

MANUFACTURERS MOTOR VEHICLE SPECIFICATIONS

METRIC (U.S. Customary)

1991

Manufacturer TOYOTA MOTOR CORPORATION	Vehicle Line MR2	
Mailing Address Toyota Motor Sales, U.S.A., Inc. 19001S, Western Avenue, Torrance, CA 90509	Issued 1990-01	Revised

Direct questions concerning these specifications to the manufacturer listed above.

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



Motor Vehicle Manufacturers Association
of the United States, Inc.

Forms Provided by Technical Affairs Division

MVMA Specifications

METRIC (U.S. Customary)

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NOTE:

1. This form uses both SI metric units and U.S. Customary units. The metric unit of measure is presented first, and the U.S. Customary unit follows in parentheses.
2. UNLESS OTHERWISE INDICATED:
 - a. Specifications apply to standard models without optional equipment. Significant deviations are noted.
 - b. Nominal design dimensions are used throughout these specifications.
 - c. All linear dimensions are in millimeters (inches), and all mass (weight) 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 MR2
Model Year 1991 Issued 90-01 Revised (*)

Vehicle Origin

Design & development (company)	Toyota Motor Corporation
Where built (country)	Japan
Authorized U.S. sales marketing representative	Toyota Motor Sales, U.S.A. Inc.

Vehicle Models

Model Description & Drive (FWD / RWD / AWD / 4WD)*	Introduction Date	Make, Vehicle Models, Series, Body Type (Mfr's Model Code)	No. of Designated Seating Positions (Front/Rear)	Max. Trunk/Cargo Load-Kilograms (Pounds) kg (Front/Rear)
2.0L turbo 5-sp. man., RWD		2dr-coupe SW20L-ACMZZA	(2/0)	15/30
		2dr-coupe w/T-bar roof SW20L-AJMZZA	(2/0)	15/30
2.2L 5-sp. man., RWD		2dr-coupe SW21L-ACMZKA	(2/0)	15/30
		2dr-coupe w/T-bar roof SW21L-AJMZKA	(2/0)	15/30
4-sp. auto., RWD		2dr-coupe SW21L-ACPZKA	(2/0)	15/30

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

Power Teams

Vehicle Line MR2
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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		3S-GTE	5S-FE	5S-FE	
	Displacement Liters (in³)		1.998 (122)	2.164 (132)	2.164 (132)	
	Induction system (FI, Carb, etc.)		FI w/turbo	FI	FI	
	Compression ratio		8.8	9.5	9.5	
	SAE Net at RPM	Power kW (bhp)	149 (200)/6000	97 (130)/5400	97 (130)/5400	
		Torque N · m (lb. ft.)	271 (200)/3200	190 (140)/4400	190 (140)/4400	
	Exhaust single, dual		Single	Single	Single	
TRANS	Transmission/ Transaxle		5-speed manual	5-speed manual	4-speed automatic	
	Axle Ratio (std. first)		4.285	4.176	3.034	

[illegible]

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Engine Description
 Engine Code

3S-GTE, 1.998L Turbo

5S-FE, 2.164L

ENGINE - GENERAL

Type & description (inline, V, angle, flat, location, front, mid, rear, transverse, longitudinal, sohc, dohc, ohv, hemi, wedge, pre-chamber, etc.)	Midship, transverse, in-line 4, 16 valve DOHC, pentroof	
Manufacturer	TOYOTA	
No. of cylinders	4	
Bore	86.0	87.0
Stroke	86.0	91.0
Bore spacing (C/L to C/L)	93.5-96.5-93.5	
Cylinder block material & mass kg (lbs.) (machined)	FC23, 36.3	Gray cast iron, 42.0
Cylinder block deck height	216	
Cylinder block length	409.5	
Deck clearance (minimum) (above or below block)	0.1	0.40
Cylinder head material & mass kg (lbs.)	Aluminum alloy, 12.5	Aluminum alloy, 12.1
Cylinder head volume (cm ³)	50.8	38.5
Cylinder liner material	N.A.	N.A.
Head gasket thickness (compressed)	1.25	1.20
Minimum combustion chamber total volume (cm ³)	64.1	63.6
Cyl. no. system (front to rear)*	L. Bank	1, 2, 3, 4
	R. Bank	
Firing order	1-3-4-2	
Intake manifold material & mass (kg (lbs.))**	Aluminum alloy, 4.1	Aluminum alloy, 4.1
Exhaust manifold material & mass (kg (lbs.))**	SCH1A (cast steel), 4.56	Spheroidal graphite cast iron, 6.9
Fuel required unleaded, diesel, etc.	Unleaded premium gasoline only	Unleaded gasoline
Fuel antiknock index (R + M) - 2	91	87
Engine mounts	Quantity	4
	Material and type (elastomeric, hydroelastic, hydraulic damper, etc.)	Elastomeric
	Added isolation (sub-frame, crossmember, etc.)	
Total dressed engine mass (wt) dry***	173	M/T=139, A/T=130

Engine - Pistons

Material & mass, g (weight, oz.) - piston only	Aluminum alloy, 393	Aluminum alloy, 354
--	---------------------	---------------------

Engine - Camshaft

Location	Overhead	
Material & mass kg (weight, lbs.)	Cast iron, 1.7 x 2	Alloy cast iron, Intake=2.1 Exhaust=1.6
Drive type	Chain / belt	Belt Gear
	Width / pitch	25.4/8 26.7/8.0 14/1.9 (module)

* 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:

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Engine - Valve System

Hydraulic lifters (std., opt., NA)	N.A.		
Valves	Number intake / exhaust	8/8	
	Head O.D. intake / exhaust	33.5/29.0	32/27

Engine - Connecting Rods

Material & mass (kg., (weight, lbs.))*	Steel, 0.770	Alloy steel, 0.690
Length (axes & to & mm)		

Engine - Crankshaft

Material & mass (kg., (weight, lbs.))*		Steel, 18.6	Alloy steel, 19.4
End thrust taken by bearing (no.)		No.3	No.3
Length & number of main bearings		, 5	, 5
Seal (material, one, two piece design, etc.)	Front	Fluorocarbon rubber,one piece	Fluorocarbon rubber, one piece
	Rear	Fluorocarbon rubber,one piece	Silicone rubber, one piece

Engine - Lubrication System

Normal oil pressure (kPa (psi) at engine rpm)	275 at 2500	343 at 2500
Type oil intake (floating, stationary)	Stationary	Stationary
Oil filter system (full flow, part, other)	Full flow	Full flow
Capacity of c/case, less filter-refill-L (qt.)	3.6	3.7

Engine - Diesel Information

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.)		
Turbo manufacturer		
Oil cooler-type (oil to engine coolant; oil to ambient air)		
Oil filter		

Engine - Intake System

Turbo charger - manufacturer	TOYOTA	
Super charger - manufacturer	-	
Intercooler	Air cooled	

* Finished State

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Engine - Cooling System

Coolant recovery system (std., opt., n.a.)		Std.	
Coolant fill location (rad., bottle)		Filler neck near LH rear suspension tower	
Radiator cap relief valve pressure (kPa (psi))		88	
Circulation thermostat	Type (choke, bypass)	Bypass	
	Starts to open at °C (°F)	82°	
Water pump	Type (centrifugal, other)	Centrifugal	
	GPM 1000 pump rpm	0.6L/sec.	0.54L/sec.
	Number of pumps	1	
	Drive (V-belt, other)	Timing belt	
	Bearing type	Prepacked ball bearing	
	Impeller material	Stainless steel	Steel
	Housing material	Aluminum	
By-pass recirculation (type (inter., ext.))		External	
Cooling system capacity	With heater - L(qt.)	13.6	13.0
	With air conditioner - L(qt.)	-	
	Opt. equipment (specify - L(qt.))	-	
Water jackets full length of cyl. (yes, no)		No	
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.)	Cross-flow	
	Construction (fin & tube mechanical, braze, etc.)	Corrugated fin and tube, braze	
	Material, mass (kg (wt., lbs.))	Copper alloy, 5.3	Copper alloy, M/T=5.0, A/T=5
	Width	675	M/T=575, A/T=675
	Height	318	
	Thickness	32	
	Fins per inch	17	20
Radiator end tank material		Copper alloy	
Fan	Std., elec., opt.	Electric	
	Number of blades & type (flex, solid, material)	4, solid	4, solid, plastics
	Diameter & projected width	300, 47	M/T=280, 54, A/T=300, 55
	Ratio (fan to crankshaft rev.)	-	
	Fan cutout type	-	
	Drive type (direct, remote)	-	
	RPM at idle (elec.)	2100	M/T=2100, A/T=2050
	Motor rating (wattage) (elec.)	80	80 120
	Motor switch (type & location) (elec.)	Temperature controlled, radiator	
	Switch point (temp., pressure) (elec.)	90°C	
	Fan shroud (material)	Steel plate	

