1st Edition – Subject to errors and changes
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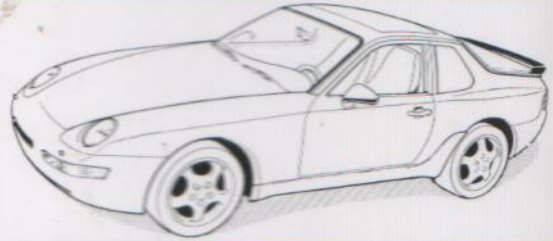
PORSCHE



968
Models 92, 93

968

968 CS
Model 93

968 CS

Technical Specifications

INTRODUCTION

We are publishing this booklet with information on

Technical Specifications

to provide the Porsche mechanic with dimensions and adjustment values necessary to perform expert repair.

We assume that the mechanic is familiar with the service operations outlined in the workshop manual.

When using this booklet, also refer to the Service Information Bulletins since the data and specifications are subject to change without prior notice.

Technical Specifications

968
Models 92, 93

968 CS
Model 93

1st edition Status as per 11/1992

Contents

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Front axle, steering, rear axle

Brakes, wheels, tires

Air conditioning

Electrical system

General technical data

Important conversion factors and new dimensioning units

	Former units		Present units
Pressure	Technical atmosphere	at (kp/cm²)	Bar (bar)
Output	Horsepower	HP	Kilowatt (kW)
Force	Kilopond	kp	Newton (N)
Torque	Kilopondmeter	kpm	Newtonmeter (Nm)

Conversion factors

at (kp/cm²)	in bar	x 0.981
kp	in N	x 9.81
HP	in kW	x 0.736
kpm	in Nm	x 9.81
m/s	in km/h	x 3.6
at	in mm Hg	x 735.56
km/h	in mph (miles)	x 0.621
°F (Fahrenheit)	in °C	(°F-32) x 0.555
l	in U.S. gal	x 0.264
l	in Imp. gal	x 0.22

To convert tightening torques from kpm into Nm, the conversion factor 10 can be used. This is sufficient for workshop applications.

Survey of Type Designations

Model year designation	Vehicle type designation T = Tiptronic	Engine type designation	Displacement act. (cm³)	Output DIN-kW (HP)	Stroke/bore (mm)	Compression ratio ε
1992	968 Coupe RoW	M44/43	2990	176(240)	88/104	11,.:1
	968 Coupe RoW T	M44/44	2990	176(240)	88/104	11.0:1
	968 Cabrio RoW	M44/43	2990	176(240)	88/104	11.0:1
	968 Cabrio RoW T	M44/44	2990	176(240)	88/104	11.0:1
	968 Coupe USA, Canada	M44/43	2990	176(240)	88/104	11.0:1
	968 Coupe USA, Canada T	M44/44	2990	176(240)	88/104	11.0:1
	968 Cabrio USA, Canada	M44/43	2990	176(240)	88/104	11.0:1
	968 Cabrio USA, Canada T	M44/44	2990	176(240)	88/104	11.0:1
1993	968 Coupe RoW	M44/43	2990	176(240)	88/104	11.0:1
	968 CS Coupe RoW	M44/43	2990	176(240)	88/104	11.0:1
	968 Coupe RoW T	M44/44	2990	176(240)	88/104	11.0:1
	968 Cabrio RoW	M44/43	2990	176(240)	88/104	11.0:1
	968 Cabrio RoW T	M44/44	2990	176(240)	88/104	11.0:1
	968 Coupe USA, Canada	M44/43	2990	176(240)	88/104	11.0:1
	968 Coupe USA, Canada T	M44/44	2990	176(240)	88/104	11.0:1
	968 Cabrio USA, Canada	M44/43	2990	176(240)	88/104	11.0:1
	968 Cabrio USA, Canada T	M44/44	2990	176(240)	88/104	11.0:1

