CAMS

5TH CATEGORY - HISTORIC RACING

GROUP Nc

APPROVED VEHICLE SPECIFICATION

This form details the approved specifications of individual vehicle models in the 5th Category Historic car group. To be issued with an Historic Log Book, cars need to comply with these specifications, the physical appearance shown in the illustrations and the general historic rules as detailed in the current CAMS Manual of Motor Sport.

Make of Car: Porsche Model: 911 S Rally

Period of Original Manufacture: 1968

General Comments : The Porsche raced in Touring car events in Australia in 1968/69 was based on the 1968 911T model as this was the only production six cylinder model manufactured in sufficient numbers to qualify for FIA Touring recognition. The 911 S Rally version incorporated certain variations in engine, transmission and brakes. The basic body shell was identical in T, E and S models.

CAMS Historic Group: Nc

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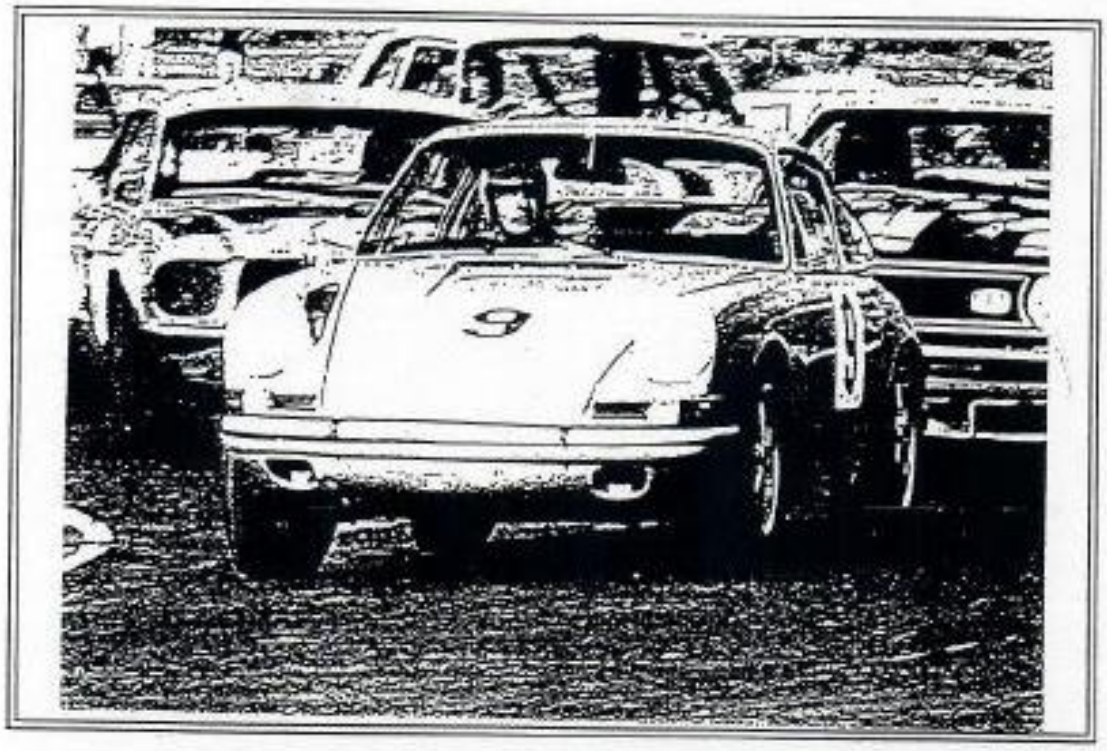


SECTION 1 - CHASSIS

1.1 CHASSIS FRAME

Description: Unitery Construction **Period of Manufacture:** 1968
Manufacturer: Porsche
Chassis no. from: 11830001 onwards
Chassis no. location: Front Luggage Compartment
Material: Steel
Comments:

1.2 FRONT SUSPENSION

Description: Independent by McPherson Strut
Spring medium: Longitudinal Torsion Bar
Damper Type: Telescopic Hydraulic **Adjustable:** Yes
Anti-sway bar: Yes **Adjustable:** No
Suspension adjustable: Yes
Comments: Front suspension fully adjustable for camber, caster, toe-in and ride height.

