

PORSCHE



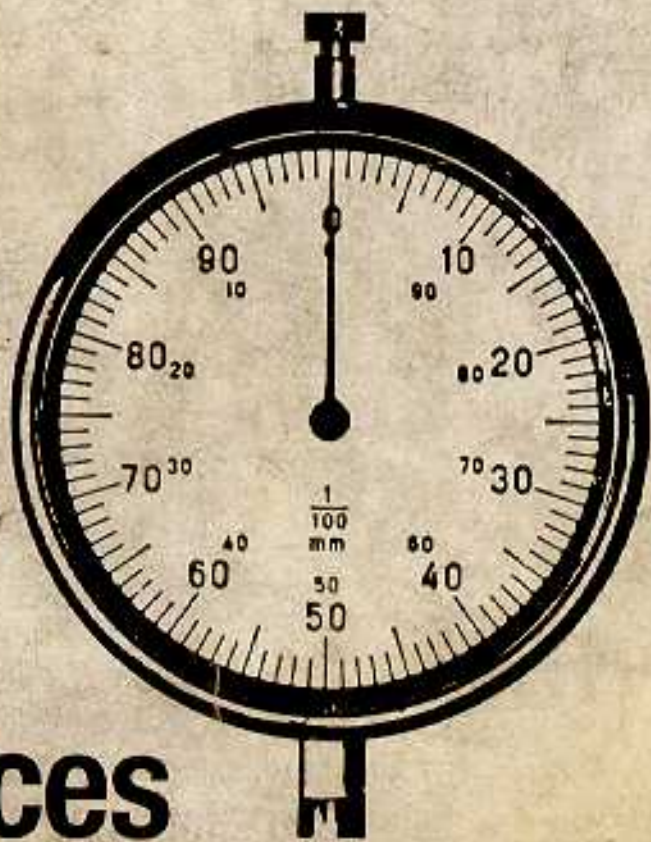
924 S
Models 86-88

924 S

944
Models 84-89

944

**Models
Dimen-
sions
Tolerances**



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Important conversion factors and new dimensioning units

	Former units		Present units
Pressure	Technical atmosphere	at (kp/cm ²)	Bar (bar)
Output	Horse power	HP	Kilowatt (kW)
Force	Kilopond	kp	Newton (N)
Torque	Kilopondmeter	kpm	Newtonmeter (Nm)

Conversion factors

at (kp/cm ²)	in bar	x 0.981
kp	in N	x 9.81
PS	in kW	x 0.736
kpm	in Nm	x 9.81
m/s	in km/h	x 3.6
at	in mmHg	x 735.56
km/h	in mph (miles)	x 0.621
°F	in °C	(°F-32)x0.555
l	in U.S. gal.	x 0.264
l	in Imp. gal.	x 0.22

To convert the 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 A = Automatic	Engine type designation	Dis- place- ment act. (cm ³)	Eng.outp. DIN-kW (HP)	Stroke/ Bore (mm)	Com- pression ratio
1984	944 Europe, R.o.W.	M44/01	2479	120(163)	78.9/100	10.6:1
	944 Europe, R.o.W.	A M44/03	2479	120(163)	78.9/100	10.6:1
	944 USA, Canada, Japan	M44/02	2479	110(150)	78.9/100	9.5:1
	944 USA, Canada, Japan	A M44/04	2479	110(150)	78.9/100	9.5:1
1985/1	944 Europe, R.o.W.	M44/05	2479	120(163)	78.9/100	10.6:1
	944 Europe, R.o.W.	A M44/06	2479	120(163)	78.9/100	10.6:1
	944 USA, Canada, Japan	M44/07	2479	110(150)	78.9/100	9.5:1
	944 USA, Canada, Japan	A M44/08	2479	110(150)	78.9/100	9.5:1
1985/2	944 Europe, R.o.W.	M44/05	2479	120(163)	78.9/100	10.6:1
	944 Europe, R.o.W.	A M44/06	2479	120(163)	78.9/100	10.6:1
	944 USA, Canada, Japan	M44/07	2479	110(150)	78.9/100	9.5:1
	944 USA, Canada, Japan	A M44/08	2479	110(150)	78.9/100	9.5:1
1986	924S Europe, R.o.W.	M44/07	2479	110(150)	78.9/100	9.7:1
	924S Europe, R.o.W.	A M44/08	2479	110(150)	78.9/100	9.7:1
	944 Europe, R.o.W.	M44/05	2479	120(163)	78.9/100	10.6:1
	944 Europe, R.o.W.	A M44/06	2479	120(163)	78.9/100	10.6:1
	944 USA, Canada	M44/07	2479	110(150)	78.9/100	9.7:1
	944 USA, Canada	A M44/08	2479	110(150)	78.9/100	9.7:1
	944 Japan, Australia	M44/07	2479	110(150)	78.9/100	9.7:1
	944 Japan, Australia	A M44/08	2479	110(150)	78.9/100	9.7:1

Fuel-induction system	Engine numbers	Trans- mission type	Chassis numbers
B=Unleaded Sb=Premium grade-unleaded Sv=Premium grade-leaded *=Super Plus			
DME(Sb*/Sv)	41E00001-20000	016J	WPO ZZZ 94 Z EN4 00001-99999
DME(Sb*/Sv)	41E20001-30000	087M	WPO ZZZ 94 Z EN4 00001-99999
DME(B)	43E00001-20000	016K	WPO AAO 94 O EN4 50001-99999
DME(B)	43E20001-30000	087N	WPO AAO 94 O EN4 50001-99999
DME(Sb*/Sv)	41F40001-50000	016J	WPO ZZZ 94 Z FN4 20001-49999
DME(Sb*/Sv)	41F50001-60000	087M	WPO ZZZ 94 Z FN4 20001-49999
DME(B)	43F40001-50000	016K	WPO AAO 94 O FN4 70001-99999
DME(B)	43F50001-60000	087N	WPO AAO 94 O FN4 70001-99999
DME(Sb*/Sv)	41F00001-20000	016J	WPO ZZZ 94 Z FN4 00001-19999
DME(Sb*/Sv)	41F20001-30000	087M	WPO ZZZ 94 Z FN4 00001-19999
DME(B)	43F00001-20000	016K	WPO AAO 94 O FN4 50001-69999
DME(B)	43F20001-30000	087N	WPO AAO 94 O FN4 50001-69999
DME(B)	43G00001-60000	016J	WPO ZZZ 94 Z GN4 00001-99999
DME(B)	43G60001-90000	087M	WPO ZZZ 94 Z GN4 00001-99999
DME(Sb*/Sv)	41G00001-20000	016J	WPO ZZZ 94 Z GN4 00001-49999
DME(Sb*/Sv)	41G20001-30000	087M	WPO ZZZ 94 Z GN4 50001-99999
DME(B)	43G00001-60000	016K	WPO AAO 94 O GN4 50001-99999
DME(B)	43G60001-90000	087N	WPO AAO 94 O GN4 50001-99999
DME(B)	43G00001-60000	016K	WPO ZZZ 94 Z GN4 00001-49999
DME(B)	43G60001-90000	087N	WPO ZZZ 94 Z GN4 50001-99999

Model year designation	Vehicle type designation A = Automatic	Engine type designation	Dis- place- ment (HP) act. (cm ³)	Eng.outp. DIN-kW (HP)	Stroke/ Bore (mm)	Com- pression ratio
1987	924S Europe, R.o.W.	M44/07	2479	110(150)	78.9/100	9.7:1
	924S Europe, R.o.W.	A M44/08	2479	110(150)	78.9/100	9.7:1
	924S USA, Canada	M44/07	2479	110(150)	78.9/100	9.7:1
	924S USA, Canada	A M44/08	2479	110(150)	78.9/100	9.7:1
	944 Europe, R.o.W.	M44/05	2479	120(163)	78.9/100	10.6:1
	944 Europe, R.o.W.	A M44/06	2479	120(163)	78.9/100	10.6:1
	944 USA, Canada	M44/07	2479	110(150)	78.9/100	9.7:1
	944 USA, Canada	A M44/08	2479	110(150)	78.9/100	9.7:1
	944 (Australia, Japan, 944 M298, 299)	M44/07	2479	110(150)	78.9/100	9.7:1
		A M44/08	2479	110(150)	78.9/100	9.7:1
1988	924S Europe, R.o.W.	M44/09	2479	118(160)	78.9/100	10.2:1
	924S Europe, R.o.W.	A M44/10	2479	118(160)	78.9/100	10.2:1
	924S USA, Kanada	M44/09	2479	118(160)	78.9/100	10.2:1
	924S USA, Kanada	A M44/10	2479	118(160)	78.9/100	10.2:1
	944 Europe, R.o.W.	M44/09	2479	118(160)	78.9/100	10.2:1
	944 Europe, R.o.W.	A M44/10	2479	118(160)	78.9/100	10.2:1
	944 USA, Canada	M44/09	2479	118(160)	78.9/100	10.2:1
	944 USA, Canada	A M44/10	2479	118(160)	78.9/100	10.2:1
	944 USA with airbag					
	944 Australia	M44/09/10		114(155)	78.9/100	10.2:1
1989	944 Europe, R.o.W.	M44/11	2681	121(165)	78.9/104	10.9:1
	944 Europe, R.o.W.	A M44/12	2681	121(165)	78.9/104	10.9:1
	944 USA, Canada	M44/11	2681	121(165)	78.9/104	10.9:1
	944 USA, Canada	A M44/12	2681	121(165)	78.9/104	10.9:1
	944 USA with airbag					

