MANUFACTURERS MOTOR VEHICLE SPECIFICATIONS

METRIC (U.S. Customary)

1990

Manufacturer	Vehicle Line	
DIAMOND STAR MOTORS	**PLYMOUTH LASER**	
Mailing Address		
100 N. DIAMOND STAR PKWY. NORMAL, IL 61761	Issued **9-15-89**	Revised

Direct questions concerning these specifications to the manufacturer listed above.

The information contained herein is prepared, distributed by, and is solely the responsibility of the vehicle manufacturing company to whose products it relates. This specification form was developed by the vehicle manufacturing companies under the auspices of the Motor Vehicle Manufacturers Association of the United States, Inc.

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

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Ø Indicates Format Change From Previous Year

NOTE:

1. This form uses both SI metric units and U.S. Customary units. The metric unit of measure is presented first, and the U.S. Customary 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.

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Vehicle Line Laser
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Vehicle Origin

Design & development (company)	Mitsubishi Motors Corporation.
Where built (country)	U.S.A
Authorized U.S. sales marketing representative	Chrysler Motors Corp.

Vehicle Models

Model Description & Drive (FWD/RWD/AWD/4WD)*	Introduction Date	Make, Vehicle Models, Series, Body Type (Mfgr's Model Code)	No. of Designated Seating Positions (Front/Rear)	Max. Trunk/Cargo Load–Kilograms (Pounds)
2 DOOR Coupe (FWD)		D21AMNJEL 4P/9P D21AMRJEL 4P/9P D21AMNHEL 4P/9P D21AMRHEL 4P/9P D22AMNHML 4P/9P D22AMRHML 4P/9P D22AMNHFL 4P/9P	4 (2/2)	28 Kg (62 lbs)

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

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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							TRANSMISSION/ TRANSAXLE	AXLE RATIO (std. first)
	Code	Displ. Liters (in^3)	Induction (FI, CARB/ BBL etc.)	Compr. Ratio	SAE Net at RPM		Exhaust S/D*		
					Power kW (bhp)	Torque N • m (lb. ft.)			
D21A Series (SOHC, MPI)	4G37	1.755 (107)	F.I.	9.0	69 (92) at 5000	142 (105) at 3500	D	Manual 5-speed	4.322
								Automatic 4-Speed	4.007
D22A Series (DOHC, NA)	4G63	1.997 (122)	F.I.	9.0	101 (135) at 6000	169 (125) at 5000	D	Manual 5-Speed	4.322
								Automatic 4-Speed	4.007
D22A Series (DOHC, T/C)	4G63	1.997 (122)	F.I.	7.8	142 (190) at 6000	275 (203) at 3000	S	Manual 5-Speed	4.153

* Single / Dual

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Engine Description/Carb. Engine Code	4G37 (1.755 Liters)		4G63 (1.997 Liters)		4G63 with Turbo (1.997 Liters)
	MT	AT	MT	AT	

ENGINE – GENERAL

Type & description (inline, V, angle, flat, location, front, mid, rear, transverse, longitudinal, sohc, dohc, ohv, hemi, wedge, pre-camber, etc.)	In line, Front, Transverse, SOHC		In line, Front, Transverse, DOHC		
Manufacturer	Mitsubishi Motors Corp.				
No. of cylinders	4				
Bore	80.6		85.0		
Stroke	86.0		88.0		
Bore spacing (C / L to C / L)	87.5		93		
Cylinder block material & mass kg (lbs.) (machined)	Cast iron, 34.2 (75.4)		Cast iron, 37.5 (82.7)		
Cylinder block deck height	230.2		229		
Cylinder block length	385.5		439		
Deck clearance (minimum) (above or below block)	Above 0.5 mm		0.0 mm		
Cylinder head material & mass kg (lbs.)	Aluminum alloy, 6.2 (13.6)		Aluminum alloy, 12.6 (27.8)		
Cylinder head volume (cm^3)	57.9		45.5		
Cylinder liner material	N.A.				
Head gasket thickness (compressed)	1.35		1.25		
Minimum combustion chamber total volume (cm^3)	54.1		61.7		72.7
Cyl. no. system (front to rear)* L. Bank	N.A.				
Cyl. no. system (front to rear)* R. Bank	N.A.				
Firing order	1-3-4-2				
Intake manifold material & mass [kg (lbs.)]**	Aluminum alloy, 5.3 (11.7)		Aluminum alloy, 5.5 (12.1)		
Exhaust manifold material & mass [kg (lbs.)]**	Cast iron, 5.7 (12.6)		Cast iron, 7.37 (16.25)		Cast iron, 5.0 (11)
Fuel required unleaded, diesel, etc.	Unleaded				
Fuel antiknock index (R + M) ÷ 2	No less than 91				No less than 95 or 91 with knock control
Engine mounts: Number	4				
Engine mounts: Material and type (elastomeric, hydroelastic, hydraulic damper, etc.	Rubber (Elastomeric)				
Engine mounts: Added isolation (sub-frame, crossmember, etc.)	Crossmember and Centermember				
Total dressed engine mass (wt) dry***	122.7	114.7	151.3	144.3	158.7

Engine – Pistons

Material & mass, g (weight, oz.) - piston only	Aluminum alloy, 322 (11.4)		Aluminum alloy, 343 (12.1)		Aluminum alloy, 362 (12.8)

Engine – Camshaft

Location	Center of IN. and EX. valve on cylinder-head		Above each IN. and EX. valve on cylinder-head		
Material & mass kg (weight, lbs.)	Cast iron, 2.32 (5.27)		Cast iron, IN:1.9 (4.2), EX:1.9 (4.2)		
Drive type: Chain / belt	Belt				
Drive type: Width / pitch	19.05/9.525		29/9.525		

* 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)		Std.	
Valves	Number intake / exhaust	4/4	8/8
	Head O.D. intake / exhaust	42/34	34/30.5

Engine – Connecting Rods

Material & mass [kg., (weight, lbs.)]*	Forged iron, 0.612(1.35)	Forged iron, 0.69 (1.52)
∅ Length (axes ℄ to ℄) mm	153.7	150.0

Engine – Crankshaft

Material & mass [kg., (weight, lbs.)]*		Forged iron, 12.4(27.3)	Forged iron, 16.3 (35.9)
End thrust taken by bearing (no.)		3	
Length & number of main bearings		23mm, 5	
Seal (material, one, two piece design, etc.)	Front	Synthetic rubber, One piece	
	Rear	Synthetic rubber, One piece	

Engine – Lubrication System

Normal oil pressure [kPa (psi) at engine rpm]	280 (40.6) at 2000	
Type oil intake (floating, stationary)	Stationary	
Oil filter system (full flow, part, other)	Full flow	
Capacity of c'case, less filter-refill-L (qt.)	3.9	4.4

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	N.A.	Mitsubishi Heavy Industries Ltd.
Super charger - manufacturer	N.A.	N.A.
Intercooler	N.A.	Std.

