

Mazda Meteor Turbo 1400 five-speed

Conceived and marketed by the Steyns Sigma dealership, this fiery Mazda 323 is handsome and very fast!

A Mazda 323 which can outrun most of the big V8 cars sounds impossible — but that is what a big South African motor dealership is offering off the showroom floor!

Named the "Meteor", this very special light car goes the turbo route to achieve exceptional performance (0-80 in 6,3 seconds, and its speedometer "off the clock" in a straight line) while it also presents a smart and unusual appearance with its roof spoilers, bib airdam, alloy sports wheels and special paintwork effects.

The Mazda Meteor is based on the production 1,4 litre Mazda 323 in South Africa, and was conceived by Steyns Sigma, of Verwoerdburg, to suit the Transvaal's high-altitude conditions, where the full benefit of turbocharging is felt.

DEVELOPMENT WORK

In the development of this special model, Steyns Sigma called in Brospeed Developments, of Randburg, and Calbrook Colours, of Johannesburg — specialists in their respective fields of turbocharging and custom coachwork.

Brospeed fitted the new Rajay aviation-approved induction turbocharger, from the United States, which has a safety control to stabilise turbo boost pressure, and is actuated by any increase in inlet manifold pressure over a preset limit. Power for the turbo comes from exhaust gas pressure, and an oil cooler is incorporated alongside the radiator.

KEY FIGURES

Maximum speed 166,8 km/h
 1 km sprint 32,2 seconds
 Terminal speed 154,5 km/h
 Fuel tank capacity 61 litres
 Litres/100 km at 80 7,25
 (see text)
 Optimum fuel range at 80 842 km
 Engine revs per km 1 840
 National list price R7 825

A specialist die-cast inlet and exhaust manifold is used, together with a heavy-gauge big-bore exhaust system and a free-flow silencer. On the test car, a Weber 36 DCD twin-choke carburettor (modified by Brospeed) replaced the standard Hitachi unit, and a high-capacity cyclonic air filter provided the necessary intake capacity.

Subsequent to our test, we are told, it was decided to retain the original Hitachi carburettor in modified form, to improve everyday operating economy.

It is claimed that these modifications increase the engine's power output by just under 60 per cent — in the case of the 1400 as tested, from 52 to 82 kW net — while torque is increased substan-

tially, coming in from 3 000 r/min onwards.

The deep-dished alloy wheels on the Meteor are colour-keyed to the coachwork, and the coachwork itself can be either two-tone or with a "Kyalami stripe" finish by Calbrook Colours, with no extra charge for the optional metallic shades, and "Turbo" decals.

Special aerodynamics are achieved by a glassfibre bib airdam which is in one piece with a shield over the front bumper to give smooth lines, and a double-scoop spoiler at rear on the roof. Chromed nerf bars are fitted front and rear to increase coachwork protection, and in production, yellow foglights are fitted in the airdam (not included on the test car).

At the interior, a boost gauge is added to the instrumentation.

PERFORMANCE

No change is made to gearing. On the 1400 five-speed tested, the overgeared fifth becomes an effective top gear on the Turbo model, with a Tapley gradient ability of 1-in-9,4 at cruising speed.

As with any small-engined turbo model, the revs have to be kept up for best performance: we took off from rest in sprint runs at 4 000 r/min, and the car went boring away with smoking tyres to reach a trun 80 (85 indicated) in 6,3 seconds, 90 km/h two seconds later, and a level-road maximum of 166,8 with needle right off the scale on what would be the 175 mark! (Steyns claims that Highveld performance is very similar.)

This is a mighty Mazda, and even though the tuners could not get a small enough second-stage choke locally in preparation for the sea level test (resulting in a flat-spot tendency at low revs) it showed phenomenal get-up-and-go in the gears once the 3 000 revs mark was passed.

The top speed was achieved in 5th after the car had "run out of revs" in 4th.

Quite by co-incidence, this 323 was also the best stopper of its breed that we have tested, coming to secure stops from 90 in 3,1 seconds, and from 100 in 3,35 seconds.

ECONOMY AND NOISE

In all of the four turbo tests we have conducted this year, the specific fuel consumption (both ways on a level road at steady true speeds) has been disappointing, but the Steyns Sigma people assure us that the benefits of turbocharging include improved overall fuel consumption when the engine is under load (such as when towing or accelerating, and particularly in hilly country) when less throttle is needed to produce the required power.

