MANUFACTURERS MOTOR VEHICLE SPECIFICATIONS

METRIC (U.S. Customary)

1991

Manufacturer	Vehicle Line	
Mazda Motor Corporaition	Mazda MX-5	
Mailing Address		
3-1,Shinchi,Fuchu-cho Akigun,Hiroshima,Japan	Issued Oct./'90	Revised

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 suggested specification form was developed by the vehicle manufacturing companies under the auspices of the Motor Vehicle Manufacturers Association of the United States, Inc.

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

mvma
Motor Vehicle Manufacturers Association
of the United States, Inc.
Forms Provided by Technical Affairs Division

MVMA Specifications

METRIC (U.S. Customary)

Table of Contents

Ø Indicates Format Change From Previous Year

NOTE:

1. This form uses both SI metric units and U.S. Customary units. The metric unit of measure is presented first, and the U.S. Customary unit follows in parentheses.
2. UNLESS OTHERWISE INDICATED:
   a. Specifications apply to standard models without optional equipment. Significant deviations are noted.
   b. Nominal design dimensions are used throughout these specifications.
   c. All linear dimensions are in millimeters (inches), and all mass (weight) specifications are in kilograms (pounds).
3. The General Specifications herein are those in effect at date of compilation and are subject to change without notice or incurring obligation by the manufacturer.
4. Additional Vehicle Dimensions (based in part on SAE J1100 "Motor Vehicle Dimensions") may be available from the manufacturer.

MVMA Specifications

METRIC (U.S. Customary)

Vehicle Line Mazda MX-5 Miata
Model Year '91 Issued Oct. / '90 Revised (·) _____

Vehicle Origin

Design & development (company)	Mazda Motor Corporation
Where built (country)	Japan
Authorized U.S. sales marketing representative	Mazda Motor of America Inc.

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)
MX-5 Miata (RWD)		2-dr convertible	2/0	

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

MVMA Specifications

Vehicle Line Mazda MX-5 Miata
Model Year '91 Issued Oct./'90 Revised (·) _____

METRIC (U.S. Customary)

Power Teams

SAE J1349 Net bhp (brake horsepower) and Net Torque corrected to 77°F/25°C and 29.61 in. Hg/100 kPa atmospheric pressure.

			A	B	C	D
ENGINE	Engine Code		B6D	B6D		
	Displacement Liters (in³)		1.597	1.597		
	Induction system (FI, Carb, etc.)		FI	FI		
	Compression ratio		9.4	9.4		
	SAE Net at RPM	Power kW (bhp)	116 HP/6500 RPM	105-HP/ 6000 RPM		
		Torque N · m (lb. ft.)	100 lb-ft/5500RPM	100 lb-ft/5500RPM		
	Exhaust single, dual		Single	Single		
TRANS	Transmission/ Transaxle		5-Speed manual M5-transaxle	4-Speed auto 4HAT-transaxle		
	Axle Ratio (std. first)		4.3	4.3		

Series Availability		Power Teams (A - B - C - D)	
Model	Code	Standard	Optional
Mazda MX-5 Miata	2-dr Convertible	A	B

MVMA Specifications

Vehicle Line Mazda MX-5 Miata
Model Year '91 Issued Oct./'90 Revised (-)

METRIC (U.S. Customary)

Engine Description / Engine Code	DOHC-16V in-line, 4-cylinder

ENGINE – GENERAL

Type & description (inline, V, angle, flat, location, front, mid, rear, transverse, longitudinal, sohc, dohc, ohv, hemi, wedge, pre-chamber, etc.)	DOHC 16-Valve Inline 4-cylinder Front, Longitudinal
Manufacturer	Mazda Motor Corporation
No. of cylinders	4
Bore	78 mm (3.1 in.)
Stroke	83.6 mm (3.3 in.)
Bore spacing (C / L to C / L)	86 mm
Cylinder block material & mass kg (lbs.) (machined)	Cast iron
Cylinder block deck height	206.5 mm
Cylinder block length	373.5 mm
Deck clearance (minimum) (above or below block)	–
Cylinder head material & mass kg (lbs.)	Cast aluminum alloy
Cylinder head volume (cm³)	38.0
Cylinder liner material	–
Head gasket thickness (compressed)	1.25
Minimum combustion chamber total volume (cm³)	46.8
Cyl. no. system (front to rear)* — L. Bank	–
Cyl. no. system (front to rear)* — R. Bank	–
Firing order	1-3-4-2
Intake manifold material & mass [kg (lbs.)]**	Cast aluminum alloy, 4.4 kg
Exhaust manifold material & mass [kg (lbs.)]**	Stainless, 3.3 kg
Fuel required unleaded, diesel, etc.	Unleaded regular gasoline
Fuel antiknock index (R + M) ÷ 2	–
Engine mounts — Quantity	–
Engine mounts — Material and type (elastomeric, hydroelastic, hydraulic damper, etc.)	–
Engine mounts — Added isolation (sub-frame, crossmember, etc.)	–
Total dressed engine mass (wt) dry***	–

Engine – Pistons

Material & mass, g (weight, oz.) - piston only	Cast aluminum alloy

Engine – Camshaft

Location	Over head
Material & mass kg (weight, lbs.)	Cast iron
Drive type — Chain / belt	Belt
Drive type — Width / pitch	22.0 / 8.007

* 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 Mazda MX-5 Miata
Model Year '91 Issued Oct./'90 Revised (·)

METRIC (U.S. Customary)

Engine Description / Engine Code	DOHC-4V in-line, 4-cylinder

Engine – Valve System

Hydraulic lifters (std., opt., NA)		Std.
Valves	Number intake / exhaust	2/2
	Head O.D. intake / exhaust	ø31/ø26.2

Engine – Connecting Rods

Material & mass [kg., (weight, lbs.)]*	Carbon steel
Length (axes ℄ to ℄) mm	132-9 mm

Engine – Crankshaft

Material & mass [kg., (weight, lbs.)]*		Nodular graphite cast iron
End thrust taken by bearing (no.)		2
Length & number of main bearings		–
Seal (material, one, two piece design, etc.)	Front	–
	Rear	–

Engine – Lubrication System

Normal oil pressure [kPa (psi) at engine rpm]	294-392 kpa (3000 rpm)
Type oil intake (floating, stationary)	Stationary
Oil filter system (full flow, part, other)	Full fllow
Capacity of c/case, less filter-refill-L (qt.)	3.2 L

