

VOLKSWAGEN

Polo & Van 1.05 & CAT

1985 to 1993

Engine & Cooling

Fuel

Ignition

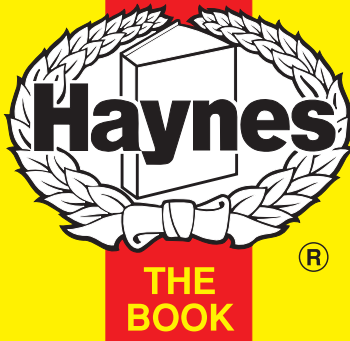
Electrical

Running gear

Torque settings

Capacities

Notes & Illustrations



Automotive Technical
DATA BOOK

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HELP

Engine and cooling system

Polo & Van 1.05 & CAT

1985 to 1993

Type		HZ. 93: ACM 33kW
Capacity (cm ³) / number of cylinders		1043 / 4
Compression ratio / pressure	bar	9.5 / ≥7.0
Oil pressure	bar	[2.0]
Oil temperature	°C	80
Valve clearance - inlet	mm	0: Hyd.
Valve clearance - exhaust	mm	0: Hyd.
Firing order		1-3-4-2
No 1 cylinder position		TBE
Thermostat opening temperature	°C	87
Radiator cap pressure	bar	1.2 to 1.5

Fuel system

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Idle speed - manual [auto]	rpm	800±50
Fast idle speed - manual [auto]	rpm	2000±100
CO @ idle speed [3000 rpm] - see page VI	%	2.0±0.5. CAT: 0 to 2.5
HC @ idle speed [3000 rpm] - see page VI	ppm	≤1200
CO ₂ @ idle speed [3000 rpm] - see page VI	%	–
O ₂ @ idle speed [3000 rpm] - see page VI	%	–
Carburettor / fuel injection		Weber/Pierburg
Type / ref		W: 32TLA. P: 1B3
Main jet / needle		W: 102. P: 105 ¹
Injection pressure	bar	–
Pump pressure	bar	0.35 to 0.40
Octane rating	RON	91[E 91 RON] ²

Ignition system

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Type		TCI-H
Ignition coil		Bosch
Primary resistance	ohms	0.52 to 0.76 ³
Ballast resistor	ohms	–
Voltage - Tmnl 15(+) to earth	V	–
Distributor		Bosch
Points gap (air gap)	mm	–
Dwell angle	° (%)	–
Condenser capacity	µF	–
Rotation		Anticlockwise
Ignition timing - basic [static	° Crankshaft @ rpm	5±1 BTDC @ 800±50
V = Vacuum NV = No Vacuum		NV
Total ignition advance	° Crankshaft @ rpm	–
	° Crankshaft @ rpm	–
	° Crankshaft @ rpm	–
Centrifugal check.	° Crankshaft @ rpm	5 to 9 @ 2600
	° Crankshaft @ rpm	14 to 18 @ 4000
	° Crankshaft @ rpm	24 to 28 @ 5700
Vacuum range check	mbar	190 to 390
Maximum vacuum advance	° Crankshaft	12 to 16
Spark plugs		Bosch/Champion
Type		W7DTC / N7BYC ⁴
Electrode gap	mm	0.70 to 0.90 ⁴

Electrical system

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Battery	V / CC / RC	12 / 175 / 60
Alternator voltage / full load current / engine rpm		12.5 to 14.5 / _ / 3000
Starter motor current / voltage - cranking	A / V	–
- locked	A / V	–

Running gear

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Brakes -		
Front (min. friction material thickness)	mm	7.0 with backing
Rear (min. friction material thickness)	mm	2.5

Tyres		
Saloon	Size	135x13: 145x13: 155/70x13
Estate / Van	Size	145x13
Pressure - front / rear - Saloon	bar	1.7 / 1.7 ⁵
- Estate / Van	bar	1.6 / 1.6

Front suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [°]	[0±10']
Camber		0±30'
Castor		+2°20'±30'
King pin inclination		–

Rear suspension / wheel alignment		
Toe-in (+) / Toe-out (–)	mm [°]	[+25'±15']
Camber		-1°40'±20'

Torque wrench settings

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Cylinder head - stage 1	Nm	40
- stage 2	Nm	60
Cylinder head - stage 3	Nm	+ 90°
- stage 4	Nm	+ 90°
Big-end bearings	Nm	30 + 90°
Main bearings	Nm	65 ⁶
Clutch cover	Nm	25
Flywheel [driveplate]	Nm	60 + 90° N
Front hubs	Nm	210
Rear hubs	Nm	WSM
Wheel nuts / bolts	Nm	90
Spark plugs	Nm	25

Capacities

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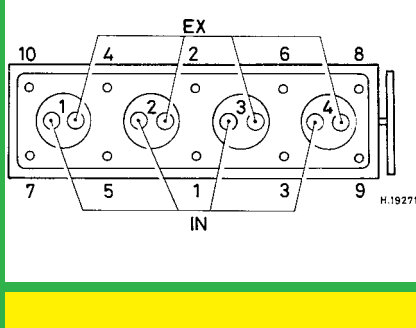
Engine oil & filter	litres	3.5
Gearbox - 4-speed [5-speed]	litres	2.2 [3.1]
Automatic transmission - refill	litres	–
Final drive	litres	WT
Cooling system	litres	5.6
Fuel tank	litres	42

Notes and Illustrations

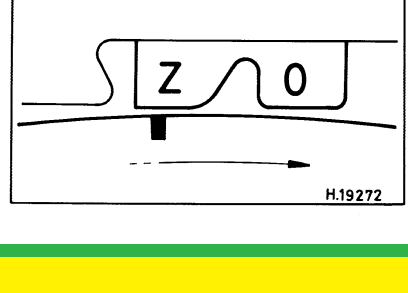
- ¹06.89 ►: 1B3 030 129 016L: 102.5
- ²CAT: [U]
- ³8.87 ►: 0.6 to 0.8
- ⁴Coil with grey sticker W7DCO / N7YCX, gap: 0.70 to 0.80
- ⁵135x13: 1.8 / 1.8
- ⁶Replace with fully threaded shank bolts: 65 + 90°

1: Idle speed

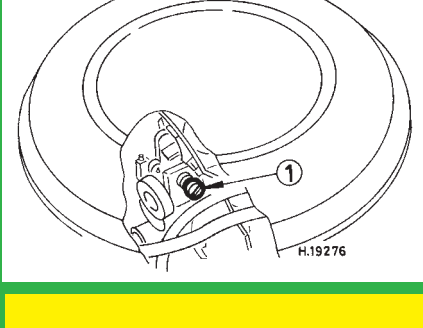
2: CO / Mixture



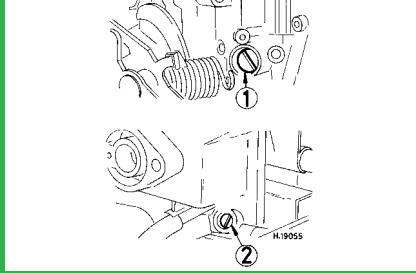
1043 cm³



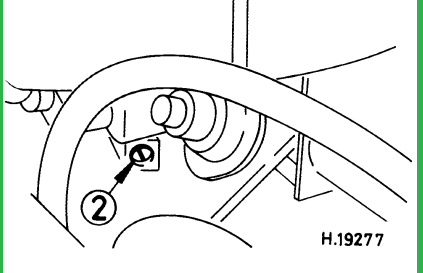
1043 cm³



Weber 32 TLA



Pierburg 1B3



Weber 32 TLA