Fuel-induction system B=Unleaded Sb=Premium grade-unleaded Sv=Premium grade-leaded *=Super Plus	Engine numbers	Trans- mission type	Chassis numbers
DME(B)	43H00001-60000	016J	WPO ZZZ 92 Z HN4 00001-49999
DME(B)	43H00001-60000	087M	WPO ZZZ 92 Z HN4 00001-49999
DME(B)	43H00001-60000	016J	WPO AAO 92 O HN4 50001-99999
DME(B)	43H00001-60000	087N	WPO AAO 92 O HN4 50001-99999
DME(Sb*/Sv)	41H00001-20000	016J	WPO ZZZ 94 Z HN4 20001-49999
DME(Sb*/Sv)	41H20001-30000	087M	WPO ZZZ 94 Z HN4 20001-49999
DME(B)	43H00001-60000	016K	WPO AAO 94 O HN4 70001-99999
DME(B)	43H60001-90000	087N	WPO AAO 94 O HN4 70001-99999
DME(B)	43H00001-60000	016J/K	WPO ZZZ 94 Z HN4 20001-49999
DME(B)	43H60001-90000	087M/N	WPO ZZZ 94 Z HN4 20001-49999
DME(Sb)	46J00001-60000	016J	WPO ZZZ 92 Z JN4 00001-49999
DME(Sb)	46J60001-70000	087M	WPO ZZZ 92 Z JN4 00001-49999
DME(Sb)	46J00001-60000	016J	WPO AAO 92 - JN4 50001-99999
DME(Sb)	46J60001-70000	087N	WPO AAO 92 - JN4 50001-99999
DME(Sb)	46J00001-60000	016J	WPO ZZZ 94 Z JN4 20001-49999
DME(Sb)	46J60001-70000	087M	WPO ZZZ 94 Z JN4 20001-99999
DME(Sb)	46J00001-60000	016J	WPO ABO 94 - JN4 70001-79999
DME(Sb)	46J60001-70000	087N	WPO ABO 94 - JN4 70001-79999
			WPO ABS 94 - JN4 80001-89999
DME(B)			
DME(Sb)	46K00001-60000	016J	WPO ZZZ 94 Z KN4 00001-29999
DME(Sb)	46K60001-70000	087M	WPO ZZZ 94 Z KN4 00001-29999
DME(Sb)	46K00001-60000	016J	WPO AAO 94 - KN4 50001-79999
DME(Sb)	46K60001-70000	087N	WPO AAO 94 - KN4 50001-79999
			WPO AA2 94 - KN4 50001-79999

Engine number codes as from model 84

Explanation of digits:

1	2	3	45678	
Assembly type	Engine type	Model year	Serial number	
4 = 4 cyl. engine	1 = 944/2.5 l	Europe, R.o.W.	E = 1984	00001-30000
	3 = 944/2.5 l	USA, Canada, Japan		00001-30000
4 = 4 cyl. engine	1 = 944/2.5 l	Europe, R.o.W.	F = 1985	00001-60000
	3 = 944/2.5 l	USA, Canada, Japan		00001-60000
4 = 4 cyl. engine	3 = 924 S/2.5 l	Europe, R.o.W.	G = 1986	00001-90000
	1 = 944/2.5 l	Europe, R.o.W.		00001-30000
	3 = 944/2.5 l	USA, Canada, Australia, Japan		
4 = 4 cyl. engine	3 = 924 S/2.5 l	worldwide	H = 1987	00001-60000
	1 = 944/2.5 l	Europe, R.o.W.		00001-30000
	3 = 944/2.5 l	USA, Canada, Australia, Japan M298/299		60001-90000
4 = 4 cyl. engine	6 = 924 S/2.5 l	worldwide	J = 1988	00001-70000
4 = 4 cyl. engine	6 = 944/2.5 l	worldwide		
4 = 4 cyl. engine	6 = 944/2.7 l	worldwide	K = 1989	00001-70000

Chassis number code

WPO	ZZZ	94	Z	K N	4	00001-99999	Europe/Rest of World
WPO	AAO	94	-	K N	4	00001-99999	USA/Canada
							Serial number
							3rd digit of type
							Place of production
							Model year (E = 1984, F = 1985, G = 1986, H = 1987, J = 1988, K = 1989)
							Test code or filling character
							1st and 2nd digit of type
							VDS code USA
							World manufacturer code

Engine type designation

Model year	Installed in A = Automatic	Type designation	Displacement actual (cm ³)	Engine output acc. DIN (kW/PS)	Fuel-induction system and ignition	Fuel B=Unleaded Sb=Super unleaded Sv=Super leaded *Super Plus	
1984	944 Europe, R.o.W.		M44.01	2479	120/163	DME	98 Sb*/Sv
	944 Europe, R.o.W.	A	M44.03	2479	120/163	DME	98 Sb*/Sv
	944 USA, Canada, Japan		M44.02	2479	110/150	DME	91 B
	944 USA, Canada, Japan	A	M44.04	2479	110/150	DME	91 B
1985	944 Europe, R.o.W.		M44.05	2479	120/163	DME	96 Sb*/Sv
	944 Europe, R.o.W.	A	M44.06	2479	120/163	DME	96 Sb*/Sv
	944 USA, Canada, Japan		M44.07	2479	110/150	DME	91 B
	944 USA, Canada, Japan	A	M44.08	2479	110/150	DME	91 B
1986	924 S Europe, R.o.W.		M44.07	2479	110/150	DME	91 B
	924 S Europe, R.o.W.	A	M44.08	2479	110/150	DME	91 B
	944 Europe, R.o.W.		M44.05	2479	120/163	DME	96 Sb*/Sv
	944 Europe, R.o.W.	A	M44.06	2479	120/163	DME	96 Sb*/Sv
	944 USA, Canada, Austr.		M44.07	2479	110/150	DME	91 B
	944 USA, Canada, Austr.	A	M44.08	2479	110/150	DME	91 B

Model year	Installed in A = Automatic	Type designation	Displacement actual (cm ³)	Engine output acc. DIN (kW/PS)	Fuel-induction system and ignition	Fuel B=Unleaded Sb=Super unleaded Sv=Super leaded *Super Plus	
1987	924 S worldwide		M44.07	2479	110/150	DME	91 B
	924 S worldwide	A	M44.08	2479	110/150	DME	91 B
	944 Europe, R.o.W.		M44.05	2479	120/163	DME	96 Sb*/Sv
	944 Europe, R.o.W.	A	M44.06	2479	120/163	DME	96 Sb*/Sv
	944 USA, Canada, Austr.		M44.07	2479	110/150	DME	91 B
	944 lia, Japan, M298/299	A	M44.08	2479	110/150	DME	91 B
1988	924 S worldwide		M44.09	2479	118/160	DME	95 Sb/Sv
	924 S worldwide	A	M44.10	2479	118/160	DME	95 Sb/Sv
	944 worldwide (not Austr.)		M44.09	2479	118/160	DME	95 Sb/Sv
	944 worldwide (not Austr.)	A	M44.10	2479	118/160	DME	95 Sb/Sv
1989	944 Australia		M44.09	2479	114/155	DME	91 B
	944 Australia	A	M44.10	2479	114/155	DME	91 B
1989	944 worldwide		M44.11	2681	121/165	DME	95 Sb/Sv
	944 worldwide	A	M44.12	2681	121/165	DME	95 Sb/Sv

Transmission number codes

Model	Number	Transmission type	Vehicle type
944			
1984, 1985	QK 19 02 4	016J-5-speed	944 Europe/R.o.W.
	7Q xx xx x	016J-5-speed with limited-slip differential	944 Europe/R.o.W.
	RCA xx xx x*	087M-Automatic	944 Europe/R.o.W.
	QL xx xx x	016K-5-speed	944 Japan
	4M xx xx x	016K-5-speed with limited-slip differential	944 Japan
	QM xx xx x	016K-5-speed	944 USA/Canada
	8Q xx xx x	016K-5-speed with limited-slip differential	944 USA/Canada
	RCB xx xx x	087N-Automatic	944 USA/Canada/Japan
		Production year 3 = 1983 4 = 1984	
		Production month	
		Production day	
		Identifying letters	
1985/2, 1986, 1987	5Y 19 02 6	016J-5-speed	944 Europe/R.o.W.
	5Z xx xx x	016J-5-speed with Limited-slip differential	944 Europe/R.o.W.
	RCE xx xx x	087M-Automatic	944 Europe/R.o.W.
	5S xx xx x	016K-5-speed	944 USA/Canada/Japan
	7V xx xx x	016K-5-speed with limited-slip differential	944 USA/Canada/Japan
	RCF xx xx x	087N-Automatic	944 USA/Canada/Japan
1988	5Y 19 02 8	016J-5-speed	944 WW
	5Z xx xx x	016J-5-speed with limited-slip differential	944 WW
	RCE xx xx x	087M-Automatic	944 Europe/R.o.W.
	RCF xx xx x	087N-Automatic	944 USA/Canada/Japan

*1984 RCA
1985 RCD

Transmission number codes

Model	Number	Transmission type	Vehicle type
1989	ASG 19 02 9	016J-5 speed	944 WW
	ASH xx xx x	016J-5-speed with limited-slip differential	944 WW
	RCE xx xx x	087M-Automatic	944 Europe/R.o.W.
	RCF xx xx x	087N-Automatic	944 USA/Canada/Japan
924 S			
1986	QK 19 01 5	016J-5-speed	924 S Europe/R.o.W.
	7Q xx xx x	016J-5-speed with limited-slip differential	924 S Europe/R.o.W.
	RCD xx xx x	087M-Automatic	924 S Europe/R.o.W.
		Production year 6 = 1986 7 = 1987	
		Production month	
		Production day	
		Identifying letters	
1987, 1988	QK 19 01 7	016J-5-speed	924 S WW
	7Q xx xx x	016J-5-speed with limited-slip differential	924 S WW
	RCD xx xx x	087M-Automatic	924 S R.o.W.
	RCB xx xx x	087N-Automatic	924 S USA/Canada/Japan

Engine data

Engine type		M44.01/03 M44.05/06	M44.02/04 M44.07/08
Model year		1984, 1985	1984, 1985
No. of cylinder		4	4
Bore	mm/in.	100	100/3.94
Stroke	mm/in.	78.9	78.9/3.11
Displacement (actual)	cm ³ /in. ³	2479	2479/151
Compression ratio		10.6:1	9.5:1
max. engine power,			
80/1269/EWG	kW/PS	120/163	
(Net Power, SAE J 1349)	kW/HP		105/143
at engine speed	rpm	5800	5500
max. torque,			
80/1269/EWG	Nm/kpm	205/20.9	
(Net Torque, SAE J 1349)	Nm/lb ft		185.9/137.1
at engine speed	1/min	3000	3000
max. specific power,			
DIN 70020	kW/l/PS/l	48.4/65.8	
(SAE J 1349)	kW/l/HP/l		43.5/57.7
Fuel octane rating ROZ	98 Sb/Sv	91 B	
Fuel cut-off to limit			
engine speed at	rpm	6500 ± 20	6500 ± 20
Idle speed	rpm	800 + 50	900 ± 50
Engine weight (dry)	kg	166	166

