

MERCEDES-BENZ

190E 2.5-16 & CAT (201.035)

1988 to 1993

Engine & Cooling

Fuel

Ignition

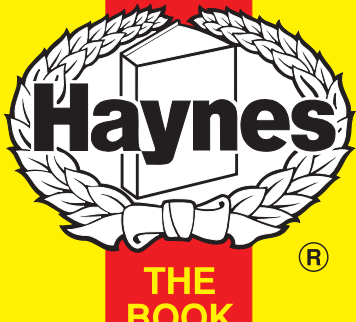
Electrical

Running gear

Torque settings

Capacities

Notes & Illustrations



Automotive Technical
DATA BOOK

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MENU

HELP

Engine and cooling system

190E 2.5-16 & CAT (201.035)

1988 to 1993

Type		102.990 KE 16V 150kW Cat:143kW
Capacity (cm ³) / number of cylinders		2498 / 4
Compression ratio / pressure	bar	9.7 / ≥10.5
Oil pressure	bar	0.3 [3.0]
Oil temperature	°C	—
Valve clearance - inlet	mm	0.10 to 0.20
Valve clearance - exhaust	mm	0.25 to 0.35
Firing order		1-3-4-2
No 1 cylinder position		F
Thermostat opening temperature	°C	87±2
Radiator cap pressure	bar	1.2±0.1

Fuel system

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Idle speed - manual [auto]	rpm	890 to 990
Fast idle speed - manual [auto]	rpm	—
CO @ idle speed [3000 rpm] - see page VI	%	1.0±0.5. CAT: ≤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		Bosch
Type / ref		CIS-E (KE-Jetronic)
Main jet / needle		—
Injection pressure	bar	≥3.2
Pump pressure	bar	5.7 to 5.9
Octane rating	RON	95[E 95 RON] ¹

Ignition system

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Type		EZL
Ignition coil		Bosch
Primary resistance	ohms	0.3 to 0.6
Ballast resistor	ohms	—
Voltage - Tmnl 15(+) to earth	V	Battery
Distributor		Bosch
Points gap (air gap)	mm	—
Dwell angle	° (%)	9 to 49 @ starter speed
Condenser capacity	µF	—
Rotation		—
Ignition timing - basic [static	° Crankshaft @ rpm	17 to 21 BTDC @ 4200
V = Vacuum NV = No Vacuum		NV
Total ignition advance	° Crankshaft @ rpm	14 to 18 BTDC @ idle
	° Crankshaft @ rpm	26 to 30 BTDC @ 4200
	° Crankshaft @ rpm	—
Centrifugal check.	° Crankshaft @ rpm	Computer control
	° Crankshaft @ rpm	—
	° Crankshaft @ rpm	—
Vacuum range check	mbar	Computer control
Maximum vacuum advance	° Crankshaft	—
Spark plugs		Bosch/Champion
Type		H5DC / S6YC
Electrode gap	mm	0.80

Electrical system

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Battery	V / CC / RC	12 / 190 / 62Ah
Alternator voltage / full load current / engine rpm		13.0 to 14.5 / 55 or 70 / 3000
Starter motor current / voltage - cranking	A / V	75 / 11.5 (no load)
- locked	A / V	430 to 550 / 3.2

Running gear

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Brakes -		
Front (min. friction material thickness)	mm	3.5
Rear (min. friction material thickness)	mm	2.0

Tyres		
Saloon	Size	205/55x15
Estate / Van	Size	—
Pressure - front / rear - Saloon	bar	2.3 / 2.5
- Estate / Van	bar	—

Front suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [°]	[+20'±10']
Camber		-25'+10'-20' ²
Castor		+10°30'±30' ³
King pin inclination		—

Rear suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [°]	[+20' to 35']
Camber		-1°30'±30'

Torque wrench settings

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Cylinder head - stage 1	Nm	55 ⁴
- stage 2	Nm	+ 90°
Cylinder head - stage 3	Nm	+ 90°
- stage 4	Nm	—
Big-end bearings	Nm	40 + 90 to 100°
Main bearings	Nm	M12: 90 ⁵
Clutch cover	Nm	25
Flywheel [driveplate]	Nm	30 + 90 to 100°
Front hubs	Nm	WSM
Rear hubs	Nm	—
Wheel nuts / bolts	Nm	110
Spark plugs	Nm	20

Capacities

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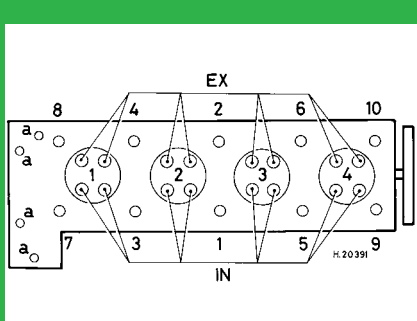
Engine oil & filter	litres	5.0
Gearbox - 4-speed [5-speed]	litres	1.6
Automatic transmission - refill	litres	6.0
Final drive	litres	1.1
Cooling system	litres	8.0
Fuel tank	litres	70

Notes and Illustrations

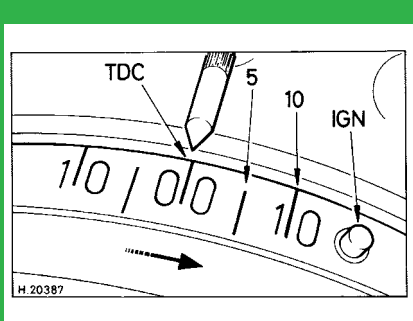
- ¹CAT: [U]
- ²Level control: -1°+10'-20'
- ³Level control: +10°55'±30'
- ⁴Bolts marked “a” on diagram: 21
- ⁵M11: 55 + 90 to 100°

1: Idle speed

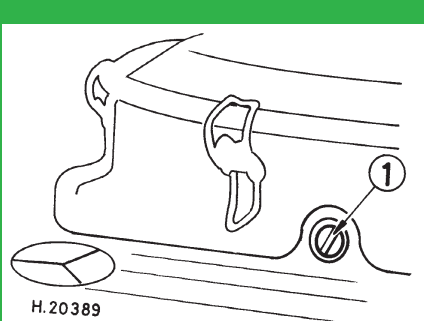
2: CO / Mixture



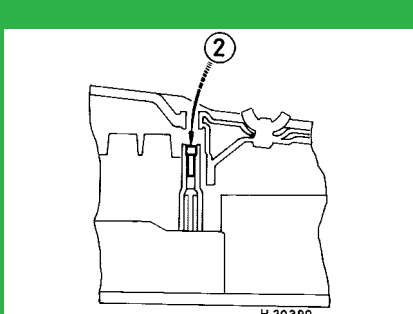
2498 cm³, 16V



2498 cm³, 16V



KE-Jetronic



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