

MANUFACTURERS MOTOR VEHICLE SPECIFICATIONS

METRIC(U.S. Customary)

Passenger Car

1987

Manufacturer Toyota Motor Corporation	Car Line MR2	
Mailing Address Toyota Motor Sales, U.S.A., INC. 19001 S. Western Avenue Torrance, CA 90509	Issued 1987	Revised

Questions concerning these specifications should be directed to the manufacturer whose address is shown above.

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

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

MVMA Specifications Form

Passenger Car

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

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Car Line MR2
Model Year 1987 Issued _____ Revised (e) _____

Car Models

Model Description & Drive (FWD/RWD)	Introduction Date	Make, Car Line, Series, Body Type (Mfr's Model Code)	No. of Designated Seating Positions (Front/Rear)	Max. Trunk/Cargo Load—Kilograms (Pounds)
2 Door Coupe		AW11L-WCMQFA	2/-	15/30 kg
2 Door Coupe		AW11L-WCPQFA	2/-	15/30 kg
2 Door Coupe with T-bar roof		AW11L-WJMQFA	2/-	15/30 kg
2 Door Coupe with T-bar roof		AW11L-WJPQFA	2/-	15/30 kg

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Power Teams (Indicate whether standard or optional)

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

SERIES AVAILABILITY	ENGINE					E x h a u s t S/D	TRANSMISSION/ TRANSAXLE	AXLE RATIO (std. first)
	Displ. Liters (in³)	Carb. (Barrels, FI, etc.)	Compr. Ratio	SAE Net at RPM				
				Power kW (bhp)	Torque N • m (lb. ft.)			
	L			kW/ rpm	N.m/ rpm			
AW11L-WCMQFA	1.587	FI	9.4	84/ 6600	132/ 4800	*	5-speed Manual	4.312
AW11L-WCPQFA	1.587	FI	9.4	84/ 6600	132/ 4800	*	4-speed Automatic	2.962
AW11L-WJMQFA	1.587	FI	9.4	84/ 6600	132/ 4800	*	5-speed Manual	4.312
AW11L-WJPQFA	1.587	FI	9.4	84/ 6600	132/ 4800	*	4-speed Automatic	2.962

*: Semi-dual

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Engine Description/Carb.
Engine Code

4A-GE

ENGINE - GENERAL

Type & description (inline, V, angle, flat, location, front, mid, rear, transverse, longitudinal, sohc, dohc, ohv, hemi, wedge, pre-camber, etc.)	Inline, mid, transverse, DOHC, pentroof	
Manufacturer	TOYOTA MOTOR CORPORATION	
No. of cylinders	4	
Bore	81.0 mm	
Stroke	77.0 mm	
Bore spacing (C/L to C/L)	87.5 mm	
Cylinder block material & mass (kg (lbs.)) (machined)	Gray cast iron, 31.3 kg	
Cylinder block deck height	191.0 mm	
Cylinder block length		
Deck clearance (minimum) (above or below block)	0 mm	
Cylinder head material & mass (kg (lbs.))	Aluminum alloy, 11.1 kg	
Cylinder head volume (cm ³)	36.0 cm ³	
Cylinder liner material		
Head gasket thickness (compressed)	1.20 mm	
Minimum combustion chamber total volume (cm ³)	47.20 cm ³	
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, 4.7 kg	
Exhaust manifold material & mass (kg (lbs.))**	Spheroidal graphite cast iron, 6.0 kg	
Recommended fuel (leaded, unleaded, diesel)	Unleaded	
Fuel antiknock index (R + M) 2	87	
Total dressed engine mass (wt) dry***	M/T: 120 kg, A/T: 112 kg	

Engine - Pistons

Material & mass, g (weight, oz.) - piston only	Aluminum alloy, 305 g
--	-----------------------

Engine - Camshaft

Location	Over cylinder head	
Material & mass (kg (weight, lbs.))	Alloy cast iron, No.1 (IN): 1.66 kg No.2 (EX): 1.55 kg	
Drive type	Chain / belt	Belt
	Width / pitch	19.1/9.525 mm

* 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
	Head O.D. intake / exhaust

Engine - Connecting Rods

Material & mass (kg., (weight, lbs.))*	Carbon steel, 0.455 kg
--	------------------------

Engine - Crankshaft

Material & mass (kg., (weight, lbs.))*	Carbon steel, 12 kg
End thrust taken by bearing (no.)	#3
Number of main bearings	5
Seal (material, one, two piece design, etc.)	Front
	Rear

Engine - Lubrication System

Normal oil pressure (kPa (psi) at engine rpm)	392 kPa/6000 rpm
Type oil intake (floating, stationary)	Stationary
Oil filter system (full flow, part, other)	Full flow
Capacity of cr/case, less filter-refill-L (qt.)	M/T: 3.0 L, M/T with air con & A/T: 3.1 L

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)	Water cooled
Oil filter	Cartridge

Engine - Intake System

Turbo charger - manufacturer	N.A.
Super charger - manufacturer	N.A.
Charge cooler	N.A.

*Finished State

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Engine - Cooling System

Coolant recovery system (std., opt., n.a.)		Std.
Coolant fill location (rad., bottle)		Exclusively with filler (right rear suspension tower)
Radiator cap relief valve pressure [kPa (psi)]		88.3 kPa
Circulation thermostat	Type (choke, bypass)	Bypass
	Starts to open at °C (°F)	82°C
Water pump	Type (centrifugal, other)	Centrifugal
	GPM 1000 pump rpm	0.50L
	Number of pumps	1
	Drive (V-belt, other)	V-ribbed belt
	Bearing type	Sealed type, Rubber & ball bearing
	Impeller material	Steel
	Housing material	Aluminum alloy
By-pass recirculation (type (inter., ext.))		External
Cooling system capacity	With heater—L (qt.)	M/T: 10.7 L, A/T: 11.4 L
	With air cond.—L (qt.)	M/T: 10.9 L, A/T: 11.4 L
	Opt. equipment (specify—L (qt.))	M/T (w/oil cooler): 10.9 L, A/T: N.A.
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.)	Cross-flow
	Construction (fin & tube mechanical, brass, etc.)	Corrugated fin
	Material, mass (kg (wgt. lbs.))	Tube: brass, fin: copper, M/T: 5.0 kg, A/T: 5.3 kg
	Width	575 mm
	Height	318 mm
	Thickness	32 mm
Fins per inch		M/T: 17, A/T: 20
Radiator end tank material		Brass
Fan	Std., elec., opt.	Elec.
	Number of blades & type (flex, solid, material)	4, solid
	Diameter & projected width	M/T: 280 x 54 mm, A/T: 280 x 64 mm
	Ratio (fan to crankshaft rev.)	N.A.
	Fan cutout type	N.A.
	Drive type (direct, remote)	N.A.
	RPM at idle (elec.)	M/T: 2100 rpm, A/T: 2050 rpm
	Motor rating (wattage) (elec.)	M/T: 80 W, A/T: 120 W
	Motor switch (type & location) (elec.)	Water temp. SW, radiator LH tank
	Switch point (temp., pressure) (elec.)	Water temp., 90°C
	Fan shroud (material)	Steel

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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
Manufacturer		
Carburetor	Choke (type)	
	Idle spd.-rpm (spec. neutral or drive and propane if used)	Manual
		Automatic
Idle A/F max.		Preset at Mfr.
Fuel injection	Point of injection (no.)	4
	Constant, pulse, flow	Pulse
	Control (electronic, mech.)	Electronic
	System pressure (kPa (psi))	250 kPa
Intake manifold heat control (exhaust or water thermostatic or fixed)		
Air cleaner type	Standard	Dry type, 1 element
	Optional	N.A.
Fuel pump	Type (elec. or mech.)	Electro magnetic
	Location (eng., tank)	Tank
	Pressure range (kPa (psi))	250 kPa