Fuel-induction system	Engine numbers	Transmission type	Chassis numbers
S+u = Super plus unleaded			
DME S+u	42N00001-20000	G44/00	WP0 ZZZ 96 ZNS8 00001-05000
DME S+u	42N50001-60000	A44/00	WP0 ZZZ 96 ZNS8 00001-05000
DME S+u	42N00001-20000	G44/00	WP0 ZZZ 96 ZNS8 30001-35000
DME S+u	42N50001-60000	A44/00	WP0 ZZZ 96 ZNS8 30001-35000
DME S+u	42N00001-20000	G44/00	WP0 AA2 96 ©NS8 20001-25000
DME S+u	42N50001-60000	A44/00	WP0 AA2 96 ©NS8 20001-25000
DME S+u	42N00001-20000	G44/00	WP0 CA2 96 ©NS8 40001-45000
DME S+u	42N50001-60000	A44/00	WP0 CA2 96 ©NS8 40001-45000
DME S+u	42P00001-20000	G44/00	WP0 ZZZ 96 ZPS8 00001-05000
DME S+u	42P00001-20000	G44/00	WP0 ZZZ 96 ZPS8 15001-19999
DME S+u	42P50001-60000	A44/00	WP0 ZZZ 96 ZPS8 00001-05000
DME S+u	42P00001-20000	G44/00	WP0 ZZZ 96 ZPS8 30001-35000
DME S+u	42P50001-60000	A44/00	WP0 ZZZ 96 ZPS8 30001-35000
DME S+u	42P00001-20000	G44/00	WP0 AA2 96 ©PS8 20001-25000
DME S+u	42P50001-60000	A44/00	WP0 AA2 96 ©PS8 20001-25000
DME S+u	42P00001-20000	G44/00	WP0 CA2 96 ©PS8 40001-45000
DME S+u	42P50001-60000	A44/00	WP0 CA2 96 ©PS8 40001-45000

Engine number codes as of Model 92

Explanation of digits:

1	2	3	45678
Type of engine	Engine type	Model year	Serial number
4 = 4-cyl. engine	2 = naturally aspirated engine	N = 1992 P = 1993	00001...99999 00001...99999

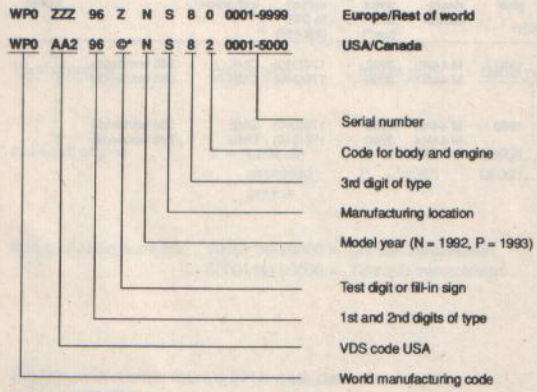
Range of serial numbers: 00001 bis 20000 = Manual transmission
50001 bis 60000 = Tiptronic transmission

The first serial number figure is 501 in each case
Example: 42N00604
Engine for 968 manual transmission 104th engine in model year 1992

Engine type codes

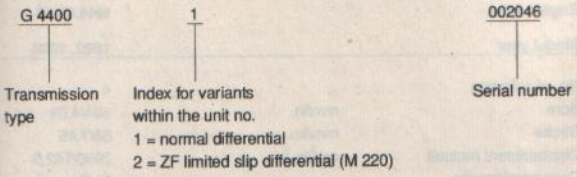
Production year	Model year	Type designation	Displacement act. (cm^3)	Engine output to DIN (kW/HP)	Fuel induction	installed in	T = Tiptronic
1991/92	1992	M 44/43	2990	176(240)	DME	968 worldwide	
		M 44/44	2990	176(240)	DME	968 worldwide	T
1992/93	1993	M 44/43	2990	176(240)	DME	968 worldwide	
		M 44/44	2990	176(240)	DME	968 worldwide	T

Chassis number codes (Model 92)



* © = Test digit can be 0 ... 9 or X.

