

Engine & Cooling

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Automotive Technical
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Engine and cooling system

Z3 1.9

1996 to 1997

Type		M44 B19 DOHC 16V 103kW
Capacity (cm ³) / number of cylinders		1895 / 4
Compression ratio / pressure	bar	10.0 / ≥10.0
Oil pressure	bar	≥0.5 / 4.3
Oil temperature	°C	80
Valve clearance - inlet	mm	0: Hyd.
Valve clearance - exhaust	mm	0: Hyd.
Firing order		1-3-4-2
No 1 cylinder position		—
Thermostat opening temperature	°C	95
Radiator cap pressure	bar	1.4

Fuel system

Z3 1.9

1996 to 1997

Idle speed - manual [auto]	rpm	900±50
Fast idle speed - manual [auto]	rpm	—
CO @ idle speed [3000 rpm] - see page VI	%	≤0.3 N/A
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		—Bosch
Type / ref		DME M5.2-Motronic
Main jet / needle		—
Injection pressure	bar	—
Pump pressure	bar	3.0
Octane rating	RON	95[U]

Ignition system

Z3 1.9

1996 to 1997

Type		Direct electronic
Ignition coil		—
Primary resistance	ohms	0.8
Ballast resistor	ohms	—
Voltage - Tmnl 15(+) to earth	V	—
Distributor		—
Points gap (air gap)	mm	—
Dwell angle	° (%)	—
Condenser capacity	µF	—
Rotation		—
Ignition timing - basic [static	° Crankshaft @ rpm	—
V = Vacuum NV = No Vacuum		—
Total ignition advance	° Crankshaft @ rpm	—
	° Crankshaft @ rpm	—
	° Crankshaft @ rpm	—
Centrifugal check.	° Crankshaft @ rpm	—
	° Crankshaft @ rpm	—
	° Crankshaft @ rpm	—
Vacuum range check	mbar	—
Maximum vacuum advance	° Crankshaft	—
Spark plugs		—
Type		—
Electrode gap	mm	—

Electrical system

Z3 1.9

1996 to 1997

Battery	V / CC / RC	12 / 70Ah
Alternator voltage / full load current / engine rpm		— / 80 / —
Starter motor current / voltage - cranking	A / V	—
- locked	A / V	—

Running gear

Z3 1.9

1996 to 1997

Brakes -		
Front (min. friction material thickness)	mm	3.0
Rear (min. friction material thickness)	mm	3.0

Tyres		
Saloon	Size	205/60x15
Estate / Van	Size	—
Pressure - front / rear - Saloon	bar	Refer to vehicle
- Estate / Van	bar	—

Front suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [°]	—
Camber		—
Castor		—
King pin inclination		—

Rear suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [°]	—
Camber		—

Torque wrench settings

Z3 1.9

1996 to 1997

Cylinder head - stage 1	Nm	30
- stage 2	Nm	+90°
Cylinder head - stage 3	Nm	+90°
- stage 4	Nm	—
Big-end bearings	Nm	5, 20+70°
Main bearings	Nm	20+50°
Clutch cover	Nm	34
Flywheel [driveplate]	Nm	120
Front hubs	Nm	290
Rear hubs	Nm	250
Wheel nuts / bolts	Nm	100±10
Spark plugs	Nm	—

Capacities

Z3 1.9

1996 to 1997

Engine oil & filter	litres	5.0
Gearbox - 4-speed [5-speed]	litres	1.0
Automatic transmission - refill	litres	—
Final drive	litres	1.0
Cooling system	litres	6.6
Fuel tank	litres	51

Notes and Illustrations