*Finished State

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	MT	AT	MT	AT	

Engine – Cooling System

Coolant recovery system (std., opt., n.a.)		With condenser tank				
Coolant fill location (rad., bottle)		Thermostat case & condenser tank				
Radiator cap relief valve pressure [kPa (psi)]		88 (12.8)				
Circulation thermostat	Type (choke, bypass)	Choke pellet				
	Starts to open at °C (°F) -	88 (190.4)				
Water pump	Type (centrifugal, other)	Centrifugal				
	GPM 1000 pump rpm	-				
	Number of pumps	1				
	Drive (V-belt, other)	V ribbed belt				
	Bearing type	Ball, integral shaft, permanently sealed		Roller & Ball, integral shaft, permanently sealed		
	Impeller material	Cold-rolled carbon steel sheet				
	Housing material	Aluminum die casting				
By-pass recirculation [type (inter., ext.)]		External				
Cooling system capacity	With heater–L(qt.)	5.0 (5.3)		7.0 (7.4)		
	With air cond.–L(qt.)	5.0 (5.3)		7.0 (7.4)		
	Opt. equipment [specify–L(qt.)]	-				
Water jackets full length of cyl. (yes, no)		Yes				
Water all around cylinder (yes, no)		No				
Water jackets open at head face (yes, no)		No				
Radiator core	Std., A/C, HD -	N.A.				
	Type (cross-flow, etc.)	Down-flow				
	Construction (fin & tube mechanical, braze, etc.)	Tube and corrugated fin, Solder				
	Material, mass [kg (wgt. lbs.)]	Copper & Brass 3.7	Copper & Brass 4.05	Copper & Brass 5.35	Copper & Brass 5.7	Copper & Brass, 5.35
	Width	668				
	Height	350				
	Thickness	16		32		
	Fins per inch	20		17		
Radiator end tank material		Plastic				
Fan	Std., elec., opt.	Electric				
	Number of blades & type (flex, solid, material)	4, Polypropylene				
	Diameter & projected width	320				
	Ratio (fan to crankshaft rev.)	N.A.				
	Fan cutout type	N.A.				
	Drive type (direct, remote)	N.A.				
	RPM at idle (elec.)	2150	2080			
	Motor rating (wattage) (elec.)	80	120			
	Motor switch (type & location) (elec.)	Thermo Type in radiator				
	Switch point (temp., pressure) (elec.)	85°C ± 3°C				
	Fan shroud (material)	Plastic				

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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		Nippon Injector Co.,Ltd.		
∅ Carburetor no. of barrels		-		
Idle A/F mix.		14.7		
Fuel injection	Point of injection (no.)	Inlet port (4)		
	Constant, pulse, flow	6.07mm³ / 2.5 msec	6.09 mm³ / 2.2 msec	8.07 mm³ / 1.8 msec
	Control (electronic, mech.)	Electronic		
	System pressure [kPa (psi)]	329 (47.71)		250 (36.25)
Idle spd.-rpm (spec. neutral or drive and propane if used)	Manual	700 rpm	750 rpm	
	Automatic	700rpm(650rpm Drive)	750rpm(650rpm Drive)	-
Intake manifold heat control (exhaust or water thermostatic or fixed)		N.A.		
Air cleaner type		Dry non-woven cloth		
Fuel filter (type / location)		Paper, Engine room		
∅ Fuel pump	• Type (elec. or mech.)	Electric		
	Location (eng., tank)	In tank		
	Pressure range [kPa (psi)]	177 to 588 (26 to 85)		
∅	Flow rate at regulated pressure (L (gal) / hr @ kPa (psi))	90 L/hr (23.8 gal/hr) @ 250kPa (36psi)		

Fuel Tank

Capacity [refill L (gallons)]		60 (15.9)
Location (describe)		Under rear seatpan
Attachment		Strap
Material & Mass [kg (weight lbs)]		Steel, 13.2
Filler pipe	Location & material	Left, rear quarter panel, Steel
	Connection to tank	Rubber hose
Fuel line (material)		Steel
Fuel hose (material)		Rubber
Return line (material)		Steel
Vapor line (material)		Steel
Extended range tank	Opt., n.a.	N.A.
	Capacity [L (gallons)]	N.A.
	Location & material	N.A.
	Attachment	N.A.
Auxiliary tank	Opt., n.a.	N.A.
	Capacity [L (gallons)]	N.A.
	Location & material	N.A.
	Attachment	N.A.
	Selector switch or valve	N.A.
	Separate fill	N.A.

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Vehicle Emission Control

Exhaust Emission Control	Type (air injection, engine modifications, other)		Three-way catalyst with feedback control, Exhaust gas recirculation		
	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)	Controlled flow (Calif. only: and electronic)		
		Exhaust source Point of exhaust injection (spacer, carburetor, manifold, other)	Exhaust manifold Port No.2 Intake manifold	Exhaust Manifold Port No.4 Intake manifold	Exhaust Manifold Port No.4 Single tank
	Catalytic Converter	Type	Three-way		
		Number of	1		
		Location(s)	Under floor		
		Volume [L (in³)]	Calif.: 1.0 (61.02) + 0.7 (42.71), Fed: 1.7 (103.7)		
		Substrate type	Monolith		
		Noble metal type	-		
		Noble metal concentration (g/cm³)	-		
Crankcase Emission Control	Type (ventilates to atmosphere, induction system, other)		Induction System		
	Energy source (manifold vacuum, carburetor, other)		Intake Manifold Vacuum		
	Discharges (to intake manifold, other)		To intake manifold		
	Air inlet (breather cap, other)		Air cleaner		
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)		Yes		

