

PORSCHE



**78, 79
80, 81
Models**

911 SC, Turbo 3.3

**Tech-
nical
Specifi-
cations**



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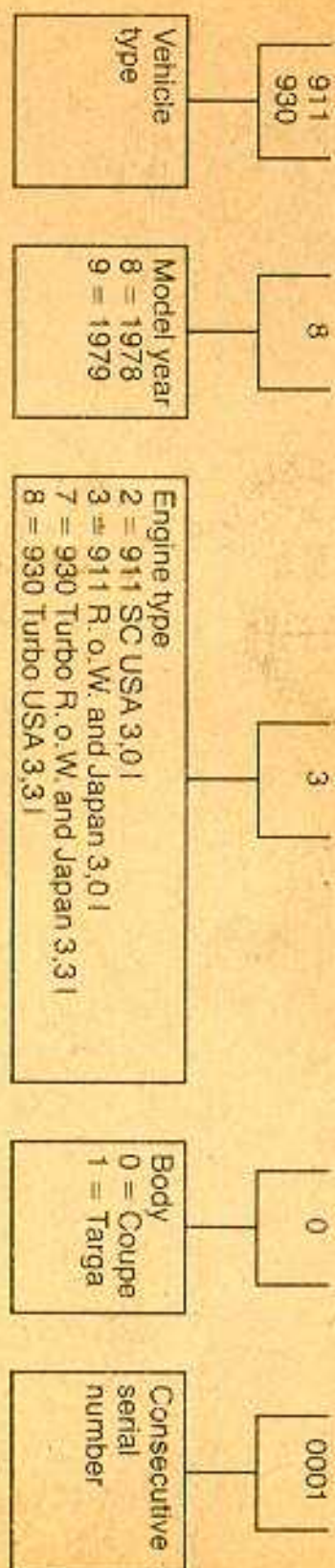
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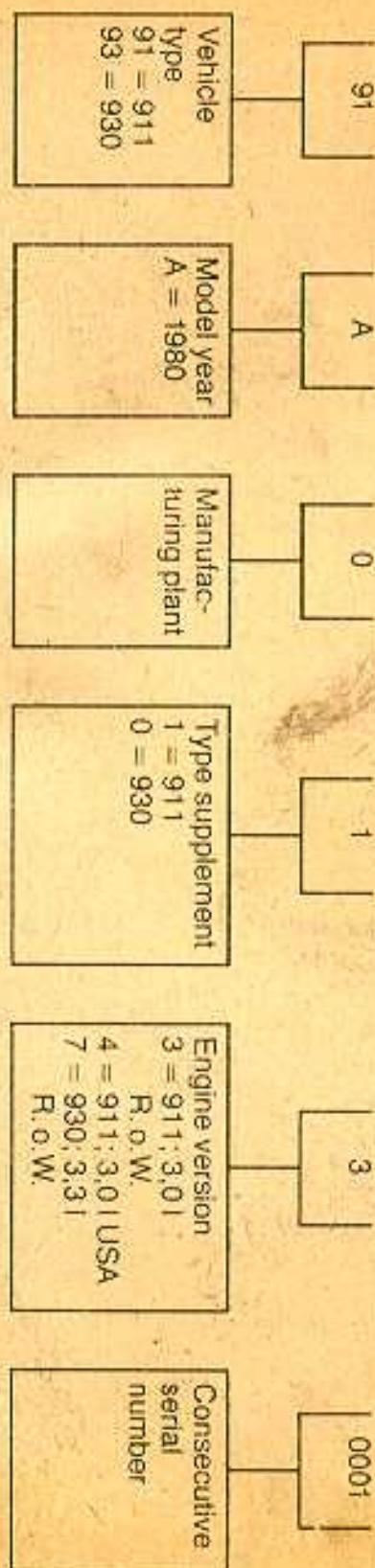
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Chassis numbers (1978 and 1979 models)



Chassis numbers (1980 models)



Important conversion factors and new units of measurement

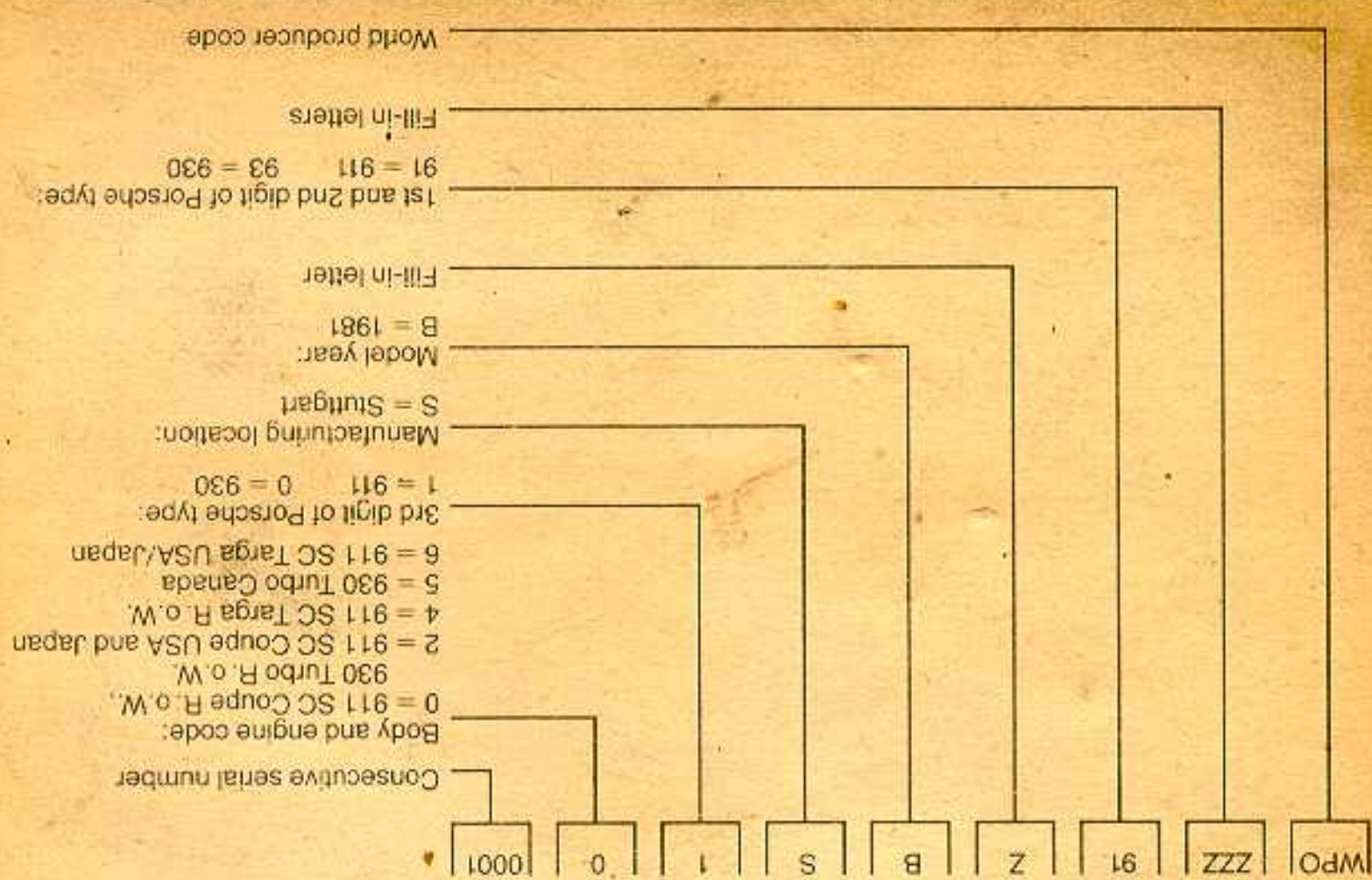
	Old units		New units
Pressure	tech. atmosphere at	(kp/cm ²)	Bar (bar)
Output	Horsepower	HP	Kilowatt (kW)
Force	Kilopond	kp	Newton (N)
Power	Kilopondmeter	kpm	Newtonmeter (Nm)

Conversion factors

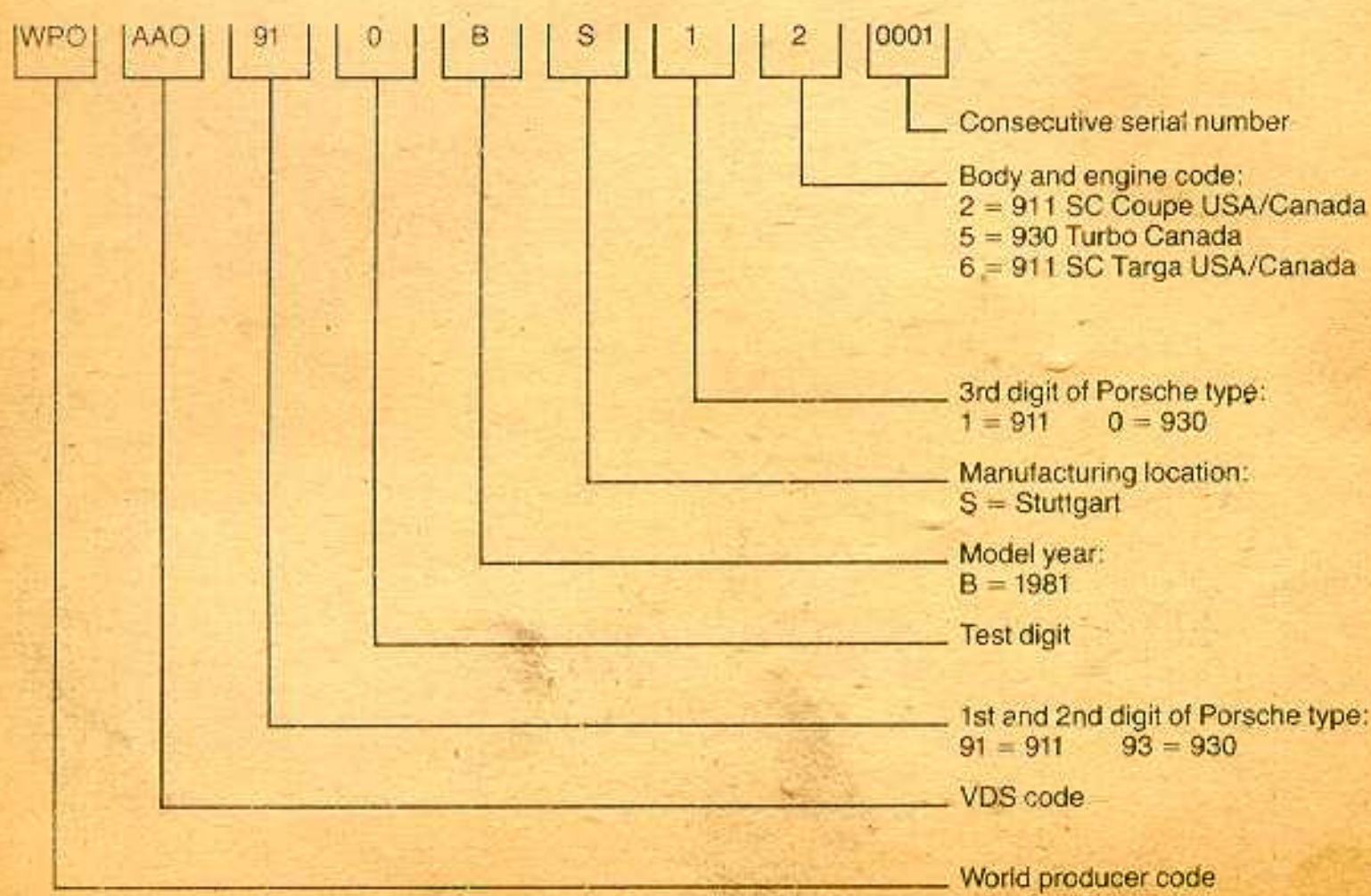
at (kp/cm ²)	in bar	x 0.981
kp	in N	x 9.81
HP	in kW	x 0.736
kpm	in Nm	x 9.81
m/s	in km/h	x 3.6
at	in mm Hg	x 735.56
km/h	in mph (miles)	x 0.621
°F (Fahrenheit)	in °C	(°F - 32) x 0.555
l	in U.S. gal.	x 0.264
l	in Imp. gal.	x 0.22

The conversion factor 10 is applied for the conversion of tightening torque from kpm to Nm. This is more than sufficient for shop practice.

Chassis numbers (1981 models) Rest of World and Japan



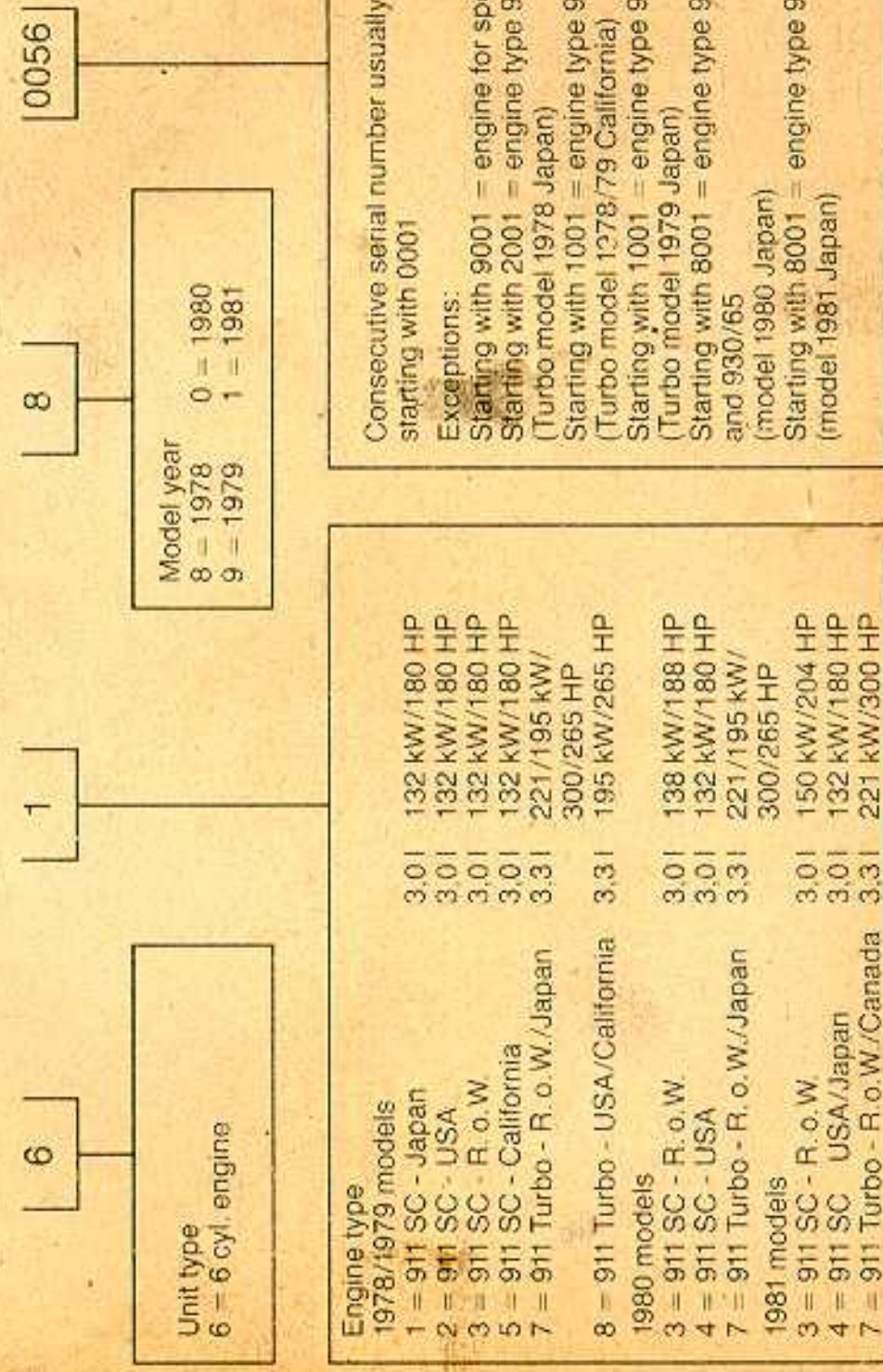
Chassis numbers (1981 models) USA and Canada



