

LANCIA

INTRODUCTION
TECHNICAL DATA

ENGINE

CLUTCH

GEARBOX
DIFFERENTIAL

PROPELLER
SHAFT

REAR
DIFFERENTIAL

BRAKING SYSTEM

STEERING

SUSPENSION AND
WHEELS

AUXILIARY UNITS

ELECTRICAL EQUIPMENT

BODYWORK

4WD

Service
Manual



This publication has been divided into sections headed by two figure numbers which appear in the parts microfiches and in the repair time schedules.

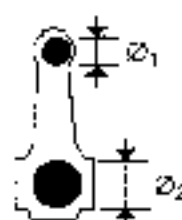
The section titled **INTRODUCTION and TECHNICAL DATA (00.)** has a dual purpose of introducing the model and reinforcing the remaining part of the manual. It contains tables of technical data and information relating to the chapters in the remaining section of the manual.

The remaining sections (10. - 18. etc) include descriptions of the servicing operations.

NOTE *The operations involved in removing-refitting the power unit are illustrated in section 10. The procedure for overhauling the engine at the bench is described in a separate booklet which has its own print number. It should be inserted, according to the size of the engine, in the appropriate section, in either the "Overhauling petrol engines" or "Overhauling Diesel engines" binder.*

This publication contains graphic representations and symbols in place of descriptions for mechanical components, operations and servicing techniques. The use of colour for a component or part of one serves to draw the operator's attention to the object to be measured or checked.

Example:



Small end diameter

Big end bearing housing



Tighten to torque

THIS PUBLICATION HAS BEEN PRODUCED IN A LOOSE LEAF FORMAT TO FACILITATE THE OPERATION OF UPDATING THE MODEL. ANY SUBJECTS DEALT WITH IN THE SERVICE BULLETINS SHOULD BE INSERTED, FROM TIME TO TIME, UNDER THE APPROPRIATE SECTION.

The **DELTA HF 4WD** is a 2 box saloon with a load carrying structure; it has a 1995 cc 4 cylinder in line engine transversely mounted at the front which runs on super petrol, has an electronic ignition/injection system, is supercharged by a turbocharger and develops a power output of 122 kW (165 bhp).

It has permanently engaged four wheel drive.

Ferguson type viscous joints are fitted to the central differential. The rear differential is the Torsen self-locking type.

THE PRISMA 4WD is a three box saloon with a load carrying structure; it has a 4 cylinder in line 1995 cc engine transversely mounted at the front, runs on super petrol, is equipped with an electronic injection/ignition system and develops a power output of 84.5 kW (115 bhp).

It has permanently engaged four wheel drive.

Ferguson type viscous joints are fitted to the central differential. The rear differential has electro-pneumatic engagement for locking.

DELTA-PRISMA 4WD Graphic representations and symbols



Remove
Disconnect



Refit
Connect



Removing
Dismantling



Fitting
Reassembly



Tighten to torque



Tighten to torque
plus angle



Stake nut



Adjustment
Regulation



Visual inspection
Check



Warning



Lubricate
Grease



LANCIA

Replacement
Genuine spares



Bleed
braking system



Machined surface
Finished surface



Interference
Force fit



Distance to be measured
Measurement: - Check
Thickness - Clearance



Inlet



Exhaust



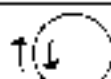
Operation



Tolerance
Difference in weight



Pre-load



Rotation



Rolling torque



Angle
Angular value



Compression
ratio



Grades
Classes



Oversize
Greater than
Maximum



Undersize
Smaller than
Minimum



Number of revs



Ratio



Pressure



Temperature



Temperature < 0°C
Cold
Winter



Temperature > 0°C
Hot
Summer



Windscreen wiper
with electric
washer pump

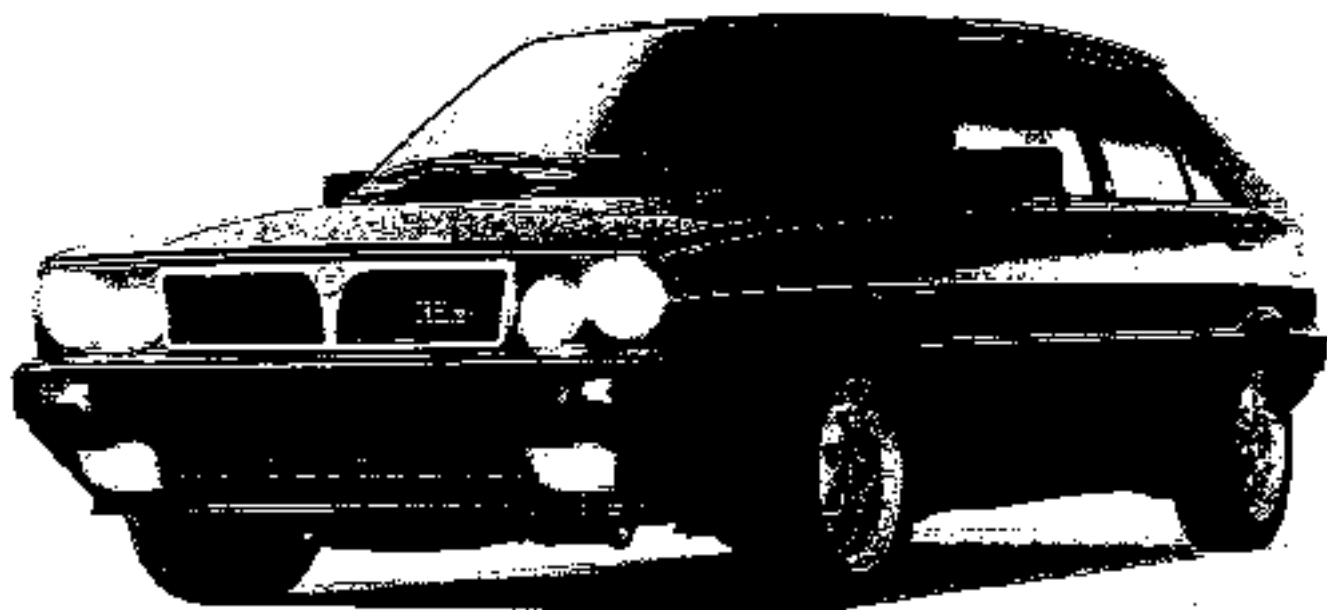


Rearscreen wiper
with electric
washer pump



Engine

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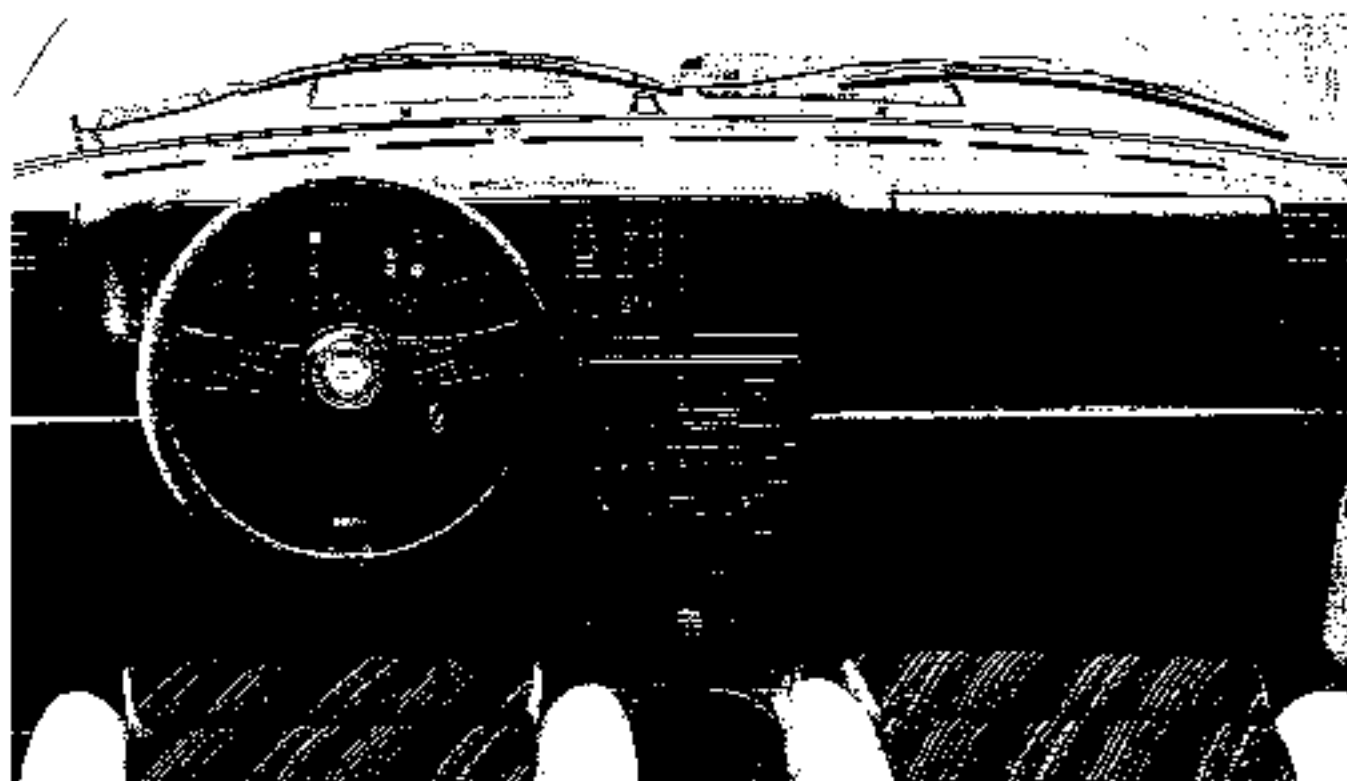
3/4 front view of DELTA HF 4WD

As an alternative air vents for cooling the front brakes are fitted in place of the driving lights

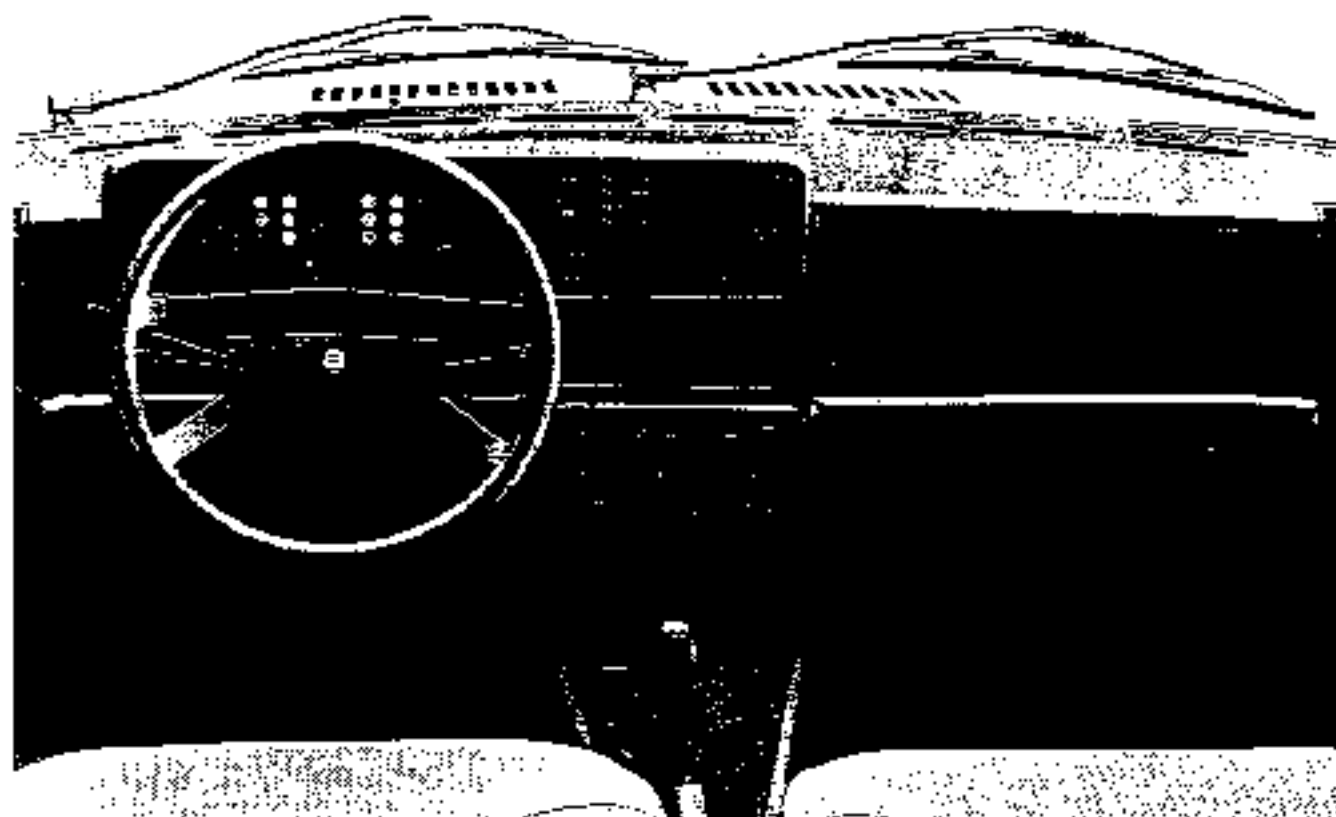


3/4 front view of PRISMA 4WD

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View of the dashboard on the DELTA HF 4WD



View of the dashboard on the PRISMA 4WD



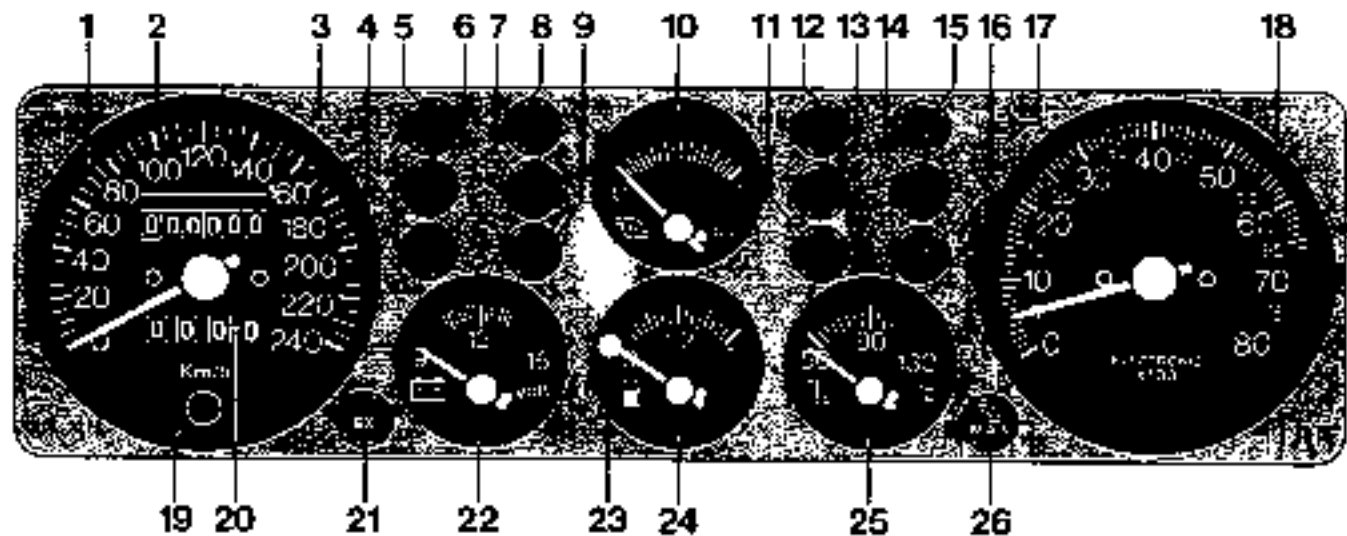
View of the interior of the DELTA HF 4WD