Transmission number codes as of Model 92



Caution: The transmission nos. 1...2000 of each type are reserved for testing. The first serial number is 2001.

Example: G 4400 2 002046

Transmission G 44/00 manufactured as of model year 1992 as the 46th standard transmission (with ZF limited slip differential M 220).

Transmission type codes

Transmission type	No. of speeds	Installed in vehic. type	Installed as of transm. no.	Remarks
G 44/00	6	968	G 4400 1 000001	Manual transmission
G 44/00	6	968	G 4400 2 000001	Manual transmission + M 220
A 44/00	4	968	A 4400 1 000001	Tiptronic

Engine Data 968/968 CS

Engine type		M44.43/44
Model year		**1992, 1993**
No. of cylinders		4
Bore	mm/in.	104/4.09
Stroke	mm/in.	88/3.46
Displacement (actual)	$cm^3/in.^3$	2990/182.5
Compression ratio		11.0:1
max. engine power,		
80/1269/EWG	kW/PS	176/240
(Net Power, SAE J 1349)	kW/HP	176/236
at engine speed	rpm	6200
max. torque,		
80/1269/EWG	Nm/kpm	305/31
(Net Torque, SAE J 1349)	Nm/lb ft	305/225
at engine speed	rpm	4100
max. specific power,		
DIN 70020	kW/l(PS/l)	58.9/80.3
(SAE J 1349)	kW/l(HP/l)	58.9/78.7
Fuel octane rating	RON	98 Sb+
Engine speed limitation		
by fuel cut-off	rpm	6700 ± 20
Idle speed M 44.43	rpm	840 ± 40
Idle speed M 44.44	rpm	880 ± 40
Engine weight (dry)	kg	172

Notes

Technical Data 968/968 CS

Engine design			
Design		4-cylinder, 4-stroke spark-ignition engine, in line with 2 balance shafts	
Crankcase		2-piece light-alloy crankcase	
Crankshaft		Forged, 5 plain bearings	
Connecting rods		Forged	
Pistons		Forged light-alloy	
Balance shaft drive		Toothed belt	
Camshaft		Cast, without bearing shells, running in cylinder head	
Camshaft drive		Toothed belt and internal chain with electric/hydraulic adjustment	
Cylinder head		Light alloy	
Valve arrangement		2 intake, 2 exhaust, suspended in V	
Valve timing		2 overhead camshafts, hydraulic bucket tappets	
Valve play		Self-adjusting (hydraulic)	
Timing		Basic timing	Torque timing
(1 mm stroke, zero play)	Intake opens	7.5 degr. after TDC	7.5 degr. after TDC
	Intake closes	52 degr. after BDC	37 degr. after BDC
	Exhaust opens	31 degr. before BDC	31degr. before BDC
	Exhaust closes	1 degr. before TDC	1 degr. before TDC
Engine cooling		Closed coolant system	
Engine lubrication		Forced-feed circulation lubrication with crescent-type gear pump	
Oil filter		In full flow	
Oil pressure		0.6...8 bar, min 3.0 bar at 3000 rpm	
Oil pressure indicator		0...5 bar, electric gauge with warning light contact	
Oil consumption	l/1000 km	Up to 1.5	
Exhaust system		2 twin-pipe manifolds, Y-pipe up to front muffler/3-way catalytic converter, rear muffler	

