

Engine & Cooling

Fuel

Ignition

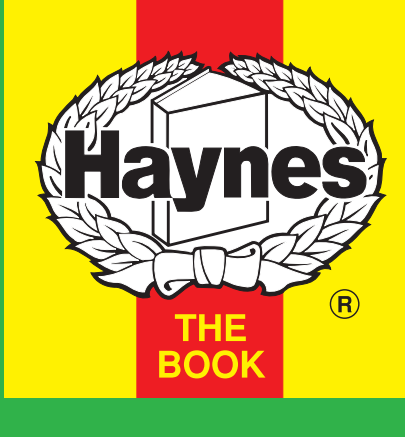
Electrical

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Automotive Technical
DATA BOOK

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Engine and cooling systemCarina E 1.6i (AT190)1992 to 1997

Type		4A-FE Lean-burn (DOHC 16V)
Capacity (cm³) / number of cylinders		1587 / 4
Compression ratio / pressure	bar	9.5 / ≥9.8
Oil pressure	bar	[2.5 to 4.9]
Oil temperature	°C	80
Valve clearance - inlet	mm	0.15 to 0.25
- exhaust	mm	0.25 to 0.35
Firing order		1-3-4-2
No 1 cylinder position		TBE
Thermostat opening temperature	°C	80 to 84
Radiator cap pressure	bar	0.74 to 1.03

Fuel systemCarina E 1.6i (AT190)1992 to 1997

Idle speed - manual [auto]	rpm	750±50 [800±50] N/A
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	≤200
CO2 @ idle speed [3000 rpm] - see page VI	%	—
O2 @ idle speed [3000 rpm] - see page VI	%	—
Carburettor / fuel injection		Toyota
Type / ref		MPI (D-Jetronic) TCCS
Main jet / needle		—
Injection pressure	bar	2.7 to 3.0
Pump pressure	bar	3.9
Octane rating	RON	95[U]

Ignition systemCarina E 1.6i (AT190)1992 to 1997

Type		TCCS - IIA
Ignition coil		—
Primary resistance	ohms	0.36 to 0.55
Ballast resistor	ohms	—
Voltage - Tmnl 15(+) to earth	V	12.0
Distributor		Toyo Denso
Points gap (air gap)	mm	[0.20 to 0.50]
Dwell angle	° (%)	—
Condenser capacity	µF	—
Rotation		Anticlockwise
Ignition timing - basic [static	° Crankshaft @ rpm	10 BTDC @ 700±50 ¹
V = Vacuum NV = No Vacuum		NV
Total ignition advance	° Crankshaft @ rpm	14 to 24 BTDC @ 700±50
	° 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		NGK
Type		BKR6EP13
Electrode gap	mm	1.30 to 1.50

Electrical systemCarina E 1.6i (AT190)1992 to 1997

Battery	V / CC / RC	—
Alternator voltage / full load current / engine rpm		14.0 to 15.0 / 70 / 2000
Starter motor current / voltage - cranking	A / V	90 / 11.5
- locked	A / V	—

Running gearCarina E 1.6i (AT190)1992 to 1997

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

Tyres		
Saloon	Size	175/70x14: 185/65x14:195/60x15
Estate / Van	Size	—
Pressure - front / rear - Saloon	bar	2.3 / 2.3 ²
- Estate / Van	bar	—

Front suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [°]	0±2.0
Camber		-20'±45'
Castor		0±45'. PAS: +30'±45'
King pin inclination		+13°25'±45'

Rear suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [°]	+4.0±2.0
Camber		-30'±30'

Torque wrench settingsCarina E 1.6i (AT190)1992 to 1997

Cylinder head - stage 1	Nm	29
- stage 2	Nm	+ 90°
- stage 3	Nm	+ 90°
- stage 4	Nm	—
Big-end bearings	Nm	29 + 90°
Main bearings	Nm	60
Clutch cover	Nm	19
Flywheel [driveplate]	Nm	78 [64]
Front hubs	Nm	226
Rear hubs	Nm	123
Wheel nuts / bolts	Nm	103
Spark plugs	Nm	18

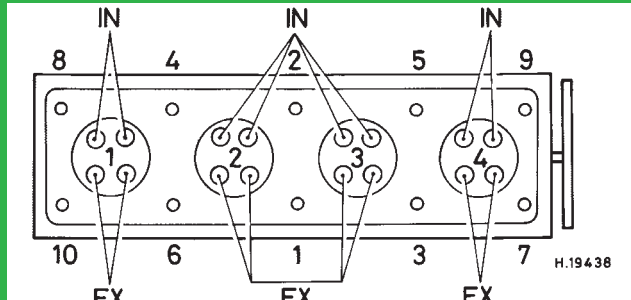
CapacitiesCarina E 1.6i (AT190)1992 to 1997

Engine oil & filter	litres	3.3
Gearbox - 4-speed [5-speed]	litres	2.6
Automatic transmission - refill	litres	3.1
Final drive	litres	WT
Cooling system	litres	5.4 [AT: 5.3]
Fuel tank	litres	60

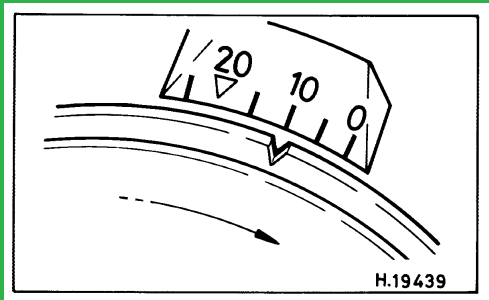
Notes and Illustrations

¹TE1 & E1 shorted

²185/65x14: 2.2 / 2.2. 195/60x15: 2.1 / 2.1



1587 cm³



1587 cm³, 4A-FE