Engine – Exhaust System

Type (single, single with cross-over, dual, other)		Single with cross-over		
Muffler no. & type (reverse flow, straight thru, separate resonator) Material & Mass [kg (weight lbs)]		One (Reverse flow) Stainless steel, 5.6 (12.3)	One (Reverse flow) Stainless steel, 6.3 (13.9)	One (Reverse flow) Stainless steel, 6.4 (14.1)
Resonator no. & type		TWO (Straight thru), Stainless steel, 2.4 (5.3)		-
Exhaust pipe	Branch o.d., wall thickness	42.7 X 2.0 (Dual)		54 X 1.5
	Main o.d., wall thickness	48.6 X 1.5, 54 X 1.5	54 X 1.5	
	Material & Mass [kg (weight lbs)]	Stainless steel tube, 4.3 (9.5)	Stainless steel tube, 4.4 (9.7)	Stainless steel tube, 4.2 (9.3)
Intermediate pipe	o.d. & wall thickness	48.6 X 1.5, 48.6 X 2.0	54 X 1.5, 54 X 2.0	54 X 1.5
	Material & Mass [kg (weight lbs)]	Stainless steel tube, 4.7 (10.4)	Stainless steel tube, 5.2 (11.5)	Stainless steel tube, 5.8 (12.8)
Tail pipe	o.d. & wall thickness	48.6 X 1.2	38.1 X 1.2 (Dual)	42.7 X 1.2 (Dual)
	Material & Mass [kg (weight lbs)]	Stainless steel tube, 0.5 (1.1)	Stainless steel tube, 0.8 (1.8)	Stainless steel tube, 1.0 (2.2)

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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)	Std., Mitsubishi Motors Corp./Japan	
Automatic (manufacturer country)	N.A.	
Automatic overdrive (manufacturer country)	Std., Mitsubishi Motors Corp./Japan	N.A.

Manual Transmission/Transaxle

Number of forward speeds		5	
Gear ratios	1st	3.363	3.083
	2nd	1.947	1.833
	3rd	1.285	1.217
	4th	0.939	0.888
	5th	0.756	0.741
	Reverse	3.083	3.166
Synchronous meshing (specify gears)		1,2,3,4,5	
Shift lever location		Floor	
Trans. case matl. & mass kg (lbs)*		Aluminum alloy, 9.9 (21.8)	Aluminum alloy 11.5 (25.4)
Lubricant	Capacity [L (pt.)]	1.8 (3.8)	2.2 (4.6)
	Type recommended -	Multipurpose gear oil conforming to API GL-4	

Clutch (Manual Transmission)

Clutch manufacturer		Aishin Seiki Co.,Ltd.	Daikin Manufacturing Co.,Ltd.	
Clutch type (dry, wet; single, multiple disc)		Dry single plate		
Linkage (hydraulic, cable, rod, lever, other)		Hydraulic		
Max. pedal effort (norm. spring load, new) N (lbs)	Depressed	123 (27.7)		
	Released	83 (18.7)		
Assist (spring, power/percent, nominal)		No		Spring
Type pressure plate springs		Diaphragm		
Total spring load (nominal, new) N (lbs)		4168 (937)	4511 (1014)	6178 (1389)
Clutch facing	Facing mfgr. & material coding	Hitachi Chemical Co.,Ltd.		
	Facing material & construction	Woven (Asbestos)	Woven (Non-Asbestos)	
	Rivets per facing	16		
	Outside x inside dia. (nominal)	200 X 130 (mm)	215 X 140 (mm)	225 X 150 (mm)
	Total eff. area [cm²(in.²)]	363 (56.3)	418 (64.8)	442 (68.5)
	Thickness (pressure plate side/ fly wheel side)	3.5/3.5 (mm)		
	Rivet depth (pressure plate side/ fly wheel side)	1.6/1.6 (mm)		1.3/1.3 (mm)
	Engagement cushion method	Flat-wave spring		
Release bearing type & method lub.		Ball bearing, permanently lubricated		
Torsional damping method, springs, hysteresis		Damper rubbers and friction washers	Damper rubbers-coil springs and Friction washers	

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

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Engine Description/Carb. Engine Code	D21A	D22A

Automatic Transmission/Transaxle

Trade name		Mitsubishi Motors Corp. F4A22	
Type and special features (describe)		Torque converter with automatically operated Planetary gear Transmission Electronic control F4A22	
Selector	Location	Lever : Console mounted	
	Ltr./No. designation	P.R.N.D.2.L / 6	
Gear ratios	1st	2.846	
	2nd	1.581	
	3rd	1.000	
	4th	0.685	
	Reverse	2.176	
Max. upshift speed - drive range [km/h (mph)] *		1-2 $^{48}/_{41}$ ($^{30}/_{26}$), 2-3 $^{90}/_{77}$ ($^{56}/_{48}$), 3-4 $^{159}/_{145}$ ($^{99}/_{91}$)	1-2 $^{59}/_{50}$ ($^{37}/_{31}$), 2-3 $^{111}/_{94}$ ($^{69}/_{59}$), 3-4 $^{187}/_{155}$ ($^{117}/_{98}$)
Max. kickdown speed - drive range [km/h (mph)]*		2-1 $^{43}/_{35}$ ($^{27}/_{22}$), 3-2 $^{84}/_{69}$ ($^{53}/_{41}$), 4-3 $^{143}/_{130}$ ($^{80}/_{81}$)	2-1 $^{45}/_{35}$ ($^{28}/_{22}$), 3-2 $^{100}/_{85}$ ($^{63}/_{53}$), 4-3 $^{168}/_{141}$ ($^{105}/_{89}$)
Min. overdrive speed [km/h (mph)]		28 (18)	29 (18)
Torque converter	Number of elements	Three	
	Max. ratio at stall	2.17 : 1	
	Type of cooling (air, liquid)	Liquid	
	Nominal diameter	240	
∅	Capacity factor "K"*	245	224
Lubricant	Capacity [refill L (pt.)]	6.1 (13.0)	
	Type Recommended	DEXRON II or DEXRON automatic Trans.fluid	
Oil cooler (std., opt., NA, internal, external, air, liquid)		Std., External liquid	
∅ Transmission case material & mass kg (lbs)**		Aluminum alloy, 13.7 (30.2)	

* Power/Economy

Axle or Front Wheel Drive Unit

Type (front, rear)		Front		
Description		Separable		
Limited slip differential (type)		-		
Drive pinion offset		-		
Drive pinion (type)		-		
No. of differential pinions		2		
Pinion/differential adjustment (shim, other)		Shim		
Pinion/differential bearing adjustment (shim, other)		Shim		
Driving wheel bearing (type)		Double row angular contact ball bearing		
Lubricant	Capacity [L (pt.)]	Refer to transmission Spec.		
	Type recommended	Refer to transmission Spec.		
		4G37 (1.755 Liters) and 4G63 (1.997 Liters)		4G63 with Turbo (1.997 Liters)
		MT	AT	

