

Engine & Cooling

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Automotive Technical  
DATA BOOK

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Engine and cooling system

Citivan / Penny

1988 to 1992

|                                                   |     |                      |
|---------------------------------------------------|-----|----------------------|
| Type                                              |     | 146 A6.000 SOHC 43kW |
| Capacity (cm <sup>3</sup> ) / number of cylinders |     | 1116 / 4             |
| Compression ratio / pressure                      | bar | 9.4 / _              |
| Oil pressure                                      | bar | [3.4 to 4.9]         |
| Oil temperature                                   | °C  | 100                  |
| Valve clearance - inlet                           | mm  | 0.30±0.05            |
| Valve clearance - exhaust                         | mm  | 0.40±0.05            |
| Firing order                                      |     | 1-3-4-2              |
| No 1 cylinder position                            |     | TBE                  |
| Thermostat opening temperature                    | °C  | 80 to 84             |
| Radiator cap pressure                             | bar | 0.98                 |

Fuel system

Citivan / Penny

1988 to 1992

|                                           |     |                   |
|-------------------------------------------|-----|-------------------|
| Idle speed - manual [auto]                | rpm | 850±50            |
| Fast idle speed - manual [auto]           | rpm | _                 |
| CO @ idle speed [3000 rpm] - see page VI  | %   | 1.0±0.5           |
| 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              |     | Weber             |
| Type / ref                                |     | 30-32 DMTE 28/150 |
| Main jet / needle                         |     | 85, 95            |
| Injection pressure                        | bar | _                 |
| Pump pressure                             | bar | 0.18              |
| Octane rating                             | RON | 98[E 95 RON]      |

Ignition system

Citivan / Penny

1988 to 1992

|                                 |                    |                  |
|---------------------------------|--------------------|------------------|
| Type                            |                    | Electronic       |
| Ignition coil                   |                    | Marelli BAE 506A |
| Primary resistance              | ohms               | 0.756 to 0.924   |
| Ballast resistor                | ohms               | _                |
| Voltage - Tmnl 15(+) to earth   | V                  | _                |
| Distributor                     |                    | Marelli          |
| Points gap (air gap)            | mm                 | [0.30 to 0.40]   |
| Dwell angle                     | ° (%)              | _                |
| Condenser capacity              | µF                 | _                |
| Rotation                        |                    | Clockwise        |
| Ignition timing - basic [static | ° Crankshaft @ rpm | 10 BTDC @ idle   |
| V = Vacuum   NV = No Vacuum     |                    | NV               |
| Total ignition advance          | ° Crankshaft @ rpm | _                |
|                                 | ° Crankshaft @ rpm | _                |
|                                 | ° Crankshaft @ rpm | _                |
| Centrifugal check.              | ° Crankshaft @ rpm | 0 @ 1400 to 1800 |
|                                 | ° Crankshaft @ rpm | 9 to 13 @ 3000   |
|                                 | ° Crankshaft @ rpm | 22 to 26 @ 4800  |
| Vacuum range check              | mbar               | 107 to 267       |
| Maximum vacuum advance          | ° Crankshaft       | 10 to 14         |
| Spark plugs                     |                    | Bosch/Champion   |
| Type                            |                    | WR7DC / RN9YC    |
| Electrode gap                   | mm                 | 0.70 to 0.80     |

Electrical system

Citivan / Penny

1988 to 1992

|                                                     |             |                          |
|-----------------------------------------------------|-------------|--------------------------|
| Battery                                             | V / CC / RC | 12 / 140 / 34Ah          |
| Alternator voltage / full load current / engine rpm |             | 14.0 to 14.3 / 45 / 3500 |
| Starter motor current / voltage - cranking          | A / V       | 170 / 9.1                |
| - locked                                            | A / V       | 320 / 7                  |

Running gear

Citivan / Penny

1988 to 1992

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

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

|                                    |        |            |
|------------------------------------|--------|------------|
| Front suspension / wheel alignment |        |            |
| Toe-in (+) / Toe-out (-)           | mm [°] | -3.0±1.0   |
| Camber                             |        | +1°55'±30' |
| Castor                             |        | +55'±30'   |
| King pin inclination               |        | _          |

|                                   |        |            |
|-----------------------------------|--------|------------|
| Rear suspension / wheel alignment |        |            |
| Toe-in (+) / Toe-out (-)          | mm [°] | +5.0±2.0   |
| Camber                            |        | -1°25'±30' |

Torque wrench settings

Citivan / Penny

1988 to 1992

|                         |    |                    |
|-------------------------|----|--------------------|
| Cylinder head - stage 1 | Nm | 65 <sup>1</sup>    |
| - stage 2               | Nm | + 90° <sup>1</sup> |
| Cylinder head - stage 3 | Nm | + 90° <sup>1</sup> |
| - stage 4               | Nm | _                  |
| Big-end bearings        | Nm | 51                 |
| Main bearings           | Nm | 80                 |
| Clutch cover            | Nm | 16                 |
| Flywheel [driveplate]   | Nm | 83                 |
| Front hubs              | Nm | 216                |
| Rear hubs               | Nm | 216                |
| Wheel nuts / bolts      | Nm | 86                 |
| Spark plugs             | Nm | 25 to 30           |

Capacities

Citivan / Penny

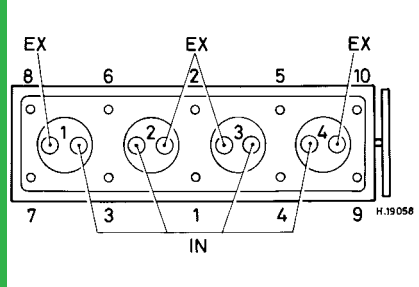
1988 to 1992

|                                 |        |     |
|---------------------------------|--------|-----|
| Engine oil & filter             | litres | 3.4 |
| Gearbox - 4-speed [5-speed]     | litres | 3.0 |
| Automatic transmission - refill | litres | _   |
| Final drive                     | litres | WT  |
| Cooling system                  | litres | 4.8 |
| Fuel tank                       | litres | 54  |

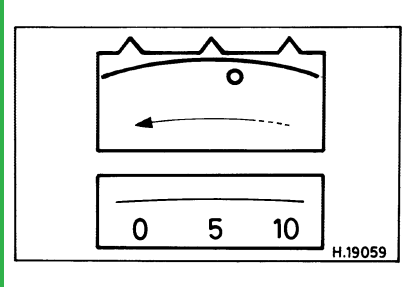
Notes and Illustrations

<sup>1</sup>NUTS: 65 + 40° + 40°

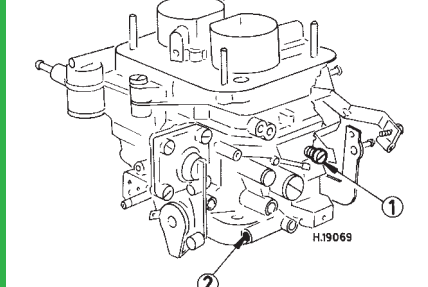
1: Idle speed      2: CO / Mixture



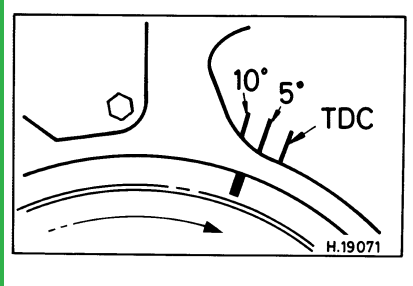
1116 cm<sup>3</sup>



1116 cm<sup>3</sup>



Weber DMTE



1116 cm<sup>3</sup>, alternative