M44.05/06	M44.07/08	M44.09/10	M44.09/10 Australia	M44.11/12
1986, 1987	1986/1987	1988	1988	1989
4	4	4	4	4
100	100/3.94	100/3.94	100/3.94	104/4.09
78.9	78.9/3.11	78.9/3.11	78.9/3.11	78.9/3.11
2479	2479/151	2479/151	2479/151	2681/163.6
10.6:1	9.7:1	10.2:1	10.2:1	10.9:1
120/163	110/150	118/160	114/155	121/165
	110/147	118/158		121/162
5800	5800	5900	5900	5800
205/20.9	195/19.9	210/21.4	205/20.9	225/22.9
	190/140	210/155		225/166
3000	3000	4500	4500	4200
48.4/65.8	44.4/60.5	47.6/64.5	46/62.5	45.1/61.5
	44.4/59.3	47.6/63.7		45.1/60.4
96 Sb/Sv	91 B	95 Sb/Sv	91 B	95 Sb/Sv
6500 ± 20	6500 ± 20	6640 ± 20	6640 ± 20	6560 ± 40
840 ± 40	840 ± 40	840 ± 40	840 ± 40	840 ± 40
166	166	166	166	166

Technical data type 924 S/944 engine type M 44/01-12

Engine design

Design	4-cylinder, four-stroke spark-ignition engine, in line, two differential gear shafts		
Crankcase	Two-piece, light alloy cylinder/crankcase without liners		
Crankshaft	forged, 5 plain bearings		
Connecting rods	Cast steel		
Pistons	Light alloy, cast. Running surface chromium-plated or iron-coated		
Camshaft	cast, running in camshaft housing without bearing shells		
Camshaft drive	by means of toothed belt with tightening roller		
Cylinder head	Light alloy		
Arrangement of valve	1 intake, 1 exhaust in line overhead		
Valve timing	by overhead camshaft and hydraulic bucket tappet		
Valve play	Automatic (hydraulic) adjustment		
Timing	M44/01...04	M44/05...12	
(1 mm stroke, zero play)	Intake opens	1 degr. after TDC	1 degr. aft. TDC
	Intake closes	49 degr. after BDC	49 degr. aft. BDC
	Exhaust opens	43 degr. before BDC	47 degr. bef. BDC
	Exhaust closes	3 degr. before TDC	1 degr. aft. TDC
Engine cooling	closed coolant system		
Engine lubrication	Forged oil circulation system with crescent pump		
Oil filter	in full flow		
Oil pressure at 5000/min	approx. 4 bar for oil temperature between 80...100°C		
Oil pressure indicators	Indicator lamp and pressure gauge		
Oil consumption	l/1000 km	up to 1.5	
Exhaust system	Manifold, single pipe up to pre-muffler or 3-way catalytic converter, final muffler.		

Technical data type 924 S/944 engine type M44/01-12

Heater	Warm water heater with heat exchanger and blower	
Fuel system	DME	
Fuel delivery	1 electric fuel delivery pump	
Fuel grade RON	Refer to "Engine type designation"	
Fuel consumption	Refer to "Operating instructions"	
Electrical system		
Interference suppression	ECE-R 10 and 72/245/EWG	
Battery voltage	V	12
Battery capacitance	Ah	50(63)
Alternator/output	A/W	(115/1610)
Ignition	Contactless via DME	
Ignition sequence	1-3-4-2	
Ignition timing	via DME	
Spark plugs	Bosch WR 7 DC, Champion RN 9 YC	
Electrode gap	mm	0.7 + 0.1
Power transmission	Engine monitored at front end, transmission mounted at rear end, bolted together by a connecting tube to form a rigid drive unit (transactor). Front engine, clutch, torsionally elastic drive shaft to transmission mounted in connecting tube, rear transmission interlocked with axle drive, twin drive shaft to rear wheels	
Clutch	Single-disk drive clutch with diaphragm spring, in extended design, arranged at engine end	
Pressure plate	MFZ 225	
Clutch disc	225 GUD	

Torque specifications - Engine M44.01...12

Location	Thread	Tightening torque Nm	
Crankshaft/ Crankcase			
Bolted joint Crankcase upper and lower sections (Studs)	M 12 x 1.5	30	1st stage
		60° angle	2nd stage
	M 10	20	1st stage
		50	2nd stage
	M 8	20	
	M 6	10	
Rotational body on Compensating shaft	M 6	10 secured with Loctite 270	
Models 82 - 85			
Cover for compensating shaft housing at upper crankcase section	M 6	8	
Hexagon bolt	M 8	15	1st stage
		20	2nd stage
Stud bolt	M 8	15	1st stage
		30	2nd stage
As from model 85			
Compensating shaft with separate Bearing brackets:			
Bearing brackets (nuts) of the compensating shaft to Upper crankcase section	M 8	15	1st stage
		33	2nd stage
Cover for Compensating shaft housing to upper crankcase section	M 6	10	
hexagon bolt	M 8 x 55	15	1st stage
		20	2nd stage

Location	Thread	Tightening torque Nm	
As from model 87			
Hexagon bolt (bearing bracket) for Compensating shaft housing to upper crankcase section	M 8 x 58	15	1st stage
		33	2nd stage
Bearing housing left and right on upper crankcase section	M 8	20	
Connecting rod bolted joint Verbusrip nut	M 10 x 1,25	75 + 5	
Connecting rod bolted joint with smooth bearing surface	M 10 x 1,25	57 + 5	
Water drain plug in upper crankcase section	M 8	20	
Oil pan on crankcase housing	M 6	hand-tight	1st stage
		4	2nd stage
		10	3rd stage
Oil pan insert on oil pan	M 5	6 secure with Loctite 270	
Oil drain plug	M 20 x 1,5	50	
Engine mount left + right to crankcase	M 10	48	
Flywheel to crankshaft	M 10 x 1,25	40	1st stage
		90	2nd stage
Holder for sensors to crankcase	M 8	20	
Gearwheel to crankshaft	M 16 x 1,5	210	
Sensor to holder	M 6	8	

Location	Thread	Tightening torque Nm
Belt pulley to gearwheel	M 6 x 25 Strength class 10.9	13
Gearwheel to compensating shaft	M 10	45
Tensioner roller to bearing housing	M 10	45
Water pump to return crankcase	M 6	8 secure with Loctite 270
Roller to water pump housing	M 10	45
Tension roller to oil pump housing	M 10	45
Oil pump to crankcase	M 6 M 10	8 45
Toothed belt tensioner to crankcase	M 8	20
Tensioning roller to toothed belt tensioner	M 10	45
Mounting belt cover	M 6	8
Bracket for alternator to crankcase	M 10	45
Telethermometer transmitter	M 10 x 1	35
Oil pressure sensor (NTC II)	M 12 x 1.5	15
Oil pressure	M 18 x 1.5	35
Housing insert in oil pump housing	M 6	8 Seal interface with Loctite 574
Radiator housing/ Thermostat housing to crankcase	M 8	20

Location	Thread	Tightening torque Nm
Screw plug to oil-water radiator housing	M 18 x 1.5	35
Coolant vent screw	M 8 x 1	12 + 3
Relief valve	M 20 x 1.5	45
Oil filter		20
Oil trap to crankcase	M 8	20
Cylinder head		
Securing cylinder head to upper crankcase section		Ref. to tightening specific. Cylinder head
Intake manifold to cylinder head	M 8	20
Connection piece of heater supply line to cylinder head	M 8	20
Connection piece for cooling water pipe	M 8	20
Camshaft housing to cylinder head	M 8	20
Aluminium screw plugs to camshaft housing	M 18 x 1.5	40
Camshaft bearing to camshaft housing	M 6	8
Camshaft gearwheel to camshaft		
hexagon socket screw	M 10	45
Multiple-tooth socket head bolt	M 10	65-70
Bracket to camshaft bearing	M 6	8
Connection piece to driver	M 5	5 secure with Loctite 221

Location	Thread	Tightening torque Nm
Distributor finger to connecting piece	M 4	4 self-locking
Transportation hub to cylinder head	M 6	8
Spark plugs	M 14 x 1,25	25-30
Fuel system		
Securing diaphragm damper and pressure regulator to fuel manifold	M 16 x 1,5	30
Cap nut to fuel manifold	M 12 x 1,5	12
Exhaust system		
Sealing nut to catalytic converter	M 14 x 1,5	30
All other bolts and nuts:		
	M 6	8 + 2
	M 8	20 + 2
	M 10	40 + 5

Tolerances and wear limits - Engine

		When installed (new)	Wear limit
Cooling system			
Coolant thermostat	Open. temperature	81-85° C	
Cap for cooling system			
Pressure relief valve	opens at overpress.	$1 \pm 0,15$ bar	
Vacuum valve	opens at vacuum	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 dipstick			
upper mark	oil content	5.5 l	
lower mark	oil content	4.2 l	
Valve timing			
Bore for camshaft	Inner diameter	$60.5 \pm 0,03$	
Camshaft	Diameter	$60.5 \pm 0,04$ 0.055	
Camshaft	Axial play	0.10-0.18	
Bore for bucket tappet	Inner diameter	$38 \pm 0,27$ $+ 0,007$	
Bucket tappet	Diameter	$38 \pm 0,018$ $- 0,034$	
Camshaft	Runout	0.02	

Tolerances and wear limits - engine

		When installed (new)	Wear limit
Cylinder head with valves			
Mounting face	Distortion		max. 0.08
Valve seat:			
Intake	Width	1.7	
Exhaust	Width	2.0	
Intake	Seating angle	45°	
Exhaust	Seating angle	45°	
Outer correction angle		30°	
Inner correction angle		60°	
Valve guide:			
Intake and exhaust	Inner diameter	9 + 0.015	
Valve stem:			
Intake	Diameter	8.97-0.012	
Exhaust	Diameter	8.95-0.012	
Valve guide/valve stem	Play		
Intake			0.8
Exhaust			0.8
Compression		10 bar overpressure and above	
Piston with connecting rods			
Cylinder/pistons	Play	0.008-0.032	approx. 0.080
		Mahle	KS
Piston rings	Vert. play groove 1	0.05-	0.05-
		0.082	0.082
	Groove 2	0.04-	0.05-
		0.072	0.082
	Groove 3	0.023-	0.023-
		0.137	0.137
Piston rings	Gap width	Groove 1	0.20-0.45
		Groove 2	0.20-0.45
		Groove 3	0.38-1.40

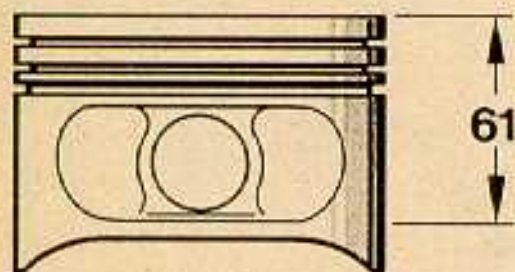
Tolerances and wear limit - engine

		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	Runout	0.04-0.06	max. 0.08
Con rod journal	Diameter	51.971-51.990	
Con rod/crankshaft	Radial play	0.034-0.092	
	Axial play	0.100-0.400	
Crankshaft bearing journal	Diameter	69.971-69.990	
Crankshaft bearing/ crankshaft	Radial play	0.020-0.098	
Crankshaft bearing/ crankshaft	Axial play	0.110-0.312	0.40
Cylinder bore	out-of-round	0.010	0.020
Bore for compensating shaft bearing shells at crankcase housing or compensating shaft cover	Diameter	34.000-34.019	
Bore for bush in bearing housing	Diameter	34.000-34.019	
Compensating shaft	Diameter	30.975-30.991	

Checking pistons and cylinder bores

Checking pistons

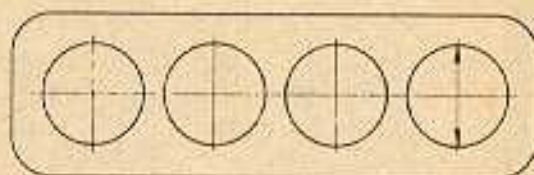
Measure approx. 61* mm from piston crown, offset 90 degree to piston pin axis.



