

Engine & Cooling

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Automotive Technical
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Engine and cooling systemTempra 2.0ie & 4x4 CAT1991 to 1997

Type		159 A6.046 DOHC 8V 83kW US83
Capacity (cm ³) / number of cylinders		1995 / 4
Compression ratio / pressure	bar	9.5±0.15 / _
Oil pressure	bar	≥0.8 [4.0]
Oil temperature	°C	100
Valve clearance - inlet	mm	0.40±0.04
Valve clearance - exhaust	mm	0.50±0.04
Firing order		1-3-4-2
No 1 cylinder position		TBE
Thermostat opening temperature	°C	81 to 85
Radiator cap pressure	bar	0.98

Fuel systemTempra 2.0ie & 4x4 CAT1991 to 1997

Idle speed - manual [auto]	rpm	850±50
Fast idle speed - manual [auto]	rpm	_
CO @ idle speed [3000 rpm] - see page VI	%	≤0.35
HC @ idle speed [3000 rpm] - see page VI	ppm	≤90
CO2 @ idle speed [3000 rpm] - see page VI	%	≥13.0
O2 @ idle speed [3000 rpm] - see page VI	%	_
Carburettor / fuel injection		Weber-Marelli
Type / ref		IAW MPI WF4S1
Main jet / needle		_
Injection pressure	bar	3.0±0.2
Pump pressure	bar	≤4.5
Octane rating	RON	95[U]

Ignition systemTempra 2.0ie & 4x4 CAT1991 to 1997

Type		IAW
Ignition coil		Marelli BAE 504DK
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	15±2 BTDC @ 850±50 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		Champion
Type		RN7YCC
Electrode gap	mm	0.85 to 0.95

Electrical systemTempra 2.0ie & 4x4 CAT1991 to 1997

Battery	V / CC / RC	12 / 320 / 60Ah
Alternator voltage / full load current / engine rpm		14.0 to 14.6 / 65, 90 / 3500
Starter motor current / voltage - cranking	A / V	360 to 380 / 8.15 to 8.5
- locked	A / V	680 to 730 / 4.8 to 5.2

Running gearTempra 2.0ie & 4x4 CAT1991 to 1997

Brakes -		
Front (min. friction material thickness)	mm	1.5
Rear (min. friction material thickness)	mm	1.5

Tyres		
Saloon	Size	175/65x14: 185/60x14
Estate / Van	Size	175/65x14: 185/60x14
Pressure - front / rear - Saloon	bar	2.2 / 2.2
- Estate / Van	bar	2.2 / 2.2

Front suspension / wheel alignment		
Toe-in (+) / Toe-out (-)	mm [°]	0±1.0
Camber		+25'±30'. 4x4: -20'±50' N/A
Castor		+2°50'±30' N/A ¹
King pin inclination		_

Rear suspension / wheel alignment		
Toe-in (+) / Toe-out (-)	mm [°]	-3.0 to +1.0
Camber		-1°30'±15' N/A ²

Torque wrench settingsTempra 2.0ie & 4x4 CAT1991 to 1997

Cylinder head - stage 1	Nm	20
- stage 2	Nm	60
Cylinder head - stage 3	Nm	+ 90°
- stage 4	Nm	+ 90°
Big-end bearings	Nm	25 + 50°
Main bearings	Nm	Centre: 20 + 130° ³
Clutch cover	Nm	38
Flywheel [driveplate]	Nm	142
Front hubs	Nm	235
Rear hubs	Nm	284
Wheel nuts / bolts	Nm	86
Spark plugs	Nm	27

CapacitiesTempra 2.0ie & 4x4 CAT1991 to 1997

Engine oil & filter	litres	5.2
Gearbox - 4-speed [5-speed]	litres	2.0. 4x4: 3.8
Automatic transmission - refill	litres	4.25
Final drive	litres	WT. 4x4: 1.1
Cooling system	litres	6.9 [AT: 7.4]
Fuel tank	litres	62

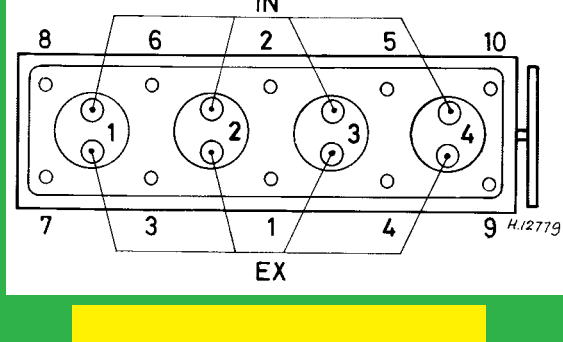
Notes and Illustrations

¹4x4: +2°30' to 3°30'

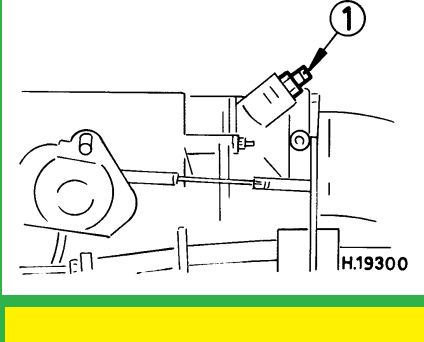
²4x4: -30' to -1°30'

³Side: 20 + 90°

1: Idle speed 2: CO / Mixture



1995 cm³, 8V



Weber-Marelli IAW