



ENGINE 3.9 V8i

Type	V8i
Number of cylinders	Eight, two banks of four
Bore	94,00 mm
Stroke	71,12 mm
Capacity	3950 cc
Compression ratio	8.13:1 or 9.35:1
Valve operation	Overhead by push-rod
Maximum power	
- 8.13:1	127kW at 4550 rev/min
- 9.35:1	134kW at 4750 rev/min

Crankshaft

Main journal diameter	58,409-58,422 mm
Minimum regrind diameter	57,393-57,406 mm
Crankpin journal diameter	50,800-50,812 mm
Minimum regrind diameter	49,784-49,797 mm
Crankshaft end thrust/(end float)	Taken on thrust washers of centre main bearing 0,10-0,20 mm

Main bearings

Number and material	5, Lead-indium
Diametrical clearance	0,010-0,048 mm
Undersize bearing shells	0,254 mm, 0,508 mm

Connecting rods

Type	Horizontally split big-end, plain small-end
Length between centres	143,81-143,71 mm

Big-end bearings

Type and material	Lead-indium
Diametrical clearance	0,015-0,055 mm
End-float crankpin	0,15-0,36mm
Undersize bearing shells	0,254 mm, 0,508 mm

Piston pins

Length	72,67-72,79 mm
Diameter	22,215-22,220 mm
Fit-in connecting rod	Press fit
Clearance in piston	0,002-0,007 mm

Pistons

Clearance in bore, measured at bottom
of skirt at right angles to piston pin 0,018-0,041 mm

Piston rings

Number of compression rings 2
 Number of control rings 1
 No 1 compression ring Molybdenum barrel faced
 No 2 compression ring Tapered and marked 'T' or 'TOP'
 Width of compression rings 1,478-1,49 mm
 Compression ring gap 0,40-0,65 mm
 Oil control ring width 3,0 mm
 Oil control ring rail gap 0,38-1,40 mm

Camshaft

Location Central
 Bearings Tin - aluminium
 Number of bearings 5
 Drive Chain 9,52 mm pitch x 54 pitches.

Tappets Hydraulic-self-adjusting

Valves

Length: Inlet 116,59-117,35 mm
 Exhaust 116,59-117,35 mm
 Seat angle: Inlet 45° to 45 1/2°
 Exhaust 45° to 45 1/2°
 Head diameter: Inlet 39,75-40,00 mm
 Exhaust 34,226-34,480 mm
 Stem diameter: Inlet 8,664-8,679 mm
 Exhaust 8,651-8,666 mm
 Stem to guide clearance: Inlet 0,025-0,066 mm
 Exhaust 0,038-0,078 mm
 Valve lift (Inlet and Exhaust) 9,49 mm
 Valve spring length fitted 40,4 mm at pressure of 29,5 kg

Lubrication

System type Wet sump, pressure fed
 Oil pump type Eccentric rotor
 Oil pressure 2.75 bar (40 lb/in²) at 2500 rev/min with engine at
 running temperature
 Oil filter-internal Wire screen, pump intake filter.
 Oil filter-external Full flow, self-contained cartridge



ENGINE 4.0 V8

Type	4.0 litre V8	
Number of cylinders	Eight, two banks of four	
Bore	94.00 mm	3.70 in
Stroke	71.12 mm	2.80 in
Capacity	3950 cm ³	241 cu in
Valve operation	Overhead by push-rod	
	High Compression	Low Compression
Compression ratio	9.35:1	8.2:1
Valve operation	Overhead by push-rod	
Maximum power:	9.35:1	140kW at 4750 rev/min
	8.2:1	132kW at 4750 rev/min

Crankshaft

Main journal diameter	63.500 - 63.487 mm	2.50 - 2.4995 in
Crankpin journal diameter	55.513 - 55.500 mm	2.1855 - 2.1850 in
Crankshaft end thrust/end float	Taken on thrust washers of centre main bearing	
	0.10 - 0.20 mm	0.004 - 0.008 in

Main bearings

Number and type	5, Vandervell shells	
Material	Lead bronze with lead-indium overlay	
Diametrical clearance	0.015 - 0.060 mm	0.0006 - 0.0024 in

Connecting rods

Type	Horizontally split big-end, plain small-end	
Length between centres	155.12 - 155.22 mm	6.1071 - 6.1110 in

Big-end bearings

Type and material	Vandervell VP3 Lead bronze with lead-indium overlay	
Diametrical clearance	0.015 - 0.016 mm	0.0006 - 0.0024 in

Piston pins

Length	60.00 - 60.50 mm	2.3622 - 2.3819 in
Diameter	23.995 - 24.000 mm	0.9447 - 0.9449 in
Fit-in connecting rod	Press fit	
Clearance in piston	0.015 - 0.006 mm	0.0006 - 0.0002 in

Pistons

Clearance in bore, measured at bottom of skirt at right angles to piston pin	0.020 - 0.050 mm	0.0008 - 0.0020 in
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FUEL SYSTEM 3.9 V8i

Fuel system type	Lucas 14CUX hot wire system electronically controlled
Fuel pump-make/type	ACX delco high pressure electrical, immersed in the fuel tank
Fuel pump delivery pressure	2.4-2.6 bar (34-37 lbf/in ²)
Fuel filter	Bosch in-line filter 'canister' type

Airflow Sensor

Make and type	Lucas 'Hot Wire' 5AM
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Injectors

Make and type	Lucas 8NJ
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Electronic Control Unit

Make and type	Lucas 14CUX
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Fuel pressure regulator

Make and type	Lucas 8RV
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Fuel temperature sensor

Make and type	Lucas 6TT
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Coolant temperature sensor

Make and type	Lucas 3TT
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Bypass Airvalve (Stepper motor)

Make and type	Lucas 2ACM
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Throttle potentiometer

Make and type	Lucas 215SA
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Lambda sensor - catalyst vehicles

Make and type	Lucas 3LS
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FUEL SYSTEM (GEMS) 4.0 V8 ENGINE

Type	Sagem - Lucas Gems 8 hot wire system electronically controlled
Fuel pump-make/type	High pressure electrical, immersed in the fuel tank
Fuel pump delivery pressure	2.4-2.6 bar (34-37 lbf/in ²)
Fuel filter	Bosch in-line filter 'canister' type

Mass airflow sensor

Make and type	Lucas 'Hot Wire' 20AM
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Injectors

Make and type	Lucas D1000
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Electronic Control Module

Make and type	Lucas GEMS 8.3
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Fuel pressure regulator

Make and type	Lucas 8RV
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Coolant temperature sensor

Make and type	Lucas 8TT
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Bypass Air valve (Stepper motor)

Make and type	Lucas 3ACM
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Throttle position sensor

Make and type	Lucas 3TP
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Heated oxygen sensor - catalyst vehicles

Make and type	Lucas 4LS
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Camshaft position sensor

Make and Land Rover part no.	Lucas ERR6170
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Crankshaft position sensor

Make and type	Lucas 3VRS, Honeywell ERR6049
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Knock sensor

Make and type	Lucas 2KS
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Intake air temperature sensor

Make and type	Lucas 10TT
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Ignition coils

Make and type	Lucas 2DIS2
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Fuel temperature sensor

Make and type	Lucas 6TT
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