

Engine & Cooling

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Automotive Technical
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Engine and cooling systemCelica 2.2i CAT (ST184/5)1991 to 1994

Type		5S-FE DOHC 16V 100kW
Capacity (cm ³) / number of cylinders		2164 / 4
Compression ratio / pressure	bar	9.8 / ≥9.8
Oil pressure	bar	[2.5 to 4.9]
Oil temperature	°C	80
Valve clearance - inlet	mm	0.19 to 0.29
- exhaust	mm	0.28 to 0.38
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 systemCelica 2.2i CAT (ST184/5)1991 to 1994

Idle speed - manual [auto]	rpm	700±50 N/A
Fast idle speed - manual [auto]	rpm	—
CO @ idle speed [3000 rpm] - see page VI	%	0 to 0.5 N/A
HC @ idle speed [3000 rpm] - see page VI	ppm	≤300
CO2 @ idle speed [3000 rpm] - see page VI	%	—
O2 @ idle speed [3000 rpm] - see page VI	%	—
Carburettor / fuel injection		Toyota
Type / ref		MPI Electronic TCCS
Main jet / needle		—
Injection pressure	bar	—
Pump pressure	bar	2.7 to 3.0
Octane rating	RON	95[U]

Ignition systemCelica 2.2i CAT (ST184/5)1991 to 1994

Type		TCCS - IIA
Ignition coil		—
Primary resistance	ohms	0.4 to 0.5
Ballast resistor	ohms	—
Voltage - Tmnl 15(+) to earth	V	—
Distributor		Toyo Denso
Points gap (air gap)	mm	[0.20 to 0.40]
Dwell angle	° (%)	—
Condenser capacity	µF	—
Rotation		Clockwise
Ignition timing - basic [static	° Crankshaft @ rpm	10 BTDC @ 700±50 ¹
V = Vacuum NV = No Vacuum		
Total ignition advance	° Crankshaft @ rpm	13 to 22 BTDC @ 750±50
	° Crankshaft @ rpm	—
	° Crankshaft @ rpm	—
Centrifugal check.	° Crankshaft @ rpm	TCCS - ESA
	° Crankshaft @ rpm	—
	° Crankshaft @ rpm	—
Vacuum range check	mbar	TCCS - ESA
Maximum vacuum advance	° Crankshaft	—
Spark plugs		NGK
Type		BKR5EYA-11
Electrode gap	mm	1.10

Electrical systemCelica 2.2i CAT (ST184/5)1991 to 1994

Battery	V / CC / RC	12 / 32Ah
Alternator voltage / full load current / engine rpm		13.9 to 15.1 / 70 / 3000
Starter motor current / voltage - cranking	A / V	90 / 11.5
- locked	A / V	—

Running gearCelica 2.2i CAT (ST184/5)1991 to 1994

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

Tyres		
Saloon	Size	205/60x14: 205/55x15
Estate / Van	Size	—
Pressure - front / rear - Saloon	bar	2.1 / 2.1
- Estate / Van	bar	—

Front suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [°]	0±1.0
Camber		-10'±45'
Castor		+1°±45'
King pin inclination		+14°10'±45'

Rear suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [°]	+5.0±1.0
Camber		-45'±30'

Torque wrench settingsCelica 2.2i CAT (ST184/5)1991 to 1994

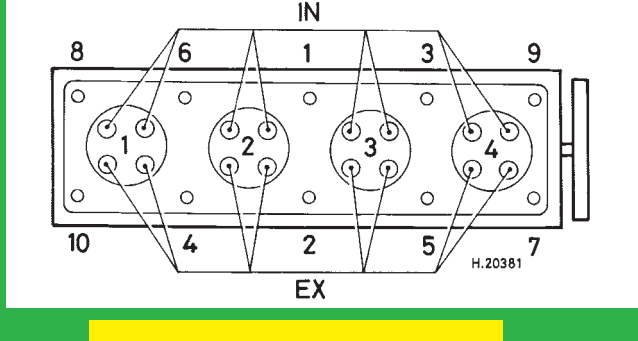
Cylinder head - stage 1	Nm	47
- stage 2	Nm	+ 90°
- stage 3	Nm	—
- stage 4	Nm	—
Big-end bearings	Nm	25 + 90°
Main bearings	Nm	59
Clutch cover	Nm	19
Flywheel [driveplate]	Nm	88
Front hubs	Nm	186
Rear hubs	Nm	123
Wheel nuts / bolts	Nm	103
Spark plugs	Nm	18

CapacitiesCelica 2.2i CAT (ST184/5)1991 to 1994

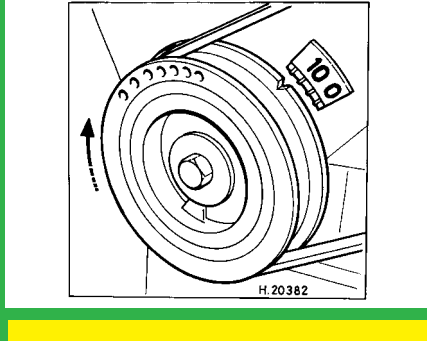
Engine oil & filter	litres	4.2
Gearbox - 4-speed [5-speed]	litres	2.6
Automatic transmission - refill	litres	3.3
Final drive	litres	AT: 1.1
Cooling system	litres	6.5 [6.6]
Fuel tank	litres	60

Notes and Illustrations

¹TE1 & E1 shorted



2164 cm³



2164 cm³, 5S-FE