Engine – Diesel Information NA

Diesel engine manufacturer		–
Glow plug, current drain at 0°F		–
Injector nozzle	Type	–
	Opening pressure [kPa (psi)]	–
Pre-chamber design		–
Fuel injection pump	Manufacturer	–
	Type	–
Fuel injection pump drive (belt, chain, gear)		–
Supplementary vacuum source (type)		–
Fuel heater (yes/no)		–
Water separator, description (std., opt.)		–
T manufacturer		–
Oil cooler-type (oil to engine coolant; oil to ambient air)		–
Oil filter		–

Engine – Intake System NA

Turbo charger - manufacturer	–
Super charger - manufacturer	–
Intercooler	–

* Finished State

MVMA Specifications

METRIC (U.S. Customary)

Vehicle Line Mazda MX-5 Miata
Model Year '91 Issued Oct./'90 Revised (-)

Engine Description / Engine Code: DOHC-4V in-line, 4-cylinder

Engine – Cooling System

		M/T	A/T
Coolant recovery system (std., opt., n.a.)		Std.	←
Coolant fill location (rad., bottle)		rad.	←
Radiator cap relief valve pressure [kPa (psi)]		74-103 kpa (0.75~1.05 kg/cm²)	←
Circulation thermostat	Type (choke, bypass)	BYPASS	←
	Starts to open at °C (°F)	sub : 85°c Main : 88°c	←
Water pump	Type (centrifugal, other)	Centrifugal	←
	GPM 1000 pump rpm	-	-
	Number of pumps	1	←
	Drive (V-belt, other)	V-belt	←
	Bearing type	Ball bearing	←
	Impeller material	Steel	←
	Housing material	Aluminum	←
By-pass recirculation [type (inter., ext.)]		Ext.	←
Cooling system capacity	With heater – L(qt.)	5.0	6.0
	With air conditioner – L(qt.)	-	-
	Opt. equipment [specify – L(qt.)]	-	-
Water jackets full length of cyl. (yes, no)		Yes	←
Water all around cylinder (yes, no)		No	←
Water jackets open at head face (yes, no)		No	←
Radiator core	Std., A/C, HD	STD	←
	Type (cross-flow, etc.)	Down-flow	←
	Construction (fin & tube mechanical, braze, etc.)	Corrugated fin	←
	Material, mass [kg (wgt., lbs.)]	-	-
	Width	647 mm	←
	Height	320 mm	←
	Thickness	16 mm	25mm
	Fins per inch	16.9	19.5
Radiator end tank material		Nylon	←
Radiator fan	Std., elec., opt.	STD (elec)	←
	Number of blades & type (flex, solid, material)	5	←
	Diameter & projected width	300 mm	←
	Ratio (fan to crankshaft rev.)	-	-
	Fan cutout type	-	-
	Drive type (direct, remote)	remote	←
	RPM at idle (elec.)	-	-
	Motor rating (wattage) (elec.)	70 W	80W
	Motor switch (type & location) (elec.)	Thermo-switch	←
	Switch point (temp., pressure) (elec.)	OFF→ON 97°c	←
	Fan shroud (material)	P-PR	←

MVMA Specifications

Vehicle Line Mazda MX-5 Miata
Model Year '91 Issued Oct. /'90 Revised (-)

METRIC (U.S. Customary)

Engine Description / Engine Code	DOHC-16V in-line, 4-cylinder

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

Induction type: carburetor, fuel injection system, etc.		Electric fuel injection system
Manufacturer		NIPPON DENSO
Carburetor no. of barrels		NA
Idle A/F mix.		A/F = 14.7
Fuel injection	Point of injection (no.)	4
	Constant, pulse, flow	Pulse (2 Group)
	Control (electronic, mech.)	Elec.
	System pressure (kPa (psi))	284 kPa
Idle spd.-rpm (spec. neutral or drive and propane if used)	Manual	850 , Neutral
	Automatic	850 , P & N - range
Intake manifold heat control (exhaust or water thermostatic or fixed)		–
Air cleaner type		Wet
Air filter (type/location)		Paper element / Rear under body
Fuel pump	Type (elec. or mech.)	Impeller
	Location (eng., tank)	Tank
	Pressure range (kPa (psi))	441- 637 kPa
	Flow rate at regulated pressure (L (gal)/hr @ kPa (psi))	80 [L/hr] Min. @ 294 kPa

Fuel Tank

Capacity (refill L (gallons))		45 L (11.9)
Location (describe)		Behind front seat
Attachment		–
Material & Mass (kg (weight lbs.))		–
Filler pipe	Location & material	–
	Connection to tank	–
Fuel line (material)		–
Fuel hose (material)		Rubber
Return line (material)		–
Vapor line (material)		–
Expanded tank	Opt., n.a.	NA
	Capacity (L (gallons))	–
	Location & material	–
	Attachment	–
Auxiliary tank	Opt., n.a.	NA
	Capacity (L (gallons))	–
	Location & material	–
	Attachment	–
	Selector switch or valve	–
	Separate fill	–

MVMA Specifications

Vehicle Line Mazda MX-5 Miata
Model Year '91 Issued Oct./'90 Revised (-)

METRIC (U.S. Customary)

Engine Description / Engine Code: DOHC-16V in-line, 4-cylinder

Vehicle Emission Control

Exhaust Emission Control	Type (air injection, engine modifications, other)		Three way Catalyst + Feed back control
	Air Injection	Pump or pulse	NA
		Driven by	NA
		Air distribution (head, manifold, etc.)	NA
		Point of entry	NA
	Exhaust Gas Recirculation	Type (controlled flow, open orifice, other)	NA
		Exhaust source / Point of exhaust injection (spacer, carburetor, manifold, other)	NA
	Catalytic Converter	Type	3-way
		Number of	1
		Location(s)	Under floor
		Volume [L (in³)]	1.6 L
		Substrate type	Monolith
		Noble metal type	Pt / Rh =5/1
		Noble metal concentration (g/cm³)	0.0016
Crankcase Emission Control	Type (ventilates to atmosphere, induction system, other)		Induction
	Energy source (manifold vacuum, carburetor, other)		manifold vacuum
	Discharges (to intake manifold, other		intake manifold
	Air inlet (breather cap, other)		NA
Evaporative Emission Control	Vapor vented to (crankcase, canister, other)	Fuel tank	Canister
		Carburetor	NA
	Vapor storage provision		Canister
Electronic system	Closed loop (yes/no)		Yes
	Open loop (yes/no)		No.