1.3 REAR SUSPENSION

Description: Independent by Trailing Central Arms
Spring medium: Transverse Torsion Bars (1 per side)
Damper type: Telescopic Hydraulic **Adjustable:** Yes
Anti-sway bar: Yes **Adjustable:** No
Suspension adjustable: Yes
Comments: Rear suspension fully adjustable for camber, toe-in and ride height

1.4 STEERING

Type: Rack & Pinion **Make:** Porsche
Comments:

1.5 BRAKES

	Front	Rear
Type:	Ventilated Disc	Ventilated Disc
Dimensions:	262 mm	290 mm
Material of drum/disc	Cast Iron	Cast Iron
No. cylinders/pots per wheel:	2	2
Actuation:	Hydraulic	Hydraulic
Caliper: Make, Material, Type:	Ate Cast Iron	Ate Cast Iron
Master cylinder make:	Ate **Type:**	Single cylinder
Adjustable bias	No	
Servo Fitted	No	

Comments: Adjustable bias and other modifications in accordance with Group Nc regulations are permitted.

SECTION 2 - ENGINE

2.1 ENGINE

Make:	Porsche		
Model:	901/22		
No. cylinders:	6	Configuration:	Horizontal Opposed
Cylinder Block-material:	Aluminium	Four Stroke	
Bore - Original:	80 mm	Max. allowed:	80 mm
Stroke - original:	66 mm	Max. allowed:	66 mm
Capacity - original:	1991 cc	Max. allowed:	2000 cc
Cooling method:	Air/Oil		
Identifying marks:			
Comments:			

2.2 CYLINDER HEAD

Make:	Porsche				
No. of valves/cylinder-	Inlet:	1		Exhaust:	1
- No. of ports total:	Inlet:	6		Exhaust:	6
No. of camshafts: 2	Location:	OHC		Drive:	Chain
Valve actuation:	Rocker Arms				
Spark plugs/cylinder:	2				
Identifying marks:					

Comments: Single overhead cam on each bank of cylinders operating valves by Rocker Arms.

2.3 LUBRICATION

Method: Dry Sump		Oil tank location:	Right Rear Fender
Dry sump pump type:	Gear Type	Location:	Inside Crankcase
Oil cooler standard:	Yes	Location:	Engine & Front Right Fender

Comments:

2.4 IGNITION

Type:	Dual Ignition Distributor and Coil
Make:	Bosch
Comments:	

2.5 FUEL FEED

Carburettor: Make:	Weber	Model:	40 IDA 3	No:	2	Size: 40mm	
Fuel injection Make:	N/A						
Supercharged:	No						

Comments:

SECTION 3 - TRANSMISSION

3.1 CLUTCH

Make: Fichtal & Sachs Type: M215K Diaphragm
No. of Plates: One
Actuation: Cable
Comments

3.2 TRANSMISSION

Type: Manual Transaxle
Make: Porsche Model: 901
No. forward speeds: 5 Gearbox location: Front of Rear Axle
Gearchange type and location: Manual, Floor mounted, central
Case material: Aluminium Identifying marks:
Comments:

3.3 FINAL DRIVE

Make: Porsche Model: 901
Wheel drive method: Spiral Bevel C/W and Pinion to Rear Wheels
Ratios:
Differential: ZF Limited slip Type: Sliding Pawl Type
Comments:

3.4 TRANSMISSION SHAFTS (EXPOSED)

Number: 2 Location: To Rear Wheels
Description: Each shaft fitted with Nadella u/j's (inboard) and Hookes u/j's (outboard) accommodating change of axle length
Comments:

3.5 WHEELS & TYRES

Wheel type: Original: Forged Material: Original: Alloy
Allowed: Allowed:
Fixture method: Studs No. studs: 5 per wheel

	FRONT	REAR
Wheel dia. & rim width		
Original:	6" x 15"	6" x 15"
Allowed	7" x 15"	7" x 15"
Tyre section:		
Original:		
Allowed:		

Aspect ratio - minimum: 60%
Comments: All four road wheels used required to be "identically similar". Wheel/tyre combination must lie within the periphery of body plan.

SECTION 4 - GENERAL

4.1 FUEL SYSTEM

Tank Location: Front Luggage Compartment Capacity: 62 Litres

Fuel pump, type and location: Electric, Dual Front Luggage Compartment Make: Bendix or Hardi

Comments:

4.2 ELECTRICAL SYSTEM

Voltage: 12 Alternator fitted

Battery Location: Front Luggage Compartment

Comments:

4.3 BODYWORK

Type: 2 Door Coupe Material: Steel

No. of seats: 2 x 2 No. doors: 2

Comments: Total body - Standard Production Steel.
All glass was standard production, with standard window winders
Alternative factory supplied seats (Recaro) used in "simplified" interior model are acceptable.

