

VAUXHALL/OPEL

Carlton/Omega-A 2.0i

1986 to 1994

Engine & Cooling

Fuel

Ignition

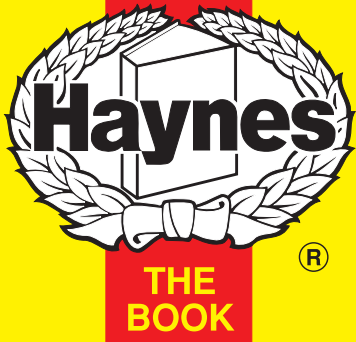
Electrical

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Automotive Technical
DATA BOOK

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Engine and cooling system

Carlton/Omega-A 2.0i

1986 to 1994

Type		20SE SOHC. 90kW. 15.04 ¹
Capacity (cm ³) / number of cylinders		1998 / 4
Compression ratio / pressure	bar	10.0 / _
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 1.3

Fuel system

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1986 to 1994

Idle speed - manual [auto]	rpm	720 to 880
Fast idle speed - manual [auto]	rpm	_
CO @ idle speed [3000 rpm] - see page VI	%	0.5 to 1.0
HC @ idle speed [3000 rpm] - see page VI	ppm	≤1200
CO2 @ idle speed [3000 rpm] - see page VI	%	_
O2 @ idle speed [3000 rpm] - see page VI	%	_
Carburettor / fuel injection		Bosch
Type / ref		ML4.1-Motronic. 90 ►: M1.5
Main jet / needle		_
Injection pressure	bar	2.5±0.2 ²
Pump pressure	bar	3.0±0.1 ³
Octane rating	RON	98[E 95 RON] ⁴

Ignition system

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Type		DME Motronic
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	8 to 12 BTDC @ idle N/A
V = Vacuum NV = No Vacuum		NV
Total ignition advance	° Crankshaft @ rpm	_
	° 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		AC/Champion
Type		CR42CXLS / RN7YC
Electrode gap	mm	0.70 to 0.80

Electrical system

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Battery	V / CC / RC	12 / 44Ah
Alternator voltage / full load current / engine rpm		13.8 to 14.8 / 90 / 2000
Starter motor current / voltage - cranking	A / V	75 / 11.5 (no load)
- locked	A / V	475 to 600 / 12

Running gear

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Brakes -		
Front (min. friction material thickness)	mm	7.0 with backing
Rear (min. friction material thickness)	mm	7.0 with backing

Tyres		
Saloon	Size	185/70x14: 195/65x15
Estate / Van	Size	175x14: 185/70x14: 195/65x15
Pressure - front / rear - Saloon	bar	2.2 / 2.2
- Estate / Van	bar	2.0 / 2.2

Front suspension / wheel alignment		
Toe-in (+) / Toe-out (-)	mm [°]	[0 to +20'] L
Camber		-1°55' to -15'
Castor		⁵
King pin inclination		_

Rear suspension / wheel alignment		
Toe-in (+) / Toe-out (-)	mm [°]	-0.5 to +5.5 ⁶
Camber		4D: -2°20' to -1°. 5D ⁷

Torque wrench settings

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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° to 60° N
Main bearings	Nm	50 + 40° to 50° N
Clutch cover	Nm	15
Flywheel [driveplate]	Nm	65 + 30° to 45° ⁸
Front hubs	Nm	320
Rear hubs	Nm	WSM
Wheel nuts / bolts	Nm	90
Spark plugs	Nm	25

Capacities

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1986 to 1994

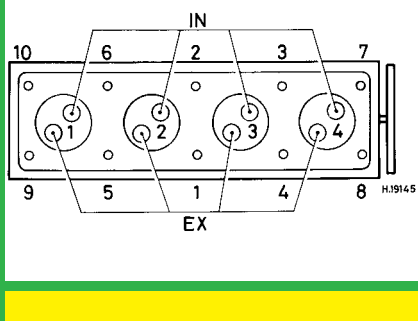
Engine oil & filter	litres	4.5
Gearbox - 4-speed [5-speed]	litres	1.9
Automatic transmission - refill	litres	5.5. AR25: 2.6
Final drive	litres	4D: 0.9. 5D: 1.1
Cooling system	litres	6.4
Fuel tank	litres	4D: 75. 5D: 70

Notes and Illustrations

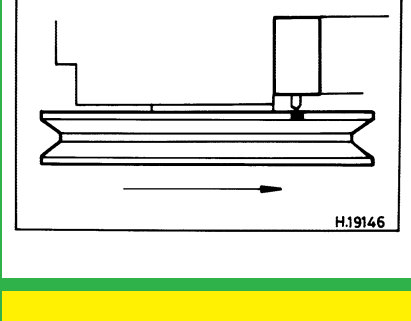
- ¹94 ►: ECE R 83A
- ²M1.5-Motronic: 1.8 to 2.2
- ³M1.5-Motronic: 2.5 to 3.0
- ⁴Octane rating plug = 95 RON. 89 ►: [E 95 RON]
- ⁵4D manual steering: +2° to 4°. PAS: +4°30' to 6°30'. 5D manual steering: +1°30' to 3°30'. PAS: +4° to 6°
- ⁶5D: 0 to +6.0
- ⁷-2°5' to -45'
- ⁸Use locking compound

1: Idle speed

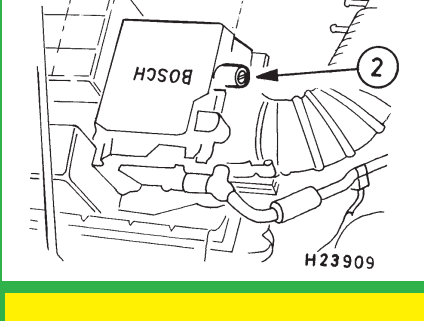
2: CO / Mixture



1998cm³, 8V



1998 cm³, 8V, 20SE



Motronic