View of the interior of the PRISMA 4WD

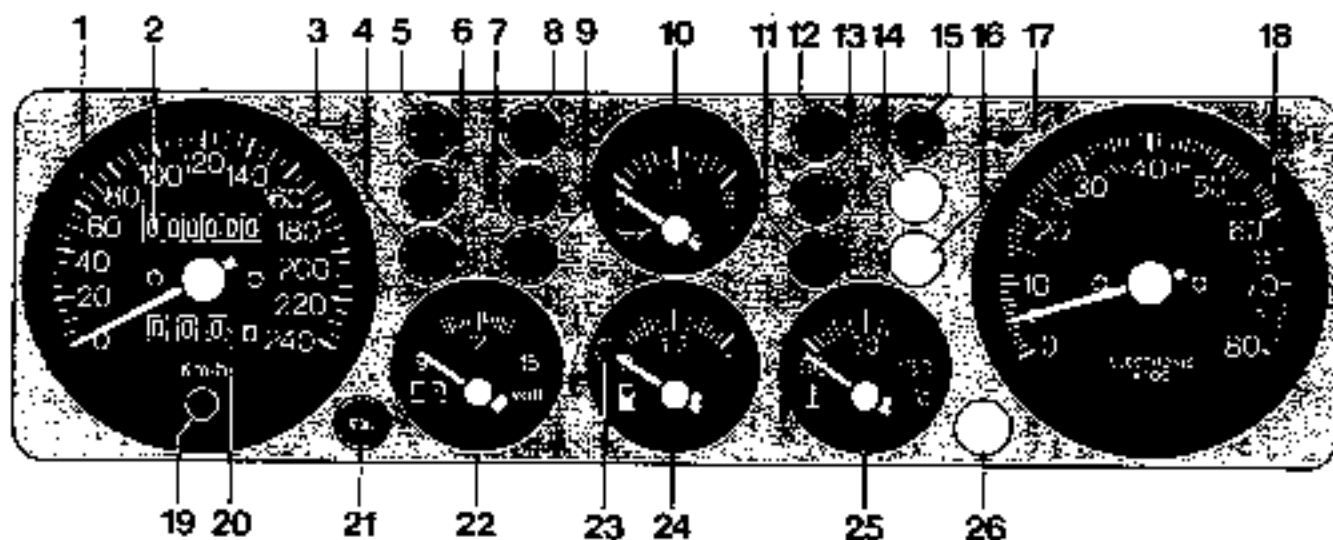
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Instrument panel on the DELTA HF 4WD



1. Speedometer
2. Milometer
3. Left direction indicator signal
4. Main beam headlamps warning light
5. Dipped headlamps warning light
6. Lights warning lights
7. Fog lamps warning light
8. Starting go ahead signal
9. Rear fog lamps warning light
10. Turbocharger pressure gauge
11. Heated rear windscreen warning light
12. General warning light
13. Handbrake warning light
14. Brake pad wear warning light
15. Hazard warning lights warning light
16. Coolant overheating warning light
17. Right direction indicator signal
18. Rev counter
19. Push button for zeroing trip meter
20. Trip meter
21. Catalytic silencer maximum temperature warning light (for specific markets)
22. Volt meter
23. Fuel reserve warning light
24. Fuel gauge
25. Coolant temperature gauge
26. Overboost engaged warning light

Instrument panel on the PRISMA 4WD



- | | |
|--|---|
| 1. Speedometer | 14. Spare warning light |
| 2. Milometer | 15. Hazard warning lights warning light |
| 3. Left direction indicator signal | 16. Spare warning light |
| 4. Main beam headlamps warning light | 17. Right direction indicator signal |
| 5. Lights warning light | 18. Rev counter |
| 6. Dipped headlamps warning light | 19. Push button for zeroing trip meter |
| 7. Rear fog lamps warning light | 20. Trip meter |
| 8. General warning light | 21. Catalytic silencer maximum temperature warning light (for specific markets) |
| 9. Driving lights warning light | 22. Volt meter |
| 10. Engine oil pressure gauge | 23. Fuel reserve warning light |
| 11. Heated rear windscreen warning light | 24. Fuel gauge |
| 12. Starting go ahead signal | 25. Coolant temperature gauge |
| 13. Handbrake warning light | 26. Spare warning light |

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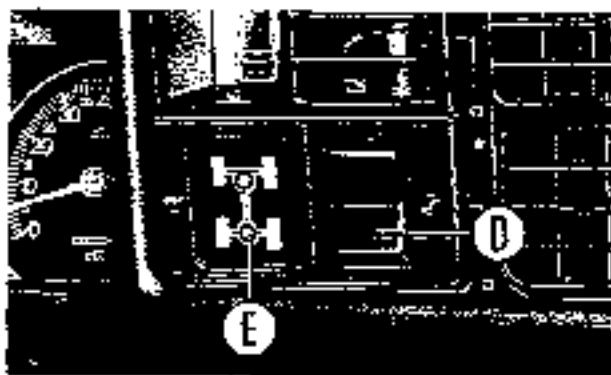


Spare wheel housing on the DELTA HF 4WD



Spare wheel housing on the PRISMA 4WD

NOTE *The spare wheel is smaller; in order to remove it from its housing undo the clip A and remove the cover B. This wheel should only be used for essential journeys to reach a garage where repairs can be carried out. Maximum speed 80 kph (50 mph).*



Engaging-releasing rear differential for the PRISMA 4WD

In order to lock the rear differential press the lower section of switch D and LED E should come on. To release the differential press the upper section of switch D

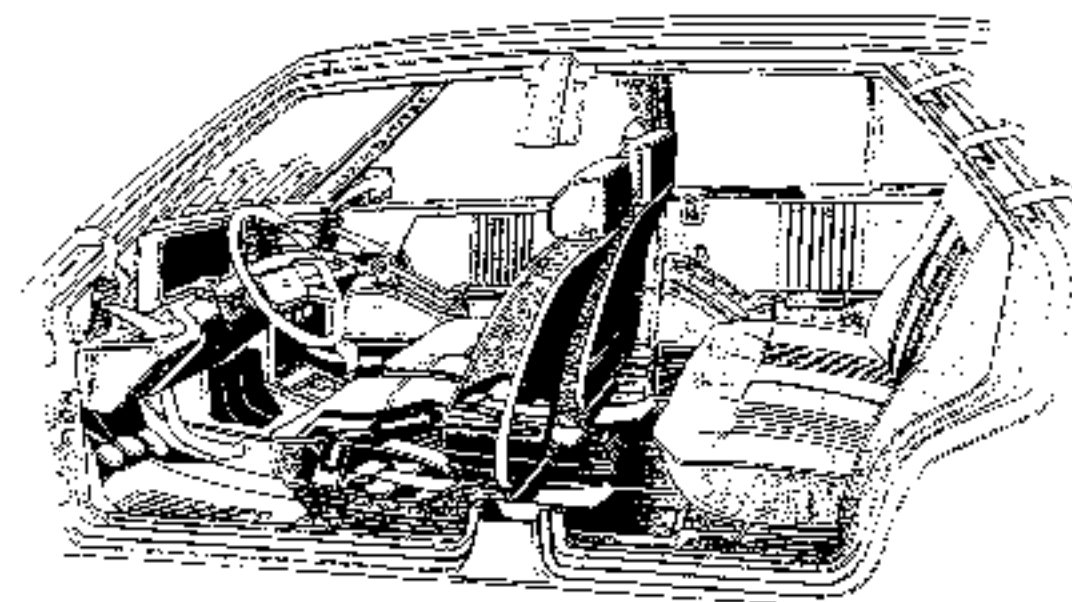


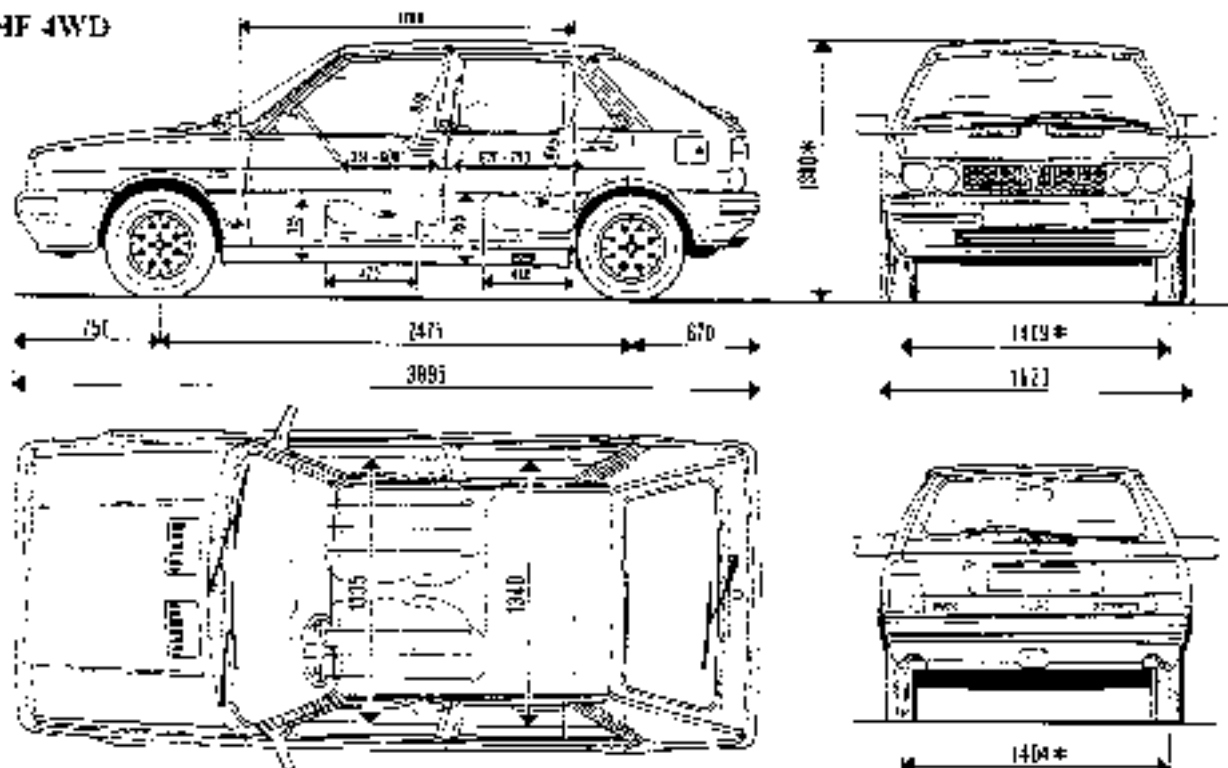
Diagram showing passenger compartment ventilation on the PRISMA 4WD

Introduction

Dimensions

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DELTA HF 4WD

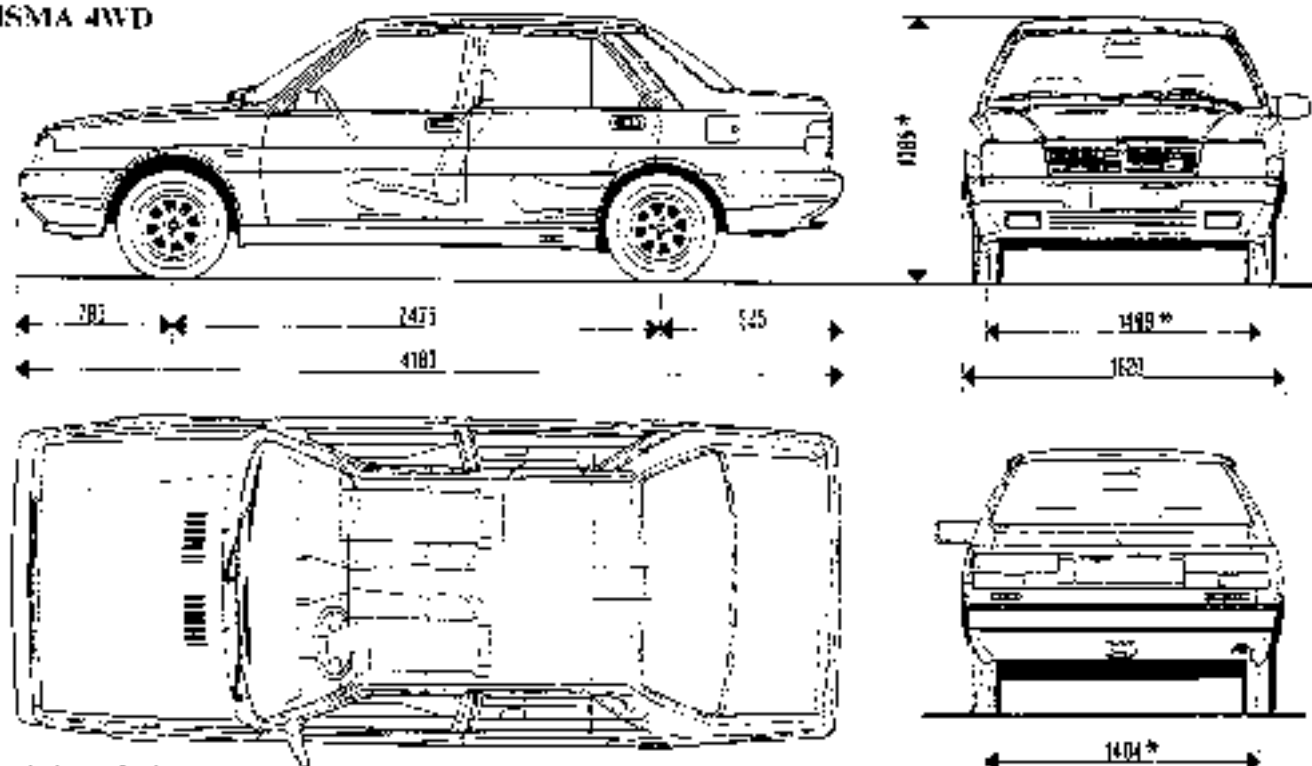


(*) Unladen vehicle

Luggage compartment capacity with the rear seat backrest in its normal position: 200 litres (7.05 cu ft)

Luggage compartment capacity with the rear seat folded down: 940 litres (33.19 cu ft)