Fuel Tank

Capacity (refill L (gallons))		41 L
Location (describe)		Under floor of front floor tunnel
Attachment		Band
Material & Mass (kg (weight lbs))		Steel sheet
Filler pipe	Location & material	Left wheel house, copper coated steel pipe
	Connection to tank	Rubber hose
Fuel line (material)		Copper coated steel pipe
Fuel hose (material)		Rubber hose with central blade
Return line (material)		Copper coated steel pipe
Vapor line (material)		Copper coated steel pipe, powder painting
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)		EFI + O ₂ S + EGR + TWC
	Air Injection	Pump or pulse	N.A.
		Driven by	N.A.
		Air distribution (head, manifold, etc.)	N.A.
		Point of entry	N.A.
	Exhaust Gas Recirculation	Type (controlled flow, open orifice, other)	Back pressure controlled
		Exhaust source	Exhaust manifold
		Point of exhaust injection (spacer, carburetor, manifold, other)	Intake manifold
	Catalytic Converter	Type	3 way
		Number of	1
		Location(s)	Under rear luggage room
		Volume (L (in ³))	1.3 L
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	N.A.
	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)		Semi dual
Muffler no. & type (reverse flow, straight thru, separate resonator) Material & Mass (kg (weight lbs))		Reverse flow, 1
Resonator no. & type		-
Exhaust pipe	Branch o.d., wall thickness	ø42.7 mm, t-2.0 mm
	Main o.d., wall thickness	ø48.6 mm, t-2.0 mm, 1.5 mm
	Material & Mass (kg (weight lbs))	Stainless steel, 5.0 kg
Inter- mediate pipe	o.d. & wall thickness	-
	Material & Mass (kg (weight lbs))	-
Tail pipe	o.d. & wall thickness	ø42.7 mm, ø31.8 mm, t-1.6 mm, t-1.2 mm
	Material & Mass (kg (weight lbs))	Al coated steel, 8.7 kg

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Transmissions/Transaxle

Manual 3-speed (std., opt., n.a.) (mfr.)	N.A.
Manual 4-speed (std., opt., n.a.) (mfr.)	N.A.
Manual 5-speed (std., opt., n.a.) (mfr.)	Std. (AW11L-WCMQFA, AW11L-WJM0FA)
Manual overdrive (std., opt., n.a.) (mfr.)	N.A.
Automatic (std., opt., n.a.) (mfr.)	Std. (AW11L-WCPQFA, AW11L-WJPQFA)
Automatic overdrive (std., opt., n.a.) (mfr.)	N.A.

Manual Transmission/Transaxle

Number of forward speeds		5	
Transmission ratios	In first	3.166	
	In second	1.904	
	In third	1.310	
	In fourth	0.969	
	In fifth	0.815	
	In overdrive	—	
	In reverse	3.250	
Synchronous meshing (specify gears)		All forward gears (1st, 2nd, 3rd, 4th, 5th)	
Shift lever location		Floor	
Lubricant	Capacity [L (pt.)]		2.6 L
	Type recommended		Multi purpose, API GL-4
	SAE viscosity number	Summer	SAE 75W-90
		Winter	SAE 75W-90
		Extreme cold	SAE 75W-90

Clutch (Manual Transmission)

Make, type, engagement (describe) - (hydraulic, cable, rod)		AISHIN SEIKI, dry single plate
Assist (yes, no / percent)		No
Type pressure plate springs		Diaphragm spring
Total spring load (N (lb.))		4214 N
No. of clutch driven discs		1
Clutch facing	Material	Semi mold
	Manufacturer	AISHINKAKO, NISSHINBO
	Part number	31256-17020
	Rivet/plate	16
	Rivet size	4 mm
	Outside & inside dia.	212 x 140 mm
	Total eff. area (cm ² (in. ²))	199 cm ²
	Thickness	3.5 mm
Engagement cushion method		Cushion spring
Release bearing	Type & method of lubrication	Single row ball bearing, sealed grease
Torsional damping	Method: springs, friction material	Rubber

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Automatic Transmission/Transaxle

Trade name		A240E
Type and special features (describe)		Electronic controlled planetary gear
Selector	Location	floor
	Ltr./No. designation	P R N D 2L
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)) *		1→2: 61/49, 2→3: 110/95, 3→4: 182/142
Max. kickdown speed - drive range (km/h (mph)) *		2→1: 45/45, 3→2: 104/90, 4→3: 173/136
Min. overdrive speed (km/h (mph))		22
Torque converter	Number of elements	3 elements, 1 step, 2 phases
	Max. ratio at stall	2.1
	Type of cooling (air, liquid)	Liquid
	Nominal diameter	230 mm
Lubricant	Capacity (refill L (pt.))	7.9 L
	Type Recommended	ATF DII
Oil cooler (std., opt., NA, internal, external, air, liquid)		Lockup clutch

Axle or Front Wheel Drive Unit

* Power/Normal

Type (front, rear)		Rear wheel drive
Description		Helical gear
Limited slip differential (type)		N.A.
Drive pinion offset		-
Drive pinion (type)		Helical gear
No. of differential pinions		2
Pinion / differential adjustment (shim, other)		-
Pinion / differential bearing adjustment (shim, other)		Collapsible sleeve (A/T)
Driving wheel bearing (type)		Double row angular ball bearing
Lubricant	Capacity (L (pt.))	M/T: 2.6 L
	Type recommended	M/T: Multi purpose API GL-4, A/T: ATF DII
	SAE viscosity number	M/T: SAE 75W-90, A/T: -
	Summer	M/T: SAE 75W-90, A/T: -
	Winter	M/T: SAE 75W-90, A/T: -
	Extreme cold	M/T: SAE 75W-90, A/T: -

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

Axle ratio (or overall top gear ratio)		M/T: 4.312, A/T: 2.962
No. of teeth	Pinion	M/T: 16, A/T: 27
	Ring gear or gear	M/T: 69, A/T: 80
Ring gear o.d.		-
Transaxle	Transfer gear ratio	-
	Final drive ratio	-

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Axle Shafts – Front Wheel Drive

Manufacturer and number used		2	
Type (straight, solid bar, tubular, etc.)		Left	Solid shaft
		Right	Solid shaft
Outer diam. x length* x wall thickness	Manual transmission	Left	ø22.8 x 358.7 mm
		Right	ø26.0 x 601.2 mm
	Automatic transmission	Left	ø22.3 x 360.1 mm
		Right	ø26.0 x 601.4 mm
	Optional transmission	Left	
		Right	
Slip yoke	Type	-	
	Number of teeth	-	
	Spline o.d.	-	
Universal joints	Make and mfg. no.	Inner	* TOYOTA MOTOR CORPORATION, 43403-32011/43403-12020
		Outer	* TOYOTA MOTOR CORPORATION, 43405-32012/43405-12020
	Number used	4	
	Type, size, plunge	Inner	Tripot plunging
		Outer	Rzeppa fixed
	Attach (u-bolt, clamp, etc.)		Snap ring
	Bearing	Type (plain, anti-friction)	-
Lubrication (fitting, greasepack)		-	
Drive taken through (torque tube, arms or springs)		-	
Torque taken through (torque tube, arms or springs)		-	

* Manual/Automatic

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

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Propeller Shaft – Rear Wheel Drive

Manufacturer Type (straight tube, tube-in-tube, internal-external damper, etc.)			
Outer diam. x length* x wall thickness	Manual 3-speed trans.		
	Manual 4-speed trans.		
	Manual 5-speed trans.		
	Overdrive		
	Automatic transmission		
Inter- mediate bearing	Type (plain, anti-friction)		
	Lubrication (fitting, prepack)		
Slip yoke	Type		
	Number of teeth		
	Spine o.d.		
Universal joints	Make and mfg. 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)			

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

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Body Type And/Or
Engine Displacement

