

**S40**  
RACING

**TVR**

**VOLVO**

# VOLVO S40 SPECIFICATION

## CHASSIS

Standard Volvo S40 bodysell, reinforced with TWR-designed safety roll cage and driver side-impact system.

## ENGINE

Highly-tuned 2-litre unit, 5 Cylinders, 4 Valves per cylinder, 1,999mm Displacement, 73.9mm Stroke, 83mm Bore, Max output KW/BHP/RPM 215+/290+/8500, Oil - Q8 Formula.

## CATALYTIC CONVERTER

Catalytic exhaust emission control and silencer fitted. Volvo was the first manufacturer in the BTCC to fit one (on the 850), before they became mandatory in 1995.

## TRANSMISSION

Purpose-built racing transmission, designed and developed by TWR and Xtrac. Six-speed, sequential shift: push to change down, pull to change up. Ratios can be changed and both plate and viscous differentials can be used.

## SUSPENSION

Front: TWR Low Friction McPherson strut with coil springs. Ohlins three-way adjustable dampers. Fixed anti-roll bar.

Rear: Multi-link suspension system, with coil springs over Ohlins three-way adjustable dampers. Driver-adjustable roll bar.

## BRAKES

Front: Brembo eight-piston calipers with Endless carbon metallic pads. Brembo 355mm x 32mm wide ventilated discs.

Rear: Brembo four-piston calipers with Endless pads, Brembo 278mm x 16mm wide ventilated discs.

## COOLING

Twin front-mounted water radiators ducted to sides. TWR oil/water heat exchanger.

## FUEL SYSTEM

40-litre FT 3-specification rubber fuel cell.

## WHEELS & TYRES

BBS forged magnesium alloy racing wheels (19-inch diameter x 8.2-inch wide), mounted with Michelin racing tyres - six slicks allowed per race and 16 grooved.

## BODYWORK

TWR-designed and developed aerodynamic package includes front spoiler and single-element, centrally-mounted rear wing.

## ADDITIONAL FEATURES

Carbon/kevlar safety seat On-board AP pneumatic jacking system, PI Research System 3+ monitors engine and chassis parameters. Driver to pit Kenwood radio system.

The Volvo logo, consisting of the word "VOLVO" in a bold, black, sans-serif font.



Volvo S40 Racing drivers Rickard Rydell and Kelvin Burt are on the fitness trail with top trainer Dominique Sappia. The BTCC stars have joined the likes of Eric Cantons, Andre Agassi, Mick Jagger and Damon Hill on French fitness guru Sappia's books.

Sappia has been designing specialised fitness routines for celebrity visitors to his Marseille clinic since 1988.

Rydell, Burt and the team hope that, combined with the exciting new S40 racer, improve training will give them the edge over the competition. They recently travelled to the south of France for a series of tests at Sappia's clinic.

Burt explained the plan of action. "All of the top drivers and cars are so closely matched you have to exploit every advantage

you can. We know that all the other drivers are working on their fitness, so we need to do the same"

#### Testing time

As the drivers were plugged into machines at the Sainte Marguerite Hospital in Marseilles, Sappia outlined his system. "By testing the blood, heart and lungs I can work out the perfect level at which to exercise them.

"It is particularly important to stretch their pulse rate, because a driver's pulse rises in bursts as he overtakes, before falling back again. It does not need to be strong and constant like a marathon runner's," says the 31-year-old trainer.

With hospital staff swarming around, the drivers were led to an exercise bicycle and wired up to a heart monitor. As the display

showed Rydell's pulse edging up to a level of 180 beats per minute, Sappia stressed that "maximum heart rates do not apply to professional sportsmen."

#### Pulse rate

"The top pulse rate is normally 220 minus the person's age. For the drivers, both aged 29, this would mean that doctors would not normally take them beyond 191, but sports doctors need to know how high their clients can go," he said, adding that the heart rate should be raised carefully, in stages.

After their lung capacity had been measured, an assistant told Burt that the result was "very good - big, big lungs;" but complained that he was controlling his breathing too tightly. "I can't help it, I'm used to holding my breath when I take a corner,"

he replied.