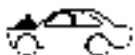


PRISMA 4WD

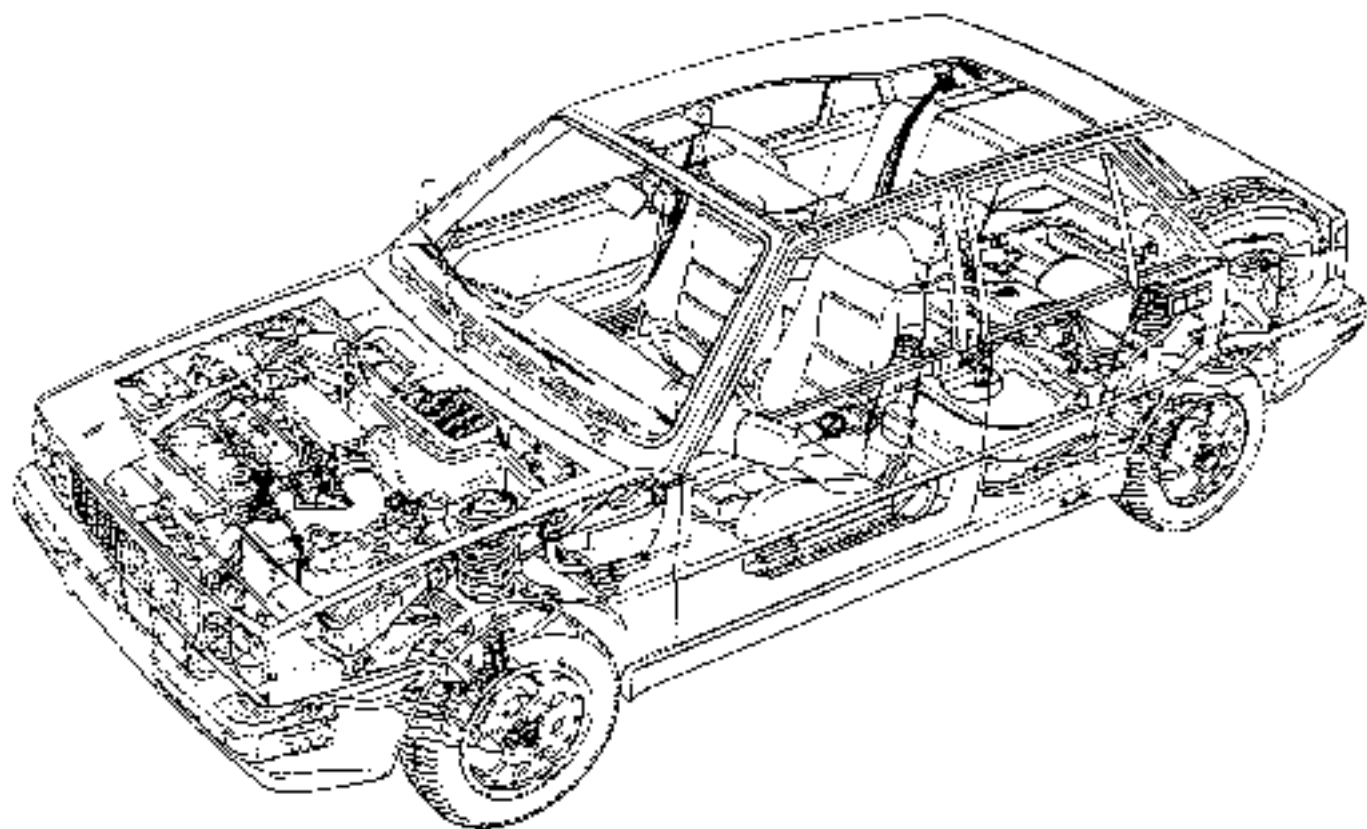


(*) Unladen vehicle

Luggage compartment capacity with rear seat backrest in upright position: 360 litres (12.71 cu ft)

Luggage compartment capacity with rear seat folded down to level of rear parcel shelf: 650 litres (22.95 cu ft)

		 turbo	 2000tur
WEIGHTS (in kg)			
		1190	1180
+ 450 		1640	1630
 - 		865	855
Kerb weight		775	775
		1200	




















Arrangement of mechanical components in the DELTA HF 4WD

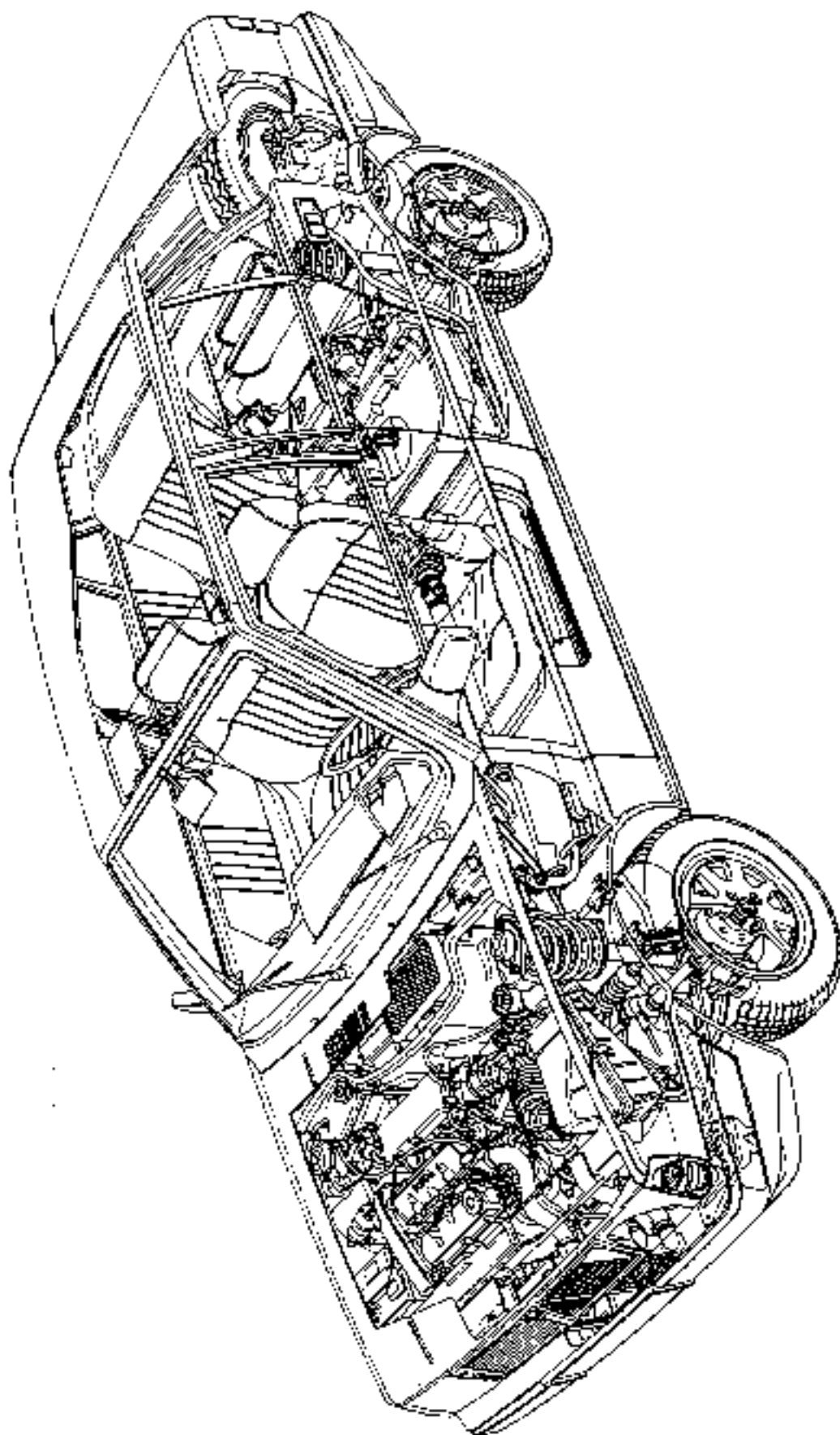
Introduction

DELTA-PRISMA 4WD

Performance - Fuel consumption

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Speed in kph 		65	55
		105	90
		155	130
		200	170
		208	184
		65	55
Maximum climbable gradient  %		58	42
		37	23
		23	15
		16	10
		11	7
		68	40
EEC fuel consumption figures (litres/100 km) (mpg) 	Urban cycle (A)	10,8 (26.15)	11 (25.68)
	Constant speed 90 kph (B)	7,8 (36.21)	7,8
	Constant speed 120 kph (C)	10,2 (27.69)	10 (28.24)
	Average consumption (CCMC proposal) $\frac{A + B + C}{3}$	9,6 (29.42)	9,6














































Arrangement of mechanical components on the PRISMA 4WD

Introduction

Capacities



DELTA-PRISMA 4WD

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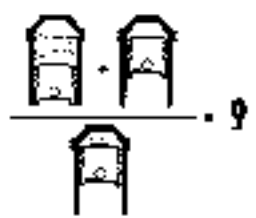


Description	Unit	Quantity	
		dm ³	(kg)
 Petrol O.R. (98-100)	 	57	
 50% H ₂ O + 	      Total capacity of cooling system	- 6	-
 VS Superstagionale (SAE 10 W) (SAE 20 W) (SAE 30) (SAE 40)	Total capacity 		5,20
 VS Supermultigrade (SAE 15 W 40)	 		
 VS Turbo Synthese (SAE 15 W 40)	Partial capacity (periodic replacement)		4,80
 a = TUTELA 2C 80S 	 	a	- 3,40
 b = TUTELA GI-A 		b	-
 TUTELA W 90 M DA	a  b 	a	-
	Self-locking	b	- 1
 a = b = TUTELA GI-A	a  c  d  b 	a	- 0,61
 c = TUTELA W 90/M-DA		b	-
 d = K 854		c	-
		d	-
 TUTELA DOT 4	Total capacity 		0,30
 - 	 3%  ~ -10°C 50% ~ -20°C 100%	 PRISMA 4WD  2,50  DELTA 4WD  2	- -

▲ Distilled water

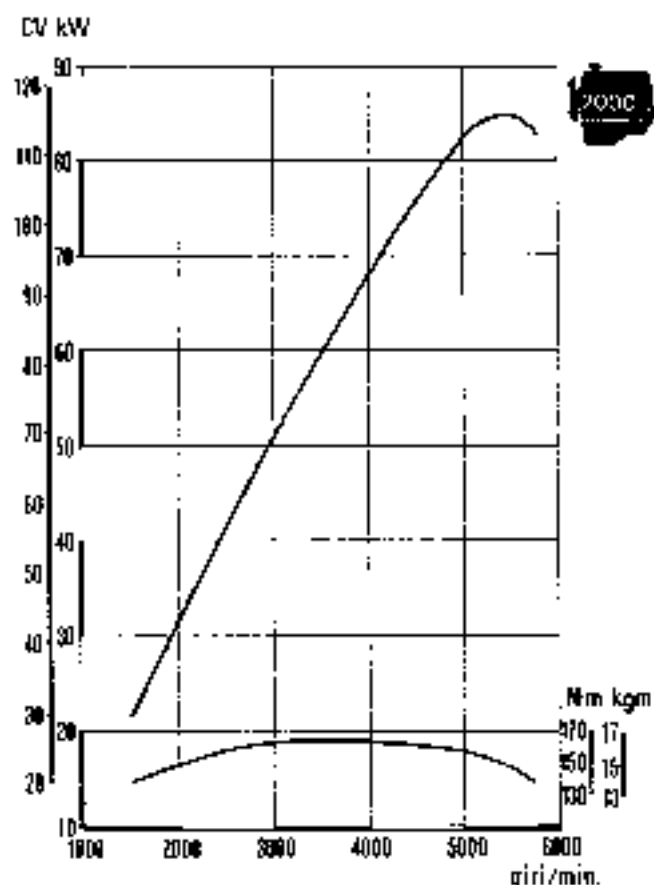
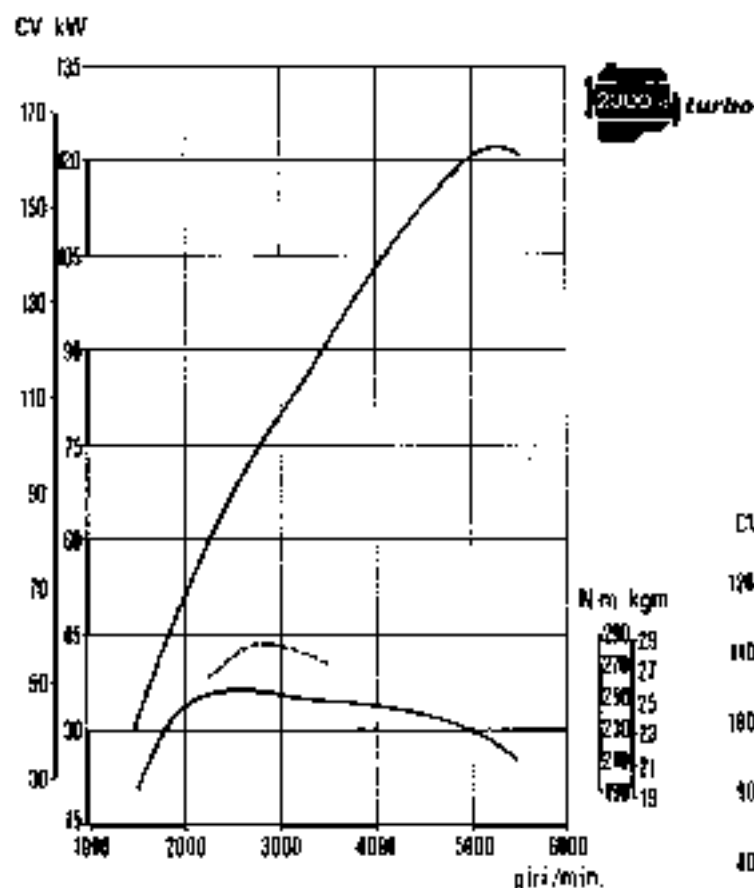
Name of product	Description International designation	Usage	
VS-Superstar-globale	SAE 40	Temperature 0°C - > 35°C	
	SAE 30	Temperature 0°C - < 35°C	
	SAE 20 W	Minimum temperature - 15°C - 0°C	
	SAE 10 W	Minimum temperature below - 15°C	
VS-Super-multigrade	SAE 15 W/40	Low ash content detergent oil for petrol engines. Service API "SE". Satisfies standard MIL-L-46152. Exceeds European CCMC specifications	Temperature - 15°C - > 35°C
VS Turbo Synthesis	SAE 15 W/40	Synthetic based detergent oil for petrol engines. Service API "SE". Satisfies standard MIL-L-46152. Exceeds European CCMC specifications	Temperature - 15°C - > 40°C
VS Diesel	SAE 40	Oil for Diesel engines. Service API "CD". Satisfies standard MIL-L-2104 C.	Temperature 0°C - 50°C
	SAE 30		Temperature - 5°C - 30°C
	SAE 20 W		Temperature - 15°C - 15°C
	SAE 10 W		Temperature below - 15°C
VS Diesel Supermultigrade		Oil for Diesel engines. Service API "CD". Satisfies standard MIL-L-2104 C.	Temperature - 20°C - 40°C
TUTELA ZC 80S	SAE 80 W oil. Satisfies standard MIL-L-2105 API GL4	Manual gearboxes and differentials	
TUTELA ZC 90	Non EP SAE 80 W/90 oil for manual gearboxes, containing anti-wear additives.	Gearboxes and non hypoid differentials	
TUTELA W 90/M DA	EP SAE 80 W/90 oil for normal and self-locking differentials. Satisfies standard MIL-L-2105 C.	Hypoid differentials Self-locking diffs. Steering boxes	
TUTELA GL4	DEXRON II type oil for automatic transmissions.	Automatic gearboxes Power assisted steering	
TUTELA JOTA 1	Lithium soap based grease. N.L.G.I.N.1 consistency	Greasing vehicle except for components particularly exposed to water requiring special greases	
TUTELA MRM2	Lithium soap based molybdenum disulphide water repellent grease. N.L.G.I.N.2 consistency	Constant velocity joints	
TUTELA MR3	Lithium soap based grease. N.L.G.I.N.3 consistency	Wheel hub bearings, steering rods, various components	
TUTELA DOT 4	DOT 4 hydraulic brake fluid, meeting F.M.V.S.S. standard no. 116	Hydraulic brakes and hydraulically operated clutch	
K 854	Lithium soap based grease. N.L.G.I. 000 consistency, containing molybdenum disulphide	Rack and pinion steering boxes	
SP 349	Special castor oil and sodium based grease containing graphite and molybdenum disulphide, compatible with brake fluid and rubber circuit seals	Load proportioning valve Load proportioning valve control bar bush	
Liquido Autofa DPI	Alcohol based liquid detergent	To be used undiluted or diluted for windscreen, washers and headlamps washers	
Liquido Paraflex FIAT	Mono ethylene glycol based anti-freeze for cooling system	Cooling circuits Percentage to be used 35% up to - 25°C 50% up to - 35°C	

 2000 cc turbo	 2000 cc
--	---

CHARACTERISTICS

		831 B5.000	831 B4.000
 Cycle		OTTO 4 stroke	
 Number of cylinders		4	
 Cylinder liner (bore)	mm	84	
 Stroke	mm	90	
 Capacity	cc	1995	
 Compression ratio		8 ± 0,1	9,75 ± 0,15
 Max power EEC	kW (CV)	122 (165)	84,5 (115)
	rpm	5250	5400
 Max torque EEC	daNm (kgm)	25,5 (26) 28,5 [▲] (29)	16,3 (16,6)
	rpm	2500 2750 [▲]	3250

(▲) With overboost engaged



Characteristic power curves from EEC method

The power curves shown can be obtained with the engine overhauled and run in without a fan and with a silencer and air filter fitted at sea level.

