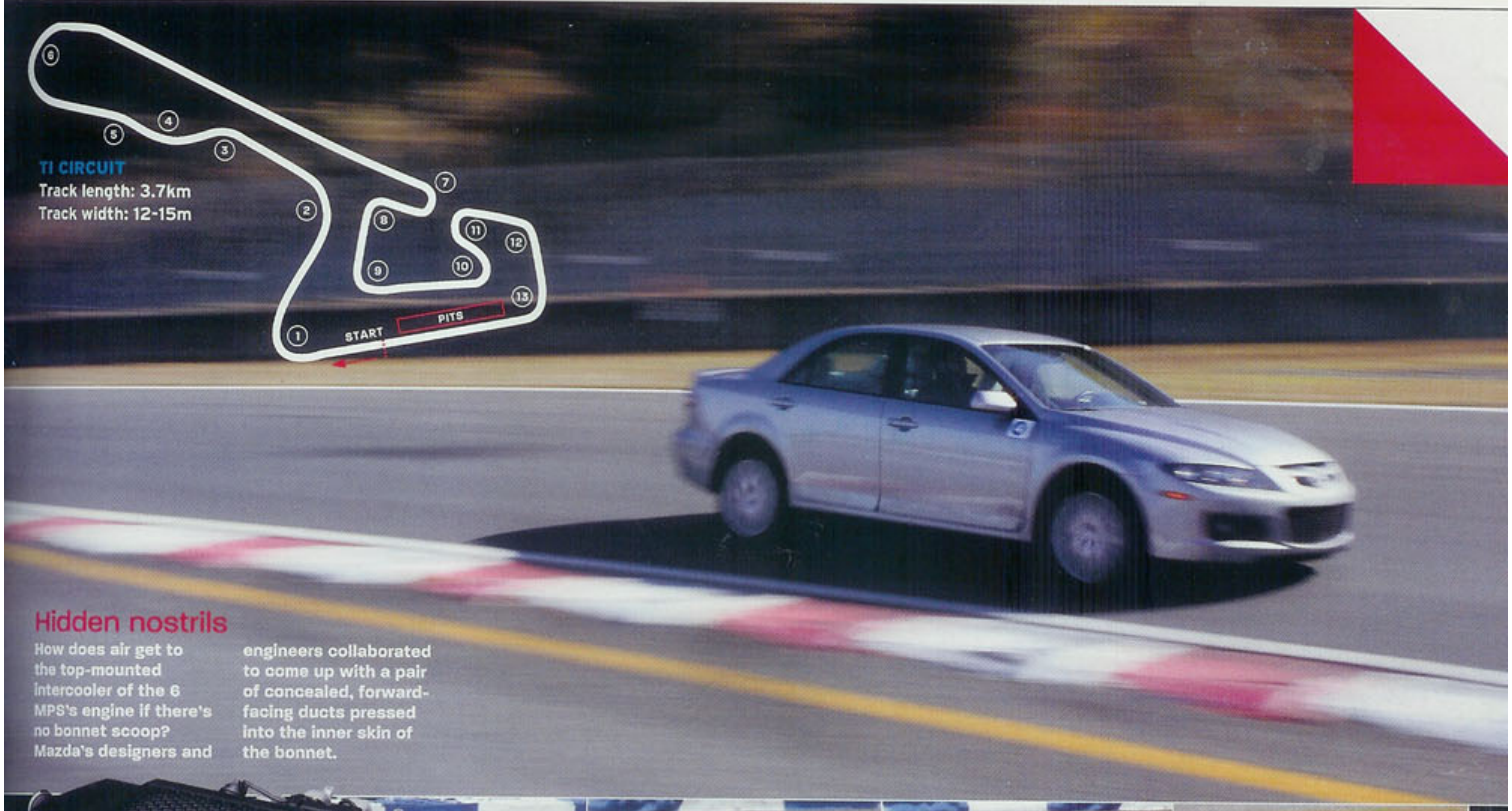
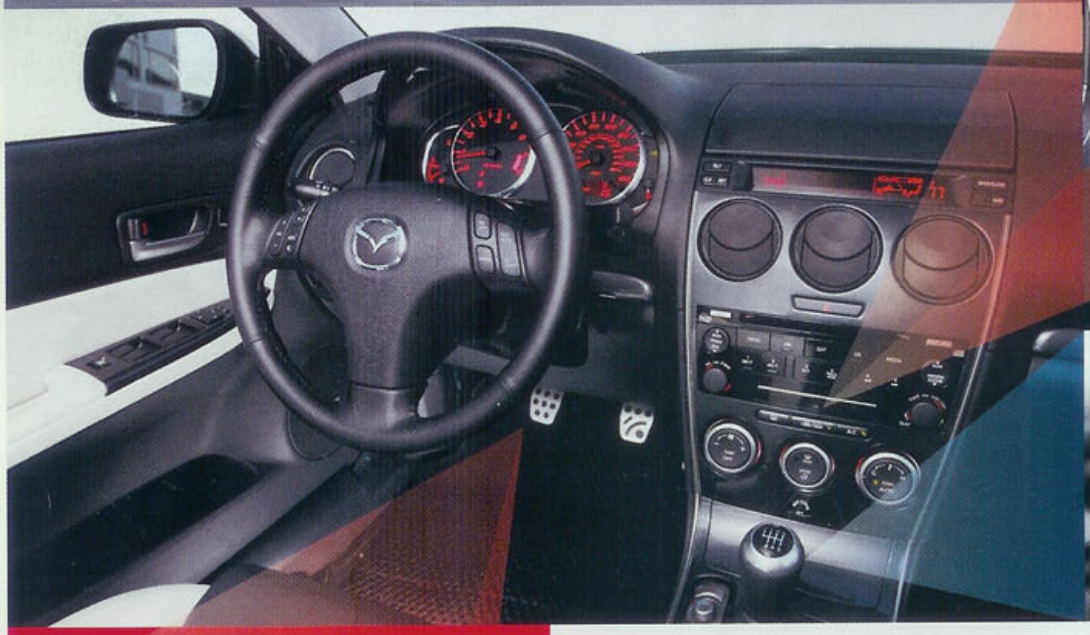