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Engine - Fuel System

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

Induction type: carburetor, fuel injection system, etc.		Fuel injection system	
Manufacturer		NIPPONDENSO	
Carburetor no. of barrels		-	
Idle A/F mix.		Preset at manufacturer	
Fuel injection	Point of injection (no.)	4	
	Constant, pulse, flow	Pulse	
	Control (electronic, mech.)	Electronic	
	System pressure (kPa (psi))	250	284
Idle spd.:rpm (spec. neutral or drive and propane if used)	Manual	800	ISC
	Automatic	-	ISC
Intake manifold heat control (exhaust or water thermostatic or fixed)		N.A.	
Air cleaner type		Dry	
Fuel filter (type/location)			
Fuel pump	Type (elec. or mech.)	Electro-magnetic	
	Location (eng., tank)	In tank	
	Pressure range (kPa (psi))	250	284
	Flow rate at regulated pressure (L (gal)/hr @ kPa (psi))		

Fuel Tank

Capacity (refill L (gallons))		54
Location (describe)		Underfloor, at front floor tunnel
Attachment		Bands and attached to cross-member.
Material & Mass (kg (weight lbs.))		Terneplate,
Filler pipe	Location & material	Left quarter panel, copper plated steel pipe
	Connection to tank	Rubber hose
Fuel line (material)		Copper plated steel pipe
Fuel hose (material)		Internally braided rubber hose
Return line (material)		Copper plated steel pipe w/powder coating
Vapor line (material)		Copper plated steel pipe w/powder coating
Extended range tank	Opt., n.a.	N.A.
	Capacity (L (gallons))	
	Location & material	
	Attachment	
Auxiliary tank	Opt., n.a.	N.A.
	Capacity (L (gallons))	
	Location & material	
	Attachment	
	Selector switch or valve	
	Separate fill	

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Vehicle Emission Control

Exhaust Emission Control	Type (air injection, engine modifications, other)		MPI, ERG, O ₂ S, TWC		
	Air Injection	Pump or pulse	N.A.		
		Driven by	-		
		Air distribution (head, manifold, etc.)	-		
		Point of entry	-		
	Exhaust Gas Recirculation	Type (controlled flow, open orifice, other)	Back pressure control		
		Exhaust source Point of exhaust injection (spacer, carburetor, manifold, other)	No.4 exhaust port Intake manifold		
	Catalytic Converter	Type	3-way		
		Number of	2	Fed. 1	Cal. 2
		Location(s)	Exhaust manifold under floor	Exhaust manifold	Exhaust manifold under floor
		Volume [L (in ³)]	1.3 + 0.5	1.3	1.3 + 0.5
		Substrate type	Monolith		
		Noble metal type	-		
		Noble metal concentration (g/cm ³)	-		
Crankcase Emission Control	Type (ventilates to atmosphere, induction system, other)		Sealed		
	Energy source (manifold vacuum, carburetor, other)		Manifold vacuum		
	Discharges (to intake manifold, other)		Intake manifold		
	Air inlet (breather cap, other)		N.A.		
Evaporative Emission Control	Vapor vented to (crankcase, canister, other)	Fuel tank	Canister		
		Carburetor	-		
	Vapor storage provision		Canister		
Electronic system	Closed loop (yes/no)		Yes		
	Open loop (yes/no)		No		

Engine - Exhaust System

Type (single, single with cross-over, dual, other)		Single			
Muffler no. & type (reverse flow, straight thru, separate resonator) Material & Mass [kg (weight lbs)]		1, reverse flow			
Resonator no. & type		N.A.			
Exhaust pipe	Branch o.d., wall thickness	N.A.			
	Main o.d., wall thickness	60.5/54.0, 1.2	Fed. 54, 1.2	Cal. 54, 1.2	
	Material & Mass [kg (weight lbs)]	Stainless steel, 1.8	Stainless steel, 1.8	Stainless steel, 1.2	
Intermediate pipe	o.d. & wall thickness	N.A.			
	Material & Mass [kg (weight lbs)]	N.A.			
Tail pipe	o.d. & wall thickness	60.5, 1.2	54, 1.2		
	Material & Mass [kg (weight lbs)]	Stainless steel, 2.2	Stainless steel 2.1		

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3S-GTE, 1.998L Turbo

5S-FE, 2.164L

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

Manual 3-speed (manufacturer/country)	N.A.
Manual 4-speed (manufacturer/country)	N.A.
Manual 5-speed (manufacturer/country)	TOYOTA/Japan
Automatic (manufacturer/country)	N.A.
Automatic overdrive (manufacturer/country)	N.A. AISIN AW/Japan

Manual Transmission/Transaxle

Number of forward speeds		5	
Gear ratios	1st	3.230	3.285
	2nd	1.913	1.960
	3rd	1.258	1.322
	4th	0.918	1.028
	5th	0.731	0.820
	Reverse	3.545	3.153
Synchronous meshing (specify gears)		All forward=1st through to 5th	
Shift lever location		Floor	
Trans. case mat'l. & mass kg (lbs)*		-	
Lubricant	Capacity [L (pt.)]	4.2	2.6
	Type recommended	Multi-purpose, API GL-5	ATF, "DEXRON II"

Clutch (Manual Transmission)

Clutch manufacturer		AISIN SEIKI.	
Clutch type (dry, wet; single, multiple disc)		Single dry	
Linkage (hydraulic, cable, rod, lever, other)		Hydraulic	
Max. pedal effort (nom. spring load, new) N (lbs)	Depressed	-	
	Released	-	
Assist (spring, power/percent, nominal)		Turn-over spring	N.A.
Type pressure plate springs		Diaphragm	
Total spring load (nominal, new) N (lbs)		7350	4900
Clutch facing	Facing mfg. & material coding	AISIN CHEMICAL	
	Facing material & construction	Semi-mold	
	Rivets per facing	16	
	Outside x inside dia. (nominal)	236 x 150	224 x 150
	Total eff. area (cm ² (in. ²))	261	217
	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.		Single row ball bearing, prepacked	
Torsional damping method, springs, hysteresis		Rubber	

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

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Engine Description
Engine Code

5S-FE, 2.164L

☒ Automatic Transmission/Transaxle

Trade Name		A241E
Type and special features (describe)		4-speed, electronic controlled planetary gear, lock-up clutch converter
Gear selector	Location (column, floor, other)	Floor
	Ltr./No. designation (e.g. PRND21)	PRND2L
	Shift interlock (yes, no, describe)	No
Gear ratios	1st	3.643
	2nd	2.008
	3rd	1.296
	4th	0.892
	Reverse	2.977
Max. upshift speed - drive range [km/h (mph)]		137
Max. kickdown speed - drive range [km/h (mph)]		131
Min. overdrive speed [km/h (mph)]		21
Torque converter	Number of elements	3
	Max. ratio at stall	2.1
	Type of cooling (air, liquid)	Liquid
	Nominal diameter	241
	Capacity factor "K"	-
Lubricant	Capacity (refill L(pt.))	8.0 including differential
	Type recommended	ATF, "DEXRON II"
Oil cooler (std., opt., N.A., internal, external, air, liquid)		Std, external, integral to the radiator
Transmission mass [kg (lbs)] & case material **		-

☒ All Wheel / 4 Wheel Drive

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		
System disconnect (describe)		
Center differential	Type (bevel, planetary, w or w/o viscous bias, torsen, etc.)	
	Torque split (% front/rear)	

* Input speed = $\frac{\text{torque}}{\text{torque}}$

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

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Engine Description
Engine Code

3S-GTE, 1.998L Turbo	5S-FE, 2.164L	
5-speed manual	5-speed manual	4-speed, automatic

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

Axle ratio (or overall top gear ratio)		4.285	4.176	3.034
Ring gear o.d.		-		
No. of teeth	Pinion	14	17	29
	Ring gear	40	71	88

☒ Rear Axle Unit

Description		Integral to transmission		
Limited slip differential (type)		N.A.		
Drive pinion	Type	Helical gear		
	Offset	-		
No. of differential pinions		4	2	2
Pinion / differential	Adjustment (shim, etc.)	-		
	Bearing adjustment	-		
Driving wheel bearing (type)		Double angular ball bearing		
Lubricant	Capacity (L (pt.))	Included in transmission		
	Type recommended	-		

☒ Propeller Shaft - Rear Wheel Drive NOT APPLICABLE See next page

Manufacturer Type (straight tube, tube-in-tube, internal-external damper, etc.)			
Outer diam. x length" x wall thickness	Manual 3-speed transmission		
	Manual 4-speed transmission		
	Manual 5-speed transmission		
	Overdrive		
	Automatic transmission		
Inter- mediate bearing	Type (plain, anti-friction)		
	Lubrication (fitting, prepack)		
Slip yoke	Type		
	Number of teeth		
	Spline o.d.		
Universal joints	Make and mtg. no.	Front	
		Rear	
	Number used		
	Type (ball and trunnion, cross)		
	Rear attach (u-bolt, clamp, etc)		
	Bearing	Type (plain, anti-friction)	
		Lubrication (fitting, prepack)	
Drive taken through (torque tube, arms or springs)			
Torque taken through (torque tube, arms or springs)			