4.4 DIMENSIONS

Track - Front: 1370 mm Rear: 1370 mm

Wheelbase: 2211 mm Overall length: 4163 mm

Dry weight: 960 kg

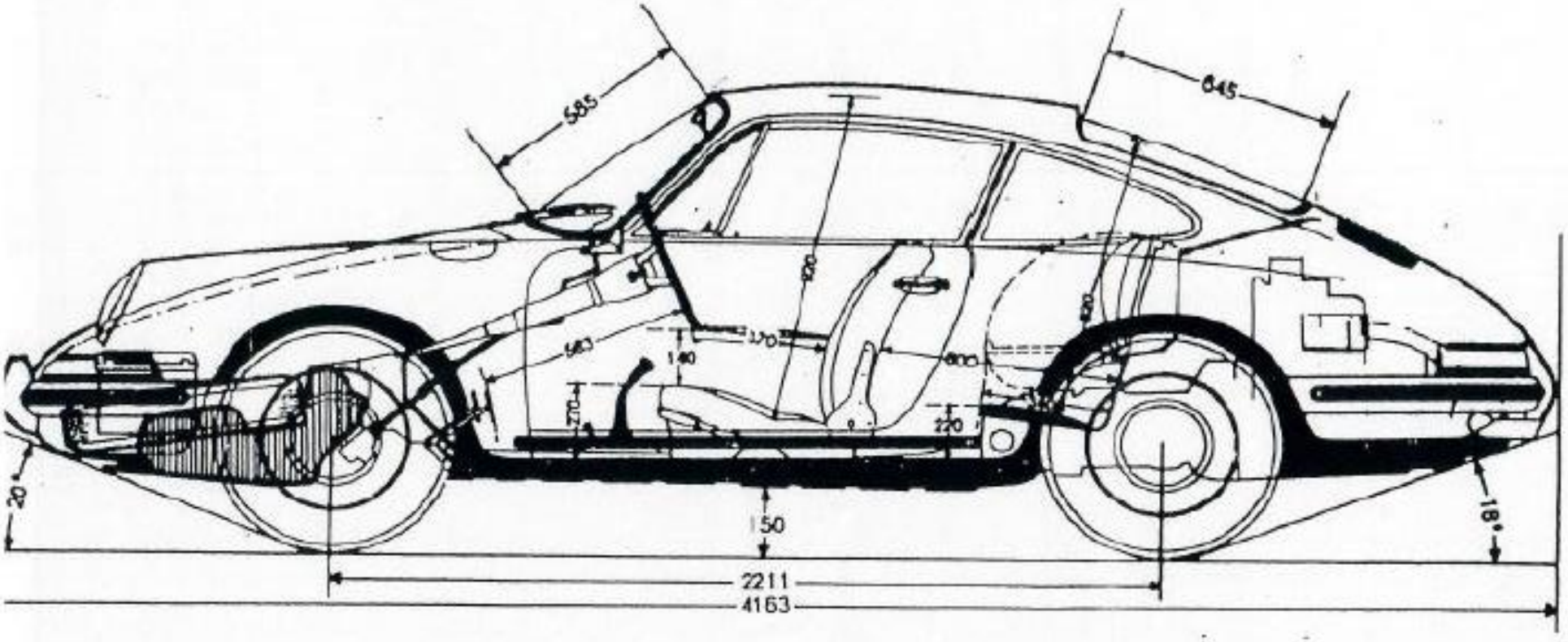
Comments: Maximum permitted track increase under Group Nc regulations is 50mm.

4.5 SAFETY EQUIPMENT

Fire extinguisher required
Seat belt required
Rollbar required
Electrical cut off switch required
Safety fuel tank optional

PORSCHE

Body Dimensions for Type 911 and 912



General description: Types 911 S-2.2/2.3

Coachwork and chassis

For the 1970 racing and rally season, the 2.2-litre 911 S became the base for most competition versions. While the engine was kept almost standard for rally work (as in the case of the Safari rally), the racing version had its capacity increased by 52 cc while its power went up from 180 to 240 bhp. The racing 911 S (internally known as 'ST') differed from the standard model in several ways: thin gauge sheet metal was used for the roof panel, for both rear side panels and for the seat pan back and side panels. The following body parts were deleted: the seat slide supports on the central backbone, all standard seat belt anchorage points, the heater ducts, the ashtray, the glove box lid and the tubes for the front and rear cover opening cables. Door and bumper decorative mouldings were also deleted, as were the front and rear cover locks, the foglight recess covers, the front torsion bar protections, the covers giving access to the rear torsion bars and the sun visor on the passenger side. Sheet metal joints were not filled, the body was not undersealed and both the rubber and sound damping felt mats were deleted. Even the paint was kept as thin as possible to reduce weight.