Hidden nostrils

How does air get to the top-mounted intercooler of the 6 MPS's engine if there's no bonnet scoop? Mazda's designers and engineers collaborated to come up with a pair of concealed, forward-facing ducts pressed into the inner skin of the bonnet.

IT'S OBVIOUS THE MPS WILL DELIVER AN APPEALING BLEND OF SPIRIT AND SENSE



INSIDE 6 Sombre to and subtle accents giv a European flavour to MPS's inte Six-speede with triple- synchros o first to thi gears, is a pleasure to

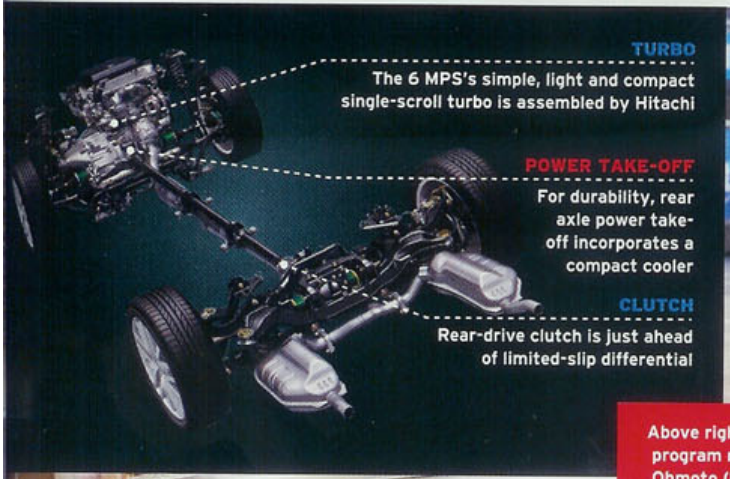
Subtle satin finish of metal pedals matches accent finish used throughout interior

of a drifting amateur must be hell for the watching engineers. Not every attempt is neatly executed, and apexes are missed by miles. My worst mistake comes at Turn 9. Failing to fully disengage the handbrake after a none-too-tidy entry, the Mazda is still only a front-driver as I hit the accelerator to power out. With no torque heading rearwards to the limited-slip differential, the inside-front Bridgestone Potenza spins savagely and severe understeer has set in before I realise what I've done. It isn't always pretty, but by the time my three laps are done and I've parked the car in pit lane, I'm smiling broadly. Mazda's fun-first dynamic priorities are just fine with me.

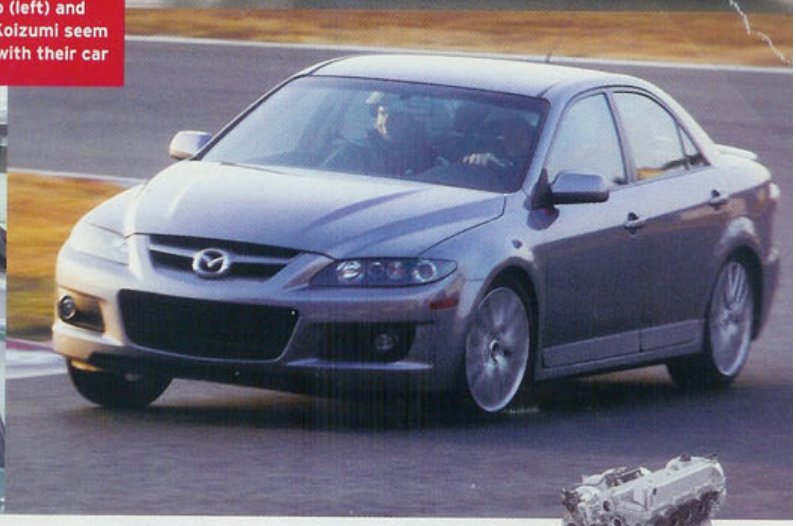
While there's still some final polishing required before the 6 MPS goes into production, it's obvious at this distance that it will deliver an appealing blend of spirit and sense.