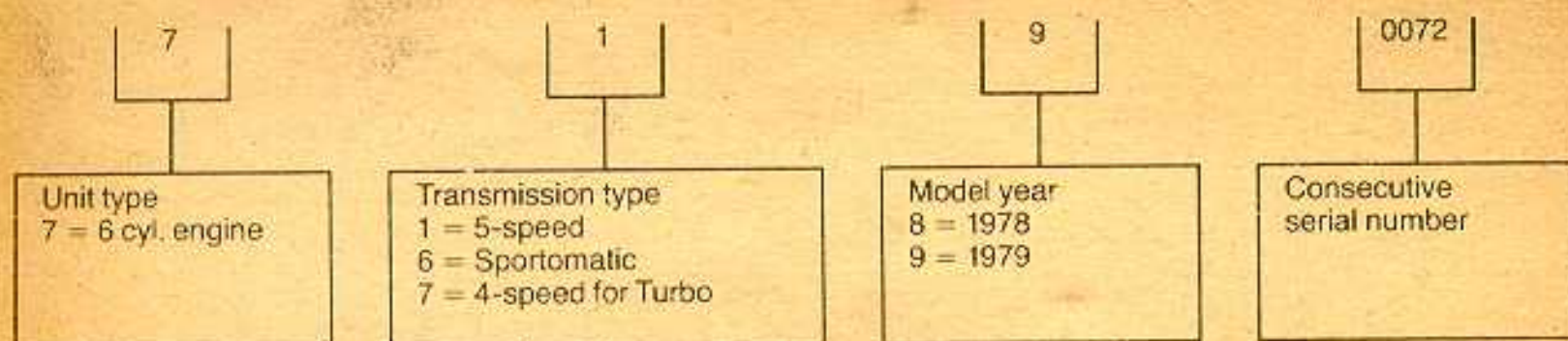
Engine type designations

Year mfd.	Model year	Engine type designation		Internal	Displace-ment	kw/HP
		Official				
1977/78	1978	911 SC	R. o. W.	930/03	3.0 ltr.	132/180
		911 SC	R. o. W. Spm.	930/13	3.0 ltr.	132/180
		911 SC	USA	930/04	3.0 ltr.	132/180
		911 SC	Japan	930/05	3.0 ltr.	132/180
		911 SC	Japan Spm.	930/15	3.0 ltr.	132/180
		911 SC	California	930/06	3.0 ltr.	132/180
		911 Turbo	R. o. W.	930/60	3.3 ltr.	221/300
		911 Turbo	USA	930/61	3.3 ltr.	195/265
		911 Turbo	Japan	930/62	3.3 ltr.	195/265
		911 Turbo	California	930/63	3.3 ltr.	195/265
1979/80	1980	911 SC	USA	930/07	3.0 ltr.	132/180
		911 SC	Japan	930/08	3.0 ltr.	132/180
		911 SC	R. o. W.	930/09	3.0 ltr.	138/188
		911 Turbo	R. o. W.	930/60	3.3 ltr.	221/300
		911 Turbo	USA	930/64	3.3 ltr.	195/265
		911 Turbo	Japan	930/65	3.3 ltr.	195/265
1980/81	1981	911 SC	R. o. W.	930/10	3.0 ltr.	150/204
		911 SC	USA	930/16	3.0 ltr.	132/180
		911 SC	Japan	930/17	3.0 ltr.	132/180
		911 Turbo	R. o. W.	930/60	3.3 ltr.	221/300
		911 Turbo	Canada	930/60	3.3 ltr.	221/300

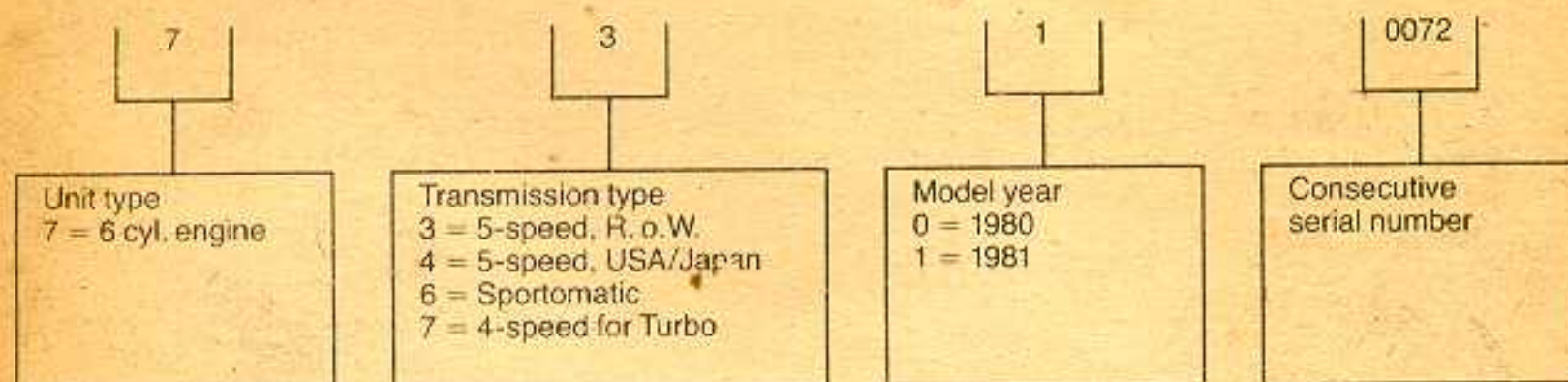
Engine numbers



Transmission numbers (1978/79 models)



Transmission numbers (1980/81 models)



Transmission type codes

Trans- mission type	Number of gears	1st gear	2nd gear	3rd gear	4th gear	5th gear	Pinion/ ring gear	As from chassis number	Remarks
1978 mod.									
915.61	5	11/35	18/33	23/29	26/26	28/23	8/31	718 0001	Manual transm. 911 worldwide
930.34	4	16/36	23/30	28/25	32/20	—	9/38	778 0001	Manual transm. Turbo worldwide
925.16	3	15/36	21/30	27/25	—	—	8/27	768 0001	Sportomatic worldwide
1979 mod.									
915.61	5	11/35	18/33	23/29	26/26	28/23	8/31	719 0001	Manual transm. 911 worldwide
930.34	4	16/36	23/30	28/25	32/20	—	9/38	779 0001	Manual transm. Turbo worldwide
925.16	3	15/36	21/30	27/25	—	—	8/27	769 0001	Sportomatic worldwide
1980 mod.									
915.62	5	11/35	18/33	23/29	26/26	28/22	8/31	730 0001	Manual transm. 911 R. o. W.
915.63	5	11/35	18/32	23/29	26/26	28/23	8/31	740 0001	Manual transm. 911 USA/Japan
930.34	4	16/36	23/30	28/25	32/20	—	9/38	770 0001	Manual transm. Turbo worldwide
925.16	3	15/36	21/30	27/25	—	—	8/27	760 0001	Sportomatic worldwide
1981 mod.									
915.62	5	11/35	18/33	23/29	26/26	28/22	8/31	731 0001	Manual transm. 911 R. o. W.
915.63	5	11/35	18/32	23/29	26/26	28/23	8/31	741 0001	Manual transm. 911 USA/Japan
930.34	4	16/36	23/30	28/25	32/20	—	9/38	771 0001	Manual transm. Turbo worldwide

Engine specifications for 1978, 1979, 1980 and 1981 models (911 SC)

Engine		911 SC		
Internal engine code		930/03/13/04/05/15 06/07/08/16/17	930/09/19	930/10
Design		Four stroke internal combustion engine (two banks of cylinders opposite each other)		
No. of cylinders		6	6	6
Bore	mm/inch	95,0/3,74	95,0/3,74	95,0/3,74
Stroke	mm/inch	70,4/2,77	70,4/2,77	70,4/2,77
Total displacement	cm ³ /inch ³	2994/182,7	2994/182,7	2994/182,7
Compression ratio		8,5 : 1	8,6 : 1	9,8 : 1
			(930/07/08/16/17)	
Max. engine power acc. DIN 70020	kW/HP	132/180	138/188	150/204
Net power, SAE J 245 at engine speed	kW/HP rpm	128/172 5500	134/179 5500	145/195 5900
Max. torque acc. DIN 70020	Nm/kpm	265/27	245/25 (930/04/06/05/15/07/08)	265/27 267/27
Net torque, SAE J 245 at engine speed	Nm/ft lbs rpm	257/189 4200	237/175 4200 (930/04/06/05/15/07/08)	257/189 4300
Max. liter output acc. DIN 70020	kW/l, HP/l	44/60	46,1/62,8	50,1/68,1
acc. SAE J 245	kW/l, HP/l	42/57	44,8/59,8	48,4/65,1
Max. permissible speed	rpm	7000	7000	7000

Engine		911 SC		
Internal engine code		930/03/13/04/05/15 06/07/08/16/17	930/09/19	930/10
Cut-off speed				
Speed governed by switching-off ignition	rpm	6800 ± 200 (930/03/13)	6500 ± 200	6800 ± 200
Speed governed by switching off fuel pump	rpm	6700 + 300 (930/04/05/15/06)		
	rpm	6500 + 200 (930/07/08/16/17)		
Engine weight (dry)	kg/lbs. approx.	200/441 190/419 (930/07/08)	190/419	190/419
Fuel octane	RON	91 91 lead-free (USA)	91	98
Cooling system		air-cooling from axial blower on alternator		
Blower drive		by v-belt off of crankshaft		
Crankshaft/blower ratio		1 : 1,81 1 : 1,68 for 930/16/17	1 : 1,68	1 : 1,68
Air delivery rate		1380 l/s at 6000 rpm of crankshaft	1500 l/s at 6000 rpm of crankshaft	1500 l/s at 6000 rpm of crankshaft
Drive belt		9,5 x 710	9,5 x 710	9,5 x 710

Engine	911 SC
Internal engine code	930 (all engine types)

Lubricating system

Oil cooling

dry sump lubrication

oil cooler on crankcase in blower air stream,
plus cooling pipe coil or pipe oil coolerOil pressure at 90° C
oil temperature and speed
of 5000 rpm

bar

approx. 4,0

Oil consumption

ltr./1000 km

approx. 1,5

Crankcase

Crankshaft

two-piece aluminum alloy

Crankshaft bearings

forged (tenifer treated)

Connecting rods

8 plain bearings

Connecting rod bearings

forged (steel)

Piston pin bearing in conrod

plain bearing half shells

press-fit bronze bush

Pistons

Piston pin

cast aluminum

Piston rings

floating installation, held by circlips

2 compression rings, 1 oil scraper ring

Engine	911 SC
Internal engine code	930 (all engine types)

Cylinders

Cylinder head

nikasil (Mahl) and alusil (KS)

Valve seat insert

single alloy cylinder head

Valve guide

shrink-fit made of annealed sintered steel
thermohedul FS

Valve arrangement for each cylinder

1 intake and 1 exhaust valve in vee suspension

Exhaust valve

without sodium filling, with reinforced seat surface

Valve springs

2 coil springs per valve

Valve timing

left and right one each overhead camshaft

Camshaft

cast, 4 bearings direct in camshaft housing

(no bearing shells)

Camshaft drive

by chain

Valve clearance on cold engine

Intake

0,1 mm measured between valve and rocker arm

Exhaust

Engine		911 SC
Internal engine code		930 (all engine types)
Clutch		single plate dry type
Diameter	mm	225
(manual transmission)		
Contact pressure	N (kp)	7800...8500 (775...866)
Diameter (sportomatic)	mm	190
Contact pressure	N (kp)	7848...8633 (800...880)
Fuel supply		K-Jetronic (CIS) 1 electric roller cell pump

Engine specifications for 1978, 1979, 1980 and 1981 models (911 Turbo)

Engine		911 Turbo	
Internal engine code		930/60	930/61/62/63/64/65
Design		four stroke internal combustion engine (two banks of cylinders opposite each other)	
No. of cylinders		6	6
Bore	mm/inch	97,0/3,82	97,0/3,82
Stroke	mm/inch	74,4/2,93	74,4/2,93
Total displacement	cm ³ /inch ³	3299/201,3	3299/201,3
Compression ratio		7,0 : 1	7,0 : 1
Max. engine power	kW/HP	221/300	195/265
Net power	kW/HP	221/296	195/261
at engine speed	rpm	5500	5500
Max. torque	Nm/kpm	412/42	395/40,3
Net torque	Nm/lbft	412/304	395/291
at engine speed	rpm	4000	4000
Max. liter output	kW/l, HP/l	67/91	67/91
Max. permissible speed	rpm	6700	6700

Engine Internal engine code		911 Turbo 930/60	930/61/62/63/64/65
Max. permissible constant speed	rpm	6000	6000
Cut-off speed of speed governor in distributor	rpm	7000 $\pm$ 200	7000 $\pm$ 200
Engine weight (dry)	kg/lbs	230/507	240/529
Fuel octane	RON	98	96 lead-free

Engine
Internal engine code

911 Turbo
930 (all engine types)

Cooling system

Blower drive
Crankshaft/blower ratio
Air delivery rate
Blower drive belt

air-cooling from axial blower on alternator
by v-belt off of crankshaft
1 : 1,68
1500 l/s at 6000 rpm of crankshaft
9,5 x710

Lubricating system

Oil cooling

Oil pressure at 90° C oil
temperature and speed
of 5000 rpm
Oil consumption

dry sump lubrication
oil cooler on crankcase in blower air stream,
plus cooling pipe coil or pipe oil cooler

bar
l/1000 km
approx. 5,0
approx. 1,0 to 2,0

Crankcase

Crankshaft
Crankshaft bearings
Connecting rods

two-piece aluminum alloy
forged (tenifer treated)
3 plain bearings
forged steel

Engine	911 Turbo
Internal engine code	930 (all engine types)
Connecting rod bearings	plain bearing half shells
Piston pin bearing in conrod	press-fit bronze bush
Intermediate shaft bearing	2 plain bearings
Pistons	forged alloy
Piston pin	floating installation, held by circlips
Piston rings	2 compression rings, 1 oil scraper ring
Cylinders	nikasil (Mahle)
Cylinder head	light alloy single cylinder head
Valve seat insert	shrink-fit, made of annealed sintered steel
Valve guide	thermoheul FS
Arrangement of valves per cylinder	1 intake and 1 exhaust valve in vee suspension
Exhaust valve	sodium filled with reinforced seat surface
Valve springs	2 coil springs per valve
Valve timing	left and right one each overhead camshaft
Camshaft	cast, 4 bearings direct in camshaft housing (no bearing shells)

Engine	911 Turbo
Internal engine code	930 (all engine types)
Camshaft drive	by chain
Valve clearance on cold engine	
Intake	0,10 mm, measured between valve and rocker arm
Exhaust	
Clutch	single plate dry type
Diameter	
(manual transmission)	mm 240
Contact pressure	N (kp) 11200 to 12100 (1142 to 1233)
Fuel supply	K-Jetronic (CIS)
Supercharging	2 electric roller cell pumps in series KKK exhaust gas turbocharger

Engine

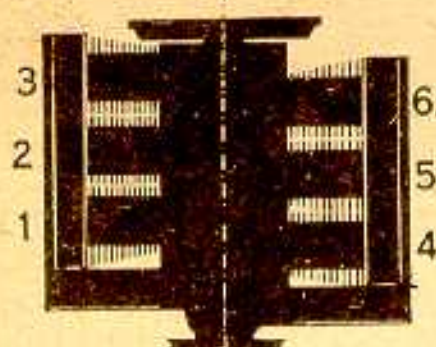
911 SC and 911 Turbo

Electrical system

Battery voltage	V	12	
Battery capacity	Ah	66 (88 optional extra)	
Alternator/output	A/W	70/980	
Regulator switch		matched to alternator	(black plastic housing)
Ignition		CDI without contacts	
Ignition transformer		Bosch	
Firing order		1 - 6 - 2 - 4 - 3 - 5	

