Haynes THE BOOK

Automotive Technical DATA BOOK

Click on one of the buttons above to view data for this car. To return to this screen and make another choice, click anywhere on the data screen.

MENU HELP

Engine and cooling system

		MR2 CAT (SW20) 1990 to 1994
Type		3S-FE DOHC 16V
Capacity (cm³) / number of cylinders		1998 / 4
Compression ratio / pressure	bar	9.8 / ≥9.8
Oil pressure	bar	[2.5 to 4.9]
Oil temperature	ºC	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	ºC	80 to 84
Radiator cap pressure	bar	0.74 to 1.03

Fuel system

		MR2 CAT (SW20) 1990 to 1994
Idle speed - manual [auto]	rpm	700±50
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	≤1200
CO2 @ idle speed [3000 rpm] - see page VI	%	_
O2 @ idle speed [3000 rpm] - see page VI	%	_
Carburettor / fuel injection		Toyota
Type / ref		Electronic TCCS
Main jet / needle		_
Injection pressure	bar	_
Pump pressure	bar	2.7 to 3.0
Octane rating	RON	95[U]

Ignition system

		MR2 CAT (SW20) 1990 to 1994
Type		Computerized
Ignition coil		Denso
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	º (%)	_
Condenser capacity	µF	_
Rotation		Clockwise
Ignition timing - basic [static	º Crankshaft @ rpm	10 BTDC @ idle¹
V = Vacuum NV = No Vacuum		_
Total ignition advance	º Crankshaft @ rpm	13 to 22 BTDC @ idle
	º Crankshaft @ rpm	_
	º Crankshaft @ rpm	_
Centrifugal check.	º Crankshaft @ rpm	Computer control
	º Crankshaft @ rpm	_
	º Crankshaft @ rpm	_
Vacuum range check	mbar	Computer control
Maximum vacuum advance	º Crankshaft	_
Spark plugs		NGK/Champion
Type		BKR5EY-A11 / RC7YCC
Electrode gap	mm	1.10

Electrical system

		MR2 CAT (SW20) 1990 to 1994
Battery	V / CC / RC	12 / 60Ah
Alternator voltage / full load current / engine rpm		13.9 to 15.1 / 70, 80 / 3000
Starter motor current / voltage - cranking	A / V	90 / 11.5 (no load)
- locked	A / V	_

Running gear

		MR2 CAT (SW20) 1990 to 1994
Brakes -		
Front (min. friction material thickness)	mm	1.0
Rear (min. friction material thickness)	mm	1.0
Tyres		
Saloon	Size	195/60x14: 205/60x14
Estate / Van	Size	_
Pressure - front / rear - Saloon	bar	1.8 / 2.2
- Estate / Van	bar	_
Front suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [º]	+1.0±2.0
Camber		-50'±45'
Castor		+2°45'±30'
King pin inclination		+13°30'±30'
Rear suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [º]	+5.0±1.0
Camber		-1°25'±30'

Torque wrench settings

		MR2 CAT (SW20) 1990 to 1994
Cylinder head - stage 1	Nm	20
- stage 2	Nm	47
- stage 3	Nm	+ 90°
- stage 4	Nm	_
Big-end bearings	Nm	53
Main bearings	Nm	59
Clutch cover	Nm	19
Flywheel [driveplate]	Nm	88 [83]
Front hubs	Nm	123
Rear hubs	Nm	206
Wheel nuts / bolts	Nm	103
Spark plugs	Nm	39

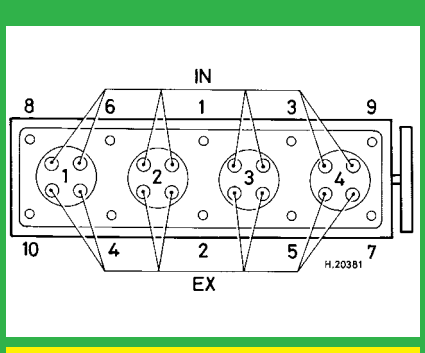
Capacities

		MR2 CAT (SW20) 1990 to 1994
Engine oil & filter	litres	4.2
Gearbox - 4-speed [5-speed]	litres	2.6
Automatic transmission - refill	litres	3.4
Final drive	litres	WT
Cooling system	litres	13.6
Fuel tank	litres	55

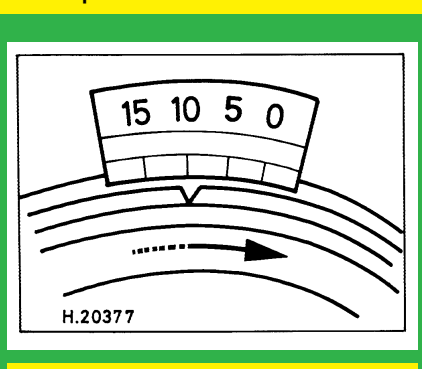
Notes and Illustrations

[1]**Terminals TE1 & E1 shorted**

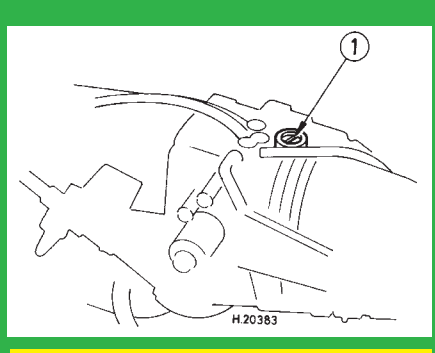
1: Idle speed 2: CO / Mixture



1998 cm³



1998 cm³, 3S-FE



EFi, 3S-FE