It's a remarkably cohesive car for one that has made such a swift transition from show stage to showroom. The initial concept emerg from Mazda's Frankfurt studio only a little ov two years ago. An Englishman, Peter Birtwistl led the design team. They laboured through the Northern Hemisphere summer of 2002 an had the concept ready for the Paris show in September. Positive reaction there sealed the project's fate. It became a live program.

Turning concept car into production car wasn't as simple as it might seem. For a start, the MPS concept was a hatch. Given the limited global demand for the car (the 6 MPS expected to sell at a rate of only 12,000 a yea



Above right: 6 MPS program manager Ohmoto (left) and designer Koizumi seem delighted with their car



a single body configuration had to be chosen. The projected volume was not enough, Mazda realised, to justify developing multiple variants. So the MPS quickly became a sedan, because the four-door model is inherently stiffer than the five-door hatch and wagon.

Then there was the small matter of the intercooler. According to Peter Birtwistle, the idea was always to conceal it. "We didn't want a boy-racer image," he says. "We leave that to the other guys." But exactly where it might be located was a moot point at the time the concept car was coming together. Only after much collaborative work involving designers and engineers was it established that a top-mounted intercooler with concealed air ducts could be packaged without compromising efficiency.

While designers played an important role in reconciling aesthetic satisfaction with minimal aerodynamic lift values for the reshaped sedan, the majority of the tough work on the 6 MPS program fell to the engineers.

The body was strengthened, with a small amount of additional bracing increasing the shell's torsional rigidity by fully 50 percent.

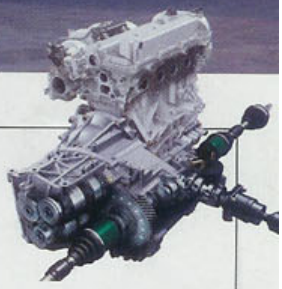
With the 'performance feel' of the old 2.7-litre Audi S4 and current BMW 330i as benchmarks, development of the 2.3-litre engine proceeded. Although based on the naturally aspirated engine of lesser Mazda 6 models, so much was altered and added that it's practically a new engine. Various internal components were strengthened, and a new direct fuel-injection head, single Hitachi turbocharger and top-mount intercooler were developed.

It's to the direct-injection system, by the way, that Mazda's engineers attribute much of the engine's sweetly responsive character. Injecting fuel directly into the combustion chamber, they maintain, has a charge-cooling effect that boosts torque by 10 percent in the 2000-3000rpm region. The same effect also endows the stream of exhaust gas, they claim, with greater energy. This brings the advantage of swifter turbo response. Substantial boost – the maximum, electronically controlled value is a little under 16psi – is available from 2500rpm.

While the AWD system was largely borrowed from an existing system used in the 6, it wasn't a simple transplant. To meet their durability objectives, the drivetrain engineers found that the power take-off for the rear axle needed to be liquid-cooled. It had to be designed and developed. Meanwhile, Japanese transmission specialist Aisin had to come up with a very compact and all-new six-speed manual 'box. A high-performance braking system with larger discs had to be developed and tested. And there was, of course, the task of developing a totally fresh calibration of the 6's double-A-arm front and multi-link rear suspensions to work in harmony with the car's 215/45R18 Bridgestones. The steering, too, was retuned with alterations to the valving of the hydraulic assistance.

And, perhaps most importantly, a connection had to be established between the handbrake lever and the all-wheel-drive and chassis stability systems.

Unexpected details like this are proof of Mazda's commitment to satisfying drivers with its MPS-badged models. If the cars that follow this one are similarly infused with a sense of fun, the 6 MPS could be just the beginning of something quite special.



Triple treat

With the 6 MPS engine stripped bare of distractions such as intercooler, turbo, and manifolds, it's possible to appreciate the compactness of its sweet-shifting three-shaft six-speed manual. While the Mazda engineers deliberately adopted a wide ratio spread for the new transmission, only sixth is an overdrive gear. As well as triple-cone synchronisers on first, second and third gears, it has a double-cone synchro on fourth. The gearbox is supplied to Mazda by transmission specialist Aisin.

MAZDA 6 MPS
www.mazda.com.au
Body steel, 4 doors, 5 seats
Drivetrain front engine (east-west), all drive
Engine 2261cc in-line 4, dohc, 16v, turbocharger, intercooler
Power 190kW @ 5500rpm
Torque 380Nm @ 3000rpm
Transmission 6-speed manual
Size l/w/h 4760/1780/1430mm
Wheelbase 2675mm
0-100km/h 6.6sec (claim)
Price $50,000-$55,000 (est.)
On sale June