Test bench test cycle with overhauled engine

In the bench test of the overhauled engine it is not advisable to run the engine at maximum speed but to stick to the figures given in the table; complete the running in of the actual engine in the car

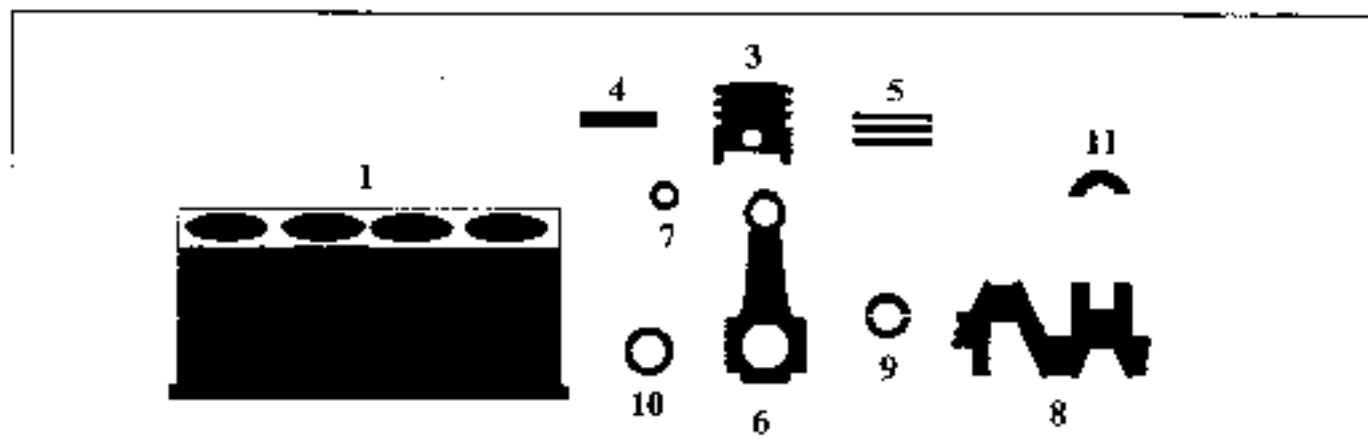
Test speed (rpm)	Time in minutes	Load on the brakes
800 - 1000	10'	no load
1500	10'	no load
2000	11'	no load

Technical data

DELTA-PRISMA 4WD

Engine: cylinder block/crankcase, crankshaft and associated components

00.10



DESCRIPTION

Values in mm

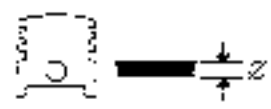

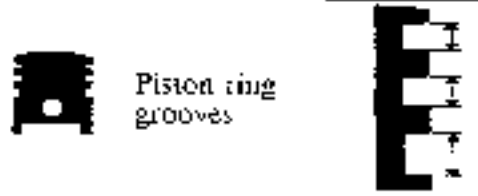

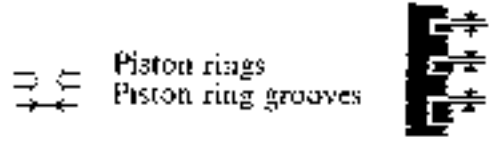

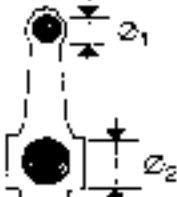
		L	23,100 + 23,200
<p>Main bearing supports</p>	$\left\{ \begin{array}{l} A \\ B \\ C \end{array} \right.$	A	56,717 + 56,723
		B	56,723 + 56,729
		C	56,729 + 56,735
		<p>Cylinder bore</p>	$\left(\begin{array}{l} \text{HIT} \\ 0,010 \end{array} \right)$
		Y	25
<p>Piston</p>	$\left\{ \begin{array}{l} A \\ C \\ E \end{array} \right.$	A	83,940 + 83,950
		C	83,960 + 83,970
		E	83,980 - 83,990
		$\left(\begin{array}{l} \text{LANCIA} \\ > \end{array} \right)$	0,4
		Difference in weight between pistons	± 5 g
		Piston-Cylinder bore	0,050 - 0,070
<p>Gudgeon pin housing</p>	$\left\{ \begin{array}{l} 1 \\ 2 \end{array} \right.$	1	21,996 - 21,999
		2	21,999 - 22,002

DELTA-PRISMA 4WD

Technical data

Engine: cylinder block/crankcase, crankshaft and associated components

00.10

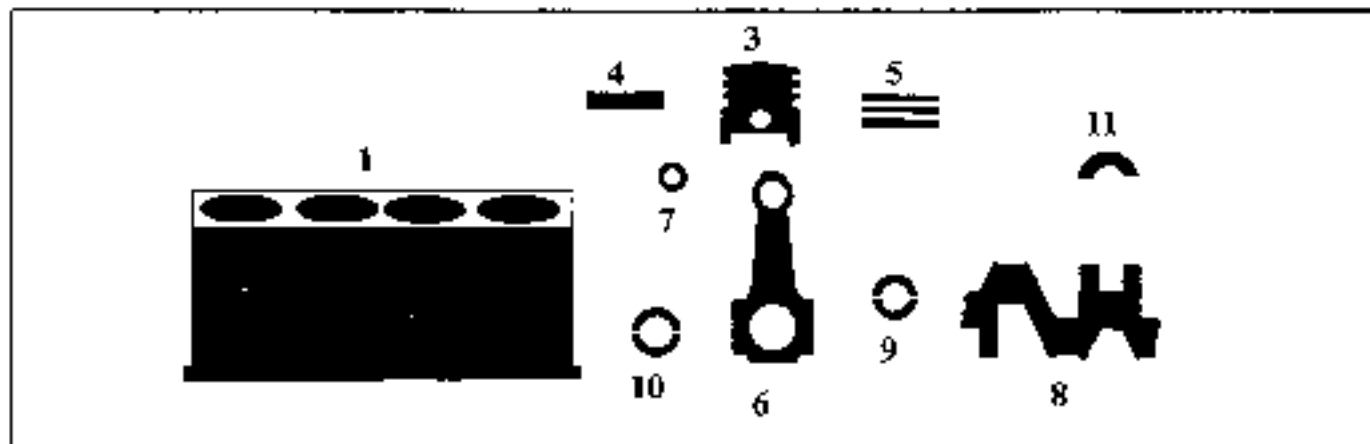
		2000 turbo	2000	
DESCRIPTION		Values in mm		
4		\varnothing <div style="display: flex; align-items: center;"> <div style="font-size: 2em; margin-right: 5px;">}</div> <div style="font-size: 0.8em; margin-right: 5px;">mm</div> </div>	1	21,991 + 21,994
			2	21,994 + 21,997
	Gudgeon pin	\varnothing LANCIA >	0,2	
4-3		Gudgeon pin-Housing	0,002 + 0,008	
3		1	1,535 + 1,555	
		2	2,030 + 2,050	
		3	3,967 + 3,987	
5		\varnothing LANCIA > <div style="display: flex; align-items: center;"> <div style="font-size: 2em; margin-right: 5px;">}</div> <div style="font-size: 0.8em; margin-right: 5px;">mm</div> </div>	1	1,478 + 1,490
	Piston rings	2	1,978 + 1,990	
		3	3,925 + 3,937	
	\varnothing LANCIA >	0,4		
5-3		1	0,045 + 0,077	
		2	0,040 + 0,072	
		3	0,030 + 0,062	
5-1		1	0,30 + 0,45	
		2	0,30 + 0,45	
		3	0,25 + 0,40	
6		\varnothing <div style="display: flex; align-items: center;"> <div style="font-size: 2em; margin-right: 5px;">}</div> <div style="font-size: 0.8em; margin-right: 5px;">mm</div> </div>	\varnothing_1	24,988 + 25,021
			1	53,904 + 53,910
			2	53,898 + 53,904
	Big end bearing housing	3	53,892 + 53,898	

Technical data

DELTA-PRISMA 4WD

Engine: cylinder block/crankcase, crankshaft and associated components

00.10



DESCRIPTION

Values in mm

7			\varnothing_1	25.065 + 25.090	
			1	22.004 + 22.007	
			2	22.007 + 22.010	
4-7		Gudgeon pin Small end bush		0,010 + 0,016	
7-6		Small end bush Housing		0,044 + 0,102	
8		Main journals	A	52,998 + 53,004	
			B	52,992 + 52,998	
			C	52,986 + 52,992	
			1	50,799 + 50,805	
		Crank pins	2	50,793 + 50,799	
			3	50,787 + 50,793	
			L	27,975 + 28,025	
9		Crankshaft bearings	A	1,836 + 1,844	1,836 - 1,842
			B	1,844 + 1,850	1,842 + 1,848
			C	1,850 + 1,856	1,848 + 1,854
			\varnothing LANCIA <	0,254 - 0,508	


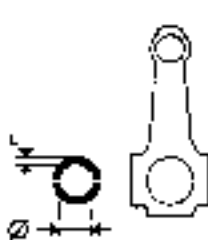



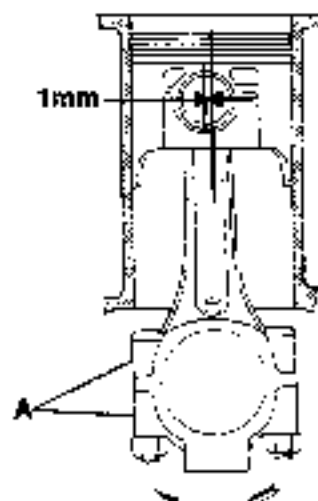
		2000 turbo	2100
DESCRIPTION		Values in mm	
9-8	 Crankshaft bearings-Main journals	0,025 - 0,049	0,029 - 0,053
10	 Big end bearings L { A B C ∅ LANCIA <	1,527 - 1,533	
		1,533 - 1,539	
		1,539 - 1,545	
		0,254 - 0,508	
10-8	 Big end bearings-Pins	0,033 - 0,057	
11	 Thrust washers S S LANCIA >	2,310 - 2,360	
		0,127	
11-8	 Crankshaft end float	0,055 - 0,305	

Diagram showing connecting rod-piston assembly and direction of rotation in engine

A = Area where number of cylinder bore to which connecting rod belongs is stamped.

The arrow shows the direction of rotation of the engine as seen from the timing side.

1mm = Gudgeon pin offset on the piston.





DESCRIPTION

Values in mm

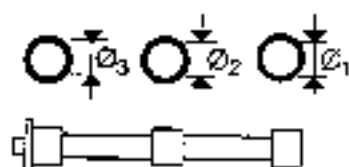
25 Counter-balance shafts

n° 2

Shafts operated

by toothed belt

26



Ø₁

36,920 ÷ 36,940

Ø₂

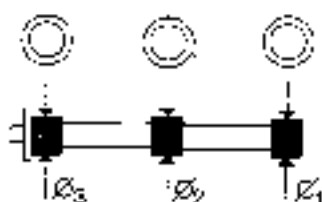
37,020 ÷ 37,040

Ø₃

38,020 ÷ 38,040

Bushes for counter-balance shafts in housings

25



Ø₁

36,850 ÷ 36,870

Ø₂

36,950 ÷ 36,970

Ø₃

37,950 ÷ 37,970

Counter-balance shaft bearings

26-1



Bushes for shaft Housings

0,080 ÷ 0,140

25-26



Shaft bearings · Bushes

0,050 ÷ 0,090

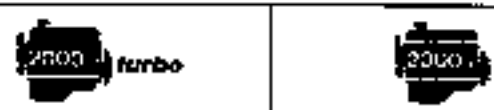
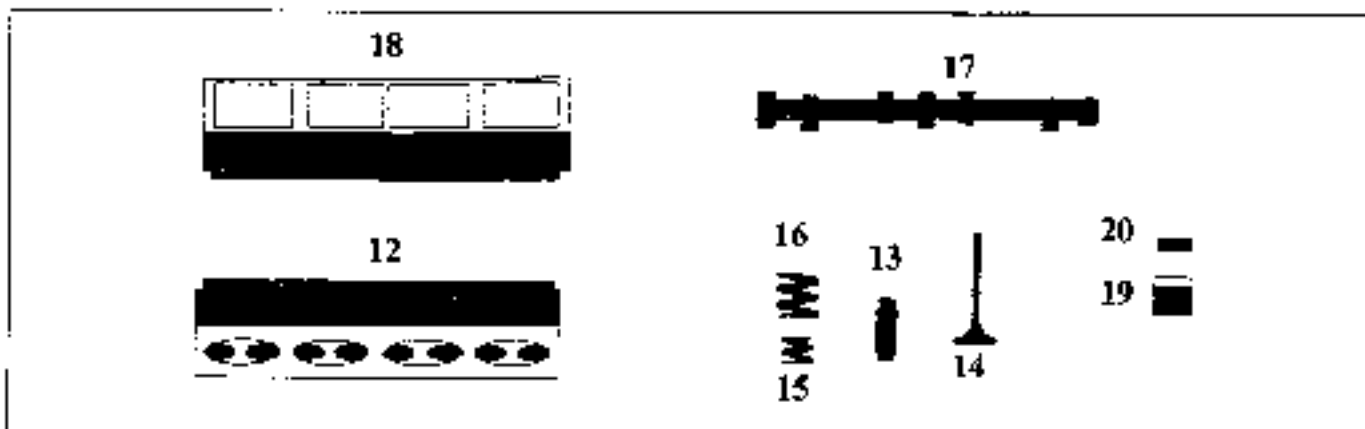


DESCRIPTION

Values in mm




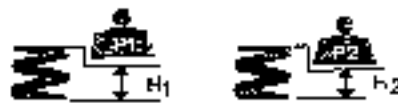
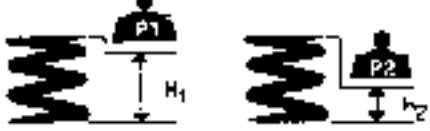
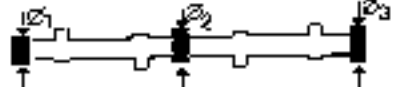