Designation of cylinders on 6 cylinder engine

Driving direction

Firing order
1 - 6 - 2 - 4 - 3 - 5**Engine tolerance and wear limit survey - 911 SC**

Note: B = bore W = shaft

Measuring point	Installation size with tolerances mm	Clearance (+) or press fit (-) from to		Wear limits in mm
Crankshaft - main bearing	B 60,020 - 60,059	+ 0,010	+ 0,072	visual inspect.
Bearings 1 - 7 (d 1)	W 59,971 - 59,990			59,960
Crankshaft - main bearing	B 31,041 - 31,084	+ 0,048	+ 0,104	visual inspect.
Bearing 8 (d 3)	W 30,980 - 30,993			30,970
Crankpin - conrod bearing	B 53,020 - 53,059	+ 0,030	+ 0,088	visual inspect.
(d 2)	W 52,971 - 52,990			52,960
Crankshaft runout (measured on bearings 4 and 8 with bearings 1 and 7 in vee blocks)				max. 0,04
Crankshaft unbalance				max. 10 cmg.
Crankshaft - main bearing				
Axial play		+ 0,110	+ 0,195	0,30
Crankshaft - timing gear	B 41,975 - 42,000	- 0,002	- 0,038	
	W 42,002 - 42,013			
Crankshaft - distributor drive	B 41,975 - 42,000	- 0,002	- 0,038	
	W 42,002 - 42,013			
Crankshaft - flywheel	B 50,002 - 50,021	+ 0,021	+ 0,028	
	W 50,000 - 50,030			
Crankshaft - pulley	B 30,000 - 30,033	+ 0,007	+ 0,073	
	W 29,960 - 29,993			
Pulley: radial runout				max. 0,15
lateral runout				max. 0,20

Engine tolerance and wear limit survey – 911 Turbo

Note: B = bore W = shaft

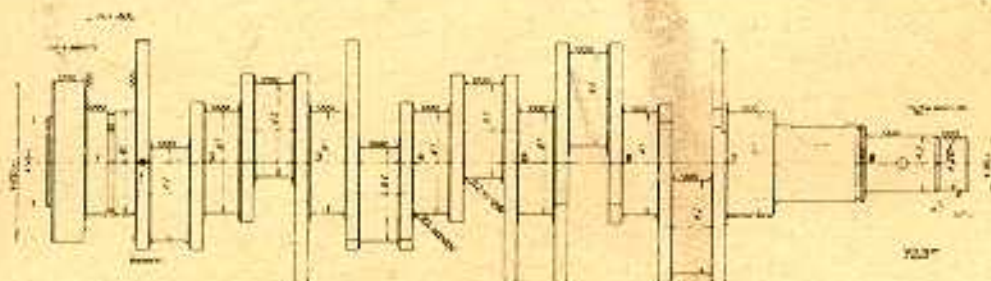
Measuring point	Installation size with tolerances mm	Clearance (+) or press fit (–) from to		Wear limits in mm
Crankshaft – main bearing	B 60,020 – 60,059	+ 0,010	+ 0,072	visual inspect.
Bearings 1 – 7 (d 1)	W 59,971 – 59,990			59,960
Crankshaft – main bearing	B 31,041 – 31,084	+ 0,048	+ 0,104	visual inspect.
Bearing 8 (d 3)	W 30,980 – 30,993			30,970
Crankpin – conrod bearing (d 2)	B 55,020 – 55,059	+ 0,030	+ 0,088	visual inspect.
	W 54,971 – 54,990			54,960
Crankshaft runout (measured on bearings 4 and 8 with bearings 1 and 7 in vee blocks)				max. 0,04
Crankshaft unbalance				max. 10 cmg.
Crankshaft – main bearing		+ 0,110	+ 0,195	0,30
Axial play		– 0,002	– 0,038	
Crankshaft – timing gear	B 41,975 – 42,000			
	W 42,002 – 42,013			
Crankshaft – distributor drive	B 41,975 – 42,000	– 0,002	– 0,038	
	W 42,002 – 42,013			
Crankshaft – flywheel	B 90,000 – 90,030	0,0	+ 0,049	
	W 89,780 – 90,000			
Crankshaft – pulley	B 30,030 – 30,033	+ 0,007	+ 0,073	
	W 29,960 – 29,993			
Pulley: radial runout				max. 0,15
lateral runout				max. 0,20

Crankshaft – standard and repair sizes – 911 SC

Size	Crankcase diameter bearings 1–8	All main bearings d 1	Connecting rod bearings d 2	Main bearing dia. d 3 of crankshaft bearing 8	Collar dia. d 4	Seat for timing gear dia. d 5	Crankshaft pulley dia. d 6	Thrust bearing width A
Stand.		59,971...59,990	52,971...52,990	30,980...30,993	89,780...90,000	42,002...42,013	29,960...29,993	28,000...28,060
- 0,25		59,721...59,740	52,721...52,740	30,730...30,743				
- 0,50		59,471...59,490	52,471...52,490	30,480...30,493	89,280...89,500		29,370...29,500	
- 0,75		59,221...59,240	52,221...52,240	30,230...30,243				
- 1,00		58,971...58,990	51,971...51,990	29,980...29,993				

Normal
65,000...65,019

Oversize
65,250...65,269



Only grind bearing surfaces for radial oil seals to 29,5 and 89,5 as specified here when scoring is too deep. Otherwise repolish as necessary: 3 microns.

After grinding give oil bores a 0,5 radius. Break sharp edges with 0,2 to 0,5 radius. Max. radial runout in reference to take-up in — —: max 0,04.

Specification for tenifer treatment according to Tenifer 120 W PN 1053 feroflux.

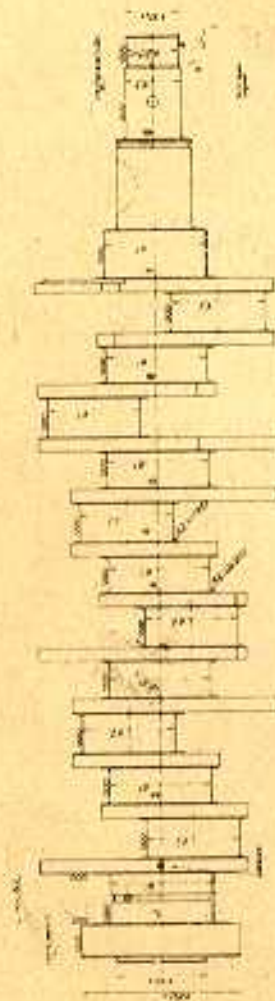
Never straighten main bearings 3 and 5 after tenifer treatment. Straightening of the other main bearing journals through stemming in the radii is permitted.

Color codes for repair sizes

1st repair size yellow paint dot
2nd repair size green paint dot
3rd repair size yellow paint dot
4th repair size white paint dot

Crankshaft - standard and repair sizes - 911 Turbo

Size	Crankcase diameter bearings 1-8	All main bearings d 1	Connecting rod bearings d 2	Main bearing dia. d 3 or crankshaft bearing 8	Collar dia. d 4	Seat for timing gear dia. d 5	Crankshaft pulley dia. d 6	Thrust bearing width A
Stand. Standard		59,971...59,990	54,971...54,990	30,980...30,993	89,780...90,000	42,002...42,013	29,960...29,993	28,000...28,060
- 0,25	65,000...65,019	59,721...59,740	54,721...54,740	30,730...30,743				
- 0,50	Oversize	59,471...59,490	54,471...54,490	30,480...30,493	89,280...89,500		29,370...29,500	
- 0,75		59,221...59,240	54,221...54,240	30,230...30,243				
- 1,00	65,250...65,269	58,971...58,990	53,971...53,990	29,980...29,993				



Only grind bearing surfaces for radial oil seals to 29,5 and 89,5 as specified here when scoring is too deep. Otherwise repolish as necessary: 3 microns.

After grinding give oil bores a 0,5 radius. Break sharp edges with 0,2 to 0,5 radius. Max. radial runout in reference to take-up in — — : max. 0,04.

Specification for tenifer treatment according to Tenifer 120 W PN 1053 ferroflux.

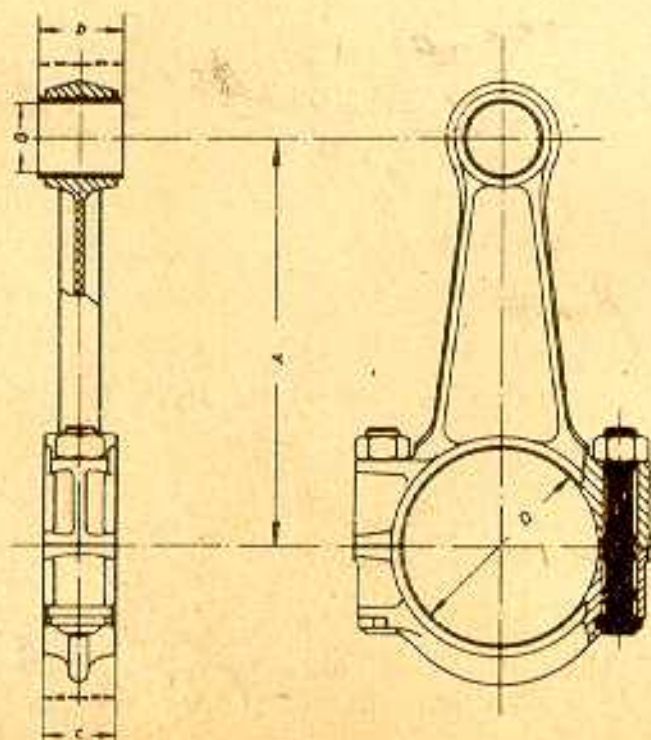
Never straighten main bearings 3 and 5 after tenifer treatment. Straightening of the other main bearing journals through stemming in the radii is permitted.

Color codes for repair sizes

1st repair size blue paint dot
2nd repair size green paint dot
3rd repair size yellow paint dot
4th repair size white paint dot

Measuring point	Installation size with tolerances mm	Clearance (+) or press fit (-) from to	Wear limit mm
Crankcase			
Case bore for main bearings:			
Bearing 1 - 8	65,000...65,019		
Oversize	65,250...65,269		
Case bore for intermediate shaft:			
Bearing 1 (thrust bearing)	27,500...27,521		
Bearing 2	26,500...26,521		
Spring for safety valve:			
Relaxed length	70,00		
Spring force at 52 mm	104 N/10,6 kp		
Spring force at 46 mm	138 N/14,1 kp		
Spring wire dia.	1,8		
Spring for pressure relief valve:			
Relaxed length	86,6		
Spring force at 50,5 mm	82,4 N/8,4 kp		
Spring force dia.	1,5		
Installation Note:			
The pressure relief valve spring (86,8 mm long) may only be used in conjunction with a spring guide (safeguard against bending).			
Never press springs flat.			

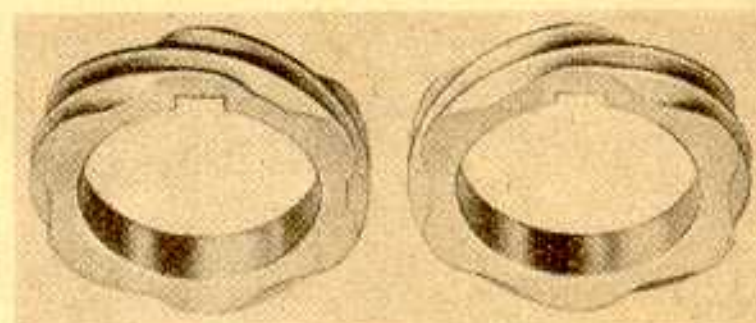
Measuring point	Install. size with tolerances mm		Clearance (+) or press fit (-)		Wear limit mm
	911 SC	911 Turbo	from	to	
Connecting rods					
A Distance between centers	127,75-127,80	126,95-127,00			
b Width of conrod bush	24,8-25,0	24,5-25,0			
c Width at big end	21,7-21,8	21,7-21,8			
Width at crankpin	22,00-22,05	22,00-22,05	+0,200	+0,350	
D Conrod dia. (without bearing shell)	56,000-56,019	58,000-58,019			
G Conrod bush dia. installed in conrod (finished)	22,020-22,033	23,020-23,033			
Piston pin bushing/piston pin clearance			+0,020	+0,037	0,055



Installing drive gear for left-hand turning distributor on crankshaft

Remarks:

From 1978 models on the engines use a left-hand turning distributor and therefore required a new drive gear with modified teeth on the crankshaft.



For left-hand turning distributor
(with Porsche manufacturing
code stamped)

For right-hand turning distributor
(with VW manufacturing
code stamped)

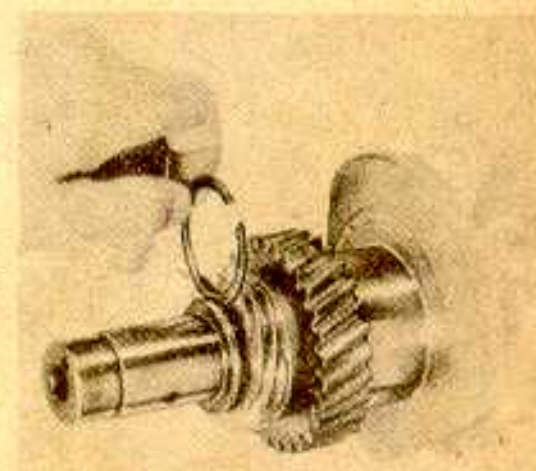
Installing circlip on crankshaft

To take up axial play on distributor drive gear, there are circlips in different thicknesses.

The following circlips are available:

Part No.	Thickness mm	Code
901.102.148.00	2,4	0
901.102.148.01	2,3	1
901.102.148.02	2,2	2
901.102.148.03	2,1	3

Install timing gear, intermediate ring and drive gear for left-hand turning distributor on crankshaft against stop. Find correct circlip thickness by inserting different circlips. Circlip must be installed without play.



Connecting rod weight groups - 911 SC

Connecting rods are grouped according to weights.

Final digits of the part number indicate the specified weight group.

These final digits are stamped on the connecting rod shank if it is supplied as a replacement part.

Weight Over grams	Under grams	Weight group for service	Service Conrod part number	Conrod code
633	642	1	930.103.015.51	51
642	651	2	930.103.015.52	52
651	660	3	930.103.015.53	53
660	669	4	930.103.015.54	54
669	678	5	930.103.015.55	55
678	687	6	930.103.015.56	56
687	696	7	930.103.015.57	57
696	705	8	930.103.015.58	58
705	714	9	930.103.015.59	59

Connecting rod weight groups - 911 Turbo

Weight Over grams	Under grams	Weight group for service	Service Conrod part number	Conrod code
624	633	4	930.103.020.74	74
633	642	5	930.103.020.75	75
642	651	6	930.103.020.76	76
651	660	7	930.103.020.77	77
660	669	8	930.103.020.78	78

Note:

Connecting rods installed in a given engine must not differ in weight by more than 9 grams. To determine weight group, weigh the complete connecting rod without bearing shells.

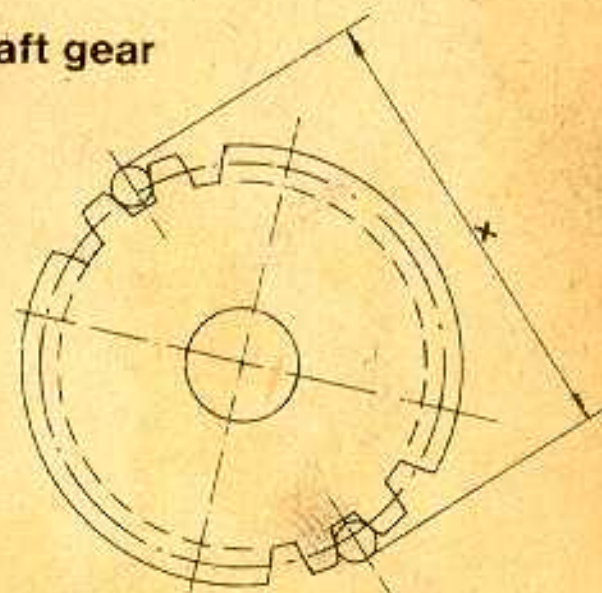
Matching intermediate shaft and crankcase

See marking on left half of crankcase below alternator support: 0 or 1.