Technical Data 968/968 CS

Heater		Warm water heater with heat exchanger and fan
Fuel system		DME
Fuel delivery		1 electric fuel delivery pump
Fuel grade RON		98 S+u
Fuel consumption figures		Refer to Operating Instructions
Electrical system		
Interference suppression		ECE-R 10 and 72/245/EEC
Battery voltage	V	12
Battery capacitance	Ah	63 Manual transmission (64 Tiptronic, 50 968 CS)
Alternator/output	A/W	115/1610 (90/1260 968 CS)
Ignition		Contactless, via DME
Ignition sequence		1-3-4-2
Ignition timing		Via DME
Spark plugs		Bosch WR 7 DTC
		3-ground electrode
Electrode gap	mm	0.7 + 0.1
Power transmission		Front-mounted engine, transmission at rear end, bolted together by a connecting tube to form a rigid drive unit - transaxle. Front engine, double-mass flywheel, clutch, torsionally elastic drive shaft to transmission mounted in connecting tube, rear transmission interlocked with axle drive, twin drive shafts to rear wheels
Clutch		Single-disk dry clutch with diaphragm spring, extended version, located at engine end Pressure plate: GMFZ 240 Drive plate: Ø 240 (rigid)

Engine tightening torques

Location	Thread	Tightening torque Nm(ftlb)
Crankshaft/ crankcase		
Crankcase bolt joints top and bottom section (studs)	M 12 x 1.5	30 (22) 1st stage 60°torque angle 2nd stage
	M 10	20 (15) 1st stage 50 (37) 2nd stage
	M 8	20 (15)
	M 6	10 (7)
Rotation body on balance shaft	M 6	10 (7), secured with Loctite 270
Cover for balance shaft housing to upper crankcase section Hexagon head bolt	M 6 M 8	10 (7) 20 (15)
Hexagon head bolt (bearing saddle)	M 8 x 58	15 (11) 1st stage 33 (24) 2nd stage
Left-hand and right-hand bearing housing to upper crankcase section	M 8	20 (15)
Sprocket on balance shaft	M 10	45 (33)
Tensioning pulley to bearing housing	M 10	45 (33)
Water pump to crankcase	M 6	10 (7), secured with Loctite 270
Idler pulley to water pump case	M 10	45 (33)
Tensioning pulley to oil pump housing	M 10	45 (33)
Oil pump to crankcase	M 6 M 10	10 (7) 45 (33)

Engine tightening torques

Location	Thread	Tightening torque Nm(ftlb)
Toothed belt tensioner to crankcase	M 8	20 (15)
Tensioning pulley to tensioning lever	M 10	45 (33)
Support pin for tensioning lever	M 10	45 (33)
Connecting-rod bolts (forged con-rods) Verbus-Ripp nut	M 10 x 1.25	25 (18) + 90° torque angle
Oil pan to crankcase	M 6	hand-tight 1st stage 4 (3) 2nd stage 10 (7) 3rd stage
Oil pan insert to oil pan	M 5	6 (4), secured with Loctite 270
Oil drain plug	M 20 x 1.5	50
LH + RH engine support to crankcase	M 10	48
Flywheel to crankshaft	M 10 x 1.25	40 1st stage 90 2nd stage
Sensor brackets to crankcase	M 8	20
Sensor to bracket	M 6	10
Sprocket to crankschaft	M 16 x 1.5	210
Flywheel to sprocket	M 6 x 25 Grade 10.9	13
Mounting of belt cover	M 6	8
Bracket for alternator to crankcase	M 10	45
Water temperature gauge	M 10 x 1	35

Engine tightening torques

Location	Thread	Tightening torque Nm(ftlb)
Temperature sender (coolant or oil)	M 12 x 1.5	15 (11)
Knock sensor	M 8	20 (15) Genuine bolt without washer
Oil pressure sender	M 18 x 1.5	35 (26)
Housing insert in oil pump housing	M 6	10 (7) mating flange sealed with Loctite 574
Radiator fan/thermostat housing to crankcase	M 8	20 (15)
Plug at oil/coolant radiator housing	M 18 x 1.5	35 (26)
Coolant vent plug	M 8 x 1	12 + 3 (9 + 2)
Oil filter pressure relief valve	M 20 x 1.5	45 (33) 20 (15)
Cylinder head		
Cylinder head to crankcase upper section Engine type M 44.43/44	M 12	20 (15) 1st stage 60°torque angle 2nd stage 90°torque angle 3rd stage
Camshaft support to cylinder head	M 8	20 (15)
Camshaft adjuster - Vario-Cam to cylinder head	M 6	10 (7)
Socket head bolts for chain tensioner /oil pipe	M 6	10 (7)
Banjo bolt /oil pipe	M 8 x 1	10 (7)
Cylinder head cover	M 6	10 (7)
Intake pipe to cylinder head	M 8	20 (15)