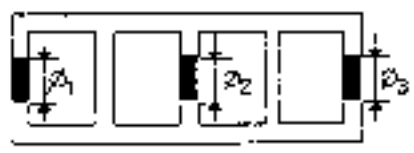



25	Counter-balance shafts		n° 2
	Shafts operated		by toothed belt
26	<p>Central bush for counter-balance shafts in housing</p>	∅	37,020 - 37,040
27	<p>Ball bearings for counter-balance shafts</p>	∅	19,990 - 20,000
25	<p>Counter-balance shaft central bearing</p>	∅	36,945 - 36,960
25	<p>Counter-balance shaft bearings</p>	∅	19,980 - 19,993
26-1	<p>Bushes for shaft Housings</p>		0,080 - 0,140
25-26	<p>Shaft bearings - Bushes</p>		0,060 - 0,095
27-1	<p>Ball bearings Housings</p>		+0,011 - -0,025
25-27	<p>Shaft bearings Ball bearings</p>		+0,020 - -0,003

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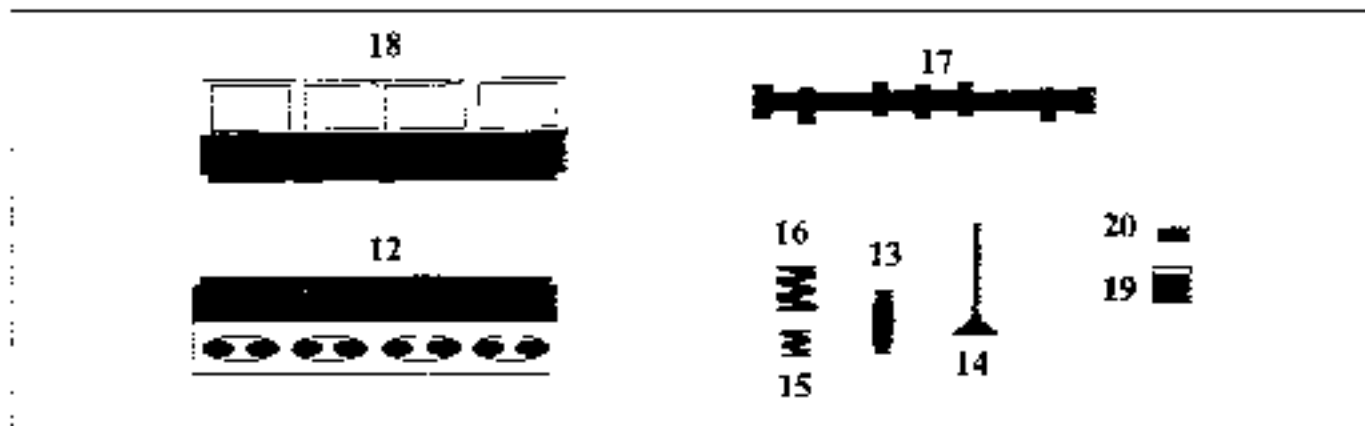


DESCRIPTION

		Values in mm	
12	<p>Valve guide bore in cylinder head</p>	Ø	13,950 ÷ 13,977
	<p>Valve seats</p>	α	45° + 5'
		L	45° ± 5'
			~2
13	<p>Valve guide</p>	Ø ₁	8,022 ÷ 8,040
		Ø ₂	14,040 ÷ 14,058
			13,988 ÷ 14,016 14,040 ÷ 14,058
		Ø: LANCIA >	0,05-0,10-0,25
13-12	<p>Valve guide Bore in cylinder head</p>		0,063 ÷ 0,108
			0,021 ÷ 0,066 0,063 ÷ 0,108
14	<p>Valves</p>	α	7,974 ÷ 7,992
			43,300 ÷ 43,700
			45° 30' ± 5'
			7,974 ÷ 7,992
			35,850 ÷ 36,450
			45° 30' ± 5'

				
DESCRIPTION		Values in mm		
14-13	 Valve-Valve guide	0,030 + 0,066		
15	 Internal valve spring	P ₁	14,13 + 15,11 daN	
		H ₁	31	
		P ₂	26,39 + 28,74 daN	
		H ₂	21,5	
16	 External valve spring	P ₁	36,68 + 39,6 daN	
		H ₁	36	
		P ₂	55,91 + 60,82 daN	
		H ₂	26,5	
17	 Camshaft bearings	∅ ₁	29,944 + 29,960	
		∅ ₂	45,755 + 45,771	
		∅ ₃	46,155 + 46,171	
	 Cam lift		9,1	
			8,6	
18	 Camshaft bearings in camshaft housing	∅ ₁	30,009 + 30,034	
		∅ ₂	45,800 + 45,825	
		∅ ₃	46,200 + 46,225	
18	 Tappet housings	∅	37,000 + 37,025	
		17-18	 Camshaft bearings housing supports	∅ ₁
			∅ ₂ - ∅ ₃	0,029 + 0,070
19	 Tappet	∅	36,975 + 36,995	

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DESCRIPTION

		Values in mm		
19-18		Tappet Housing in cylinder head	0,005 ± 0,050	
20	 Shim	S (0,05)	3,25 - 4,70	
17-20			0,80	
			0,80	
			0,35 ± 0,04	0,40 ± 0,04
			0,40 ± 0,04	0,48 ± 0,03

TIMING ANGLES

inlet	opens BTDC	8°	7°
	closes ABDC	42°	52°
exhaust	opens BBDC	42°	53°
	closes ATDC	1°	6°







		
	Values in mm	
Oil pump	lobe gears	
Pump operated	by crankshaft	
Oil pressure relief valve	incorporated in crankshaft front cover	
 <p>between pump casing housing and driven gear</p>	$0,080 \pm 0,186$	
 <p>between upper side of gears and pump cover</p>	$0,025 \pm 0,056$	
Full flow filter	cartridge	
Insufficient oil pressure sender unit	electrical	
 <p>Operating pressure at a temperature of 110°C</p>	$3,4 - 4,9 \text{ bar (3,5 - 5 kg/cm}^2\text{)}$	
 <p>Oil pressure relief valve spring</p>	P	$11,3 \pm 12,1 \text{ daN}$
	H	35.3

Technical data

DELTA-PRISMA 4WD

Engine: cooling system-fuel system-supercharging

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		 turbo	
COOLING SYSTEM			
Cooling circuit		coolant circulation via centrifugal pump, radiator and electric fan operated by thermostatic switch	
Water pump operation		through belt	
	Thermostat switch to engage fan		90° + 94°C
			85° + 89°C
Engine cooling water thermostat	opens		81° + 85°C
	max opening		97°C
	valve travel		≥ 7,5 mm
Clearance between impeller blades and pump casing			0,8 + 1 mm
Pressure for checking water tightness of system			0,98 bar
Pressure for checking overflow valve on expansion tank			0,98 bar

FUEL SYSTEM

Pump	electric
Capacity	~ 120 litres/h







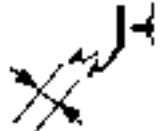
SUPERCHARGING (with turbocharger operated by exhaust gases with wastegate valve)

Turbocharger type	KKK K26	Garrett T3	-
Maximum supercharging pressure	0,9 bar		-

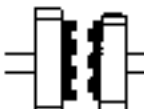


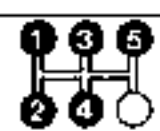


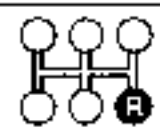

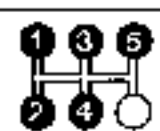
















Checking engine idle speed and carbon monoxide emissions

Engine speed	rpm	800 + 900	(750 + 800)*
CO idle emissions	(%)	1,5	± 0,5

(*) With VAE valve disconnected







			
		Values in mm	
Type		 dry, single plate	
Operating mechanism		 diaphragm spring	
Spring loading		575 daN	
Lining		Ø ₁	230
		Ø ₂	155
Clutch pedal setting		8 ÷ 10 mm below the level of the brake pedal	
Clutch release		mechanical	

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
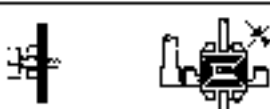
		2000 cc turbo	2300 cc
GEARBOX			
 Synchronizers	spring ring (Porsche type)		-
	hault ring type		
 Gears	straight toothed		
	helical toothed		
 Gear ratios			3.500
			2.235
			1.518
			1.132
			0.928
			3.583
 	Crown wheel and pinion reduction	53.18 (2,944)	65.19 (3,421)
 Ratio at the wheels			10.304
			6.580
			4.468
			3.332
			2.732
			10.548
			12.828
			7.645
			5.193
			3.872
			3.174
			12.257





CENTRE DIFFERENTIAL

 <p>Differential internal casing bearing</p>	 <p>conical roller bearings</p>
 <p>Adjustment of bearing pre-loading</p>	 <p>by shims</p>
 <p>Thickness of shims</p> <p>LANCIA $\left(\begin{matrix} \text{A} \\ \text{B} \end{matrix} \right) 0,05$ mm</p>	<p>1,00 - 1,60</p>
 <p>Interference to obtain exact bearing pre-loading</p> <p>mm</p>	<p>bearings not pre-loaded = 0,12 bearings pre-loaded (350 daN) = 0,08</p>

















FRONT DIFFERENTIAL

 <p>Clearance between satellite and planet gears</p> <p>mm</p>	<p>$\leq 0,10$</p>
 <p>Adjustment of clearance between planet and satellite gears</p>	<p>no adjustment is carried out</p>

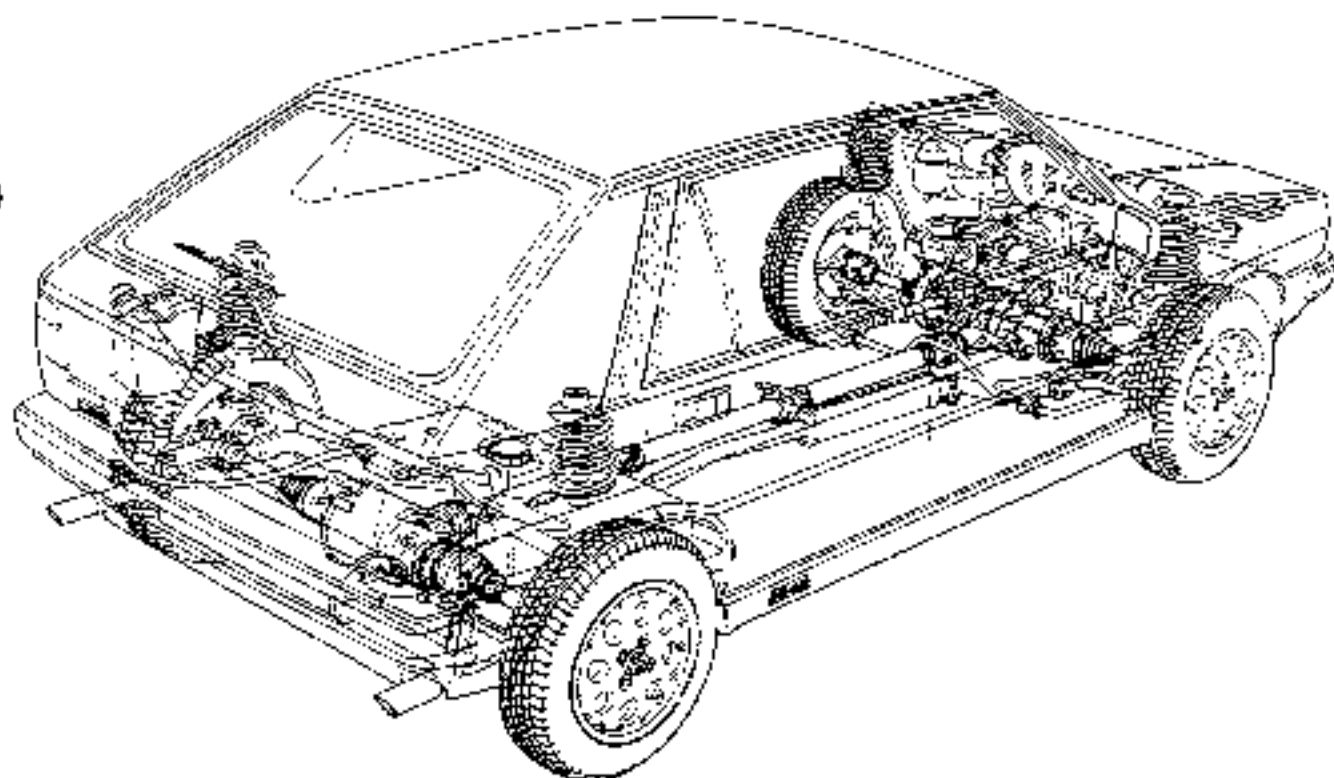
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 turbo	
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IDLER GEAR


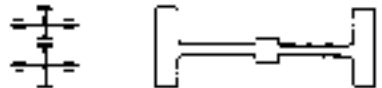



















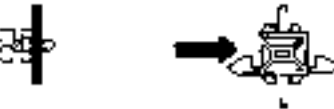







 <p>Spur gear set ratio</p>	<p>43/19 (2,263)</p>
 <p>Ring gear bearing rolling torque</p>	<p>daNm</p> <p>0,18 ÷ 0,20</p>
 <p>Adjustment of ring gear bearings</p>	 <p>by shims</p>
 <p>LANCIA  0,025 mm</p> <p>Thickness of shims</p>	<p>1,475 ÷ 2,90</p>
 <p>Adjustment of idler gear bevel pinion</p>	 <p>by shims</p>
 <p>LANCIA  0,02 mm</p> <p>Thickness of shims</p>	<p>2,55 ÷ 3,35</p>
 <p>Bevel pinion bearing rolling torque</p>	<p>daNm</p> <p>0,08 ÷ 0,12</p>
 <p>Clearance between pinion and ring gear</p>	<p>mm</p> <p>0,08 ÷ 0,15</p>
 <p>Adjustment of clearance between pinion and ring gear</p>	 <p>by shims</p>
 <p>LANCIA  0,025 mm</p> <p>Thickness of shims</p>	<p>1,475 ÷ 2,90</p>





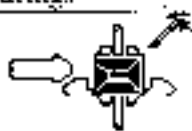
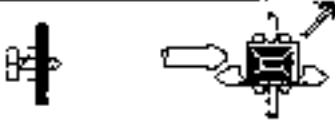


		2000 cc turbo	2000 cc
Type		in three sections	
Supports		2 { 1 on the centre section with a ball bearing on the support 1 on the rear section with a ball bearing inside the support dust cover	
Sliding constant velocity joints		1. on the front section	
Universal joints		2. on the centre section	
Splined joint		1. on the rear section	
Spider radial clearance	mm	0,01 - 0,04	
Thickness of shims for adjusting spider radial clearance	mm	1,50-1,53-1,56-1,59-1,62	
Spline backlash	mm	0,175 ÷ 0,350	

