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MANUFACTURERS MOTOR VEHICLE SPECIFICATIONS

METRIC(U.S. Customary)

Passenger Car

1987

Manufacturer ALFA ROMEO AUTO S.p.A.	Car Line 1010 (SPIDER VELOCE 2000)	
Mailing Address V.le Alfa Romeo 20020 ARESE MILANO (Italy)	Issued Nov.86	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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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 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)
Spider 2000 R.W.D.	MY87	ALFA ROMEO 1010 Road Ster 115.41	2	20 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.)			
Spider Veloce 2000	1.962	E.F.I.S.	9	84.5	161.7	S	MT	4.1

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Engine Description/Carb.
 Engine Code

1962 cc E.F.I.S.

ENGINE - GENERAL

Type & description (inline, V, angle, flat, location, front, mid, rear, transverse, longitudinal, sohc, dohc, ohv, hemi, wedge, pre-camber, etc.)		4 cil. in line 2 over head camshaft in front	
Manufacturer		Alfa Romeo Auto Spa	
No. of cylinders		4	
Bore		84	mm
Stroke		88.5	mm
Bore spacing (C/L to C/L)		93-93-93	mm
Cylinder block material & mass kg (lbs.) (machined)		Aluminium alloy	
Cylinder block deck height		291.5	mm
Cylinder block length			
Deck clearance (minimum) (above or below block)		0.1 above	mm
Cylinder head material & mass kg (lbs.)		Aluminium alloy	
Cylinder head volume (cm³)		91.5	cm³
Cylinder liner material		Cast iron for cyminder liner	
Head gasket thickness (compressed)		1.5	mm
Minimum combustion chamber total volume (cm³)		58.5	cm³
Cyl. no. system (front to rear)*	L. Bank	in line 1-2-3-4	
	R. Bank		
Firing order		1-3- 4-2	
Intake manifold material & mass (kg (lbs.))**		Aluminium alloy	
Exhaust manifold material & mass (kg (lbs.))**		Ferritic cast iron	
Recommended fuel (leaded, unleaded, diesel)		Unleaded	
Fuel antiknock index (R + M) 2		87 91 RON 83 MON	
Total dressed engine mass (wt) dry***		145	Kg

Engine - Pistons

Material & mass, g (weight, oz.) - piston only	Aluminium alloy 445 g
--	-----------------------

Engine - Camshaft

Location	2 overhead		
Material & mass kg (weight, lbs.)	Casehardened steel R.1.887 L.1.910 Kg		
Drive type	Chain / belt	22.86	mm
	Width / pitch	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: intake manifold and filter, alternator, starting motor, exhaust gas manifold, compressor.

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1962 c.c. E.F.I.S.

Engine - Valve System

Hydraulic lifters (std., opt., NA)	N.A.
Valves	Number intake / exhaust I= 4 E.=4
	Head O.D. intake / exhaust over head

Engine - Connecting Rods

Material & mass (kg., (weight, lbs.))*	Drop forged hardened and tempered steel	720 g.
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Engine - Crankshaft

Material & mass (kg., (weight, lbs.))*	Drop forged hardened tempered and soft nitrited steel	19 Kg
End thrust taken by bearing (no.)	n°2 central	
Number of main bearings	n°5 (3 central)	
Seal (material, one, two piece design, etc.)	Front	1 RING CORTECO M.27 S1 7505
	Rear	1 RING CORTECO M.27 S1 7505

Engine - Lubrication System

Normal oil pressure (kPa (psi) at engine rpm)	442±490 KPa at 5500 r.p.m.
Type oil intake (floating, stationary)	Stationary
Oil filter system (full flow, part, other)	Full flow
Capacity of oil case, less filter-refill-L (qt.)	3.360

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	
Super charger - manufacturer	
Charge cooler	

*Finished State

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1962 c.c. E.F.I.S.