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5-speed manual	5-speed manual	4-speed automatic

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

Effective final drive ratio (or overall top gear ratio)		See preceding page.
Transfer ratio and method (chain, gear, etc.)		
Front drive unit	Ring gear o.d.	
	No. of teeth	Pinion
		Ring gear

⊗ Front Drive Unit

Description (integral to trans., etc.)		See preceding page.
Limited slip differential (type)		
Drive pinion	Type	
	Offset	
No. of differential pinions		
Pinion / differential	Adjustment (shim, etc.)	
	Bearing adjustment	
Driving wheel bearing (type)		
Lubricant	Capacity [L (pt.)]	
	Type recommended	

⊗ Axle Shafts - Rear Wheel Drive

Manufacturer and number used			TOYOTA, 2	
Type (straight, solid bar, tubular, etc.)		Left	Solid	
		Right	Solid	
Outer diam. x length* x wall thickness	Manual transaxle	Left	28.5 x 323.7	23.5 x 340.0
		Right	28.5 x 323.7	26.0 x 608.0
	Automatic transaxle	Left	N.A.	
		Right	N.A.	
	Optional transaxle	Left	N.A.	
		Right	N.A.	
Slip yoke	Type		N.A.	
	Number of teeth			
	Spline o.d.			
Universal joints	Make and mfg. no.	Inner	TOYOTA	
		Outer	TOYOTA	
	Number used		4	
	Type, size, plunge	Inner	Cross groove plunge	Tripod plunge
		Outer	Rzeppa fixed	
	Attach (u-bolt, clamp, etc)		Snap ring	
	Bearing	Type (plain, anti-friction)	Ball bearing	N.A.
Lubrication (fitting, prepack)		Prepacked	N.A.	
Drive taken through (torque tube, arms or springs)			MacPherson strut	
Torque taken through (torque tube, arms or springs)			Engine mounting system	

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

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Body Type And/Or
Engine Displacement

3S-GTE, 1.998L Turbo	5S-FE, 2.164L
5-speed manual	5-speed manual 4-speed automatic

Suspension - General Including Electronic Controls

Car leveling	Standard/optional/not avail.	Not available
	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/optional/not avail.	Not available
	Manual/automatic control	
	Number of damping rates	
	Type of actuation (manual/electric motor/air, etc.)	
	s e n s o r s	Lateral acceleration
		Deceleration
		Acceleration
		Road surface
Shock absorber (front & rear)	Type	Double acting tube type
	Make	TOYOTA
	Piston diameter	32/32
	Rod diameter	22/22

Suspension - Front

Type and description		MacPherson strut	
Travel*	Full jounce	75	
	Full rebound	90	
Spring	Type (coil, leaf, other) & material	Coil, SUP7NV	
	Insulators (type & material)	Upper, rubber	
	Size (coil design height & i.d.)	249.0, 157.2	264.0, 157.6
	Spring rate (N/mm (lb./in.))	24.5	20.6
	Rate at wheel (N/mm (lb./in.))	27.0	22.6
Stabilizer	Type (link, linkless, frameless)	Link	
	Material & bar diameter	Svd48-M, manual steering=16.5, opt. power steering=17.0	

Suspension - Rear

Type and description		MacPherson strut	
Travel*	Full jounce	80	
	Full rebound	90	
Spring	Type (coil, leaf, other) & material	Coil, SUP7	
	Size (length x width, coil design height & i.d.)	322.7, 96.7	315.7, 97.1 322.2, 96.9
	Spring rate (N/mm (lb./in.))	39.2	37.2
	Rate at wheel (N/mm (lb./in.))	43.1	41.0
	Insulators (type & material)	-	
	if leaf	No. of leaves	-
		Shackle (comp. or tens.)	-
Stabilizer	Type (link, linkless, frameless)	Link	
	Material & bar diameter	Svd48-M, 18	Svd48-M, 17.5
Track bar (type)		N.A.	

* Define load condition:

MVMA Specifications

METRIC (U.S. Customary)

Vehicle Line MR2
Model Year 1991 Issued 90-01 Revised (+)

Body Type And/Or
Engine Displacement

3S-GTE, 1.998L Turbo

5S-FE, 2.164L

Brakes - Service

Description		Four wheel hydraulic actuated system	
Manufacturer and brake type (std., opt., n.a.)	Front (disc or drum)	Disc	
	Rear (disc or drum)	Disc	
Valving type (proportion, delay, metering, other)		P&B valve	
Power brake (std., opt., n.a.)		Std.	
Booster type (remote, integral, vac., hyd., etc.)		Integral, vacuum	
Vacuum	Source (inline, pump, etc.)	Inline	
	Reservoir (volume in. ³)	-	
	Pump-type (elec. gear driven, belt driven)	-	
Traction control	Operational speed range	N.A.	
	Type engine intervention (electronic, mech.)	-	
Anti-lock device	Front / rear (std., opt., n.a.)	Opt/opt.	
	Manufacturer	TOYOTA	
	Type (electronic, mech.)	Electronic	
	Number sensors or circuits	4	
	Number anti-lock hydraulic circuits	3	
	Integral or add-on system	Integral	
	Yaw control (yes, no)	No	
Hydraulic power source (elec., vac. mtr., pwr. stg.)		Electric motor	
Effective area [cm ² (in. ²)]* (F/R)		196/142	168/142
Gross Lining area [cm ² (in. ²)]** (F/R)		196/142	168/142
Swept area [cm ² (in. ²)]*** (F/R)		1204/1199	1190/1199
Rotor	Outerworking diameter	F/R	258/263
	Inner working diameter	F/R	162/169
	Thickness	F/R	25/16
	Material & type (vented/solid)	F/R	Cast iron ventilated/Cast iron ventilated
Drum	Diameter & width	F/R	N.A.
	Type and material	F/R	N.A.
Wheel cylinder bore		F/R	36.51/36.51, two each 51.10/41.30
Master cylinder	Bore/stroke	F/R	Bore=22.22/22.22, Stroke=15/12
Pedal arc ratio		3.7	
Line pressure at 445 N(100 lb.) pedal load [kPa (psi)]		12180	10170
Lining clearance		F/R	Self adjusted/self adjusted
Brake lining	Front wheel	Bonded or riveted (rivets/seg.)	Bonded
		Rivet size	-
		Manufacturer	AKEBONO, SUMITOMO, NISSHINBO or AISIN
		Lining code*****	
		Material	Resin molded
		**** Primary or out-board	122.5 x 50.0 x 10.0 102.7 x 43.5 x 10.0
		Size Secondary or in-board	122.5 x 50.0 x 10.0 102.7 x 43.5 x 10.0
		Shoe thickness (no lining)	5.5 5.0
	Rear wheel	Bonded or riveted (rivets/seg.)	Bonded
		Manufacturer	AKEBONO, SUMITOMO, NISSHINBO or AISIN
		Lining code*****	
		Material	Resin molded
		**** Primary or out-board	82.0 x 44.5 x 10.0
		Size Secondary or in-board	94.0 x 42.9 x 10.0
		Shoe thickness (no lining)	Out-board=5.5, in-board=6.0

* 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

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METRIC (U.S. Customary)

Body Type And/Or
Engine Displacement

3S-GTE, 1.998L Turbo

5S-FE, 2.164L

Tires And Wheels (Standard)

Tires	Size (load range, ply)		F//R	195/60R1485V//205/160R1488V	195/60R1485H//205/60R1487H
	Type (bias, radial, steel, nylon, etc.)			Radial	
	Inflation pressure (cold) for recommended max. vehicle load	Front (kPa (psi))		200	
		Rear (kPa (psi))		230	
	Rev./mile-at 70 km/h (45 mph)			886	
Wheels	Type & material			Full drop center rim, aluminum	Full drop center rim, steel
	Rim (size & flange type)		F/R	14 x 6JJ/14 x 7JJ	
	Wheel offset		F/R	45/45	
	Attachment	Type (bolt or stud)		Stud	
		Circle diameter		114.3	
		Number & size		5, M12 x1.5	
Spare	Tire and wheel			T135/70D15, 15 x 4T	
	Storage position & location (describe)			Front luggage room	

Tires And Wheels (Optional)

Tire size (load range, ply) F//R		N.A.	195/60R1485H//250/60R1487H
radial, steel, nylon, etc.)			Radial
Wheel (type & material)			Full drop center rim, aluminum
Rim (size, flange type and offset) F/R			14x6JJ/14x7JJ
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		Floor
Operates on		Rear service brakes
If separate from service brakes	Type (internal or external)	
	Drum diameter	
	Lining size (length x width x thickness)	

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Vehicle Line MR2
Model Year 1991 Issued 90-01 Revised (+) _____

METRIC (U.S. Customary)