Checking cylinder bores

Measure approx. 61* mm from upper edge of cylinder bore transverse to cylinder block. Note: To perform measurement, fit lower section of crankcase and tighten to specified tightening torque.

* For 2.7 l engine 57 mm



Engine type M 44/01...10 (2.5 l)

Repair stage	PistonØ (mm)	Cylinder bore (mm)	Tolerance groups Identification
Standard size	99.980	100.000	0
	99.990 ± 0.007*	100.010 ± 0.005	1
	100.000	100.020	2
1st oversize	100.480	100.50	1 0
	100.490 ± 0.007*	100.51 ± 0.005	1 1
	100.500	100.52	1 2

*MAHLE-pistons ± 0.005

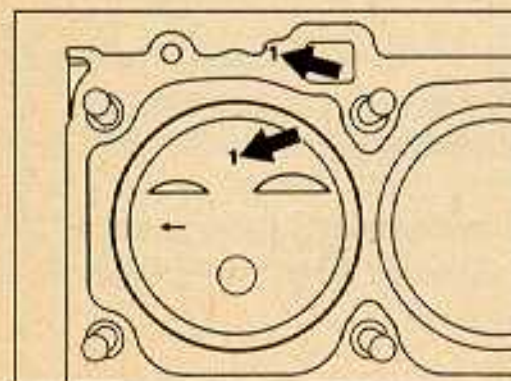
Engine type M 44.11/12 (2.7 l)

Repair stage	PistonØ (mm) Messrs. Mahle	Cylinder bore (mm)	Tolerance groups Identification
Standard dimension	103.980	104.000	0
	103.990 ± 0.007	104.010 ± 0.005	1
	104.000	104.020	2
1st oversize	104.480	104.500	1 0
	104.490 ± 0.007	104.510 ± 0.005	1 1
	104.500	104.520	1 2

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 matched in pairs. Different tolerance groups may be fitted to the same engine.



Driving direction →

Firing order

1-3-4-2

Survey of pistons (dimensions, weights and compression)

Models '84 - '87
 Engine M 44.01/03/05/06
 Compression 10.6:1
 NominalØ 100 mm

Model '88
 Engine M 44.09/10
 Compression 10.2:1
 NominalØ 100mm

Models '84 - '85
 Engine M44.02/04/07/08
 Compression 9.5:1
 NominalØ 100mm

Model '89
 Engine M44.11/12
 Compression 10.9:1
 NominalØ 104 mm

Models '86 - '87
 Engine M44.07/08
 Compression 9.7:1
 NominalØ 100 mm

Piston weight 2.5 l engine: 720 g ± 4g
 2.7 l engine: 748 g ± 4g

Piston weight tolerances

Pistons and piston pins are paired in accordance with weight selection. Pistons are weighed with 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 mark if necessary.

If piston pins have been interchanged by mistake, reallocation must be carried out by checking the total weight.

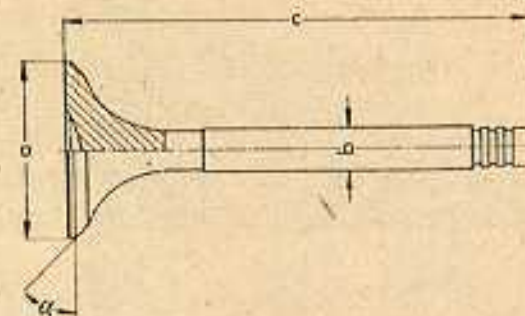
Valve dimensions

Engine type M 44.01-10

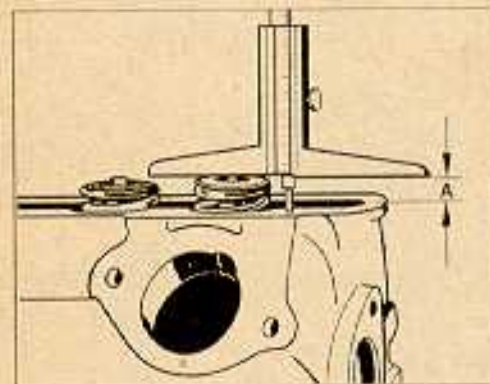
Size	Intake	Exhaust
a	45.00 mm	40.00 mm
b	8.97 mm	8.95 mm
c	111.50 mm	111.90 mm
α	45°	45°

Engine type M 44.11/12 (2.7 l)

a	48.00 mm	40.00 mm
---	----------	----------



Reworking valve seats



Valve seats can be reworked until the wear limit size, dimension "A" = 14.5 mm, has been reached. (Size new 13.65 ± 0.45). Perform check with new valve. Dimension "A" must not be exceeded, otherwise, the hydraulic valve tappet will no longer operate satisfactorily.

Checking valve guide

Wear limit (play) for intake and exhaust valve guide = 0.80 mm

Checking installation length of valve springs

Check installation size with special tool 9138/1 and correct by fitting or removing shims. Shims are available in the thicknesses 0.5 and 1.0 mm.

Intake valve	41.0 + 0.5 mm
Exhaust valve	40.0 + 0.5 mm

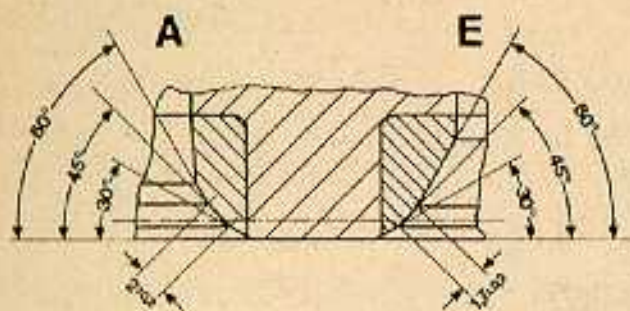
Valve springs as from model 85

Note

The bearing surface of the valve spring is machined to the same depths with installation of cylinder head, rough part number 944 104 303 7R.

Intake valve	41.0 + 0.5 mm
Exhaust valve	41.0 + 0.5 mm

Angles and Dimensions of Valve Seat Inserts

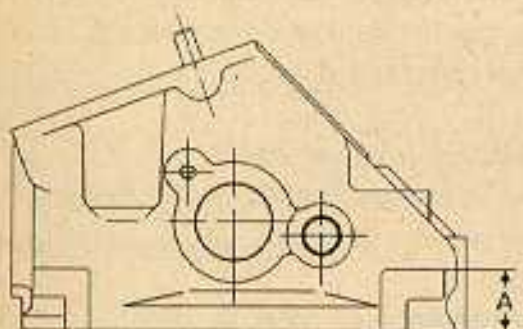


Machining the cylinder head mating face

Permissible unevenness of mating face: 0.03mm

Max. Reworking depth 0.2 mm

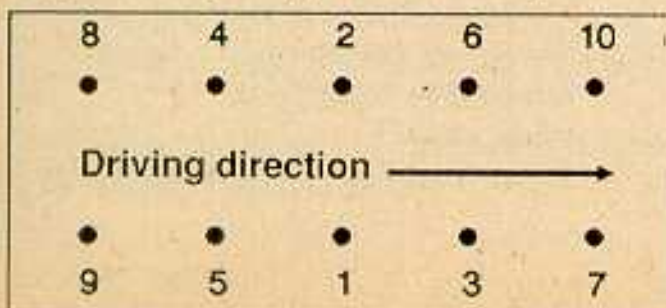
Peak-to-valley height = 0.015 mm



Size new A = 24 ± 0.1

Size worn A = 23.8

Tightening sequence for cylinder head



Torque specifications for cylinder head

As from model 82

Engine type M 44.01-04

1st stage	20 Nm
2nd stage	50 Nm
3rd stage	90 Nm

The thread of the stud bolts must be lightly oiled.

As from model 89

Engine type M 44.11/12 (2.7 l)

1st stage	20 Nm
2nd stage	60° torquing angle
3rd stage	60° torquing angle

The thread of the stud bolts must be lightly oiled.

As from model 86

Engine type M 44.05-08

1st stage	20 Nm
2nd stage	50 Nm
3rd stage	90 Nm

The thread of the stud bolts must be lightly oiled.

As from model 86

Engine type M 44.05-10

In conjunction with 12 mm high nut

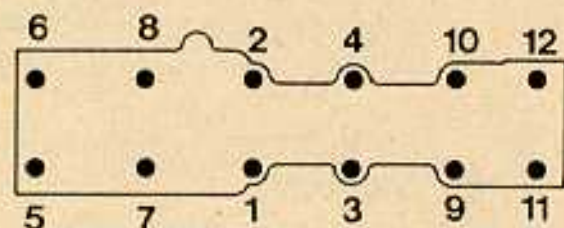
1st stage	20 Nm
2nd stage	90° torquing angle
3rd stage	90° torquing angle

The thread of the stud bolts must be lightly oiled.