Distance between centers mm	Crank- case mark	Crankshaft gear marking	Intermediate shaft gear marking	Backlash mm
103.975- 103.990	0	0 Installation	0 still possit	0.029-0.049
		1 0	0 1	0.016-0.042 0.017-0.043
103.990- 104.000	1	1 Installation	1 still possible	0.012-0.041
		0 1	1 0	0.025-0.049 0.025-0.048

Checking intermediate shaft gear

Use 4.5 mm dia. steel rollers to measure gear (see sketch).



Intermediate shaft gear (standard) - wear limit
Intermediate shaft gear (marked 1) - wear limit

x 136.5 mm
= 136.55 mm

Replace intermediate shaft gears and crankshaft gears in sets only.

Measuring point	Installation size with tolerances mm	Clearance press fit from	(+) or (-) to	Wear limits mm
Intermediate shaft				
Bearing 1 Crankcase bore - shaft	B 27.500-27.521 W 25.000-24.980			
Bearing 2 Crankcase bore - shaft	B 26.500-26.521 W 23.980-23.967			
Intermediate shaft clearance		+ 0.030	+ 0.084	
Intermediate shaft axial play		+ 0.040	+ 0.133	0.16
Chain guide - bolt	B 8.000- 8.015 W 7.822- 7.837			
Pinion - distributor shaft	B 12.456-12.474 W 12.444-12.455	+ 0.001	+ 0.030	
Distributor - crankcase	B 27.000-27.021 W 26.947-26.980	+ 0.020	+ 0.074	
Flywheel - drive shaft steel bushing	B 50.000-50.030 W 49.975-49.991	+ 0.009	+ 0.055	
Flywheel				
Lateral runout				max. 0.10
Radial runout				max. 0.20

Measuring point	Installation size with tolerances mm	Clearance press fit from	(+) or (-) to	Wear limits mm
Timing chain case				
Sprocket pivot shaft - chain tensioner housing	B 15.000-15.018 W 14.973-14.984	+ 0.016	+ 0.045	Visual inspection
Sprocket pivot shaft - sprocket carrier	B 15.000-15.018 W 14.973-14.984	+ 0.016	+ 0.045	
Sprocket carrier - sprocket pin	B 15.000-15.018 W 14.989-15.000	0.000	+ 0.029	
Sprocket - sprocket pin	B 15.032-15.050 W 14.989-15.000	+ 0.032	+ 0.610	Visual inspection
Pin - chain guide	B 8.000- 8.015 W 7.886- 7.895	+ 0.105	+ 0.129	
Pin - timing chain case	B 7.857- 7.872 W 7.886- 7.895	- 0.014	- 0.038	

Parallel alignment of both sprockets may not deviate by more than 0.25 mm.

Measuring point	Installation size with tolerances mm	Clearance (+) or press fit (-) from to		Wear limits mm
Camshaft housing – camshaft				
Camshaft bearings	B 48,967 - 48,992	+0,025	+0,066	0,10
Camshaft	W 48,926 - 48,942			
Camshaft – axial play		+0,150	+0,200	0,40
Camshaft – timing gear flange	B 30,000 - 30,013 W 29,979 - 30,000	0,000	+0,034	
Camshaft – runout, measured on center bearing (between points)				max. 0,02
Rocker arm shaft – camshaft case	B 18,000 - 18,018 W 17,992 - 18,000	Rocker arm shaft held firm by wedge effect		
Rocker arm – rocker arm shaft	B 18,016 - 18,027 W 17,992 - 18,000	+0,016	+0,035	0,080
Axial play		+0,100	+0,350	0,50

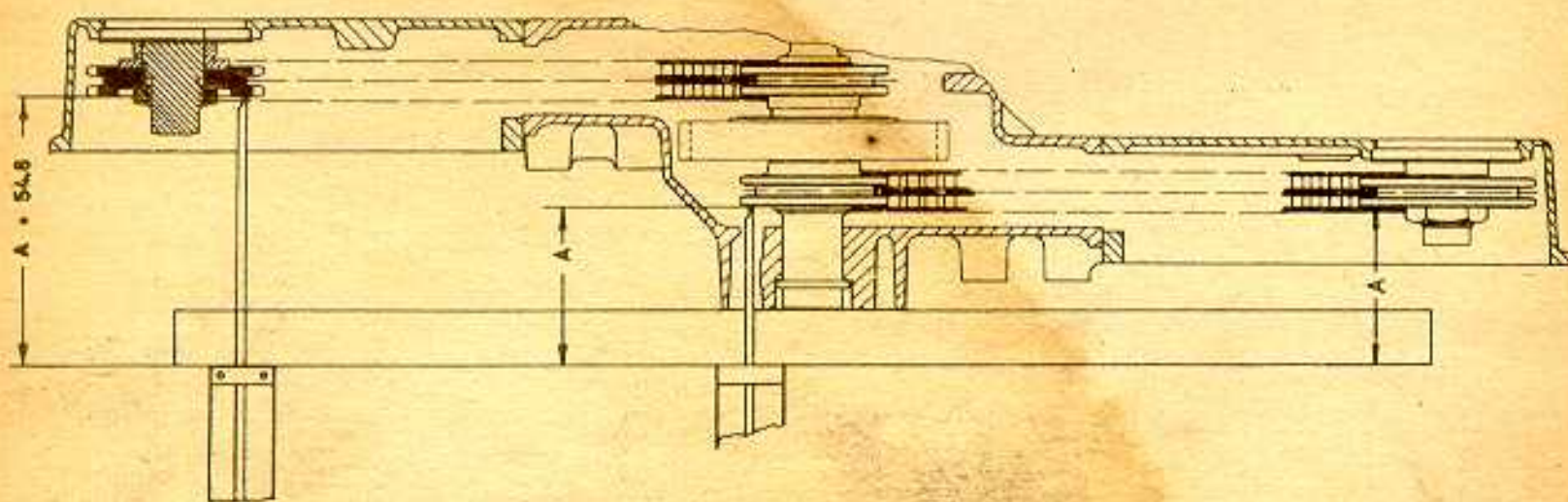
Checking parallel alignment of timing chain sprockets

Before measuring, push intermediate shaft and camshaft axially toward flywheel to set bearing thrust flanges in position.

Measurement is made through hole below intermediate shaft against side of forward chain sprocket on intermediate shaft (dimension A).

This dimension must also be achieved at sprocket for cylinders 4 – 6. Use shims if necessary (maximum permissible difference is 0.25 mm).

Sprocket for cylinders 1 – 3, mounted on intermediate shaft, is positioned 54.8 mm further to front. This 54.8 mm (design dimension) must be considered when determining dimension A. (maximum permissible difference is 0.25 mm).



Example: measured dimension A = 78.7 mm

This means sprocket of cylinders 1 – 3 is $A + 54.8 = 78.7 + 54.8 = 133.5$ mm

Pistons and cylinders (sizes, weights and marks)

Size	Code	Nominal dia.	911 SC Piston dia. D Mahle	911 SC Piston dia. D KS	911 Turbo Piston dia. D Mahle
Standard	0	95/97	94,965 - 94,975 94,972 - 94,982 94,979 - 94,989 94,986 - 94,996	94,963 - 94,977 94,970 - 94,984 94,977 - 94,991 94,984 - 94,998	96,960 - 96,970 96,967 - 96,977 96,974 - 96,984 96,981 - 96,991
			Nikasil cylinder dia.	Alusil cylinder dia.	Nikasil cylinder dia.
Standard	0	95/97	95,000 - 95,007 95,007 - 95,014 95,014 - 95,021 95,021 - 95,028	95,000 - 95,007 95,007 - 95,014 95,014 - 95,021 95,021 - 95,028	97,000 - 97,007 97,007 - 97,014 97,014 - 97,021 97,021 - 97,028
Play between piston and cylinder			0,025 - 0,042	0,023 - 0,044	0,030 - 0,047

Weight classes of pistons – 911 SC from 1980 models

Installation specifications:

1. Always only install pistons of same make and same weight class in one engine.
2. Piston pins must always remain with matching pistons and must not be mixed up even within an engine. Pay attention to this, marking pistons/pins if necessary, when disassembling and assembling engine.

Weight classes for MAHLE pistons

Pistons weighed with components (piston pin, piston rings, circlips)

	Total piston weight in grams Weight class within one set		Code
Engine type	930/09	930/07/08	
Standard production	660 to 664 664 to 668	636 to 640 640 to 644	— — —
Max. weight difference 4 grams	668 to 672 672 to 676	644 to 648 648 to 652	+ ++
For service sector	660 to 668	636 to 644	— — or —
Max. weight difference 8 grams	668 to 676	644 to 652	+ or ++

Weight classes for KS pistons

Pistons weighed with components (piston pin, piston rings, circlips)

	Total piston weight in grams Weight class within one set		Code
Engine type	930/09		
Standard production	695 to 699 699 to 703		— — —
Max. weight difference 4 grams	703 to 707 707 to 711		+ ++
For service sector	695 to 703		— — or —
Max. weight difference 8 grams	703 to 711		+ or ++

Weight classes of pistons – 911 SC from 1981 models

Weight classes for MAHLE pistons

Pistons weighed with components (piston pin, piston rings, circlips)

	Total piston weight in grams Weight class within one set		Code
Engine type	930/10 (R. o. W.)	930/16/17 (USA/Japan)	
Standard production	668 to 672	636 to 640	— —
	672 to 676	640 to 644	—
Max. weight difference 4 grams	676 to 680	644 to 648	+
	680 to 684	648 to 652	++
For service sector	668 to 676	636 to 644	— — or —
Max. weight difference 8 grams	676 to 684	644 to 652	+ or ++

Weight classes for KS pistons

Pistons weighed with components (piston pin, piston rings, circlips)

	Total piston weight in grams Weight class within one set		Code
Engine type	930/16/17		
Standard production	673 to 677		— —
	677 to 681		—
Max. weight difference 4 grams	681 to 685		+
	685 to 689		++
For service sector	673 to 681		— — or —
Max. weight difference 8 grams	681 to 689		+ or ++

Checking pistons and cylinders

Cylinders

D1 = Measuring point for wear and ovality

30 mm below cylinder upper edge

The cylinder is worn, if the distance at this measuring point is 0,08 mm more than the installation size. The ovality of a cylinder is determined by measuring in directions a and b. The difference between a and b must not exceed 0,04 mm.

D2 = Measuring point for piston pin gap

Rings slid in a height of cylinder base gasket.

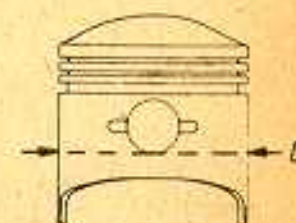
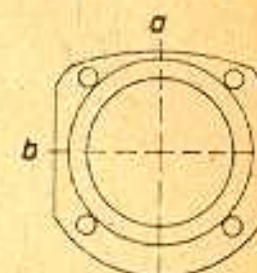
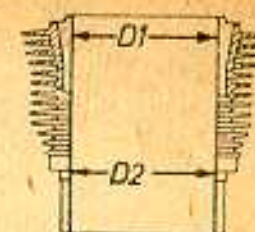
Pistons

D = Measuring point for wear

At height of piston pin bore lower edge.

Note

Replace pistons and cylinders when running clearance exceeds 0,15 mm. This results from the difference between the max. cylinder dia. and the min. piston dia.



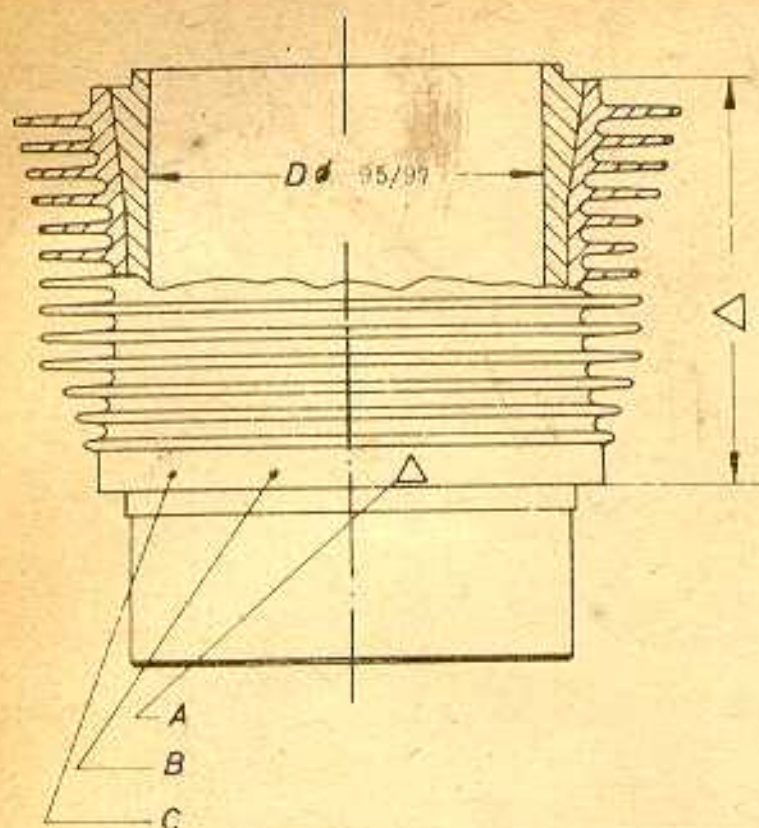
Piston ring gap

Piston ring	Gap mm (installation size)	Gap mm (wear limit)
Compression ring, I and II	0,15 - 0,3	0,8
Oil scraper ring, III	0,15 - 0,3	1,0
Oil scraper ring, III		
3-piece "LS" ring (see measuring point "D2")	0,4 - 1,4	2,0

Piston ring height clearance

Piston ring	Height play mm (installation size)	Height play mm (wear limit)
Compression ring, I	0,070 - 0,102	0,2
Compression ring, II	0,040 - 0,072	0,2
Oil scraper ring, III	0,020 - 0,052	0,1

Cylinder sizes



Cylinder height tolerances

Code A



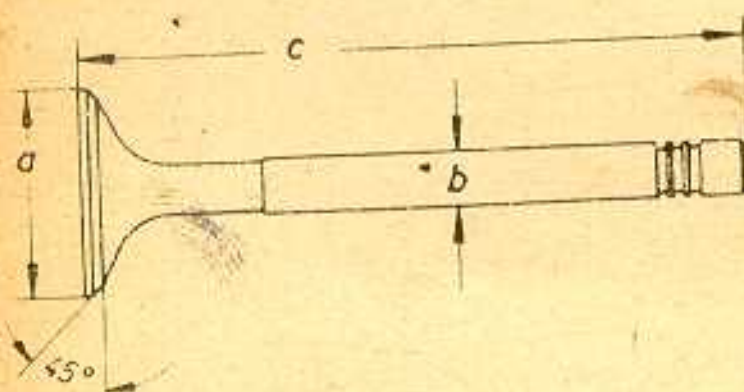
Cylinder height

85,400 - 85,425	911 SC
85,600 - 85,625	911 Turbo
85,425 - 85,450	911 SC
85,625 - 85,650	911 Turbo

- A Tolerance group for cylinder height
 B Tolerance group for cylinder diameter (refer to table)
 C Manufacturer's identification

Valve size

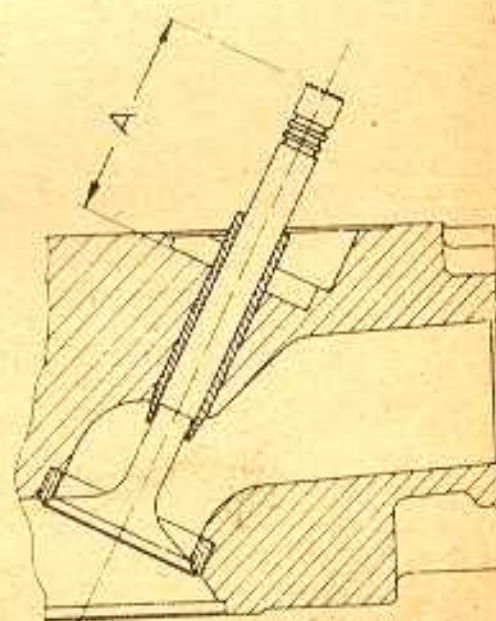
	911 SC Intake	Exhaust	911 Turbo Intake	Exhaust
a	$49 \pm 0,1$	$41,5 \pm 0,1$	$49 \pm 0,1$	$41,5 \pm 0,1$
b	$8,97 - 0,012$	$8,95 - 0,012$	$8,97 - 0,012$	$8,95 - 0,012$
c	$110,1 \pm 0,25$	$108,4 \pm 0,25$	$110,1 \pm 0,25$	$103,4 \pm 0,25$



Checking valve seats

To check valve seat depth, insert respective valve into guide and measure distance between valve stem end and bottom of shim cavity, without shims (see distance A in sketch).

