

FAST SPEEDSTER

The original was built for boulevard cruising, but this 962-engined remake is closer to an open-cockpit racer. Total 911 presents the full story of a Speedster truly living up to its name

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BELOW 934 fenders, 934.5 axles and 935 suspension leap from the spec sheet of this wild Speedster



BELOW DP rear wing and decklid allowed Canepa to fit the intercooler and associated plumbing



“The engine was the spare, well, it was what became the spare engine; it had been the primary engine in HR2, the '62 which I raced. It was the Daytona engine,” says

Bruce Canepa. It isn't every shop that has such an engine going spare, and when Las Vegas casino owner Gary Primm contacted Canepa about the disappointing 1989 911 Speedster he'd just had delivered, the stars aligned. Primm had driven his Speedster about 100 miles and found it lacking, calling Canepa to ask: “What can we do with this thing? It's boring, and slow,” Primm and Canepa having collaborated previously on an AMG build.

It didn't take Canepa long to figure out what to do with the Speedster. He admits: “They were pretty underwhelming. They had no power, they had a Turbo chassis, which was almost too much car for the motor, and they were flexy.” He thought for a while before fixing on the idea of a 934 for the road. “Really, the nicest thing about Primm and a lot of my customers is he just let me build what I want,” says Canepa. “He didn't really know what a 934 was. I said ‘we're going to put on 934 fenders; they look cool. We're going to make it look like a Porsche race car, but with no roof on it.’”

The result is sitting in Canepa's showroom in Scotts Valley, California. I've been poring over it for



over an hour. Even here among Porsche rarities of the like you'll seldom see outside Porsche's own Stuttgart Museum, the Speedster is a knockout. G1 Guards red, because that's how it was delivered to Canepa (all of Primm's cars are red), the build is so beautifully executed it could easily be a factory car, albeit a very special one.

The deep front splitter has its outer cutouts filled by running lights behind Perspex, and the remaining three large intakes are pure 934 race car. In the unlikely event that the front bumper left you guessing, this is a Speedster unlike any other. Those 934-proportioned flared arches front and rear, covering 17-inch, three-piece BBS alloy racing wheels, leave little doubt. Those punctured rear wings feed intake air into the engine, this Speedster taking the idea of a Turbo-bodied Speedster to its ultimate incarnation. Only unlike the standard cars, the visuals are more than matched by the mill.

Enhancing the racing look, the gold and silver finished BBS race wheels feature centre-lock nuts. That's thanks to the fitment of 935 hubs, Canepa saying: "The 935 wasn't that much different than the street car in the early 1990s. Especially the first version. The 1976 934 was damn near a street car. We put all that stuff on this car and upgraded the axles to the bigger CV joints, as with a 934.5. The axles came

from my 934.5. The trailing arms were all stuff we had in our inventory." That includes a 959-derived braking system, too.

Early in the build a full coilover set-up was considered, but ruled out as it brought too many compromises for what was always intended to be a road car, as opposed to a track car. Even so, to achieve the project's goals there needed to be some work done to the structure.

By Canepa's own admission the standard Speedster was somewhat lacking in torsional rigidity, and near tripling the power and adding that road-tuned but race-derived 934-935 suspension wasn't going to do anything to improve that. "At the time our engineer said basically we've got to fix the tub, because we can't put 700 horsepower in it - the tub's all flexy," he recalls. The solution was to monocoque the whole tub to make it all work properly. Canepa explains: "We boxed the longitudinals, we tied all the corners together and the centre to the torsion bar tube. Under the seats, actually the floor, it's boxed. It goes all the way to the front. That thing has zero flex in it... it's better than most Coupes."

Aiding that rigidity and safety is the integrated roll bar, it fully welded, with side bars fitted along those boxed sills, the cage allowing for the installation of

four-point TRW race harnesses in what otherwise could be a stock interior. There are clues there, but unlike the exterior they're subtle enough that you could miss them. A Momo suede-rimmed Prototipo steering wheel isn't unusual in a 911, particularly of this vintage, but the 959 speedometer behind it is, it reading to a tantalising 220mph maximum.

That might be a touch optimistic, but not by much, 210mph or thereabouts the likely maximum, the goal not really the extremes of its performance but the usability. That's not something you'd usually associate with a highly strung race engine, but Canepa had famed engine builder Jerry Woods, as at the time Canepa didn't have its own engine shop. The IMSA 962 engine is, Canepa admits, essentially a 935 motor, so it's fully air-cooled, not featuring the water-cooling later 962s gained to help them retain their dominance among ever-tougher competition.

"We gave it to Jerry, and he mapped out what it was going to be, and what size it was going to be," says Canepa. 3.3 litres was the capacity, Woods using 100mm pistons and a 70-4mm stroke crankshaft to achieve that. Canepa says: "It doesn't do any good to have top-end as the priority. I said, 'You need low- and mid-range: most of the time you can go fast from here and the hotel'. There's traffic and congestion and there's not a lot of places to go real fast anymore. ☺





Model
**1962 twin-turbo
Speedster**

Year 1989

Engine

Capacity 3,300 cc

Compression unknown
ratio

Maximum power 650hp+ @ 6,500rpm with
1.3 bar boost

Maximum torque In excess of 740Nm

Transmission Custom G50 five-speed manual

Suspension

Front 935-derived suspension with rifle-drilled 23mm torsion bars; anti-roll bar; custom-valved Bilstein shock absorbers; 935 centre-lock hubs