Engine – Exhaust System

T (single, single with cross-over, other)		Single
Muffler no. & type (reverse flow, straight thru, separate resonator) Material & Mass [kg (weight lbs)]		1 / Reverse flow
Resonator no. & type		-
Exhaust pipe	Branch o.d., wall thickness	-
	Main o.d., wall thickness	ϕ 50.8 × 2.0 mm
	Material & Mass [kg (weight lbs)]	Stainless
Intermediate pipe	o.d. & wall thickness	ϕ 48.6 × 1.2 mm
	Material & Mass [kg (weight lbs)]	Al coated stainless
Tail pipe	o.d. & wall thickness	ϕ 48.6 × 1.2 mm
	Material & Mass [kg (weight lbs)]	Al coated stainless

MVMA Specifications

Vehicle Line Mazda MX-5 Miata
Model Year '91 Issued Oct./'90 Revised (-)

METRIC (U.S. Customary)

Engine Description / Engine Code	All models

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

Manual 3-speed (manufacturer/country)	NA
Manual 4-speed (manufacturer/country)	NA
Manual 5-speed (manufacturer/country)	Std
Automatic (manufacturer/country)	Opt
Automatic overdrive (manufacturer/country)	-

Manual Transmission/Transaxle

Number of forward speeds		5
Gear ratios	1st	3.136
	2nd	1.888
	3rd	1.330
	4th	1.000
	5th	0.814
	Reverse	3.758
Synchronous meshing (specify gears)		All of forward gears
lever location		Floor
Trans. case matl. & mass kg (lbs)*		-
Lubricant	Capacity [L (pt.)]	2.0 L
	Type recommended	A.P.T. Serice GL-4 or GL-5 SEA 75W-90

Clutch (Manual Transmission)

Clutch manufacturer		DAIKIN MANUFACTURING CO.
Clutch type (dry, wet; single, multiple disc)		Single dry plate, hydraulically actuated
Linkage (hydraulic, cable, rod, lever, other)		Hydranlic
Max. pedal effort (norm. spring load, new) N (lbs)	Depressed	-
	Released	-
Assist (spring, power/percent, nominal)		Nominal
Type pressure plate springs		Diaphragm
Total spring load (nominal, new) N (lbs)		-
Clutch facing	Facing mfgr. & material coding	HITACHI
	Facing material & construction	WOVEN
	Rivets per facing	-
	Outside x inside dia. (nominal)	200 130
	Total eff. area [cm²(in.²)]	181 cm²
	Thickness (pressure plate side/fly wheel side)	3.5 / 3.5
	Rivet depth (pressure plate side/fly wheel side)	-
	Engagement cushion method	Cushion spring
Release bearing type & method lub.		Ball bearing
Torsional damping method, springs, hysteresis		Coil and rubber spring

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

MVMA Specifications

Vehicle Line Mazda MX-5 Miata
Model Year '91 Issued Oct./'90 Revised (-)

METRIC (U.S. Customary)

Engine Description Engine Code	DOHC-16V in-line, 4-cylinder

∅ Automatic Transmission/Transaxle

Trade Name		N4A-HL
Type and special features (describe)		Hydraulic control
Gear selector	Location (column, floor, other)	Floor
	Ltr./No. designation (e.g. PRND21)	PRND21
	Shift interlock (yes, no, describe)	Yes
Gear ratios	1st	2.841
	2nd	1.541
	3rd	1.000
	4th	0.720
	Reverse	2.400
Max. upshift speed - drive range [km/h (mph)]		(1-2) 43.1 km/h, (2-3) 87.1 km/h, (3-4) 140 km/h
* kickdown speed - drive range [km/h (mph)]		(2-1) 40 km/h, (3-2) 90km/h
Min. overdrive speed [km/h (mph)]		31 km/h
Torque converter	Number of elements	3
	Max. ratio at stall	2.8
	Type of cooling (air, liquid)	Liquid
	Nominal diameter	236
	Capacity factor "K"	289
Lubricant	Capacity [refill L(pt.)]	6.7L
	Type recommended	MAZDA ATF M-III
Oil cooler (std., opt., N.A., internal, external, air, liquid)		NA
Transmission mass [kg (lbs)] & case material **		–

∅ All Wheel / 4 Wheel Drive

NA

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

* Input speed ÷ torque

** Dry weight including torque converter. If other, specify.

MVMA Specifications

Vehicle Line Mazda MX-5 Miata
Model Year '91 Issued Oct./'90 Revised (-)

METRIC (U.S. Customary)

Engine Description Engine Code	DOHC-4V in-line, 4-cylinder

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

Axle ratio (or overall top gear ratio)		4.3
Ring gear o.d.		162
No. of teeth	Pinion	10
	Ring gear	43

Rear Axle Unit

Description		Hypoid gear
Limited slip differential (type)		Viscous (Opt.)
Drive pinion	Type	Hypoid gear
	Offset	25
No. of differential pinions		2 (L.S.D.=4)
Pinion / differential	Adjustment (shim, etc.)	Shim
	Bearing adjustment	Collapsible
Driving wheel bearing (type)		Unit bearing
Lubricant	Capacity [L (pt.)]	0.65 L
	Type recommended	GL-5

Propeller Shaft – Rear Wheel Drive

Manufacturer Type (straight tube, tube-in-tube, internal-external damper, etc.)			Straight tube
Outer diam. x length* x wall thickness	Manual 3-speed transmission		NA
	Manual 4-speed transmission		NA
	Manual 5-speed transmission		57×864×1.6
	Overdrive		-
	Automatic transmission		57×864×1.6
Intermediate bearing	Type (plain, anti-friction)		-
	Lubrication (fitting, prepack)		-
Slip yoke	Type		Spline
	Number of teeth		22
	Spline o.d.		25.19
Universal joints	Make and mfg. no.	Front	NTN M002-25-060
		Rear	NTN M002-25-060
	Number used		2
	Type (ball and trunnion, cross)		Hooks joint
	Rear attach (u-bolt, clamp, etc)		flange
	Bearing: Type (plain, anti-friction)		Needle bearing
	Bearing: Lubrication (fitting, prepack)		Sealed grease
Drive taken through (torque tube, arms or springs)			Arms
Torque taken through (torque tube, arms or springs)			Arms

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

MVMA Specifications

Vehicle Line Mazda MX-5 Miata

Model Year '91 Issued Oct./'90 Revised (*)

METRIC (U.S. Customary)