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Suspension - General

Car leveling	Std./opt./n.a.	N.A.
	Type (air, hyd., etc.)	-
	Manual/auto. controlled	-
Provision for brake dip control		-
Provision for accel. squat control		-
Provisions for car jacking		
Shock absorber (front & rear)	Type	Double acting tube type
	Make	TOYOTA MOTOR CORPORATION (Fr & Rr)
	Piston diameter	* $\phi 30.2/\phi 32$ mm
	Rod diameter	* $\phi 20/\phi 22$ mm

Suspension - Front

* Fr/Rr

Type and description		Macpherson strut
Travel	Full jounce	75 mm
	Full rebound	90 mm
Spring	Type (coil, leaf, other) & material	Coil, SUP7
	Insulators (type & material)	Gum
	Size (coil design height & i.d., bar length x dia.)	299.5 x $\phi 118.9$ mm
	Spring rate (N/mm (lb./in.))	16.7 N/mm
	Rate at wheel (N/mm (lb./in.))	18.6 N/mm
Stabilizer	Type (link, linkless, frameless)	Link
	Material & bar diameter	SUP6, $\phi 17.5$ mm

Suspension - Rear

Type and description		Macpherson strut
Travel	Full jounce	80 mm
	Full rebound	80 mm
Spring	Type (coil, leaf, other) & material	Coil, SUP7
	Size (length x width, coil design height & i.d., bar length & dia.)	M/T: 299.4 x ($\phi 86.9 \sim \phi 116.9$)mm, A/T: 303.0 x ($\phi 86.6 \sim \phi 116.6$)mm M/T with T-bar roof: 302.9 x ($\phi 86.9 \sim \phi 116.8$)mm
	Spring rate (N/mm (lb./in.))	M/T: 33.3 N/mm, A/T: 34.3 N/mm
	Rate at wheel (N/mm (lb./in.))	M/T: 35.3 N/mm, A/T: 36.3 N/mm
	Insulators (type & material)	Gum shear
	If leaf	No. of leaves
		Shackle (comp. or tens.)
Stabilizer	Type (link, linkless, frameless)	N.A.
	Material & bar diameter	N.A.
Track bar (type)		N.A.

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Body Type And/Or
Engine Displacement

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Brakes - Service

Description		-	
Manufacturer and brake type (std., opt., n.a.)	Front (disc or drum)	Disc, std.	
	Rear (disc or drum)	Disc, std.	
Self-adjusting (std., opt., n.a.)		Std.	
Special valving	Type (proportion, delay, metering, other)	P & B Valve	
Power brake (std., opt., n.a.)		Std.	
Booster type (remote, integral, vac., hyd., etc.)			
Vacuum source (inline, pump, etc.)		N.A.	
Vacuum reservoir (volume in.³)		N.A.	
Vacuum pump-type (elec. gear driven, belt driven, if other so state)		N.A.	
Anti-lock device type (std., opt., n.a.) (F/R)		N.A./N.A.	
Effective area (cm²(in.²))*		Fr.: 172 cm²/Rr.: 136 cm²	
Gross lining area (cm²(in.²))** (F/R)		172/136 cm²	
Swept area (cm²(in.²))*** (F/R)		1202/1199 cm²	
Rotor	Outer working diameter	F/R 258/263 mm	
	Inner working diameter	F/R 162/171 mm	
	Thickness	F/R 22.0/10.0 mm	
	Material & type (vented/solid)	F/R Cast iron, ventilated/Cast iron, solid	
Drum	Diameter & width	F/R N.A.	
	Type and material	F/R N.A.	
Wheel cylinder bore		Fr.: 51.10/Rr.: 36.51 mm	
Master cylinder	Bore/stroke	F/R * Fr.: 22.22, Rr.: 22.22/Fr.: 15.00, Rr.: 12.00 mm	
Pedal arc ratio		3.7	
Line pressure at 445 N(100 lb.) pedal load (kPa (psi))		8810 kPa (500 mmHg)	
Lining clearance		F/R Self adjusting/Self adjusting	
Brake lining	Front wheel	Bonded or riveted (rivets/seg.)	Bonded
		Rivet size	N.A.
		Manufacturer	AKEBONO, SUMITOMO, NISHINBO, AISIN
		Lining code*****	-
		Material	Resin molded
		*** Primary or out-board	103.7 x 44.4 x 10 mm
		Size Secondary or in-board	103.7 x 44.4 x 10 mm
		Shoe thickness (no lining)	5.0 mm
	Rear wheel	Bonded or riveted (rivets/seg.)	Bonded
		Manufacturer	NISHINBO
		Lining Code*****	-
		Material	Resin molded
		*** Primary or out-board	82.0 x 44.5 x 10 mm
		Size Secondary or in-board	94.0 x 42.9 x 10 mm
Shoe thickness (no lining)		O.B.: 5.0 mm, I.B.: 6.0 mm	

*Excludes rivet holes, grooves, chamfers, etc.

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

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

****Size for drum brakes includes length x width x thickness.

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

* Bore/stroke

MVMA Specifications Form Passenger Car

METRIC (U.S. Customary)

Car Line MR2
Model Year 1987 Issued _____ Revised (e) _____

Body Type And/Or
Engine Displacement

4A-GE

Tires And Wheels (Standard)

Tires	Size (load range, ply)		185/60R1482H
	Type (bias, radial, etc.)		Radial
	Inflation pressure (cold) for recommended max. vehicle load	Front (kPa (psi))	210 kPa
		Rear (kPa (psi))	210 kPa
	Rev./mile—at 70 km/h (45 mph)		921
Wheels	Type & material		Wide rim with deep bottom, steel
	Rim (size & flange type)		5 1/2 - J x 14
	Wheel offset		39 mm
	Attachment	Type (bolt or stud)	Nut
		Circle diameter	100 mm
Number & size		4, 12 (P=1.5)	
Spare	Tire and wheel (same, if other describe)		Tire: T125/70D14 Wheel: 4 - T x 14
	Storage position & location (describe)		Front luggage room

Tires And Wheels (Optional)

Size (load range, ply)		185/60R14 82H
Type (bias, radial, etc.)		Radial
Wheel (type & material)		Wide rim with deep bottom, aluminum
Rim (size, flange type and offset)		5 1/2 - JJ x 14
Size (load range, ply)		185/60R14 82H M+S
Type (bias, radial, etc.)		Radial
Wheel (type & material)		Wide rim with deep bottom, steel
Rim (size, flange type and offset)		5 1/2 - J x 14
Size (load range, ply)		
Type (bias, radial, etc.)		
Wheel (type & material)		
Rim (size, flange type and offset)		
Size (load range, ply)		
Type (bias, radial, etc.)		
Wheel (type & material)		
Rim (size, flange type and offset)		
Spare tire and wheel (if configuration is different than road tire or wheel, describe optional spare tire and/or wheel location & storage position)		-

Brakes - Parking

Type of control		
Location of control		
Operates on		
If separate from service brakes	Type (internal or external)	N.A.
	Drum diameter	N.A.
	Lining size (length x width x thickness)	N.A.

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Car Line MR2
Model Year 1987 Issued _____ Revised (•) _____

METRIC (U.S. Customary)

Body Type And/Or
Engine Displacement

4A-GE

Steering

Manual (std., opt., n.a.)		Std.		
Power (std., opt., n.a.)		N.A.		
Adjustable steering wheel/column (tilt, telescope, other)	Type	Tilt		
	Manufacturer			
	(Std., opt., n.a.)	Std.		
Wheel diameter** (W8) SAE J1100	Manual	370 mm (OPT: 374 mm*)		
	Power	-		
Turning diameter m (ft.)	Outside front	Wall to wall (l. & r.)	10.4 mm	
		Curb to curb (l. & r.)	9.6 mm	
	Inside rear	Wall to wall (l. & r.)	5.3 mm	
		Curb to curb (l. & r.)	5.5 mm	
Scrub Radius*				
Manual	Gear	Type	R & P	
		Manufacturer	TOYOTA MOTOR CORPORATION	
		Ratios	Gear	∞
			Overall	18.0
	No. wheel turns (stop to stop)	3.2		
Power	Type (coaxial, linkage, etc.)		-	
	Manufacturer		-	
	Gear	Type	-	
		Ratios	Gear	-
			Overall	-
	Pump (drive)	-		
No. wheel turns (stop to stop)	-			
Linkage	Type		Ackerman	
	Location (front or rear of wheels, other)		Rear of wheels	
	Tie rods (one or two)		2	
Steering axis	Inclination at camber (deg.)		12°05'	
	Bearings (type)	Upper	Ball bearing	
		Lower	Ball joint	
		Thrust	-	
Steering spindle & joint type				
Wheel spindle/hub	Diameter	Inner bearing	28.0 mm	
		Outer bearing	61.0 mm	
	Thread (size)		M20 x 1.5 mm	
	Bearing (type)		Double row angular ball bearing	

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

*: Leather wrapped.

