

Engine & Cooling

Fuel

Ignition

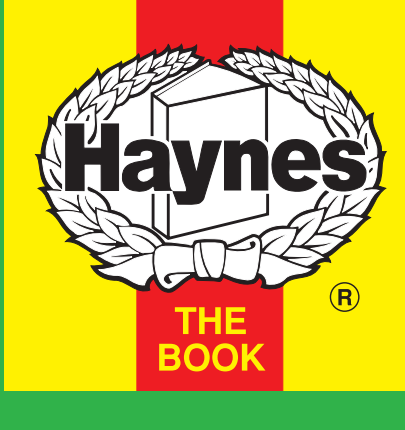
Electrical

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Automotive Technical
DATA BOOK

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Engine and cooling system

Sierra & Sapphire Cosworth

1986 to 1990

Type		N5A (DOHC 16V Turbo)	15.04
Capacity (cm ³) / number of cylinders		1993 / 4	
Compression ratio / pressure	bar	8.0 / 8.5	
Oil pressure	bar	1.8 [2.4]	
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	76 to 88 [70 to 82, RS500]	
Radiator cap pressure	bar	0.85 to 1.10	

Fuel system

Sierra & Sapphire Cosworth

1986 to 1990

Idle speed - manual [auto]	rpm	850±50	
Fast idle speed - manual [auto]	rpm	—	
CO @ idle speed [3000 rpm] - see page VI	%	1.5±0.5	
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		Weber-Marelli	
Type / ref		Electronic injection /ignition	
Main jet / needle		—	
Injection pressure	bar	3.5	
Pump pressure	bar	≥5.0	
Octane rating	RON	97[RA] ¹	

Ignition system

Sierra & Sapphire Cosworth

1986 to 1990

Type		Computerized	
Ignition coil		Motorcraft	
Primary resistance	ohms	0.72 to 0.88	
Ballast resistor	ohms	—	
Voltage - Tmnl 15(+) to earth	V	—	
Distributor		Marelli	
Points gap (air gap)	mm	[0.20 to 0.30]	
Dwell angle	° (%)	—	
Condenser capacity	µF	—	
Rotation		Clockwise	
Ignition timing - basic [static	° Crankshaft @ rpm	16 BTDC @ idle [RS500: 13°] ¹	
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		Motorcraft/Champion	
Type		AGPR902P / C59C	
Electrode gap	mm	0.75	

Electrical system

Sierra & Sapphire Cosworth

1986 to 1990

Battery	V / CC / RC	12 / 500 / 70 or 590 / 90	
Alternator voltage / full load current / engine rpm		13.7 to 14.6 / _ / 4000	
Starter motor current / voltage - cranking	A / V	—	
- locked	A / V	—	

Running gear

Sierra & Sapphire Cosworth

1986 to 1990

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

Tyres			
Saloon	Size	205/50x15	
Estate / Van	Size	—	
Pressure - front / rear - Saloon	bar	2.1 / 2.3	
- Estate / Van	bar	—	

Front suspension / wheel alignment			
Toe-in (+) / Toe-out (–)	mm [°]	+2.0	
Camber		-1°28'	
Castor		+3°5'	
King pin inclination		—	

Rear suspension / wheel alignment			
Toe-in (+) / Toe-out (–)	mm [°]	—	
Camber		—	

Torque wrench settings

Sierra & Sapphire Cosworth

1986 to 1990

Cylinder head - stage 1	Nm	45 to 50 N	
- stage 2	Nm	+ 180±10°	
Cylinder head - stage 3	Nm	110	
- stage 4	Nm	—	
Big-end bearings	Nm	55 to 60	
Main bearings	Nm	88 to 102	
Clutch cover	Nm	19 to 22	
Flywheel [driveplate]	Nm	64 to 70	
Front hubs	Nm	315 to 350	
Rear hubs	Nm	250 to 290	
Wheel nuts / bolts	Nm	100	
Spark plugs	Nm	28 to 33	

Capacities

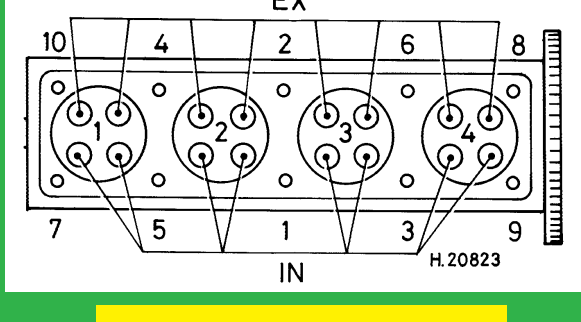
Sierra & Sapphire Cosworth

1986 to 1990

Engine oil & filter	litres	3.4	
Gearbox - 4-speed [5-speed]	litres	2.6	
Automatic transmission - refill	litres	—	
Final drive	litres	1.0	
Cooling system	litres	7.5	
Fuel tank	litres	60	

Notes and Illustrations

¹[E 95 RON]: 12° BTDC @ idle



1993 cm³, 16V