Body Type And/Or Engine Displacement	All models

Suspension – General Including Electronic Controls

Car leveling	Standard/optional/not avail.		NA
	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		–
Shock absorber damping controls	Standard/option/not avail.		NA
	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		Cylindrical double acting
	Make		SHOWA
	Piston diameter		–
	Rod diameter		–

Suspension – Front

Type and description			Independent , Double wishbone , Coil spring
Travel*	Full jounce		–
	Full rebound		–
Spring	Type (coil, leaf, other) & material		Coil, Steel
	Insulators (type & material)		–
	Size (coil design height & i.d.)		10.8×93.8×282.5-5.91
	Spring rate [N/mm (lb./in.)]		2.79 kgf/mm
	Rate at wheel [N/mm (lb./in.)]		1.6 kgf/mm
Stabilizer	Type (link, linkless, frameless)		Link
	Material & bar diameter		Steel, 19 mm

Suspension – Rear

Type and description			Independent , Double wishbone , Coil spring
Travel*	Full jounce		–
	Full rebound		–
Spring	Type (coil, leaf, other) & material		Coil , Steel
	Size (length x width, coil design height & i.d.)		10.1×93.1×339.5-7.13
	Spring rate [N/mm (lb./in.)]		–
	Rate at wheel [N/mm (lb./in.)]		1.43
	Insulators (type & material)		–
	If leaf	No. of leaves	–
		Shackle (comp. or tens.)	–
Stabilizer	Type (link, linkless, frameless)		Link
	Material & bar diameter		Steel , 12 mm
Track bar (type)			–

* Define load condition:

MVMA Specifications

Vehicle Line Mazda MX-5 Miata

Model Year '91 Issued Oct./'90 Revised (-)

METRIC (U.S. Customary)

Body Type And/Or Engine Displacement	All models

Brakes – Service

Description			Four wheel hydraulic actuated system
Manufacturer and brake type (std., opt., n.a.)	Front (disc or drum)		Disc (ventilated)
	Rear (disc or drum)		Disc (solid)
Valving type (proportion, delay, metering, other)			Proportion
Power brake (std., opt., n.a.)			Std
Booster type (remote, integral, vac., hyd., etc.)			Vacuum
Vacuum	Source (inline, pump, etc.)		Direct vacuum
	Reservoir (volume in.³)		N/A
	Pump type (elec., gear driven, belt driven)		N/A
Traction control	Operational speed range		N/A
	Type engine intervention (electronic, mech.)		N/A
Anti-lock brake	Front / rear (std., opt., n.a.)		N/A
	Manufacturer		–
	Type (electronic, mech.)		–
	Number sensors or circuits		–
	Number anti-lock hydraulic circuits		–
	Integral or add-on system		–
	Yaw control (yes, no)		–
	Hydraulic power source (elec., vac. mtr., pwr. strg.)		–
Effective area [cm²(in.²)]*		F/R	148/104
Gross Lining area [cm²(in.²)]**(F/R)			148/104
Swept area [cm²(in.²)]***(F/R)			268.6/195.35
Rotor	Outer working diameter	F/R	235/231
	Inner working diameter	F/R	144/164
	Thickness	F/R	18/9
	Material & type (vented/solid)	F/R	All Cast iron
Drum	Diameter & width	F/R	–
	Type and material	F/R	–
Wheel cylinder bore		F/R	51.1/31.75
Master cylinder	Bore:stroke	F/R	22.22/15
Pedal arc ratio			4.1
Line pressure at 445 N(100 lb.) pedal load [kPa (psi)]			9800
Lining clearance		F/R	All Self-adjusting
Brake lining – Front wheel	Bonded or riveted (rivets/seg.)		Bounded
	Rivet size		–
	Manufacturer		SUMITOMO ELECTRIC INDUSTRIES CO.,LTD
	Lining code*****		M2247 FF
	Material		RESIN MOLDED
	**** Primary or out-board		101×44×9.5
	Size Secondary or in-board		101×44×9.5
	Shoe thickness (no lining)		9.5
Brake lining – Rear wheel	Bonded or riveted (rivets/seg.)		Bounded
	Manufacturer		NISSHINBO INDUSTRIES
	Lining code*****		NBK D991 GG
	Material		RESIN MOLDED
	**** Primary or out-board		99×31.5×8
	Size Secondary or in-board		99×31.5×8
	Shoe thickness (no lining)		8

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

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

**** Size for drum brakes includes length x width x thickness. ***** Manufacturer I.D., catalog for formulation designation and coefficient of friction classification.

MVMA Specifications

Vehicle Line Mazda MX-5 Miata
Model Year '91 Issued Oct./'90 Revised (-)

METRIC (U.S. Customary)

Body Type And/Or Engine Displacement	All models

Tires And Wheels (Standard)

Tires	Size (load range, ply)		P185/60 R14 82H
	Type (bias, radial, steel, nylon, etc.)		Steel Radial
	Inflation pressure (cold) for recommended max. vehicle load	Front [kPa (psi)]	1.8 kgf/cm²
		Rear [kPa (psi)]	1.8 kgf/cm²
	Rev./mile-at 70 km/h (45 mph)		-
Wheels	Type & material		Aluminum
	Rim (size & flange type)		5 1/2 JJx14
	Wheel offset		45
	Attachment	Type (bolt or stud)	Stud
		Circle diameter	100.0 mm
		Number & size	M12x1.5
Spare	Tire and wheel		T115/70 D14 , 14x4T
	Storage position & location (describe)		Trunk room

Tires And Wheels (Optional)

NA

Tire size (load range, ply)	-
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		Hand operated
Location of control		Right side of driver's seat (floor)
Operates on		Rear service brake
If separate from service brakes	Type (internal or external)	NA
	Drum diameter	NA
	Lining size (length x width x thickness)	NA

MVMA Specifications

Vehicle Line Mazda MX-5 Miata
Model Year '91 Issued Oct./'90 Revised (-)

METRIC (U.S. Customary)