Engine - Cooling System

Coolant recovery system (std., opt., n.a.)	Std.	
Coolant fill location (rad., bottle)	Bottle	
Radiator cap relief valve pressure (kPa (psi))	69 KPa	
Circulation thermostat	Type (choke, bypass)	By pass controlled
	Starts to open at °C (°F)	83° ± 2° °C
Water pump	Type (centrifugal, other)	Centrifugal
	GPM 1000 pump rpm	400 l/h at 1000 rpm with open circuit. No heater
	Number of pumps	one
	Drive (V-belt, other)	V- belt
	Bearing type	Ball integral shaft permanently molded
	Impeller material	
	Housing material	Aluminium alloy
By-pass recirculation (type (inter., ext.))	External	
Cooling system capacity	With heater—L.(qt.)	9.7 1
	With air cond.—L.(qt.)	8.2 1
	Opt. equipment (specify—L.(qt.))	N.A.
Water jackets full length of cyl. (yes, no)	NO	
Water all around cylinder (yes, no)	Yes	
Water jackets open at head face (yes, no)	NO	
Radiator core	Std., A/C, HD	Std
	Type (cross-flow, etc.)	Cross-flow
	Construction (fin & tube mechanical, braze, etc.)	Fin & tube
	Material, mass (kg (wgt. lbs.))	
	Width	453 mm
	Height	323 mm
	Thickness	43 mm
	Fins per inch	15.8 mm
Radiator end tank material	Vestolen PX3130 - Vestolen 6502	
Fan	Std., elec., opt.	Std
	Number of blades & type (flex, solid, material)	6PA 5750
	Diameter & projected width	Ø 300 mm
	Ratio (fan to crankshaft rev.)	1:1
	Fan cutout type	N.A.
	Drive type (direct, remote)	Direct
	RPM at idle (elec.)	/
	Motor rating (wattage) (elec.)	/
	Motor switch (type & location) (elec.)	/
	Switch point (temp., pressure) (elec.)	/
	Fan shroud (material)	/

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1962 c.c. E.F.I.S.

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

Induction type: carburetor, fuel injection system, etc.		E.F.I.S. L.Jetronic	
Manufacturer		Bosch	
Carburetor	Choke (type)	/	
	Idle spd.-rpm (spec. neutral or drive and propane if used)	Manual	/
		Automatic	/
Idle A/F mix.		(0.3 + 1.5)%	
Fuel injection	Point of injection (no.)	7° B.T.D.C.	
	Constant, pulse, flow	Constant	
	Control (electronic, mech.)	Electronic	
	System pressure (kPa (psi))	300	KPa
Intake manifold heat control (exhaust or water thermostatic or fixed)		water	
Air cleaner type	Standard	Replacement paper Std.	
	Optional	/	
Fuel pump	Type (elec. or mech.)	electrical	
	Location (eng., tank)	under floor	
	Pressure range (kPa (psi))	118 + 196	KPa

Fuel Tank

Capacity (refill L (gallons))		46	1.
Location (describe)		In the luggage compartment	
Attachment		3 Screws	
Material & Mass (kg (weight lbs))		FeP Zn8	
Filler pipe	Location & material	Rear left side	
	Connection to tank	Welded	
Fuel line (material)		Steel tube for petrol	
Fuel hose (material)		Rubber	
Return line (material)		Steel tube for petrol	
Vapor line (material)		Rubber	
Extended range tank	Opt., n.a.	/	
	Capacity (L (gallons))	/	
	Location & material	/	
	Attachment	/	
Auxiliary tank	Opt., 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)		E.F.I.S. T.W.C. + Cosed loop
	Air Injection	Pump or pulse	/
		Driven by	/
		Air distribution (head, manifold, etc.)	/
		Point of entry	/
	Exhaust Gas Recirculation	Type (controlled flow, open orifice, other)	/
		Exhaust source	/
		Point of exhaust injection (spacer, carburetor, manifold, other)	/
	Catalytic Converter	Type	T.W.C.C.
		Number of	one
Location(s)		Forward under floor	
Volume (L (in ³))		3.4 1.	
Substrate type		2 monolithic	
Crankcase Emission Control	Type (ventilates to atmosphere, induction system, other)		Induction system
	Energy source (manifold vacuum, carburetor, other)		Manifold vacuum
	Discharges (to intake manifold, other)		To intake manifold
	Air inlet (breather cap, other)		/
Evaporative Emission Control	Vapor vented to (crankcase, canister, other)	Fuel tank	Vapor vented to intake manifold
		Carburetor	/
	Vapor storage provision		Canister
Electronic system	Closed loop (yes/no)		Closed loop
	Open loop (yes/no)		/

