

Engine & CoolingFuelIgnitionElectricalRunning gearTorque settingsCapacitiesNotes & Illustrations



Automotive Technical
DATA BOOK

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MENUHELP

Engine and cooling system

316 (E30)1983 to 1988

Type		M10/B18 66kW
Capacity (cm³) / number of cylinders		1766 / 4
Compression ratio / pressure	bar	9.5 / 10 to 11
Oil pressure	bar	0.5 [4.0]
Oil temperature	°C	80
Valve clearance - inlet	mm	0.25 H
Valve clearance - exhaust	mm	0.25 H
Firing order		1-3-4-2
No 1 cylinder position		TCE
Thermostat opening temperature	°C	80
Radiator cap pressure	bar	1.0±0.1

Fuel system

316 (E30)1983 to 1988

Idle speed - manual [auto]	rpm	850±50
Fast idle speed - manual [auto]	rpm	—
CO @ idle speed [3000 rpm] - see page VI	%	≤3.5
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		Solex/Pierburg
Type / ref		2B4 or 2BE
Main jet / needle		2B4: 120, 90. 2BE: 120, 110
Injection pressure	bar	—
Pump pressure	bar	0.1 to 0.3
Octane rating	RON	98[R]

Ignition system

316 (E30)1983 to 1988

Type		Electronic
Ignition coil		Bosch 0 221 122 319
Primary resistance	ohms	0.82
Ballast resistor	ohms	—
Voltage - Tmnl 15(+) to earth	V	≥10.8
Distributor		Bosch
Points gap (air gap)	mm	[0.30 to 0.70]
Dwell angle	° (%)	—
Condenser capacity	µF	—
Rotation		—
Ignition timing - basic [static	° Crankshaft @ rpm	25 BTDC @ 2500. 9.83 ►: 2900
V = Vacuum NV = No Vacuum		NV
Total ignition advance	° Crankshaft @ rpm	—
	° Crankshaft @ rpm	—
	° Crankshaft @ rpm	—
Centrifugal check.	° Crankshaft @ rpm	10 to 17 @ 1000¹
	° Crankshaft @ rpm	24 to 26 @ 2500¹
	° Crankshaft @ rpm	35 to 42 @ 5500¹
Vacuum range check	mbar	160 to 315²
Maximum vacuum advance	° Crankshaft	9 to 13²
Spark plugs		Bosch/Champion
Type		W8DC / N9YC
Electrode gap	mm	0.70+0.10

Electrical system

316 (E30)1983 to 1988

Battery	V / CC / RC	12 / 44Ah
Alternator voltage / full load current / engine rpm		13.5 to 14.2 / _ / 1500
Starter motor current / voltage - cranking	A / V	130 / 9.0 [9.83 ►: 160 / 9]
- locked	A / V	—

Running gear

316 (E30)1983 to 1988

Brakes -		
Front (min. friction material thickness)	mm	2.0
Rear (min. friction material thickness)	mm	1.5

Tyres		
Saloon	Size	175/70x14
Estate / Van	Size	—
Pressure - front / rear - Saloon	bar	1.9 / 2.1
- Estate / Van	bar	—

Front suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [°]	+2.0±0.6
Camber		-40'±30'
Castor		+8°30'±30'
King pin inclination		+13°52'±30'

Rear suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [°]	+2.0±0.8
Camber		-1°50'±30'

Torque wrench settings

316 (E30)1983 to 1988

Cylinder head - stage 1	Nm	60±2, wait 15 mins.
- stage 2	Nm	+ 33±3°
Cylinder head - stage 3	Nm	Warm engine for 25 mins.
- stage 4	Nm	+ 25±5°
Big-end bearings	Nm	52 to 57
Main bearings	Nm	58 to 63
Clutch cover	Nm	22 to 24³
Flywheel [driveplate]	Nm	105±7 locked threads
Front hubs	Nm	WSM
Rear hubs	Nm	195 to 210
Wheel nuts / bolts	Nm	100±10
Spark plugs	Nm	20 to 30

Capacities

316 (E30)1983 to 1988

Engine oil & filter	litres	4.0
Gearbox - 4-speed [5-speed]	litres	1.1
Automatic transmission - refill	litres	2.0 [4 speed: 3.0]
Final drive	litres	0.9
Cooling system	litres	7.0
Fuel tank	litres	55

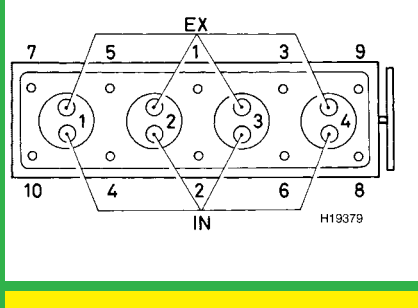
Notes and Illustrations

¹9.83 ►: 2 to 9 @ 1000, 21 to 27 @ 2500, 30 to 36 @ 4500

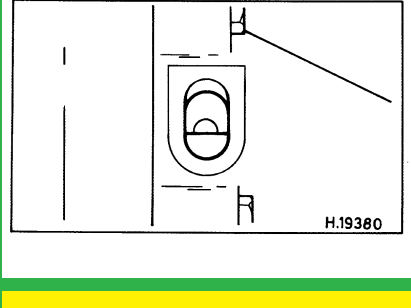
²9.83 ►: 100 to 420 @ 13 to 17°

³10.9 hex head bolt: 30 to 35

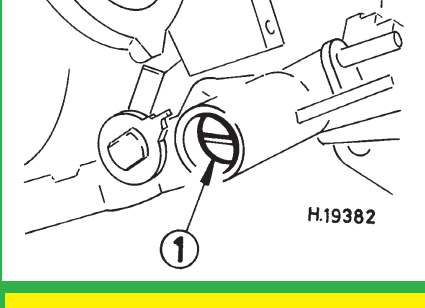
1: Idle speed2: CO / Mixture



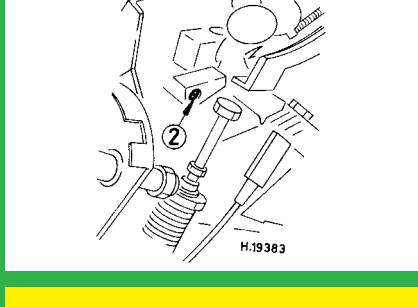
1766 cm³



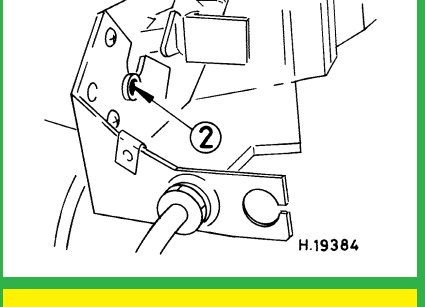
1766 cm³



Solex 2B4



Solex 2B4



Solex 2BE