Rear 935-derived rear suspension with rifle-drilled 33mm transverse torsion bars; semi-trailing arms, anti-roll bar, custom-valved Bilstein shock absorbers; 935 centre-lock hubs

Wheels & tyres

Front 9.5x17-inch; 275/40/ZR17

Rear 13x17-inch; 315/35/ZR17

Dimensions

Length unknown

Width unknown

Weight unknown

Performance

0-62mph 3.0 seconds (estimate)

Top speed 210mph (geared)

BELOW Integrated roll bar is fully welded, with side bars fitted along the Speedster's boxed sills



I said 'I want the thing to just rip from 0 to 100.'" Unlike the race engine it uses a pair of turbos, the same K26 turbos that Canepa used on its own 999 S builds. These are instrumental in helping to increase the torque of the race engine. Canepa also says that the cam design is instrumental here for low-rev driveability and response.

In the 962 the engine is mid-mounted rather than rear-mounted, which meant its fitment to the Speedster caused a number of engineering challenges. Canepa insisted on the engine retaining its top-mounted fan, not just for its appreciable cooling, as well as visual properties, but because it gives the car a very distinctive sound, particularly at idle. Canepa says: "When you're standing around you're looking for a 935 or 962, 'cause that's what it sounds like."

Woods' efforts in the engine build brought results. With the turbos running on 1.3 bar of boost it's developing 650-plus horsepower today, though it's the torque that's instrumental in its ability to outrun almost anything and, at the same time, prove usable as a road car. Producing in excess of 740Nm, it provides enough thrust to push the Speedster into speeds that will quickly make you familiar with the local police force. Unsurprisingly, the more useful amount of power now created dwarfs the 'undervhelming' 235hp that it was producing from the stock 3.2-litre engine it was delivered with.

Making a racing engine fit – and work – meant every element of the engine build required some form of modification. With low rev response the goal, shorter primary headers were required, these helping eradicate lag from the turbos. These were positioned behind the wheels to give as short a route as possible to the headers, as well as being the ideal placement to work with the sizeable intercoolers. "We did the exhaust and made it as short as possible, and got that thing to have very little lag," says Canepa, the lag all below 1,500rpm. The intercooler plumbing took some effort, that DP wing and engine lid giving Canepa the space to fit it all under the rear. Electronics inevitably played their part with a Haltech programmable twin-ignition system developed by Woods using the 962 twin-staged injectors, the initial set working at low loads with the second set joining in when the boost pressure builds. There's an electronic wastegate control too, with two presets and a variable setting, replacing the manual wastegate that featured on the engine. With all that power the stock gearbox was replaced, too, with a custom G50 five-speed transmission from a 911 Turbo fitted, shortened an inch by Canepa to fit within the car.

In addition to the 962's top-mounted fan helping keep the 3.3-litre twin-turbo cool is a lubrication system that uses a 26.5-litre oil tank under the bonnet. It's plumbed to a large oil cooler in the front dam, while out back there's an oil accumulator tank attached to the breather system.

"It was really a backyard engineering project," Canepa admits. Every solution to a problem created the requirement for another innovative solution. Civilising a race engine for the road is tricky enough, but Canepa's team achieved exactly that – without compromises – in the final build. There's air conditioning, Canepa saying: "We put the compressor underneath instead of on top as there's no room on top because of the fan. It's a counter-clockwise compressor." This neat solution is also used on the 934 street car builds which, to date, Canepa has done three of, one currently in the shop being built for Jerry Seinfeld.

That's cabin cooling sorted, but with the no-compromises approach the Speedster required a heater system, too. With no space for conventional


heat exchangers in the engine compartment, Canepa installed a petrol heater system, a solution Porsche itself used on its rally cars.

Primm drove the car, albeit very few miles, and with so many other cars in his collection Canepa admits that he did most of the miles on the odometer while testing it, saying: "I had done a full thousand miles of sorting and

testing. I think it's got 2,900 miles on it now. That's the original paint, everything. Other than the parts I added, fenders and spoiler, it's all original Porsche paint on the car."

During the test drives Canepa would spend a whole day in traffic cruising around to make sure it was drivable, and so it proved, though with the ability to test the traction of those 13-inch-wider rear tyres in any gear if you've got the space. "The top goes up and down. It's just as easy to drive as a stock one is in terms of driveability. It'll cruise down the street," says Canepa.

"The funny part is, we look back and we say we built this in 1990. I've always been one that believes less is more, so if you don't go stupid on design then it will stand the test of time," adds Canepa. And if he were to build it today? "Well I would never have done it red, because I'm not a red fan," he admits. "I wouldn't do a tan interior. I'd repaint the whole car. I would have it in a dark colour with a dark interior. I'd have my wheel fans that I had on it that I originally made for those wheels, because I made them and they look awesome." They were part of the original build, but it's one area where Primm and Canepa disagreed, Primm replacing the look of the car without the wheel fans.

Elsewhere, Canepa admits he'd make use of the advancements in engine management: "Every modern car is fast because of the engine management system and the turbochargers, with the newer tech for increasingly better response and more power. The idea of the compressor itself is just the same. If we Motec that thing and did the turbos, 'Katy bar the dam,' because we know how to make 870hp in a 962 motor. We could do some serious damage." 

"We're going to make it look like a Porsche race car, but with no roof on it"

BELOW 962's horizontal cooling fan position is retained

