

pp 50


modern MOTOR

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JANUARY 1989

Mobil 1 Falcon S vs Holden SV3800



**Jaguar XJ220: inside the beast
Bertone X1/9 vs Toyota MR2**



**Comparison: the mid-size
wagons**



Mid-engined missiles

Two racing-style machines for the masses.

by Ewan Kennedy

You snatch a quick glance at the tacho. It's nudging 7000. Hold fourth gear for a few more seconds, then slice it up to fifth. The shrill shriek of the busy engine behind your left shoulder drops in intensity.

The track's straight for another couple of hundred metres. In the mirrors you see the tiny Bertone speedster has dropped back. You can relax for a moment. Take one hand from the wheel and wipe its sweat on to your overalls. Hold the tiny wheel with that hand and repeat the action with the other one.

Time to get serious again. Hard on to the brakes. The seat belts bite as the G-force builds and speed is hauled off. A big blip of the throttle with the side of your foot brings a glorious scream from the engine as it leaps up its rev band to cope with fourth gear. Keep the brake pedal under pressure. Another blip, then another. Third gear, then second.

Instant response from the steering as

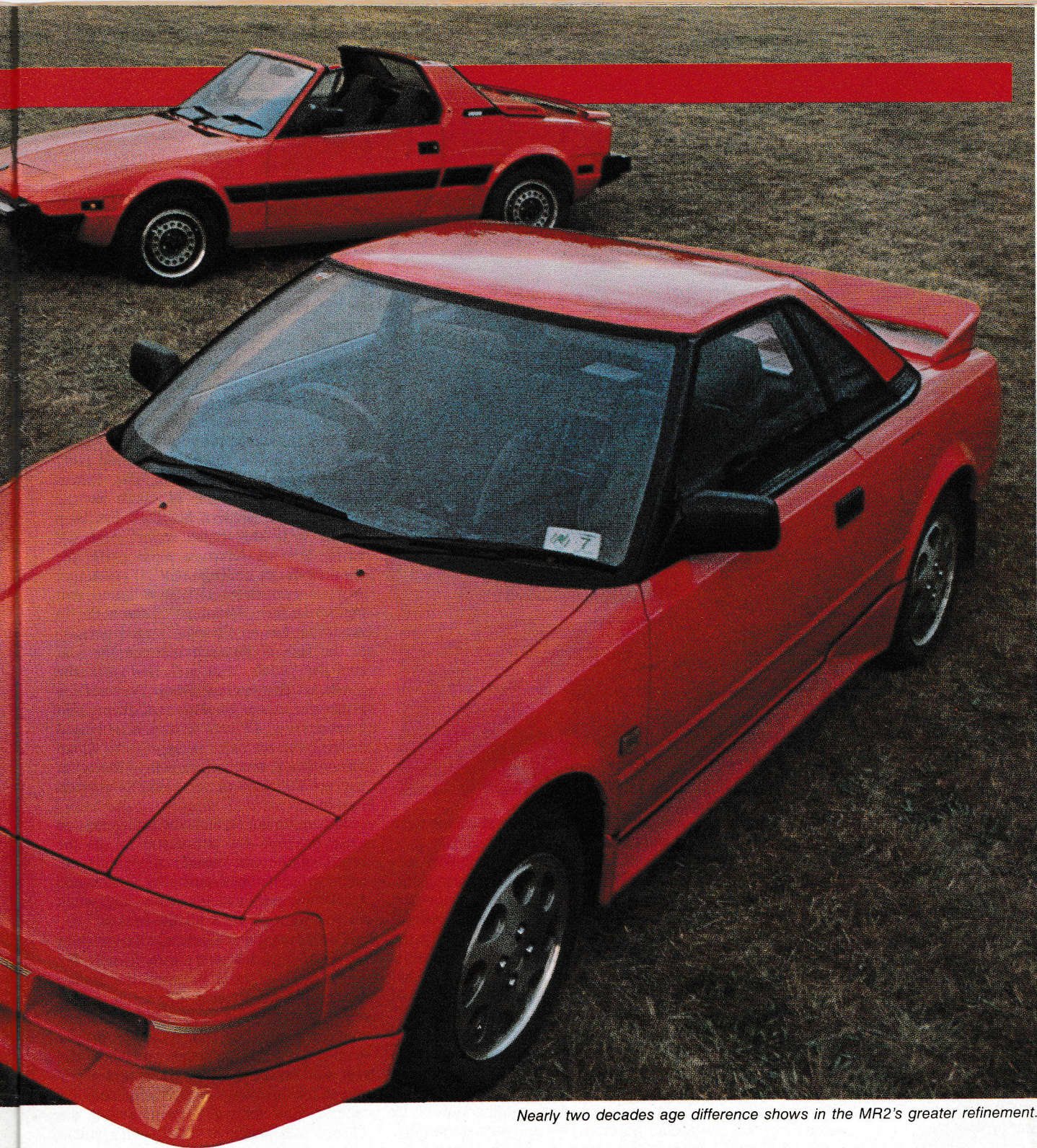
the car turns in precisely, with a huge amount of cornering grip. Meet the apex and hold the car in for a few metres, then back off the steering ever so slightly. The car runs a little wider than anticipated in understeer, but you let it be so that tyre scrub is minimised. The exit. The wide line sees the tyres just brush the dust at the edge of the track, but there's no drama. Power on gently — then hard. A smooth push in the back. Nudge the redline in second, then third. The engine is so willing that you could shout with joy as the silky revs soar.