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

Axle ratio (or overall top gear ratio)				
No. of teeth	Pinion	17	16	
	Ring gear or gear	67	57	55
Ring gear o.d.		179.26	175.73	187.69
Transaxle	Transfer gear ratio	1.096	1.125	1.208
	Final drive ratio	3.941	3.562	3.437

* Input speed ÷ $\sqrt{\text{torque}}$

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

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Axle Shafts – Front Wheel Drive

Manufacturer and number used			Toyo Bearing Co.,Ltd.		
Type (straight, solid bar, tubular, etc.)		Left	Straight bar		
		Right	Straight bar		
∅ Outer diam. x length* x wall thickness	Manual transaxle	Left	26 X 708	26 X 706	30 X 706
		Right	23.2 X 368	24 X 366	24 X 366
	Automatic transaxle	Left	26 X 708	26 X 706	–
		Right	23.2 X 368	24 X 366	–
	Optional transaxle	Left	–		
		Right	–		
Slip yoke	Type		None		
	Number of teeth		–		
	Spline o.d.		–		
Universal joints	Make and mfg. no.	Inner	Toyo Bearing Co.,Ltd.		
		Outer	Toyo Bearing Co.,Ltd.		
	Number used		Two X Two		
	Type, size, plunge	Inner	C.V. joint		
		Outer	C.V. joint		
	Attach (u-bolt, clamp, etc.)		–		
	Bearing: Type (plain, anti-friction)		–		
	Bearing: Lubrication (fitting, prepack)		–		
Drive taken through (torque tube, arms or springs)			Lower arm & Strut		
Torque taken through (torque tube, arms or springs)			Lower arm & Strut		

∅ All Wheel/4 Wheel Drive

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

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

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Body Type And/Or Engine Displacement	D21A	D22A

Suspension - General Including Electronic Controls

Car leveling	Standard/optional/not avail.	N.A.
	Manual/automatic control	N.A.
	Type (air/hydraulic)	N.A.
	Primary/assist spring	N.A.
	Rear only/4 wheel leveling	N.A.
	Single/dual rate spring	N.A.
	Single/dual ride heights	N.A.
	Provision for jacking	N.A.
Shock absorber damping contols	Standard/option/not avail.	N.A.
	Manual/automatic control	N.A.
	Number of damping rates	N.A.
	Type of actuation (manual/electric motor/air, etc.)	N.A.
	Sensors: Lateral acceleration	N.A.
	Sensors: Deceleration	N.A.
	Sensors: Acceleration	N.A.
	Sensors: Road surface	N.A.
Shock absorber (front & rear)	Type	Front : Strut Type Rear : Telescopic Type
	Make	Front/Rear : Kayaba Industry Co.,Ltd.
	Piston diameter	Front : 32 Rear : 25 (mm)
	Rod diameter	Front : 22 Rear : 12.5 (mm)

Suspension – Front

Type and description		Independent Strut Type	
Travel*	Full jounce	92 (mm)	83 (mm)
	Full rebound	78 (mm)	87 (mm)
Spring	Type (coil, leaf, other) & material	Coil (9254 Steel, Specified in SAE)	
	Insulators (type & material)	-	
	Size (coil design height & i.d., bar length x dia.)	327 X 146.6 or 335 X 146.4	314 X 146.3 or 322 X 146.1
	Spring rate [N/mm (lb./in.)]	21.6 (123.2)	23.5 (134.4)
	Rate at wheel [N/mm (lb./in.)]	20.3 (116.0)	22.1 (126.3)
Stabilizer	Type (link, linkless, frameless)	Link	
	Material & bar diameter	ASB 25N, φ17.3 (mm)	Spring steel, φ19 (mm)

Suspension – Rear

Type and description		3-Link torsion axle	
Travel*	Full jounce	110 (mm)	100 (mm)
	Full rebound	75 (mm)	
Spring	Type (coil, leaf, other) & material	Coil (9254 Steel, Specified in SAE)	
	Size (length x width, coil design height & i.d., bar length & dia.)	337 X 84.9	317 X 84.8
	Spring rate [N/mm (lb./in.)]	19.6 (112.0)	22.5 (128.8)
	Rate at wheel [N/mm (lb./in.)]	19.6 (112.0)	22.5 (128.8)
	Insulators (type & material)	Rubber pad	
	If leaf: No. of leaves	-	
	If leaf: Shackle (comp. or tens.)	-	
Stabilizer	Type (link, linkless, frameless)	Bar	
	Material & bar diameter	S38C, φ20 (mm)	S38C, φ25 (mm)
Track bar (type)		-	

* Define load condition:

MVMA Specifications Form

Vehicle Line Laser
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METRIC (U.S. Customary)

Body Type And/Or Engine Displacement	4G37 (1.755 Liters)	4G63 (1.997 Liters)	4G63 with Turbo (1.997 Liters)

∅ Brakes - Service

Description				-	
Manufacturer and brake type (std., opt., n.a.)	Front (disc or drum)			Akebono Brake Industry Co.,Ltd., Disc	
	Rear (disc or drum)			Akebono Brake Industry Co.,Ltd., Disc	
Valving type (proportion, delay, metering, other)				Proportion valve	
Power brake (std., opt., n.a.)				Std.	
Booster type (remote, integral, vac., hyd., etc.)				Integral	
Vacuum	Source (inline, pump, etc.)			Inline	
	Reservoir (volume in.³) and source			-	
	Pump-type (elec, gear driven, belt driven)			-	
Traction control	Operational speed range			-	
	Type engine intervention (electronic, mech.)			-	
Anti-lock device	Front / rear (std., opt., n.a.)			-	
	Manufacturer			-	
	Type (electronic, mech.)			-	
	Number sensors or circuits			-	
	Number anti-lock hydraulic circuits			-	
	Integral or add-on system			-	
	Yaw control (yes, no)			-	
	Hydraulic power source (elect., vac. mtr., pwr. strg.)			-	
Effective area [cm²(in.²)]*				F: 200 (31.0) / R: 120 (18.6)	
Gross lining area [cm²(in.²)]**(F/R)				F: 206 (31.9) / R: 120 (18.6)	
Swept area [cm²(in.²)]***(F/R)				F: 1281 (198.6) / R: 1177 (182.5)	
Rotor	Outerworking diameter	F/R		F: 264 / R: 263	(mm)
	Inner working diameter	F/R		F: 170 / R: 178	(mm)
	Thickness	F/R		F: 24 / R: 10	(mm)
	Material & type (vented/solid)	F/R		F: Cast iron vented / R: Cast iron solid	
Drum	Diameter & width	F/R		-	
	Type and material	F/R		-	
Wheel cylinder bore				F: 53.97 / R: 30.16	(mm)
Master cylinder	Bore/stroke	F/R	Bore: 22.22 / Stroke: Primary: 13, Secondary: 15 (mm)		Bore: 23.81/Stroke: Primary: 13, Secondary: 15 (mm)
Pedal arc ratio				4.4	
Line pressure at 445 N(100 lb.) pedal load [kPa (psi)]				12162 (1773)	12656 (1844)
Lining clearance		F/R		F:No major adjustment required/R:No major adjustment required	
Brake lining	Front wheel	Bonded or riveted (rivets/seg.)		Bonded	
		Rivet size		-	
		Manufacturer		Hitachi Chemical Co.,Ltd.	
		Lining code*****		Hitachi MH102 EE	
		Material		Molded	
		**** Primary or out-board		116 X 43.1 X 10.5	(mm)
		Size Secondary or in-board		116 X 43.1 X 10.5	(mm)
		Shoe thickness (no lining)		5.0	(mm)
	Rear wheel	Bonded or riveted (rivets/seg.)		Bonded	
		Manufacturer		Akebono Brake Industry Co.,Ltd.	
		Lining code*****		AKS 26 GF	
		Material		Molded	
		**** Primary or out-board		72 X 41.6 X 9.5	(mm)
		Size Secondary or in-board		72 X 41.6 X 9.5	(mm)
		Shoe thickness (no lining)		5.0	(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.