Engine tightening torques

Location	Thread	Tightening torque Nm(ftlb)
Inlet flange for heater to cylinder head	M 8	20 (15)
Flange for coolant pipe	M 8	20 (15)
Toothed belt cover to cylinder head	M 6	10 (7)
Hall sender/mounting	M 6	10 (7)
Camshaft gearwheel to camshaft multi-tooth bolt	M 10	65 - 70 (48 - 52)
Distributor rotor to camshaft gearwheel	M 5	6 (4)
Transport bracket to cylinder head	M 6	10 (7)
Spark plugs	M 14 x 1,25	25 - 30 (18 - 22); grease thread lightly with Molykote paste HTP (white)
Fuel system		
Mounting of pressure regulator to fuel collection pipe	M 6 x 12	10 (7)
Cap nut to fuel collection pipe	M 12 x 1,5	12 (9)
Exhaust system		
Plug nut to catalytic converter	M 14 x 1,5	30 (22)
All other nuts and bolts:	M 6 M 8 M 10	8 + 2 (6 + 1) 20 + 2 (15 + 1) 40 + 5 (29 + 4)
Coat all nut and bolt unions with Optimoly HT		

Tolerances and Wear Limits - Engine M 44.43/44

		When installed (new)	Wear limit
Cooling system			
Coolant thermostat	Open. temperature	81...85° C	
Cap for cooling system			
Pressure relief valve	opens at overpress.	1.3...1.5 bar	
Vacuum valve	opens at underpressure	0.1 bar	
Oil circuit			
Oil consumption	l/1000 km		approx. 1.5
Oil pressure			
at 80° C oil temperature:			
at 5000 rpm	Overpressure	approx. 4 bar	
Oil capacity		6.5 l	
Quantity difference		approx. 1.5 l	
at oil gauge			
Oil thermostat	Open. temperature	95° ± 4° C	
Valve timing			
Camshaft bore	Inner diameter	$28^{+0.021}_{-0}$	
Camshaft	Diameter	$28^{-0.04}_{-0.055}$	
Camshaft	Axial end play	0.08...0.18	
Flat-base tappet bore	Inner diameter	$35^{+0.015}_{+0.005}$	
Flat-base tappet	Diameter	$35^{-0.025}_{-0.041}$	
Camshaft	Runout	0.02	

Tolerances and Wear Limits- Engine M 44.43/44

		When installed (new)	Wear limit
Cylinder head with valves			
Mounting face	Distortion		max. 0.05
Valve seat width	Intake	1.5	
	Exhaust	1.8	
Seating angle		45°	
Outer correction angle		30°	
Inner correction angle		60°	
Valve guides	Inner diameter	7 + 0.015	
Valve stem:			
Intake	Diameter	6.98-0.012	
Exhaust	Diameter	6.974 ± 0.006 tapered stem	
	(stem end)		
Valve guide/valve stem	Play		
Intake			0.8
Exhaust			0.8
Compression		8 bar and above	6.5 bar
Pistons with connecting rods			
Cylinder/piston	Play	0.008...0.032	approx. 0.080
Piston rings	Vert. play groove 1	0.040...0.075	
	groove 2	0.030...0.065	
	groove 3	0.020...0.055	
Piston rings	Gap width groove 1	0.20...0.50	
	groove 2	0.20...0.55	
	groove 3	0.30...0.90	