Where's the Bertone? It's closer than before. A broad smile creases its driver's face. He knows that he may be down on power but his Italian machine's brakes are better and its handling is more predictable when the car is hammered to its limit. He can, and is, able to take even more chances than you want to in the slightly twitchy little Toyota screamer.

So it continues for kilometre after

photography by Kent Mears

enjoyable kilometre of track testing. The Japanese car pulling away easily on the straights, the Italian one making up ground under brakes — and almost holding its own on the twisty bits. We stop to swap cars and notes. Ashley's red hair is windblown and the harsh Australian sun is already doing unkind things to the skin on his face — but there's no way that we plan to put the roof back on to the Italian sports machine. The rush of wind and the sound of the engine and transmission are music to the driver's ear as the Bertone does its thing with classical competence.



Nearly two decades age difference shows in the MR2's greater refinement.

It's a shame there's no topless version of the Toyota.

Surely there's no need to introduce the legendary little Bertone (nee Fiat) X1/9 to our readers? On second thoughts, there probably is — many may not even have been born when the car was first released! So sweet are the looks of the tiny Italian thoroughbred it's easy to forget that its sleek lines were penned almost 20 years ago. Today it still looks bang up to date.

Show the X1/9 to a non-motoring person and you would have no trouble at all in convincing them that it's the latest 1989

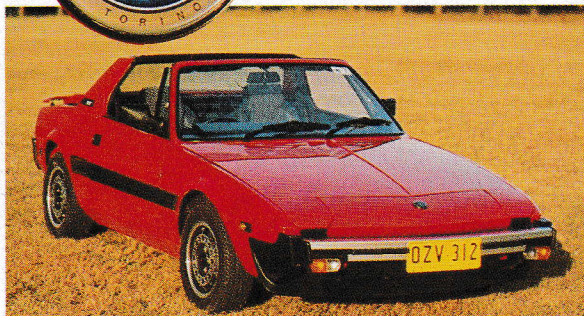
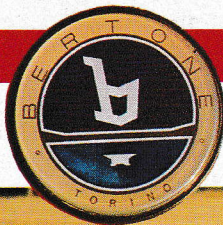
release from Italy. Yet it was on the new-car market at the same time as such forgettable machinery as the HQ Holden and the Morris Marina. Time certainly sorts out the masterpieces from the also-rans.