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METRIC (U.S. Customary)

Body Type And/Or Engine Displacement	4G37 (1.755 Liters)	4G63 (1.997 Liters)	4G63 with Turbo (1.997 Liters)

Tires And Wheels (Standard)

Tires	Size (load range, ply)		P185/70R14, Std load	P205/55HR16, Std load	P205/55VR16, Std load
	Type (bias, radial, steel, nylon, etc.)		Radial		
	Inflation pressure (cold) for recommended max. vehicle load	Front [kPa (psi)]	200 (29)		
		Rear [kPa (psi)]	180 (26)		
	Rev./mile–at 70 km/h (45 mph)		858	754	
Wheels	Type & material		Disc, Steel		
	Rim (size & flange type)		14 X 5 1/2JJ	16 X 6JJ	
	Wheel offset		46		
	Attachment	Type (bolt or stud)	Stud		
		Circle diameter	114.3		
		Number & size	5, M12 X 1.5		
∅ Spare	Tire and wheel		T125/70D15, 4T X 15 High pressure tire		
	Storage position & location (describe)		On cargo Floor		

Tires And Wheels (Optional)

Tire size (load range, ply)	–	P205/55VR16, Std load	–
Type (bias, radial, steel, nylon, etc.)	–	Radial	–
Wheel (type & material)	–	Disc, Steel or Aluminum	–
Rim (size, flange type and offset)	–	16 X 6JJ	–
Tire size (load range, ply)	–	205/55VR16, Load range C	
Type (bias, radial, steel, nylon, etc.)	–	Radial	
Wheel (type & material)	–	Disc, Steel or Aluminum	
Rim (size, flange type and offset)	–	16 X 6JJ	
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		One handle, Hand-operated
Location of control		Between front seats
Operates on		Rear wheels
If separate from service brakes	Type (internal or external)	N.A.
	Drum diameter	N.A.
	Lining size (length x width x thickness	N.A.

MVMA Specifications Form

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METRIC (U.S. Customary)

Body Type And/Or Engine Displacement	D21A	D22A

Steering

Manual (std., opt., n.a.)				Std.	N.A.
Power (std., opt., n.a.)				Opt.	Std.
Adjustable steering wheel/column (tilt, telescope, other)		Type		Tilt	
		Manufacturer		Mitsubishi Motors Corp.	
		(Std., opt., n.a.)		Std.	
Wheel diameter** (W9) SAE J1100		Manual		372	-
		Power		-	372
Turning diameter m (ft.)	Outside front	Wall to wall (l. & r.)		M/S:11.2(36.7) P/S:11.6(38.1)	11.6 (38.1)
		Curb to curb (l. & r.)		M/S:10.4(34.1) P/S:10.8(35.4)	10.8 (35.4)
	Inside rear	Wall to wall (l. & r.)		M/S: 6.0(19.7) P/S: 6.4(21.0)	6.4 (21.0)
		Curb to curb (l. & r.)		M/S: 6.2(20.3) P/S: 6.6(21.7)	6.6 (21.7)
Scrub Radius*				-10.9	-14.3
Manual	Gear	Type		Rack & pinion	N.A.
		Manufacturer		Koyo Seiko Co.,Ltd.	N.A.
		Ratios	Gear	-	N.A.
			Overall	23.8	N.A.
	No. wheel turns (stop to stop)			4.2	N.A.
Power	Type (coaxial, elec., hyd., etc.)			Integral	
	Manufacturer			Koyo Seiko Co.,Ltd.	
	Gear	Type		Rack & Pinion	
		Ratios	Gear	-	
			Overall	15.8	
	Pump (drive)			V-belt	
	No. wheel turns (stop to stop)			2.7	
Linkage	Type			Trailing, equal length tie rods	
	Location (front or rear of wheels, other)			Rear	
	Tie rods (one or two)			Two	
Steering axis	Inclination at camber (deg.)			14°06'	14°20'
	Bearings (type)	Upper		Ball bearing	
		Lower		Ball joint	
		Thrust		N.A.	
Steering spindle & joint type				Ball	
Wheel spindle/hub	Diameter	Inner bearing		40.0 (mm)	
		Outer bearing		40.0 (mm)	
	Thread (size)			M22 X 1.5 (Metric)	
	Bearing (type)			Ball	

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

**See Page 22

MVMA Specifications Form

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METRIC (U.S. Customary)

Body Type And/Or Engine Displacement	D21A		D22A
	MNJEL, MRJEL	MNHEL, MRHEL	

Wheel Alignment

Front wheel at curb mass (wt.)	Service checking	Caster (deg.)	2°20' ± 30'	
		Camber (deg.)	0°15' ± 30'	0°05' ± 30'
		Toe-in [outside track-mm (in.)]	0 ± 3 (0 ± 0.118)	
	Service reset*	Caster	–	
		Camber	–	
		Toe-in	–	
	Periodic M.V. inspection	Caster	–	
		Camber	–	
		Toe-in	–	
Rear wheel at curb mass (wt.)	Service checking	Camber (deg.)	-0°45' ± 30'	
		Toe-in [outside track-mm (in.)]	0 ± 3 (0 ± 0.118)	
	Service reset*	Camber	–	
		Toe-in	–	
	Periodic M.V. inspection	Camber	–	
		Toe-in	–	