Parts were available for further lightening and modifications, such as: plastic front cover, plastic front and rear bumpers, front mudguard extensions, aluminium doors of which the frame was 0.75 mm thick steel, and Plexiglas for all windows, except the windscreen.

The front end of the car was stiffened by a transverse bar between the strut consoles in the luggage compartment. A special rally or circuit fuel tank of 80 or 110 litres capacity (17.6 or 24.2 gallons), which could be filled through an aperture in the front cover, was available to replace the standard 62-litre (13.6-gallon) tank with filler in the left front mudguard. For rallies, forged light alloy wheels with a 152 mm (6-inch) wide rim at the front and 178 mm (7-inch) at the rear were used, while 178 mm and 228 mm (9-inch) wide rims were fitted for circuit work. Further optional competition equipment included a supplementary petrol-electric heater (rallies only), a ventilating fan, two Recaro sports seats, tape to cover the moulding fitting holes, simplified internal trim, thinner windscreen glass, lighter knee protection padding, rubber fasteners for front and rear covers, a supplementary battery (rallies only), an aluminium roll-over bar, a space-saver spare tyre, and steel mudguard side extensions to cover the wider rear wheels.

For long distance rallies, such as the Safari, the special preparation of the 911 S was as follows. The lightened standard body was further reduced in weight by the use of glass-fibre reinforced plastic components, such as the front cover and the front and rear bumpers. All glass areas were Plexiglas, except for the windscreen. The co-driver sat in a sports seat and the driver in a Recaro bucket. Further equipment included: a reading lamp, a Speed Pilot, a socket for a portable lamp, air horns, Plexiglas covers for the additional lights, 100-watt headlight bulbs, a large map pocket, a tool bag secured to the rear bulkhead, three jacks, complete rally tools, a special tool for quick-changing the front suspension struts, two fire extinguishers, a fire extinguishing jet in the bell housing, a straight-through silencer, a wire mesh protection for the oil tank, and splash flaps at the rear.

The normal production running gear was little changed. The front suspension used the standard torsion bars as well as the standard 15 mm (0.6 inch) diameter anti-roll bar. Toe-in was zero, camber −30'. Koni front struts were used and in many cases the standard brakes were replaced by those of the 908.02 racing model. The rear suspension torsion bars (23 mm/0.9 inch diameter) and anti-roll

bar (16 mm/0.6 inch diameter) were also standard parts. Basic settings for the rear axle were also standard with 0° toe-in and –1°30' negative camber. The dampers were Koni, aluminium brake calipers replaced the cast iron originals, and the hub studs were longer than standard.

Some special equipment was used for the Safari rally, such as reinforced Koni 'tropical' shock absorbers, while the wishbones, the steering and its linkage were reinforced; 20 or 21 mm diameter (approximately 0.8 inch) front torsion bars were used. There were reinforced rear semi-trailing links and attachment brackets. In contrast with the racing version, there was no special protection for the brake pipes, but the front strut consoles were reinforced and both the front and rear running gear were protected by an aluminium underpan. Spare clutch and throttle cables were fitted and the cog-belt driving the injection pump was enclosed in a protective cover.