Body Type And/Or
Engine Displacement

Standard=Manual

Option=Power

Steering

Manual (std., opt., n.a.)			Std.	-	
Power (std., opt., n.a.)			-	Opt.	
Adjustable steering wheel/column (tilt, telescope, other)	Type	Tilt			
	Manufacturer	TOYOTA			
	(std., opt., n.a.)	Std.			
Wheel diameter** (W9) SAE J1100	Manual	380	-		
	Power	-	380		
Turning diameter m (ft.)	Outside front	Wall to wall (l. & r.)	10.4		
		Curb to curb (l. & r.)	9.8		
	Inside rear	Wall to wall (l. & r.)	5.2		
		Curb to curb (l. & r.)	5.5		
Scrub Radius*					
Manual	Gear	Type	Rack and pinion	-	
		Manufacturer	KOYO SEIKO		
		Ratios	Gear-	-	
			Overall	20.5	
	No. wheel turns (stop to stop)	3.7			
Power	Type (coaxial, elec., hyd., etc.)	-	Integral, hydraulic		
	Manufacturer		Pump=TOYOTA MACHINE WORKS, gear=KOYO SEIKO		
	Gear	Type		Rack and pinion	
		Ratios	Gear	-	
			Overall	18.2	
	Pump (drive)		Electric motor		
	No. wheel turns (stop to stop)		3.3		
Linkage	Type	Ackermann			
	Location (front or rear of wheels, other)	Front of wheels			
	Tie rods (one or two)	2			
Steering axis	Inclination at camber (deg.)	13°50'			
	Bearings (type)	Upper	Ball bearing		
		Lower	Ball joint		
		Thrust	-		
Steering spindle/knuckle & joint type			MacPherson strut		
Wheel spindle/hub	Diameter	Inner bearing	30.0		
		Outer bearing	63.0		
	Thread (size)	M20x1.5			
	Bearing (type)	Double angular ball bearing			

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

** See Page 22.

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Body Type And/Or
Engine Displacement

3S-GTE, 1.998L Turbo

5S-FE, 2.164L

Wheel Alignment

Front wheel at curb mass (wt.)	Service checking	Caster (deg.)	2°45'±45'
		Camber (deg.)	-55'±45'
		Toe-in (outside track-mm (in.))	1±2
	Service reset*	Caster	Pre-set
		Camber	Pre-set
		Toe-in	1±1
	Periodic M.V. inspection	Caster	2°45'±45'
		Camber	-55'±45'
		Toe-in	1±2
Rear wheel at curb mass (wt.)	Service checking	Camber (deg.)	-1°20'±45'
		Toe-in (outside track-mm (in.))	5±2
	Service reset*	Camber	Pre-set
		Toe-in	5±1
	Periodic M.V. inspection	Camber	-1°20'±45'
		Toe-in	5±2

* Indicates 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		N.A.	
Charge indicator	Type	Tell-tale	
	Warning device (light, audible)	Light	Voltmeter
Temperature indicator	Type	Electric gauge	
	Warning device (light, audible)	N.A.	
Oil pressure indicator	Type	Tell-tale	
	Warning device (light, audible)	Light	
Fuel indicator	Type	Electric gauge	
	Warning device (light, audible)	Light	
Windshield wiper	Type (standard)	3 speed electric motor	
	Type (optional)	N.A.	
	Blade length	LH=500mm, RH=475mm	
	Swept area (cm²(in.²))	6599cm²	
Windshield washer	Type (standard)	Electric motor	
	Type (optional)	N.A.	
	Fluid level indicator (light, audible)	N.A.	
Rear window wiper, wiper/washer (std., opt., n.a.)		N.A.	
Horn	Type	Electric, disc	
	Number used	2	
Other			

MVMA Specifications

Vehicle Line MR2
 Model Year 1991 Issued 90-01 Revised (*) _____

METRIC (U.S. Customary)

Engine Description
 Engine Code

All models

Electrical - Supply System

Battery	Manufacturer	JAPAN STORAGE BATTERY, YUASA BATTERY, SHIN-KOBE ELECTRIC, NATIONAL, FURUKAWA
	Model, std., (opt.)	55D23L
	Voltage	12
	Amps at 0°F cold crank	310
	Minutes-reserve capacity	90
	Amps./hrs. -20 hr. rate	60
	Location	Center of front luggage room
Alternator	Manufacturer	NIPPONDENSO
	Rating (idle/max. rpm)	70A
	Ratio (alt. crank/rev.)	2.36
	Output at idle (rpm, park)	-
	Optional (type & rating)	-
Regulator	Type	IC

Electrical - Starting System

Motor	Manufacturer	NIPPONDENSO
	Current drain _____ °F	-
	Power rating (kw (hp))	-
Motor drive	Engagement type	Shift
	Pinion engages from (front, rear)	Front

Electrical - Ignition System

Type	Electronic (std., opt., n.a.)	Std.
	Other (specify)	-
Coil	Manufacturer	NIPPONDENSO
	Model	-
	Current	Engine stopped - A 0
		Engine idling - A 0.8
Spark plug	Manufacturer	NIPPONDENSO NGK
	Model	PK20R8 BKR6EPB
	Thread (mm)	M14x19
	Tightening torque (N·m (lb. ft))	17.7
	Gap	0.8
	Number per cylinder	1
Distributor	Manufacturer	NIPPONDENSO
	Model	-

Electrical - Suppression

Locations & type	Flame sprayed distributor rotor Resistive high tension cord Resistive spark plug
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MVMA Specifications

METRIC (U.S. Customary)

Vehicle Line MR2
Model Year 1991 Issued 90-01 Revised (+) _____

Body Type

All models

Body

Structure	Monocoque construction
Bumper system front - rear	Front = Urethane facia + energy absorber foam + steel reinforcement Rear = Urethane facia + energy absorber foam + plastic reinforcement
Anti-corrosion treatment	Extensive use of galvanealed steel sheet Full dipped pretreatment Cathodic ED Chip resistant coat on lower exterior sides Application of rust resistant sealer to sheet edge Application of PVC under-coat

Body - Miscellaneous Information

Type of finish (lacquer, enamel, other)		Acrylic or alkyd enamel
Hood	Material & mass	Steel sheet
	Hinge location (front, rear)	Front
	Type (counterbalance, prop)	Prop
	Release control (internal, external)	Internal
Trunk lid	Material & mass	Steel sheet
	Type (counterbalance, other)	Front=prop, rear=counterbalance clock spring
	Internal release control (elec., mech., n.a.)	Mechanical
Hatch-back lid	Material & mass	None
	Type (counterbalance, other)	
	Internal release control (elec., mech., n.a.)	
Tailgate	Material & mass	None
	Type (drop, lift, door)	
	Internal release control (elec., mech., n.a.)	
Vent window control (crank, friction, pivot, power)	Front	None
	Rear	-
Window regulator type (cable, tape, flex drive, etc.)	Front	Sector gear and arm
	Rear	-
Seat cushion type (e.g., 60/40 bucket, bench, wire, foam, etc.)	Front	Bucket, panel frame + spring + foam pad
	Rear	None
	3rd seat	None
Seat back type (e.g., 60/40, bucket, bench, wire, foam, etc.)	Front	Bucket, pipe frame + spring + foam pad
	Rear	None
	3rd seat	None

MVMA Specifications

Vehicle Line MR2
Model Year 1991 Issued 90-01 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.)	First seat	Std.=3-point, lap & shoulder belt with ELR retractor		Std.=3-point lap & shoulder belt with ELR retractor
	Standard / optional	Second seat	-	-	-
		Third seat	-	-	-
Passive	Type & description (air bag, motorized - 2-point belt, fixed belt, knee bolster, manual - lap belt)	First seat	Std.=Air-bag	-	N.A.
	Standard / optional	Second seat	-	-	-
		Third seat	-	-	-

Glass	SAB Ref. No.	
Windshield glass exposed surface area [cm ² (in. ²)]	S1	8350
Side glass exposed surface area [cm ² (in. ²)] - total 2-sides	S2	6208
Backlight glass exposed surface area [cm ² (in. ²)]	S3	1734
Total glass exposed surface area [cm ² (in. ²)]	S4	16292
Windshield glass (type)		Laminated
Side glass (type)		Tempered
Backlight glass (type)		Tempered

Headlamps

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

Frame

Type and description (separate frame, unitized frame, partially-unitized frame)	Unitized frame
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METRIC (U.S. Customary)

Body Type

All model

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

Air conditioning (manual, auto, temp control)		Opt., automatic temperature control
Clock (digital, analog)		Std., digital
Compass / thermometer		N.A.
Console (floor, overhead)		Std., floor
Defroster, elec. backlight		Std.
Electronic	Diagnostic monitor (integrated, individual)	
	Instrument cluster (list instruments)	N.A.
	Keyless entry	N.A.
	Tripfinder (avg. spd., fuel)	N.A.
	Voice alert (list items)	N.A.
	Other	
Fuel door lock (remote, key, electric)		Std., remote
Lamps	Auto head on / off delay, dimming	Auto head on/off=opt. dimming=N.A.
	Cornering	N.A.
	Courtesy (map, reading)	Opt. map lamp=std.
	Door lock, ignition	Ignition lock lamp=std.
	Engine compartment	N.A.
	Fog	Opt. for 2L turbo
	Glove compartment	N.A.
	Trunk	Std.
	Illuminated entry system (list lamps, activation)	Opt. ignition lock lamp, door lock cylinder lamp, room lamp
	Other	
Mirrors	Day / night (auto, man.)	Std.,=manual
	L.H. (remote, power, heated)	Power=std. for 2L turbo, opt. for 2.2L
	R.H. (convex, remote, power, heated)	Power=std. for 2L turbo, opt. for 2.2L
	Visor vanity (RH / LH, illuminated)	Std.=vanity for RH w/o lamp
Navigation system (describe)		N.A.
Parking brake-auto release (warning light)		Auto release=N.A., warning light=std.