Body Type And/Or Engine Displacement	All models

Steering

Manual (std., opt., n.a.)				Std.
Power (std., opt., n.a.)				Opt.
Adjustable steering wheel/column (tilt, telescope, other)		Type		NA
		Manufacturer		–
		(std., opt., n.a.)		–
Wheel diameter** (W9) SAE J1100		Manual		–
		Power		–
Turning diameter m (ft.)	Outside front	Wall to wall (L & r.)		–
		Curb to curb (L & r.)		–
	Inside rear	Wall to wall (L & r.)		–
		Curb to curb (L & r.)		–
Scrub Radius*				–
Manual	Gear	Type		Rack & Pinion
		Manufacturer		NIPPON SEIKO
		Ratios	Gear	
			Overall	–
	No. wheel turns (stop to stop)			–
Power	Type (coaxial, elec., hyd., etc.)			Hyd.
	Manufacturer			JIDOSHA KIKI
	Gear	Type		–
		Ratios	Gear	–
			Overall	–
	Pump (drive)			–
	No. wheel turns (stop to stop)			–
Linkage	Type			–
	Location (front or rear of wheels, other)			Front
	Tie rods (one or two)			Two
Steering axis	Inclination at camber (deg.)			–
	Bearings (type)	Upper		–
		Lower		–
		Thrust		–
Steering spindle/knuckle & joint type				–
Wheel spindle/hub	Diameter	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 Mazda MX-5 Miata
Model Year '91 Issued Oct./'90 Revised (·) ____

METRIC (U.S. Customary)

Body Type And/Or Engine Displacement	All models

Wheel Alignment

Front wheel at curb mass (wt.)	Service checking	Caster (deg.)	–
		Camber (deg.)	–
		Toe-in [outside track-mm (in.)]	–
	Service reset*	Caster	4° 49' ± 45'
		Camber	0° 24' ± 30'
		Toe-in	3 ± 3 mm
	Periodic M.V. inspection	Caster	–
		Camber	–
		Toe-in	–
Rear wheel at curb mass (wt.)	Service checking	Camber (deg.)	–
		Toe-in [outside track-mm (in.)]	–
	Service reset*	Camber	–
		Toe-in	–
	Periodic M.V. inspection	Camber	–
		Toe-in	–

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

Electrical – Instruments and Equipment

Speedometer	Type (analog, digital, std., opt.)	Analog
	Trip odometer (std., opt., n.a.)	Std.
EGR maintenance indicator		–
Charge indicator	Type	NA
	Warning device (light, audible)	Light
Temperature indicator	Type	NA
	Warning device (light, audible)	Light
Oil pressure indicator	Type	Meter
	Warning device (light, audible)	NA
Fuel indicator	Type	Meter
	Warning device (light, audible)	Light
Windshield wiper	Type (standard)	Semi-concealed
	Type (optional)	None
	Blade length	–
	Swept area [cm²(in.²)]	–
s. d washer	Type (standard)	2 Nozzle (4 jet)
	Type (optional)	None
	Fluid level indicator (light, audible)	None
Rear window wiper, wiper/washer (std., opt., n.a.)		None
Horn	Type	Electric
	Number used	2
Other		

MVMA Specifications

Vehicle Line Mazda MX-5 Miata
Model Year '91 Issued Oct./'90 Revised (-)

METRIC (U.S. Customary)

Engine Description / Engine Code	DOHC-4V in-line , 4-cylinder

Electrical – Supply System

Battery	Manufacturer	MATSUSHITA
	Model, std., (opt.)	–
	Voltage	12V
	Amps at 0°F cold crank	–
	Minutes-reserve capacity	–
	Amps-hrs.-20 hr. rate	40AH
	Location	Trunk room
Alternator	Manufacturer	MITSUBISHI
	Rating (idle/max. rpm)	MT : 12V-50A , AT : 12V-65A
	Ratio (alt. crank/rev.)	2.21
	Output at idle (rpm, park)	–
	Optional (type & rating)	–
Regulator	Type	IC-Type

Electrical – Starting System

Mo..	Manufacturer	MITSUBISHI
	Current drain ____ °F	–
	Power rating [kw (hp)]	0.95 KW
Motor drive	Engagement type	Magnetic
	Pinion engages from (front, rear)	–

Electrical – Ignition System

Type	Electronic (std., opt., n.a.)		–
	Other (specify)		–
Coil	Manufacturer		MITSUBISHI
	Model		–
	Current	Engine stopped – A	–
		Engine idling – A	–
Spark plug	Manufacturer		NGK / NIPPON DENSO
	Model		BKR6E-11, BKR5E-11, BKR7E-11/K22PR-U11, K20PR-U11, K16PR-U11
	Thread (mm)		M14 x 1.25
	Tightening torque [N-m (lb. ft)]		15-23N·m
	Gap		1.0 - 1.1
	Number per cylinder		–
Distributor	Manufacturer		–
	Model		

Electrical – Suppression

Locations & type	High tension cord & Spark plug

MVMA Specifications

Vehicle Line Mazda MX-5 Miata
Model Year '91 Issued Oct./'90 Revised (-)

METRIC (U.S. Customary)

Body Type	All models

Body

Structure	Unitized all steel welded body with energy absorbing front and rear structures.
Bumper system front - rear	2.5 MPH bumper (front & rear)
corrosion treatment	Major exterior and structural sheet metal components.

Body – Miscellaneous Information

Type of finish (lacquer, enamel, other)		Lacquer
Hood	Material & mass	Aluminum , 8 kg
	Hinge location (front, rear)	Rear
	Type (counterbalance, prop)	Prop
	Release control (internal, external)	Internal
Trunk lid	Material & mass	Steel , 6 kg
	Type (counterbalance, other)	Counterbalance
	Internal release control (elec., mech., n.a.)	None
Hatch-back lid	Material & mass	NA
	Type (counterbalance, other)	NA
	Internal release control (elec., mech., n.a.)	NA
te	Material & mass	NA
	Type (drop, lift, door)	NA
	Internal release control (elec., mech., n.a.)	NA
Vent window control (crank, friction, pivot, power)	Front	–
	Rear	–
Window regulator type (cable, tape, flex drive, etc.)	Front	–
	Rear	–
Seat cushion type (e.g., 60/40 bucket, bench, wire, foam, etc.)	Front	Bucket
	Rear	NA
	3rd seat	NA
Seat back type (e.g., 60/40, bucket, bench, wire, foam, etc.)	Front	Bucket
	Rear	NA
	3rd seat	NA

MVMA Specifications

Vehicle Line Mazda MX-5 Miata
Model Year '91 Issued Oct./'90 Revised (-)

METRIC (U.S. Customary)