Engine - Exhaust System

Type (single, single with cross-over, dual, other)		Single
Muffler no. & type (reverse flow, straight thru, separate resonator) Material & Mass (kg (weight lbs))		1st catalytic converter 2nd and 3rd straight thru
Resonator no. & type		2 filled with lana di roccia
Exhaust pipe	Branch o.d., wall thickness	38x4.5 mm
	Main o.d., wall thickness	38x1.5 mm
	Material & Mass (kg (weight lbs))	stainless steel tubes
Inter- mediate pipe	o.d. & wall thickness	50x1.5 mm
	Material & Mass (kg (weight lbs))	steel tubes
Tail pipe	o.d. & wall thickness	50x1.5 mm
	Material & Mass (kg (weight lbs))	steel tubes

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Transmissions/Transaxle

Manual 3-speed (std., opt., n.a.) (mfr.)	/
Manual 4-speed (std., opt., n.a.) (mfr.)	/
Manual 5-speed (std., opt., n.a.) (mfr.)	Std.
Manual overdrive (std., opt., n.a.) (mfr.)	/
Automatic (std., opt., n.a.) (mfr.)	/
Automatic overdrive (std., opt., n.a.) (mfr.)	/

Manual Transmission/Transaxle

Number of forward speeds		5	
Transmission ratios	In first	3.30	
	In second	1.90	
	In third	1.35	
	In fourth	1.00	
	In fifth	0.79	
	In overdrive	/	
	In reverse	3.01	
Synchronous meshing (specify gears)		1-2-3-4-5	
Shift lever location		on the floor	
Lubricant	Capacity [L (pt.)]		1.85 1
	Type recommended		See foot note (A)
	SAE viscosity number	Summer	SAE 85 W/90
		Winter	SAE 85 W/90
		Extreme cold	/

Clutch (Manual Transmission)

Make, type, engagement (describe) - (hydraulic, cable, rod)		Fichtel and Sachs dry discs hydraulic
Assist (yes, no, percent)		yes
Type pressure plate springs		Cone diaphragm
Total spring load [N (lb.)]		4600 + 5200 N.
No. of clutch driven discs		one
Clutch facing	Material	S 50/17
	Manufacturer	Texfar
	Part number	Alfa Romeo 105.12.12.032.00
	Rivets/plate	16
	Rivet size	Ø 5 lenght 5.3 mm
	Outside & inside dia.	216 x 144 mm
	Total eff. area [cm ² (in. ²)]	406.96 cm ²
	Thickness	8.9 new 5.3 worn mm
	Engagement cushion method	Flat wave spring
Release bearing	Type & method of lubrication	Ball bearing permanent lubricated
Torsional damping	Method: springs, friction material	Coil springs and friction washer

A) Classification SAE 85 W/90 commercial AGIP F1 ROTRA MP
 or AGIP L5 equivalents SAE 85 W/90
 SHELL SPIRA 90HD
 IP PONTIAC HD

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Automatic Transmission/Transaxle

Trade name		
Type and special features (describe)		
Selector	Location	
	Ltr. No. designation	
Gear ratios	1st	
	2nd	
	3rd	
	4th	
	Reverse	
Max. upshift speed - drive range (km/h (mph))		
Max. kickdown speed - drive range (km/h (mph))		
Min. overdrive speed (km/h (mph))		
Torque converter	Number of elements	
	Max. ratio at stall	
	Type of cooling (air, liquid)	
	Nominal diameter	
Lubricant	Capacity (refill L (pt.))	
	Type Recommended	
Oil cooler (std., opt., NA, internal, external, air, liquid)		

Axle or Front Wheel Drive Unit

Type (front, rear)	Rear
Description	Live axle with final drive of hypoid tyre
Limited slip differential (type)	Friction disc
Drive pinion offset	3175 mm
Drive pinion (type)	hypoid
No. of differential pinions	2
Pinion / differential adjustment (shim, other)	Shim
Pinion / differential bearing adjustment (shim, other)	Shim
Driving wheel bearing (type)	Ball bearing permanently lubricated
Lubricant	Capacity (L (pt.))
	Type recommended
	SAE viscosity number
	Summer Winter Extreme cold

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

Axle ratio (or overall top gear ratio)		4.1
No. of teeth	Pinion	10
	Ring gear or gear	41
Ring gear o.d.		184.526
Transaxle	Transfer gear ratio	
	Final drive ratio	

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Propeller Shaft - Rear Wheel Drive

