

Engine & Cooling

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Automotive Technical  
DATA BOOK

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HELP

| Engine and cooling system                           |  |  | S500 (140.050/1:070)   | 1993 to 1997         |
|-----------------------------------------------------|--|--|------------------------|----------------------|
| Type                                                |  |  | 119.970 DOHC 32V 235kW |                      |
| Capacity (cm³) / number of cylinders                |  |  | 4973 / 8               |                      |
| Compression ratio / pressure                        |  |  | bar                    | 10.0 / 13.5 to 15.5  |
| Oil pressure                                        |  |  | bar                    | 0.3 [3.0 @ 3000rpm]  |
| Oil temperature                                     |  |  | °C                     | 80                   |
| Valve clearance - inlet                             |  |  | mm                     | 0: Hyd.              |
| Valve clearance - exhaust                           |  |  | mm                     | 0: Hyd.              |
| Firing order                                        |  |  | 1-5-4-8-6-3-7-2        |                      |
| No 1 cylinder position                              |  |  | FR                     |                      |
| Thermostat opening temperature                      |  |  | °C                     | 87±2                 |
| Radiator cap pressure                               |  |  | bar                    | 1.40±0.10            |
| Fuel system                                         |  |  | S500 (140.050/1:070)   | 1993 to 1997         |
| Idle speed - manual [auto]                          |  |  | rpm                    | 600 to 750           |
| Fast idle speed - manual [auto]                     |  |  | rpm                    | —                    |
| CO @ idle speed [3000 rpm] - see page VI            |  |  | %                      | ≤0.3                 |
| 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                                          |  |  | LH-Jetronic            |                      |
| Main jet / needle                                   |  |  | —                      |                      |
| Injection pressure                                  |  |  | bar                    | 3.7 to 4.2           |
| Pump pressure                                       |  |  | bar                    | —                    |
| Octane rating                                       |  |  | RON                    | 95[U]                |
| Ignition system                                     |  |  | S500 (140.050/1:070)   | 1993 to 1997         |
| Type                                                |  |  | EZL                    |                      |
| Ignition coil                                       |  |  | —                      |                      |
| Primary resistance                                  |  |  | ohms                   | 0.3 to 0.6           |
| Ballast resistor                                    |  |  | ohms                   | —                    |
| Voltage - Tmnl 15(+) to earth                       |  |  | V                      | Battery              |
| Distributor                                         |  |  | —                      |                      |
| Points gap (air gap)                                |  |  | mm                     | —                    |
| Dwell angle                                         |  |  | ° (%)                  | —                    |
| Condenser capacity                                  |  |  | µF                     | —                    |
| Rotation                                            |  |  | —                      |                      |
| Ignition timing - basic [static                     |  |  | ° Crankshaft @ rpm     | Computer control N/A |
| V = Vacuum NV = No Vacuum                           |  |  | —                      |                      |
| Total ignition advance                              |  |  | ° Crankshaft @ rpm     | Computer control     |
|                                                     |  |  | ° Crankshaft @ rpm     | —                    |
|                                                     |  |  | ° Crankshaft @ rpm     | —                    |
| Centrifugal check.                                  |  |  | ° Crankshaft @ rpm     | Computer control     |
|                                                     |  |  | ° Crankshaft @ rpm     | —                    |
|                                                     |  |  | ° Crankshaft @ rpm     | —                    |
| Vacuum range check                                  |  |  | mbar                   | Computer control     |
| Maximum vacuum advance                              |  |  | ° Crankshaft           | —                    |
| Spark plugs                                         |  |  | Bosch/Champion         |                      |
| Type                                                |  |  | F8DCO / C10YCC         |                      |
| Electrode gap                                       |  |  | mm                     | 0.80                 |
| Electrical system                                   |  |  | S500 (140.050/1:070)   | 1993 to 1997         |
| Battery                                             |  |  | V / CC / RC            | 12 / 100Ah           |
| Alternator voltage / full load current / engine rpm |  |  | 13.5 to 14.0 / 120 / _ |                      |
| Starter motor current / voltage - cranking          |  |  | A / V                  | 95/11.5              |
| - locked                                            |  |  | A / V                  | —                    |
| Running gear                                        |  |  | S500 (140.050/1:070)   | 1993 to 1997         |
| Brakes -                                            |  |  |                        |                      |
| Front (min. friction material thickness)            |  |  | mm                     | 2.5                  |
| Rear (min. friction material thickness)             |  |  | mm                     | 2.5                  |
| Tyres                                               |  |  |                        |                      |
| Saloon                                              |  |  | Size                   | 235/60x16: 255/45x18 |
| Estate / Van                                        |  |  | Size                   | —                    |
| Pressure - front / rear - Saloon                    |  |  | bar                    | 2.4 / 2.5            |
| - Estate / Van                                      |  |  | bar                    | —                    |
| Front suspension / wheel alignment                  |  |  |                        |                      |
| Toe-in (+) / Toe-out (–)                            |  |  | mm [°]                 | [+35'±10']           |
| Camber                                              |  |  | -20'±10'               |                      |
| Castor                                              |  |  | 10°20' ± 30'           |                      |
| King pin inclination                                |  |  | —                      |                      |
| Rear suspension / wheel alignment                   |  |  |                        |                      |
| Toe-in (+) / Toe-out (–)                            |  |  | mm [°]                 | [+35'±10']           |
| Camber                                              |  |  | —                      |                      |
| Torque wrench settings                              |  |  | S500 (140.050/1:070)   | 1993 to 1997         |
| Cylinder head - stage 1                             |  |  | Nm                     | 55¹                  |
| - stage 2                                           |  |  | Nm                     | + 90°                |
| Cylinder head - stage 3                             |  |  | Nm                     | + 90°                |
| - stage 4                                           |  |  | Nm                     | —                    |
| Big-end bearings                                    |  |  | Nm                     | 45, + 90 to 100°     |
| Main bearings                                       |  |  | Nm                     | WSM                  |
| Clutch cover                                        |  |  | Nm                     | —                    |
| Flywheel [driveplate]                               |  |  | Nm                     | 35, + 90 to 100°     |
| Front hubs                                          |  |  | Nm                     | WSM                  |
| Rear hubs                                           |  |  | Nm                     | 320                  |
| Wheel nuts / bolts                                  |  |  | Nm                     | 150                  |
| Spark plugs                                         |  |  | Nm                     | 20                   |
| Capacities                                          |  |  | S500 (140.050/1:070)   | 1993 to 1997         |
| Engine oil & filter                                 |  |  | litres                 | 8.0                  |
| Gearbox - 4-speed [5-speed]                         |  |  | litres                 | —                    |
| Automatic transmission - refill                     |  |  | litres                 | 7.7                  |
| Final drive                                         |  |  | litres                 | 1.4                  |
| Cooling system                                      |  |  | litres                 | 16.5                 |
| Fuel tank                                           |  |  | litres                 | 100                  |

Notes and Illustrations

<sup>1</sup>Bolts marked “a” on diagram: 25