MVMA Specifications

Vehicle Line MR2
 Model Year 1991 Issued 90-01 Revised (*) _____

METRIC (U.S. Customary)

Engine Description
 Engine Code

All models

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

Power equipment	Deck lid (release, pull down)		N.A.	
	Door locks (manual, automatic, describe system)		Opt.=manual, both doors with either LH/RH switch	
	Seats	2 - 4 - 6 way, etc.	N.A.	
		Reclining (R.H., L.H.)	N.A.	
		Memory (R.H., L.H., present, recline)	N.A.	
		Lumbar, hip, thigh, support	N.A.	
		Heated (R.H., L.H., other)	N.A.	
	Side windows		Opt.	
	Vent windows		None	
	Rear windows		None	
Radio systems	Antenna (location, whip, w / shield, power)		Std.=2.2L, standard roof, front pillar: others, rear quarter, power Opt.=rear quarter, power + windshield	
	Standard	AM, FM, stereo, tape, compact disc, graphic equalizer, theft deterrent, radio prep package, headphone jacks, etc.	AM/FM MPX ETR (1 din) 4 speakers	
	Optional		AM/FM MPX ETR with cassette (1 din) 6 speaker	
			AM/FM MPX ETR with cassette and acoustic flavor, theft deterrent (2 din) 7	
			AM/FM MPX ETR with cassette and acoustic flavor, theft deterrent (1 din) 7	
	AM/FM MPX ETR with cassette (2 din) 6			
Speaker (number, location)		4=doors + outside mirror brackets 6=4 + rear sides, 7=6 + behind left seat		
Roof: open air or fixed (flip-up, sliding, "T")			"T"-std. for some models. See page 2, Detachable & flip up=opt. for others	
Speed control device			Opt.	
Speed warning device (light, buzzer, etc.)			N.A.	
Tachometer (rpm)			Std.	
Telephone system (describe)			-	
Theft deterrent system			Opt.	

MVMA Specifications

Vehicle Line MR2

Model Year 1991 Issued 90-01 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	1470
Tread (rear)	W102	1450
Vehicle width	W103	1700
Body width at Sq RP (front)	W117	1695
Vehicle width (front doors open)	W120	3685
Vehicle width (rear doors open)	W121	-
Tumble-home (deg.)	W122	30.0°
Outside mirror width	W410	

Ø Length		
Wheelbase	L101	2400
Vehicle length	L103	4170
Overhang (front)	L104	865
Overhang (rear)	L105	905
Upper structure length	L123	1657
Rear wheel C/L "X" coordinate	L127	2400

Ø Height*		
Passenger distribution (front/rear)	PD1.2.3	2
Trunk/cargo load	Fr/Rr	0/0
Vehicle height	H101	1240
Cowl point to ground	H114	805
Deck point to ground	H138	925
Rocker panel-front to ground	H112	160
Rocker panel-rear to ground	H111	270
Windshield slope angle	H122	60.0°
Backlight slope angle	H121	15.0°

Ground Clearance*

Front bumper to ground	H102	405/235
Rear bumper to ground	H104	360
Bumper to ground (front at curb mass (wt.))	H103	385/215
Bumper to ground (rear at curb mass (wt.))	H105	350
Angle of approach (degrees)	H106	14°
Angle of departure (degrees)	H107	18°
Ramp breakover angle (degrees)	H147	14.5°
Axle differential to ground (front/rear)	H153	165 (Rear)
Min. running round clearance	H156	135
Location of min. run. grd. clear.		Exhaust pipe heat insulator

* All vehicle height and ground clearances are measured at the Manufacturer's Design Load Weight. Manufacturer's 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

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Vehicle Dimensions See Key Sheets for definitions

Vehicle Line MR2

Model Year 1991

Issued 90-01

Revised (*)

Body Type

All models

SAE
Ref.
No.

Front Compartment

SgRP front, "X" coordinate	L31	1353
Effective head room	H61	Standard roof=953.4, Standard roof w/op. Sun roof=935.1, T-bar Roof=934.4
Max. eff. leg room (accelerator)	L34	1102.1
SgRP to heel point	H30	195
SgRP to heel point	L53	921.1
Back angle	L40	21°
Hip angle	L42	94.5°
Knee angle	L44	136°
Foot angle	L46	87°
Design H-point front travel	L17	Driver=208.4, Passenger=164.8
Normal driving & riding seat track trvl.	L23	Driver=208.4, Passenger=164.8
Shoulder room	W3	1371
Hip room	W5	1326
Upper body opening to ground	H50	327
Steering wheel maximum diameter*	W9	380
Steering wheel angle	H18	21°
Accel. heel pt. to steer. whl. cntr	L11	
Accel. heel pt. to steer. whl. cntr	H17	
Undepressed floor covering thickness	H67	12

Rear Compartment

None

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	
Depressed floor covering thickness	H73	

Luggage Compartment

Usable luggage capacity [L (cu. ft.)]	V1	184 (Fr.=29, Rr.=155)
Liftover height	H195	767

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.

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Revised (+) _____

METRIC (U.S. Customary)

Vehicle Dimensions See Key Sheets for definitions

Body Type

None

Station Wagon - Third Seat

SAE
Ref.
No.

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
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

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

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Vehicle Line MR2

Model Year 1991

Issued 90-01

Revised (+)

Body Type

All model

Vehicle Fiducial Marks

Number*

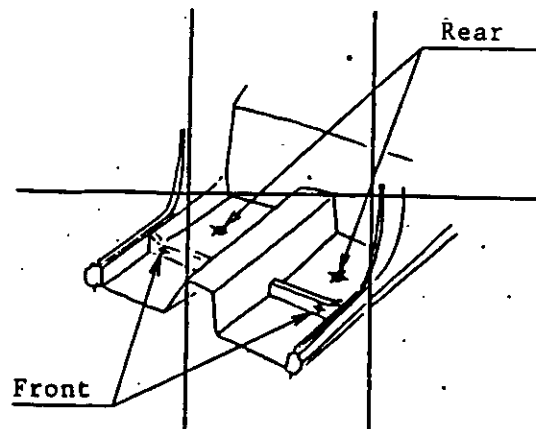
Define Coordinate Location

Front 2

Center of installed hole for outer seat track
in front floor cross-member

Rear 2

Center of paint drain hole
in front floor



Fiducial
Mark
Number

Front	W21*	W5 + 84.4
	L54*	L19 + 78.4
	H81*	H10 + 43.2
	H181*	
	H163*	
Rear	W22*	W4 + 55.0
	L55*	L23 + 50.0
	H82*	H9 + 89.2
	H182*	
	H164*	

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

METRIC (U.S. Customary)

Model Year	1991	Issued	90-01	Revised (A)
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[illegible]

* 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

1000	2000	3000	4000
1125	2125	3125	4250
1250	2250	3250	4500
1375	2375	3375	4750
1500	2500	3500	5000
1625	2625	3625	5250
1750	2750	3750	5500
1875	2875	3875	5750

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

Shipping Mass (weight) = Curb Weight Less:

34.9 kg

MVMA Specifications

METRIC (U.S. Customary)

MR2

1991

Issued

90-01

Revised (•)

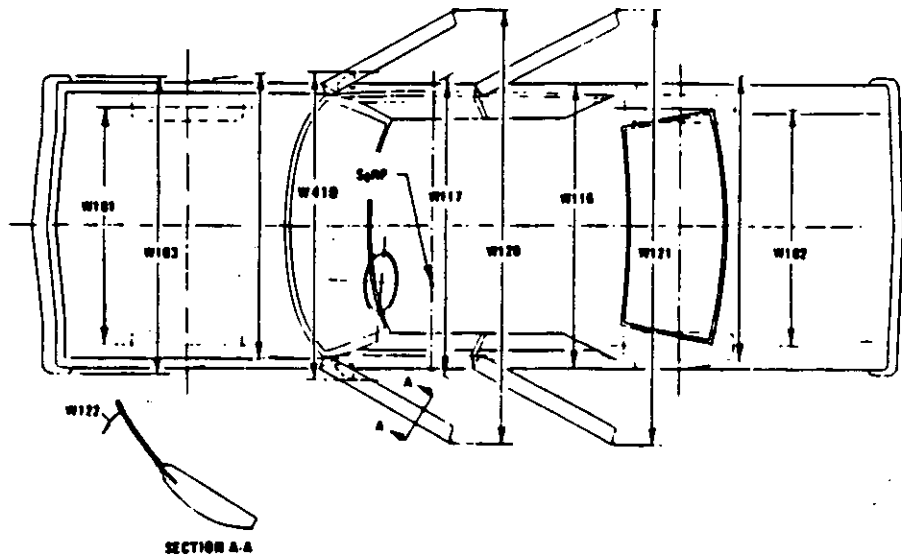
[illegible]