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

Electrical – Instruments and Equipment

Speedometer	Type (analog, digital, std., opt.)	Analog (Std.)	
	Trip odometer (std., opt., n.a.)	Std.	
EGR maintenance indicator		N.A.	
Charge indicator	Type	Voltage relay	
	Warning device (light, audible)	Light	
Temperature indicator	Type	Cross coil	
	Warning device (light, audible)	Driving pointer	
Oil pressure indicator	Type	Pressure switch and Electric Thermal	
	Warning device (light, audible)	Light	
Fuel indicator	Type	Cross coil and Thermistor	
	Warning device (light, audible)	Driving pointer & Light	
Windshield wiper	Type (standard)	Electric two speed with variable intermittent	
	Type (optional)	N.A.	
	Blade length	500 (DR. Side, AS. Side)	(mm)
	Swept area [cm²(in.²)]	6427 (996)	
Windshield washer	Type (standard)	Electric	
	Type (optional)	N.A.	
	Fluid level indicator (light, audible)	N.A.	
Rear window wiper, wiper/washer (std., opt., n.a.)		Opt.	
Horn	Type	80 diameter	
	Number used	One	Two
Other		Brake system and parking brake warning light, Fasten belts warning light, Coolant level warning light.	

MVMA Specifications Form

Vehicle Line Laser
Model Year 1990 Issued 1988-8 Revised (•) _____

METRIC (U.S. Customary)

Engine Description/Carb. / Engine Code	4G37 (1.755 Liters)		4G63 (1.997 Liters)		4G63 with Turbo (1.997 Liters)
	MT	AT	MT	AT	

Electrical – Supply System

Battery	Manufacturer	JOHNSON CONTROLS				
	Model, std., (opt.)	BCI Size GROUP 86				
	Voltage	12				
	Amps at 0°F cold crank	430				
	Minutes-reserve capacity	90				
	Amp/hrs. - 20 hr. rate	60				
	Location	Front, right side of engine compartment				
Alternator	Manufacturer	Mitsubishi Electric Corp.				
	Rating (idle/max. rpm)	65	75	65	75	
	Ratio (alt. crank/rev.)	2.65	2.43	2.29		
	Output at idle (rpm, park)	-				
	Optional (type & rating)	N.A.				
Regulator	Type	Voltage control				

Electrical – Starting System

Start. motor	Manufacturer	Mitsubishi Electric Corp.			
	Current drain at 0°F	-			
	Power rating [kw (hp)]	0.7	0.9	1.2	
Motor drive	Engagement type	Solenoid			
	Pinion engages from (front, rear)	Front			

Electrical – Ignition System

Type	Electronic (std., opt., n.a.)	Std.			
	Other (specify)	-			
Coil	Manufacturer	N.A.	Mitsubishi Electric Corp.		
	Model	N.A.	H4T00172		
	Current – Engine stopped – A	N.A.	0		
	Current – Engine idling – A	N.A.	1.4		
Spark plug	Manufacturer	NGK Spark Plug Co.,Ltd., Champion Spark Plug Co.,Ltd. or Nippon Denso			
	Model	BPR6ES-11, RN9YC4 or W20EPR-S11			BPR6ES, RN9YC or W20EPR
	Thread (mm)	14			
	Tightening torque [N-m (lb. ft)]	20 to 30 (15 to 22)			
	Gap	1.0 to 1.1 (mm)			0.7 to 0.8 (mm
	Number per cylinder	1			
Distributor	Manufacturer	Mitsubishi Electric Corp.	N.A.		
	Model	T6T 57071	N.A.		

Electrical – Suppression

Locations & type	-

MVMA Specifications Form

Vehicle Models Laser
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METRIC (U.S. Customary)

Body Type	D21A, D22A

Body

Structure	Monocock body
∅ Bumper system front - rear	Impact absorbing system Fascia (Polyurethane) Energy absorber (Fluid type) Reinforcement (Steel)
Anti-corrosion treatment	Cathodic ED Paint Extended use of galvanized Wax injection Stone chipping resistance coating

∅ Body – Miscellaneous Information

Type of finish (lacquer, enamel, other)		Heat setting acrylic enamel
Hood	Material & mass	Steel, 17.2 kg
	Hinge location (front, rear)	Rear
	Type (counterbalance, prop)	–
	Release control (internal, external)	Internal
Trunk lid	Material & mass	–
	Type (counterbalance, other)	–
	Internal release control (elec., mech., n.a.)	–
Hatch-back lid	Material & mass	Steel, 10.1 kg
	Type (counterbalance, other)	Gas spring
	Internal release control (elec., mech., n.a.)	Mech.
Tailgate	Material & mass	–
	Type (drop, lift, door)	–
	Internal release control (elec., mech., n.a.)	–
Vent window control (crank, friction, pivot, power)	Front	–
	Rear	–
Window regulator type (cable, tape, flex, drive, etc.)	Front	Cable
	Rear	–
Seat cushion type (e.g., 60/40, bucket, bench, wire, foam etc.)	Front	Bucket, Foam
	Rear	Bench, Foam
	3rd seat	–
Seat back type (e.g., 60/40, bucket, bench, wire, foam etc.)	Front	Bucket, Spring
	Rear	Bench, Foam
	3rd seat	–

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METRIC (U.S. Customary)

Vehicle Line Laser
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Body Type	D21A, D22A

Restraint System

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

Glass	SAE Ref. No.	
Windshield glass exposed surface area [cm^2($in.^2$)]	S1	10291 (1595)
Side glass exposed surface area [cm^2($in.^2$)] - total 2-sides	S2	9393 (1456)
Backlight glass exposed surface area [cm^2($in.^2$)]	S3	8839 (1370)
Total glass exposed surface area [cm^2($in.^2$)]	S4	28523 (4421)
Windshield glass (type)		Curved-laminated plate
Side glass (type)		Curved-Tempered plate
Backlight glass (type)		Curved-tempered plate

Lamps and Headlamp Locations

Headlamps	Description - sealed beam, halogen, replaceable bulb, etc.	Sealed beam, Halogen
	Shape	Rectangular
	Lo-beam type (2A1, 2B1, 2C1, etc.)	2E1
	Quantity	Two
	Hi-beam type (1A1, 2A1, 1C1, 2C1, etc.)	2E1
	Quantity	Two