Body Type	All models

Restraint System

Seating Position			Left	Center	Right
Active	Type & description (lap & shoulder belt, lap belt, etc.) Standard / optional	First seat	Lap & Shoulder belt	NA	Lap & Shoulder belt
		Second seat	NA	NA	NA
		Third seat	NA	NA	NA
Passive	Type & description (air bag, motorized - 2-point belt, fixed belt, knee bolster, manual - lap belt) Standard / optional	First seat	Air bag Standard	NA	None
		Second seat	NA	NA	NA
		Third seat	NA	NA	NA

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

Headlamps

Description - sealed beam, halogen, replaceable bulb, etc.	Halogen sealed beam
Shape	Circular
Lo-beam type (2A1, 2B1, 2C1, etc.	2D1
Quantity	2
Hi-beam type (1A1, 2A1, 1C1, 2C1, etc.)	2D1
Quantity	2

Frame

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

MVMA Specifications

Vehicle Line Mazda MX-5 Miata
Model Year '91 Issued Oct./90 Revised (-)

METRIC (U.S. Customary)

Body Type	All models

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

Air conditioning (manual, auto. temp control)		Opt. Manual
Clock (digital, analog)		NA
Compass, thermometer		NA
Console (floor, overhead)		Rear
Defroster, elec. backlight		Defroster, std.
Electronic	Diagnostic monitor (integrated, individual)	Air bag monitor , std.
	Instrument cluster (list instruments)	NA
	Keyless entry	NA
	Tripminder (avg. spd., fuel)	NA
	Voice alert (list items)	NA
	Other	NA
Fuel door lock (remote, key, electric)		Remote
Lamps	Auto head on / off delay, dimming	NA
	Cornering	NA
	Courtesy (map, reading)	NA
	Door lock, ignition	NA
	Engine compartment	NA
	Fog	NA
	Glove compartment	NA
	Trunk	NA
	Illuminated entry system (list lamps, activation)	NA
	Other	NA
Mirrors	Day / night (auto. man.)	Manual 1
	L.H. (remote, power, heated)	Manual 1
	R.H. (convex, remote, power, heated)	Convex , Manual
	Visor vanity (RH / LH, illuminated)	RH only
Navigation system (describe)		NA
Parking brake-auto release (warning light)		NA

MVMA Specifications

Vehicle Line: Mazda MX-5 Miata
Model Year: '91 Issued: Oct./'90 Revised (·):

METRIC (U.S. Customary)

Engine Description / Engine Code: All models

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

Power equipment	Deck lid (release, pull down)		NA
	Door locks (manual, automatic, describe system)		Standard , Manual
	Seats	2 - 4 - 6 way, etc.	NA
		Reclining (R.H., L.H.)	NA
		Memory (R.H., L.H., present, recline)	NA
		Lumbar, hip, thigh, support	NA
		Heated (R.H., L.H., other)	NA
	Side windows		Opt.
	Vent windows		NA
	Rear windows		NA
Radio systems	Antenna (location, whip, w / shield, power)		Opt. Right side rear end
	Standard		NA
	Optional	AM, FM, stereo, tape, compact disc, graphic ecualizer, theft deterrent, radio prep package, headphone jacks, etc.	AM/FM auto-reverse casette stereo with digital clock and anti-theft code. Compact disc.
	Speaker (number, location)		2/Door , 2/Headrest
Roof: open air or fixed (flip-up, sliding, "T")			NA
Speed control device			Opt.
Speed warning device (light, buzzer, etc.)			NA
Tachometer (rpm)			Std.
Telephone system (describe)			NA
Theft deterrent system			Dealer-installed accessory

MVMA Specifications

Vehicle Line Mazda MX-5 Miata

Model Year 91 Issued Oct./'90 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	SAE Ref. No.	All models
Ø Width		
Tread (front)	W101	1410
Tread (rear)	W102	1428
Vehicle width	W103	1676
Body width at Sg RP (front)	W117	
Vehicle width (front doors open)	W120	
Vehicle width (rear doors open)	W121	
Tumble-home (deg.)	W122	
Outside mirror width	W410	
Ø Length		
Wheelbase	L101	2266
Vehicle length	L103	3948
Overhang (front)	L104	
Overhang (rear)	L105	
Upper structure length	L123	
Rear wheel C/L "X" coordinate	L127	
Ø Height*		
Passenger distribution (front/rear)	PD1,2,3	
Trunk/cargo load		
Vehicle height	H101	1224
Cowl point to ground	H114	
Deck point to ground	H138	
Rocker panel-front to ground	H112	
Rocker panel-rear to ground	H111	
Windshield slope angle	H122	
Backlight slope angle	H121	
Ground Clearance*		
Front bumper to ground	H102	
Rear bumper to ground	H104	
Bumper to ground (front at curb mass (wt.))	H103	
Bumper to ground (rear at curb mass (wt.))	H105	
Angle of approach (degrees)	H106	
Angle of departure (degrees)	H107	
Ramp breakover angle (degrees)	H147	
Axle differential to ground (front/rear)	H153	
Min. running round clearance	H156	
Location of min. run. grd. clear.		

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

MVMA Specifications

Vehicle Line Mazda MX-5 Miata
Model Year '91 Issued Oct./'90 Revised (·)

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

Body Type		All models
Front Compartment	SAE Ref. No.	
SgRP front, "X" coordinate	L31	
Effective head room	H61	942
Max. eff. leg room (accelerator)	L34	1093
SgRP to heel point	H30	175
SgRP to heel point	L53	934
Back angle	L40	
Hip angle	L42	
Knee angle	L44	
Foot angle	L46	
Design H-point front travel	L17	
Normal driving & riding seat track trvl.	L23	
Shoulder room	W3	1280
Hip room	W5	1314
Upper body opening to ground	H50	
'teering wheel maximum diameter'	W9	370
S' 'ng wheel angle	H18	
Ac... heel pt. to steer. whl. cntr	L11	
Accel. heel pt. to steer. whl. cntr	H17	
Undepressed floor covering thickness	H67	
Rear Compartment		Not-applicable
SgRP point couple distance	L50	–
Effective head room	H63	–
Min. effective leg room	L51	–
SgRP (second to heel)	H31	–
Knee clearance	L48	–
Shoulder room	W4	–
Hip room	W6	–
Upper body opening to ground	H51	–
Back angle	L41	–
Hip angle	L43	–
Knee angle	L45	–
Foot angle	L47	–
epressed floor covering thickness	H73	–
L ...gage Compartment		
Usable luggage capacity [L (cu. ft.)]	V1	–
Liftover height	H195	–
Interior Volumes (EPA Classification)		
Vehicle class		–
Interior volume index (cu. ft.)**		–
Trunk / cargo index (cu. ft.)		–

* See page 14.
** Includes passenger and trunk / cargo index - see definition page 32.