Sappia was pleased with the results of the tests: "They are both in good shape, they have no injuries, their pulse is fine and their blood pressure is fine"

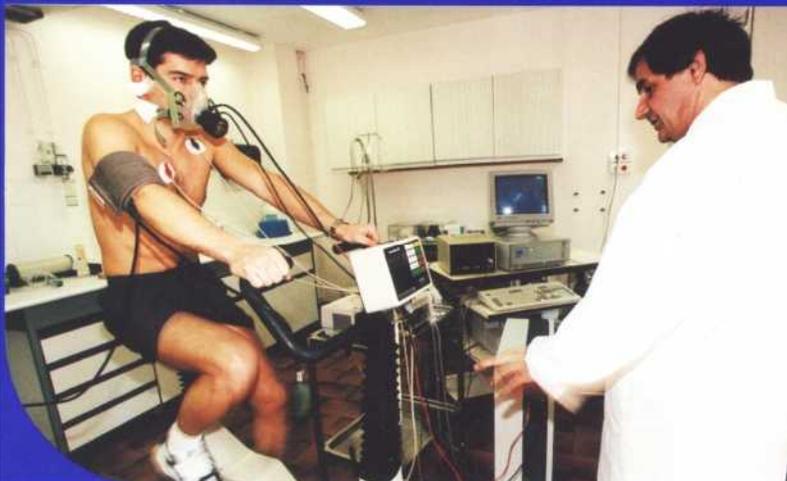
Rydell was having to work hard. "I have felt better I must admit, but you are meant to feel tired, because they are pushing you to your limits," he said. "If you feel fit out on the track, then you find it much easier to concentrate"

Sappia confirmed the importance of a clear mind, citing Ayrton Senna as the prime example of mind and body fitness. "He was the complete driver, very strong mentally and physically. A calm driver is a good driver," he said.

#### Food & drink

He also stresses the importance of diet, saying that drivers should concentrate on eating protein, from either meat or fish, at the start of the week before a race, before boosting their energy reserves nearer the time with large pasta meals. They should also drink plenty of water and keep up their intake of vitamins and citrus fruits, to eliminate toxins from their muscles.

S40 Racing's drivers have never been in better physical shape, and now they are ready to cope with the best that their rivals can produce.





Wherever it goes Volvo S40 Racing takes over 20 tons of equipment in its articulated transporter and support truck, plus a motorhome, equipped to feed up to 35 people - everything it needs to set up a self-sufficient base camp at every circuit.

Once set-up, the team can cope with any emergency, bar the sort of crash which destroys a bodyshell. With its own generators and compressors to supply power, all it needs from the circuit is a water supply.

Everything centres on the two race cars. There is a full set of spare parts for each, including several different specifications of some items. You will find 80 brake pads in the mobile stores; 60 wheels - with different tyres to suit different conditions; 12 dampers and three complete sets of gear ratios.

Body damage is an inevitable part of racing, so there are plenty of panels on board, with three each of the vulnerable front bumpers and wings, plus two bonnets, two sets of doors, two windscreens and so on.

Technical personnel need the tools of their trade too and the team carries 10 Lister toolboxes. Workshop facilities include a lathe and welder plus trolleys for the move forward to the front line - the pits. These carry air bottles, air jack equipment, wheel guns, airlines, plus 10 sets of springs and eight anti-roll bars.

That's far from all - there are sets of lighting equipment, computers to analyse data from the race cars, 40 radios, over a mile of extension lead, pit boards, and tables and even chairs for those all-important drivers' autograph sessions.



What do TWR Arrows Grand Prix stars Damon Hill and Pedro Diniz have in common with Simon Templar - the cult TV character now back in the limelight in the new Hollywood movie 'The Saint'?

The answer is the stunning new Volvo 070, the first sports coupe produced by Volvo since the P1800 favoured by The Saint when he first hit TV screens played by the suave and sophisticated Roger Moore.

The Saint, played now by Val Kilmer, goes into action in his C70 in the dramatic new adventure movie, while the Grand Prix stars, currently driving S70 T5s, are eagerly anticipating delivery of their own versions of the svelte new coupe later in the year.

The C70 which World Champion Hill and his Brazilian team mate will soon drive on the road is a striking and very elegant car. It not only looks good and

seats four adults in comfort, but also has serious power thanks to Volvo's 240bhp turbocharged five-cylinder engine. And, since it was developed by AutoNova, the joint venture between Volvo and TWR, all the chassis expertise of their F1 employer has been brought to bear to produce exceptional ride and roadholding.

The C70 continues Volvo's recent line of exciting high performance cars, but traditional Volvo virtues have not been forgotten. It is of course a very safe car with state of the art passive safety provision as well as the active safety bonuses its superb dynamic performance entails. And, of course, the comfort of the C70's occupants has not been forgotten.

Design flair and top-quality materials provide a superlative environment complete with one of the very best sound systems available anywhere, which includes no less than 10 speakers.