With the return to the modified

Hitachi carburettor, they report, improved fuel economy results have been recorded on the Highveld.

Mechanical noise levels tend to be higher with turbocharging because of increased induction sound. When working hard the motor has a busy note, but at steady speeds this is not offensive. Apart from the sporty big-bore exhaust note, it can hardly be distinguished from a standard car when driving past.

SUMMARY

Steyns Sigma put this very special Mazda into regular production during June, so that the car should be available now off the company's showroom floor. Initially, the installation of turbo kits is confined to new cars straight from the Sigma factory, but Peter Lewis, sales director of Steyns Sigma, told us that in due course owners of existing 323 models would be able to have the Meteor conversion done by Steyns Sigma at a total cost of about R1 750.

The Meteor (or "shooting star") is well-named: it is swift and beautiful, and is bound to attract attention wherever it goes! (Graphs overleaf) ■

SPECIFICATIONS

ENGINE:
 Cylinders 4 in line
 Fuel supply Weber 36 DCD carburettor, with Rajay turbocharger (see text)
 Bore/stroke 77,0/76,0 mm
 Cubic capacity 1 415 cm³
 Compression ratio 9,0 to 1
 Valve gear o-h-v, single o-h-c
 Ignition coil and distributor
 Main bearings five
 Fuel requirement 98-octane Coast, 93-octane Reef
 Cooling water

ENGINE OUTPUT:
 Max power I.S.O. (kW) 82 approx
 Power peak (r/min) 6 000
 Max usable r/min 6 000
 Max torque (N.m) not measured
 Torque peak (r/min) 3 500 approx

TRANSMISSION:
 Forward speeds five
 Gearshift console
 Low gear 3,337 to 1
 2nd gear 1,995 to 1
 3rd gear 1,301 to 1
 4th gear direct
 Top gear 0,831 to 1
 Reverse gear 3,337 to 1
 Final drive 3,909 to 1
 Drive wheels rear

WHEELS AND TYRES:
 Road wheels light alloy sports
 Rim width 5,0J
 Tyres 155 SR 13 radials

BRAKES, STEERING, SUSPENSION:
 Standard

CAPACITIES:
 Seating five
 Fuel tank 61 litres

WARRANTY:
 Six months or 10 000 km on car; six months with no distance limit on turbo-charger and kits.

TEST CAR FROM:
 Steyns Sigma of Pretoria.



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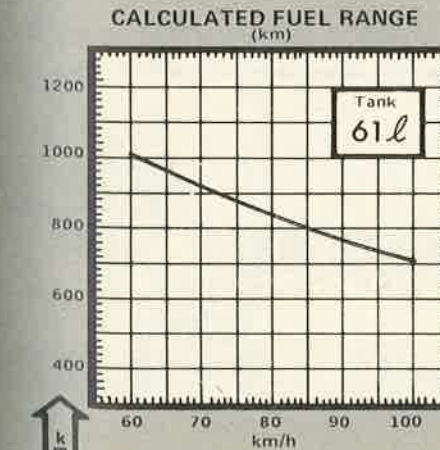
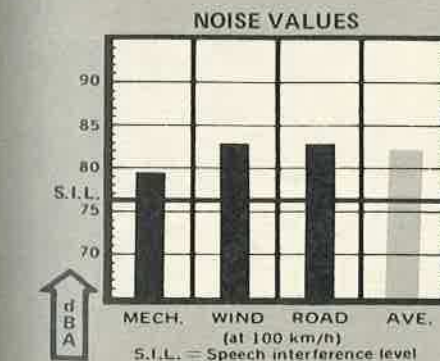
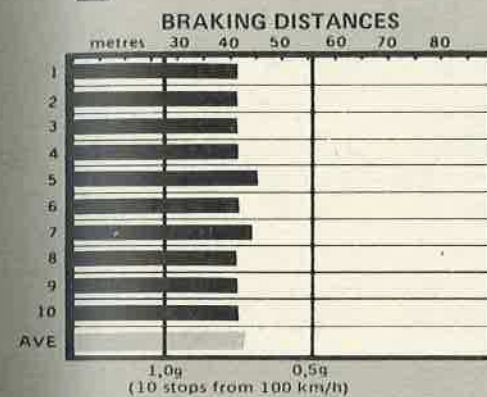
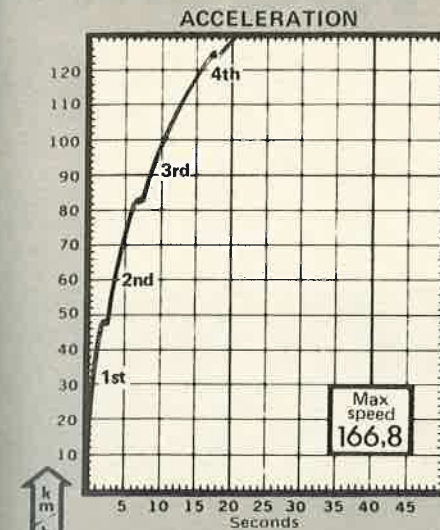
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test Mazda Meteor Turbo 1400 5-speed