If dimension is greater than specified, measure again a new valve. If dimension is still beyond specifications, valve seat inserts have been cut too deep and should be replaced, or exchange cylinder head.

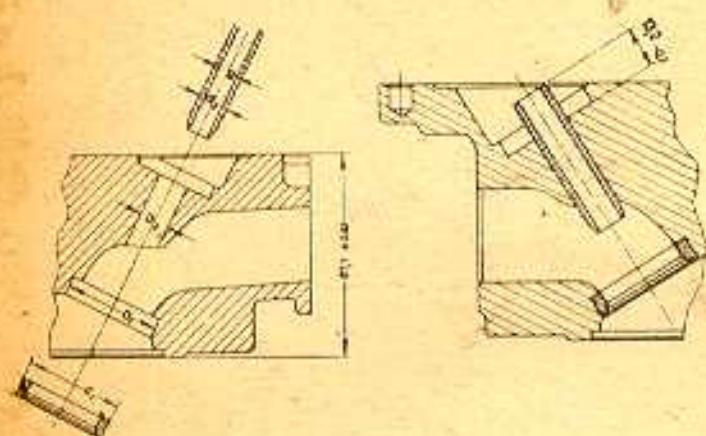


Distance A

911 SC, 911 Turbo $46,0 \pm 0,3$ mm

Valve guides (wear limits, installation sizes)

Measuring point	Installation size with tolerances mm	Clearance (+) or press fit (-) from to	Wear limits mm
Valve guide, outside dia. d2	13.049-13.060	-0.031 -0.060	
Cylinder head, bore dia. D2	13.000-13.018		
Intake valve guide, inside dia. g	9.000- 9.015	+0.030 +0.057	0.15
Intake valve stem, dia. b	8.958- 8.970		
Exhaust valve guide, inside dia. g	9.000- 9.015	+0.050 +0.077	0.20
Exhaust valve stem, dia. b	8.938- 8.950		



Machine 1st and 2nd oversize to correspond with bore in cylinder head.
Press fit: 0.06-0.09 mm.

Size table for pulling in valve guides

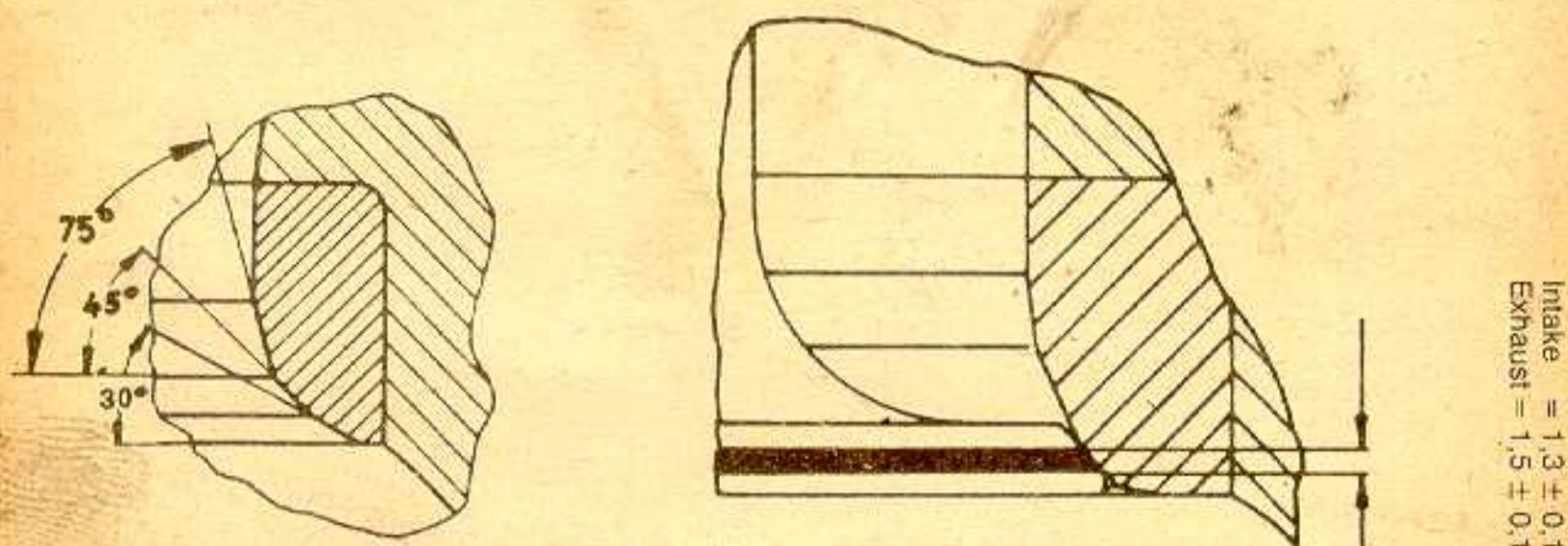
Valve guide	Outside dia. d2 Valve guide *	Bore dia. D2 Cylinder head
Standard size	13.060	13.000 - 13.018
1st oversize	13.260	13.000 - 13.200
2nd oversize	13.460	13.201 - 13.400

* Grind valve guides on diameter d2 according to pertinent bore diameter D2 - remembering press-fit - 0.06...0.09 mm.

Specifications for installation of valve seat inserts

911 SC and 911 Turbo		Outside dia. d 1 valve seat insert	Bore D 1 in cylinder head
Standard size	Intake	51,680 – 51,661	51,500 – 51,530
Standard size	Exhaust	44,200 – 44,184	44,000 – 44,025
1st oversize	Intake	52,000 – 51,981	51,820 – 51,850
1st oversize	Exhaust	44,760 – 44,744	44,560 – 44,585

Angles and sizes of valve seat inserts



Important manual transmission adjusting data 915 and 930

2 examples for adjustment of pinion and ring gear

	Transm. Type 915	Transm. Type 930
Design dimension "F"	66,30 mm	82,29 mm
Deviation "r"	+ 0,10 mm	+ 0,02 mm
Adjustment dimension "E"	66,40 mm	82,31 mm
Dial gauge setting	66,30 mm	82,29 mm
Measured dimension (without shims)	- 0,29 mm	- 0,14 mm
Distance to face end of pinion shaft	66,01 mm	82,15 mm
Adjustment dimension "E"	66,40 mm	82,31 mm
Distance to face end of pinion shaft	- 66,01 mm	- 82,15 mm
Thickness of shims	0,39 mm *	0,16 mm *

*) Round off the nearest 0,05 mm.

Shims are available 0,10, 0,15 and 0,20 mm thick.

Recheck adjustment dimension "E" after installation of shims; a deviation of ± 0,03 mm is permissible.

Transmission tolerance survey

Measuring point	Type 915		Type 930	
	Installation tolerance mm	Wear limit mm	Installation tolerance mm	Wear limit mm
1. Backlash between gear I and II				
1st gear	0,17	0,22	0,055 - 0,13	0,22
2nd gear	0,17			
3rd gear	0,05 - 0,13			
4th gear	0,05 - 0,13			
5th gear	0,05 - 0,13			
2. Loose gears on pinion and drive shaft				
Axial clearance				
1st gear	0,3 - 0,4	0,5	same as 915	
2nd gear	0,2 - 0,3	0,4		
3rd gear	0,2 - 0,3	0,4		
4th gear	0,2 - 0,3	0,4		
5th gear	0,2 - 0,3	0,4		
3. Selector rods				
a) in guides	0,195 - 0,236	0,4	same as 915	
radial clearance				
b) Runout	—	0,1		

Measuring point	Typ 915		Typ 930	
	Installation tolerance mm	Wear limit mm	Installation tolerance mm	Wear limit mm
4. Selector forks in operating sleeve				
Axial clearance				
5th and reverse gear	0,1 - 0,3	0,5	same as 915	
1st and 2nd gear	0,1 - 0,3	0,5		
3rd and 4th gear	0,1 - 0,3	0,5		
5. Synchronizing rings				
Outside dia. installed				
1st gear	86,20 - 86,54	after	86,15 - 86,65	after
2nd gear	86,20 - 86,54	local wear	86,15 - 86,65	local wear
3rd gear	76,12 - 76,48	through of	76,20 - 76,55	through of
4th gear	76,12 - 76,48	molybdenum	76,20 - 76,55	molybdenum
5th gear	76,12 - 76,48	layer	—	layer
6. Drive shaft				
Max. runout at guidepin	0,1	0,1 (align)	same as 915	

Tightening torque for bolts and nuts of manual transmission 915

Location	Designation	Threads	Material	Tightening torque Nm	Tightening torque kpm
Transmission case (oil drain)	Plug with magnet	M 24 taper	St 37	20-25	2,0-2,5
Gear box (oil filler)	Plug	M 24 taper	St 37	20-25	2,0-2,5
Gear box, side, front cover, shift cover	Mid-grip nut	M 8x1,25	X 12 CrNi 18,8	22-25	2,2-2,5
Front cover	Backup light switch	M 18x1,5	Ms	25-35	2,5-3,5
Drive shaft	Collared nut	M 30x1,5	8,8	160-180	16-18
Drive shaft	Castle nut	M 18x1,5	6,8	120-140	12-14
Transm. support clamping plate and mountings	Hexagon nut	M 8x1,25	8	21-23	2,1-2,3
Drive pinion	Collared nut	M 24x1,5	8	240-260	24-26
Fork, gearshift	Hexagon nut	M 6x1,0	8	8-9	0,8-0,9
Shift lock	Hexagon head bolt	M 10x1,5	8,8	15-18	1,5-1,8
Transmission case	Vent	M 16x1,5	9 S 20 K	20-30	2-3
Transmission case	Hexagon head bolt	M 8x1,25	8,8	24-26	2,4-2,6
Selector forks	Hexagon head bolt	M 12x1,25	11,9	115-120	11,5-12
Ring gear (differential)	Hexagon head bolt	M 12x1,25	11,9	140-150	14-15
Ring gear (locking differential)	Expansion bolt	M 10x1,5	12,9	150-160	15-16
Joint flange	Hexagon head bolt	M 10x1,5	8,8	26-30	2,6-3
Joint flange	Hexagon nut	M 10x1,5	8	39-46	3,9-4,6
Starter mountings	Hexagon head bolt	M 6x1,0	8,8	8-9	0,8-0,9
Pressure tube (drive pinion)	Pressure relief bolt	M 12x1,5	9 S 20 K	22-25	2,2-2,5
Front cover	Mid-grip nut	M 6x1,0	X 12 CrNi 18,8	9-10	0,9-1
Oil pump cover	Fillister head bolt	M 6x1,0	8,8	8-9	0,8-0,9
Suction tube	Hexagon head bolt	M 6x1,0	8,8	8-9	0,8-0,9
Pressure tube (gear box)	Hexagon head bolt	M 6x1,0	8,8	8-9	0,8-0,9
Guide tube for release bearing	Phillips screw	M 6x1,0	8,8	8-9	0,8-0,9

Tightening torque for bolts and nuts of manual transmission 930

Location	Designation	Threads	Material	Tightening torque Nm	Tightening torque kpm
Drive shaft	Collared nut	M 30 x 1,5	8,8	210 - 230	21,0 - 23,0
Drive shaft	Collared nut	M 20 x 1,5	C 35 V	160 - 180	16,0 - 18,0
Drive pinion	Collared nut	M 24 x 1,5	8	240 - 260	24,0 - 26,0
Transmission case	Vent	M 14 x 1,5	9 S 20 K	20 - 30	2,0 - 3,0
Connecting rod, gearshift	Conical bolt	M 8 x 1,25	8,8	23 - 26	2,3 - 2,6
Shift cover	Mid-grip nut	M 8 x 1,25	X 12 CrNi 18,8	22 - 25	2,2 - 2,5
Gear box	Backup light switch	M 18 x 1,5	Ms	25 - 35	2,5 - 3,5
Gearshift, fork	Hexagon nut	M 6 x 1,0	8,8	9 - 11	0,9 - 1,1
Clamping plate, gear box and transmission case, front and side transmission covers	Hexagon nut	M 8 x 1,25	8	22 - 25	2,2 - 2,5
Shift lock transmission case	Hexagon head bolt	M 10 x 1,5	8,8	15 - 18	1,5 - 1,8
Selector forks	Hexagon head bolt	M 8 x 1,25	8,8	24 - 26	2,4 - 2,6
Ring gear (differential)	Hexagon head bolt	M 12 x 1,25	11,9	135 - 140	13,5 - 14,0
Locking differential	Hexagon head bolt	M 12 x 1,25	12,9	150 - 160	15,0 - 16,0
Joint flange	Expansion bolt	M 10 x 1,5	8,8	26 - 30	2,6 - 3,0
Joint flange	Hexagon head bolt	M 10 x 1,5	8,8	39 - 46	3,9 - 4,6

Transmission case (oil drain)	Plug with magnet	M 24 x 1,5 (taper 1 : 16)	St 37	20 - 25	2,0 - 2,5
Gear box (oil filler)	Plug	M 30 x 1,5	5.8	20 - 25	2,0 - 2,5
Reverse gear detent	Plug	M 16 x 1,5	5.8	20 - 25	2,0 - 2,5
Guide tube (Transmission case)	Fillister head bolt	M 6 x 1,0	8.8	8 - 10	0,8 - 1,0
Clutch and gear ring mountings	Fillister head bolt	M 8 x 1,0	8.8	20 - 25	2,0 - 2,5
Starter mountings	Hexagon nut	M 10 x 1,5	8	46 - 50	4,6 - 5,0
Holder to shift base	Hexagon head bolt	M 6	8.8	6,0	0,6
Shift base to tunnel	Fillister head bolt	M 8	8.8	21	2,1
Conical bolt in selector rod head	Conical bolt	M 8	8.8	15	1,5
Conical bolt on shift coupling	Conical bolt	M 8	8.8	15	1,5
Clamp mountings	Hexagon head bolt	M 8	8.8	25	2,5
Transmission cover	Fillister head bolt	M 6	8.8	14	1,4
Locking differential					

Sportomatic transmission specifications

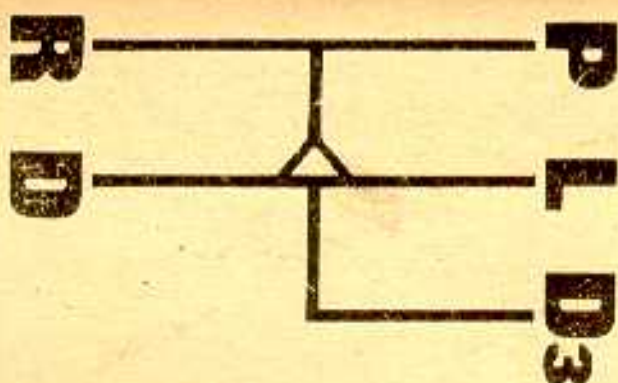
Clutch

Hydrodynamic torque converter and a vacuum operated single plate dry clutch

Manual transmission: Porsche locking synchromesh

No. of gears: 3 forward, 1 reverse and parking lock

Shift scheme



P = Parking lock

R = Reverse gear

L = Low (driving range for steep gradients)

D = Drive (driving range for city)

D3 = Drive 3 (driving range for open roads)

Final drive ratio

Towing speed

Stall speed

Converter ratio

Clutch speed (at full throttle)

Transmission oil

8/27

approx. 40 km/h

1900 ± 200 rpm

1.8

3200 ± 200 rpm

approx. 2.5 ltr.