Tightening sequence - Tightening torques for compensating shaft cover

As from model 84

Engine type M 44.01...04



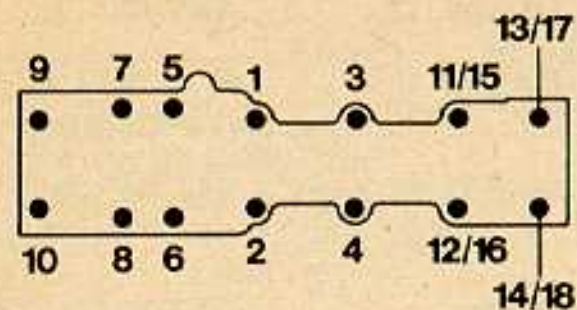
1. Manually tighten bolts and nuts
2. Fit bearing housing
3. Stud bolts M 8

1st stage	15 Nm
2nd stage	30 Nm
4. Hexagon bolts M 8

1st stage	15 Nm
2nd stage	20 Nm

As from model '85

Engine type M 44.05...08



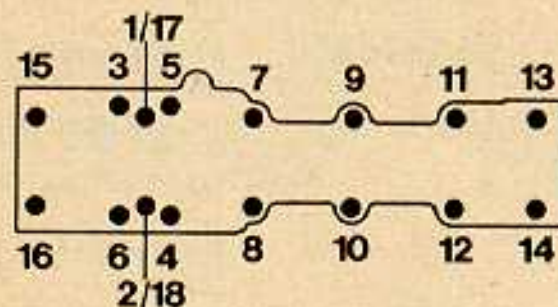
1. Manually tighten bolts
2. Fit bearing housing
3. Hexagon bolts M 6

	10 Nm
--	-------
4. Hexagon bolts M 8

1st stage	15 Nm
2nd stage	20 Nm

As from model '87

Engine type M 44.05...12



1. Manually tighten bolts
2. Fit bearing housings
3. Hexagon bolts No. 1 and 2

M 8	15 Nm
-----	-------
4. Hexagon bolts No. 3...16

M 6	10 Nm
M 8	20 Nm
5. Hexagon bolts No. 17 and 18

M 8	33 Nm
-----	-------

Camshaft survey

Model year	Mod. 82...84	Mod. 85...88	Mod. 89
Engine type	M 44.01...04	M 44.05...10	M 44.11/12 (2.7 l)
Camshaft	944.105.155.05	944.105.155.09	944.105.155.10
Identification between exhaust and intake cams of cylinder 2	155.05	155.09	155.10
Valve timing 1 mm stroke, zero play			
Intake opens	1° CS after TDC	1° CS after TDC	1° CS after TDC
Intake closes	49° CS after BDC	49° CS after BDC	49° CS after BDC
Exhaust opens	43° CS before BDC	47° CS before BDC	47° CS before BDC
Exhaust closes	3° CS before TDC	1° CS after TDC	1° CS after TDC

Belt adjustment values at engine

Belt type	Scale values on special tool 9201	
	New belt up to appr. 3000 km	Used belt over 3000 km

Camshaft toothed belt

for engine with tensioning roller:
(in direction of rotation to TDC
cylinder 1 and 10° crankshaft angle back)

Adjustment value	4.0 ± 0.3	2.7 ± 0.3
Check value	2.4 to 4.3	2.7 ± 0.3

Camshaft toothed belt for engine with mechanical belt tensioner:
(in direction of rotation to TDC cylinder 1)

- Undo fixing screws at belt tensioner
- Check mobility of tensioning roller lever
- Tighten fixing screws (20 Nm)

Toothed belt, compensating shaft

Adjustment and check value:

for roller without oblong hole	4.3 ± 0.3	4.0 ± 0.3
for roller with oblong hole	2.7 ± 0.3	2.7 ± 0.3

Alternator drive belt

Adjustment and check value:

5-rib "poly-rib belt" (up to and including model 85)	9.5 ± 0.3	9.5 ± 0.3
6-rib "poly-rib belt" (as from model 85/2)	9.5 + 2 revolutions at the tensioning strut	9.5

V-belt - Servopump

This V-belt cannot be checked with the special tool 9201.

The tension must be determined by some pressure in the middle of the V-belt:

Belt must give by approx. 5 mm

V-belt dimensions**V-belt for servo pumps**

9.5 x 950

**Polyrib belt for alternator
as from mod. 85/2**

K5 736 Lw
K6 720 Lw

**Polyrib belts for alternator
and air-conditioning compressor
as from mod. 85/2**

K5 1005 Lw
K6 1000 Lw

Coolant mixing table (average values)

Frost protection to	Antifreeze	Water	Antifreeze	Water
-30° C	45 %	55 %	3.5 l	4.3 l
-35° C	50 %	50 %	3.9 l	3.9 l
-40° C	55 %	45 %	4.3 l	3.5 l

Cleaning the complete engine-oil system following engine failure (bearing failure)**Note**

This cleaning sequence is only intended to give pointers as to where chips may be found.

The actual scope of work involved must be determined individually for each engine failure.

Replace the following parts:

- Hydraulic valve tappets
- Relief valve (crankcase)
- Pressure reducing valve (cylinder head)
- Oil-water heat exchanger
- Oil filter

The following parts must be dismantled, checked and cleaned thoroughly:

- Oil pump
- Oil-water heat exchanger housing
- Oil check valve at cylinder head

The following parts must be cleaned thoroughly and/or rinsed several times:

Note:

All oil feeder holes may be flush thoroughly with a commercially available oil-gasoline syringe and benzine.

- Oil sump
- Oil inlet pipe
- Oil drain pipe
- Crankcase
- Crankshaft
- Cylinder head
- Camshaft housing

Change oil filter and engine oil after approx. 500 km.

Note:

Following an engine failure, the complete intake system must be checked for foreign bodies and oil and cleaned before assembly.

Testing and adjusting values

Model year	Mod. 84	Mod. 85...88	Mod. 89
Engine type	M44.01...04	M44.05...10	M44.11/12 (2.7l)
Electric fuel pump			
Delivery rate	min. 850 cm ³ /30 s	min. 850 cm ³ /30 s	min. 850 cm ³ /30 s
Fuel pressure (engine stop)			
Fuel pump relay bridged	2.5 ± 0.2 bar	2.5 ± 0.2 bar	3.8 ± 0.2 bar
Check value for idle	approx. 2.0 bar	approx. 2.0 bar	approx. 3.3 bar
Leak test			
Min. pressure after 20 min.	1.0 bar	1.0 bar	2.0 bar
Idle setting	without catalytic converter	without catalytic converter	without catalytic converter
	800 + 50	840 ± 40	840 ± 40
CO level %	0.5...1.0	0.5...1.5	0.5...1.5
HC levels	≤300 ²⁾	≤300 ²⁾	≤300 ²⁾
	catalytic converter vehicles	catalytic converter vehicles	catalytic converter vehicles
	900 ± 50	840 ± 40	840 ± 40
	0.6 ± 0.2 ¹⁽²⁾	0.6 ± 0.2 ¹⁽²⁾	0.4...0.8 ¹⁽²⁾
	≤300 ²⁾	≤300 ²⁾	≤300 ²⁾

¹⁾ Oxygen sensor plug disconnected

²⁾ measured before catalytic converter

Torque specifications for clutch

Location	Thread	Tightening torque Nm
Clutch		
Guide tube to clutch housing	M 7	15
Clutch and ring gear mounting	M 8	25
Flywheel on crankshaft	M 10	90
Clutch housing to engine	M 12	75
Protective plate and support plate to clutch and crankshaft housing	M 10	42
Release lever with clutch housing	M 6 x 35 M6 (nut)	9.5 7.5
Reference mark and speed sensor to holder	M 6	8
Slave cylinder to clutch housing	M 8 x 28	21
Master cylinder to bulkhead	M 8	21
Clutch tube to clutch hose or to master and slave cylinder	M 12	16

Clutch

Engine type M44.01...12

Design Single-plate dry clutch with diaphragm spring, extended design mounted on engine side. Hydraulic operation.

Pressure play MFZ 225

Contact pressure 6100...6800 N

Clutch disk Ø225 GUD (with rubber torsion damper)

Lateral runout max. 0.6 mm for d 220

Clutch play at clutch pedal * approx. 3 mm

The clutch play cannot be checked at the clutch pedal because of automatic hydraulic adjustment. However, perfect functioning of the clutch must be guaranteed by a play of 0.5 mm between the push rod and master cylinder piston.

This play cannot be measured, but must be determined on the clutch pedal by sense of feeling. It will be approx. 3 mm on the pedal tread plate.

Torque specifications for central tube, transmission suspension and gear shift

Location	Thread	Tightening torque Nm
Central shaft to transmission drive shaft	M 10 x 46	80
Central tube flange to clutch housing	M 10 x 35	42
Central tube case to transmission case	M 12 x 75	85
	M 12 x 80	85
	M 10 x 60	42
Transmission bearing to body	M 10	46
Bearing to suspension bracket	M 8	25
Suspension bracket to transmission	M 8	25
Transmission bearing to transmission support	M 8	23
Holder to transmission bearing	M 8	23
Holder to transmission	M 8	23
Joint rod to transmission case	M 8	14
Joint rod to intermediate lever	M 8	21
Shift rod mounting	M 8	21
Shift lever plate to central tube	M 8 x 12	21
Intermediate lever to shifting shaft	M 8	22.5

Tightening torques for manual transmission

Location	Thread	Tightening torque Nm
Oil filler screw to transmission case	M 24	24
Oil drain screw to trans. case	M 24	24
Cover for shifting shaft to transmission case	M 6	8
Bearing bracket to transmission case	M 8	24
Ball bearing to drive shaft*	M 10	70
Cover to bearing bracket	M 8	24
5th gear wheel to driving shaft	M 10	70
Shifting lock to bearing bracket and transmission case	M 18	30
Shift travel limiter to bearing bracket	M 14	30
Reversing lever to bearing bracket	M 10	35
Reverse gear pin to bearing bracket	M 8	24
Flanged shaft to diff. gear	M 8	24
Side transmission cover to transmission case	M 8	24
Crown gear to differential case	M 10	90
Reversing light switch to transmission case	M 18	42
Tacho bush to transmission case	M 18	42
Joint shaft to joint flange	M 8	42

*Bolts are micro-encapsulated. Can be used once only!

5-speed manual transmissions 016 J and 016 K (as from model 85/2)

Type	Identification code	Equipment	Installed in	Model year
016J	5Y	5 speed without limited-slip differential	R.o.W. worldwide	85/2...88
016J	5Z	5 speed with limited-slip differential	R.o.W. worldwide	85/2...88
016K	5S	5 speed without limited-slip differential	USA/Japan	85/2...87
016K	7V	5 speed with limited-slip differential	USA/Japan	85/2...87
016J	ASG	5 speed without limited-slip differential	worldwide	as from 89
016J	ASH	5 speed with limited-slip differential	worldwide	as from 89

Technical data type 016 J/016 K

Ratio

1st gear	10:36	$i = 3.6000$
2st gear	16:34	$i = 2.1250$
3rd gear	24:35	$i = 1.4583$
4th gear	28:30	$i = 1.0714$
5th gear	35:29	$i = 0.8286$
	(37:27)	$i = 0.7297^*$
R. gear	12:42	$i = 3.5000$

Final drive Hypoid drive with 12 mm offset

Final drive ratio 9:35 $i = 3.889$

Power transmission Front engine and transmission (at rear) bolted together by means of a connecting tube to form a rigid drive unit. Front engine, clutch, torsionally elastic shaft (25 mm Ø) to transmission mounted in 4 bearings in the connecting tube, rear transmission interlocked with axle drive, twin drive shaft to rear wheels

Filling capacity approx. 2 l Hypoid transmission oil SAE 75W/90 of API classification GL 5 or MIL-L 2105 B or SAE 80 of API classification GI 4 or MIL-L 2105.