PERFORMANCE FACTORS

Power/mass (W/kg) net. 92,7 approx
Frontal area (m²) 2,21
km/h per 1 000 r/min (top) 32,6
(Calculated on licensing mass, gross frontal area, gearing and I.S.O. power output)

INTERIOR NOISE LEVELS:

	Mech	Wind	Road
Idling	55,5	-	-
60	69,5	-	-
80	74,5	79,0	79,0
100	79,5	83,0	83,0
Average dBA at 100	81,8	-	-

ACCELERATION (seconds):

0-60	4,2
0-80	6,3
0-100	10,1
1 km sprint	32,2

OVERTAKING ACCELERATION:

	3rd	4th	Top
40-60	6,3	8,0	11,2
60-80	3,1	4,7	8,5
80-100	3,2	4,6	6,4

MAXIMUM SPEED (km/h):

True speed	166,8
Speedometer reading	175

Calibration:

Indicated: 60 70 80 90 100	
True speed: 57 66 75 84 93	

FUEL CONSUMPTION (litres/100 km)

	(see text):
60	6,09
70	6,62
80	7,25
90	7,90
100	8,64

(Stated in litres per 100 kilometres, based on fuel economy figures recorded at true speeds)

BRAKING TEST:

From 100 km/h	
Best stop	3,3
Worst stop	3,6
Average	3,35

GRADIENTS IN GEARS:

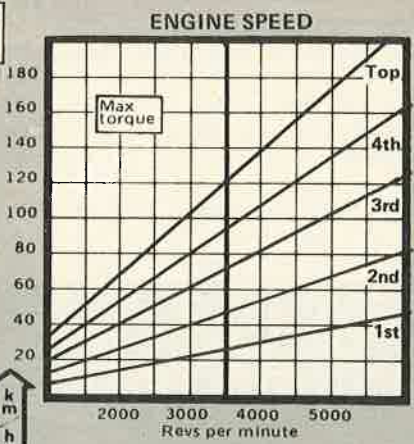
Low gear	1 in 2,4
2nd gear	1 in 3,3
3rd gear	1 in 5,1
4th gear	1 in 6,8
Top gear	1 in 9,4

GEARED SPEEDS (km/h):

Low gear	48,7
2nd gear	81,5
3rd gear	125,0
4th gear	162,6
Top gear	195,6

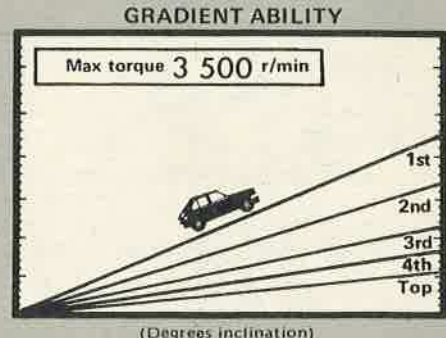
TEST CONDITIONS:

Altitude at sea level
Weather fine and mild
Fuel used 98 octane
Test car's odometer 3 030 km



IMPERIAL DATA

ACCELERATION (seconds):	0-60 9,6
MAXIMUM SPEED (m-p-g):	True speed 103,7
FUEL ECONOMY (m-p-g):	50 m-p-h 38,7
	60 m-p-h 33,5



CRUISING AT 90

Mech noise level	77,0 dBA
0-90 through gears	8,3 seconds
Litres/100 km at 90	7,90 (see text)
Optimum fuel range at 90	772 km
Braking from 90	3,1 seconds
Maximum gradient (top)	1 in 9,6
Speedometer error	7% over
Speedo at true 90	96
Odometer error	3,5% over
Engine r/min at 90	2 760