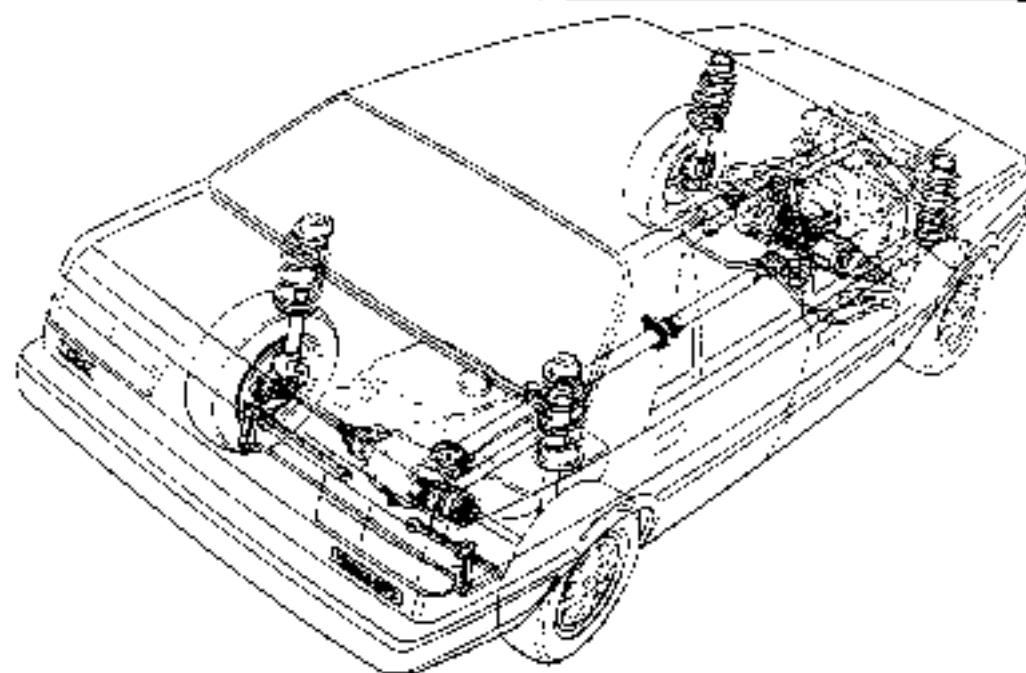


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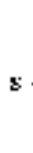
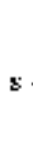









 <p>Crown wheel and pinion reduction</p>	<p>19,43 (2,263)</p>																		
 <p>Ratio at the wheels</p>	<table border="1"> <tr> <td></td> <td>10.304</td> <td>12.828</td> </tr> <tr> <td></td> <td>6.580</td> <td>7.645</td> </tr> <tr> <td></td> <td>4.468</td> <td>5.193</td> </tr> <tr> <td></td> <td>3.332</td> <td>3.872</td> </tr> <tr> <td></td> <td>2.732</td> <td>3.174</td> </tr> <tr> <td></td> <td>10.548</td> <td>12.257</td> </tr> </table>		10.304	12.828		6.580	7.645		4.468	5.193		3.332	3.872		2.732	3.174		10.548	12.257
	10.304	12.828																	
	6.580	7.645																	
	4.468	5.193																	
	3.332	3.872																	
	2.732	3.174																	
	10.548	12.257																	
 <p>Bevel pinion bearings rolling torque</p>	<p>daNm</p> <p>0,08 + 0,12</p>																		
 <p>Adjustment of bevel pinion position</p>	 <p>by shims</p>																		
 <p>Thickness of shims</p> <p>LANCIA  0,05 mm.</p>	<p>2,55 + 3,35</p>																		
 <p>Differential internal casing bearing</p>	 <p>conical roller bearings</p>																		
 <p>Crown wheel bearings rolling torque</p>	<p>daNm</p> <p>0,18 + 0,20</p>																		
 <p>Clearance between pinion and crown wheel</p>	<p>mm</p> <p>0,08 + 0,15</p>																		


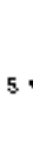
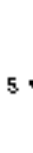






		2010 turbo	2003
 <p>Adjustment of clearance between pinion and crown wheel</p>		 by shims	
 <p>Adjustment of bearing pre-loading</p>			
 <p>Thickness of shims for differential internal casing bearings</p> <p>LANCIA $\left(\begin{array}{c} \text{ } \\ \text{ } \end{array} 0,05 \right)$ mm</p>		0,18 - 0,20	
 <p>Clearance between planet and satellite gears</p>	mm.	-	$\leq 0,10$
 <p>Adjustment of clearance between planet and satellite gears</p>		-	 by shims
 <p>Thickness of shims</p> <p>LANCIA $\left(\begin{array}{c} \text{ } \\ \text{ } \end{array} 0,05 \right)$ mm</p>		-	2,75 - 3,25

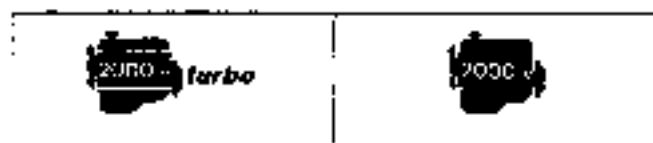












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		 turbo 				
FRONT BRAKES		Values in mm				
	Disc		Ø	257		
				19,20 ÷ 20,10	11,90 ÷ 12,10	
					18,55	11,30
				allowed	18,2	10,8
	Brake pads		allowed	1,5		
	Caliper	Ø	48			
	Master cylinder (pump)	Ø	19,05 (3/4")			
	Servo brake	ISOVAC 7" hydro-pneumatic vacuum servo acting on all four wheels				
	Distance of hydraulic piston push rod from master cylinder support plate	L	0,3 ÷ 0,5			

REAR BRAKES

	Disc		Ø	227	
				10,70 ÷ 10,90	
					9,70
				allowed	9
	Brake pads		allowed	1,5	
	Caliper	Ø	34		
	Load proportioning valve	acting on the rear wheels			
	Ratio (reduction)		0,36		



<p>Type</p>	 <p>rack and pinion power assisted</p>
<p>Ratio</p> 	<p>2.835</p>
<p>no. of turns lock to lock</p>  	<p>134 mm</p>
<p>rack travel</p> 	<p>10,4 m</p>
<p>Minimum turning circle</p> 	<p>30°46'</p>
<p>Steering angle</p>  	<p>35°4'</p>
<p>Steering column</p> 	 <p>with 2 universal joints</p>

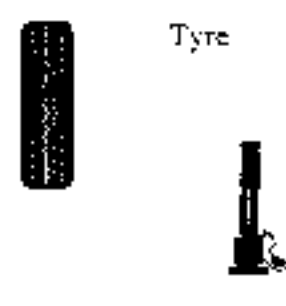
Wheels

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2000 turbo

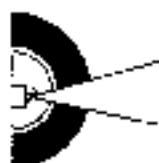
2000

WHEELS

	Tyre type	185/60 R14" 82 H 165/65 R14" 80 H*	
	front	average load	2 bar
		heavy load	2,2 bar
	rear	average load	2 bar
heavy load		2,2 bar	
Wheel rim type	light alloy 5 1/2 J x 14" AH2-45 5 1/2 J x 14" H2-45*		




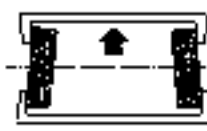


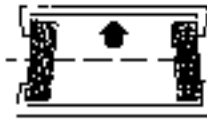
NOTE Spare wheel with 4J x 15" FH4 rim and 115/70 R15" XTL tyre
 Speed limit: 80 kph
 Inflation pressure: 4.2 bar

(*) Available on request



unladen vehicle (*)

WHEEL GEOMETRY

	camber (**) 	$-40' \pm 30'$
	caster (**) 	$3'10' \pm 30'$
Front suspension toe in 		$-0,5 \pm 1,5 \text{ mm} (\bullet)$
	camber (**) 	$-55' \pm 30'$
	Rear suspension toe in 	

(*) With tyres inflated to the correct pressure and the vehicle in running order

(**) Angles cannot be adjusted (●) Measured on a 360 mm diameter

Front suspension independent, Mac Pherson type with lower track control arm and damper comprising double acting, hydraulic, telescopic shock absorber with offset coil spring.
Stabilizer bar

Coil spring		2000cc turbo		2000cc	
Diameter of wire	mm	12.7 ± 0,05		12,4 ± 0,05	
Number of turns		5,4		5,4	
Direction of coil		clockwise			
Height of spring release	mm	436		445	
Height of spring under a load of	378 daN	mm	205	-	
	374 daN	mm	-	205	
The springs are divided into two categories identifiable by a mark:					
yellow (1) for those under a load of:	378 daN	having a height of mm	> 205	-	
	374 daN	having a height of mm	-	> 205	
green (1) for those under a load of:	378 daN	having a height of mm	≤ 205	-	
	374 daN	having a height of mm	-	≤ 205	

(1) Springs of the same category must be fitted

Shock absorbers

Type: telescopic, hydraulic, double acting		Way-Assauto
Travel	mm	158
Maximum extension	mm	521,5



Rear suspension

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Rear suspension independent, Mac Pherson type with two transverse track control arms and a lower longitudinal track control arm plus a damper comprising a double acting, telescopic, hydraulic shock absorber with an offset coil spring.

Stabilizer bar

Coil spring

			
Diameter of wire	mm	11,9 ± 0,05	11,6 ± 0,05
Number of turns		3,86	3,86
Direction of coil		clockwise	
Height of spring released	mm	316	331
Height of spring under a load of:	258 daN	mm	173
	268 daN	mm	-
The springs are subdivided into two categories identifiable by a mark:	yellow (t) for those under a load of:	258 daN having a height of mm	> 173
		268 daN having a height of mm	> 173
green (l) for those under a load of:	258 daN	having a height of mm	≤ 173
	268 daN	having a height of mm	-

(1) Springs of the same category must be fitted.

Shock absorbers

Type: telescopic, hydraulic, double acting		Way-Assauto
Travel	mm	190
Maximum extension	mm	590

	2000 turbo	2100
STARTER MOTOR	M. Marelli E95 - 1,1 kW - 12 V	
ALTERNATOR	M. Marelli AA125R - 14 V - 65 A	
VOLTAGE REGULATOR	M. Marelli RTT 119 AC	
BATTERY	12 V - 45 Ah - 225 A	
IGNITION SYSTEM	Weber injection/ignition	
IGNITION DISTRIBUTOR	DT 453 AX	
IGNITION COIL	M. Marelli BAE 504 CK	
IGNITION COIL WITH POWER MODULE	M. Marelli AEI 600 A	
SPARK PLUGS	Fiat V45 LSR M. Marelli F8 LCR Bosch WR6 DC Champion RN7 YC	

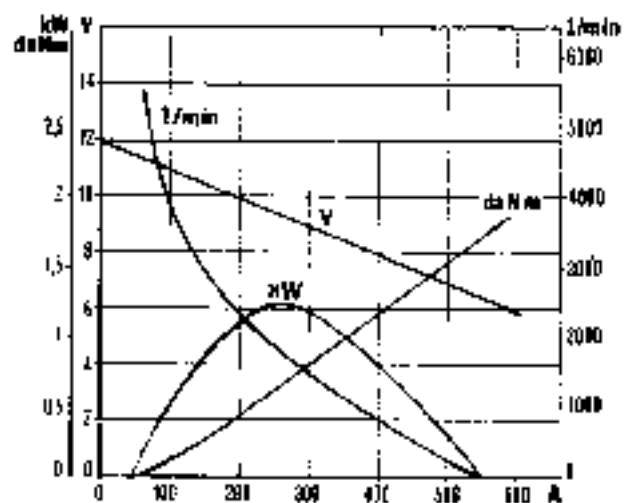


Motor: type	M. Marelli E95 - 1.1,12		
Voltage	V	12	
Nominal power	kW	1,1	
Rotation, pinon side		clockwise	
No. of poles		4	
Field coil		series-parallel	
Engagement		free wheel	
Operation		solenoid	
End float of armature shaft	mm	0,15 ± 0,45	
Data for bench test	Operating test (*):		
	current	A	270
	speed	rpm	1750
	voltage	V	9,2
	torque developed	daNm	0,65
	Engagement test (*):		
	current	A	530 - 570
	voltage	V	6,6
	torque developed	daNm	≥ 1,6
	Free running test (*):		
	current	A	35 ± 45
	voltage	V	11,6 ± 11,7
speed	rpm	8500 ± 9500	
Relay	Winding resistance (*)	pull in Ω	0,33 ± 0,37
		hold in Ω	1,13 ± 1,27
Lubrication	Internal splines and shaft bushes	VS SAE 10 W	
	Sleeve and intermediate disc	TUTELA MR3	

(*) Data obtained at an ambient temperature of 20°C

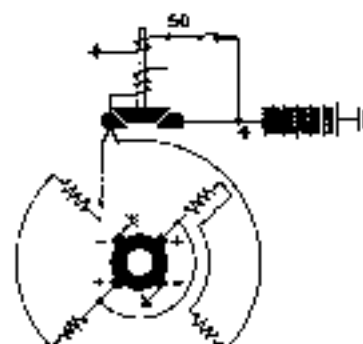
NOTE: When overhauling it is not necessary to undercut the insulator between the commutator bars

STARTER MOTOR - TYPICAL CURVES



M. Marelli E95 - 1.1/12

Wiring diagram showing M. Marelli E95 - 1.1/12 starter motor



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ALTERNATOR		7300 <i>turbo</i>	7000
		Make and type	
Nominal voltage	V	12	
Maximum current	A	65	
Cut in speed	rpm	1050 - 1150	
Current delivery on the battery at 7000 rpm	A	≥ 63	
Field winding resistance, between the slip rings (*)	Ω	2,6 - 2,8	
Direction of rotation (as seen from the control side)		clockwise	
Engine/alternator ratio		1 : 2	
Rectifier diodes		bridge	

(*) Data obtained at an ambient temperature of 25°C

VOLTAGE REGULATOR

Type		Built in electronic RTT 119 AC	
Alternator test speed	rpm	7000	
Thermal stabilization current	A	30 - 35	
Test current	A	32 - 33	
Regulation voltage (*)	V	14 14,3	

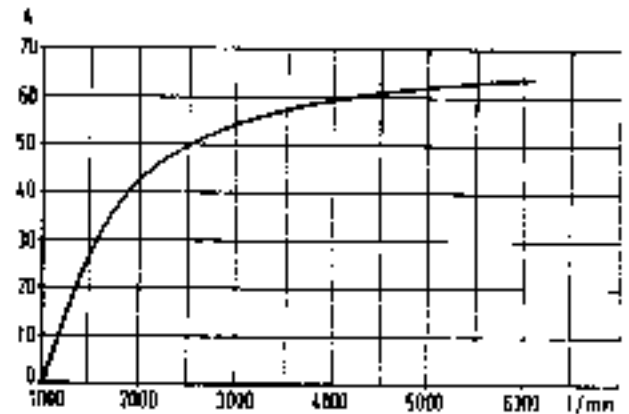
(*) Data obtained at an ambient temperature of 20°C

BATTERY

Nominal voltage	V	12
Capacity (20 hour discharge)	Ah	45

ALTERNATOR - TYPICAL OUTPUT CURVES

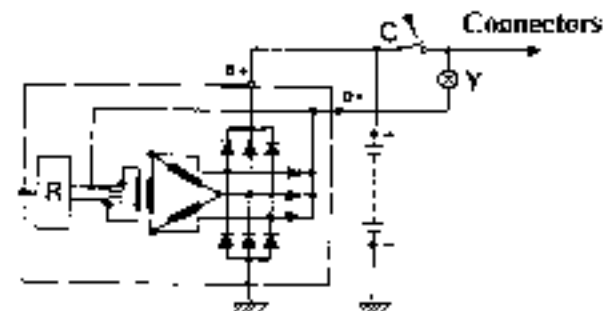
(the data in these curves refer to output at a constant voltage of 13.5 V with bedded in brushes)



