

Engine & Cooling

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Engine and cooling systemSierra & Sapphire 2.0i CAT1989 to 1993

Type		N9C. DOHC 8V 88kW US83
Capacity (cm ³) / number of cylinders		1998 / 4
Compression ratio / pressure	bar	10.3 / 11 to 13
Oil pressure	bar	1.6 [3.1]
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	85 to 89
Radiator cap pressure	bar	1.00 to 1.25

Fuel systemSierra & Sapphire 2.0i CAT1989 to 1993

Idle speed - manual [auto]	rpm	875±25 N/A
Fast idle speed - manual [auto]	rpm	—
CO @ idle speed [3000 rpm] - see page VI	%	≤0.5 N/A
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		Ford
Type / ref		EEC IV
Main jet / needle		—
Injection pressure	bar	2.5±0.2
Pump pressure	bar	≥3.0
Octane rating	RON	95[U]

Ignition systemSierra & Sapphire 2.0i CAT1989 to 1993

Type		EEC IV
Ignition coil		High output
Primary resistance	ohms	0.72 to 0.88
Ballast resistor	ohms	—
Voltage - Tmnl 15(+) to earth	V	—
Distributor		Bosch/Motorcraft
Points gap (air gap)	mm	—
Dwell angle	° (%)	—
Condenser capacity	µF	—
Rotation		Clockwise
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	EEC IV control
	° Crankshaft @ rpm	—
	° Crankshaft @ rpm	—
Vacuum range check	mbar	EEC IV control
Maximum vacuum advance	° Crankshaft	—
Spark plugs		Motorcraft/Champion
Type		AGPR22CD / RC7YCC
Electrode gap	mm	0.75

Electrical systemSierra & Sapphire 2.0i CAT1989 to 1993

Battery	V / CC / RC	12 / 200 / 70, 250 / 80
Alternator voltage / full load current / engine rpm		13.5 / _ / 3000
Starter motor current / voltage - cranking	A / V	—
- locked	A / V	—

Running gearSierra & Sapphire 2.0i CAT1989 to 1993

Brakes -		
Front (min. friction material thickness)	mm	1.5
Rear (min. friction material thickness)	mm	1.0

Tyres		
Saloon	Size	185/65x14: 195/65x14 ¹
Estate / Van	Size	185/65x14: 195/65x14 ¹
Pressure - front / rear - Saloon	bar	1.8 / 1.8 ²
- Estate / Van	bar	1.8 / 1.8 ²

Front suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [°]	+2.0±1.0 ³
Camber		-21'±1°. Est: -19'±1° ⁴
Castor		+1°52'. Est: +1°50'+1°30'-1° ⁵
King pin inclination		—

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

Torque wrench settingsSierra & Sapphire 2.0i CAT1989 to 1993

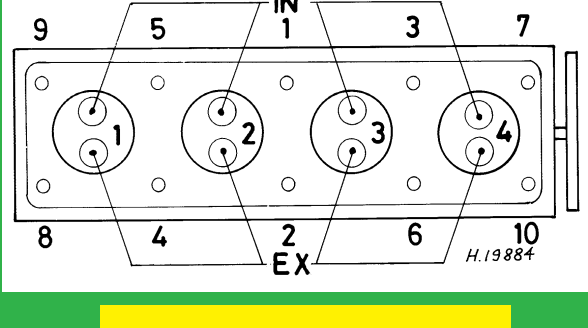
Cylinder head - stage 1	Nm	25
- stage 2	Nm	55
Cylinder head - stage 3	Nm	+ 90°
- stage 4	Nm	+ 90° ⁶
Big-end bearings	Nm	6 to 8, THEN ⁷
Main bearings	Nm	90 to 104
Clutch cover	Nm	17 to 21
Flywheel [driveplate]	Nm	82 to 92
Front hubs	Nm	310 to 350 ⁸
Rear hubs	Nm	250 to 290
Wheel nuts / bolts	Nm	70 to 100
Spark plugs	Nm	17 to 33

CapacitiesSierra & Sapphire 2.0i CAT1989 to 1993

Engine oil & filter	litres	4.5
Gearbox - 4-speed [5-speed]	litres	1.2 ⁹
Automatic transmission - refill	litres	8.5
Final drive	litres	¹
Cooling system	litres	7.3
Fuel tank	litres	60

Notes and Illustrations

- ¹185/70x13: 195/60x14
- ²4x4: 2.0 / 2.0
- ³4x4: 0±1.0
- ⁴4x4: -1°17'±1°. Estate 4x4: -1°12'±1°
- ⁵4x4: +2°58'+1°30'-1°. Estate 4x4: +2°38'+1°30'-1°
- ⁶M8 bolts: 36 to 39 N
- ⁷15 to 20 + 85 to 95°
- ⁸4x4: 205 to 235
- ⁹4x4 transfer box: 0.5
- ¹⁰⁰7.5: 1.3. 4x4: Front: 1.0. Rear: 0.9



1998 cm³, DOHC 8V