Although it first hit the streets in Europe in 1972, we were denied the pleasure of the tiny Italian speedster in this country until 1978. Modern MOTOR's test team raved over it then, even if we did find its 1.3-litre engine down on power and torque. And the lack of fifth gear meant the engine was turning mighty fast at high cruising speed. Oh,

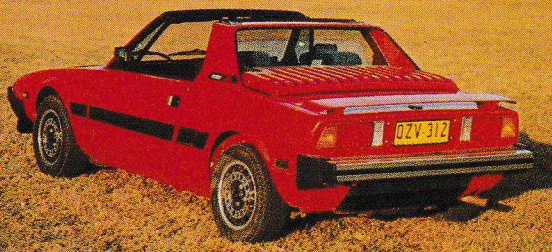
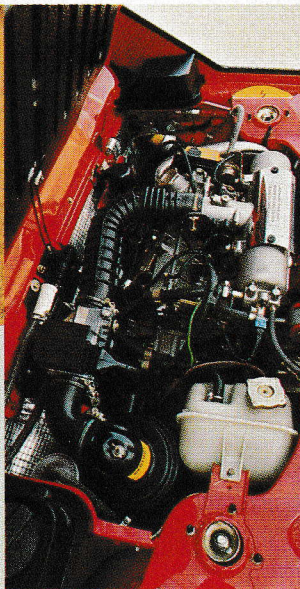
and legroom was noticeable by its absence.

Almost three years later, in September 1981, we tested the then newest version of the X1/9 and praised it for its increase in engine size to 1.5-litres and the addition of another forward gear — but tall testers just couldn't get comfortable, even if they were willing to forgive the car its lack of room because of the sheer driving pleasure it offered.

The car almost disappeared from the world's roads forever not long after that test was written — Fiat went through one of its typically Italian cost-cutting traumas



The X1/9 still features a 1.5-litre engine, now fuel-injected. Styling has dated well, but leg-room is still a flaw.



and couldn't see enough profit in making the little beastie. The Italian master designer Bertone, under contract to Fiat, had done the body design of the X1/9 prior to its 1972 release and decided to step in and rescue its baby. The X1/9 reappeared — this time with Bertone badges gracing its bodywork.

Today the X1/9 still has a 1.5-litre donk, but Bosch has supplied it with fuel injection to improve its power and torque curves — though the peak figures are actually a little lower than before. It is now cleaner in the exhaust emissions department. It still has a five-speed gearbox and there still isn't enough space for the driver's legs...

Fiat led the way in brilliant lateral thinking with the layout of this car. Others have followed, among them, not surprisingly, the Japanese. The lateral thinking was remarkably simple and went like this: to get a small budget-priced sports car suited to driving in the '70s and beyond, you needed a mid-engined machine with all the advantages that means in handling balance. Ask Ferrari, Lamborghini, Lotus etc (not to mention every designer of a pure-racing car since John Cooper and Colin Chapman) about the big difference that comes from mounting the engine near the middle of the car.

Making a purpose-built mid engine for a budget-priced sports car is out of the question for economic reasons. But why not use an existing engine/transmission package from a transverse-engined front-wheel drive car — and stick it in the middle of the car to drive the rear wheels? (By the way, mid-engined means the engine is mounted within the car's wheelbase; it doesn't have to be in the dead centre of the car. Indeed, technically, a Mazda RX-7 is mid-engined as its power is mounted behind the front wheels and therefore is within the wheelbase.)

Fiat had front-wheel drive engine/transmission packages coming out of its ears in the early '70s and soon found one to match the Bertone design sketches for the new car. Hey presto — an instant racing-style machine for the poor (well, poorish) enthusiast driver.

Others copied the idea. Toyota did the best job. Its MR2 (it stands for Mid-Rear 2-seater) was released in Japan in 1984 and used the four-cylinder 1.6-litre twin-cam 16-valve fuel-injected engine from the Toyota Corolla Twin Cam. We first saw the MR2 in Australia three years later, in 1987 — typically, far back in the queue, as with every time a desirable new car comes on to the world's market.

As in the Fiat/Bertone, the engine was

designed for transverse front mounting and connection to the front wheels, but now sits behind the driver in a mid-engined layout.

In some ways this comparison test is a harsh one. A 1972 car against a 1984 one — it's a bit like putting an HQ Monaro up against a Brock Group A Commodore. Interesting, but hardly a fair fight given the age of the old model, and the amount of technology which has appeared in the intervening decade and a bit. The Fiat (er, Bertone) fared remarkably well. Though severely outclassed in others, in some ways it made the Toyota look rather poor.