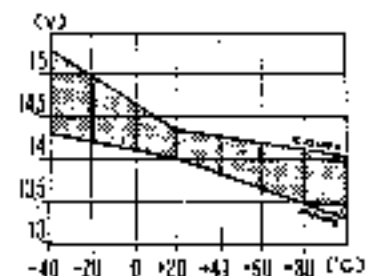
M. Marelli AA125R - 14 V - 65 A

Marelli alternator wiring diagram

- C = Ignition switch with key
- Y = Alternator recharging warning light (12V - 3.5W)
- R = Electronic voltage regulator



FIMM RTT 119 AC voltage regulator typical curve



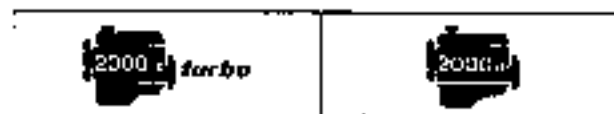
Technical data

DELTA-PRISMA 4WD

Electrical equipment: electronic injection/ignition

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POWER MODULE ELECTRONIC IGNITION



Make and type	M. Marelli AEI 600A
Firing order	1 - 3 - 4 - 2

DISTRIBUTOR

Make	M. Marelli
Type	DT 453 AX
Built in rotor arm resistance Ω	1000
Electro-magnetic impulse generator winding resistance at 20°C Ω	758 - 872

COIL

Make	M. Marelli
Type	BAE 504 CK
Primary winding resistance at 20°C Ω	0,415 - 0,495
Secondary winding resistance at 20°C Ω	4320 - 5280

TDC AND RPM SENSOR

Make and type	M. Marelli SEN 8 D
Sensor winding resistance Ω	612 - 748
Distance (gap) between sensor and crankshaft pulley teeth mm	0,4 - 1

ENGINE ADVANCE

Minimum from 800 to 850 rpm at 0.43 bar (0.60 bar)* :	15° ± 2°	18° ± 2° (*)
Maximum at 4000 rpm at 0.43 bar (0.299 bar)* :	40° ± 2°	39° ± 2° (*)

SPARK PLUGS

Make and type	Fiat V 45 LSR	Bosch WR 6 DC	Champion RN7YC	M. Marelli F8LCR
Thread	M 14 x 1,25			
Electrode gap	0,6 - 0,7 mm			

LAW INJECTION SYSTEM COMPONENTS

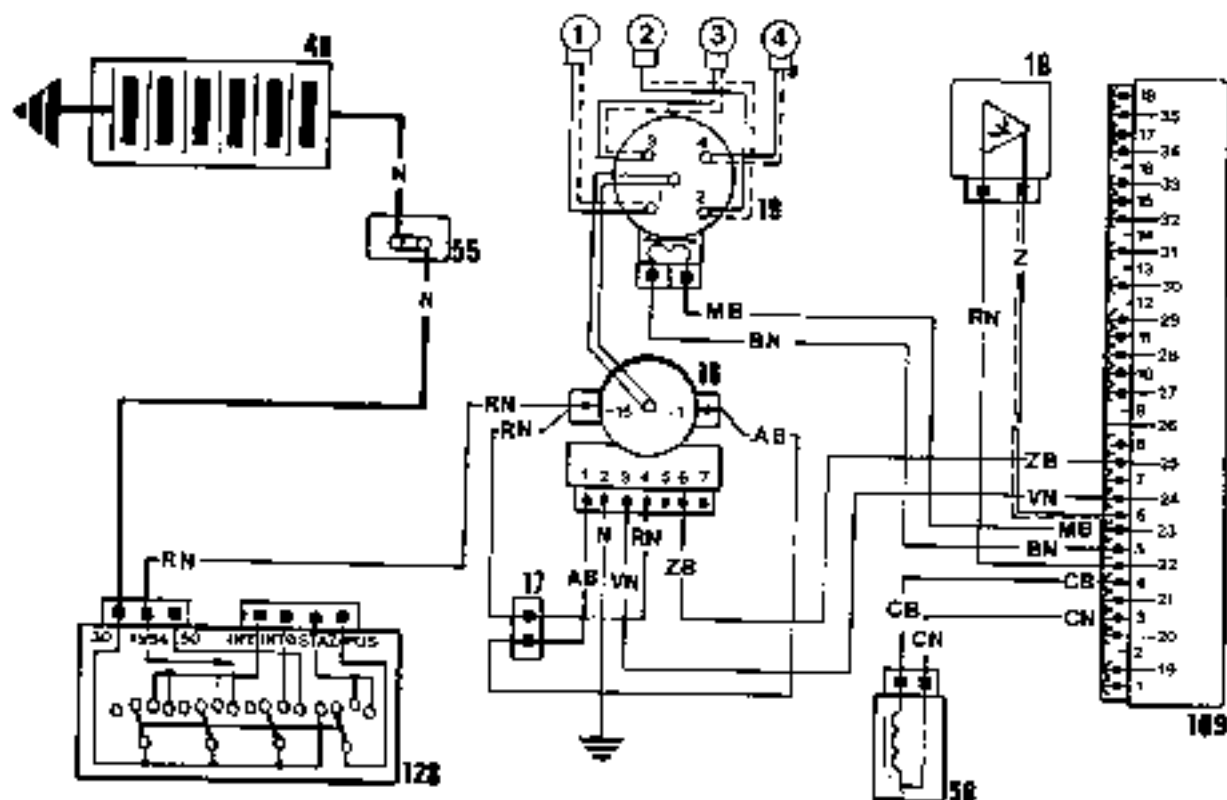


DESCRIPTION	QUANTITY	TYPE	
ELECTRONIC CONTROL UNIT	1	WH1E.03:085-F6 black label	WH26.03:HAI-BB yellow label
BUTTERFLY CASING	1	52 CFL 15	56 CFL 18
INJECTOR	4	IW 025 01	IW 024.03
ENGINE IDLE AUTOMATIC ADJUSTMENT SOLENOID VALVE	1	VAE 02	
PRESSURE REGULATOR	1	RP 1/3 bar	
AIR TEMPERATURE SENSOR	1	ATS 04	
WATER TEMPERATURE SENSOR	1	WTS 05	
ABSOLUTE PRESSURE SENSOR	1	APS 02 01	APS 03 01
BUTTERFLY VALVE POSITION SENSOR	1	PF 09.01	
FUEL FILTER	1	FI 02.01	
ELECTRIC FUEL PUMP	1	PI 022.2	

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DIAGRAM SHOWING INJECTION/IGNITION CONTROL UNIT CONNECTIONS (CONCERNING ELECTRONIC IGNITION ONLY)

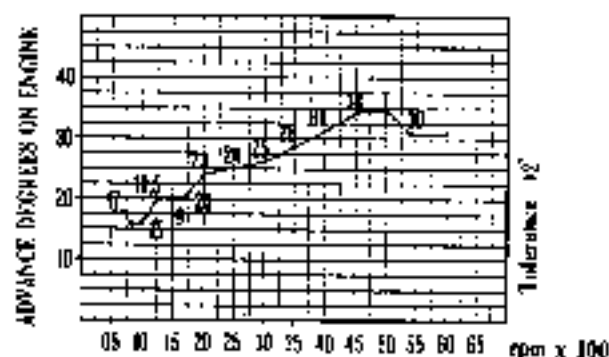
The identification numbers for the components are the same as those given in the wiring diagrams



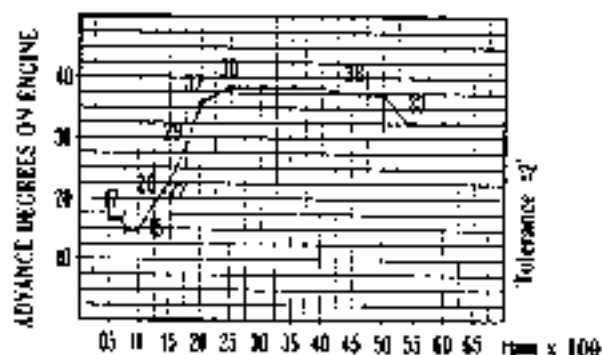
- | | |
|--|---|
| 16. Ignition coil with power module | 55. Connector |
| 17. Connection | 58. Rpm and TOC sensor |
| 18. Anti-detonation sensor | 109. Injection/ignition electronic control unit |
| 19. H.T. distributor with built in timing sensor | 128. Ignition switch |
| 40. Battery | |

CHARACTERISTIC IGNITION ADVANCE CURVES FOR EIGHT VACUUM VALUES IN THE INLET MANIFOLD

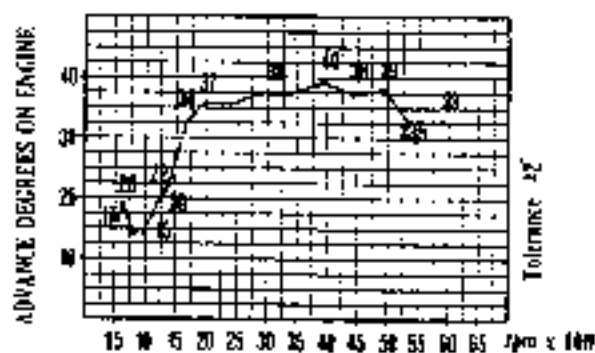
at an absolute pressure of 0,18 bar (135 mmHg)



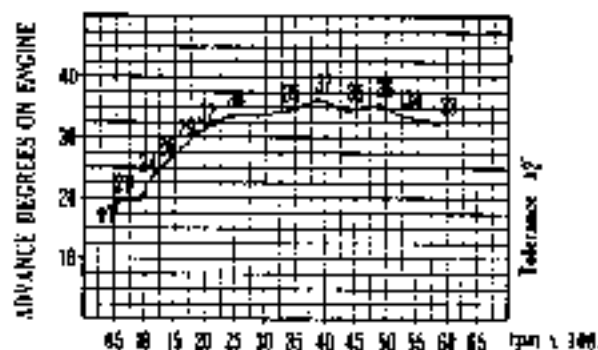
at an absolute pressure of 0,299 bar (225 mmHg)



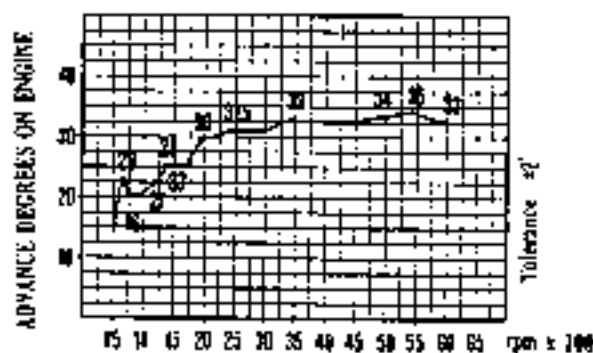
at an absolute pressure of 0,43 bar (321 mmHg)



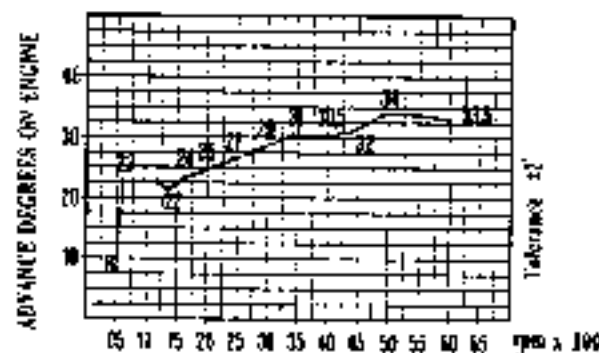
at an absolute pressure of 0,54 bar (405 mmHg)



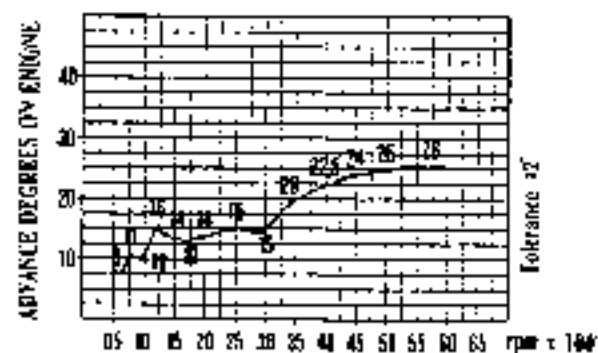
at an absolute pressure of 0,70 bar (525 mmHg)



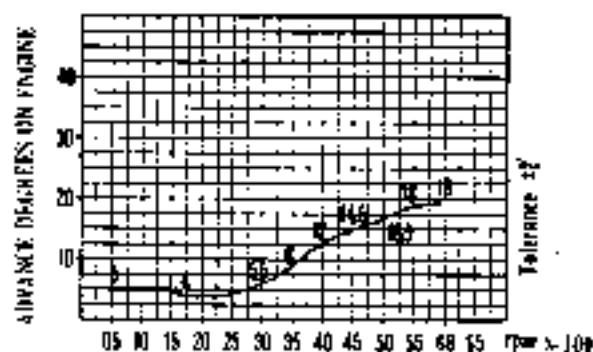
at an absolute pressure of 0,92 bar (690 mmHg)



at an absolute pressure of 1,38 bar (1035 mmHg)



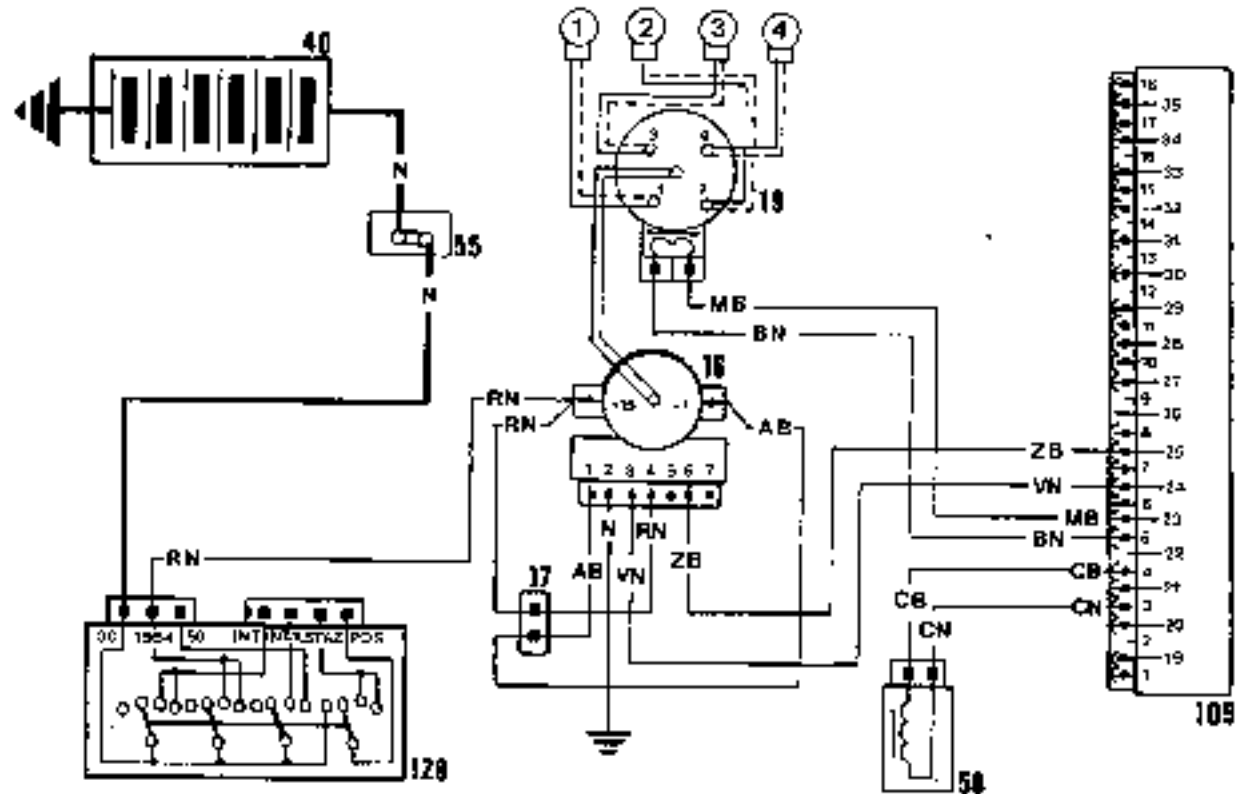
at an absolute pressure of 1,80 bar (1350 mmHg)