Manufacturer Type (straight tube, tube-in-tube, internal-external damper, etc.)		ALFA ROMEO AUTO S.p.A. Straight tube	
Outer diam. x length* x wall thickness	Manual 3-speed trans.	/	
	Manual 4-speed trans.	/	
	Manual 5-speed trans.	Front 70x567x2	Rear 70x624x2 mm
	Overdrive	/	
	Automatic transmission	/	
Inter- mediate bearing	Type (plain, anti-friction)	Ball bearing	
	Lubrication (fitting, prepack)	Prepack	
Slip yoke	Type	Sliding spline	
	Number of teeth	16	
	Spline o.d.	26.7	
Universal joints	Make and mfg. no.	Front	SAGA-Alfa Romeo Part N°105.00.15.300.00
		Rear	Central and rear Spica Alfa Romeo Part N°105.12.15.030.00
	Number used		3
	Type (ball and trunnion, cross)		Front: hexagonal rubber joint Central and Rear: cross joint
	Rear attach (u-bolt, clamp, etc.)		Belted roller
	Bearing	Type (plain, anti-friction)	Needle roller
Lubrication (fitting, prepack)		Prepack	
Drive taken through (torque tube, arms or springs)		Trailing arms	
Torque taken through (torque tube, arms or springs)		Rear suspension 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	Direct telescopic type
	Make	Spica
	Piston diameter	Ø36 front and rear mm
	Rod diameter	None

Suspension - Front

Type and description		Independent transverse links, antiroll bar	
Travel	Full jounce	99	mm
	Full rebound	65	mm
Spring	Type (coil, leaf, other) & material	coil chromium alloy steel	
	Insulators (type & material)	rubber seat	
	Size (coil design height & i.d., bar length x dia.)	Free length = 318	mm
		Ant. dia. = 103.7	mm
		bar dia. = 16.3	mm
	Spring rate (N/mm (lb./in.))	71.1	N/mm
	Rate at wheel (N/mm (lb./in.))	9.1	N/mm
Stabilizer	Type (link, linkless, frameless)	Link	
	Material & bar diameter	Spring steel Ø 24 mm	

Suspension - Rear

Type and description		Live axle with longitudinal trailing arms and T arm for transverse reaction. All rubber bushed	
Travel	Full jounce	90	mm
	Full rebound	90	mm
Spring	Type (coil, leaf, other) & material	Chromium alloy steel	
	Size (length x width, coil design height & i.d., bar length & dia.)	Free length = 457	mm
		Int. dia. = 92.1	mm
		Rear dia. = 11.9	mm
	Spring rate (N/mm (lb./in.))	11.5	N/mm
	Rate at wheel (N/mm (lb./in.))	11	N/mm
	Insulators (type & material)	Rubber seat	
	If leaf	No. of leaves	N.A.
		Shackle (comp. or tens.)	N.A.
Stabilizer	Type (link, linkless, frameless)	Link	
	Material & bar diameter	Spring steel diameter Ø14 mm	
Track bar (type)			

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Brakes - Service

Description		Hydraulic braking system servo assisted	
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)	Metering	
Power brake (std., opt., n.a.)		Std.	
Booster type (remote, integral, vac., hyd., etc.)		Vacuum	
Vacuum source (inline, pump, etc.)		In line	
Vacuum reservoir (volume in. ³)		/	
Vacuum pump-type (elec. gear driven, belt driven, if other so state)		/	
Anti-lock device type (std., opt., n.a.) (F.R)		N.A.	
Effective area [cm ² (in. ²)]*		Front 143.8	Rear 78.5 Total 222.3 cm ²
Gross lining area [cm ² (in. ²)]** (F.R)		Front 147.8	Rear 82.3 Total 230.1 cm ²
Swept area [cm ² (in. ²)]*** (F.R)		Front 1152.2	Rear 1074.5 Total 2526.7 cm ²
Rotor	Outerworking diameter	F.R	F. 268 R. 263 mm
	Inner working diameter	F.R	F. 154 R. 182 mm
	Thickness	F.R	F. 12.7 R. 9.5 mm
	Material & type (vented solid)	F.R	Cast iron - solid Front and rear
Drum	Diameter & width	F.R	N.A.
	Type and material	F.R	N.A.
Wheel cylinder bore		F. 48 R. 38 mm	
Master cylinder	Bore stroke	F.R	F. 20.64 R. 26.5 mm
Pedal arc ratio		5 mm	
Line pressure at 445 N(100 lb.) pedal load (kPa (psi))		Manual 6.65 with booster 11.47 Kpa	
Lining clearance		F.R	F. 0.15 R. 0.15 mm
Brake lining	Front wheel	Bonded or riveted (rivets seg.)	Integrally molded
		Rivet size	N.A.
		Manufacturer	ATE
		Lining code*****	Alfa Romeo P.N. 105.41.22.039.00
		Material	Necto 248 GG
		**** Primary or out-board	/
		Size Secondary or in-board	/
		Shoe thickness (no lining)	5 mm
	Rear wheel	Bonded or riveted (rivets seg.)	Integrally molded
		Manufacturer	ATE
		Lining Code*****	Alfa Romeo P.N. 105.48.26.416.00
		Material	Necto 248 GG
		**** Primary or out-board	/
		Size Secondary or in-board	/
Shoe thickness (no lining)		5 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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Tires And Wheels (Standard)