MVMA Specifications

Vehicle Line Mazda MX-5 Miata
Model Year 91 Issued Oct./90 Revised (•)

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

Body Type: All models

	SAE Ref. No.	
Station Wagon – Third Seat		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		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 (m^3($ft.^3$))	V2	–
Hidden cargo volume index (m^3($ft.^3$))	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 (m^3($ft.^3$))	V3	–
Hidden cargo volume index (m^3($ft.^3$))	V4	–
Cargo volume index-rear of 2-seat	V11	–

MVMA Specifications

METRIC (U.S. Customary)

Vehicle Line Mazda MX-5 Miata

Model Year '91 Issued Oct./'90 Revised (-)

Body Type: All models

Vehicle Fiducial Marks

Number*		Define Coordinate Location
Front		
Rear		
Fiducial Mark Number		
Front	W21*	—
	L54*	—
	H81*	—
	H161*	—
	H163*	—
Rear	W22*	—
	L55*	—
	H82*	—
	H162*	—
	H164*	—

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

MVMA Specifications

METRIC (U.S. Customary)

Vehicle Line Mazda MX-5 Miata

Model Year '91 Issued Oct./'90 Revised (*) _____

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
	2-dr Convertible 5MT	509.7 (1123.9)	459.5 (1013.2)	969.2 (2137.1)	38.3	61.7	NA	NA	M
	4AT	524.7 (1157.0)	481.5 (1061.7)	1006.2 (2218.7)	38.3	61.7	NA	NA	N

* 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 Weight Less:

_____

_____

_____

MVMA Specifications

METRIC (U.S. Customary)

Vehicle Line Mazda MX-5 Miata

Model Year '91 Issued Oct./'90 Revised (•)

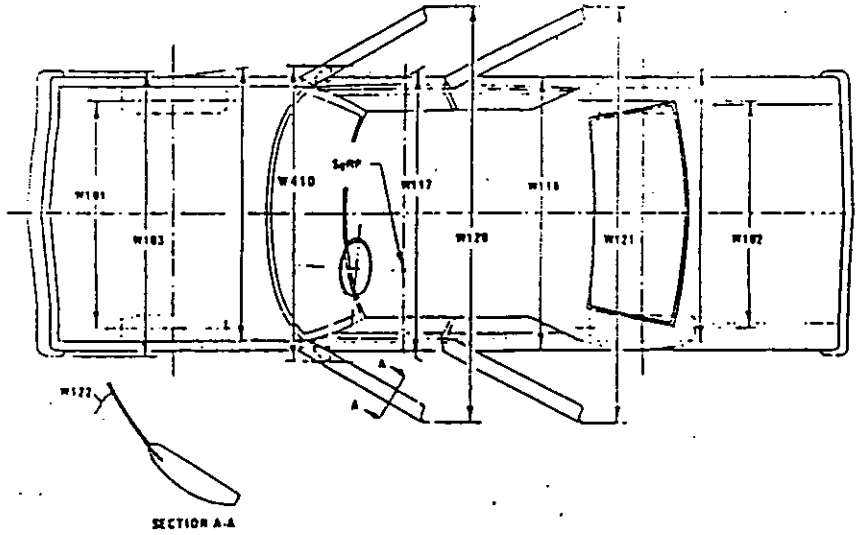
Optional Equipment Differential Mass (weight)*

Code	Equipment	MASS, kg. (lb.) Front	Rear	Total	Remarks Restrictions, Requirements
	Air Conditioner	21.3	-0.5	20.8	
		(47.0)	(-1.1)	(45.9)	
	Power window	0.6	0.6	1.2	
		(1.3)	(1.3)	(2.6)	
	Audio (C/D)	0.8	0.6	1.4	
		(1.8)	(1.3)	(3.1)	
	Headrest speaker	0.2	1.0	1.2	
		(0.4)	(2.2)	(2.6)	
	L.S.D.	0	2.0	2.0	
		(0)	(2.4)	(4.4)	
	Detachable top	1.6	20	21.6	
		(3.5)	(44.1)	(47.6)	
	ABS	7.0	3.0	10.0	
		(15.4)	(6.7)	(22.1)	

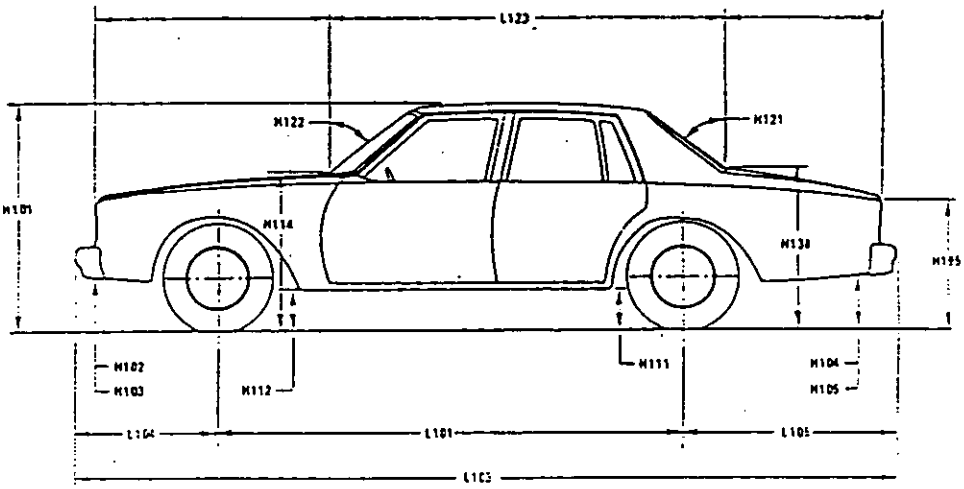
* Also see Engine - General Section for dressed engine mass (weight).