Tightening torque for bolts and nuts of sportomatic transmission

Location	Designation	Threads	Material	Tightening torque	
				Nm	kpm
Transmission case (on stud for side and front transmission cover as well as fork)	Hexagon nut	M 8x1.25	6.8	21 - 23	2.1 - 2.3
	Mid-grip nut	M 8x1.25	18.8 x12CrNi	22 - 25	2.2 - 2.5
Transmission case (oil filler)	Plug	M 24x1.5 (taper 1 : 16)	St 37	20 - 25	2.0 - 2.5
Transmission case (oil drain)	Plug with magnet	M 24x1.5 (taper 1 : 16)	St 37	20 - 25	2.0 - 2.5
Transmission case (vent)	Vent	M 14x1.5 (taper 1 : 16)	9 S 20 K	20 - 30	2.0 - 3.0
Transmission case	Backup light switch	M 18x1.5	Ms	35 - 40	3.5 - 4.0
Transmission case	Bridge-over switch	M 18x1.5	Ms	35 - 40	3.5 - 4.0
Transmission case (starter)	Hexagon nut	M 10x1.5	8.8	46 - 48	4.6 - 4.8
Transmission case (power motor support and mountings)	Hexagon nut	M 8x1.25	6.8	21 - 23	2.1 - 2.3
Converter housing to transmission case	Hexagon nut	M 8x1.25	6.8	21 - 23	2.1 - 2.3
	Hexagon nut	M 10x1.5	8.8 (SW15)	46 - 48	4.6 - 4.8
Converter housing (one-way clutch mountings)	Fillister head bolt	M 6x1.0	10.9	12 - 14	1.2 - 1.4

Converter housing	Threaded adaptor	M 24x1.5	6 S	30 - 35	3.0 - 3.5
Converter housing	Temperature transmitter	M 14x1.5	Ms	25 - 30	2.5 - 3.0
Converter housing	Temperature switch	M 14x1.5	Ms	25 - 30	2.5 - 3.0
Converter housing (clutch pressure plate)	Fillister head bolt	M 6x1.0	10.9	12 - 14	1.2 - 1.4
Converter drive plate	12-sided bolt	M 8x1.25	8.8	24 - 26	2.4 - 2.6
Intermediate plate (clamping)	Hexagon head bolt	M 8x1.25	8.8	21 - 23	2.1 - 2.3
Intermediate plate	Reversing lever shaft	M 8x1.25	9 S 20 K	21 - 23	2.1 - 2.3
Intermediate plate (shift lock)	Plug	M 14x1.5	4.6	22 - 25	2.2 - 2.5
Front transmission cover (speedometer drive lock)	Hexagon head bolt	M 8x1.25	8.8	16 - 18	1.6 - 1.8
Front transmission cover (9 mm parking lock ball dia.)	Plug	M 12x1.5	5.8	30 - 35	3.0 - 3.5
Angle drive in guide sleeve	Hollow bolt	M 24x1.5	6.8	22 - 24	2.2 - 2.4
Drive shaft	Hexagon nut	M 24x1.5	6.9	100-120	10.0 - 12.0
Drive shaft	Collared nut	M 18x1.5	5.8	110 - 130	11.0 - 13.0
Drive pinion	Expansion bolt	M 12x1.5	10.9	110-120	11.0 - 12.0
Selector forks	Hexagon head bolt	M 8x1.25	8.8	22 - 26	2.2 - 2.6
Differential (ring gear mtgs.)	Hexagon head bolt	M 12x1.25	11.9	115-120	11.5 - 12.0
Joint flange (differential)	Expansion bolt	M 10x1.5	8.8	35-40	3.5 - 4.0
Front transmission cover Transmission support mtgs.	Hexagon nut	M 8x1.25	6.8	21-23	2.1 - 2.3

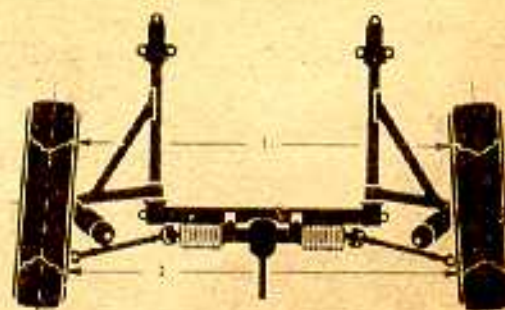
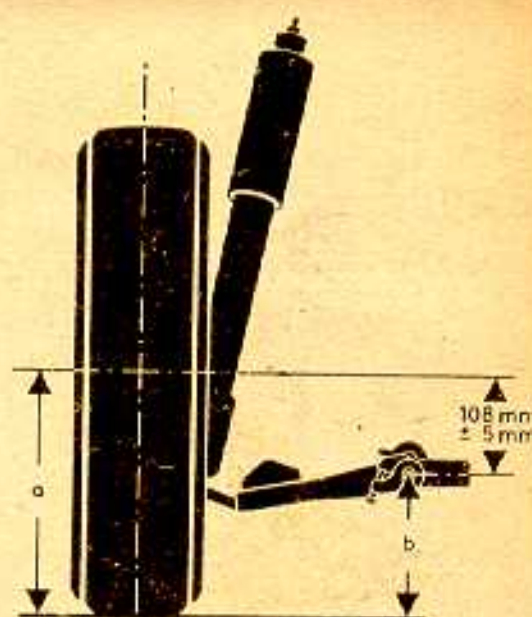
Front axle and steering specifications

	911 SC	911 SC - USA, Canada, Japan	Turbo
Wheel suspension	Independent employing control arms and shock absorber struts		
Springs	One round torsion bar in driving direction for each wheel 18,8 mm dia.		
Track width	1369 mm with rim 6 J x 15	1361 mm with rim 6 J x 15	1432 mm with rim 7 J x 16
Shock absorbers	Double action, hydraulic shock absorber struts		
Stabilizers			
front/rear dia. in mm	20/18	20/18	20/18
Adjustment of ZF rack and pinion steering			
Frictional moment of steering (measured on flange of steering gear with tie rods detached)	0,8 to 1,4 Nm = 8 to 14 kpcm		
ZF steering specifications			
Steering ratio (in center)	17,78 : 1		
No. of steering wheel turns from lock to lock	approx. 3,0		

Specifications and tolerances

At curb weight according to DIN 70020
Car with full fuel tank, spare wheel and tools

Designation	Adjustment data and tolerances	Max. difference between left and right
Front axle		
Height adjustment: Wheel center above middle of torsion bar		
911 SC	108 mm ± 5 mm	5 mm
911 SC - USA, Canada, Japan	99 mm ± 5 mm	5 mm
Turbō	94 mm ± 5 mm	5 mm
Turbo - USA, Canada, Japan	85 mm ± 5 mm	5 mm
Total toe (pressed with 150 N)	0°	—



Designation	Adjustment data and tolerances	Max. difference between left and right
Difference angle at 20° lock	0° to + 30'	Can only be influenced by exchanging steering arm

A' = Parallel to A
 B = Centerline of wheel
 γ = Difference angle

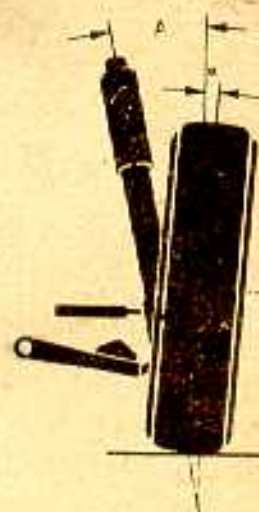
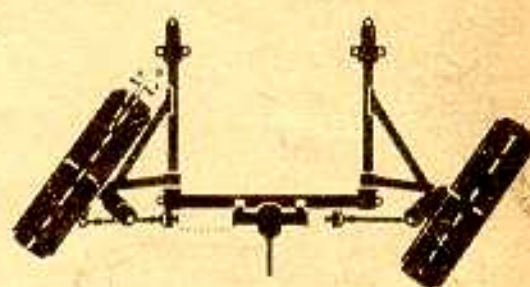
Camber of front wheels (wheels pointing straight ahead)

α = Camber angle

911 SC, Turbo 0° ± 10' 10'

911 SC, Turbo
 USA, Canada, Japan + 30' ± 10' 10'

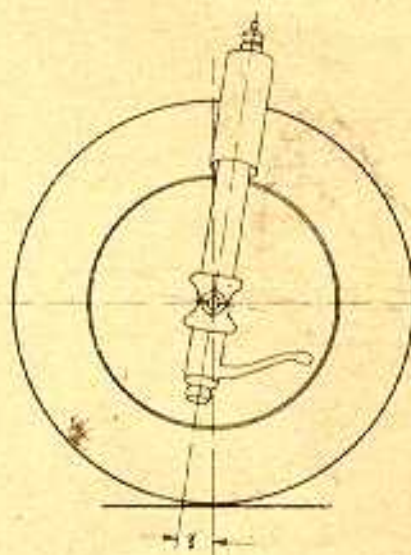
β = Inclination of kingpin 11°



Designation	Adjustment data and tolerances	Max. difference between left and right
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γ = Caster 6° 5' ± 15' 30'

Caster results from total camber difference at 20° left lock and 20° right lock x 1.5



These wheel alignment specifications can also be applied to earlier models.

Tightening torque for front axle and steering

Location	Designation	Threads	Material	Tightening torque	
				Nm	kpm
Support to spring strut	Hexagon nut	M 14 x 1,5	8	80	8,0
Support to body	Socket head screw	M 10	8.8	47	4,7
Auxiliary carrier to body	Hexagon head bolt	M 12 x 1,5	8.8	90	9,0
Stabilizer to auxiliary carrier strut	Hexagon head bolt	M 8	8.8	25	2,5
Auxiliary carrier strut, shield, stabilizer to body	Fillister head screw	M 10	8.8	47	4,7
Auxiliary carrier strut and shield to auxiliary carrier	Hexagon nut	M 10	8	28	2,8
Steering gear	Hexagon head bolt	M 10	8.8	47	4,7
Steering tie rod to steering gear	Hexagon head bolt	M 10	8.8	47	4,7

Location	Designation	Threads	Material	Tightening torque	
				Nm	kpm
Joint ball and pivot to tie rod (lock nut)	Hexagon nut	M 14 x 1,5	0,4	45	4,5
Tie rod to rack (Turbo)	Ball socket pivot	M 16 x 1,5	C 35 K	150	15
Nut on steering knuckle	Socket head screw	M 7	10.9	15	1,5
Ball joint to spring strut	Uni stopnut	M 8	8	22	2,2
Ball joint to control arm	Slotted nut	M 45 x 1,5	8.8	250	25
Control arm to body	Hexagon head bolt	M 10	8.8	47	4,7
Plug for spring strut cartridge	Plug			120+20	12+2
Wheel to wheel hub	Wheel nut	M 14 x 1,5	10.9/F 53	130	13
Brake disc to wheel hub	Hexagon nut	M 8	8.8	23	2,3
Guard to steering knuckle	Hexagon head bolt	M 8	8.8	10	1,0
Caliper to steering knuckle	Hexagon head bolt/ fillister head bolt	M 12 x 1,5	8.8	70	7,0

Location	Designation	Threads	Material	Tightening torque	
				Nm	kpm
Brake line connection	Coupling nut	M 10 x 1		14	1,4
Steering coupling to steering shaft	Hexagon head bolt	M 8	8.8	25	2,5
Steering shaft to steering gear	Hexagon head bolt	M 8	8.8	25	2,5
Steering shaft bearings	Fillister head bolt	M 8	8.8	25	2,5
Universal joint to steering shaft (lubricated with Optimoly HT)	Hexagon head bolt	M 8	8.8	20	2,0
Steering wheel	Hexagon nut	M 18 x 1,5	8	75	7,5
Dust cover to rack	Slotted nut	M 16 x 1,5		70	7,0
Ball joint to steering arm	Castle nut	M 10 x 1	8	45	4,5
Clutch flange to drive pinion (self-locking)	Hexagon nut	M 10	8	45	4,5
Housing cover to steering gear	Hexagon head bolt	M 8 x 1	8.8	15	1,5

Rear axle specifications

	911 SC	911 SC USA, Japan, Canada	Turbo
Wheel suspension	Independent, employing trailing arms, wheels driven by propeller shafts		
Springs	One round torsion bar in lateral direction for each wheel		
Torsion bar dia.	24,1 mm	24,1 mm	26 mm
Track width	1379 mm with rim 7 J x 15	1367 mm with rim 7 J x 15	1501 mm with rim 8 J x 16
Shock absorbers	Double action, hydraulic shock absorbers		
Stabilizers			
front/rear dia. in mm	20/18	20/18	20/18

Specifications and tolerances

(at curb weight according to DIN 70020; car with full fuel tank, spare wheel and tools)

Designation	Adjustment data and tolerances
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Torsion bar specification

Inclination of spring strut

Coupe 911 SC	35°	with Bielstein-shock absorbers 34°
Coupe 911 SC USA, Canada, Japan	40°	with Bielstein-shock absorbers 39°

Designation	Adjustment data and tolerances	Max. difference between left and right
Targa	+ 0,5°	
Air conditioner	+ 0,5°	
Sportomatic	+ 0,5°	
Turbo	33°	
Turbo - USA, Canada, Japan	37°	

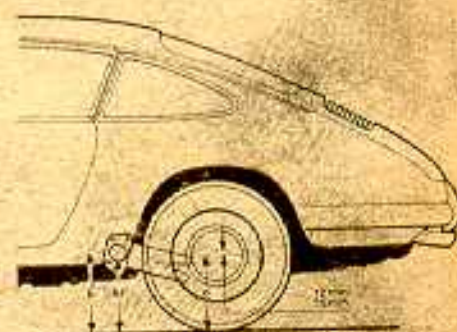
Camber of rear wheels

911 SC	- 1° ± 10'	20'
Turbo	- 30' ± 10'	20'
911 SC/Turbo - USA, Canada, Japan	0° ± 10'	20'
Track for all types	+ 10' ± 10' each wheel	20'

Height adjustment

Wheel center below center of cross tube

911 SC	16 mm ± 5 mm	8 mm
Turbo	12 mm ± 5 mm	8 mm
911 SC/Turbo - USA, Canada, Japan	37 mm ± 5 mm	8 mm



1° change in spring strut inclination = approx. 7 – 9 mm change in vehicle height.

