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A classic wedge-shaped sports-prototype
that was state of the art in 1970

Abarth Due Mille



ABARTH 2000 SP



There is something magical about Abarth. This is a brand with wide appeal: the well-heeled, the collectors, the racers, and kids on the street are all drawn to the Scorpion. Fiat's top brass have reacted to this phenomenon by reviving the brand. Despite being downgraded in the 1990s to floor mat logos on mundane Fiats, the Scorpion is flexing its pincers once again. In its heyday, Abarth not only modified cars, but also made its own complete cars. Don't be surprised to see a new purpose built Abarth join the current stand-alone Abarth range.



On test here at the Autodromo di Franciacorta is a 1970 Abarth 2000 SP belonging to Abarth specialist Tony Berni (www.bernimotori.com). This is a type SE 010 and its chassis number 015. Abarth started his chassis numbers at 011, making this the fifth 2000 SP. Berni bought the car in December 2008 from UK Abarth personality Lincoln Small (founder of Radbourne Racing) who had owned it for 10 years. Before that the car spent time in Japan and the USA.

adjustments are limited to ride height, rake and an adjustable Gurney flap on the tail. In true prototype fashion, it is right-hand drive, which gives a corner-weight advantage on race circuits, as most corners turn right. Where Lola and Chevron, and just about every racing car manufacturer, placed the engine ahead of the gearbox, Abarth (and Porsche) did the opposite. Contrary to engineering principles, the bespoke Abarth motor pokes out the rear, well aft of

ABOVE: The slick tyres grip the hot tarmac at a sunny Franciacorta circuit. With the engine well rear of the axle line, lifting off mid-corner is not recommended

“Contrary to engineering principles, the bespoke Abarth motor pokes out of the rear”

The 2000 SP has a neat, purposeful look about it. Studying its components, I cannot help thinking about the mountain that Abarth had to climb in order to be competitive against the Porsches, the Lolas and the Chevrons. The Porsche 908 was instantly competitive, while the quick Brits could concentrate on chassis and suspension design. Lola and Chevron never had to worry about engines or gearboxes because power units could be cherry-picked from the best sources and Hewland supplied lightweight, reliable, off-the-shelf transmissions. Abarth, on the other hand, had to learn on the job, doing everything in-house.

Removing the covers, we can see that the 2000 SP has a conventional tubular steel space frame with fibre-glass body and aluminium floor and bulkheads. Apart from the roll-cage tubing, the steel chassis is comprised of slender lightweight tubes. Aero

the rear axle line. Abarth called it 'fuoribordo', which is Italian for 'out-board'. In period, the story goes that Arturo Merzario wanted a mid-engined car. Abarth tried back-to-back tests with conventional mid-engined layouts and rear-engined configurations. And guess what? The rear-engined layout was quicker. I do not know how or where the tests were carried out but with the benefit of history and experience, two things spring to mind. Firstly, that in 50 years, nothing has changed, the mid-engine location for racing cars is virtually universal. The second observation is how Porsches work so well with their engines overhanging the rear axle line.

When considering the positives and negatives of the two configurations we find that a mid-engine location has a low polar moment of inertia which means that rapid directional changes can be made. The advantage of a

ABARTH 2000 SP



ABOVE: The superb 2-litre twin cam engine produces 250bhp at 8000rpm. With the Abarth weighing in at just 530kg the power to weight ratio is an excellent 472bhp per tonne

rear-engine location is that of superior corner-exit traction, and thereby greater terminal speed on the following straight. On the down-side, apart from mild lift-off oversteer, a mid-engine location has few negatives, while the rear-mounted engine will act like a pendulum if things turn ugly – ie lifting off mid-corner will induce monster lift-off oversteer.

Let's have a look at the Abarth 'pendulum'. Well, it is not much of a pendulum as it looks pretty lightweight – everything is aluminium. The 4-cylinder twin cam was state of the art back in 1970 with 4-valves per cylinder and a reasonably over-square bore/stroke ratio of 88mm x 80mm, which is a fine compromise enabling a safe 8000rpm with reasonable mid-range torque. Although quite how it will work with a pair of massive 58DCOE twin choke Webers will soon be discovered.

