

VAUXHALL/OPEL

Frontera 2.4i

1991 to 1995

Engine & Cooling

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Automotive Technical  
DATA BOOK

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Engine and cooling system

Frontera 2.4i

1991 to 1995

|                                                   |     |                       |
|---------------------------------------------------|-----|-----------------------|
| Type                                              |     | C24NE CIH. 92kW. US83 |
| Capacity (cm <sup>3</sup> ) / number of cylinders |     | 2410 / 4              |
| Compression ratio / pressure                      | bar | 9.2 / _               |
| Oil pressure                                      | bar | 1.0                   |
| Oil temperature                                   | °C  | 60                    |
| Valve clearance - inlet                           | mm  | 0: Hyd.               |
| Valve clearance - exhaust                         | mm  | 0: Hyd.               |
| Firing order                                      |     | 1-3-4-2               |
| No 1 cylinder position                            |     | TCE                   |
| Thermostat opening temperature                    | °C  | 92 to 107             |
| Radiator cap pressure                             | bar | 1.2 to 1.3            |

Fuel system

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1991 to 1995

|                                           |     |                         |
|-------------------------------------------|-----|-------------------------|
| Idle speed - manual [auto]                | rpm | 820 to 880 [720 to 780] |
| Fast idle speed - manual [auto]           | rpm | 2800 to 3200            |
| CO @ idle speed [3000 rpm] - see page VI  | %   | ≤0.5 [≤0.3]             |
| 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              |     | Bosch                   |
| Type / ref                                |     | Motronic M1.5           |
| Main jet / needle                         |     | _                       |
| Injection pressure                        | bar | 2.5                     |
| Pump pressure                             | bar | 3.0±0.2                 |
| Octane rating                             | RON | 95[U]                   |

Ignition system

Frontera 2.4i

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|                                 |                    |                      |
|---------------------------------|--------------------|----------------------|
| Type                            |                    | DME Motronic         |
| Ignition coil                   |                    | Bosch 0 221 122 369  |
| Primary resistance              | ohms               | 0.72±0.04            |
| Ballast resistor                | ohms               | _                    |
| Voltage - Tmnl 15(+) to earth   | V                  | _                    |
| Distributor                     |                    | Bosch                |
| Points gap (air gap)            | mm                 | _                    |
| Dwell angle                     | ° (%)              | Electronic control   |
| 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                     |                    | AC/Champion          |
| Type                            |                    | CR4.225BC / RL82YCC  |
| Electrode gap                   | mm                 | 0.70 to 0.80         |

Electrical system

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|                                                     |             |                              |
|-----------------------------------------------------|-------------|------------------------------|
| Battery                                             | V / CC / RC | 12/55Ah                      |
| Alternator voltage / full load current / engine rpm |             | 13.7 to 14.5 / 70, 90 / 2000 |
| Starter motor current / voltage - cranking          | A / V       | 75 / 11.5 (no load)          |
| - locked                                            | A / V       | 475 to 600 / 12.0            |

Running gear

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

|                                  |      |                               |
|----------------------------------|------|-------------------------------|
| Tyres                            |      |                               |
| Saloon                           | Size | _                             |
| Estate / Van                     | Size | 225/75x15:255/75x15:245/70x16 |
| Pressure - front / rear - Saloon | bar  | _                             |
| - Estate / Van                   | bar  | 1.7 / 1.7                     |

|                                    |        |            |
|------------------------------------|--------|------------|
| Front suspension / wheel alignment |        |            |
| Toe-in (+) / Toe-out (-)           | mm [°] | 0 to +2.0  |
| Camber                             |        | +30'±1°    |
| Castor                             |        | +2°10'±45' |
| King pin inclination               |        | +10°±1°    |

|                                   |        |   |
|-----------------------------------|--------|---|
| Rear suspension / wheel alignment |        |   |
| Toe-in (+) / Toe-out (-)          | mm [°] | _ |
| Camber                            |        | _ |

Torque wrench settings

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|                         |    |                 |
|-------------------------|----|-----------------|
| Cylinder head - stage 1 | Nm | 60              |
| - stage 2               | Nm | + 90°           |
| Cylinder head - stage 3 | Nm | Warm engine     |
| - stage 4               | Nm | + 30°           |
| Big-end bearings        | Nm | 43              |
| Main bearings           | Nm | 110             |
| Clutch cover            | Nm | 15              |
| Flywheel [driveplate]   | Nm | 60              |
| Front hubs              | Nm | WSM             |
| Rear hubs               | Nm | WSM             |
| Wheel nuts / bolts      | Nm | 100. Alloy: 120 |
| Spark plugs             | Nm | 20              |

Capacities

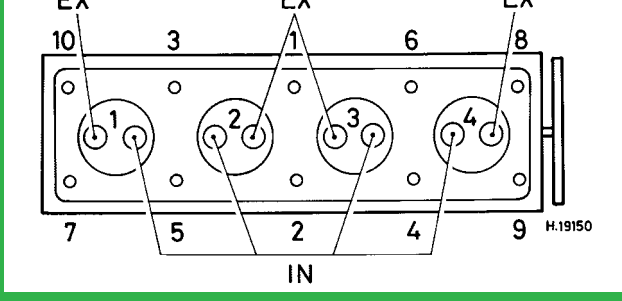
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|                                 |        |                         |
|---------------------------------|--------|-------------------------|
| Engine oil & filter             | litres | 4.5                     |
| Gearbox - 4-speed [5-speed]     | litres | 2.8. Transfer: 1.4      |
| Automatic transmission - refill | litres | _                       |
| Final drive                     | litres | Front: 1.7 <sup>1</sup> |
| Cooling system                  | litres | 7.8                     |
| Fuel tank                       | litres | 80                      |

Notes and Illustrations

<sup>1</sup>Rear: 2.4. LSD: 1.9



2410 cm<sup>3</sup>