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METRIC (U.S. Customary)

Car Line MR2
Model Year 1987 Issued _____ Revised (?) _____

Body Type And/Or
Engine Displacement

4A-GE

Wheel Alignment

Front wheel at curb mass (wt.)	Service checking	Caster (deg.)	5°05' ± 45'
		Camber (deg.)	0°15' ± 45'
		Toe-in (outside track-mm (in.))	1 ± 2 mm
	Service reset*	Caster	5°05' ± 30'
		Camber	0°15' ± 30'
		Toe-in	1 ± 1 mm
	Periodic M.V. inspection	Caster	5°05' ± 45'
		Camber	0°15' ± 45'
		Toe-in	1 ± 2 mm
Rear wheel at curb mass (wt.)	Service checking	Camber (deg.)	-55' ± 45'
		Toe-in (outside track-mm (in.))	In 5 ± 2 mm
	Service reset*	Camber	-55' ± 30'
		Toe-in	In 5 ± 1 mm
	Periodic M.V. inspection	Camber	-55' ± 45'
		Toe-in	In 5 ± 2 mm

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

Electrical - Instruments and Equipment

Speedometer	Type (analog, digital, std., opt.)	Analog, round
	Trip odometer (std., opt., n.a.)	Std.
EGR maintenance indicator		N.A.
Charge indicator	Type	M/T: Electric gauge, A/T: N.A.
	Warning device (light, audible)	Lamp
Temperature indicator	Type	Electric gauge
	Warning device (light, audible)	N.A.
Oil pressure indicator	Type	Electric gauge
	Warning device (light, audible)	N.A.
Fuel indicator	Type	Electric gauge
	Warning device (light, audible)	Lamp
Wind-shield wiper	Type (standard)	Motor, 3-speed
	Type (optional)	N.A.
	Blade length	Dr.: 450 mm, Pa: 450 mm
	Swept area (cm ² (in. ²))	6375.0 cm ²
Wind-shield washer	Type (standard)	Motor
	Type (optional)	N.A.
	Fluid level indicator (light, audible)	N.A.
Rear window wiper, wiper/washer (std., opt., n.a.)		
Horn	Type	
	Number used	
Other		

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METRIC (U.S. Customary)

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Engine Description/Carb.
Engine Code

4A-GE

Electrical - Supply System

Battery	Manufacturer	* G, Y, K, N, F
	Model, std., (opt.)	55D23L
	Voltage	12V, 60 plates
	Amps at 0°F cold crank	310
	Minutes-reserve capacity	90
	Amp/hrs. - 20 hr. rate	60
	Location	Left front engine compartment
Alternator	Manufacturer	
	Rating	AC 70A
	Ratio (alt. crank/rev.)	2.36 : 1
	Optional (type & rating)	-
Regulator	Type	IC type

* G: NIHON DENCHI, Y: YUASA DENCHI, K: SHINKOBE DENCHI
N: MATSUSHITA DENCHI, F: FURUKAWA DENCHI

Electrical - Starting System

Start, motor	Current drain at 0°F	-
Motor drive	Engagement type	Shift
	Pinion engages from (front, rear)	Right

Electrical - Ignition System

Type	Electronic (std., opt., n.a.)	Std.
	Other (specify)	N.A.
Coil	Make	NIPPON DENSO
	Model	-
	Current	Engine stopped - A
		0A
Spark plug	Current	Engine idling - A
		0.85A
	Make	NIPPON DENSO, NIHON TOKUSHU TOGYO
	Model	P016R (ND), BCPR5EP11 (NGK)
	Thread (mm)	M14 x 19.0 mm
	Tightening torque (N·m (lb, ft))	17.7 N·m
Distributor	Gap	1.1 mm
	Number per cylinder	1
	Make	NIPPON DENSO
	Model	-

Electrical - Suppression

Locations & type	Distributor with frame spray coating rotor Resistive spark plug Resistive cord
------------------	--

MVMA Specifications Form Passenger Car

METRIC (U.S. Customary)

Car Line MR2
Model Year 1987 Issued _____ Revised (●) _____

Body Type

4A-GE

Body

Structure	Bar Material & Mass Reinforcement Material & Mass	Fr.: Urethane 3.87 kg, Rr. Urethane 3.72 kg Fr.: Steel 8.4 kg, Rr. Steel 10.5 kg
-----------	--	---

Bumper system
front - rear

Anti-corrosion treatment

Body - Miscellaneous Information

Type of finish (lacquer, enamel, other)	Acryl or alkyd
---	----------------

Hood	Hinge location (front, rear)	Rear
	Type (counterbalance, prop)	Prop.
	Release control (internal, external)	Internal
Trunk lid	Type (counterbalance, other)	Counterbalance
	Internal release control (elec., mech., n.a.)	Mech.

Hatch-back lid	Type (counterbalance, other)	
	Internal release control (elec., mech., n.a.)	

Station wagon

Vent window control (crank, friction, pivot, power)

Front
Rear

-
-

Seat cushion type
(e.g., 60/40, bucket, bench, wire, foam etc.)

Front
Rear
3rd seat

Spring + foampad
-
-

Seat back type
(e.g., 60/40, bucket, bench, wire, foam etc.)

Front
Rear
3rd seat

Spring + foampad
-
-

MVMA Specifications Form
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Car Line MR2
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Body Type

4A-GE

Restraint System

Active restraint system	Standard/optional	Standard
	Type and description	3 point type, with retractor (ELR)
	Location	3 point type, 2 seats
Passive seat belts	Standard/optional	N.A.
	Power/manual	N.A.
	2 or 3 point	N.A.
	Knee barrier belt	N.A.

Frame

Type and description (separate frame, unitized frame, partially-unitized frame)	Monocock	
Glass	SAE Ref. No.	
Windshield glass exposed surface area (cm ² (in. ²))	S1	8752 cm ²
Side glass exposed surface area (cm ² (in. ²)) - total 2-sides	S2	6328 cm ²
Backlight glass exposed surface area (cm ² (in. ²))	S3	2902 cm ²
Total glass exposed surface area (cm ² (in. ²))	S4	17982 cm ²
Windshield glass (type)		Laminated glass
Side glass (type)		Tempered glass
Backlight glass (type)		Tempered glass

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Body Type

4A-GE

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

Air conditioning (manual, auto, temp control)	P/opt.	
Clock (digital, analog)	Std.	
Compass / thermometer		
Console (floor, overhead)		
Defroster, elec. backlight	Std.	
Electronic	Diagnostic monitor (integrated, individual)	
	Instrument cluster (list instruments)	
	Keyless entry	
	Tripminder (avg. spd., fuel)	
	Voice alert (list items)	
	Other	
Fuel door lock (remote, key, electric)		
Lamps	Auto head on / off delay, dimming	
	Cornering	N.A.
	Courtesy (map, reading)	N.A.
	Door lock, ignition	Std.
	Engine compartment	
	Fog	
	Glove compartment	N.A.
	Trunk	
	Other	
Mirrors	Day/night (auto, man.)	
	L.H. (remote, power, heated)	
	R. H. (convex, remote, power, heated)	
	Visor vanity (RH : LH, illuminated)	
Parking brake-auto release (warning light)		
Power equipment	Door locks - deck lid - specify	
	Seat (2-4-6 way) heated (driver, pass, other) lumbar, hip, thigh support (power, manual) reclining (driver, pass) memory (1-2 preset, recline)	N.A.
	Side windows	
	Vent windows	
	Rear window	
Radio systems	Antenna (location, whip, w/ shield, power)	
	AM, FM, stereo, tape, CB	Std.: AM/FM ETR. 2 S/P, Opt: AM/FM ETR., w/cast 4 S/P
	Speaker (number, location) Premium sound	Opt.: AM/FM ETR., w/cst, w/AF 4 S/P
Roof open air fixed (flip-up, sliding, "T")		
Speed control device	Opt	
Speed warning device (light, buzzer, etc.)	N.A.	
Tachometer (rpm)		
Telephone system - mobile		
Theft protection-type	Steering lock	