Frame

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

MVMA Specifications Form

METRIC (U.S. Customary)

Vehicle Line Laser

Model Year 1990 Issued 1988-8 Revised (•) _____

Body Type	D21A		D22A	
	MNJEL, MRJEL	MNHEL, MRHEL	MNHML, MRHML	MNHFL

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

3 Air conditioning (manual, auto. temp control)		Opt. (Manual temp control)	
Clock (digital, analog)		Std. (Digital)	
Compass/thermometer		N.A.	
Console (floor, overhead)		Floor console	
Defroster, elec. backlight		Std.	
Electronic	Diagnostic monitor (integrated, individual)	Integrated	
	Instrument cluster (list instruments)	Std. (Speedometer, Tachometer, Tripmeter, Fuel Ind. Eng. Coolant Ind., Oil pressure Ind., Battery Ind., Brake Ind.)	
		-	Boost Meter
	Keyless entry	N.A.	
	Tripminder (avg. spd., fuel)	N.A.	
	Voice alert (list items)	N.A.	
	Other	-	
Fuel door lock (remote, key, electric)		Remote	
Lamps	Auto head on/off delay, dimming	N.A.	
	Cornering	N.A.	
	Courtesy (map, reading)	Room, Map, Foot	
	Door lock, ignition	Ignition	
	Engine compartment	N.A.	
	Fog	N.A.	
	Glove compartment	Std.	
	Trunk	Std.	
Ø	Illuminated entry system (list lamps, activation)	N.A.	
	Other	-	
Mirrors	Day/night (auto. man.)	Std. (Man)	
	L.H. (remote, power, heated)	Std. (Direct remote)	Std. (power)
	R. H. (convex, remote, power, heated)	Std. (Direct remote)	Std. (power)
	Visor vanity (RH / LH, illuminated)	RH/LH	
Ø Navigation system (describe)		N.A.	
Parking brake-auto release (warning light)		N.A.	

MVMA Specifications Form

METRIC (U.S. Customary)

Vehicle Line Laser
Model Year 1990 Issued 1988-8 Revised (•) _____

Body Type	D21A		D22A	
	MNJEL, MRJEL	MNHEL, MRHEL	MNHML, MRHML	MNHFL

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

Ø	Deck lid (release, pull down)		N.A.	
	Door locks (manual, automatic, describe system)		Single Action Key Less Lock	
			-	Opt. (Center Door Lock)
Power equipment	Seats	2 - 4 - 6 way, etc.	N.A.	
		Reclining (R.H., L.H.)	N.A.	
		Memory (R.H., L.H., preset, recline)	N.A.	
		Lumbar, hip, thigh, support	N.A.	
		Heated (R.H., L.H., other)	N.A.	
	Side windows		N.A.	Opt. (Power Window)
	Vent windows		N.A.	
	Rear windows		N.A.	
	Antenna (location, whip, w/shield, power)		Rear Quarter, Whip.	
Ø	Radio systems — Standard	AM, FM, stereo, tape, compact disc, graphic equalizer, theft deterrent, radio prep package, headphone jacks, etc.	AM/FM MPX ETR	AM/FM MPX ETR & Casset Stereo
	Radio systems — Optional		AM/FM (MPX) ETR & Casset Stereo	-
			Audio System (AM/FM MPX ETR & Casset Stereo with Graphic equalizer)	
			Audio System (AM/FM ETR with Casset Stereo & CD Player)	
	Speaker (number, location)		Std. (I/pan•••2, Rear Seat Side•••2)	
			Opt. (Front Door•••2)	
	Roof open air fixed (flip-up, sliding, "T")		N.A.	
	Speed control device		Opt.	
	Speed warning device (light, buzzer, etc.)		N.A.	
	Tachometer (rpm)		Std.	
	Telephone system (describe)		N.A.	
	Theft deterrent system		N.A.	

MVMA Specifications Form

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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.	D21A, D22A
Width		
Tread (front)	W101	1465
Tread (rear)	W102	1450
Vehicle width	W103	1690
Body width at Sg RP (front)	W117	1690
Vehicle width (front doors open)	W120	1690
Vehicle width (rear doors open)	W121	–
Front fender overall width	W106	1675
Rear fender overall width	W107	1660
Tumble-home (deg.)	W122	30°
Vehicle width including mirrors		–
Length		
Wheelbase	L101	2470
Vehicle length	L103	4330
Overhang (front)	L104	950
Overhang (rear)	L105	910
Upper structure length	L123	2560
Rear wheel C/L "X" coordinate	L127	2470
Cowl point "X" coordinate	L125	410
Front end length at centerline	L126	1285
Rear end length at centerline	L129	325
Height*		
Passenger distribution (front/rear)	PD1,2,3	Front: 2, Rear: 2
Trunk/cargo load		–
Vehicle height	H101	1306
Cowl point to ground	H114	920
Deck point to ground	H138	985
Rocker panel-front to ground	H112	216
Bottom of door closed-front to ground	H133	364
Rocker panel-rear to ground	H111	218
Bottom of door closed-rear to ground	H135	–
Windshield slope angle	H122	63°
Backlight slope angle	H121	72°
Ground Clearance*		
Front bumper to ground	H102	201
Rear bumper to ground	H104	298
Bumper to ground [front at curb mass (wt.)]	H103	242
Bumper to ground [rear at curb mass (wt.)]	H105	347
Angle of approach (degrees)	H106	16.5°
Angle of departure (degrees)	H107	19.0°
Ramp breakover angle (degrees)	H147	16°
Axle differential to ground (front / rear)	H153	Front 195
Min. running ground clearance	H156	160
Location of min. run. grd. clear.		Flexible Pipe

