

VAUXHALL/OPEL

Cavalier/Vectra-A 16V/4x4 CAT

1989 to 1995

Engine & Cooling

Fuel

Ignition

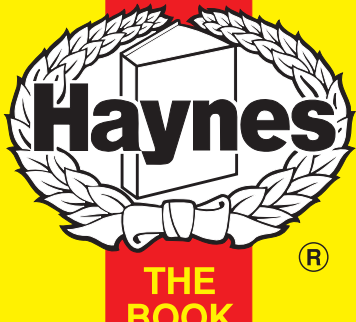
Electrical

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Automotive Technical

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Engine and cooling system

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Type		C20XE DOHC 16V 110kW 91/441/EE
Capacity (cm ³) / number of cylinders		1998 / 4
Compression ratio / pressure	bar	10.5 / _
Oil pressure	bar	2.5
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	91 to 107
Radiator cap pressure	bar	1.20 to 1.35

Fuel system

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Idle speed - manual [auto]	rpm	860 to 1020
Fast idle speed - manual [auto]	rpm	_
CO @ idle speed [3000 rpm] - see page VI	%	[≤0.3]
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		M2.5-Motronic. 93 ►: M2.8
Main jet / needle		_
Injection pressure	bar	2.0 to 2.2 ¹
Pump pressure	bar	2.3 to 2.7 ²
Octane rating	RON	95[U]

Ignition system

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Type		DME Motronic ³
Ignition coil		Bosch ³
Primary resistance	ohms	0.2 to 0.34
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	N/A
V = Vacuum NV = No Vacuum		_
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		Bosch/Champion ⁴
Type		FR7DC-2 / RC9MCC
Electrode gap	mm	0.70 to 0.80

Electrical system

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Battery	V / CC / RC	12 / 210 / 65
Alternator voltage / full load current / engine rpm		14.5±0.25 / 70, 90 / 3500
Starter motor current / voltage - cranking	A / V	35 to 80 / 10.6 to 11.5
- locked	A / V	350 to 820 / 4.5 to 8.6

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	195/60x15: 205/55x15
Estate / Van	Size	_
Pressure - front / rear - Saloon	bar	2.4 / 2.2
- Estate / Van	bar	_

Front suspension / wheel alignment		
Toe-in (+) / Toe-out (-)	mm [°]	[-15'±10']
Camber		-40'±45' L
Castor		+2°±1° L
King pin inclination		_

Rear suspension / wheel alignment		
Toe-in (+) / Toe-out (-)	mm [°]	[-25'+30'-20"] ⁵
Camber		-2°10'±40" ⁶

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° +15° N
Main bearings	Nm	50 + 45° +15° N
Clutch cover	Nm	15
Flywheel [driveplate]	Nm	65 + 30° +15° N
Front hubs	Nm	WSM
Rear hubs	Nm	WSM ⁷
Wheel nuts / bolts	Nm	110
Spark plugs	Nm	25

Capacities

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Engine oil & filter	litres	4.5
Gearbox - 4-speed [5-speed]	litres	1.9. Transfer: 0.6
Automatic transmission - refill	litres	_
Final drive	litres	Rear 4x4: 0.8
Cooling system	litres	7.2
Fuel tank	litres	65 ⁸

Notes and Illustrations

- ¹M2.8-Motronic: 2.2 to 2.7
- ²M2.8-Motronic: 3.0 to 3.5
- ³93 ►: M2.8-Motronic: DIS EST with dual coils
- ⁴93 ►: Bosch FR8LDC
- ⁵4x4: [+18'+30'-20']
- ⁶4x4: -2°±40'
- ⁷4x4: 50 + 60° +15°
- ⁸91 ►: 63