Tightening torque for bolts and nuts for rear axle

Location	Designation	Threads	Material	Tightening torque	
				Nm	kpm
Bearing cover to body	Hexagon head bolt	M 10	8.8	47	4,7
Control arm to cross tube	Hexagon head bolt	M 14 x 1,5	10.9	60	6,0
Spring strut to control arm	Eccentric	M 12 x 1,5	8.8	60	6,0
Spring strut to control arm	Hexagon head bolt	M 12 x 1,5	10.9	95	9,5
Brake caliper to control arm	Hexagon socket screw	M 12 x 1,5	8.8	60	6,0
Shock absorber to control arm	Hexagon head bolt	M 14 x 1,5	8.8	125	12,5
Shock absorber to body	Hexagon nut	M 10 x 1	8	25	2,5
Brake line	Coupling nut	M 10 x 1		14	1,4
Stabilizer to body	Hexagon head bolt	M 8	8.8	25	2,5
Axle shafts to transmission and drive shaft	Fillister head bolt	M 10	12.9	83	8,3
		M 8	12.9	42	4,2
Stabilizer to stabilizer suspender	Hexagon nut	M 12 x 1,5	8/8.8	85	8,5
Stabilizer suspender to rear axle trailing arm	Hexagon head bolt	M 12 x 1,5	8.8	85	8,5
Wheel to wheel hub	Wheel nut	M 14 x 1,5		130	13
Wheel hub to drive shaft	Castle nut	M 20 x 1,5	10.9	300-320	30-32
Brake disc to wheel hub	Countersunk bolt	M 6	8.8	5	0,5
Adjusting lever to spring strut	Hexagon head bolt	M 16 x 1,5	10.9	245	24,5
Adjusting lever to spring strut	Eccentric bolt	M 16 x 1,5	10.9	245	24,5

Brakes – Specifications

Description	Remarks, specifications		Wear limit	
	911 SC	Turbo	911 SC	Turbo
Brake booster				
Tandem master cyl. dia.	20,64 mm	23,81 mm		
Brake booster dia.	7"	8"		
Play on brake pedal with brakes bled and engine stopped	10 mm	10 mm		
Brake circuit division	front axle/ rear axle	front axle/ rear axle		
Front wheel brakes				
Brake disc outside dia.	282,5 mm inboard venting	304 mm inboard venting perforated evolvent-shaped inboard venting ports		
Effective brake disc dia.	228 mm	247 mm		
Brake disc thickness (new)	20,5 mm	32 mm		

Description	Remarks, specifications		Wear limit	
	911 SC	Turbo	911 SC	Turbo
Min. brake disc thickness* after machining	19,1 mm	30,6 mm	18,5 mm	30 mm
Max. brake disc surface-to-valley surface finish after machining	0,006 mm	0,006 mm		
Max. brake disc thickness tolerance	0,02 mm	0,02 mm		
Max. brake disc lateral runout	0,05 mm	0,05 mm		
Max. lateral runout installed	0,1 mm	0,1 mm		
Pistons in brake caliper	48 mm dia. 2 pistons per caliper	38 mm dia. 4 pistons per caliper		
Brake pad area per wheel	76 cm ²	94 cm ²		
Brake pad thickness	10 mm	13 mm	2 mm	2 mm
Brake pad recess play	brake liner has easy movement in recess	0,4 to 0,6 mm		
Rear wheel brakes				
Brake disc outside dia.	290 mm inboard venting	309 mm inboard venting perforated evolvent-shaped inboard venting ports		
Effective brake disc dia.	244 mm	251 mm		

Description	Remarks, specifications		Wear limit	
	911 SC	Turbo	911 SC	Turbo
Brake disc thickness (new)	20 mm	28 mm		
Min. brake disc thickness* after machining	18,6 mm	26,6 mm	18 mm	26 mm
Max. brake disc peak-to-valley surface finish after machining	0,006 mm	0,006 mm		
Max. brake disc thickness tolerance	0,02 mm	0,02 mm		
Max. brake disc lateral runout	0,05 mm	0,05 mm		
Max. lateral runout installed	0,1 mm	0,1 mm		
Pistons in caliper	38 mm dia. 2 pistons per caliper	30 mm dia. 4 pistons per caliper		
Brake pad area per wheel	52.5 cm ²	94 cm ²		
Brake pad thickness	10 mm	13 mm	2 mm	2 mm
Brake pad recess play	brake pads move easily in recess	0,4 to 0,6 mm		
Parking brake				
Brake drum dia.	180 mm	180 mm	181 mm	181 mm
Brake shoe width	25 mm	25 mm		
Liner area per wheel	85 cm ²	85 cm ²		
Brake liner thickness	4,5 mm	4,5 mm	2 mm	2 mm

Caliper version

911 SC: gray cast iron front and rear Turbo: light alloy front and rear

* Brake disc should only be machined symmetrically, i. e. uniform on both sides.

Machining specifications and wear limits for brake discs and parking brake

Vehicle type	Type of brake disc	Location of brake disc	Distance "a" (in ref. to new brake disc thickness)	New brake disc thickness	Min. thickness of brake disc after machining	Wear limit of brake disc (for symmetric wear)
911 SC	Vented brake disc	Front wheel	35,25 ± 0,1 mm	20,5 – 0,2 mm	19,1 mm	18,5 mm
Turbo	Vented, perforated brake disc	Front wheel	35,7 ± 0,25 mm* – 0,35 mm from model 1981	32 – 0,2 mm	30,6 mm	30 mm
			56,7 ± 0,1 mm	32 – 0,2 mm	30,6 mm	30 mm
911 SC	Vented brake disc	Rear wheel	76 ± 0,2 mm	20,0 – 0,2 mm	18,6 mm	18,0 mm
Turbo	Vented, perforated brake disc	Rear wheel	76 ± 0,2 mm	28 – 0,2 mm	26,6 mm	26 mm
All	Thickness tolerance of brake discs				max. 0,02 mm	
All	Lateral runout of brake discs				max. 0,05 mm	
All	Surface finish of brake discs after machining				max. 0,006 mm	

* From brake flange bearing surface on wheel hub (brake disc, ring, brake flange assembly) to inside brake disc friction surface.

Caution

Refinishing and wear specifications listed above are based on the assumption that remaining thickness of the brake pad is not less than 2.0 mm.
This pad thickness is required to assure perfect operation of brakes.
(Installation of cross spring assures this.)

Only balanced brake discs are supplied. Brake discs are balanced by special clips in the cooling vents.

Caution! Never remove balance clips.

Parking brake

Brake drum dia. (new)
Brake drum wear limit
Brake liner width

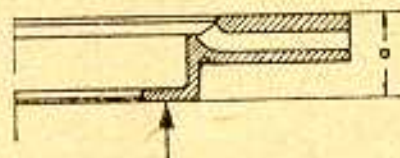
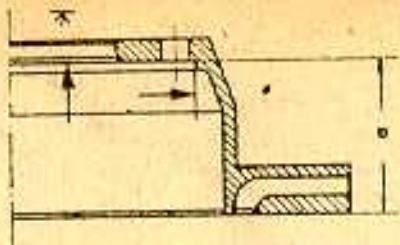
180 + 0.2 mm
max. 181.0 mm dia.
25 mm

Caution!

Parking brake liners must be at least 2.0 mm thick.

Caution

Machine brake disc symmetrically, i. e. uniformly on both sides.
Arrows indicate brake disc reference or mounting points.

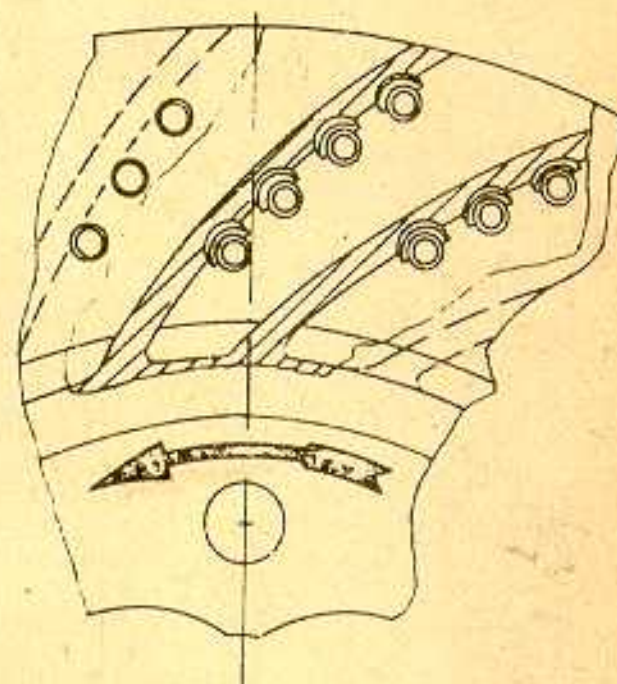
Front wheel
brake discRear wheel
brake disc

Arrangement of brake disc venting ports (assembly information)

The inboard venting ports of brake discs **on Turbo** are arranged in evolvent-shape. Don't mix up left and right sides when assembling.

Identification: Evolvent shape and part number.

Part number is located on brake disc.



Left side part number:

3 group number
uneven

Right side part number:

3 group number
even

Example:

930.351 04700 = left side

930 351 04800 = right side

Forward direction

Modification of front wheel brakes – 911 Turbo (assembly information)

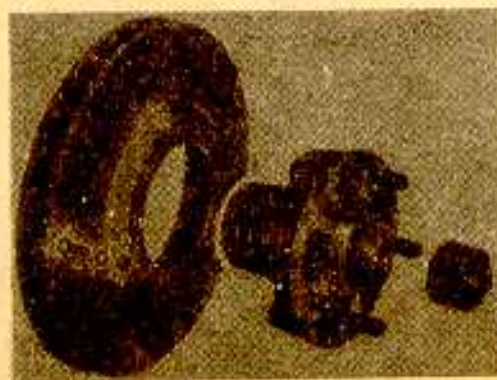
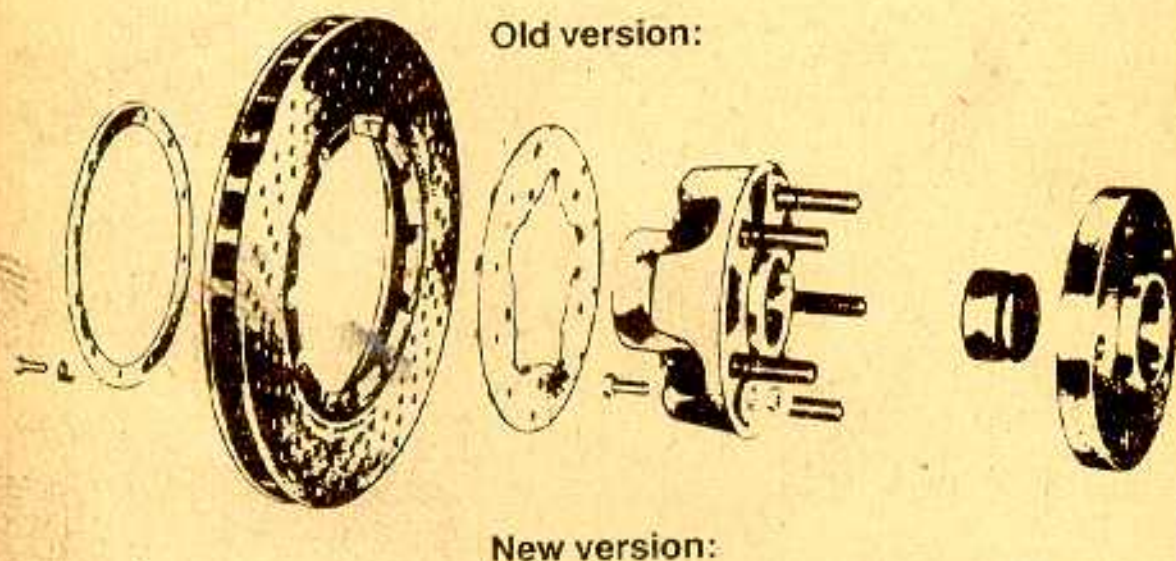
Since the beginning of production of 1981 models the front wheel brake disc to hub connection has been changed on the Type 911 Turbo. Instead of the old connection with flange and ring, it has been changed to the brake disc shell connection (same as 911).

Modified parts:

Brake discs, wheel hubs, grease caps

Deleted parts:

Brake flange, ring, M 6 screws with lockplates, spacer (21 mm)



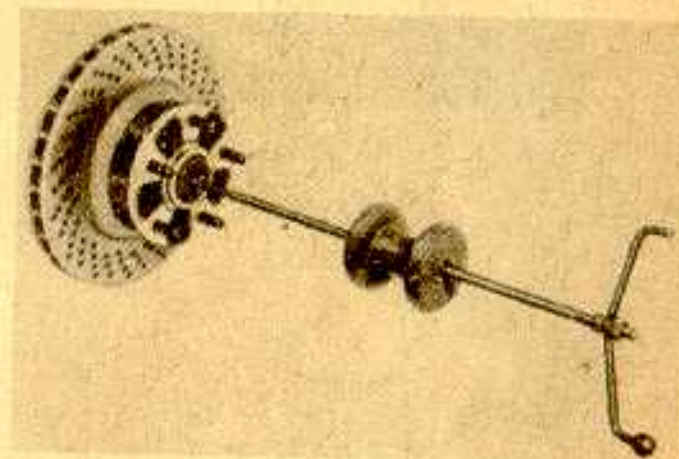
Modification of front wheel brakes – 911 Turbo (assembly information)

Brake discs are mounted on hubs with M 8 bolts and nuts as for Type 911 SC cars. Because of the new brake disc with shell design the total distance (brake disc – hub) is 21 mm longer. Consequently the 21 mm spacers need not be installed. An additional installation of spacers with the wheel hub is not approved.

When replacing parts a conversion to new brake discs/wheel hubs is only permitted on both sides for 911 Turbo 3,3 ltr. cars before 1981 model year. Due to the modified hubs it is not quite so simple to take off wheel hub grease caps with Special Tool VW 771 in conjunction with Special Tool 9165 (see Repair Manual 930 Turbo, page 46-5) or with screwdrivers due to the deeper installed position.

As from Chassis No. 93 Z BS 000094 (October, 1980) hub grease caps with welded adapters are used. These grease caps can be knocked off with Special Tool VW 771 (without Special Tool 9165).

A piece of pipe should be used to knock in the grease caps to protect threads on the adapters.



Note: Grease caps without adapters were still used on 1981 model Turbos up to the above mentioned chassis number. These caps have been machined to the smallest possible diameter at the pressing-in point, in order to have a slight load. These caps can only be removed with screwdrivers.

Brake circuit failure indicator

Each of both brake circuits has a stop light switch on the brake master cylinder, which also acts as a brake function warning switch.

An indicator lamp installed in the instrument panel comes on when a brake circuit fails.

After repairing the brake system the brake indicator lamp must be switched off by disconnecting the battery.

Tightening torque for hydraulic and mechanical brake parts

Location	Designation	Threads	Material	Tightening torque	
				Nm	kpm
Nut on steering knuckle	Fillister head screw	M 7	10.9	15	1,5
Brake caliper to steering knuckle	Fillister head screw/ hexagon head bolt	M 12 x 1,5	8.8	70	7,0
Brake flange to wheel hub	Hexagon head bolt	M 8	8.8	23	2,3
Brake disc to brake flange	Hexagon head bolt	M 6	8.8	10	1,0
Brake disc to wheel hub	Hexagon head bolt	M 8	8.8	23	2,3
Guard to steering knuckle	Hexagon head bolt	M 8	8.8	10	1,0
Guard and brake backplate to trailing arm	Fillister head screw	M 8	8.8	25	2,5
Guard to brake backplate	Hexagon head bolt	M 8	8.8	25	2,5
Brake disc to wheel hub	Countersunk screw	M 6	8.8	5	0,5
Brake caliper to trailing arm	Fillister head screw/ hexagon head screw	M 12 x 1,5	8.8	60	6,0
Wheel to wheel hub	Wheel nut	M 14 x 1,5	F 53/10 K	130	13

Brake master cylinder to vacuum booster	Hexagon nut	M 8	8	25	2,5
Stop light switch to master cylinder	Stop light switch	M 10 x 1		15 + 4	1,5 + 0,4
Brake booster to console	Hexagon nut	M 8	8	25	2,5
Brake fluid tank	Hexagon head bolt	M 6	8.8	2	0,2
Pivot and joint shell to push rod	Hexagon nut	M 10	8	35	3,5
Brake booster to trunk floor	Hexagon nut	M 8	8	25	2,5
Strut to console	Hexagon head bolt	M 10	8.8	46	4,6
Brake lines to master cylinder, branch brake hoses and brake calipers	Coupling	M 10 x 1		14	1,4
Branch to cover and rear axle cross tube	Hexagon head bolt	M 6	8.8	6	0,6
Bleeder screws on brake calipers (Turbo)	Bleeder screw	M 10 x 1		8 to 11	0,8 to 1,1
Brake caliper sections to bridge (Turbo)	Fillister head bolt	M 12 x 1,5	8.8	60	6
Spring plate to bridge (Turbo)	Countersunk screw	M 5		4	0,4
Ring adapter to brake caliper (Turbo)	Hollow union bolt	M 10 x 1		16	1,6
Bleeder valve in brake caliper	Bleeder screw			3	0,3

Rims and tires

Type	Standard rims	tires	Optional extra * rims	tires
911 SC	front LM g 6 J x 15 rear LM g 7 J x 15	185/70 VR 15 215/60 VR 15	front LM gs 6 J x 16	205/55 VR 16
			rear LM gs 7 J x 16	225/50 VR 16
			Winter tires**	
			5 1/2 J x 15***	165 R 15 M+S***
			5 1/2 J x 14	185 R 14 M+S
			5 1/2 J x 15***	185/70 R 15 M+S
			6 J x 15	
			7 J x 15	
			6 J x 15 front/ 7 J x 15 rear	
			6 J x 16	205/55 R 16 M+S
			6 J x 16 front/ 7 J x 16 rear	
Turbo	front LM gs 7 J x 16 rear LM gs 8 J x 16	205/55 VR 16 225/50 VR 16	Winter tires**	
			6 J x 15	185/70 R 15 M+S
			7 J x 15	
			6 J x 15 front/ 7 J x 15 rear	
			6 J x 16	205/55 R 16 M+S
			7 J x 16	
			6 J x 16 front/ 7 J x 16 rear	

Tire inflation pressure (reference values)

(measured on cold tires)

	911 SC	Turbo	Turbo - USA, Japan, Canada
Front	2,0 bar	2,0 bar	2,0 bar
Rear	2,4 bar	3,0 bar	2,4 bar
Spare wheel	2,2 bar	2,2 bar	2,2 bar

These values also apply to winter tires.