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DIAGRAM SHOWING INJECTION/IGNITION CONTROL UNIT CONNECTIONS (CONCERNING ELECTRONIC IGNITION ONLY)

The identification numbers for the components are the same as those used in the wiring diagrams

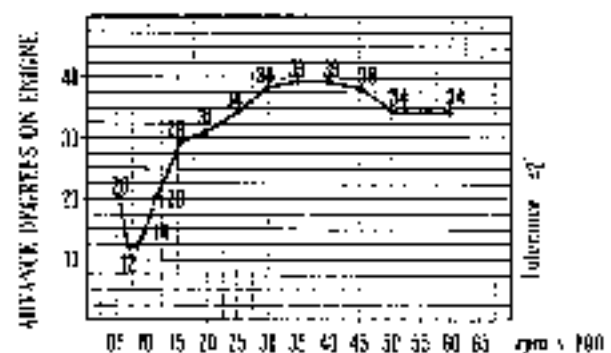
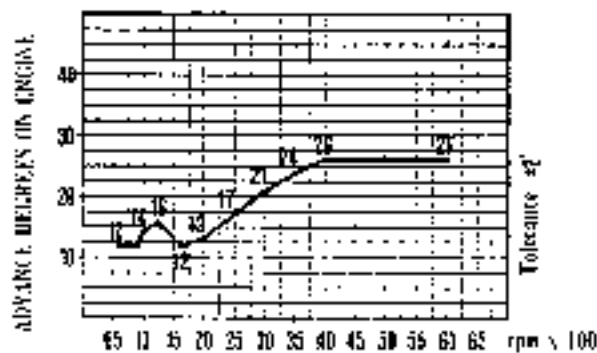


- | | |
|--|---|
| 16. Ignition coil with power module | 55. Connector |
| 17. Connection | 58. Rpm and TDC sensor |
| 19. H.T. distributor with built in timing sensor | 109. Injection ignition electronic control unit |
| 40. Battery | 128. Ignition switch |

CHARACTERISTIC IGNITION ADVANCE CURVES FOR EIGHT VACUUM VALUES IN THE INLET MANIFOLD

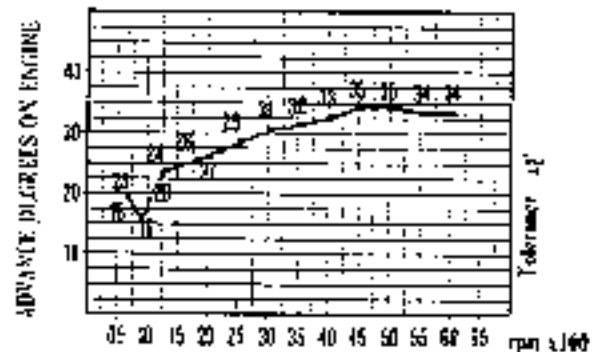
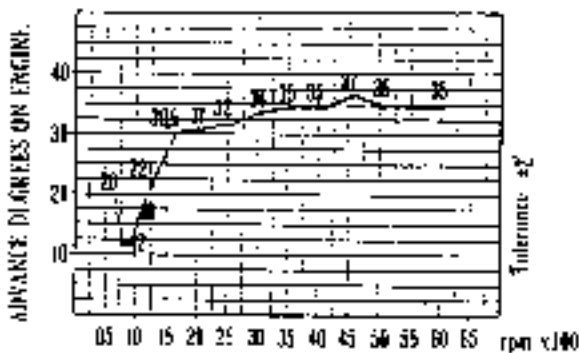
at an absolute pressure of 0,17 bar (129 mmHg)

at an absolute pressure of 0,299 bar (225 mmHg)



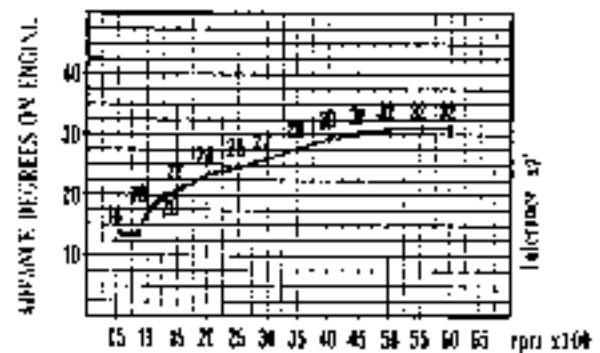
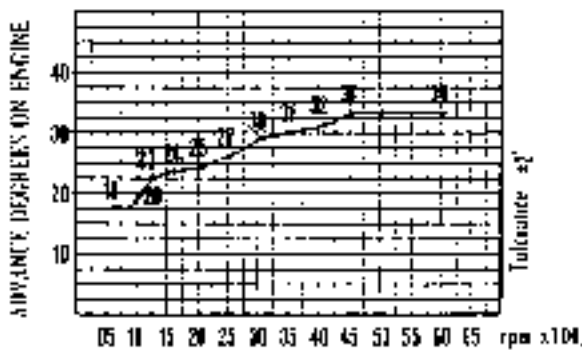
at an absolute pressure of 0,39 bar (294 mmHg)

at an absolute pressure of 0,53 bar (399 mmHg)



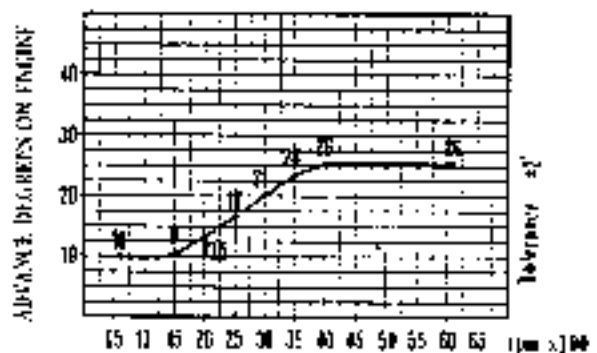
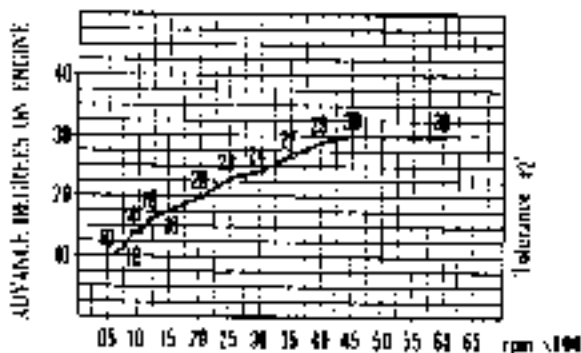
at an absolute pressure of 0,60 bar (450 mmHg)

at an absolute pressure of 0,73 bar (549 mmHg)



at an absolute pressure of 0,82 bar (615 mmHg)

at an absolute pressure of 0,82 bar (619 mmHg)



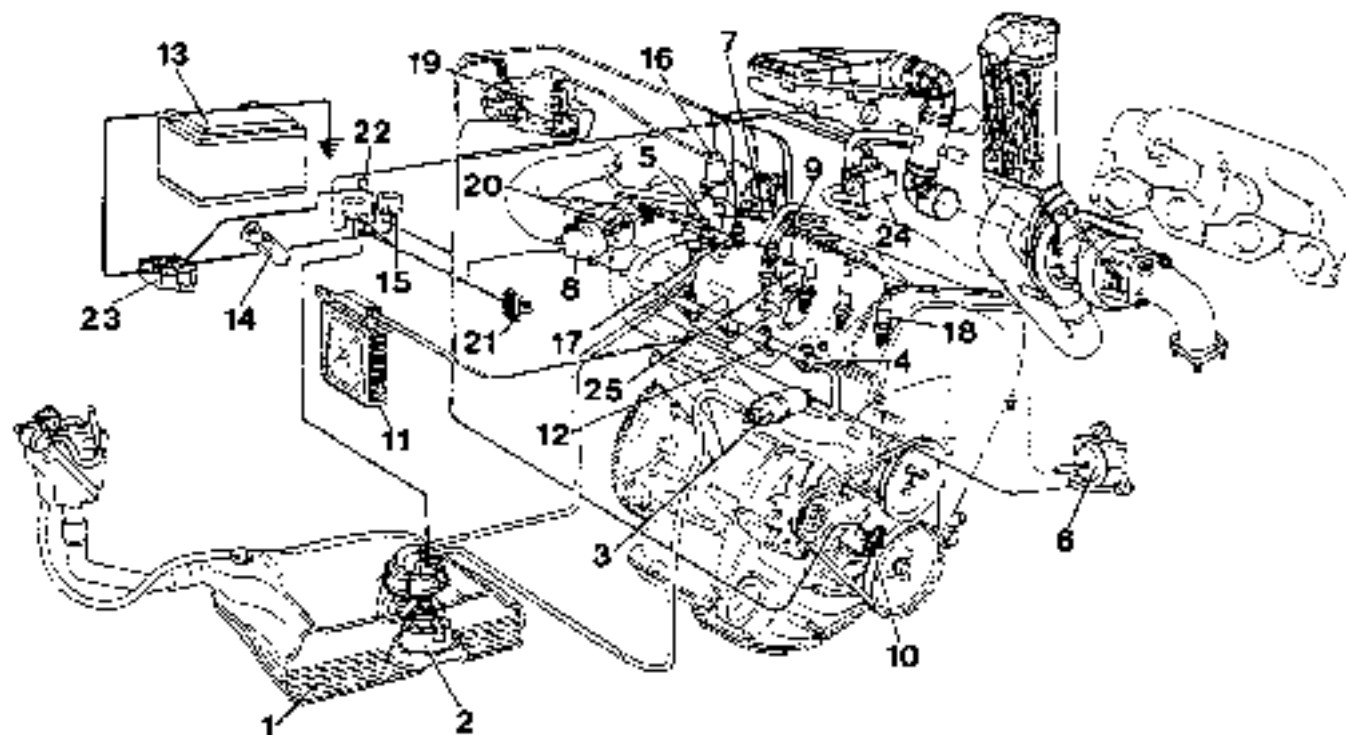


Diagram showing 1AW injection/ignition system

- | | |
|--|---|
| 1. Fuel tank | 15. Injection ignition relays |
| 2. Electric fuel pump | 16. Additional air solenoid valve for automatic adjustment of engine idling |
| 3. Fuel filter | 17. Coolant temperature sensor |
| 4. Fuel inlet | 18. Spark plugs |
| 5. Fuel pressure regulator | 19. Ignition unit |
| 6. Absolute air pressure sensor | 20. Butterfly valve |
| 7. HT distributor with injection timing sensor | 21. Diagnostic socket |
| 8. Butterfly valve position sensor | 22. W.L.I. system protective fuse |
| 9. Inlet air temperature sensor | 23. Vehicle electrical system connector |
| 10. Rpm and TDC sensor | 24. Overboost solenoid valve |
| 11. Electronic control unit | 25. Detonation sensor |
| 12. Injector | |
| 13. Battery | |
| 14. Ignition switch | |

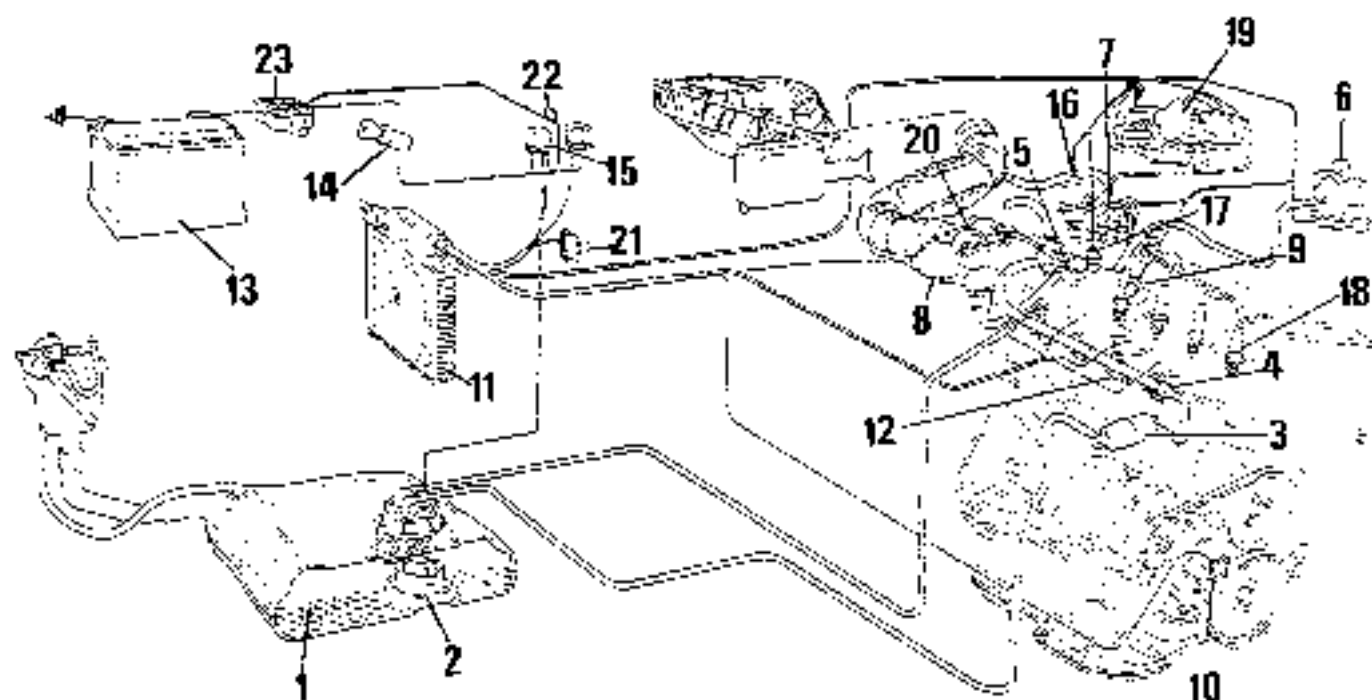


Diagram showing IAW Injection/ignition system

- | | |
|--|---|
| 1. Fuel tank | 15. Injection ignition relays |
| 2. Electric fuel pump | 16. Additional air solenoid valve for automatic adjustment of engine idling |
| 3. Fuel filter | 17. Coolant temperature sensor |
| 4. Fuel manifold | 18. Spark plugs |
| 5. Fuel pressure regulator | 19. Ignition unit |
| 6. Inlet air absolute pressure sensor | 20. Butterfly valve |
| 7. HT distributor with injection timing sensor | 21. Diagnostic socket (located near injection control unit connector) |
| 8. Butterfly valve position sensor | 22. IAW system protective fuse |
| 9. Inlet air temperature sensor | 23. Vehicle electrical system connector |
| 10. Rpm and TDC sensor | |
| 11. Electronic control unit | |
| 12. Injectors | |
| 13. Battery | |
| 14. Ignition switch | |