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

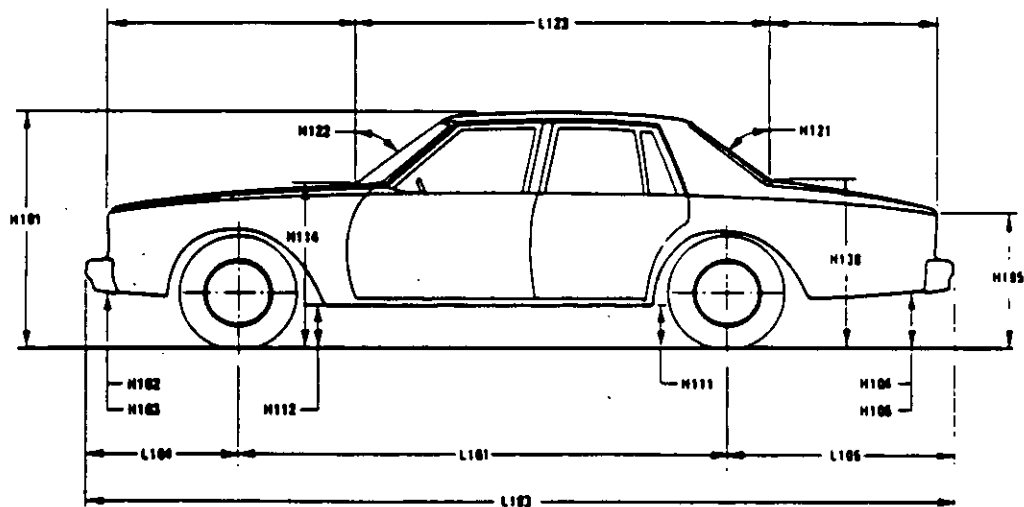
MVMA Specifications
METRIC (U.S. Customary)

Exterior Vehicle And Body Dimensions – Key Sheet

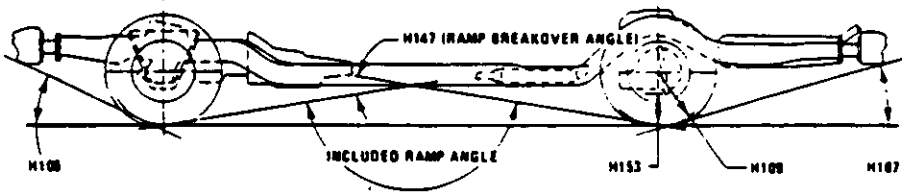
Exterior Width



Exterior Length & Height

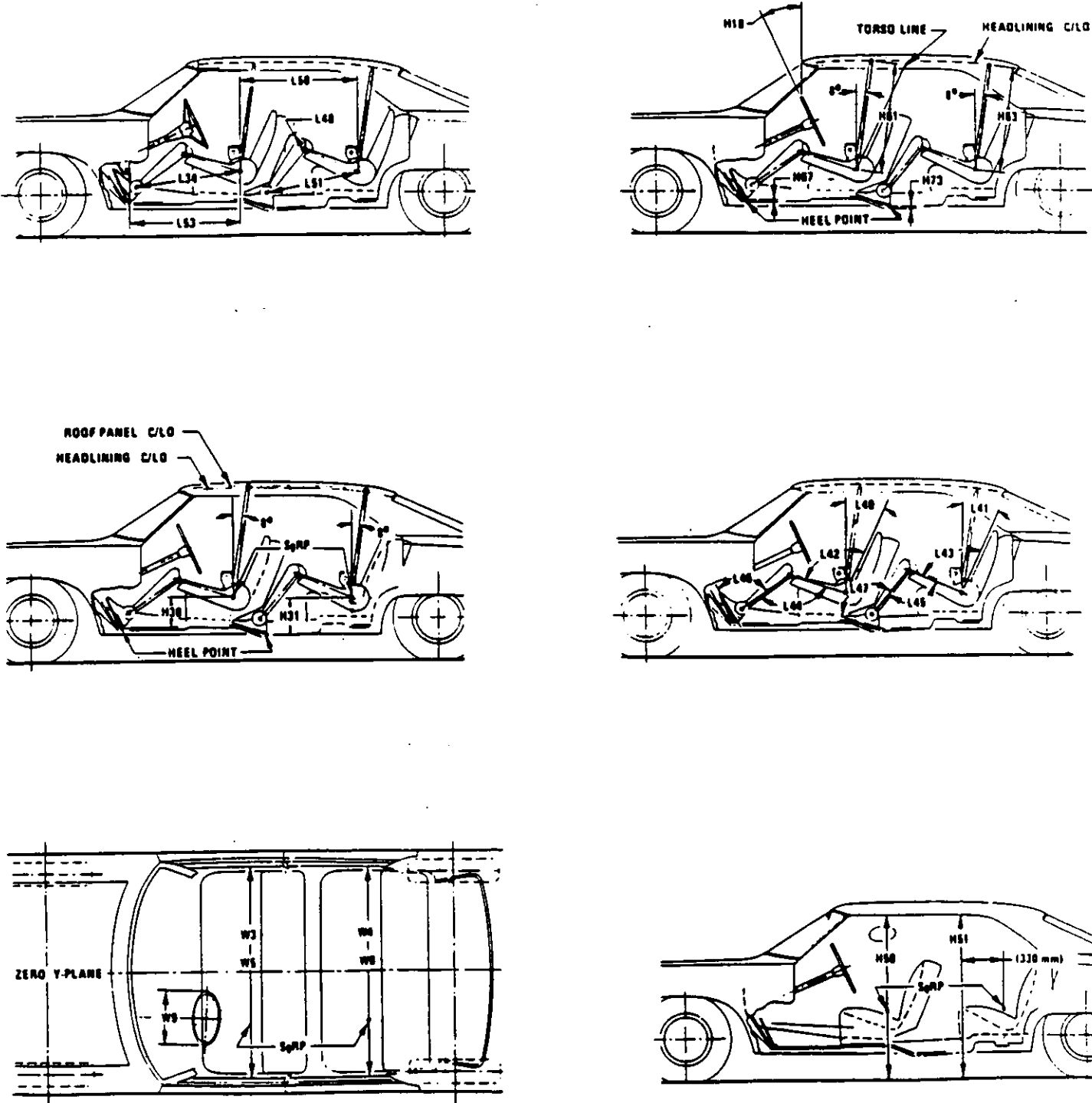


Exterior Ground Clearance



MVMA Specifications Form
METRIC (U.S. Customary)

Interior Vehicle And Body Dimensions - Key Sheet

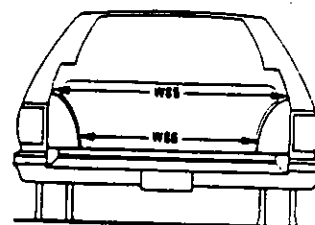
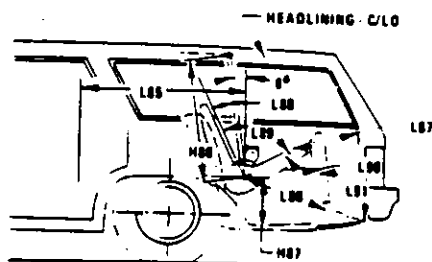


MVMA Specifications Form

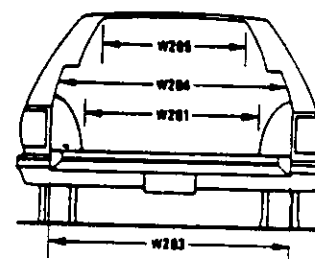
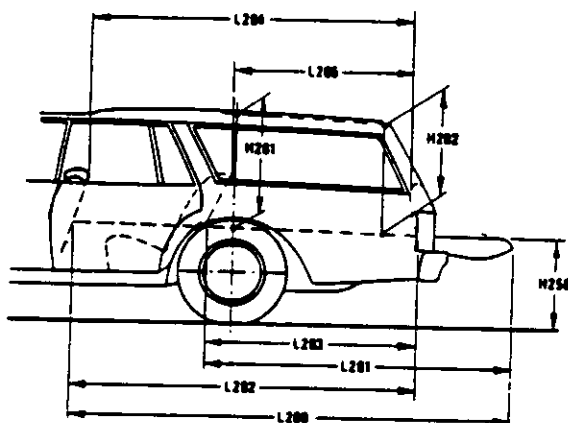
METRIC (U.S. Customary)

Interior Vehicle And Body Dimensions - Key Sheet

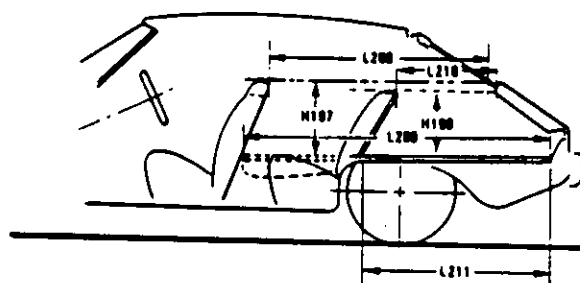
Third Seat



Cargo Space



Station Wagon



Hatchback

MVMA Specifications

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Exterior Vehicle And Body Dimensions - Key Sheet Dimensions Definitions

Seating Reference Point

SEATING REFERENCE POINT means the manufacturer's design reference point which -

- (a) Establishes the rearmost normal design driving or riding position of each designated seating position in a vehicle;
- (b) Has coordinates established relative to the design vehicle structure;
- (c) Simulates the position of the pivot center of the human torso and thigh; and
- (d) Is the reference point employed to position the two dimensional templates described in SAE Recommended Practice J826, "Devices for Use in Defining and Measuring Vehicle Seating Accommodations."