The biggest problem in the Italian machine remains lack of room in the cabin. Maybe Modern MOTOR has been cursed with long-legged testers over the years, but we have to agree with the remarks of our colleagues of 10 years ago. Anyone over about 175 cm tall, and that must be a fair percentage of the males in Australia, has to sit splay legged because of the lack of distance between the seat and the pedals, and will find that the hands on the steering wheel occasionally brush the insides of their legs during fast manoeuvring. Drivers of that height need to have the seat all the way back, which means that it touches the rear of the cabin and no alteration of the backrest angle is possible.

In true Italian fashion the pedals are too close together and offset too far to the centre of the car. Initially there's a tendency to sometimes push the brake and accelerator pedals at the same time, when all you want to do is hit the brakes.

The Toyota is a whole size larger than the Bertone. Look at it on its own and it seems tiny — stand it beside the Italian car and it towers over it. The result is a far more pleasant cabin environment. In stark contrast to the Bertone, none of our test team could reach the pedals properly if the seat was set all the way back, and a fair degree of backrest rake is available on request. But don't get the idea that the Toyota is a spacious limo — it's still a tight-fitting personal two-seater.

Yet in the luggage carrying areas (note



At the limit, the X1/9 handled better than MR2.



the plural; in most mid-engined cars you get two boots, one at the front and one behind the engine) the Bertone is a long way ahead of the Toyota. Its front boot is big enough to carry a couple of reasonably-sized suitcases, whereas the Toyota's is all but useless — a small, soft bag fills it. The secret is in the stowage of the Bertone's space-saver spare wheel in the cabin behind the driver — a classic swings-and-roundabouts case. The MR2's spare wheel/tyre is under the front "bonnet". There's fractionally more room in the Toyota's rear boot than in the Fiat's but a set of golf clubs pretty well fills either space.

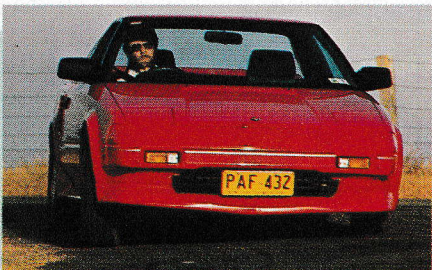
You sit lower in the Bertone X1/9 than in the Toyota MR2 and it's a lot more of a struggle to get up and out of it. Despite the lower seating position there is more of a feeling of reaching down to the gear lever and handbrake in the Bertone than there is in the Toyota where these controls sit high on the centre console. We preferred the major-control layout of the Japanese car.

The Bertone has the typically confusing Fiat two-stalk control arrangement for lighting. At first it's easy to get mixed up with the lights operation, but owners will, hopefully, soon find it second nature. The blinker stalk is on the wrong side for right-hand-drive Australia. This is even more of a pain than usual because any driver worth his or her salt will do a lot of gear changing and lane-change signalling in this nippy little speedster — and it all has to be done with the same hand.

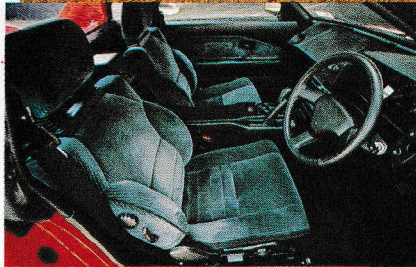
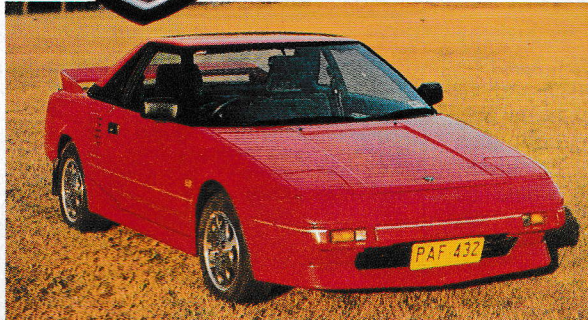
The seats in both cars are snug and well fitting with plenty of support for hard driving. Those in the MR2 are bigger and slightly softer than those in the X1/9 and have a greater number of adjustment options. We preferred the Toyota's seats but the Bertone's certainly aren't far behind.