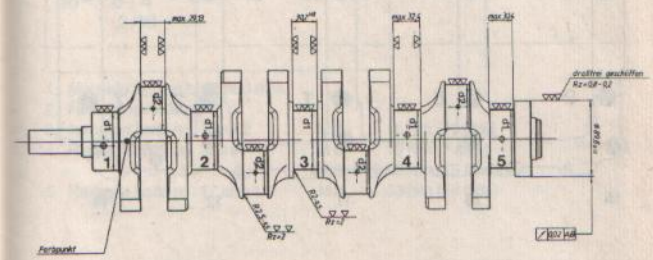
Tolerances and Wear Limits - Engine M 44.43/44

		When installed (new)	Wear limit
Con rod bush	Diameter	24 + 0.018 + 0.028	
Piston pin	Diameter	24-0.004	
Con rod bush/piston pin	Radial play	0.018...0.032	
Crankshaft and cylinder block			
Crankshaft (measure at bearings 2, 3 or 4, bearings 1 and 5 on prisms)	Runout	0.04	max. 0.06
Con rod bearing journal	Diameter	51.971...51990	
Con rod bearing/crankshaft	Radial play	0.027...0.069	
	Axial play	0.080...0.240	
Crankshaft bearing journal	Diameter	69.971...69.990	
Crankshaft bearing/ crankshaft	Radial play	0.028...0.070	0.16
Crankshaft bearing/ crankshaft	Axial play	0.060...0.192	0.40
Cylinder bore	out-of-round	0.010	0.020
Bore for balance shaft bearing shells at crankcase or balance shaft cover	Diameter	34.000...34.019	
Bore for bush in bearing housing	Diameter	34.000...34.019	
Balance shafts	Diameter	30.975...30.991	

All dimensions in mm.

Crankshaft - normal and reconditioning dimensions

Size	Crankcase Bore dia.	Crankshaft bearing journal d1 journal dia.	Crankshaft con rod journal d2 journal dia.	Thrust bearing 3 width
Normal	Normal	69,971...69,990	51,971...51,990	30,00...30,052
– 0,25	75,000...75,019	69,721...69,740	51,721...51,740	Reconditioning size
– 0,50	Oversize 75,250...75,269	69,471...69,490	51,471...51,490	30,200...30,239

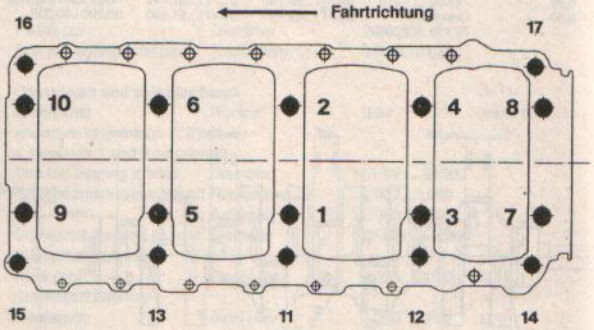


Grind bearing surface for oil seals to dimension 89.8 only if score marks are too deep. In other cases, repolish if required R_t = 0.8...2. Oil bores are rounded to R 0.5 after grinding. Remove sharpe edges with R = 0.2...0.5. Max. permissible radial runout relative to support max. 0.04.

Color coding of reconditioning sizes

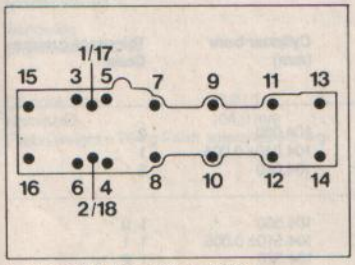
1st reconditioning size	blue dot
2nd reconditioning size	green dot

Tightening Sequence - Crankcase Upper and Lower Parts



Tightening sequence		Tightening torque (ftlb)
Nos. 1...10 in 2 stages:	1st stage	30 Nm (22)
Thread M 12 x 1,5	2nd stage	60° torquing angle
Nos. 11...17 in 2 stages:	1st stage	20 Nm (15)
Thread M 10	2nd stage	50 Nm (37)

