

Engine & Cooling

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Automotive Technical
DATA BOOK

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Engine and cooling systemSierra & Sapphire 1.8 CAT1991 to 1992

Type		R2C (CVH) 64kW 15.05
Capacity (cm³) / number of cylinders		1769 / 4
Compression ratio / pressure	bar	9.3 / 11 to 13
Oil pressure	bar	1.0 [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	88
Radiator cap pressure	bar	1.00 to 1.25

Fuel systemSierra & Sapphire 1.8 CAT1991 to 1992

Idle speed - manual [auto]	rpm	850±50 [800±25]
Fast idle speed - manual [auto]	rpm	—
CO @ idle speed [3000 rpm] - see page VI	%	1.0±0.25
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		Pierburg
Type / ref		2V (2E3)
Main jet / needle		100, 105 [AT: 97.5, 105]
Injection pressure	bar	—
Pump pressure	bar	0.24 to 0.38
Octane rating	RON	95[U]

Ignition systemSierra & Sapphire 1.8 CAT1991 to 1992

Type		ESC II
Ignition coil		Bosch, Femsa, Polmot
Primary resistance	ohms	0.72 to 0.88
Ballast resistor	ohms	—
Voltage - Tmnl 15(+) to earth	V	—
Distributor		Motorcraft
Points gap (air gap)	mm	—
Dwell angle	° (%)	—
Condenser capacity	µF	—
Rotation		Clockwise
Ignition timing - basic [static	° Crankshaft @ rpm	20 BTDC @ idle
V = Vacuum NV = No Vacuum		V
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		AGPR32C1 / RC7YC
Electrode gap	mm	1.00

Electrical systemSierra & Sapphire 1.8 CAT1991 to 1992

Battery	V / CC / RC	12 / 200 / 70 or 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 1.8 CAT1991 to 1992

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

Tyres		
Saloon	Size	165x13: 195/65x14: 185/65x14
Estate / Van	Size	185/70x13:195/65x14: 185/65x14
Pressure - front / rear - Saloon	bar	1.8 / 1.8
- Estate / Van	bar	1.8 / 1.8

Front suspension / wheel alignment

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

Rear suspension / wheel alignment

Toe-in (+) / Toe-out (–)	mm [°]	—
Camber		—

Torque wrench settingsSierra & Sapphire 1.8 CAT1991 to 1992

Cylinder head - stage 1	Nm	40 to 60 N
- stage 2	Nm	- 180°
Cylinder head - stage 3	Nm	40 to 60 + 90°
- stage 4	Nm	+ 90°
Big-end bearings	Nm	35 to 41
Main bearings	Nm	90 to 108
Clutch cover	Nm	20 to 25
Flywheel [driveplate]	Nm	73 to 91
Front hubs	Nm	310 to 350
Rear hubs	Nm	250 to 290
Wheel nuts / bolts	Nm	70 to 100
Spark plugs	Nm	17 to 33

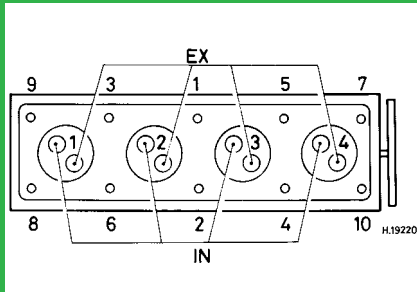
CapacitiesSierra & Sapphire 1.8 CAT1991 to 1992

Engine oil & filter	litres	4.0
Gearbox - 4-speed [5-speed]	litres	1.25
Automatic transmission - refill	litres	8.5
Final drive	litres	0.9
Cooling system	litres	8.7
Fuel tank	litres	60

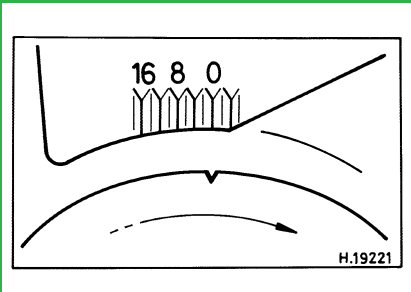
Notes and Illustrations



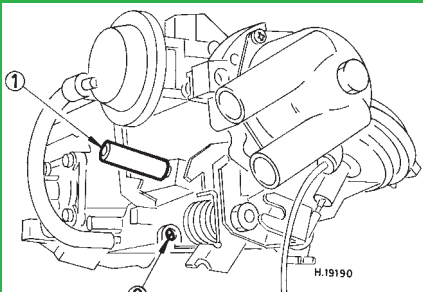
1: Idle speed 2: CO / Mixture



1769 cm³



1769 cm³, not DIS



Pierburg 2E3