

MERCEDES-BENZ

200E, TE & CAT (124.021/081)

1988 to 1989

Engine & Cooling

Fuel

Ignition

Electrical

Running gear

Torque settings

Capacities

Notes & Illustrations



Automotive Technical
DATA BOOK

Click on one of the buttons above to view data for this car. To return to this screen and make another choice, click anywhere on the data screen.

MENU

HELP

Engine and cooling system

200E, TE & CAT (124.021/081)

1988 to 1989

Type		102.963 KE 90kW Cat: 87kW
Capacity (cm³) / number of cylinders		1997 / 4
Compression ratio / pressure	bar	9.1 / ≥8.5
Oil pressure	bar	0.3 [3.0]
Oil temperature	°C	—
Valve clearance - inlet	mm	0: Hyd.
Valve clearance - exhaust	mm	0: Hyd.
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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1988 to 1989

Idle speed - manual [auto]	rpm	750±50
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	≥3.0. 9.88 ▶: 3.2
Pump pressure	bar	5.3 to 5.5
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-Siemens
Points gap (air gap)	mm	—
Dwell angle	° (%)	9 to 49 @ starter speed
Condenser capacity	µF	—
Rotation		Clockwise
Ignition timing - basic [static	° Crankshaft @ rpm	23 to 27 BTDC @ 3200
V = Vacuum NV = No Vacuum		NV
Total ignition advance	° Crankshaft @ rpm	8 to 12 BTDC @ idle
	° Crankshaft @ rpm	36 to 40 BTDC @ 3200
	° 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		H7DC / S9YC
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 / 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	195/65x15: 205/60x15
Estate / Van	Size	195/65x15: 205/60x15
Pressure - front / rear - Saloon	bar	2.0 / 2.0
- Estate / Van	bar	2.0 / 2.5

Front suspension / wheel alignment

Toe-in (+) / Toe-out (–)	mm [°]	[+20'±10']
Camber		-25'+10'-20' ²
Castor		+10°25'±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	30 + 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	25 to 30

Capacities

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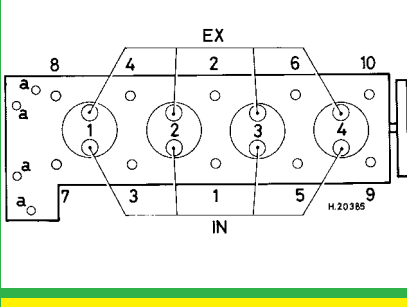
Engine oil & filter	litres	5.0
Gearbox - 4-speed [5-speed]	litres	1.3 [1.5]
Automatic transmission - refill	litres	5.5
Final drive	litres	0.7. ASD: 1.1
Cooling system	litres	8.5. A/c: 9.5
Fuel tank	litres	70. 200TE: 72

Notes and Illustrations

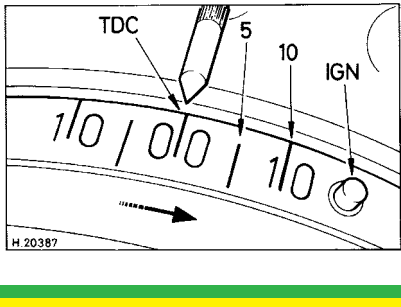
- ¹CAT: [U]
- ²200TE: -5'+10'-20'. Sport: -50'+10'-20'
- ³200TE: 10°10'±30'. Sport: +10°40'±30'
- ⁴Bolts marked “a” on diagram: 21
- ⁵M11: 55 + 90 to 100°

1: Idle speed

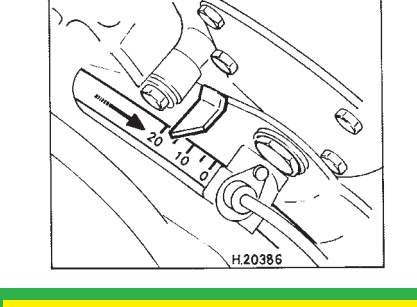
2: CO / Mixture



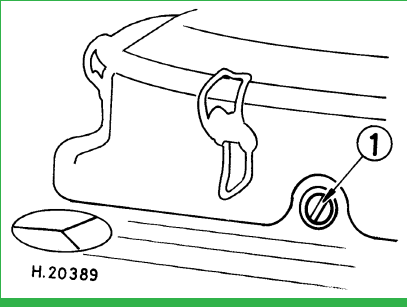
1997 cm³



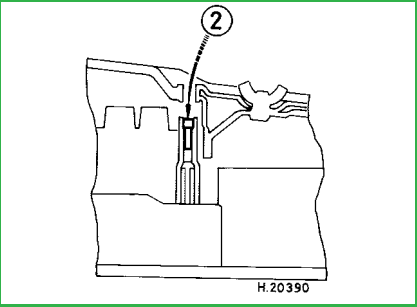
1997 cm³



1997 cm³, alternative



KE-Jetronic



KE-Jetronic