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

MVMA Specifications Form

Vehicle Models Laser
Model Year 1990 Issued 1988-8 Revised (•) _____

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

Body Type	SAE Ref. No.	D21A, D22A
Front Compartment		
Sg RP front, "X" coordinate	L31	1410
Effective head room	H61	962
Max. eff. leg room (accelerator)	L34	1114
SgRP to heel point	H30	197
SgRP to heel point	L53	910
Back angle	L40	25°
Hip angle	L42	101°
Knee angle	L44	141°
Foot angle	L46	95°
Design H-point front travel	L17	260
Normal driving & riding seat track trvl.	L23	260
Shoulder room	W3	1370
Hip room	W5	1400
Upper body opening to ground	H50	1190
Steering wheel maximum diameter*	W9	370
Steering wheel angle	H18	19°
Accel. heel pt. to steer. whl. cntr	L11	420
Accel. heel pt. to steer. whl. cntr	H17	760
Steering wheel to C/L of thigh	H13	123
Steering wheel torso clearance	L7	410
Headlining to roof panel (front)	H37	20
Undepressed floor covering thickness	H67	20
Rear Compartment		
Sg RP Point couple distance	L50	635
Effective head room	H63	867
Min. effective leg room	L51	724
Sg RP (second to heel)	H31	285
Knee clearance	L48	0
Compartment room	L3	525
Shoulder room	W4	1330
Hip room	W6	1160
Upper body opening to ground	H51	1180
Back angle	L41	27°
Hip angle	L43	88°
Knee angle	L45	72°
Foot angle	L47	102°
Headlining to roof panel (second)	H38	20
Depressed floor covering thickness	H73	20
Luggage Compartment		
Usable luggage capacity [L (cu. ft.)]	V1	N.A.
Liftover height	H195	935
Interior Volumes (EPA Classification)		
Vehicle class		Sub compact cars
Interior volume index (cu. ft.)		91
Trunk / cargo index (cu. ft.)		10.201

* See Page 14.

MVMA Specifications Form

Vehicle Line Laser
Model Year 1990 Issued 1988-8 Revised (•) _____

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

Body Type		D21A, D22A
Station Wagon – Third Seat	**SAE Ref. No.**	
Seat facing direction	SD1	–
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	–
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	840
Cargo length at floor (front)	L209	1405
Cargo length at second seatback height	L210	424
Cargo length at floor (second)	L211	755
Front seatback to load floor height	H197	488
Second seatback to load floor height	H198	368
Cargo volume index [m^3($ft.^3$)]	V3	0.729 (25.7)
Hidden cargo volume index [m^3($ft.^3$)]	V4	–
Cargo volume index-rear of 2-seat	V11	0.288 (10.2)
Aerodynamics*		
Wheel lip to ground, front		680
Wheel lip to ground, rear		690
Frontal area [m^2(ft^2)]		–
Drag coefficient (Cd)		0.331

* EPA Loaded Vehicle Weight, Loading Conditions

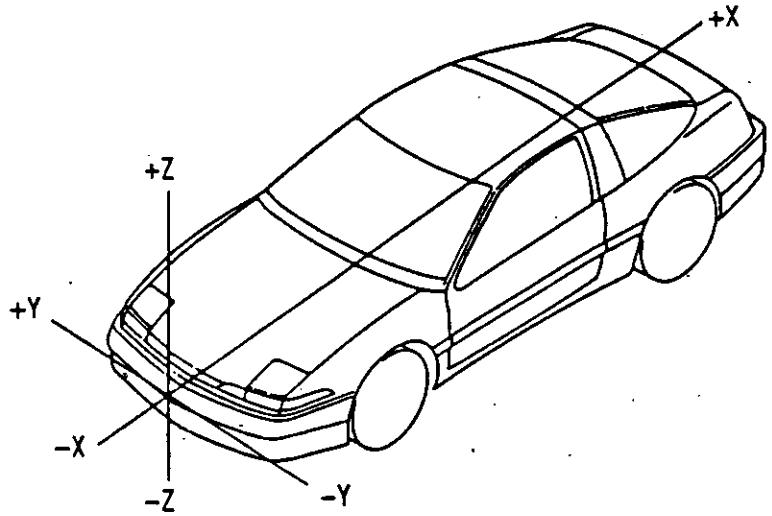
MVMA Specifications Form

METRIC (U.S. Customary)

Vehicle Line Laser
Model Year 1990 Issued 1988-8 Revised (•) _____

Body Type	D21A, D22A

Vehicle Fiducial Marks

Fiducial Mark Number*	Define Coordinate Location
Front / Rear	 Datum plane definition – Vertical longitudinal plane through the longitudinal center of the car. Vertical transverse plane through the front wheel center. Horizontal plane through the lower surface of the front floor panel.

Fiducial Mark Number		
Front	W21*	480
	L54*	-405
	H81*	195
	H161*	410
	H163*	–
Rear	W22*	480
	L55*	2975
	H82*	196
	H162*	414
	H164*	–

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

MVMA Specifications Form

Vehicle Line Laser

Model Year 1990 Issued 1988-8 Revised (•) _____

METRIC (U.S. Customary)

Code Model	Vehicle Mass (weight)							
	CURB MASS, kg. (lb.)*			% PASS. MASS DISTRIBUTION				
				Pass in Front		Pass in Rear		
	Front	Rear	Total	Front	Rear	Front	Rear	ETWC**
D21AMNJEL 4P, 9P	700	445	1145	43	57	17	83	
	(1543)	(981)	(2524)					
D21AMRJEL 4P, 9P	725	445	1170	43	57	17	83	
	(1598)	(981)	(2579)					
D21AMNHEL 4P, 9P	715	452	1167	43	57	17	83	
	(1576)	(996)	(2572)					
D21AMRHEL 4P, 9P	740	452	1192	43	57	17	83	
	(1631)	(996)	(2627)					
D22AMNHML 4P, 9P	755	460	1215	43	57	17	83	
	(1664)	(1014)	(2678)					
D22AMRHML 4P, 9P	780	460	1240	43	57	17	83	
	(1720)	(1014)	(2734)					
D22AMNHFL 4P, 9P	780	465	1245	43	57	17	83	
	(1720)	(1025)	(2745)					

SHIPPING MASS (weight) = Curb Weight Less Kg. (lbs.) _____

* Reference – SAE J1100 Motor vehicle dimensions, curb weight definition.

** ETWC - Equivalent Test Weight Class - U.S. Environmental Protection Agency emission certifications are based on the ETWC's shown.

NA - Not Applicable - applies to model / series combinations not requiring testing.

MVMA Specifications Form

METRIC (U.S. Customary)

Vehicle Line Laser
Model Year 1990 Issued 1988-8 Revised (•) _____

Code	Equipment	Optional Equipment Differential Mass (weight)* MASS. kg. (lb.) Front	Rear	Total	Remarks Restrictions, Requirements
	Air-Conditioner	22.4 (49.4)	0 (0)	22.4 (49.4)	
	Rear Shelf	0 (0)	2.6 (5.7)	2.6 (5.7)	
	Power Steering	6.7 (14.8)	0 (0)	6.7 (14.8)	
	Rear Window Wiper	0 (0)	3.7 (8.2)	3.7 (8.2)	
	Power Window	1.4 (3.1)	1.5 (3.3)	2.9 (6.4)	
	Auto Speed Control	3.8 (8.4)	0 (0)	3.8 (8.4)	

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