Instrumentation is good in both cars. Naturally the speedo and tacho take pride of place. The MR2's dials are bigger and easier to read, but the X1/9's aren't a long way behind in design.

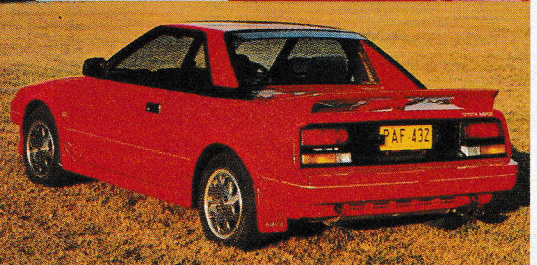
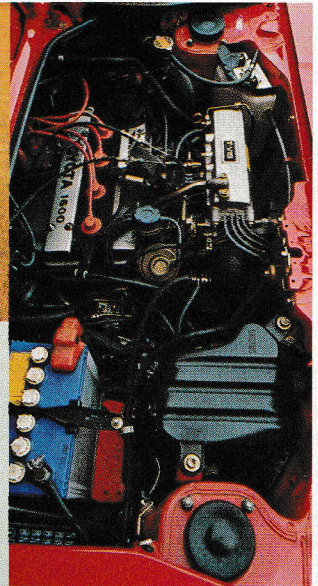
There's little to pick between the two



The Toyota is skittish when pushed really hard.



MR2 is bigger and its engine far superior to the Bertone's, but both could handle more power.



cars in steering feel. Both are great and the steering is sharp and precise. At driving speeds the weight in the Toyota's steering is slightly greater than the Bertone's, but at parking speeds the MR2's steering becomes very heavy. On the road, both cars are neutral up to very high cornering limits. Then the Bertone oversteers controllably, though there isn't enough engine power to really get stuck into it. The Toyota is skittish at its limit. Sometimes it oversteers, occasionally it just slides. It's not really a problem until the car is going extremely hard — but inexperienced drivers should be wary.

In straight-line acceleration the Toyota's far superior engine power shows through. Its best standing 400 metres of 16.6 seconds is streets ahead of the Bertone's 17.7 seconds — what the Japanese engineers lack in knowledge of suspension design they certainly redeem with sensational little engines. Yet, even the Toyota could use more power. The chassis on these cars are so good that they could easily handle a bigger engine.

Both cars are — in true performance-machine fashion — a little difficult to get off the line cleanly. In normal driving it's relatively easy to stall their engines unless the revs are kept up. In flat out acceleration both suffer from not being able to

wheelspin off the line in order to keep the engine revs in the best area of the power band. The rear weight bias of the cars tells against them in this area.

The number one area for car development over the last ten years has been refinement in noise and vibration elimination and insulation. It shows in these two little mid-engined machines. The MR2 is light years ahead of the X1/9. The Italian car is noisy all the time: the engine roars, the transmission whines (and remember that this is all happening just behind your ears), the suspension thumps, the wind whistles by. It all feels and sounds rather frantic. At first it's great fun and brings out the boy racer in any driver. But it gets tiring.

If you were to drive the Bertone only when it struck your fancy to play racing drivers, or only on shortish trips, it would be a sensation — but give us the Toyota any time if a long interstate haul is to be made. Not that the MR2 is quiet — it certainly makes all the right sounds and does so with a fair bit of volume at times — but it's more subdued and doesn't grate on the senses after the first hour or so at the wheel.

The Toyota MR2 has to be our winner. It's a lot faster in a straight line, though only marginally quicker in corners (but

note the comments about its twitchy handling at the limit); it's more spacious and comfortable; the instruments are better; it's more civilised, without being soft; it costs only a thousand dollars more than the Bertone X1/9 and is better equipped.