*944 USA up to mod '87

Torque specifications for automatic transmission

Location	Thread	Tightening torque Nm
Screw plug for measuring connection	M 10 x 1	15
ATF filler tube to oil pan	M 24 x 1.5	80
ATF reservoir to holder	M 6	7
Holder for ATF reservoir to transmission	M 10	42
Planetary gear to axle drive	M 8 x 1.25	29
Intermediate plate to transmission housing	M 5 x 0.8	3.5
Pump to transm. housing	M 6 x 1	7,0
Cover plate to pump hous.	M 4 x 0.7	1.4
Adjustment brake strap 2nd gear	M 12 x 1.5	19.6
Oil pan to transm. housing	M 8 x 1.25	20.5
Oil strainer to slide valve case	M 5 x 0.8	3.5
Slide valve case to transmission housing	M 6 x 1	3.5
Facing plate to slide valve case	M 5 x 0.8	3.5
Supporting plate to duct plate	M 5 x 0.8	3.5
Intermediate and duct plate to slide valve case	M 5 x 0.8	3.5
Lever for hand slide valve to transmission housing	M 6 x 1	3.5
Detent segment to lever for hand slide valve	M 16 x 1.5	20.5
Lever of kick-down valve to shaft of accelerator rod	M 8 x 1.25	17

Location	Thread	Tightening torque Nm
Detent spring to transmission housing	M 8 x 1.25	20.5
Lever of control cable to shaft	M 10 x 1	18
Governor cover to axle housing	M 8 x 1.25	9
Governor shaft to governor housing	M 5 x 0.8	3.5
Flange shaft to differential	M 8 x 1.25	25
Locking plate to adjusting ring	M 6 x 1	8
Cover for differential pinion to axle housing	M 10 x 1.5	42
Cover of axle housing to axle housing	M 8 x 1.25	25
Crown gear to differential	M 10 x 1	78-93
Oil filler transmission housing	M 24 x 1.5	20
Screw connection for ATF line to axle housing	M 16 x 1.5	80
Converter to driver plate	M 8	40

Tightening torques for ATF cooling and ATF reservoir (automatic transmission)

Location	Thread	Tightening torque Nm
Piping to connection piece	M 16	30
Line to transmission output	M 12	22.5
Line to transmission input	M 16	30
Line to radiator input	M 14	22.5
Line to radiator output	M 16	30
Lines to central tube housing	M 6	5
Lines to central tube	-	3
Lines to camshaft housing	M 6	5
Connection to radiator	M 14	30
Bracket for ATF reservoir to transmission	M 10 x 22	42
ATF reservoir to bracket	M 6 x 15	7
ATF filler pipe to oil pan	M 24	80

Tightening torques for shift actuation (automatic transmission)

Location	Thread	Tightening torque Nm
Shift lever guide to shift bracket	M 6	9
Locking segment to shift bracket	M 6	8.2
Mount of shift actuation and side seal guide	M 6	8.2
Retaining angle to transmission	M 8	21
Cable to bracket	M 8	8
Cable to retaining angle	M 8	8
Ball head to cable	M 5	5

Tightening torques for accelerator actuation (automatic transmission)

Location	Thread	Tightening torque Nm
Control cable to bracket (engine)	M 8	5
Control cable to transmission	M 10	20
Control cable to central tube	M 4	3
Metal rubber to intermediate lever (accelerator pedal)	M 6	9
Accelerator pedal to floor plate	M 6	5

Tightening torques for central tube

Location	Thread	Tightening torque Nm
Torque converter mounting to rear bell	M 8 x 25	21
Mounting of central shaft to flange shaft	M 10 x 46	80
Central tube flange to clutch bell	M 10 x 35	42
Central tube housing to transmission housing	M 12 x 80	85
Central tube housing to transmission housing	M 10 x 50	42
Torque converter to driver plate	M 8 x 11	40
Mounting of central shaft with damper	M 10 x 46	80
Damper to flywheel	M 8 x 40	21
Guard plate to clutch bell	M 10 x 25	42
Support to transmission*	M 10 x 30	42
Arrester hook to central tube*	M 8	20

* Only on USA/Japan vehicles

Tightening torques for final drive (automatic transmission)

Location	Thread	Tightening torques Nm
Flange shaft to differential	M 8 x 1.25	25
Locking plate to adjusting ring	M 6 x 1	8
Cover for driving pinion to axle housing	M 10 x 1.5	42
Cover of axle housing to axle housing	M 8 x 1.25	25
Crown gear to differential	M 10 x 1	78-93
Planetary gear to final drive	M 8 x 1.25	29
Universal shaft to transmission flange	M 8	42

Technical data - Automatic transmission

Internal designation	087M (087 N)*	
Number of speeds	3 forward, 1 reverse and parking lock	
Ratios:	Type 087 M and N	Type 087 M
	Identification code	
	RCA, RCB, RCD, RCE, RCF	RH
Driving position 1	i = 2.7143	i = 2.5517
Driving position 2	i = 1.5000	i = 1.4483
Driving position D	i = 1.0000	i = 1.0000
Driving position R	i = 2.4286	i = 2.4615
Clutch	Hydrodynamic torque converter	
Torque converter ratio	2.08 (2.5)	
Torque conv. code letter	J (K)	
Stall speed	2200 ± 200 rpm (2800 ± 200 rpm)	
Final drive	Hypoid drive set	
Hypoid offset	44 mm	
Axle ratio	12/37 (11/38)	
Filling capacities		
Final drive	approx. 1 l hypoid transmission oil SAE 90 (optionally 75W/90) of API classification GL 5 or MIL-L 2105 B	
Automatic section	Total filling capacity with ATF radiator approx. 6.5 l ATF Dexron II D	
	Change quantity approx. 2.8 l ATF	

*USA values in brackets

Shift points in km/h

Transmission version	Shifts	Full throttle*	Kickdown*
Transmission type 087 M	1 - 2	40 - 56	89 - 92
Identification code RH	2 - 3	96 - 120	155 - 156
	3 - 2	68 - 94	148 - 150
	2 - 1	28 - 31	81 - 83
Transmission type 087 M	1 - 2	40 - 55	83 - 88
Identification code RCA, RCD, RCE	2 - 3	96 - 120	149 - 152
	3 - 2	69 - 95	142 - 146
	2 - 1	28 - 32	76 - 81
Transmission type 087 N	1 - 2	35 - 48	73 - 77
Identification code RCB, RCF	2 - 3	84 - 105	130 - 133
	3 - 2	60 - 83	124 - 128
	2 - 1	25 - 28	67 - 71

*When testing, remember that speedometers may deviate from the specified values within the permitted tolerances.

Position of shift elements

Gear	1st gear "1"	1st gear "2"+"D"	2nd gear "2"+"D"	3rd gear "D"	R. gear "R"
Selector lever position					
Forward clutch closed	closed	closed	closed	closed	open
D. + R. clutch	open	open	open	closed	closed
1st and reverse gear brake	engaged	released	released	released	engaged
2nd gear brake	released	engaged	engaged	released	released
One-way clutch	no	no	no	no	no
	power transmission	power transmission	power transmission	power transmission	power transmission

Pressure test

Selector lever position	Accelerator pedal position	Main pressure in bar	Measuring cond.
D	Idle (no throttle)	2.95 ± 0.05	Speed over 50 km/h*
D	Full throttle	7.35 ± 0.05	
R	Idle (no throttle)	9.5 ± 0.3	Vehicle at stand-still
R	Full throttle	over 20	at stall speed

*As from Dec. '83 for Europe - vehicle (transmissions RCD and RCE) speed over 140 km/h.

Torque specifications for front axle

Location	Thread	Tightening torque Nm
Control arm to cross member	M 12 x 1.5	65
Control arm to body	M 10	46
Control arm bearing to alu. control arm (caster eccentric)	M 12 x 1.5	85
Control arm to steering knuckle	M 10	50
Cross member to body	M 12	85
Heat sink for hydraulic bearing to cross member	M 6	10
Track rod to steering knuckle	M 12 x 1.5	Castle nut 30 + 20 Locking nut 50
Stabilizer suspension to body	M 8	23
Clip for stabilizer to suspension	M 8	23
Stabilizer to steel control arm	M 8	23
Stabilizer suspension to aluminium control arm	M 10	25
Plug for vibration damper insert		150 ± 30
McPherson strut bearing to shock absorber strut	M 14 x 1.5	77
Fillister head screw to clamping nut	M 7	13 + 3
Cover plate to steering knuckle	M 7	10

Location	Thread	Tightening torque Nm
Floating caliper to steering knuckle	M 12 x 1.5	85
McPherson strut to steering knuckle	M 12 x 1.5	100
McPherson strut to body	M 8	25
Brake disk to wheel hub	M 8	23
Guide joint to steel control arm	M 7	25
LM wheel to brake disk	M 14 x 1.5	130
Steel wheel to brake disk	M 14 x 1.5	130

Torque specifications for steering

Location	Thread	Tightening torque Nm
Universal shaft to steering gear and steering shaft	M 8	30 + 5
Steering gear to cross member	M 8	23
Cover for pinion bearing	M 6	7
Cover on thrust piece bearing	M 6	7
Check nut for adjust. bolt	M 10 x 1	25
Track rod to steering knuckle	M 12 x 1.5	Castle nut 30 + 20 Locking nut 50
Track rod to steering rack (not for power steering)	M 22 x 1.5	50
Track rod joint to track rod (not for power steering)	M 14 x 1.5	30
Steering wheel to steering shaft	M 16 x 1.5	45
Steering column switch to jacket tube	M 8 M 5	15 4
Jacket tube to body	M 8	23
Support bearing to body	M 6	7
Power steering*		
Track rod to steering rack	M 14 x 1.5	70
Track rod joint to track rod	M 14 x 1.5	70
Pressure and return line to steering gear	M 12 x 1.5	20
Pressure line to servo pump	M 14 x 1.5	30
Ring hose nipple for suction hose to servo pump	M 16 x 1.5	45

*The values not listed are the same as for vehicles without power steering.