LM g = Cast light alloy
LM gs = Forged light alloy

* Other wheel rim/tire combinations are possible in addition to optional extra tires (Technical Information).

** SR or HR version.

*** Not recommended.

Checking wheel rims

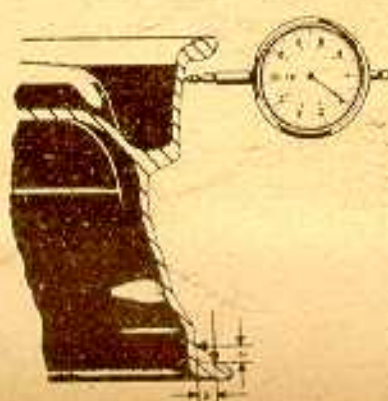
Measuring points for lateral and radial runout on inner and outer rim flanges

Distance "a" = 8 mm.

Max. permissible radial runout for steel rims	1,25 mm
Max. permissible radial runout for alloy rims	1,0 mm
Max. permissible lateral runout for steel rims	1,25 mm
Max. permissible lateral runout for alloy rims	0,8 mm
Max. permissible radial and lateral runout for rim + tire	1,5 mm

Note:

Straightening of deformed rims is not permitted.



The rim flanges of light alloy wheel rims can be checked for wear. Inner rim flanges more subject to wear.

Use a conventional 8 mm radius gauge to check, but first remove any sharp edges and burrs.

Wear limit 1 mm. If necessary, replace wheel rim.

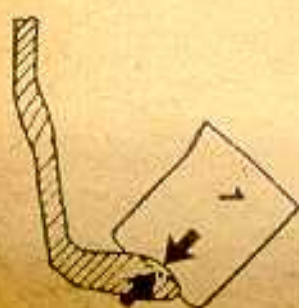
Checking rim flange shape:

— New condition

- - - Worn

▶ — ▶ Max. wear 1 mm

1 8 mm radius gauge



Ignition timing values 911 SC and 911 Turbo

Engine type	911 SC 1978/79 models	911 SC (USA/ Japan) 1978/79 models	911 SC 1980 model	911 SC (USA/ Japan) 1980/81 models	911 SC 1981 model	911 Turbo (Europe, R. o. W.) from 1978 model	911 Turbo (USA) from 1978 model	911 Turbo (California, Japan) from 1978 model
Ignition timing	5° BTDC	5° BTDC	5° BTDC	5° BTDC	25° BTDC	29° BTDC	10° ± 2° ATDC	5° ± 1° ATDC
at engine speed (rpm)	900 ± 50	900 ± 50	900 ± 50	900 ± 50	4000	4000	1000 ± 50	1000 ± 50
Vacuum control detached	yes	yes	yes	yes	yes	yes	no	no
Ignition timing control	24°...31° BTDC	24°...28° BTDC	23°...29° BTDC	19°...25° BTDC	not above 25° BTDC	0° ± 2° BTDC	26° ± 4° BTDC	31° ± 4° BTDC
at engine speed (rpm)	6000	6000	6000	6000	6000	1000 ± 50	4000	4000
Vacuum control detached	yes	yes	yes	yes	yes	no	yes	yes

Spark plug survey 911 SC and 911 Turbo

	911 SC 78-79 mod.	911 SC 80-81 mod.	911 SC (USA) 78-79 mod.	911 SC (USA) 80-81 mod.	911 Turbo 78-81 mod.
Spark plugs	W 5 D (W 225 T 30)	W 4 C 1 (W 260 T 2)	W 8 D (W 145 T 30)	W 5 D (W 225 T 30)	W 3 DP (W 280 P 21)
Bosch	14-5 D (225/14/3 A)	14-4 C 1 (260/14/3)	14-8 C (145/14/3 A)	14-5 D (225/14/3 A)	
Beru					
Electrode gap	0,8 mm	0,8 mm	0,8 mm	0,8 mm	0,6 mm

Battery charge condition	Normal Climates Density	Temperature Protection	Tropics Density
Discharged (dead)	1,12	-11°C	1,08
Half charged	1,20	-27°C	1,16
Charged	1,28	-68°C	1,23

Fuse and relay chart
for 911 SC, 1978-80 models

Fuse no.	Fused equipment	Amps
1	Fog lights	16
2	License plate light, fog light indicator lamp and relay	5
3	Front and rear right marker lights	5
4	Front and rear left marker lights, engine compartment light	5
5	Right low beam headlight	8
6	Left low beam headlight	8
7	Right high beam headlight	8
8	Left high beam headlight, high beam indicator lamp	8
9	Right front turn signal	5
10	Left front turn signal	5
11	Left and right stop lights, flasher relay, backup lights, tempostat	16
12	Rear window defogger relay, heater blower, rear window defogger indicator lamp	25
13	Windshield wipers, washer pump	25
14	Electric sliding roof, rear window wiper, outside mirror	16
15	Cigar lighter, blower switch indicator lamp	16
16	Fuel pump	25
17	Hazard lights	16
18	Courtesy light, clock, glove box light, trunk light	5
19	Headlight cleaners	16
20	Blower for air conditioner	25
21	Electric window controls	25

Fuses in engine compartment

1	Heater blower relay	5
2	Heater blower	25
3	Rear window defogger, rear wiper return	25

Relays in fuse box

- 1 Not occupied
- 2 Fog lights
- 3 Horn
- 4 Not occupied
- 5 Window controls
- 6 Not occupied
- 7 Fuel pump

Relays in engine compartment

- 1 Heater blower
- 2 Rear window defogger

Fuse and relay chart for 911 Turbo, 1978-80 models

Fuse no.	Fused equipment	Amps
1	Fog lights	16
2	License plate lights, fog light indicator lamp and relay	5
3	Front and rear right marker lights	5
4	Front and rear left marker lights, engine compartment light	5
5	Right low beam headlight	8
6	Left low beam headlight	8
7	Right high beam headlight	8
8	Left high beam headlight, high beam indicator lamp	8
9	Right front turn signal	5
10	Left front turn signal	5
11	Flasher relay, backup lights, left and right stop lights	16
12	Electric sliding roof, rear window wiper, outside mirror	25
13	Windshield wipers, washer pump	25
14	Blower, relay and indicator lamp for windshield and rear window defoggers	16
15	Cigar lighter, blower switch indicator lamp	16
16	Fuel pumps	25
17	Hazard lights, windshield defogger	16
18	Courtesy light, clock, glove box light, trunk light	5
19	Headlight cleaners	25
20	Air conditioner blower	25
21	Electric window controls	25
In engine compartment		
	Rear window defogger, rear wiper return	25

Relays in fuse box

- I Air conditioner
- II Fog lights
- III Horn
- IV Not occupied
- V Window controls
- VI Fuel pump 1
- VII Fuel pump 2

Relays in engine compartment

- I Air sensor and charge pressure safety switch
- II Rear window defogger

Fuse and relay chart for 911 SC, 1981 model

Fused equipment	Amps
1 Fog lights	16
2 License plate lights, fog light indicator lamp and relay	5
3 Front and rear right marker lights	5
4 Front and rear left marker lights, engine compartment light	5
5 Right low beam headlight	8
6 Left low beam headlight	8
7 Right high beam headlight	8
8 Left high beam headlight, high beam indicator lamp	8
9 Right front turn signal	5
10 Left front turn signal	5
11 Flasher, backup lights	16
12 Rear window defogger relay, heater blower, rear window defogger indicator lamp, automatic heater control	25
13 Windshield wipers, washer pump, cigar lighter	25
14 Electric sliding roof, rear window wiper, outside mirror	16
15 Stop light, tempostat	8
16 Fuel pump	25
17 Hazard lights, windshield defogger	16
18 Courtesy light, clock, glove box light, trunk light	5
19 Headlight cleaners	25
20 Air conditioner blower	25
21 Electric window controls	25

Fuses in engine compartment

- I Rear window defogger, rear wiper return
- II Heater blower
- III Heater blower relay

Relays in fuse box

- I Air conditioner
- II Fog lights
- III Horn
- IV Tempostat
- V Window controls
- VI Not occupied
- VII Fuel pump

Relays in engine compartment

- I Single-step rear window defogger
- II Heater blower
- III Double-step rear window defogger

Fuse and relay chart for 911 Turbo, 1981 model

Fused equipment	Amps
1 Fog lights	16
2 License plate lights, fog light indicator lamp and relay	5
3 Front and rear right marker lights	5
4 Front and rear left marker lights, engine compartment light	5
5 Right low beam headlight	8
6 Left low beam headlight	8
7 Right high beam headlight	8
8 Left high beam headlight, high beam indicator lamp	8
9 Right front turn signal	5
10 Left front turn signal	5
11 Flasher relay, backup lights, outside mirror	16
12 Electric sliding roof, rear window wiper	25
13 Windshield wipers, washer pump, cigar lighter	25
14 Blower, relay and indicator lamp for windshield and rear window defoggers, automatic rear window control	16
15 Stop light	8
16 Fuel pumps	25
17 Hazard lights, windshield defogger	16
18 Courtesy light, clock, glove box light, trunk light	5
19 Headlight cleaners	25
20 Air conditioner blower	25
21 Electric window controls	25
In engine compartment	
Rear window defogger, rear wiper return	25

Relays in fuse box

- I Air conditioner
- II Fog lights
- III Horn
- IV Not occupied
- V Window controls
- VI Fuel pump 1
- VII Fuel pump 2

Relays in engine compartment

- II Air sensor and charge pressure safety switch
- III Rear window defogger
- IV Delay relay

Bulb chart - 1978 - 1980 models (911 SC and 911 Turbo)

Location	Wattage	Base DIN (SAE)	Remarks
Main headlights H 4	60/55 W	P 43 t-38	
Additional headlights H 3			
Front fog lights H 3	55 W	PK 22 S	
Main headlights "AS"	45/40 W	P 45 t	Japan
Stop/tail lights	21/5 W	BAY 15 d	
Turn signals			
Backup lights	21 W	BA 15 s	
Side marker lights			
License plate light	4 W	BA 9 s	
Rear fog light	18 W	SV 8,5 - 8	
Trunk light	10 W	BA 15 s	
Passenger compartment light			
Engine compartment light	10 W	SV 8,5 - 8	
Instrument indicator lamps	2 W	BA 7 s	
Glass base indicator lamp	1,2 W	W 2 x 4,6 d	
License plate light	5 W	BA 15 s	
Sealed beam headlights (RHD)	60/50 W	(6014)	USA
Sealed beam headlight (LHD)	60/50 W	(7002)	
Stop/tail lights			
Turn signals/side marker lights	32/3 cp	(1034)	USA
Turn signals			
Backup lights	32 cp	(1073)	USA
Side marker lights			
License plate light	2 cp	(1895)	USA
Marker lights (rear)	6 cp	(89)	USA

Bulb chart from 1981 models (911 SC and 911 Turbo)

Location	Wattage	Base DIN (SAE)	Remarks
Main headlights H 4	60/55 W	P 43 1-38	
Additional headlights H 3 Front fog lights H 3	55 W	PK 22 S	
Main headlights "AS"	45/40 W	P 45 t	Japan
Stop/tail lights	21/5 W	BAY 15 d	
Turn signals Backup lights Rear fog light	21 W	BA 15 s	
Side marker lights License plate light	4 W	BA 9 s	
Trunk light	10 W	BA 15 s	
Passenger compartment light Engine compartment light	10 W	SV 8,5-8	
Lamps for instruments and ashtray	2 W	BA 7 s	
Glass base indicator lamps	1,2 W	W 2 x 4,6 d	
License plate light	5 W	BA 15 s	
Side turn signals	5 W	3,5 x 9,5	
Sealed beam headlights (RHD)	60/50 W	(6014)	USA
Sealed beam halogen headlights	60/50 W	(6014)	USA
Stop/tail lights Turn signals/marker lights	32/3 cp	(1034)	USA
Turn signals Backup lights	32 cp	(1073)	USA
Sign light	1,2 W	2,9 x 4,6	USA
Side marker/license plate light	2 cp	(1895)	USA

Dimensions at curb weight according to DIN

	911	Turbo
Wheelbase	2272	2272
Front track width	1369	1432
Rear track width	1379	1501
Length	4291	4291
Width	1652	1775
Height	1320	1310
		(1328)

USA values in brackets.

Weights

	911 SC R. o. w. 78-81 mod.	911 SC USA 78-79 mod.	911 SC USA 80 mod.	911 SC USA 81 mod.	Turbo R. o. w. 78-81 mod.	Turbo USA 78-80 mod.	Turbo Canada 81 mod.
Curb weight acc. to DIN	kg 1160	kg 1160	kg 1250	kg 1250	kg 1300	kg 1295	kg 1300
Gross vehicle weight	kg 1500	kg 1400	kg 1460	kg 1550	kg 1680	kg 1500	kg 1600
Max. axle load, front/rear	kg 650/930	kg 600/840	kg 650/880	kg 650/950	kg 700/1050	kg 625/900	kg 675/1000
Max. trailer load, without brakes**	kg 480	kg 480	kg 480	kg 480	kg 480	kg 480	kg 480
Max. trailer load, with brakes**	kg 800	kg 800	kg 800	kg 800	kg 800	kg 800	kg 800
Max. roof load (only coupe)*	kg 35	kg 35	kg 35	kg 35	kg 35	kg 35	kg 35

* But without exceeding the gross vehicle weight.
** For gradients up to 16 %.

Filling capacities

	911	Turbo
Motor	Brand name heavy duty oil of API Classification SE or SF. SAE 10 W/50, 15 W/40 or 20 W/50 multigrade oil for year around operation. Latter oil not for constant temperatures below - 15° C. Only use brand name oils which had been tested and approved by Porsche. Only when multigrade oil is not available and operating conditions are normal, may brand name single-grade oils be used, but then oil must be changed at specified intervals to avoid damage as specified by the season of the year. Use SAE 30 in summer and SAE 20 W in winter (adequate only for temperatures below + 5° C).	
Total oil volume of system	litr. approx. 13	13
With Sportomatic	litr. approx. 2 more	—
Oil change volume	litr. approx. 10	10
Manual transmission *	litr. approx. 3	3,7
Sportomatic transmission *	litr. approx. 2,5	—
Fuel tank	litr. approx. 80	80
Brake fluid tank	litr. approx. 0,2	0,2
Washing fluid tank	litr. approx. 8,5	8,5

* SAE 90 of Specification API-GL 5 (or Mil-L 2105 B)

Performances, consumption of fuel and oil

		911 SC 78-80 mod.	911 SC 81 mod.	911 Turbo
Top speed with manual transmission	km/h	225	235 (225 USA)	260 (250 USA, 78/79 mod.)
with Sportomatic	km/h	220	—	—
Acceleration 0 - 100 km/h	s	7,0	6,8 (7,0 USA)	5,4 (5,6 USA, 78/79 mod.)
Kilometer from standing start	s	27,5	26,8 (27,5 USA)	24
Fuel consumption (acc. DIN 70030, part 1)				
at 90 km/h	l/100 km	9,2	8,0	8,1
at 120 km/h	l/100 km	11,4	9,7	15,3
City test	l/100 km	17,3	13,4	20,0
Oil consumption	l/1000 km	ca. 1,5	ca. 1,5	1,0-2,0