Haynes THE BOOK

Automotive Technical DATA BOOK

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Engine and cooling system

		Supra 3.0i & CAT (MA70) 1986 to 1993
Type		7M-GE (DOHC)
Capacity (cm³) / number of cylinders		2954 / 6
Compression ratio / pressure	bar	9.2 / ≥8.8
Oil pressure	bar	[2.5 to 4.9]
Oil temperature	ºC	80
Valve clearance - inlet	mm	0.15 to 0.25
- exhaust	mm	0.20 to 0.30
Firing order		1-5-3-6-2-4
No 1 cylinder position		F
Thermostat opening temperature	ºC	86 to 90
Radiator cap pressure	bar	0.75 to 1.00

Fuel system

		Supra 3.0i & CAT (MA70) 1986 to 1993
Idle speed - manual [auto]	rpm	800±50. CAT: 700±50
Fast idle speed - manual [auto]	rpm	_
CO @ idle speed [3000 rpm] - see page VI	%	1.0±0.5. CAT: 0 to 0.5
HC @ idle speed [3000 rpm] - see page VI	ppm	≤1200. CAT: ≤300
CO2 @ idle speed [3000 rpm] - see page VI	%	_
O2 @ idle speed [3000 rpm] - see page VI	%	_
Carburettor / fuel injection		Toyota
Type / ref		Electronic
Main jet / needle		_
Injection pressure	bar	_
Pump pressure	bar	2.3 to 3.0
Octane rating	RON	97[E 95 RON][1]

Ignition system

		Supra 3.0i & CAT (MA70) 1986 to 1993
Type		Computerized
Ignition coil		_
Primary resistance	ohms	0.20 to 0.30
Ballast resistor	ohms	_
Voltage - Tmnl 15(+) to earth	V	_
Distributor		_
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±1 BTDC @ idle
V = Vacuum NV = No Vacuum		NV
Total ignition advance	º Crankshaft @ rpm	_
	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		BCPR6EY / RC12YC4
Electrode gap	mm	1.00. CAT: 0.80

Electrical system

		Supra 3.0i & CAT (MA70) 1986 to 1993
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

		Supra 3.0i & CAT (MA70) 1986 to 1993
Brakes -		
Front (min. friction material thickness)	mm	1.0
Rear (min. friction material thickness)	mm	1.0
Tyres		
Saloon	Size	225/50x16
Estate / Van	Size	_
Pressure - front / rear - Saloon	bar	2.3 / 2.5
- Estate / Van	bar	_
Front suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [º]	0±1.0
Camber		-5'±30'. 89 ▸: -10'±30'
Castor		+7°30'±30'. 89 ▸: +7°40'±30'
King pin inclination		+10°50'±45'
Rear suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [º]	+3.0±1.0[2]
Camber		-15'±30'. 89 ▸: -45'±30'

Torque wrench settings

		Supra 3.0i & CAT (MA70) 1986 to 1993
Cylinder head - stage 1	Nm	27
- stage 2	Nm	54
- stage 3	Nm	78
- stage 4	Nm	_
Big-end bearings	Nm	64
Main bearings	Nm	102
Clutch cover	Nm	19
Flywheel [driveplate]	Nm	74
Front hubs	Nm	199
Rear hubs	Nm	213
Wheel nuts / bolts	Nm	88 to 118
Spark plugs	Nm	17

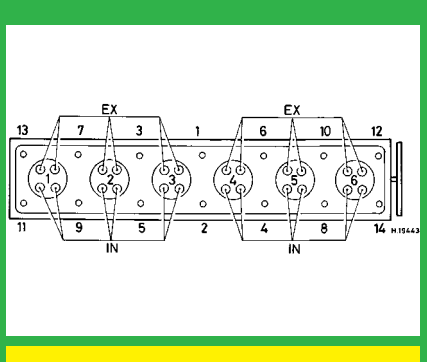
Capacities

		Supra 3.0i & CAT (MA70) 1986 to 1993
Engine oil & filter	litres	4.4
Gearbox - 4-speed [5-speed]	litres	2.4. R154: 3.0
Automatic transmission - refill	litres	1.6
Final drive	litres	1.3
Cooling system	litres	8.1 [AT: 8.0]
Fuel tank	litres	70

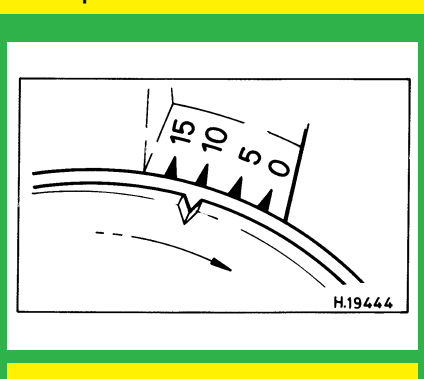
Notes and Illustrations

[1]**CAT: 95 [U]**
[2]**1989 ▸: +7.0±1.0**

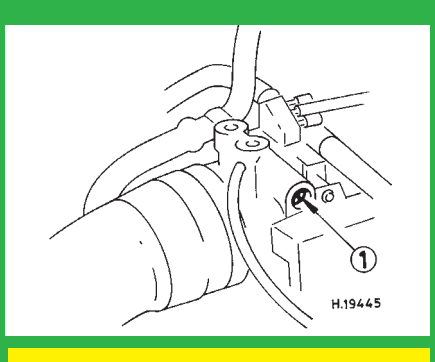
1: Idle speed 2: CO / Mixture



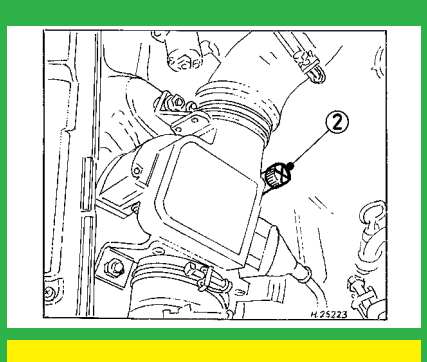
2954 cm³



2954 cm³, 7M-GE



Fuel injection, 7M-GE



Fuel injection, 7M-GE