Torque specifications for rear axle

Location	Thread	Tightening torque Nm
Bearing flange to transv. tube	M 10	46
Bearing flange to body	M 12 x 1.5	70
Thrust bearing to bearing flange	M 10	46
Thrust bearing to body	M 10	46
Supporting bearing to body	M 10	46
Supporting bearing to strut	M 8	23
Axle control arm to rear axle strut	M 12 x 1.5	Camber eccentric 90 Fixing screws 103
Axle contr. arm to transv. tube	M 12 x 1.5	61
Vibration damper to body	M 12 x 1.5	61
Vibration damper to steel axle control arm	M 12 x 1.5	61
Vibration damper to aluminium axle control arm	M 14 x 1.5	123
Adjusting lever to spring strut	M 16 x 1.5	245
Stabilizer suspension to rear axle strut and stabilizer	M 10	46
Stabilizer fastening clip to rear axle transverse tube	M 8	23
Brake carrier to steel axle control arm	M 10	58
Wheel hub to rear wheel shaft with steel axle control arm	M24 x 1.5	380 + 70
Wheel hub to rear wheel shaft with aluminium axle control arm	M 22 x 1.5	500

Torque specifications for rear axle

Location	Thread	Tightening torque Nm
Universal shaft to transmission and rear wheel shaft	M 8	42
Cover plate to brake carrier or axle control arm	M 6	10
Floating caliper to brake carrier or axle control arm	M 12 x 1.5	85
Brake line to floating caliper and brake hose	M 10 x 1	12
Mounting bracket for brake line to brake carrier or axle control arm	M 6	10
Cable holder to control arm	M 6	10
Brake disk to wheel hub	M 6	5
LM wheel to wheel hub	M 14 x 1.5	130
Steel wheel to wheel hub	M 14 x 1.5	130

Technical data

Front axle

Wheel suspension	Wheels independently suspended on control arms and spring struts (McPherson design) with sheet steel or light alloy control arms. Sheet steel control arms: 944 up to mod. 85/2 and 924 S Light alloy control arms: 944 as from mod. 85/2		
Springing	One coil spring per wheel, coaxial with damper strut		
Shock absorbers	Double-acting hydraulic shock absorber strut Standard: VW or F + S Optional extra: Koni		
Stabilizer	924 S and 944 up to mod. 86	Standard Solid stabilizer Ø 20 mm	Optional extra Solid stabilizer Ø 21.5 mm or tubular stabilizer Ø 23 x 3.5 mm
	944 as from mod. 87 (Introduction in mod. 87)	Solid stabilizer Ø 21.5 mm	Tubular stabilizer Ø 25.5 x 4 mm
Height adjustment 944 M 030/M 637 (height-adjustable spring strut)	Height adjustment* Bottom screw edge of control arm bearing at rear under wheel center 146 ± 10 mm		

* Max. height difference on left and right 10 mm.

The bumper height is decisive for USA, Canada vehicle. The distance from the measuring surface (road/flat surface) up to the top edge of the bumper must be 526 ± 20 mm.

Technical data

Steering		Rack and pinion steering, optional hydraulically-assisted power steering
Steering wheel	Standard:	380 mm Ø
	Optional extra:	360 mm Ø
Steering wheel ratio in the middle		22.39:1 (power steering)
		Left-hand drive 18.85 :1
		Right-hand drive 18.96:1)
Turning circle diameter		10.75 m
Track circle diameter		10.1 m
Number of steering wheel turns from lock to lock		3.84 - 4.02 (power steering)
		Left-hand drive 3.24
		Right-hand drive 3.26)
Rear axle		
Wheel suspension		Independent wheel suspension on semi-trailing arms
Springing		One round torsion bar per wheel, transverse
Torsion bar Ø		Refer to spring struts and height adjustment
Shock absorbers		Double-acting hydraulic shock absorbers
		Standard: F + S
		Optional extra: Koni
Stabilizer		Standard:—
		Optional extra: 14 mm - 944 up to end Mod. 86, 924 S
		18 mm - 944 as from mod. 87 (introduction in mod. 87)
Shims		21 mm per wheel for steel axle control arms

Technical data

	Spring struts Adjustment	Height adjustment* Center of strut bearing (torsion bar center under wheel center (value)
	(tilt of spring strut) **	
924 S/944 up to end of model 88		
Standard (steel and aluminium axle control arms)	23°	-3.5 ± 10 mm
Torsion bar Ø 23.5 mm		(24°23' USA, Canada)
M 030/M 637 up to end of mod. 86	20°	- 18.5 ± 10 mm
Torsion bar Ø 24.5 mm		
M 030/M637 Mod. 87/88	18°	-18.5 ± 10 mm
Torsion bar Ø 25.5 mm		
as from mod. 89		
944 series with torsion bar Ø 23.5 mm	23°	-3.5 ± 10 mm
		(24°30' USA, Canada)
944 M 030	18°	-18.5 ± 10mm
Torsion bar Ø 25.5 mm		

* **Max. height difference from left to right 10 mm.**

The bumper height is decisive for USA, Canada vehicles. The distance from the measuring surface (road/flat surface) up to the top edge of the bumper must be 522 ± 20 mm.

** **Max. difference from right to left 0.5° - 1°. Change in spring strut tilt corresponds to approx. 5 mm change in vehicle height.**

Wheel alignment adjusting values

The following values apply to curb weight in accordance with DIN 70020 (car with full filled tank, spare wheel and tools).

USA and Canada values are in brackets.

Wheel position values

	Adjusting value and tolerance	max. difference left to right
Front axle		
Toe-in - unpressed	+ 10' ± 5'	
Track difference angle at 20° lock	-40' to -1° 50'	may be affected only by replacement of steering arms
Camber	-20' ± 15'	10'
Caster	2°30' + 30' - 15'	30'
Rear axle		
Toe-in per wheel	0° ± 5'	10'
Camber	-25' ± 30' (-1° ± 20')	30' 30'

Coil spring tolerance groups

General

The coil spring designs differ with respect to length and spring hardness (spring rate). They are identified by blue, white-blue and red color markings.

Spring rate 21.8 N/mm (wire - Ø = 12.0 mm): blue springs

Spring rate 24.1 N/mm (wire - Ø = 12.3 mm): red springs

Spring rate 28.0 N/mm (wire - Ø = 11.7 mm, partially 12.2 mm): white-blue springs

Each spring design (blue, white-blue and red coding) is also subdivided into two or three tolerance groups (tolerance of the spring rate ± 4 %).

Survey

Coil spring Part No. 477 411 105 Q

Use: 944/924 S with standard and sport dampers

Group	Length removed	Spring force F at Length 251 mm	Color dot
1	approx. 381 mm	2727 - 2800 N	1 blue
2	approx. 381 mm	2800 - 2873 N	2 blue
3	approx. 381 mm	2873 - 2946 N	3 blue

Coil spring Part No. 477 411 105 G

Use: 924 S and 944 up to end of mod. 86 with sport chassis M 030

Group	Length removed	Spring force F at Length 251 mm	Color dot
1	approx. 359 mm	2502 - 2560 N	1 red
2	approx. 359 mm	2560 - 2629 N	2 red
3	approx. 359 mm	2629 - 2698 N	3 red

Coil spring Part No. 944 343 531 00

Use: 944 as from mod. 87 with sport chassis M 030

Group	Length removed	Spring force F at Length 220 mm	Color dot
1	approx. 329 mm	2850 - 2950 N	1 x white 1 x blue
2	approx. 329 mm	2950 - 3050 N	2 x white 1 x blue

Torque specifications for mechanical brake system

Location	Thread	Tightening torque Nm
Fillister head screw to clamping nut	M 7	13 + 3
Brake caliper to steer. knuckle	M 12 x 1.5	85
Brake disk to front wheel hub	M 8 M 6	23 10
Cover plate to steer. knuckle	M 7	10
Wheel hub to rear wheel shaft with steel axle control arm	M 24 x 1.5	380 + 70
with alum. axle control arm	M 22 x 1.5	500
Mounting bracket for brake line to brake carrier or axle control arm	M 6	10
Cable holder to control arm	M 6	10
Cover plate to brake carrier or axle control arm	M 6	10
Brake disk to rear wheel hub	M 6	5
Brake caliper to brake carrier or axle control arm	M 12 x 1.5	85
Brake carrier to axle control arm	M 10	58
Handbrake lever to body	M 8	21
Brake cable to yoke	M 6	8.5
Handbrake cable to turnbuckle	M 6	8.5
Brake booster to intermediate piece	M 8	21
Intermediate piece to bulk head	M 8	21
Fork head to brake push rod	M 10	35

Torque specifications for hydraulic brake system

Location	Thread	Tightening torque Nm
Brake pressure line to master brake cylinder, brake hose, distributor and brake caliper	M 10 x 1	12
Brake hose to brake caliper	M 10 x 1	14
Bleed screw to floating caliper	M 7	4
Master brake cylinder to brake booster	M 8	21
Brake booster to intermediate piece	M 8	21
Intermediate piece to bulkhead	M 8	21
Mounting bracket on brake carrier or rear axle control arm	M 6	10
Stop screw in master brake cylinder	M 6	7 - 10

Technical data of braking system

Designation	Remarks, dimensions	Wear limit
Service brake (foot brake)	Hydraulic dual-circuit brake system with brake circuits split up between front axle and rear axle (black/white), brake booster, internally ventilated brake disks with floating caliper on front and rear axles. The push rod brake circuit is allocated to the front wheels.	
Brake booster (lightweight design)	Ø 9 inch	
Booster factor	3.1 or 3.4*	
Master brake cylinder** (aluminium design)		
944 up to end of model 86 and 924 S (Ø in mm)	23.81/19.05	
944 as from model 87 except 924 S (Ø in mm)	23.81/20.64	
Brake disk Ø		
front	282.5 mm	
rear	289 mm	
Effective brake disk Ø		
front	224.6 mm	
rear	242 mm	
Piston Ø in brake caliper		
front mm	54	
rear mm	36	
Brake lining thickness		
front	13 mm	2 mm
rear	13 mm	2 mm

*944 as from model 87

** on vehicles with ABS (optional extra as from mod. 87) with two central valves.

Designation	Remarks, dimensions	Wear limit
Brake lining area per front wheel	92 cm ²	
Brake lining area per rear wheel	63 cm ²	
Total brake lining area	310 cm ²	
Brake lining thickness new		
front	20.5 mm	
rear	20 mm	
Minimum brake disk thickness* after reworking		
front	19.1 mm	18.5 mm
rear	19.2 mm	18.6 mm
Thickness tolerance of brake disk max.	0.02 mm	
Max. lateral runout of brake disk	0.05 mm	
Max. lateral runout when installed	0.1 mm	
Max. peak-to-valley height after machining	0.006 mm	
Play at brake pedal when brake bled and engine not running	approx. 10 mm	

Technical data of braking system

Designation	Remarks, dimensions	Wear limit
Parking brake (handbrake)	applied mechanically to both rear wheels drum brake	
Handbrake drum \varnothing	180 mm	181 mm
Brake shoe width	25 mm	
Brake lining area per wheel	85 cm ²	
Brake lining thickness	4.5 mm	2 mm

* The brake disk must only be reworked symmetrically, i.e. from both sides.