MVMA Specifications Form

Passenger Car

METRIC (U.S. Customary)

Car and Body Dimensions See Key Sheets for definitions

Car Line MR2

Model Year 1987

Issued _____

Revised (•) _____

All dimensions to ground are for comparative purposes only. Dimensions are to be shown for all base body models of each car 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.	
Width		4A-GE
Tread (front)	W101	1440 mm
Tread (rear)	W102	1440 mm
Vehicle width	W103	1665 mm
Body width at Sg RP (front)	W117	1650 mm
Vehicle width (front doors open)	W120	3605 mm
Vehicle width (rear doors open)	W121	-
Front fender overall width	W106	
Rear fender overall width	W107	
Turn-in angle (deg.)	W122	28.5°

Length

Wheelbase	L101	2320 mm
Vehicle length	L103	3950 mm
Overhang (front)	L104	860 mm
Overhang (rear)	L105	770 mm
Upper structure length	L123	1585 mm
Rear wheel C L "X" coordinate	L127	2315 mm
Cowl point "X" coordinate	L125	340 mm
Front end length at centerline	L126	
Rear end length at centerline	L129	

Height*

Passenger distribution (front/rear)	PD1.2.3	2
Trunk cargo load		0 kg
Vehicle height	H101	1235 mm
Cowl point to ground	H114	830 mm
Deck point to ground	H138	880 mm
Rocker panel-front to ground	H112	155 mm
Bottom of door closed-front to grd.	H133	260 mm
Rocker panel-rear to ground	H111	155 mm
Bottom of door closed-rear to grd.	H135	-
Windshield slope angle	H122	60°
Backlight slope angle	H121	20.5°

Ground Clearance*

Front bumper to ground	H102	380 mm
Rear bumper to ground	H104	380 mm
Bumper to ground (front at curb mass (wt.))	H103	395 mm
Bumper to ground (rear at curb mass (wt.))	H105	395 mm
Angle of approach (degrees)	H108	14°
Angle of departure (degrees)	H107	20°
Ramp breakover angle (degrees)	H147	14°
Axle differential to ground (front/rear)	H153	150 mm
Min. running ground clearance	H156	130 mm
Location of min. run. grd. clear.		Ex pipe protector

* All vehicle height and ground clearances are made at the Manufacturer's Design Load Weight, unless otherwise specified.

Manufacturer's Design Load Weight is defined with indicated passenger distribution and trunk cargo load.

All linear dimensions are in millimeters (inches) unless otherwise noted.

MVMA Specifications Form

Passenger Car

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Car and Body Dimensions See Key Sheets for definitions

Car Line MR2

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Revised (•)

Body Type

SAE
Ref.
No.

4A-GE

Front Compartment

Sg RP front, "X" coordinate	L31	D: 1335 mm, P: 1305 mm
Effective head room	H61	*1 D: 949, P: 946 mm *2 D: 928, P: 924 mm *3 D: 931, P: 927
Max. eff. leg room (accelerator)	L34	D: 1093 mm, P: 1155 mm
Sg RP to heel point	H30	210 mm
Sg RP to heel point	L53	905 mm
Back angle	L40	23°
Hip angle	L42	D: 96°, P: 108°
Knee angle	L44	D: 133°, P: 160°
Foot angle	L46	D: 87°, P: 125°
Design H-point front travel	L17	D: 179 mm, P: 149 mm
Normal driving & riding seat track trvl.	L23	D: 179 mm, P: 149 mm
Shoulder room	W3	
Hip room	W5	
Upper body opening to ground	H50	1138 mm
Steering wheel maximum diameter*	W9	
Steering wheel angle	H18	23°
Accel. heel pt. to steer. whl. cntr	L11	
Accel. heel pt. to steer. whl. cntr	H17	
Steering wheel to C/L of thigh	H13	
Steering wheel torso clearance	L7	
Headlining to roof panel (front)	H37	
Undepressed floor covering thickness	H67	

*1 AW11L-WCPQFA, WCMQFA *3 AW11L-WJPQFA, WJMQFA

Rear Compartment

*2 AW11L-WCPQFA, WCMQFA with sun roof

Sg RP Point couple distance	L50	
Effective head room	H63	
Min. effective leg room	L51	
Sg RP (second to heel)	H31	
Knee clearance	L46	
Compartment room	L3	
Shoulder room	W4	
Hip room	W6	
Upper body opening to ground	H51	-
Back angle	L41	
Hip angle	L43	
Knee angle	L45	
Foot angle	L47	
Headlining to roof panel (second)	H36	
Depressed floor covering thickness	H73	

Luggage Compartment

Usable luggage capacity [L (cu. ft.)]	V1	161 L
Liftover height	H195	815 mm

Interior Volumes (EPA Classification)

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

* See page 14.

All linear dimensions are in millimeters (inches) unless otherwise noted.

MVMA Specifications Form

Passenger Car

METRIC (U.S. Customary)

Car and Body Dimensions See Key Sheets for definitions

Car Line MR2

Model Year 1987

Issued

Revised (e)

Body Type

SAE
Ref.
No.

Station Wagon - Third Seat

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

Station Wagon - Cargo Space

Cargo length (open front)	L200
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
Max. rear opening width above belt	W205
Cargo height	H201
Rear opening height	H202
Tailgate to ground height	H250
Front seat back to load floor height	H197
Cargo volume index ($m^3(ft.^3)$)	V2
Hidden cargo volume ($m^3(ft.^3)$)	V4
Cargo volume, index-rear of 2-seat	V10

Hatchback - Cargo Space

Cargo length at front seatback height	L208
Cargo length at floor (front)	L209
Cargo length at second seatback height	L210
Cargo length at floor (second)	L211
Front seatback to load floor height	H197
Second seatback to load floor height	H198
Cargo volume index ($m^3(ft.^3)$)	V3
Hidden cargo volume ($m^3(ft.^3)$)	V4
Cargo volume index-rear of 2-seat	V11

Aerodynamics*

Wheel lip to ground, front	
Wheel lip to ground, rear	
Frontal area ($m^2(ft.^2)$)	
Drag coefficient (Cd)	

* EPA Loaded Vehicle Weight, Loading Conditions

All linear dimensions are in millimeters (inches) unless otherwise noted.

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Passenger Car
METRIC (U.S. Customary)

Car Line MR2
 Model Year 1987 Issued _____ Revised (e) _____

Body Type

4A-GE

Vehicle Fiducial Marks

Fiducial Mark Number	Define Coordinate Location
Front	Center of outside installation hole of seat trunk on front floor cross member (both side)
Rear	Center of paint drain hole (ø45) on front floor (both side)
Fiducial Mark Number	
Front	W21* W5 + 73 mm
	LS4* L19 + 55 (5) mm
	H81* H10 + 53 mm
	H181 245 mm
	H183 230 mm
Rear	W22* W5 + 47 mm
	LS5* L24 + 50 (5) mm
	H82* H9 + 79 mm
	H182 170 mm
	H184 155 mm

* Reference - SAE Recommended Practice, J182, Motor Vehicle Fiducial Marks.
 All linear dimensions are in millimeters (inches).

