Automotive Technical DATA BOOK

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MENU HELP

## Engine and cooling system

850i (E31) 1991 to 1994

| | | |
|---|---|---|
| Type | | M70/B50 50 12A 220kW |
| Capacity (cm³) / number of cylinders | | 4988 / 12 |
| Compression ratio / pressure | bar | 8.8 / 10 to 12 |
| Oil pressure | bar | 0.5 [≤4.0] |
| Oil temperature | ºC | 80 |
| Valve clearance - inlet | mm | 0: Hyd. |
| Valve clearance - exhaust | mm | 0: Hyd. |
| Firing order | | 1-7-5-11-3-9-6-12-2-8-4-10 |
| No 1 cylinder position | | PER |
| Thermostat opening temperature | ºC | 80 |
| Radiator cap pressure | bar | 2.0±0.1 |

## Fuel system

850i (E31) 1991 to 1994

| | | |
|---|---|---|
| Idle speed - manual [auto] | rpm | 700±50 |
| 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 | ≤200 |
| CO2 @ idle speed [3000 rpm] - see page VI | % | _ |
| O2 @ idle speed [3000 rpm] - see page VI | % | _ |
| Carburettor / fuel injection | | Bosch |
| Type / ref | | M1.7-Motronic |
| Main jet / needle | | _ |
| Injection pressure | bar | _ |
| Pump pressure | bar | 3.0±0.06 |
| Octane rating | RON | 95[U] |

## Ignition system

850i (E31) 1991 to 1994

| | | |
|---|---|---|
| Type | | DME Motronic |
| Ignition coil | | Bosch 0 221 118 335 |
| Primary resistance | ohms | a: 0.50. b: 0.37 |
| 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 | | _ |
| 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 | | F8LCR / C9YCC |
| Electrode gap | mm | 0.70 to 0.80 |

## Electrical system

850i (E31) 1991 to 1994

| | | |
|---|---|---|
| Battery | V / CC / RC | 12 / 65Ah |
| Alternator voltage / full load current / engine rpm | | 13.5 to 14.2 / 140 / 3000 |
| Starter motor current / voltage - cranking | A / V | _ |
| - locked | A / V | _ |

## Running gear

850i (E31) 1991 to 1994

| | | |
|---|---|---|
| **Brakes** - | | |
| Front (min. friction material thickness) | mm | 2.0 |
| Rear (min. friction material thickness) | mm | 2.0 |
| **Tyres** | | |
| Saloon | Size | 235/50x16 |
| Estate / Van | Size | _ |
| Pressure - front / rear - Saloon | bar | 2.5 / 2.5 |
| - Estate / Van | bar | _ |
| **Front suspension / wheel alignment** | | |
| Toe-in (+) / Toe-out (–) | mm [º] | [+18'±5'] |
| Camber | | -11'±30'. Sport: -25'±30' |
| Castor | | +8°14'±30'. Sport: +8°53'±30' |
| King pin inclination | | +12°4'±30'. Sport: +13°4'±30' |
| **Rear suspension / wheel alignment** | | |
| Toe-in (+) / Toe-out (–) | mm [º] | [+18'±6'] |
| Camber | | -1°10'±15'. Sport: -1°23'±15' |

## Torque wrench settings

850i (E31) 1991 to 1994

| | | |
|---|---|---|
| Cylinder head - stage 1 | Nm | TORX: 30±2 |
| - stage 2 | Nm | + 120° |
| Cylinder head - stage 3 | Nm | _ |
| - stage 4 | Nm | _ |
| Big-end bearings | Nm | 23 + 70° N |
| Main bearings | Nm | 20 + 70° |
| Clutch cover | Nm | 25 |
| Flywheel [driveplate] | Nm | 105±5 |
| Front hubs | Nm | 290 |
| Rear hubs | Nm | 300 |
| Wheel nuts / bolts | Nm | 100±10 |
| Spark plugs | Nm | 30 to 33 |

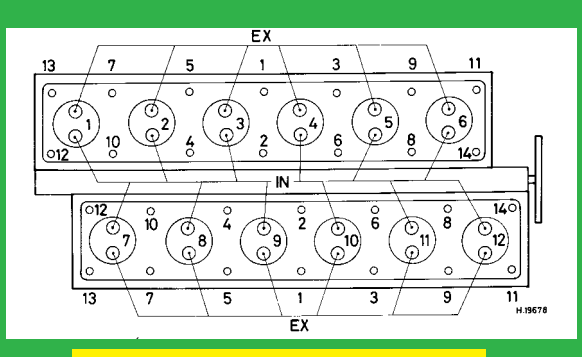
## Capacities

850i (E31) 1991 to 1994

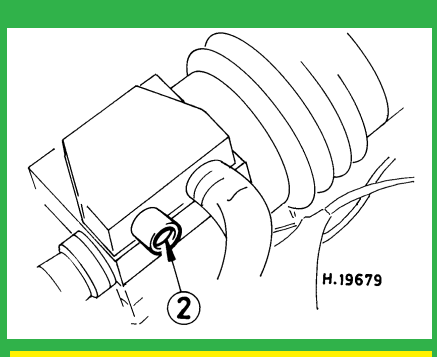
| | | |
|---|---|---|
| Engine oil & filter | litres | 7.5 |
| Gearbox - 4-speed [5-speed] | litres | 2.5 |
| Automatic transmission - refill | litres | 3.5 |
| Final drive | litres | 1.9 |
| Cooling system | litres | 13.0 |
| Fuel tank | litres | 91 |

## Notes and Illustrations

1: Idle speed 2: CO / Mixture




4988 cm³, M70




M1.7-Motronic