Tires	Size (load range, ply)	185/70 HR 14"	195/60 R15" 86H (Q.V.)
	Type (bias, radial, etc.)	Radial - tubless	Radial
	Inflation pressure (cold) for recommended max. vehicle load	Front (kPa (psi))	24 Psi
		Rear (kPa (psi))	27 Psi
	Rev. mile-at 70 km h (45 mph)	625	
Wheels	Type & material	Pressed-steel rims	Aluminium alloy
	Rim (size & flange type)	5Jx14"	6Jx15"H2
	Wheel offset	38	30 mm
	Attachment	Type (bolt or stud)	Stud.
		Circle diameter	108 mm
Spare		Number & size	4 Ø12 x 1.5 mm
	Tire and wheel (same, if other describe)	same	
	Storage position & location (describe)	Luggage compartment	

Tires And Wheels (Optional)

Size (load range, ply)	185/70 HR 14
Type (bias, radial, etc.)	Radial
Wheel (type & material)	Aluminium alloy offset 35
Rim (size, flange type and offset)	6Jx14" H2
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)	
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

Brakes - Parking		
Type of control		Hand brake lever
Location of control		Central tunnel on floor between the front seat
Operates on		Rear wheel (disc brake)
If separate from service brakes	Type (internal or external)	/
	Drum diameter	/
	Lining size (length x width x thickness)	/

MVMA Specifications Form Passenger Car

METRIC (U.S. Customary)

Car Line 1010 (Spider veloce 2000)

Model Year 1987 Issued Nov. 86 Revised (e) _____

Body Type And/Or
Engine Displacement

1962 c.c. E.F.I.S

Steering

Manual (std., opt., n.a.)		Std.	
Power (std., opt., n.a.)		N.A.	
Adjustable steering wheel/column (tilt, telescope, other)	Type	N.A.	
	Manufacturer	/	
	(Std., opt., n.a.)	/	
Wheel diameter** (W9) SAE J1100	Manual	380	mm
	Power	N.A.	
Turning diameter m (ft.)	Outside front	Wall to wall (l. & r.)	/
		Curb to curb (l. & r.)	10.4 m
	Inside rear	Wall to wall (l. & r.)	/
		Curb to curb (l. & r.)	/
Scrub Radius*		/	
Manual	Gear	Type	Recirculatory rolls or in alternative worn and roller
		Manufacturer	Spica
		Ratios	15:1 17.9:1
	No. wheel turns (stop to stop)		3.75
	Power	Gear	Type
Manufacturer			/
Ratios			/
Pump (drive)		/	
No. wheel turns (stop to stop)		/	
Linkage	Type		Ball jointed links
	Location (front or rear of wheels, other)		Rear of wheels (transverse drag link)
	Tie rods (one or two)		Two
Steering axis	Inclination at camber (deg.)		8°
	Bearings (type)	Upper	Ball joint
		Lower	" "
		Thrust	" "
Steering spindle & joint type		Steering spindle with needle bearings and cross joint	
Wheel spindle-hub	Diameter	Inner bearing	30 mm
		Outer bearing	17 mm
	Thread (size)		M16x1
	Bearing (type)		Taperd roller

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

**See Page 21.

MVMA Specifications Form Passenger Car

METRIC (U.S. Customary)

1010 (Spider veloce 2000)
Car Line _____
Model Year 1987 Issued Nov. 86 Revised (e) _____

Body Type And/Or
Engine Displacement

1962 c.c E.F.I.S.