MVMA Specifications Form
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METRIC (U.S. Customary)

Car Line MR2
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Body Type

4A-GE

Lamps and Headlamp Shape*

Height above ground to center of bulb or marker	Headlamp (SAE - H127)	Highest**	680 mm
		Lowest	
	Taillamp (SAE - H128)	Highest**	700 mm
		Lowest	
	Sidemarker	Front	450 mm
		Rear	455 mm
Distance from C.L. of car to center of bulb	Headlamp	Inside	550 mm
		Outside**	
	Taillamp	Inside	600 mm
		Outside**	
	Directional	Front	505 mm
		Rear	600 mm
Halogen headlamp (std., opt., n.s.)	Lo beam		
	Hi beam		
	Replaceable bulb		
	Shape		
Headlamp other than above	Lo beam		
	Hi beam		
	Replaceable		
	Shape		
	Type		

* Measured at curb mass (weight).

** If single lamps are used enter here.

All linear dimensions are in millimeters (inches) unless otherwise noted.

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**** Shipping mass (weight) definition -**

METRIC (U.S. Customary)

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Issued

Revised (9)

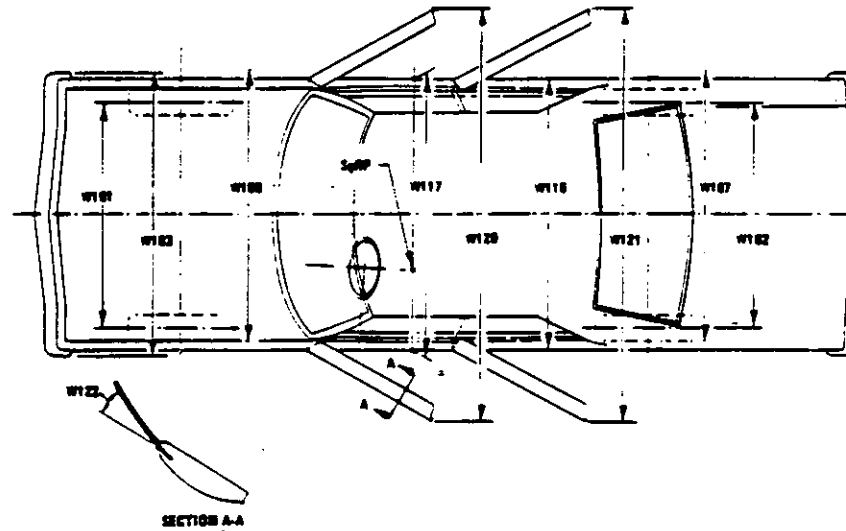
*Also see Engine - General Section for dressed engine mass (weight).

*2 Except AW11L-WJMQFA, WJPQFA

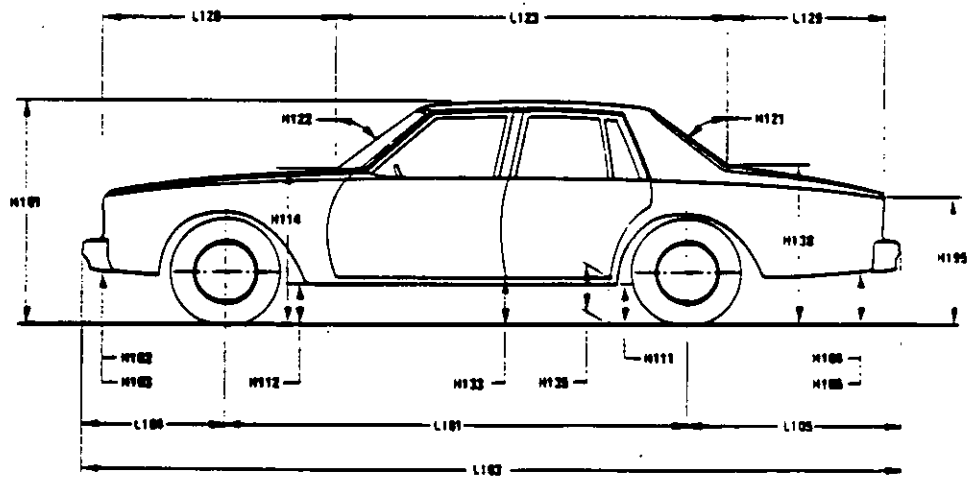
MVMA Specifications Form
Passenger Car
METRIC (U.S. Customary)

Exterior Car And Body Dimensions – Key Sheet

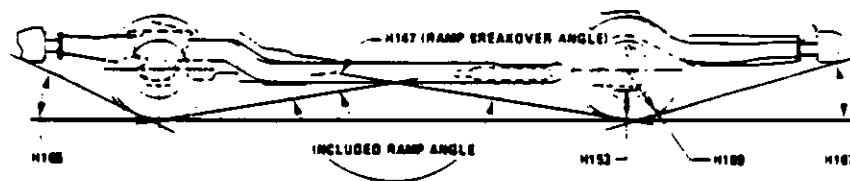
Exterior Width



Exterior Length & Height



Exterior Ground Clearance

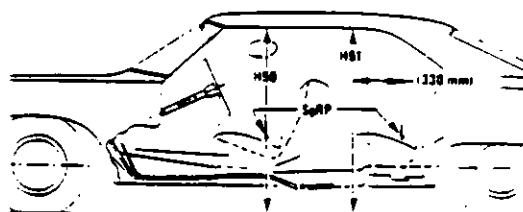
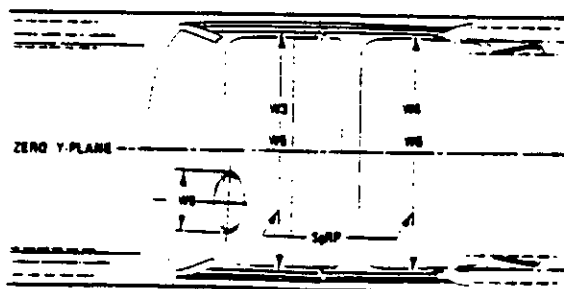
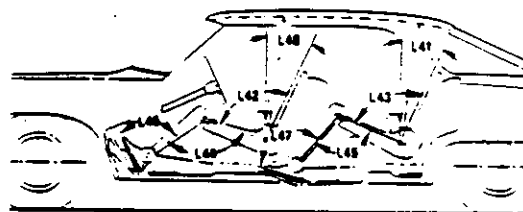
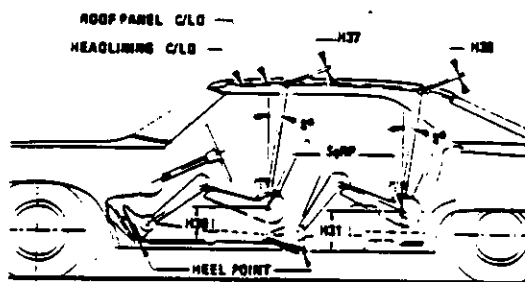
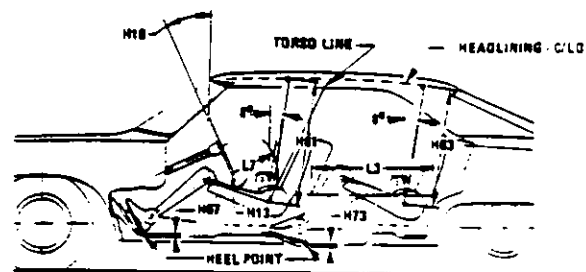
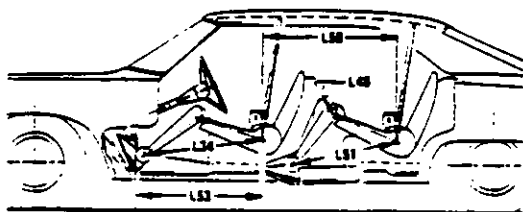


MVMA Specifications Form

Passenger Car

METRIC (U.S. Customary)