Width Dimensions

- W101 TREAD - FRONT. The dimension measured between the tire centerlines at the ground.
- W102 TREAD - REAR. The dimension measured between the tire centerlines at the ground. In case of dual wheels, the dimension will be measured to the centerline of tire and wheel assemblies.
- W103 VEHICLE WIDTH. The maximum dimension measured between the widest point on the vehicle, excluding exterior mirrors, flexible mud flaps, marker lamps, but including bumpers, moldings, sheet metal protrusions or dual wheels, if standard equipment.
- W117 BODY WIDTH AT SgRP - FRONT. The dimension measured laterally between the widest points on the body at the SgRP-front, excluding door handles, applied moldings, or appliques.
- W120 VEHICLE WIDTH - FRONT DOORS OPEN. The dimension measured between the widest point on the front doors in maximum hold-open position.
- W121 VEHICLE WIDTH - REAR DOORS OPEN. The dimension measured between the widest point on the rear doors in maximum hold-open position. For vehicles with a rear door on only one side, this dimension is to the zero "Y" plane.
- W122 TUMBLE - HOME. STRAIGHT SIDE GLASS. The angle measured from a vertical to the outside surface of the front door glass at the SgRP "X" plane.
CURVED SIDE GLASS. The angle measured from a vertical to a chord extending from the upper DLO to the lower DLO at the outside surface of the front door glass at the front SgRP "X" plane.
- W410 OUTSIDE MIRROR WIDTH. The dimension between the widest point on the outside mirrors. The standard right and left mirror adjusted for normal driving will be shown unless otherwise noted. When only one outside mirror is standard, the dimension will be to the zero "Y" plane.

Length Dimensions

- L101 WHEELBASE (WB). The dimension measured longitudinally between front and rear wheel centerlines. In case of dual rear axles, the dimension shall be to the midpoint of the centerlines of the rear wheels.
- L103 VEHICLE LENGTH. The maximum dimension measured longitudinally between the foremost point and the rearmost point on the vehicle, including bumper, bumper guards, tow hooks and/or rub strips, if standard equipment.
- L104 OVERHAND - FRONT. The dimension measured longitudinally from the centerline of the front wheels to the foremost point on the vehicle including bumper; bumper guards, tow hooks and/or rub strips, if standard equipment.
- L105 OVERHANG - REAR. The dimension measured longitudinally from the centerline of the rear wheels; or in the case of dual rear axles, the dimension shall be the midpoint of the centerlines of the rear wheels, to the rearmost point on the vehicle including rear bumpers, bumper guards, tow hooks and rub strips, if standard equipment.

- L123 UPPER STRUCTURE LENGTH. The dimension measured longitudinally from the cowl point to the deck point.
- L127 REAR WHEEL CENTERLINE "X" COORDINATE or in the case of dual rear axles, the coordinate shall be the midpoint of the distance between the rear axle centerlines.

Height Dimensions

- H101 VEHICLE HEIGHT. The dimension measured vertically from the highest point on the vehicle body to ground.
- H111 ROCKER PANEL - REAR TO GROUND. The dimension measured vertically from the bottom of the rocker or side quarter panel at the front of the rear wheel opening, excluding flanges, to ground.
- H112 ROCKER PANEL - FRONT TO GROUND. The dimension measured vertically from the foremost point on the bottom of the rocker panels, excluding flanges, to ground.
- H114 COWL POINT TO GROUND. Measured at zero "Y" plane.
- H121 BACKLIGHT SLOPE ANGLE. The angle between the vertical reference line and the surface of backlight at vehicle zero "Y" plane. For curve backlight, the angle is to chord of backlight arc from lower DLO to upper DLO.
- H122 WINDSHIELD SLOPE ANGLE. The angle between the vertical reference line and a chord of the windshield arc running from the lower DLO to the upper DLO at the vehicle zero "Y" plane. In the case of wrap over glass, the angle to be measured will be formed by a chord 457 mm (18.0 in.) long drawn from the lower DLO to the intersecting point on the windshield.
- H138 DECK POINT TO GROUND. Measured at zero "Y" plane.
- H109 STATIC LOAD - TIRE RADIUS - REAR. Specified by the manufacturer in accordance with composite TIRE SECTION STANDARD.

Ground Clearance Dimensions

- H102 FRONT BUMPER TO GROUND. The minimum dimension measured vertically from the lowest point on the front bumper to ground, including bumper guards, if standard equipment.
- H103 FRONT BUMPER TO GROUND - CURB MASS (WT.). Measured in the same manner as H102.
- H104 REAR BUMPER TO GROUND. The minimum dimension measured vertically from the lowest point on the rear bumper to ground, including bumper guards, if standard equipment.
- H105 REAR BUMPER TO GROUND - CURB MASS (WT.). Measured in the same manner as H104.
- H106 ANGLE OF APPROACH. The angle measured between a line tangent to the front tire static loaded radius arc and the initial point of structural interference forward of the front tire to ground. The limiting structural component shall be designated.
- H107 ANGLE OF DEPARTURE. The angle measured between a line tangent to the rear tire static loaded radius arc and the initial point structural interference rearward of the rear tire to ground. The limiting component shall be designated.
- H147 RAMP BREAKOVER ANGLE. The angle measured between two lines tangent to the front and rear tire static loaded radius and intersecting at a point on the underside of the vehicle which defines the largest ramp over which the vehicle can roll.
- H153 REAR AXLE DIFFERENTIAL TO GROUND. The minimum dimension measured from the rear axle differential to ground.
- H156 MINIMUM RUNNING GROUND CLEARANCE. The minimum dimension measured from the sprung vehicle to ground. Specify location.

MVMA Specifications

METRIC (U.S. Customary)

Interior Vehicle And Body Dimensions - Key Sheet Dimensions Definitions

Glass Areas

- S1 Windshield area.
- S2 Side windows area. Includes the front door, rear door, vents, and rear quarter windows on both sides of the vehicle.
- S3 Backlight areas.
- S4 Total area. Total of all areas (S1 + S2 + S3).

Fiducial Mark Dimensions

Fiducial Mark - Number 1

- L54 "X" coordinate.
- W21 "Y" coordinate.
- H81 "Z" coordinate.
- H161 Height "Z" coordinate to ground at curb weight.
- H163 Height "Z" coordinate to ground.

Fiducial Mark - Number 2

- L55 "X" coordinate.
- W22 "Y" coordinate.
- W82 "Z" coordinate.
- H162 Height "Z" coordinate to ground at curb weight.
- H164 Height "Z" coordinate to ground.

Front Compartment Dimensions

- L11 ACCELERATOR HEEL POINT TO STEERING WHEEL CENTER. The dimension measured horizontally from the AHP to the intersection of the steering column centerline and a plane tangent to the upper surface of the steering wheel rim.
- L17 DESIGN H-POINT - FRONT TRAVEL. The dimension measured horizontally between the design H-point - front in the foremost and rearmost seat track positions. (See SAE J1100)
- L23 NORMAL DRIVING AND RIDING SEAT TRACK TRAVEL. The dimension measured horizontally between a point on the design H-point travel line from the SgRP to the displaced point on the design H-point travel line with the seat moved to the foremost seat position, but not to include seat track travel used for purposes other than normal driving and riding positions. (See SAE J1100).
- L31 SgRP - FRONT. "X" COORDINATED.
- L34 MAXIMUM EFFECTIVE LEG ROOM - ACCELERATOR. The dimension measured along a line from the ankle pivot center to the SgRP - front plus 254 mm (10.0 in.) measured with right foot on the undepressed accelerator pedal. For vehicles with SgRP to heel (H30) greater than 18 in., the accelerator pedal may be depressed as specified by the manufacturer. If the accelerator is depressed, the manufacturer shall place foot flat on pedal and note the depression of the pedal.
- L40 BACK ANGLE - FRONT. The angle measured between a vertical line through the SgRP - front and the torso line. If the seatback is adjustable, use the normal driving and riding position specified by the manufacturer.
- L42 HIP ANGLE - FRONT. The angle measured between torso line and thigh centerline.
- L44 KNEE ANGLE - FRONT. The angle measured between thigh centerline and lower leg centerline measured on the right leg.
- L46 FOOT ANGLE - FRONT. The angle measured between the lower leg centerline and a line tangent to the ball and heel of the bare foot flesh line measured on the right leg. Ref SAE J826.
- L53 SgRP - FRONT TO HEEL. The dimension measured horizontally from the SgRP - front to the accelerator heel point.
- W3 SHOULDER ROOM - FRONT. The minimum dimension measured laterally between the trimmed surfaces on the "X" plane through the SgRP - front at height between the belt line and 254 mm (10.0 in.) above the SgRP - front, excluding the door assist strap and attaching parts.