Wheel Alignment

Front wheel at curb mass (wt.)	Service checking	Caster (deg.)	$10^{\circ}30' \pm 30'$
		Camber (deg.)	$0^{\circ}20' + 30'$
		Toe-in (outside track-mm (in.))	Toe-in 0 ± 3
	Service reset*	Caster	as above values
		Camber	" " "
		Toe-in	" " "
	Periodic M.V. inspection	Caster	" " "
		Camber	" " "
		Toe-in	" " "
Rear wheel at curb mass (wt.)	Service checking	Camber (deg.)	0
		Toe-in (outside track-mm (in.))	0
	Service reset*	Camber	0
		Toe-in	0
	Periodic M.V. inspection	Camber	0
		Toe-in	0

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

Electrical - Instruments and Equipment

Speedometer	Type (analog, digital, std., opt.)	Magnetic torque driven
	Trip odometer (std., opt., n.a.)	Std
EGR maintenance indicator		N.A.
Charge indicator	Type	Lamp
	Warning device (light, audible)	Electric gauge
Temperature indicator	Type	Electric gauge
	Warning device (light, audible)	/
Oil pressure indicator	Type	Electric gauge
	Warning device (light, audible)	Lamp for low pressure
Fuel indicator	Type	Electrical gauge
	Warning device (light, audible)	Lamp for reserve
Windshield wiper	Type (standard)	Electric 2 speed and start stop operation
	Type (optional)	/
	Blade length	400 mm
	Swept area (cm ² (in. ²))	4143 cm ²
Windshield washer	Type (standard)	Electric
	Type (optional)	/
	Fluid level indicator (light, audible)	/
Rear window wiper, wiper/washer (std., opt., n.a.)		N.A.
Horn	Type	Bitonal sea sheel
	Number used	2
Other		1-Tachometer 2-Handbrake and low brake fluid level warning lamp 3-Parking light 4-Fuel feed system to pressure warning lamp 5-Heater blower warning lamp 6-Throttle warning lamp 7-Seat belt signal and warning light

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

Car Line 1010 (Spider veloce 2000)
 Model Year 1987 Issued Nov.86 Revised (e) _____

Engine Description/Carb.
 Engine Code

1962c.c. E.F.I.S.

Electrical - Supply System

Battery	Manufacturer	Scaini	Marelli	FIAMM	Delco Remy
	Model, std., (opt.)	56661	GATM	6B5P	
	Voltage	12V			
	Amps at 0°F cold crank				
	Minutes-reserve capacity	66 Ah			
	Amp/hrs. - 20 hr. rate				
Alternator	Location	Righ side rear trunk coverd by plastic shield			
	Manufacturer	Bosch			
	Rating				
	Ratio (alt. crank/rev.)	1.93 : 1			
Regulator	Optional (type & rating)				
	Type	Voltage control			

Electrical - Starting System

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

Electrical - Ignition System

Type	Electronic (std., opt., n.s.)	Std
	Other (specify)	/
Coil	Make	Bosch
	Model	0.221.0122.026
	Current	1 Amp
	Engine stooped - A	1
Spark plug	Engine idling - A	1
	Make	Lodge
	Model	HL-E
	Thread (mm)	M14x1.25 mm
	Tightening torque (N·m (lb. ft))	25+34 with graphite Nm
	Gap	0,31 + 0.41 surface gap from central electrode mm
Distributor	Number per cylinder	1
	Make	Bosch
	Model	0.237.501.002

Electrical - Suppression

Locations & type	Resistor type ignition cable
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MVMA Specifications Form
Passenger Car
METRIC (U.S. Customary)

CarLine 1010 (Spider Veloce 2000)
 Model Year 1987 Issued Nov.86 Revised (e) _____

Body Type

1962 c.c.

Body

Structure	Bearing Body
Bumper system front - rear	Shock absorber Front 9.460 Kg Rear 10.800 Kg
Anti-corrosion treatment	Rust preventer protection

Body - Miscellaneous Information

Type of finish (lacquer, enamel, other)		Lacquer
Hood	Hinge location (front, rear)	Front
	Type (counterbalance, prop)	N.A.
	Release control (internal, external)	Internal
Trunk lid	Type (counterbalance, other)	Balanced by 2 torsions springs
	Internal release control (elec., mech., n.a.)	Mechanical
Hatch-back lid	Type (counterbalance, other)	/
	Internal release control (elec., mech., n.a.)	/
Station wagon		/
		/
Vent window control (crank, friction, pivot, power)	Front	Crank
	Rear	N.A.
Seat cushion type (e.g., 60 40, bucket, bench, wire, foam etc.)	Front	Foamed polyether at low flammability rate with ext sheet metal
	Rear	
	3rd seat	N.A.
Seat back type (e.g., 60 40, bucket, bench, wire, foam etc.)	Front	Foamed polyether at low flammability rate with sheet metal
	Rear	
	3rd seat	N.A.