Tightening Sequence - Tightening Torques for Balance Shaft Cover



1. Manually tighten bolts and nuts
2. Fit bearing housing
3. Hexagon bolts no. 1 and 2 — M 8 — 15 Nm (11 ftlbs)
4. Hexagon bolts no. 3...16 — M 6 — 10 Nm (7 ftlbs)
   — M 8 — 20 Nm (15 ftlbs)
5. Hexagon bolts no. 17 and 18 — M 8 — 33 Nm (24 ftlbs)

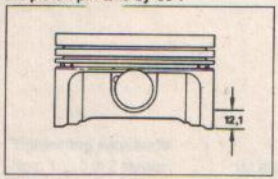
Checking piston and cylinder bore

Engine type M 44.43/44

Repair size	Piston Ø (mm) Kolben Schmidt AG	Cylinder bore (mm)	Tolerance groups Code
Standard	103.980	104.000	0
	103.990± 0.007	104.010± 0.005	1
	104.000	104.020	2
Oversize 1	104.480	104.500	1 0
	104.490± 0.007	104.510± 0.005	1 1
	104.500	104.520	1 2

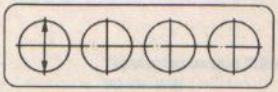
Checking pistons

Measure at a distance of 12.1 mm from the bottom of the piston skirt, offset from the piston pin axis by 90°.



Checking cylinder bore

Measure approx. 61 mm from top edge of cylinder bore, across the cylinder block. For measurement, mount lower crankcase section and tighten with prescribed tightening torque.



Note

It is recommended that the stocks of the relevant piston tolerance group are checked before machining the cylinders. If necessary, hone to the piston size available. In some cases, certain tolerance groups may be in short supply.

Survey of Pistons (Dimensions, Weights and Compression)

Models 92...93

worldwide

Engine M 44.43/44

Compression 11,0 : 1
NominalØ 104,0 mm
Piston weight = 704 g Perm. tolerance = ± 4 g

Piston weight tolerances

Pistons and piston pins are paired in accordance with weight selection. Pistons are weighed with their pertinent parts (piston pins, piston rings, snap rings).

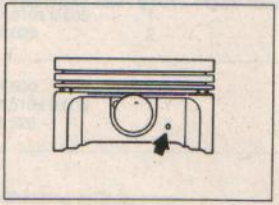
Piston pins must always remain assigned to the corresponding piston and must not be interchanged even within one engine set. Observe allocation during disassembly and assembly of engine, and mark if necessary.
If piston pins have been interchanged by mistake, reallocation must be carried out by checking the total weights.

Identification of Pistons and Cylinders

Identification for cylinders on cylinder block, identification for pistons on piston crown.

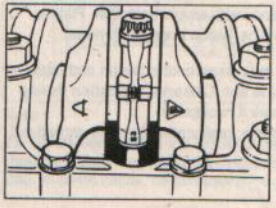
Only pistons and cylinders of the same tolerance group may be paired together. Different tolerance groups may be used in the same engine.

Arrow (rubber stamp) points towards pulley. If arrow is not discernible anymore, refer to the tolerance group mark that also points towards the pulley.

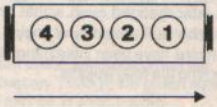


Connecting rods – installation position

The matching numbers must always face each other so that they remain legible in pairs.



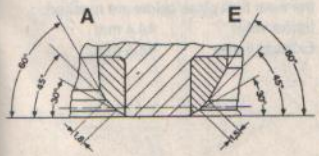
When fitting the connecting rods, the matching numbers of the four connecting rods must be on the same side throughout.