Stepping aboard over the token doors and wriggling down, I settle into a laid-back position with the backrest of the racing seat angled at about 45°. This is not noticed once under way. The gear lever has a slotted gate with a mechanical sub-device that helps to avoid mis-shifting. Padded side panels hold your knees in place in high-g turns. The big rev-counter is an Abarth original while the minor instruments are from its time in the USA. First gear is left and back on the Abarth 5-speed gearbox. All the controls work well, which means that someone has been fettling the car

TECHNICAL SPECIFICATIONS

ABARTH

ENGINE:	1946cc, all-alloy rear-mounted, inline 4-cylinder
BORE X STROKE:	88mm x 80mm
FUEL SYSTEM:	Twin 58DCOE Webers. Single plug Marelli ignition
POWER:	250bhp @ 8000rpm
TRANSMISSION:	Abarth Tipo 139 5-speed + rev and lsd.
SUSPENSION:	Double wishbones, anti-roll bars front and rear
BRAKES:	Four solid discs with Girling AR alloy 2-pot calipers
WHEELS:	Campagnolo alloy 4-stud fixing
TYRES:	Avon slicks. Rear 12 x 23 x 13. Front 9 x 21 x 13
DRY WEIGHT:	530kg
TOP SPEED:	120mph to 160mph depending on gearing (estimated)
0-60MPH:	3.8sec (estimated)

properly. Racing cars that don't race sometimes evolve into barely mobile museum pieces – but that's not the case here. The car is totally unsilenced and emitting outrageous decibels. The noise is a hard purposeful bark that would be an 'environmental issue' at most of today's race circuits.

A corner looms but the Abarth's components are not up to temperature. I press the solid brake pedal and little happens. The pads are cold and I wonder how a





hillclimb driver copes when he does not have the luxury of a warm-up lap for brakes and tyres. Even when the pads had warmed up, I did not feel comfortable with late braking or trail-braking into turns. With such a light front-end, brake balance needs to be just right for all conditions. A wet surface would require more rear brake effort so the driver really needs his on-board brake-bias adjuster. I never found the adjuster but the set-up was good for the conditions. Power delivery is

good use to help 'rotate' it. Hillclimbers often dial in some rear toe-out – a definite no-no for circuit use. Rear toe-out works on 180° switch-backs but turns your hair grey on race circuits.

The gearing is very long and it feels like it could attain 70mph in first gear. This does not mean that the car could do 350mph in fifth gear, simply that the other gear ratios are bunched to offer plenty of cogs from which to choose. With 250bhp and a dry weight of

ABOVE: The 2000 SP is beautifully presented by Italian-based Abarth guru Tony Berni, better known to his UK chums as the 'Welsh Wizard'

“Rear toe-out works on 180° switchbacks but turns your hair grey on race circuits”

surprisingly user-friendly. Perhaps those big 58mm carbs must have small internal choke diameters? Time to throw the car at some corners; initial understeer means that I have to turn-in early to hit my clipping point. Powering away from the corner is what this car does best as most of its weight is on the rear wheels.

Lifting off pulls the nose into the turn and is a useful tool. By mid-turn and corner-exit lifting off can so easily induce a spin. This sting in the tail can also be another useful tool, not so much on race circuits with big corners, but on tight hillclimb hairpin turns. In this situation, the car's tendency to spin can be put to

530kg, the Abarth does not hang about. Its power-to-weight ratio is a very effective 472bhp/tonne. The ideal driver for such a machine would be someone who likes racing Porsche 911s, either that or anyone who has mastered a Lancia Stratos. This does not mean that a newcomer could not drive the 2000 SP; being so lightweight the 2000 SP is far more forgiving than the Porsche or the Lancia. If you want a modern day comparison, it handles a bit like the first generation Lotus Elise of 1996. Design is about how a car works, not its styling or how it looks, but hey, doesn't the 2000 SP look just fabulous. **IT**

BELOW: The 2000 SP obviously spent very little time on Abarth's drawing board. However, its simple wedge-shaped design looks oh so right