- W5 HIP ROOM - FRONT. The minimum dimension measured laterally between the trimmed surfaces on the "X" plane through the SgRP - front within 25 mm (1.0 in.) below and 76 mm (3.0 in.) above the SgRP - front and 76 mm (3.0 in.) fore and aft of the SgRP - front.
- W9 STEERING WHEEL MAXIMUM OUTSIDE DIAMETER. Define if other than round.
- H7 ACCELERATOR HEEL POINT TO THE STEERING WHEEL CENTER. The dimension measured vertically from the AHP - front to the intersection of the steering column centerline to a plane tangent to the upper surface of the steering wheel rim.
- H18 STEERING WHEEL ANGLE. The angle measured from a vertical to the surface plane of the steering wheel.
- H30 SgRP - FRONT TO HEEL. The dimension measured vertically from the SgRP - front to the accelerator heel point.
- H50 UPPER BODY OPENING TO GROUND - FRONT. The dimension measured vertically from the trimmed body opening to the ground on the SgRP - front "X" plane.
- H61 EFFECTIVE HEAD ROOM - FRONT. The dimension measured along a line 8 deg. rear of vertical from the SgRP - front to the headlining plus 102 mm (4.0 in.).
- H67 FLOOR COVERING THICKNESS - UNDEPRESSED - FRONT. The dimension measured vertically from the surface of the undepressed floor covering to the underbody sheet metal at the accelerator heel point.

Rear Compartment Dimensions

- L41 BACK ANGLE - SECOND. The angle measured between a vertical line through the SgRP - second and the torso line.
- L43 HIP ANGLE - SECOND. The angle measured between torso line and thigh centerline.
- L45 KNEE ANGLE - SECOND. The angle measured between thigh centerline and lower leg centerline.
- L47 FOOT ANGLE - SECOND. The angle measured between the lower leg centerline and a line tangent to the ball and heel of the three-dimensional devices bare foot flesh line (Reference J826).
- L48 KNEE CLEARANCE - SECOND. The minimum dimension measured from the knee pivot center to the back of the front seatback minus 51 mm (2.0 in.).
- L50 SgRP COUPLE DISTANCE - SECOND. The dimension measured horizontally from the driver SgRP - front to the SgRP - second.
- L51 MINIMUM EFFECTIVE LEG ROOM - SECOND. The dimension measured along a line from the ankle pivot center to the SgRP - second plus 254 mm (10.0 in.).
- W4 SHOULDER ROOM - SECOND. The minimum dimension measured laterally between door or quarter trimmed surfaces on the "X" plane through the SgRP - second at height between 254-406 mm (10.0-16.0 in.) above the SgRP - second, excluding the door assist straps and attaching parts.
- W6 HIP ROOM - SECOND. Measured in the same manner as W5.
- H31 SgRP - SECOND TO HEEL. The dimension measured vertically from the SgRP - second to the two dimensional device heel point on the depressed floor covering.
- H51 UPPER BODY OPENING TO GROUND - SECOND. The dimension measured vertically from the trimmed body opening to the ground on the "X" plane 330 mm (13.0 in.) forward of the SgRP - second.
- H63 EFFECTIVE HEAD ROOM - SECOND. The dimension measured along a line 8 deg. rear of vertical from the SgRP to the headlining, plus 102 mm (4.0 in.).
- H73 FLOOR COVERING - DEPRESSED - SECOND. The dimension measured vertically from the heel point to the underbody sheet metal.

MVMA Specifications

METRIC (U.S. Customary)

Interior Vehicle And Body Dimensions – Key Sheet Dimensions Definitions

Luggage Compartment Dimensions

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

Interior Volumes (EPA Classification)

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

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

Station Wagon – Third Seat Dimensions

- L85 SgRP COUPLE DISTANCE – THIRD. The dimension measured horizontally from the SgRP – second to the SgRP – third.
- L86 EFFECTIVE LEG ROOM – THIRD. The dimension measured along a line from the ankle pivot center to the SgRP – third plus 254 mm (10.0 in.).
- L87 KNEE CLEARANCE – THIRD. The minimum dimension from the knee pivot center to the back of second seatback minus a constant of 51 mm (2.0 in.). With rear-facing third seat, dimension is measured to closure.
- L88 BACK ANGLE – THIRD. Measured in the same manner as L41.
- L89 HIP ANGLE – THIRD. Measured in the same manner as L43.
- L90 KNEE ANGLE – THIRD. Measured in the same manner as L45.
- L91 FOOT ANGLE – THIRD. Measured in the same manner as L47.
- W85 SHOULDER ROOM – THIRD. Measured in the same manner as W4.
- W86 HIP ROOM – THIRD. Measured in the same manner as W5.
- H86 EFFECTIVE HEAD ROOM – THIRD. The dimension, measured along a line 8 deg. from the SgRP – third to the headlining rear of vertical plus a constant of 102 mm (4.0 in.).
- H87 SgRP – THIRD TO HEEL POINT.
- SD1 SEAT FACING DIRECTION – THIRD.

Station Wagon – Cargo Space Dimensions

- L200 CARGO LENGTH – OPEN – FRONT. The minimum dimension measured longitudinally from the back of the front seatback at the height of the undeepressed floor covering to the rearmost point on the undeepressed 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 undeepressed floor covering to the rearmost point on the undeepressed 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 undeepressed floor covering to the rearmost point on the undeepressed 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 undeepressed floor covering to the rearmost point on the undeepressed 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 backpane 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 undeepressed floor covering.

- H201 CARGO HEIGHT. The dimension measured vertically from the top of the undeepressed floor covering to the headliner at the rear wheel "X" coordinate on the zero "Y" plane.

- H202 REAR OPENING HEIGHT. The dimension measured vertically from the top of the undeepressed 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 undeepressed floor covering on the lowered tailgate to ground on the zero "Y" plane.

- V2 STATION WAGON

Measured in inches:

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

Measured in mm:

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

MVMA Specifications

METRIC (U.S. Customary)

Interior Vehicle And Body Dimensions - Key Sheet Dimensions Definitions

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

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

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

Measured in mm:

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

V6 TRUCKS AND MPV'S WITH CLOSED AREA.

Measured in inches:

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

Measured in mm:

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

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

V10 STATION WAGON CARGO VOLUME INDEX.
Measured in inches:

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

Measured in mm:

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

Hatchback - Cargo Space Dimensions

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

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

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

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

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

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

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

V3 HATCHBACK.

Measured in inches:

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

Measured in mm:

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

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

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

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

Measured in mm:

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

MVMA Specifications

METRIC (U.S. Customary)

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Exhaust System	7	Transaxle	
Equipment Availability, Convenience	19	Transmission - Types	2, 8
Fan, Cooling	5	Transmission - Automatic	2
Filters - Engine Oil, Fuel System	4	Transmission - Manual	2
Four Wheel Drive	10	Transmission - Ratios	2, 8
Frame	18	Tread	2
Front Suspension	11	Trunk Cargo Load	
Front Wheel Drive Unit	10	Trunk Luggage Capacity	2
Fuel System	6	Turning Diameter	
Fuel Injection	6	Unitized Construction	1
Fuel Tank	6	Universal Joints, Propeller Shaft	1
Glass	18	Valve System	
Headlamps	18	Vehicle Dimensions	
Headroom - Body	22, 23	Width	2
Heights	21	Length	2
Horns	15	Height	2
Horsepower - Brake	2	Ground Clearance	2
Ignition System	16	Front Compartment	2
Inflation - Tires	13	Rear Compartment	2
Interior Volumes	22	Luggage Compartment	2
Instruments	15	Station Wagon - Third Seat	2
Legroom	22, 23	Station Wagon - Cargo Space	2
Lengths	21	Hatchback - Cargo Space	2
Leveling, Suspension	11	Fiducial Marks	2
Lifters, Valve	4	Voltage Regulator	1
Linings - Clutch, Brake	8, 12	Water Pump	
Lubrication - Engine Transmission Transaxle	4, 8, 9	Weights	25, 2
Luggage Compartment	22	Wheel Alignment	2
Models	1	Wheelbase	2
Motor Starting	16	Wheels & Tires	1
Muffler	7	Wheel Spindle	1
Origin	1	Widths	1
		Windshield	1
		Windshield Wiper and Washer	1