

Engine & Cooling	Fuel	Ignition	Electrical	Running gear	Torque settings	Capacities	Notes & Illustrations
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Automotive Technical DATA BOOK

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Engine and cooling system Frontera 2.2i 16V 1995 to 1997

Type	X22XE 16V Ecotec 100kW	
Capacity (cm ³) / number of cylinders	2198 / 4	
Compression ratio / pressure	bar	10.5 /
Oil pressure	bar	1.5
Oil temperature	°C	≥80
Valve clearance - inlet	mm	0: Hyd.
Valve clearance - exhaust	mm	0: Hyd.
Firing order	1-3-4-2	
No 1 cylinder position	TBE	
Thermostat opening temperature	°C	92 to 107
Radiator cap pressure	bar	1.2 to 1.4

Fuel system Frontera 2.2i 16V 1995 to 1997

Idle speed - manual [auto]	rpm	700 to 1000
Fast idle speed - manual [auto]	rpm	—
CO @ idle speed [3000 rpm] - see page VI	%	≤0.5
HC @ idle speed [3000 rpm] - see page VI	ppm	≤200
CO ₂ @ idle speed [3000 rpm] - see page VI	%	—
O ₂ @ idle speed [3000 rpm] - see page VI	%	—
Carburettor / fuel injection	Bosch	
Type / ref	M1.5.4-Motronic	
Main jet / needle	—	
Injection pressure	bar	3.0
Pump pressure	bar	—
Octane rating	RON	95[U]

Ignition system Frontera 2.2i 16V 1995 to 1997

Type	DIS	
Ignition coil	Bosch 0 221 122 369	
Primary resistance	ohms	0.72±0.04
Ballast resistor	ohms	—
Voltage - Tmnl 15(+) to earth	V	—
Distributor	Bosch	
Points gap (air gap)	mm	—
Dwell angle	° (%)	Electronic control
Condenser capacity	µF	—
Rotation	Anticlockwise	
Ignition timing - basic [static	° Crankshaft @ rpm	Computer control N/A
V = Vacuum NV = No Vacuum	—	
Total ignition advance	° Crankshaft @ rpm	Computer control
	° Crankshaft @ rpm	—
	° Crankshaft @ rpm	—
Centrifugal check.	° Crankshaft @ rpm	Computer control
	° Crankshaft @ rpm	—
	° Crankshaft @ rpm	—
Vacuum range check	mbar	Computer control
Maximum vacuum advance	° Crankshaft	—
Spark plugs	Bosch	
Type	FR7LDC	
Electrode gap	mm	0.70 to 0.80

Electrical system Frontera 2.2i 16V 1995 to 1997

Battery	V / CC / RC	12/55Ah
Alternator voltage / full load current / engine rpm	13.7 to 14.5 / 70, 90 / 2000	
Starter motor current / voltage - cranking	A / V	40 to 75 / 10.6 to 11.5
- locked	A / V	400 to 600 / 7.0 to 12.0

Running gear Frontera 2.2i 16V 1995 to 1997

Brakes -		
Front (min. friction material thickness)	mm	1.0
Rear (min. friction material thickness)	mm	1.0

Tyres		
Saloon	Size	—
Estate / Van	Size	235/70x16: 255/65x16
Pressure - front / rear - Saloon	bar	—
- Estate / Van	bar	2.0 / 2.2

Front suspension / wheel alignment

Toe-in (+) / Toe-out (-)	mm [°]	0±2.0
Camber		0±45'
Castor		2°10'±45'
King pin inclination		12°30'±30'

Rear suspension / wheel alignment

Toe-in (+) / Toe-out (-)	mm [°]	—
Camber		—

Torque wrench settings Frontera 2.2i 16V 1995 to 1997

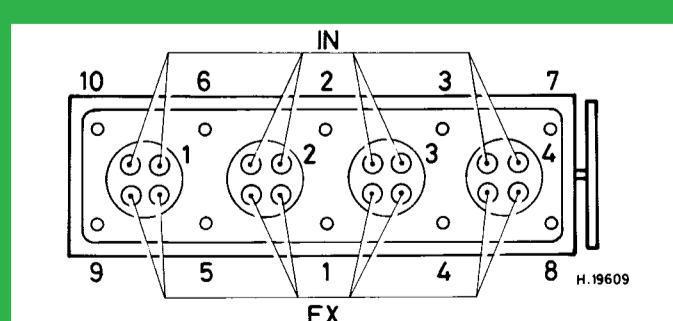
Cylinder head - stage 1	Nm	25 N
- stage 2	Nm	+90°
Cylinder head - stage 3	Nm	+90°
- stage 4	Nm	+90°
Big-end bearings	Nm	35 +45° +15° N
Main bearings	Nm	—
Clutch cover	Nm	15
Flywheel [driveplate]	Nm	65 +30° +15° N
Front hubs	Nm	WSM
Rear hubs	Nm	WSM
Wheel nuts / bolts	Nm	100. Alloy: 120
Spark plugs	Nm	25

Capacities Frontera 2.2i 16V 1995 to 1997

Engine oil & filter	litres	5.0
Gearbox - 4-speed [5-speed]	litres	4.4
Automatic transmission - refill	litres	—
Final drive	litres	—
Cooling system	litres	8.3
Fuel tank	litres	80

Notes and Illustrations

¹Rear: 2.4. LSD: 1.9



2198 cm³, 16V