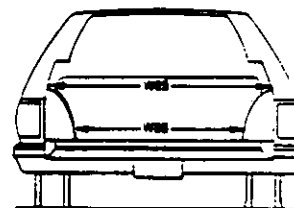
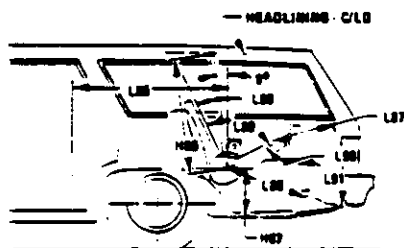
Interior Car And Body Dimensions – Key Sheet



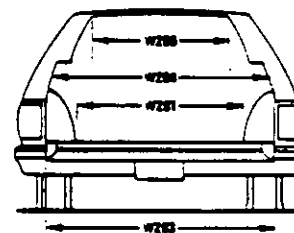
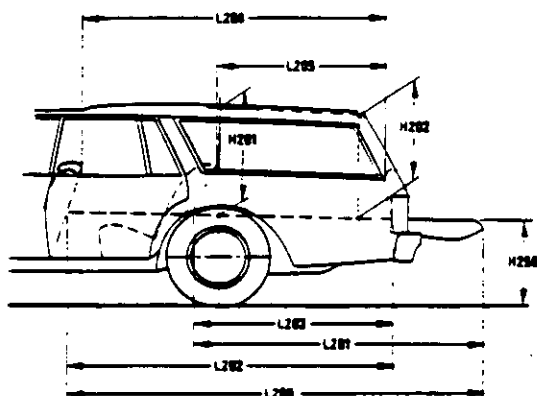
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Interior Car And Body Dimensions – Key Sheet

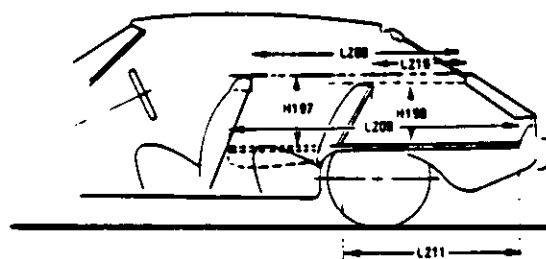
Third Seat



Cargo Space



Station Wagon



Hatchback

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Passenger Car

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Exterior Car And Body Dimensions - Key Sheet

Dimensions Definitions

Seating Reference Point

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

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

Width Dimensions

- W101 TREAD-FRONT. The dimension measured between the tire centerlines at the ground.
- W102 TREAD-REAR. The dimension measured between the tire centerlines at the ground. In case of dual wheels, the dimension will be measured to the centerline of tire and wheel assemblies.
- W103 VEHICLE WIDTH. The maximum dimension measured between the widest point on the vehicle, excluding exterior mirrors, flexible mud flaps, marker lamps, but including bumpers, moldings, sheet metal protrusions or dual wheels, if standard equipment.
- W106 FRONT FENDER WIDTH. The dimension measured between the widest points at the front wheel centerline, excluding moldings.
- W107 REAR FENDER WIDTH. The dimension measured between the widest points at the rear wheel centerline, excluding moldings.
- W117 BODY WIDTH AT SgRP-FRONT. The dimension measured laterally between the widest points on the body at the SgRP-front, excluding door handles, applied moldings, or appliques.
- W120 VEHICLE WIDTH-FRONT DOORS OPEN. The dimension measured between the widest point on the front doors in maximum hold-open position.
- W121 VEHICLE WIDTH-REAR DOORS OPEN. The dimension measured between the widest point on the rear doors in maximum hold-open position. For vehicles with a rear door on only one side, this dimension is to the zero "Y" plane.
- W122 TUMBLE-HOME, STRAIGHT SIDE GLASS. The angle measured from a vertical to the outside surface of the front door glass at the SgRP "X" plane.
CURVED SIDE GLASS. The angle measured from a vertical to a chord extending from the upper DLO to the lower DLO at the outside surface of the front door glass at the front SgRP "X" plane.

Length Dimensions

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

of dual rear axles, the dimension shall be the midpoint of the centerlines of the rear wheels, to the rearmost point on the vehicle including rear bumpers, bumper guards, tow hooks and rub strips, if standard equipment.

- L123 UPPER STRUCTURE LENGTH. The dimension measured longitudinally from the cowl point to the deck point.
- L125 COWL POINT "X" COORDINATE.
- L126 FRONT END LENGTH. The dimension measured longitudinally from the cowl point to the foremost point on the vehicle at the zero "Y" plane excluding ornamentation or bumpers. In cases where bumpers and/or grills are integrated with the profile, measurement is made at the foremost point of front end contour.
- L127 REAR WHEEL CENTERLINE "X" COORDINATE or in the case of dual rear axles, the coordinate shall be the midpoint of the distance between the rear axle centerlines.
- L129 REAR END LENGTH. The dimension measured longitudinally from the deck point to the rearmost visible point of the body sheet metal at the zero "Y" plane, excluding ornamentation or bumpers.

Height Dimensions

- H101 VEHICLE HEIGHT. The dimension measured vertically from the highest point on the vehicle body to ground.
- H111 ROCKER PANEL-REAR TO GROUND. The dimension measured vertically from the bottom of the rocker or side quarter panel at the front of the rear wheel opening, excluding flanges, to ground.
- H112 ROCKER PANEL-FRONT TO GROUND. The dimension measured vertically from the foremost point on the bottom of the rocker panels, excluding flanges, to ground.
- H114 COWL POINT TO GROUND. Measured at zero "Y" plane.
- H121 BACKLIGHT SLOPE ANGLE. The angle between the vertical reference line and the surface of backlight at vehicle zero "Y" plane. For curve backlight, the angle is to chord of backlight arc from lower DLO to upper DLO.
- H122 WINDSHIELD SLOPE ANGLE. The angle between the vertical reference line and a chord of the windshield arc running from the lower DLO to the upper DLO at the vehicle zero "Y" plane. In the case of wrap over glass, the angle to be measured will be formed by a chord 457 mm (18.0 in) long drawn from the lower DLO to the intersecting point on the windshield.
- H127 HEADLAMP TO GROUND-CURB MASS (WT.). The dimension measured vertically from the centerline of the lowest headlamp lens to ground.
- H128 TAILLAMP TO GROUND-CURB MASS (WT.). The dimension measured vertically from the centerline of the upper bulb to ground.
- H133 BOTTOM OF DOOR CLOSED-FRONT TO GROUND. The dimension measured vertically from the bottom outside corner of the door on the lock pillar side, in maximum closed position, to ground.
- H135 BOTTOM OF DOOR CLOSED-REAR TO GROUND. The dimension measured vertically from the bottom outside corner of the door on the lock pillar side, in maximum closed position, to ground.
- H138 DECK POINT TO GROUND. Measured at zero "Y" plane.
- H109 STATIC LOAD-TIRE RADIUS-REAR. Specified by the manufacturer in accordance with composite TIRE SECTION, STANDARD.

Ground Clearance Dimensions

- H102 FRONT BUMPER TO GROUND. The minimum dimension measured vertically from the lowest point on the front bumper to ground, including bumper guards, if standard equipment.
- H103 FRONT BUMPER TO GROUND-CURB MASS (WT.). Measured in the same manner as H102.

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Interior Car And Body Dimensions - Key Sheet

Dimensions Definitions

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

Glass Areas

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

Fiducial Mark Dimensions

- Fiducial Mark - Number 1
- L54 "X" coordinate.
- W21 "Y" coordinate.
- H81 "Z" coordinate.
- H161 Height "Z" coordinate to ground at curb weight.
- H163 Height "Z" coordinate to ground.
- Fiducial Mark - Number 2
- L55 "X" coordinate.
- W22 "Y" coordinate.
- W82 "Z" coordinate.
- H162 Height "Z" coordinate to ground at curb weight.
- H164 Height "Z" coordinate to ground.