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

Car Line 1010 (Spider Veloce 2000)
 Model Year 1987 Issued Nov. 86 Revised (•) _____

Body Type

1962 c.c.

Restraint System

Active restraint system	Standard/optional	Std.
	Type and description	Ant. 3 points
	Location	Front L. and R. position
Passive seat belts	Standard/optional	Optional
	Power/manual	Power
	2 or 3 point	2 points torso
	Knee bar/lap belt	Knee bar

Frame

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

Glass	SAE Ref. No.	
Windshield glass exposed surface area (cm ² (in. ²))	S1	6278 cm ²
Side glass exposed surface area (cm ² (in. ²)) - total 2-sides	S2	3430 cm ²
Backlight glass exposed surface area (cm ² (in. ²))	S3	3782 cm ²
Total glass exposed surface area (cm ² (in. ²))	S4	13.490 cm ²
Windshield glass (type)		Single curved laminated safety plate
Side glass (type)		Curved heat treated safety sheet
Backlight glass (type)		

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

Car Line 1010 (Spider Veloce 2000)
 Model Year 1987 Issued Nov. 86 Revised (•) _____

Body Type

1962 c.c.

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

Air conditioning (manual, auto, temp control)	Manual	
	Digital	
Clock (digital, analog)		
Compass - thermometer		
Console (floor, overhead)		
Defroster, elec. backlight	Electrical	
Electronic	Diagnostic monitor (integrated, individual)	
	Instrument cluster (list instruments)	
	Keyless entry	/
	Tripmeter (avg. spd., fuel)	Spd
	Voice alert (list items)	N.A.
	Other	
Fuel door lock (remote, key, electric)	Key	
Lamps	Auto head on / off delay, dimming	
	Cornering	
	Courtesy (map, reading)	Map reading lamp
	Door lock, ignition	N.A.
	Engine compartment	Std.
	Fog	N.A.
	Glove compartment	Std.
	Trunk	Std.
	Other	
Mirrors	Day/night (auto, man.)	Manual
	L.H. (remote, power, heated)	Power
	R. H. (convex, remote, power, heated)	Power
	Visor vanity (RH, LH, illuminated)	R.H. illuminated
Parking brake-auto release (warning light)	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)	NO
	Side windows	Yes optional
	Vent windows	NO
	Rear window	N.A.
	Other	/
Radio systems	Antenna (location, whip, w. shield, power)	Windshield
	AM, FM, stereo, tape, CB	AM FM Stereo
	Speaker (number, location) Premium sound	
Roof open air fixed (flip-up, sliding, "T")	Flip-up fold back	
Speed control device	N.A.	
Speed warning device (light, buzzer, etc.)	light	
Tachometer (rpm)	Std.	
Telephone system - mobile	N.A.	
Theft protection-type	Key lock on ignition switch steering wheel door luggage compartment.	

MVMA Specifications Form
Passenger Car
METRIC (U.S. Customary)
Car and Body 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 car line.
 SAE Ref. no. refers to the definition published in SAE Recommended Practice J1100 "Motor Vehicle Dimensions," unless otherwise specified.

Car Line 1010 (Spider veloce 2000)

Model Year 1987 Issued Nov. 86 Revised (e)

Body Type
Width

SAE
Ref.
No.

1962 c.c. E.F.I.S.

Tread (front)	W101	1330	mm
Tread (rear)	W102	1280	mm
Vehicle width	W103	1630	mm
Body width at Sg RP (front)	W117	1628	mm
Vehicle width (front doors open)	W120		
Vehicle width (rear doors open)	W121		
Front fender overall width	W106		
Rear fender overall width	W107		
Tumble-home (deg.)	W122		

Length

Wheelbase	L101	2250	mm
Vehicle length	L103	4247	mm
Overhang (front)	L104	977	mm
Overhang (rear)	L105	1020	mm
Upper structure length	L123	1815	mm
Rear wheel C L "X" coordinate	L127	2250	mm
Cowl point "X" coordinate	L125	445	mm
Front end length at centerline	L126		
Rear end length at centerline	L129		

