Haynes THE BOOK ®

Automotive Technical DATA BOOK

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Engine and cooling system

520i & Touring 24V (E34) 1990 to 1993

Type		M50/B20 20 6S1 110kW
Capacity (cm³) / number of cylinders		1990 / 6
Compression ratio / pressure	bar	10.5 / ≥10.0
Oil pressure	bar	2.0 [4.0]
Oil temperature	ºC	80
Valve clearance - inlet	mm	0: Hyd.
Valve clearance - exhaust	mm	0: Hyd.
Firing order		1-5-3-6-2-4
No 1 cylinder position		TBE
Thermostat opening temperature	ºC	80
Radiator cap pressure	bar	2.0±0.15

Fuel system

520i & Touring 24V (E34) 1990 to 1993

Idle speed - manual [auto]	rpm	800±40. 9.90 ▶: 700±40 N/A
Fast idle speed - manual [auto]	rpm	_
CO @ idle speed [3000 rpm] - see page VI	%	0.7±0.5 N/A
HC @ idle speed [3000 rpm] - see page VI	ppm	≤300
CO2 @ idle speed [3000 rpm] - see page VI	%	_
O2 @ idle speed [3000 rpm] - see page VI	%	_
Carburettor / fuel injection		Bosch
Type / ref		M3.1-Motronic
Main jet / needle		_
Injection pressure	bar	3.0±0.06
Pump pressure	bar	3.5 to 4.0
Octane rating	RON	95[U]

Ignition system

520i & Touring 24V (E34) 1990 to 1993

Type		Direct electronic
Ignition coil		Bosch
Primary resistance	ohms	0.8±0.1
Ballast resistor	ohms	_
Voltage - Tmnl 15(+) to earth	V	_
Distributor		Bosch
Points gap (air gap)	mm	[0.30 to 0.70]
Dwell angle	º (%)	_
Condenser capacity	µF	_
Rotation		Clockwise
Ignition timing - basic [static	º Crankshaft @ rpm	Computer control
V = Vacuum NV = No Vacuum		_
Total ignition advance	º Crankshaft @ rpm	Computer control
	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		Bosch/Champion
Type		F03DAR / C9YCC
Electrode gap	mm	0.90-0.10

Electrical system

520i & Touring 24V (E34) 1990 to 1993

Battery	V / CC / RC	12 / 50, 65Ah
Alternator voltage / full load current / engine rpm		13.5 to 14.2 / 80,140 / 1500
Starter motor current / voltage - cranking	A / V	160 / 9.0
- locked	A / V	_

Running gear

520i & Touring 24V (E34) 1990 to 1993

Brakes -		
Front (min. friction material thickness)	mm	2.0
Rear (min. friction material thickness)	mm	2.0
Tyres		
Saloon	Size	195/65x15: 225/60x15
Estate / Van	Size	205/65x15: 225/60x15
Pressure - front / rear - Saloon	bar	2.2 / 2.1
- Estate / Van	bar	2.1 / 2.4
Front suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [º]	[+18'±5']
Camber		-13'±30'. Sport: -30'±30'
Castor		+8°8'±30'. Sport: +8°26'±30'
King pin inclination		+12°4'±30'. Sport: +12°38'±30'
Rear suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [º]	[+25'±7']. Sport: [+28'±7'][1]
Camber		-2°20'±30'. Sport: -2°35'[2]

Torque wrench settings

520i & Touring 24V (E34) 1990 to 1993

Cylinder head - stage 1	Nm	30 to 32 WSM
- stage 2	Nm	+ 90±3°
Cylinder head - stage 3	Nm	+ 90±3°
- stage 4	Nm	_
Big-end bearings	Nm	23 + 70° N
Main bearings	Nm	22.5±2.5 + 50±3°
Clutch cover	Nm	24. 10.9 hex: 35
Flywheel [driveplate]	Nm	113 to 130 N
Front hubs	Nm	290
Rear hubs	Nm	247.6 ±5%
Wheel nuts / bolts	Nm	100±10
Spark plugs	Nm	30 to 33

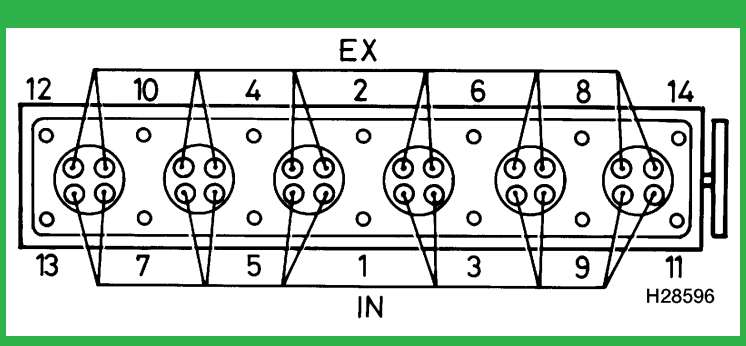
Capacities

520i & Touring 24V (E34) 1990 to 1993

Engine oil & filter	litres	5.75
Gearbox - 4-speed [5-speed]	litres	1.25. S5D: 1.00
Automatic transmission - refill	litres	3.0. A5S: 3.3
Final drive	litres	1.7
Cooling system	litres	10.5. A/C: 11.0
Fuel tank	litres	81

Notes and Illustrations

[1]**Touring Sport: [+29'±7']**
[2]**Touring Sport: -2°45'±30'**



1990 cm³, 24V