Front Compartment Dimensions

- L7 STEERING WHEEL TORSO CLEARANCE. The minimum dimension measured in the side view from the rearmost edge of the steering wheel, with front wheels in the straight ahead position, to the torso line.
- L11 ACCELERATOR HEEL POINT TO STEERING WHEEL CENTER. The dimension measured horizontally from the AHP to the intersection of the steering column centerline and a plane tangent to the upper surface of the steering wheel rim.
- L17 DESIGN H-POINT-FRONT TRAVEL. The dimension measured horizontally between the design H-point-front in the foremost and rearmost seat track positions. (See SAE J1100)
- L23 NORMAL DRIVING AND RIDING SEAT TRACK LEVEL. The dimension measured horizontally between a point on the design H-point travel line from the SgRP to the displaced point on the design H-point travel line with the seat moved to the foremost seat position, but not to include seat track travel used for purposes other than normal driving and riding positions. (See SAE J1100)
- L31 SgRP-FRONT. "X" COORDINATED.

- L34 MAXIMUM EFFECTIVE LEG ROOM-ACCELERATOR. The dimension measured along a line from the ankle pivot center to the SgRP-front plus 254 mm (10.0 in.) measured with right foot on the undepressed accelerator pedal. For vehicles with SgRP to heel (H30) greater than 18 in., the accelerator pedal may be depressed as specified by the manufacturer. If 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.
- H13 STEERING WHEEL TO CENTERLINE OF THIGH. The minimum dimension measured from the bottom of steering wheel, with front wheels in the straight position, to the thigh centerline.
- H17 ACCELERATOR HEEL POINT TO THE STEERING WHEEL CENTER. The dimension measured vertically from the AHP-front to the intersection of the steering column centerline to a plane tangent to the upper surface of the steering wheel rim.
- H18 STEERING WHEEL ANGLE. The angle measured from a vertical to the surface plane of the steering wheel.
- H30 SgRP-FRONT TO HEEL. The dimension measured vertically from the SgRP-front to the accelerator heel point.
- H37 HEADLINING TO ROOF PANEL-FRONT. The dimension measured from the intersection of the headlining and the extended effective head room line normal to the sheet metal.
- H50 UPPER BODY OPENING TO GROUND-FRONT. The dimension measured vertically from the trimmed body opening to the ground on the SgRP-front "X" plane.
- H61 EFFECTIVE HEAD ROOM-FRONT. The dimension measured along a line 8 deg. rear of vertical from the SgRP-front to the headlining plus 102 mm (4.0 in.).
- H67 FLOOR COVERING THICKNESS-UNDEPRESSED-FRONT. The dimension measured vertically from the surface of the undepressed floor covering to the underbody sheet metal at the accelerator heel point.
- PD1 PASSENGER DISTRIBUTION-FRONT.

Rear Compartment Dimensions

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

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Passenger Car

METRIC (U.S. Customary)

Interior Car And Body Dimensions - Key Sheet

Dimensions Definitions

- 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.
- H38 HEADLINING TO ROOF PANEL-SECOND. The dimension measured from the intersection of the headlining and the extended effective head room line normally to the roof sheet metal.
- H51 UPPER BODY OPENING TO GROUND-SECOND. The dimension measured vertically from the trimmed body opening to the ground on the "X" plane 330 mm (13.0 in.) forward of the SgRP-second.
- H63 EFFECTIVE HEAD ROOM-SECOND. The dimension measured along a line 8 deg. rear of vertical from the SgRP to the headlining, plus 102 mm (4.0 in.).
- H73 FLOOR COVERING-DEPRESSED-SECOND. The dimension measured vertically from the heel point to the underbody sheet metal.
- PD2 PASSENGER DISTRIBUTION-SECOND.

Luggage Compartment Dimensions

- V1 USABLE LUGGAGE CAPACITY-Total of volumes of individual pieces of standard luggage set plus H-boxes stowed in the luggage compartment in accordance with the procedure described in paragraph 8.2 of SAE-J1100a.
- H195 LIFTOVER HEIGHT. The dimension measured vertically from the luggage compartment lower opening at the zero "Y" plane to ground.

Interior Volumes (EPA Classification)

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

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

Station Wagon - Third Seat Dimensions

- L85 SgRP COUPLE DISTANCE-THIRD. The dimension measured horizontally from the SgRP-second to the SgRP-third.
- L86 EFFECTIVE LEG ROOM-THIRD. The dimension measured along a line from the ankle pivot center to the SgRP-third plus 254 mm (10.0 in.).
- L87 KNEE CLEARANCE-THIRD. The minimum dimension from the knee pivot center to the back of second seatback minus a constant of 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
- PD3 PASSENGER DIRECTION-THIRD.
- SD1 SEAT FACING DIRECTION-THIRD.

Station Wagon - Cargo Space Dimensions

- L200 CARGO LENGTH-OPEN-FRONT. The minimum dimension measured longitudinally from the back of the front seatback at the height of the 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 back 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 wheelhouseings at floor level. For any vehicle not trimmed, measure to the sheet metal.

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Interior Car And Body Dimensions - Key Sheet Dimensions Definitions

- W203 REAR OPENING WIDTH AT FLOOR.** The minimum dimension measured laterally between the limiting interferences of the rear opening at floor level.
- W204 REAR OPENING WIDTH AT BELT.** The minimum dimension measured laterally between the limiting interferences of the rear opening at belt height or top of pick up box.
- W205 REAR OPENING WIDTH ABOVE BELT.** The minimum dimension measured laterally between the limiting interferences of the rear opening above the belt height.
- H197 FRONT SEATBACK TO LOAD FLOOR HEIGHT.** The dimension measured vertically from the horizontal tangent to the top of the seatback to the undeepressed floor covering.
- H201 CARGO HEIGHT.** The dimension measured vertically from the top of the undeepressed 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 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:

$$\frac{W4 \times H201 \times L204}{10^9} = \text{m}^3 \text{ (cubic meter)}$$
- V4 HIDDEN LUGGAGE CAPACITY-REAR OF FRONT SEAT.** The total volumes of individual pieces of one set of standard luggage stowed in any hidden cargo area below the load floor rear of the front seat.
- V5 TRUCKS AND MPV'S WITH OPEN AREA.**
Measured in inches:

$$\frac{L506 \times W500 \times H503}{1728} = \text{ft}^3$$
 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 electrically adjusted seats, see the manufacturer's specifications for Design "H" Point).

- L208 CARGO LENGTH AT FRONT SEATBACK HEIGHT.** The minimum horizontal dimension from the "X" plane tangent to the rearmost surface of the driver's seatback to the inside limiting interference of the hatchback door on the vehicle zero "Y" plane.
- L209 CARGO LENGTH AT FLOOR-FRONT-HATCHBACK.** The minimum horizontal dimension measured at floor level from the rear of the front seatback to the normal limiting interference of the hatchback door on the vehicle zero "Y" plane.
- L210 CARGO LENGTH AT SECOND SEATBACK HEIGHT-HATCHBACK.** The minimum dimension measured from the "X" plane tangent to the rearmost surface of second seatback or the load floor which is stowed at least one half of the H198 dimension height above the rear load floor, to the rearmost inside limiting interference on the zero "Y" plane.
- L211 CARGO LENGTH AT FLOOR-SECOND HATCHBACK.** The minimum horizontal dimension measured at floor level from the rear of the second seatback or load floor, 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 undeepressed floor covering.
- H198 SECOND SEATBACK TO LOAD FLOOR HEIGHT.** The dimension measured vertically from the second seat back to the undeepressed 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:

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

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Turning Diameter	
Unitized Construction	
Universal Joints, Propeller Shaft	
Valve System	
Voltage Regulator	
Water Pump	
Weights	25
Wheel Alignment	
Wheelbase	
Wheels & Tires	
Wheel Spindle	
Widths - Car and Body	20
Windshield	
Windshield Wiper and Washer	