Ignition sequence 1-3-4-2

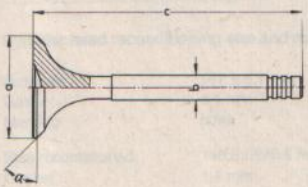
Checking valve seat angles, valve dimensions and valve guides

Valve seat angles



Intake seat width	1.5 mm
Exhaust seat width	1.8 mm

Valve dimension



Dimension	Intake	Exhaust
a	39.00 mm	33.00 mm
b	6.98 mm	6.97 mm
c	114.70 mm	113.60 mm
α	45°	45°

Checking valve guides

The valve guide is measured at a valve stroke of 10 mm (distance between valve head and valve seat).
Wear limit (play) for intake and exhaust guides = 0.80 mm.

Reworking valve seats and checking installation of valve springs

Reworking valve seats

The valve seats can be reworked until the wear limit sizes below are reached:

Intake valve	44.4 mm
Exhaust valve	43.4 mm.

Measurement is performed with the valve to be subsequently installed, from the end of the valve stem to the valve spring pad in the cylinder head.
The valve must be held firmly on the valve seat.

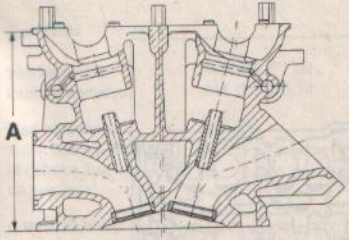
Checking installation length of valve springs with a depth gauge

Note:
The depth gauge is used to measure vertically down through the gap from the surface of the valve spring plate to the surface of the outer spring pad.

Installation length	
Intake	38.0 + 0.5 mm
Exhaust	37.0 + 0.5 mm

Machining the cylinder head mating face

Permissible unevenness of mating face: 0.05 mm
Permissible unevenness after machining: 0.03 mm
Peak-to-valley height = 0.015 mm



Size new A = 147 ± 0.1 mm
Size worn A = 146.6 mm

Cylinder head reconditioning size and marking

Size new	147 ± 0.1 mm
Gasket	1.1 mm
Marking	none
Size reconditioned	146.8...146.6 mm
Gasket	1.4 mm
Marking	N

Marking „N"

Apply to dead head beneath gasket surface of cylinder head cover on exhaust side, between cylinders 2 and 3.

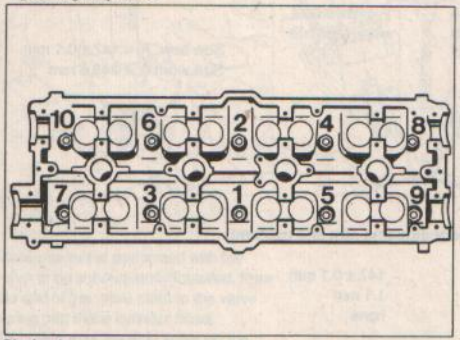
Height of letter stamp „N" 6 mm

Installing the cylinder head

Cylinder head attached with studs

Note
The cylinder head may be fitted with the engine remaining in the car.

Tightening sequence:



Slackening sequence: reverse order
Tightening specifications for cylinder head

1st stage	20 Nm (15 ftlb)
2nd stage	60° turn
3rd stage	90° turn

Note
Do not use any lubricant when fitting the cylinder head nuts and washers. Only the threads of the studs should receive a thin coat of engine oil.

Camshaft references

	worldwide as of model 92 Engine type 968 M 44.43/44
Camshafts	
Inlet camshaft	944.105.277.09
Exhaust camshaft	944.105.275.10
Marking between thrust bearing and cam of cylinder 1 or on rear face	277.09 275.10
Camshaft timing 1mm stroke, zero clearance	
Basic timing	
Inlet opens	7.5° CR after TDC
Inlet closes	52° CR after BDC
Exhaust opens	31° CR before BDC
Exhaust closes	1° CR after TDC

Checking camshaft adjustment

	worldwide as of model 92 Engine type M 44.43/44
Inlet valve stroke (at overlapping TDC)	
Test/adjustment value	0.39 ± 0.03 mm