

Engine & Cooling

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Automotive Technical
DATA BOOK

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Engine and cooling systemMetro 1.0 HC1986 to 1989

Type		99HB90P, 92P, 91P, 93P ¹
Capacity (cm ³) / number of cylinders		998 / 4
Compression ratio / pressure	bar	10.3 / $\bar{}$
Oil pressure	bar	1.0 [4.1]
Oil temperature	°C	$\bar{}$
Valve clearance - inlet	mm	0.27 to 0.33
Valve clearance - exhaust	mm	0.27 to 0.33
Firing order		1-3-4-2
No 1 cylinder position		TCE
Thermostat opening temperature	°C	88
Radiator cap pressure	bar	1.04

Fuel systemMetro 1.0 HC1986 to 1989

Idle speed - manual [auto]	rpm	830±50
Fast idle speed - manual [auto]	rpm	1050 to 1150
CO @ idle speed [3000 rpm] - see page VI	%	1.5 to 3.5
HC @ idle speed [3000 rpm] - see page VI	ppm	≤1200
CO2 @ idle speed [3000 rpm] - see page VI	%	$\bar{}$
O2 @ idle speed [3000 rpm] - see page VI	%	$\bar{}$
Carburettor / fuel injection		SU
Type / ref		HIF38
Main jet / needle		0.090 / ADS, AEG
Injection pressure	bar	$\bar{}$
Pump pressure	bar	0.4
Octane rating	RON	97[L]

Ignition systemMetro 1.0 HC1986 to 1989

Type		Contact breaker - CIS
Ignition coil		GCL 144
Primary resistance	ohms	1.3 to 1.5
Ballast resistor	ohms	1.3 to 1.5
Voltage - Tmnl 15(+) to earth	V	6.0 to 8.0
Distributor		Lucas/Ducellier
Points gap (air gap)	mm	0.38±0.03
Dwell angle	° (%)	L: 54±5 [D: 57±2.5]
Condenser capacity	µF	0.18 to 0.25
Rotation		Anticlockwise
Ignition timing - basic [static	° Crankshaft @ rpm	5 to 7 BTDC @ 1500
V = Vacuum NV = No Vacuum		NV
Total ignition advance	° Crankshaft @ rpm	$\bar{}$
	° Crankshaft @ rpm	$\bar{}$
	° Crankshaft @ rpm	$\bar{}$
Centrifugal check.	° Crankshaft @ rpm	0 to 4 @ 1000
	° Crankshaft @ rpm	12 to 16 @ 3000
	° Crankshaft @ rpm	16 to 20 @ 4400
Vacuum range check	mbar	33 to 339
Maximum vacuum advance	° Crankshaft	14 to 18
Spark plugs		Unipart/Champion
Type		GSP4382 / N12YC
Electrode gap	mm	0.65

Electrical systemMetro 1.0 HC1986 to 1989

Battery	V / CC / RC	12 / $\bar{}$
Alternator voltage / full load current / engine rpm		14.0 / $\bar{}$ / 3000
Starter motor current / voltage - cranking	A / V	75 / 12 (no load)
- locked	A / V	380 / 7.0

Running gearMetro 1.0 HC1986 to 1989

Brakes -		
Front (min. friction material thickness)	mm	3.0
Rear (min. friction material thickness)	mm	1.5

Tyres		
Saloon	Size	160/65x315
Estate / Van	Size	160/65x315
Pressure - front / rear - Saloon	bar	2.0 / 1.8
- Estate / Van	bar	2.0 / 2.2

Front suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [°]	[0 to -25']
Camber		0±30'
Castor		+2°6'±2°
King pin inclination		+10°38'

Rear suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [°]	[+10' to +50']
Camber		-1°±30'

Torque wrench settingsMetro 1.0 HC1986 to 1989

Cylinder head - stage 1	Nm	38
- stage 2	Nm	75
Cylinder head - stage 3	Nm	$\bar{}$
- stage 4	Nm	$\bar{}$
Big-end bearings	Nm	Bolts: 50. Nuts: 45
Main bearings	Nm	85
Clutch cover	Nm	25
Flywheel [driveplate]	Nm	Centre bolt: 152
Front hubs	Nm	2 hole shaft: 271 ²
Rear hubs	Nm	88
Wheel nuts / bolts	Nm	57
Spark plugs	Nm	25

CapacitiesMetro 1.0 HC1986 to 1989

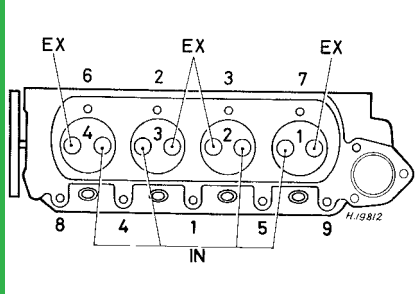
Engine oil & filter	litres	4.8
Gearbox - 4-speed [5-speed]	litres	With engine
Automatic transmission - refill	litres	$\bar{}$
Final drive	litres	With engine
Cooling system	litres	4.8
Fuel tank	litres	33

Notes and Illustrations

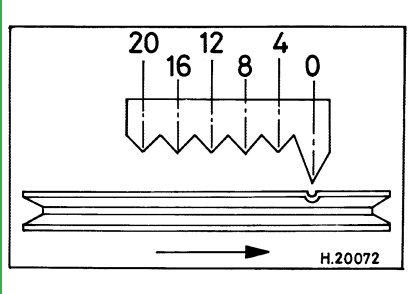
¹From 1987 MY: 99HD27P, 28P, 29P, 30 or 31

²1 hole shaft: 262

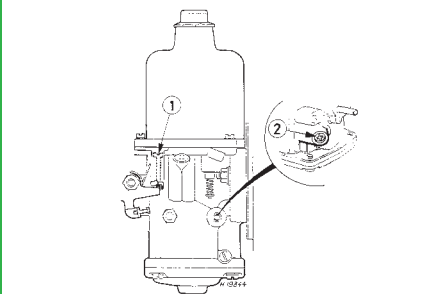
1: Idle speed 2: CO / Mixture



998 cm³



998 cm³



SU HIF