

TOYOTA

MR2 GT & CAT (SW20)

1990 to 1997

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Automotive Technical
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Engine and cooling system

MR2 GT & CAT (SW20)

1990 to 1997

Type		3S-GE DOHC 16V 129kW
Capacity (cm ³) / number of cylinders		1998 / 4
Compression ratio / pressure	bar	10.0 / ≥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	0.20 to 0.30
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 system

MR2 GT & CAT (SW20)

1990 to 1997

Idle speed - manual [auto]	rpm	800±50 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	≤100
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	2.6 to 3.0
Pump pressure	bar	2.7 to 3.0
Octane rating	RON	95[E 95 RON] ¹

Ignition system

MR2 GT & CAT (SW20)

1990 to 1997

Type		Computerized
Ignition coil		—
Primary resistance	ohms	0.4 to 0.5
Ballast resistor	ohms	—
Voltage - Tmnl 15(+) to earth	V	—
Distributor		—
Points gap (air gap)	mm	[0.20 to 0.40]
Dwell angle	° (%)	—
Condenser capacity	µF	—
Rotation		Clockwise
Ignition timing - basic [static	° Crankshaft @ rpm	10±2 BTDC @ 800±50 ²
V = Vacuum NV = No Vacuum		
Total ignition advance	° Crankshaft @ rpm	7 to 21 BTDC @ 800±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/Champion
Type		BKR6EYA / RC9YCC ³
Electrode gap	mm	0.80 ⁴

Electrical system

MR2 GT & CAT (SW20)

1990 to 1997

Battery	V / CC / RC	12 / 60Ah
Alternator voltage / full load current / engine rpm		13.5 to 15.1 / _ / 3000
Starter motor current / voltage - cranking	A / V	90 / 11.5 (no load)
- locked	A / V	—

Running gear

MR2 GT & CAT (SW20)

1990 to 1997

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

Tyres		
Saloon	Size	195/60x14: 205/60x14 ⁵
Estate / Van	Size	—
Pressure - front / rear - Saloon	bar	15": 2.1 / 2.4 ⁶
- Estate / Van	bar	—

Front suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [°]	+1.0±2.0
Camber		-50'±30'. 92 ►: -1°±45'
Castor		+2°45'±30'. 92 ►: +2°50'±45'
King pin inclination		+13°30'±30'. 92 ►: +13°50'

Rear suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [°]	92 ►: +6.0±1.0
Camber		92 ►: -1°35'±45'

Torque wrench settings

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Cylinder head - stage 1	Nm	20
- stage 2	Nm	59
- stage 3	Nm	+ 90°
- stage 4	Nm	—
Big-end bearings	Nm	67
Main bearings	Nm	59
Clutch cover	Nm	19
Flywheel [driveplate]	Nm	108
Front hubs	Nm	123
Rear hubs	Nm	206. 92 ►: 226
Wheel nuts / bolts	Nm	103
Spark plugs	Nm	18

Capacities

MR2 GT & CAT (SW20)

1990 to 1997

Engine oil & filter	litres	3.9
Gearbox - 4-speed [5-speed]	litres	2.6
Automatic transmission - refill	litres	—
Final drive	litres	WT
Cooling system	litres	13.6
Fuel tank	litres	55

Notes and Illustrations

¹CAT: 95 [U]

²TE1 & E1 shorted

³CAT: NGK: BKR6EP8

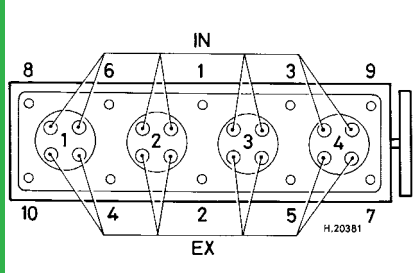
⁴CAT: BKR6EP8: 0.80 to 1.00

⁵1992 ►: 195/55x15: 225/50x15

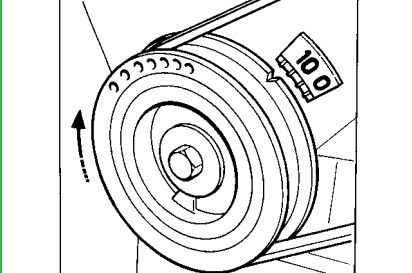
⁶UK: 2.0 / 2.3

1: Idle speed

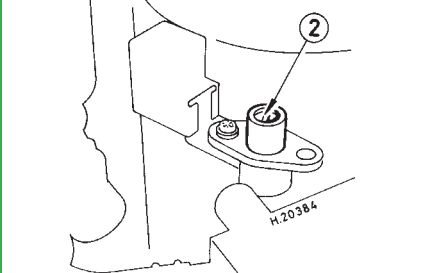
2: CO / Mixture



1998 cm³



1998 cm³, 3S-GE



EFi, 3S-GE, not CAT