Exterior Vehicle And Body Dimensions – Key Sheet

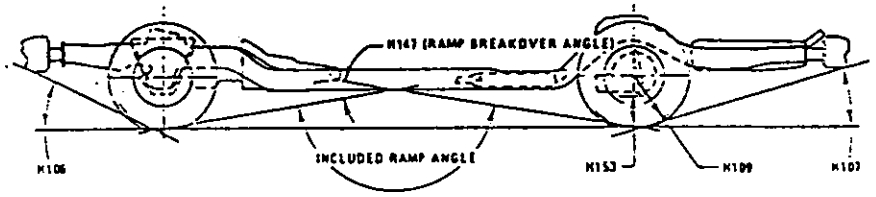
Exterior Width



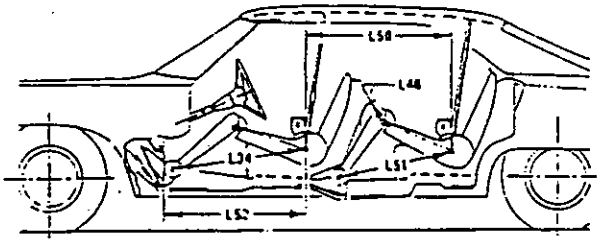
Exterior Length & Height

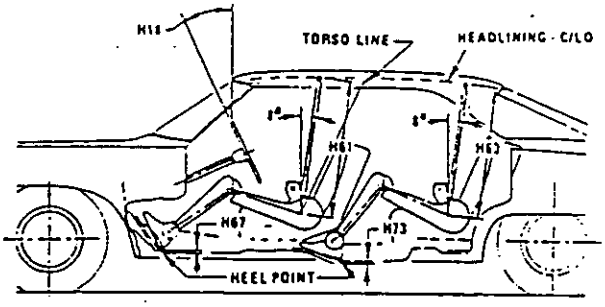


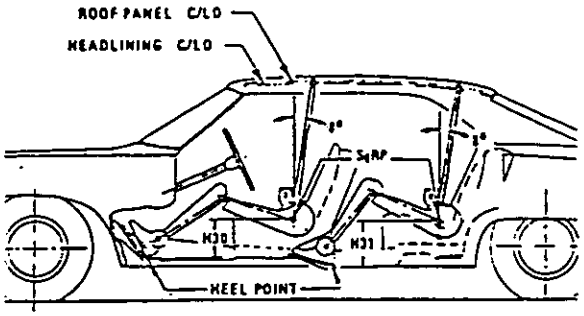
Exterior Ground Clearance

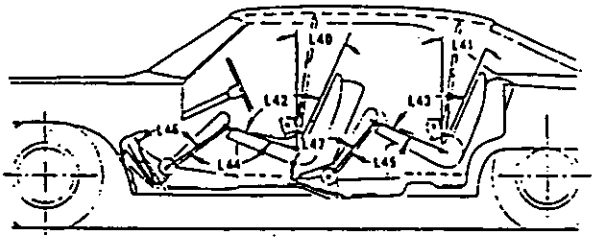


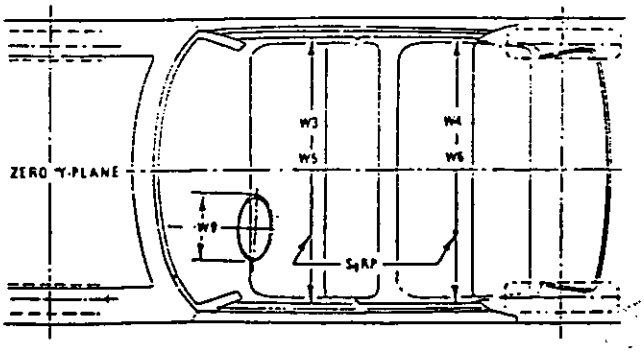
Interior Vehicle And Body Dimensions – Key Sheet

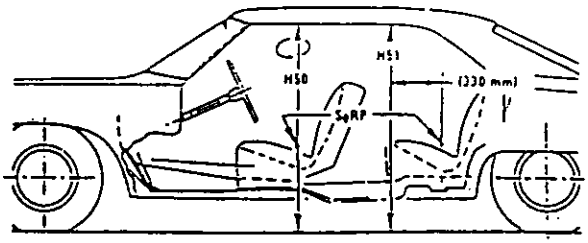






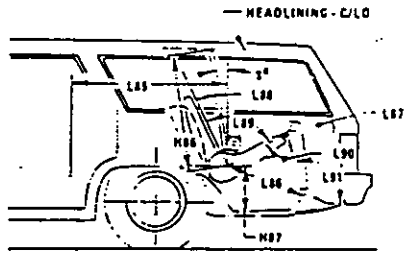


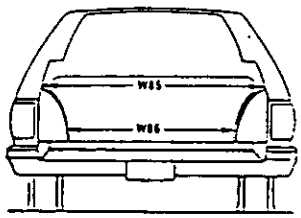




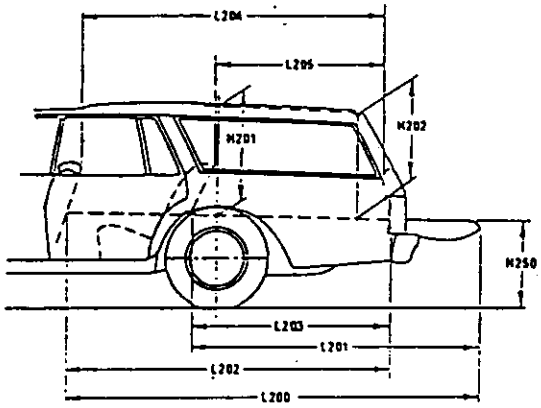
Interior Vehicle And Body Dimensions – Key Sheet

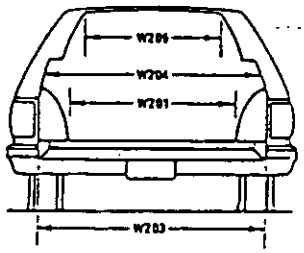
Third Seat



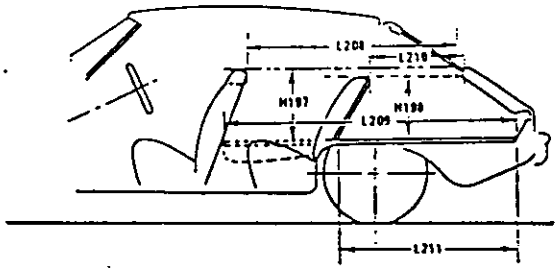


Cargo Space





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.

V102 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.

/103 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.

V410 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

L 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

.55 "X" coordinate.
W22 "Y" coordinate.
W82 "Z" coordinate.
H162 Height "Z" coordinate to ground at curb weight.
'164 Height "Z" coordinate to ground.

r. . .it Compartment Dimensions

L11 \CCELERATOR 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 ertical 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.

ıtion 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.

SD 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:

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

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:

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

V6 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.

L09 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:

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