More power in the MR2 would be appreciated, not to mention a roof which comes off. Other than that, we'd be happy to see an MR2 sitting in our garages, just waiting for a cool, clear, Sunday-morning run in the country. □

Counterpoint

SOMEHOW it doesn't seem all that long ago that the chances of seeing a mid-engined sports car from a company such as Toyota were about as likely as seeing a solar-powered sedan from Lamborghini. Remember when Toyota was the outfit which offered you a Celica if you were a hairdresser, a Crown if you were a speed-shy Japanese businessman, or perhaps a Corolla if all you really wanted was a shopping trolley? How things change.

I like this car. It handles superbly up to its limits, fits like a glove, and has enough braking power to give your passenger strap-marks from the seat belt.

On the down side, the MR-2's biggest shortcoming is its lack of real poke. The whole impracticability of the design would be a heap easier to accept if the engine had another 30-odd kilowatts. As it is, there is a need to continually wring it out to get some action happening — a fact which would have to eventually take the edge off its day-to-day appeal.

If we all said please, perhaps Toyota would give Australia the supercharged version.

The Bertone X1/9 may have been pretty hot stuff back in the mid-70s when it was called a Fiat, but this is nearly the '90s and these days a big dollop of character just isn't enough to get you by. Simply stepping into it is such a time warp, you can't help feeling that perhaps you should grow a pair of mutton-chop sideburns and put a Slade tape in the cassette player just for the occasion. The driving position is woeful, the suspension is choppy and lacks proper control, and the engine, although willing enough, feels like the "before" photo in a body-building advertisement.

Sure, it handles, and with the roof off and a clear sky it makes a cute-enough little mistress — but as a spouse? No thanks. What we have here is a clear case of the Japanese beating the Italians at their own game.

Ashley Westerman

BERTONE X1/9 1.5-litre, five-speed manual

ENGINE

Location	Mid-rear, transversely mounted
Cylinders	Four, in-line
Bore x stroke	86.4 x 63.9mm
Capacity	1498 cm ³
Induction	Electronic fuel injection
Compression ratio	8.5 to 1
Fuel pump	Electric
Valve gear	Cog-belt driven single ohc, two valves/cyl
Claimed power	56.0 kW at 5500 rpm
Claimed torque	109.0 Nm at 3000 rpm
Maximum recommended engine speed	7000 rpm
Specific power output	37.4 kW/litre

TRANSMISSION

Type	Four-speed manual
Driving wheels	Rear
Clutch	Single, dry plate

Gearbox ratios

Gear ratio	km/h 1000 rpm	Max Speed	At (rpm)
First	4.090	6.1	43 7000
Second	2.235	11.1	78 7000
Third	1.461	17.0	119 7000
Fourth	1.033	24.0	168 7000
Fifth	0.863	28.7	184 6400
Final-Drive Ratio			4.07 to 1

SUSPENSION

Front	Independent by MacPherson struts with coil springs and anti-roll bar
Rear	Independent by struts with coil springs and anti-roll bar
Wheels	Alloy, 5.0J x 13
Tyres	Pirelli P6 185/60 R13

BRAKES

Front	227mm discs
Rear	227mm discs

STEERING

Type	Rack and pinion
Turns, lock to lock	3.4
Ratio	variable to 1
Turning circle	9.9 metres

DIMENSIONS AND WEIGHT

Wheelbase	2202mm
Front Track	1355mm
Rear track	1350mm
Overall length	3960mm
Overall width	1570mm
Overall height	1180mm
Ground clearance	140mm
Kerb weight	980kg
Weight to power	17.5kg/kW

CAPACITIES AND EQUIPMENT

Fuel tank	47.0 litres
Cooling system	11.6 litres
Engine oil system	4.7 litres
Battery	12V 60AH
Alternator	70 amps

CHECKLIST

Alloy wheels	yes
Adjustable steering	no
Air-conditioning	no
Carpets	yes
Central door locking	no
Clock	LED
Cruise control	no
Intermittent wipers	yes
Laminated screen	yes
Power steering	no
Power windows	yes
Radio	yes
Tape player	yes
Compact disc player	no
Rear-window wiper	no
Remote outside mirror adjustment	two, manual — yes
Sun roof	yes
Tachometer	yes