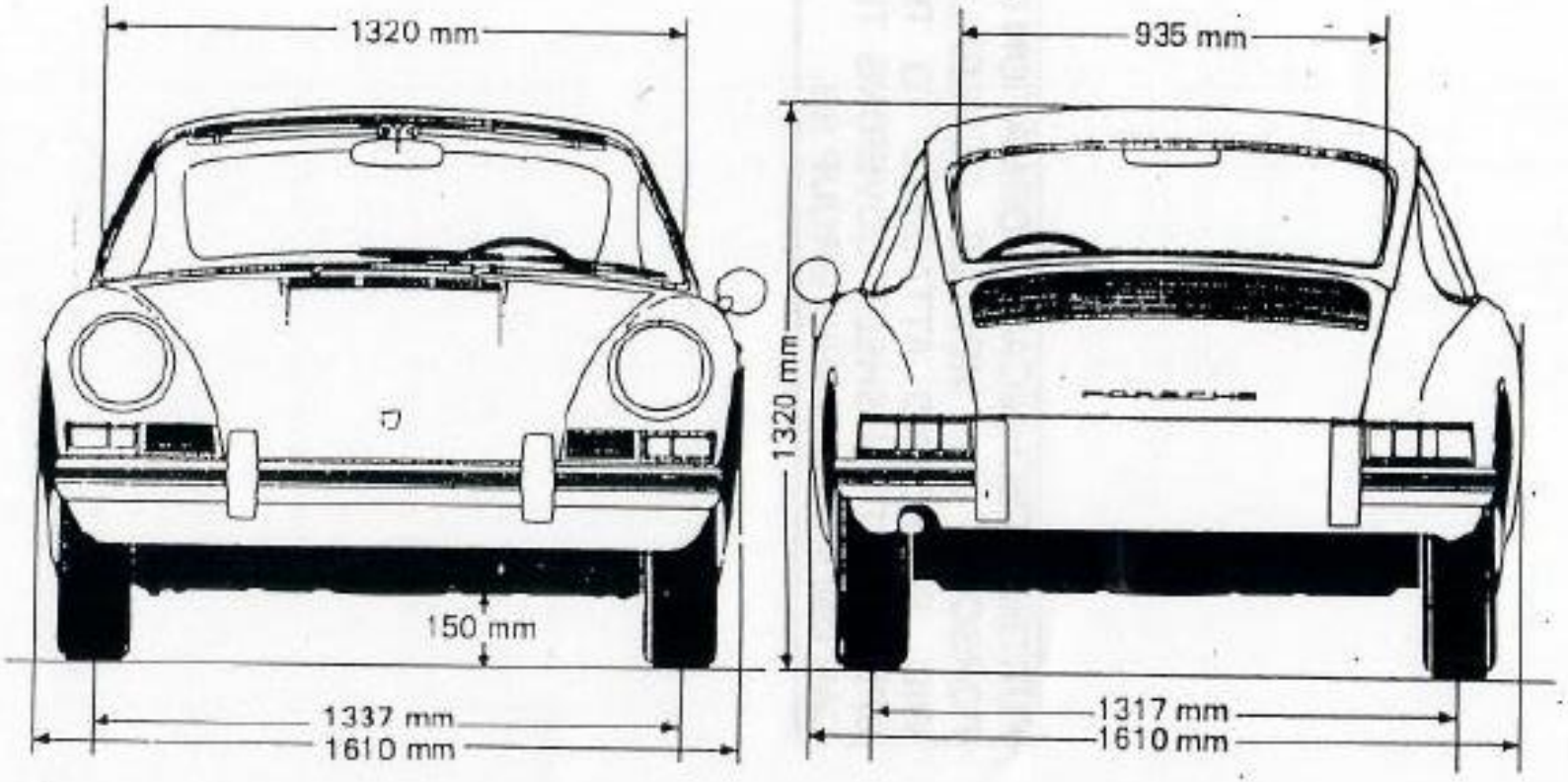
Engine

For rallies, the 2,195 cc engine remained as standard, developing 180 bhp at 7,200 rpm. The racing version had its cylinder bores increased by 1 mm to raise the capacity to 2,247 cc. With a compression ratio of 10.3:1 it produced 240 bhp at 7,800 rpm. The crankcase was pressure cast in magnesium alloy. The cylinders had chromium-plated bores and the cylinder heads were of aluminium alloy. The forged crankshaft ran in eight bearings. The connecting rods were steel and thin shell bearings were used both for the main bearings and big ends. The engine had dry sump lubrication and was fed through two electric fuel pumps. Injection was by a Bosch twin-row, six-plunger pump, while the twin ignition system was also of Bosch manufacture.

Transmission

The five-speed gearbox and differential unit were mounted in a single casing. Various gear sets were available. The final drive was by spiral bevel and crown wheel through a limited slip differential of Powr-Lok pattern. The wheels were driven through half axles incorporating two constant velocity universals, also taking up the length variations. The single plate dry clutch was reinforced.

Porsche ST-2.2, a lightweight version of the 911 S-2.2.


1320 mm
150 mm
1337 mm
1610 mm
935 mm
1320 mm
1317 mm
1610 mm

FURTHER TECHNICAL INFORMATION ON PORSCHE 911 MODELS GENERALLY WILL BE FOUND ATTACHED TO THE SPECIFICATION SHEET COVERING THE CAR UNDER HISTORIC GROUP SB.