

Engine & CoolingFuelIgnitionElectricalRunning gearTorque settingsCapacitiesNotes & Illustrations



Automotive Technical
DATA BOOK

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Engine and cooling system		Tempra 1.6ie CAT	1991 to 1994
Type		159 A3.046 SOHC 57kW US83	
Capacity (cm³) / number of cylinders		1581 / 4	
Compression ratio / pressure	bar	9.2+0.1-0.2 / _	
Oil pressure	bar	1.5 [4.6]	
Oil temperature	°C	100	
Valve clearance - inlet	mm	0.40±0.05	
Valve clearance - exhaust	mm	0.50±0.05	
Firing order		1-3-4-2	
No 1 cylinder position		TBE	
Thermostat opening temperature	°C	85 to 89	
Radiator cap pressure	bar	0.98	

Fuel system		Tempra 1.6ie CAT	1991 to 1994
Idle speed - manual [auto]	rpm	800 to 850	
Fast idle speed - manual [auto]	rpm	_	
CO @ idle speed [3000 rpm] - see page VI	%	0.4 to 1.0. Ex: ≤0.5 N/A	
HC @ idle speed [3000 rpm] - see page VI	ppm	≤500. Ex: ≤100	
CO2 @ idle speed [3000 rpm] - see page VI	%	_	
O2 @ idle speed [3000 rpm] - see page VI	%	_	
Carburettor / fuel injection		Bosch¹	
Type / ref		SPI Mono-Jetronic	
Main jet / needle		_	
Injection pressure	bar	_	
Pump pressure	bar	_	
Octane rating	RON	95[U]	

Ignition system		Tempra 1.6ie CAT	1991 to 1994
Type		Digiplex 2-Static¹	
Ignition coil		Marelli BAE 504D	
Primary resistance	ohms	0.405 to 0.495	
Ballast resistor	ohms	_	
Voltage - Tmnl 15(+) to earth	V	_	
Distributor		Marelli	
Points gap (air gap)	mm	_	
Dwell angle	° (%)	_	
Condenser capacity	µF	_	
Rotation		_	
Ignition timing - basic [static	° Crankshaft @ rpm	4±2 BTDC @ 600 to 1000 N/A	
V = Vacuum NV = No Vacuum		_	
Total ignition advance	° Crankshaft @ rpm	44±2 BTDC @ ≤5000	
	° 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		Champion	
Type		RN9YCC	
Electrode gap	mm	0.85 to 0.95	

Electrical system		Tempra 1.6ie CAT	1991 to 1994
Battery	V / CC / RC	12 / 255 / 55Ah	
Alternator voltage / full load current / engine rpm		14.0 to 14.6 / 65 / 3500	
Starter motor current / voltage - cranking	A / V	200 / 9.8 to 10.0	
- locked	A / V	440 / 7.6	

Running gear		Tempra 1.6ie CAT	1991 to 1994
Brakes -			
Front (min. friction material thickness)	mm	1.5	
Rear (min. friction material thickness)	mm	1.5	

Tyres		165/70x13:165/65x14:185/60x14
Saloon	Size	
Estate / Van	Size	175\65x14: 185/60x14
Pressure - front / rear - Saloon	bar	2.0 / 2.0¹
- Estate / Van	bar	2.2 / 2.2

Front suspension / wheel alignment		-1.0 to +1.0
Toe-in (+) / Toe-out (-)	mm [°]	
Camber		-20' to +40' N/A
Castor		+1°10' to 2°10' N/A²
King pin inclination		_
Rear suspension / wheel alignment		-3.0 to +1.0
Toe-in (+) / Toe-out (-)	mm [°]	
Camber		-30' to -1°30' N/A

Torque wrench settings		Tempra 1.6ie CAT	1991 to 1994
Cylinder head - stage 1	Nm	20	
- stage 2	Nm	40	
Cylinder head - stage 3	Nm	+ 90°	
- stage 4	Nm	+ 90°	
Big-end bearings	Nm	51	
Main bearings	Nm	80	
Clutch cover	Nm	38	
Flywheel [driveplate]	Nm	83	
Front hubs	Nm	235	
Rear hubs	Nm	284	
Wheel nuts / bolts	Nm	86	
Spark plugs	Nm	25 to 30	

Capacities		Tempra 1.6ie CAT	1991 to 1994
Engine oil & filter	litres	3.7	
Gearbox - 4-speed [5-speed]	litres	2.0	
Automatic transmission - refill	litres	3.5	
Final drive	litres	WT	
Cooling system	litres	6.3	
Fuel tank	litres	62	

Notes and Illustrations

¹93 ►: Bosch MA1.7-Mono-Motronic

²185/60x14: 2.2 / 2.4

³PAS 4D: +2°10' to 3°10'. 5D: +50' to 1°50'