FUEL CONSUMPTION

Average for test	9.0 litres/100 km
Best recorded	8.2 litres/100 km
Worst recorded	11.1 litres/100 km
AS 2877 City/Highway	n/a litres/100 km

ACCELERATION

0-60 km/h	4.64 seconds
0-80 km/h	7.80 seconds
0-100 km/h	11.89 seconds
0-110 km/h	14.80 seconds
0-120 km/h	18.63 seconds
Standing 400m	17.98 seconds
Terminal speed	119.0 km/h
The above are averages of runs in opposite directions	
Standing 400m, best	17.74 seconds
Terminal speed, best	122.6 km/h
Figures by Datron Correvit L3 digital electronic timing equipment	

LIST PRICE \$32,250

PRICE AS TESTED \$32,250

Includes options: None.

TOYOTA MR2 1.6-litre, five-speed manual

ENGINE

Location	Mid-rear, transversely mounted
Cylinders	Four, in-line
Bore x stroke	81.0 x 77.0mm
Capacity	1587 cm ³
Induction	Electronic fuel injection
Compression ratio	9.4 to 1
Fuel pump	Electric
Valve gear	Cog-belt driven twin ohc, four valves/cyl
Claimed power	88.0 kW at 6600 rpm
Claimed torque	139.0 Nm at 5000 rpm
Maximum recommended engine speed	7600 rpm
Specific power output	55.5 kW/litre

TRANSMISSION

Type	Five-speed manual
Driving wheels	Rear
Clutch	Single, dry plate

Gearbox ratios

Gear ratio	km/h 1000 rpm	Max Speed	At (rpm)
First	3.166	7.7	58 7600
Second	1.904	12.7	97 7600
Third	1.310	18.5	141 7600
Fourth	0.969	25.0	190 7600
Fifth	0.815	29.7	193 6500
Final-Drive Ratio			4.31 to 1

SUSPENSION

Front	Independent by MacPherson struts with coil springs and anti-roll bar
Rear	Independent by struts with coil springs and anti-roll bar
Wheels	Alloy, 6.0J x 14
Tyres	Bridgestone Potenza RE88 185/60 R14

BRAKES

Front	258mm discs
Rear	263mm discs

STEERING

Type	Rack and pinion
Turns, lock to lock	3.2
Ratio	18.0 to 1
Turning circle	9.6 metres

DIMENSIONS AND WEIGHT

Wheelbase	2320mm
Front Track	1440mm
Rear track	1440mm
Overall length	3950mm
Overall width	1665mm
Overall height	1250mm
Ground clearance	140mm
Kerb weight	1050kg
Weight to power	11.9kg/kW

CAPACITIES AND EQUIPMENT

Fuel tank	41.0 litres
Cooling system	12.4 litres
Engine oil system	3.8 litres
Battery	12V 38AH
Alternator	60 amps

CHECKLIST

Alloy wheels	yes
Adjustable steering	yes
Air-conditioning — optional	yes
Carpets	yes
Central door locking	yes
Clock	LED
Cruise control	yes
Intermittent wipers	yes
Laminated screen	yes
Power steering	no
Power windows	yes
Radio	yes
Tape player	yes
Compact disc player	no
Rear-window wiper	no
Remote outside mirror adjustment	two, electric — yes
Sun roof	no
Tachometer	yes

FUEL CONSUMPTION

Average for test	10.3 litres/100 km
Best recorded	9.7 litres/100 km
Worst recorded	11.8 litres/100 km
AS 2877 City/Highway	8.0/6.4 litres/100 km

ACCELERATION

0-60 km/h	4.09 seconds
0-80 km/h	6.50 seconds
0-100 km/h	9.70 seconds
0-110 km/h	11.78 seconds
0-120 km/h	14.14 seconds
Standing 400m	16.86 seconds
Terminal speed	130.1 km/h
The above are averages of runs in opposite directions	
Standing 400m, best	16.60 seconds
Terminal speed, best	133.4 km/h
Figures by Datron Correvit L3 digital electronic timing equipment	

LIST PRICE \$33,250

PRICE AS TESTED \$35,205

Includes options: Air conditioning \$1500, cruise control \$455.