

Engine & Cooling

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Automotive Technical  
**DATA BOOK**

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HELP

Engine and cooling system

309, 1.6i CAT

1991

|                                      |     |                     |
|--------------------------------------|-----|---------------------|
| Type                                 |     | XU5M2Z (BDY) (65kW) |
| Capacity (cm³) / number of cylinders |     | 1580 / 4            |
| Compression ratio / pressure         | bar | 9.26 / _            |
| Oil pressure                         | bar | 1.4 [3.5]           |
| Oil temperature                      | °C  | 80                  |
| Valve clearance - inlet              | mm  | 0.20                |
| Valve clearance - exhaust            | mm  | 0.40                |
| Firing order                         |     | 1-3-4-2             |
| No 1 cylinder position               |     | FE                  |
| Thermostat opening temperature       | °C  | 82                  |
| Radiator cap pressure                | bar | 1.0                 |

Fuel system

309, 1.6i CAT

1991

|                                           |     |                   |
|-------------------------------------------|-----|-------------------|
| Idle speed - manual [auto]                | rpm | 850±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              |     | Magneti-Marelli   |
| Type / ref                                |     | MMFD Monopoint G5 |
| Main jet / needle                         |     | _                 |
| Injection pressure                        | bar | 0.70 to 0.90      |
| Pump pressure                             | bar | _                 |
| Octane rating                             | RON | 95[U]             |

Ignition system

309, 1.6i CAT

1991

|                                 |                    |                      |
|---------------------------------|--------------------|----------------------|
| Type                            |                    | Distributorless      |
| Ignition coil                   |                    | 2x Bosch. Valeo      |
| Primary resistance              | ohms               | 2x0.8                |
| Ballast resistor                | ohms               | _                    |
| Voltage - Tmnl 15(+) to earth   | V                  | _                    |
| Distributor                     |                    | _                    |
| Points gap (air gap)            | mm                 | _                    |
| Dwell angle                     | ° (%)              | _                    |
| Condenser capacity              | µF                 | _                    |
| Rotation                        |                    | Anticlockwise        |
| 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                     |                    | Champion             |
| Type                            |                    | C7YCC                |
| Electrode gap                   | mm                 | 0.80                 |

Electrical system

309, 1.6i CAT

1991

|                                                     |             |                         |
|-----------------------------------------------------|-------------|-------------------------|
| Battery                                             | V / CC / RC | 12 / 210 / 65           |
| Alternator voltage / full load current / engine rpm |             | 13.8 to 14.8 / _ / 3000 |
| Starter motor current / voltage - cranking          | A / V       | _                       |
| - locked                                            | A / V       | _                       |

Running gear

309, 1.6i CAT

1991

|                                          |    |     |
|------------------------------------------|----|-----|
| Brakes -                                 |    |     |
| Front (min. friction material thickness) | mm | 1.0 |
| Rear (min. friction material thickness)  | mm | _   |

|                                  |      |           |
|----------------------------------|------|-----------|
| Tyres                            |      |           |
| Saloon                           | Size | 165/70x13 |
| Estate / Van                     | Size | _         |
| Pressure - front / rear - Saloon | bar  | 1.9 / 1.8 |
| - Estate / Van                   | bar  | _         |

|                                    |        |             |
|------------------------------------|--------|-------------|
| Front suspension / wheel alignment |        |             |
| Toe-in (+) / Toe-out (-)           | mm [°] | +0.5±0.5 PW |
| Camber                             |        | -30'±30'    |
| Castor                             |        | +2°±30'     |
| King pin inclination               |        | +10°15'±30' |

|                                   |        |                          |
|-----------------------------------|--------|--------------------------|
| Rear suspension / wheel alignment |        |                          |
| Toe-in (+) / Toe-out (-)          | mm [°] | +1.6±0.8 PW <sup>1</sup> |
| Camber                            |        | -50'±30'                 |

Torque wrench settings

309, 1.6i CAT

1991

|                         |    |                 |
|-------------------------|----|-----------------|
| Cylinder head - stage 1 | Nm | 60              |
| - stage 2               | Nm | Slacken         |
| Cylinder head - stage 3 | Nm | 20              |
| - stage 4               | Nm | + 300°          |
| Big-end bearings        | Nm | 40 <sup>2</sup> |
| Main bearings           | Nm | 49              |
| Clutch cover            | Nm | 25              |
| Flywheel [driveplate]   | Nm | 49 LkC          |
| Front hubs              | Nm | 265             |
| Rear hubs               | Nm | 215             |
| Wheel nuts / bolts      | Nm | 85              |
| Spark plugs             | Nm | 25 to 30        |

Capacities

309, 1.6i CAT

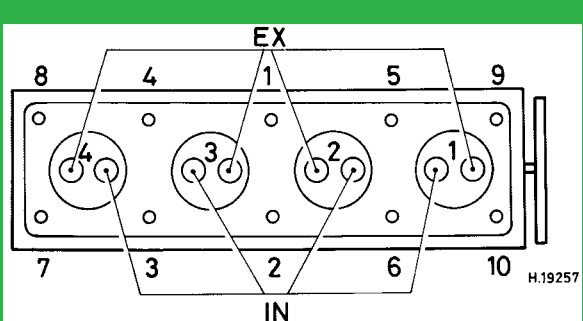
1991

|                                 |        |     |
|---------------------------------|--------|-----|
| Engine oil & filter             | litres | 5.0 |
| Gearbox - 4-speed [5-speed]     | litres | 2.0 |
| Automatic transmission - refill | litres | 2.4 |
| Final drive                     | litres | WT  |
| Cooling system                  | litres | 6.1 |
| Fuel tank                       | litres | 55  |

Notes and Illustrations

<sup>1</sup>1990 ►: +1.8±0.8

<sup>2</sup>Slacken, then 20 + 70°



1580 cm³