Height*

Passenger distribution (front/rear)	PD1/2/3	2 front	
Trunk cargo load			
Vehicle height	H101	1420	mm
Cowl point to ground	H114	862	
Deck point to ground	H138	857	
Rocker panel-front to ground	H112	235	
Bottom of door closed-front to grd	H133	349	
Rocker panel-rear to ground	H111		
Bottom of door closed-rear to grd.	H135		
Windshield slope angle	H122		
Backlight slope angle	H121		

Ground Clearance*

Front bumper to ground	H102	350	mm
Rear bumper to ground	H104	310	mm
Bumper to ground (front at curb mass (wt.))	H103		
Bumper to ground (rear at curb mass (wt.))	H105		
Angle of approach (degrees)	H106		
Angle of departure (degrees)	H107		
Ramp breakover angle (degrees)	H147		
Axle differential to ground (front/rear)	H153	280	mm
Min. running ground clearance	H156	156	mm
Location of min run grd. clear.		Differential box	

* All vehicle height and ground clearances are made at the Manufacturer's Design Load Weight, unless otherwise specified.
 Manufacturers 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
METRIC (U.S. Customary)
Car and Body Dimensions

See Key Sheets for definitions

Car Line 1010 (Spider Veloce 2000)
 Model Year 1987 Issued Nov. 86 Revised (e) _____

Body Type

SAE
Ref.
No.

1962 c.c. E.F.I.S.

Front Compartment

Sg RP front, "X" coordinate	L31	1400	mm
Effective head room	H61	860	mm
Max. eff. leg room (accelerator)	L34	750	mm
SgRP to heel point	H30	170	mm
SgRP to heel point	L53		
Back angle	L40	25°	
Hip angle	L42		
Knee angle	L44		
Foot angle	L46		
Design H-point front travel	L17	170	mm
Normal driving & nding seat track trvl.	L23		
Shoulder room	W3	1200	mm
Hip room	W5	1200	mm
Upper body opening to ground	H50	1160	mm
Steering wheel maximum diameter*	W9		
Steering wheel angle	H18		
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		

Rear Compartment

Sg RP Point couple distance	L50		
Effective head room	H63		
Min. effective leg room	L51		
Sg RP (second to heel)	H31		
Knee clearance	L48		
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)	H38		
Depressed floor covering thickness	H73		

Luggage Compartment

Usable luggage capacity [L (cu. ft.)]	V1	295	L.
Liftover height	H195	734	mm

Interior Volumes (EPA Classification)

Vehicle class (subcompact, compact, etc.)		Minicompact	
Interior volume index (cu. ft.)		37.7	cu.ft.
Trunk cargo index (cu. ft.)		10.3	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 1010 (Spider Veloce 2000)
Model Year 1987 Issued Nov. 86 Revised (e) _____

Body Type

SAE
Ref.
No.

1962 c.c. E.F.I.S.

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.

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

Car Line 1010 (Spider Veloce 2000)
 Model Year 1987 Issued Nov. 86 Revised (•) _____

Body Type

1962 c.c.

Vehicle Fiducial Marks

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

* Reference - SAE Recommended Practice, J162, Motor Vehicle Fiducial Marks.
 All linear dimensions are in millimeters (inches).

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

1010 (Spider Veloce 2000)
 Car Line _____
 Model Year 1987 Issued Nov. 86 Revised (e) _____

Body Type

1962 c.c.

Lamps and Headlamp Shape*

Height above ground to center of bulb or marker	Headlamp (SAE - H127)	Highest**	643	mm
		Lowest	/	
	Taillamp (SAE - H128)	Highest**	578	mm
		Lowest	/	
	Sidemarker	Front	425	mm
		Rear	635	mm
Distance from C.L. of car to center of bulb	Headlamp	Inside	N.A.	
		Outside**	607	mm
	Taillamp	Inside	Back-up 343 Parking 625 stop 420	mm
		Outside**	Turn-signal 520	mm
	Directional	Front	540	mm
		Rear	530	mm
Halogen headlamp (std., opt., n.a.)	Lo beam		Std.	
	Hi beam		Std.	
	Replaceable bulb		NO	
	Shape		Round	
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.

METRIC (U.S. Customary)

Car Line

Issued Nov. 86

Revised (●)

[illegible]

** Shipping mass (weight) definition -

METRIC (U.S. Customary)

Car Line 1010 (Spider Veloce 2000)
Model Year 1987 Issued Nov. 86 Revised (e) _____

[illegible]

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