Checking disk wheels

Points for measuring vertical and lateral runout on outer and inner rim shoulders.

Dimension "a" = 8 mm

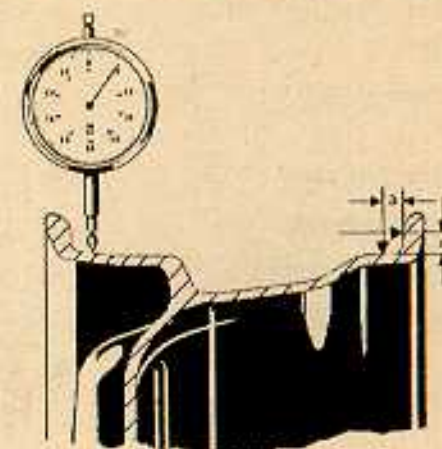
max. permissible vertical and lateral run-out

with lightweight alloy rims = 1.0 mm

with steel rims = 1.25 mm

Note

It is not permitted to straighten twisted rims.



Tires, wheels, tire pressures

Information about the permitted tire-wheel combinations and dimensions are contained in the vehicle documents or service information bulletins.

Tire pressures (summer and winter tires) measured with cold tires

front 2.0 bar (29 psi)

rear 2.5 bar (36 psi)

Folded

spare

tire 2.5 bar (36 psi)

Electrical system

Fuses, relays 924 S, 944 up to mod. '85

Order of fuses from left:

No.	Load	Amp.
1	Low beam left	8
2	Low beam right	8
3	Main beam left	8
4	Main beam right	8
5	Supplementary headlamps	16
6	Hazard warning system	8
7	Clock, interior light, radio	8
8	Tempostat, lifting roof control, brake light	8
9	Reversing lamps, rear window wiper, external mirrors, turn signal	8
10	Control line for rear window heater, heatable outside mirrors	16
11	Windscreen wipers, windscreen washer pump, washer nozzle heating	8
12	License plate, trunk, gloves compartment and ashtray lamp, instrument lamps	8
13	Righthand position lamp	8
14	Lefthand position lamp, engine compartment lamp	8
15	Fog lamps	16

A further fuse box is located
above the central electrical system

1	Motor for concealed headlamps	16
2	Fuel pump	16
3	Cooling ventilator	16, 25
4	Rear screen heater	16
5	Air-conditioning system, 2nd engine fan	16, 25
6	Air-conditioning system, condenser fan, compressor coupling, cigarette lighter	25
7	Rear fog lamp	8
8	Window lifters	16
9	Fresh-air fan, rear lid unlocking, lifting roof	25

Relays

No.

I	Cooling blower
II	Fuel pump
III	Air-conditioning system
IV	Headlamp cleaning system
V	-
VI	Heated rear screen
VII	-
VIII	Auxiliary headlamps
IX	Horn, fuse 16 A
X	Intermittent windscreen wipers
XI	Turn signals
XII	-

Note:

In the case of the 944 as from mod. '85/2, a fuse and relay assignment diagram is located on the inside of the central electrical system cover.

Performance data (with DIN curb weight and half vehicle capacity weight)

924 S		Mod. '86, 87		Mod. '88	
		Manual transmission	Automatic	Manual transmission	Automatic
Maximum speed	km/h	215	215	220	218
	mph	(134)	(134)	(137)	(136)
Acceleration 0 - 100 km/h	s	8.5	10.0	8.2	9.5
		(8.3)	(9.8)	(8.0)	(9.3)
Kilometer from standing start	s	30.1	31.4	29.5	30.9
		(16.2)	(17.2)	(15.9)	(16.9)

(USA values in brackets)

Performance figures (with DIN curb weight and half vehicle capacity weight)

944		Mod. '84 - '87		Mod. '86, '87 with catalytic converter		Mod. '88		Mod. '89	
		Manual trans.	Autom. trans.	Manual trans.	Autom. trans.	Manual trans.	Autom. trans.	Manual trans.	Autom. trans.
Max. speed	km/h	220	220	210	210	218	215	220	218
	mph	(130)	(130)	(8.5)	(8.5)	(135)	(134)	(137)	(135)
Acceleration 0 - 100 km/h	s	8.4	9.6	8.5	10.0	8.4	9.6	8.2	9.4
		(8.3)	(9.8)			(8.2)	(9.4)	(8.0)	(9.2)
Kilometer from standing start	s	28.8	30.8	30.1	31.4	29.8	31.2	29.0	30.4
		(30.1)	(31.4)			(16.1)	(17.1)	(15.9)	(16.9)
1/4 mile from standing start	s	(16.2)	(17.2)						

(USA values in brackets)

Weights

924 S	Mod. '86		Mod.'87		Mod.'88	
	R.o.W.	R.o.W.	USA	R.o.W.	USA	
Curb weight to DIN	1190 kg	1210 kg	1240 kg/2734 lbs.	1240 kg	1240 kg/2734 lbs.	
Perm. total weight	1510 kg	1530 kg	1530 kg/3373 lbs.	1560 kg	1530 kg/3373 lbs.	
Perm. axle load front*	720 kg	720 kg	720 kg/1587 lbs.	720 kg	720 kg/1587 lbs.	
Perm. axle load rear*	900 kg	900 kg	880 kg/1940 lbs.	900 kg	880 kg/1940 lbs.	
Perm. trailer load unbraked **/****	500 kg	500 kg		500 kg		
Perm. trailer load braked **/****	1200 kg	1200 kg		1200 kg		
Perm. towing weight	2710 kg	2730 kg		2760 kg		
Perm. roof load */****	75 kg	75 kg	75 kg/ 165 lbs.	75 kg	75 kg/ 165 lbs.	
Perm. drawbar load****	50 kg	50 kg		50 kg		

* The permitted total weight must, however, not be exceeded.

Important: The vehicle capacity weight is reduced correspondingly if additional equipment is installed (air-conditioning system etc.).

** Up to 16 % incline

*** Valid only if original Porsche spare parts are used.

**** Only if the original Porsche basic roof rack is used, otherwise only 35 kg roof load.

Weights

944 R.o.W.	Mod. '84, '85	Mod. '85/2, '86	Mod. '87	Mod. '88	Mod. '89
Curb weight to DIN	1180 kg	1210 kg	1240 kg	1260 kg	1290 kg
Perm. total weight	1500 kg	1530 kg	1560 kg	1580 kg	1630 kg
Perm. axle load front*	720 kg	720 kg	720 kg	720 kg	730 kg
Perm. axle load rear*	880 kg	900 kg	900 kg	900 kg	920 kg
Perm. trailer load unbraked**/****	500 kg	500 kg	500 kg	500 kg	500 kg
Perm. trailer load braked**/****	1200 kg	1200 kg	1200 kg	1200 kg	1200 kg
Perm. towing weight	2700 kg	2730 kg	2760 kg	2760 kg	2830 kg
Perm. roof load*/****	75 kg	75 kg	75 kg	75 kg	75 kg
Perm. draw bar load***	50 kg	50 kg	50 kg	50 kg	50 kg

* The permitted total weight must, however, not be exceeded.

Important: The vehicle capacity weight is reduced correspondingly if additional equipment is installed (air-conditioning system etc.)

** Up to 16 % incline.

*** Valid only if original Porsche spare parts are used.

**** Only if the original Porsche basic roof rack is used, otherwise only 35 kg roof load.

Weights

944 USA	Mod. '84 - '86	Mod. '87	Mod. '88	Mod. '89
Curb weight to DIN	1260 kg/2778 lbs.	1260 kg/2778 lbs.	1290 kg/2844 lbs.	1300 kg/2866 lbs.
Perm. total weight	1550 kg/3417 lbs.	1560 kg/3439 lbs.	1580 kg/3483 lbs.	1590 kg/3505 lbs.
Perm. axle load front*	720 kg/1587 lbs.	720 kg/1587 lbs.	720 kg/1587 lbs.	720 kg/1587 lbs.
Perm. axle load rear*	880 kg/1940 lbs.	900 kg/1984 lbs.	900 kg/1984 lbs.	900 kg/1984 lbs.
Perm. roof load**	75 kg/ 165 lbs.	75 kg/ 165 lbs.	75 kg/ 165 lbs.	75 kg/ 165 lbs.

* The permitted total weight must, however, not be exceeded.

Important: The vehicle capacity weight is reduced correspondingly if additional equipment is installed (air-conditioning system etc.).

** Only if the original Porsche basic roof rack is used, otherwise only **35 kg** roof load.

Filling capacities

Engine oil specification	API class SE/CC to SF/CD multi-grade oils, see works approval: Technical information on engine oils
Engine oil volume	Up to mod. '85 approx. 5.5 l Mod. '85/2-'87 approx. 6.0 l as from mod. '88 approx. 6.5 l Difference between the marks on oil dipsticks: up to mod. '87 approx: 1 l as from mod '88 approx: 1.5 l
Cooling system, heater	approx. 7.8 l coolant, plant filling with anti-freeze up to mod. '85 down to - 25 °C as from mod. '86 down to - 35 °C only use anti-freeze and corrosion inhibiting agents which are suitable for light alloy engines and radiators.
Power steering	approx. 0.6 l hydraulic fluid in accordance with ATF Dexron II D
Fuel tank	924 S: approx. 66 l, of which 9 l reserve 944 up to mod.. '85: approx. 66 l, of which 9 l reserve 944 as from mod. '85/2: approx. 80 l, of which 8 l reserve
Brake fluid reservoir	approx. 0.2 l brake fluid in accordance with SAE J 1703, DOT 3 or DOT 4
Windscreen washer system	approx. 6 l, 944 mod. '89 without head-lamp cleaning system approx. 3 l.

Filling capacities

Manual transmission with differential	approx. 2 l hypoid transmission oil SAE 75W/90 of API classification GL 5 or MIL-L 2105 B or SAE 80 of API classification GI 4 or MIL-L 2105.
Automatic transmission	Filling capacity approx. 6.5 l, change quantity approx. 2.8 l ATF Dexron II D
Rear axle drive	approx. 1 l hypoid transmission oil SAE 90 (optionally 75W/90) of API classification GL 5 or MIL-L 2105 B