

Magna Steyr presents “MILA Concept”: Sporty fun car powered by natural gas

Magna Steyr is unveiling a completely new vehicle concept for the first time at the IAA 2005. Called the "MILA Concept" (Magna Innovation Lightweight Auto), it is packed full of exciting ideas and countless technical innovations.

The MILA Concept version showcased at the IAA is a single-seater sports car with a mid-engine and rear-wheel drive. Magna Steyr is not only using the MILA Concept as further proof of its “complete vehicle competence” that has gone into so many successful volume production vehicles, but also to demonstrate its engineers’ creativity and their skill in meeting innovative and technically demanding challenges.

The concept vehicle’s technical highlights include

- Eco-friendly CNG (Compressed Natural Gas) powered engine combined with extremely sporty performance
- Consistent lightweight construction
- Modular design principle enabling different models to be built (single or two-seater, normal or high-power engine, etc.) without much extra effort, as the components and modules have been developed in advance and optimized in terms of cost and weight
- Advanced vehicle safety thanks to the monocoque body’s high stiffness.

Magna Steyr is confident that natural gas will gain more and more ground as an alternative fuel for road vehicles in the future. A study by the German Automotive Industry Association published in Frankfurt recently came to the conclusion that in Germany alone some two million natural gas vehicles will be licensed in the next 15 years. According to the study, natural gas vehicles could reach a market share of around 4% by the year 2020.

CNG is available today in sufficient quantities and has many advantages over automotive gas (i.e. butane or propane). It is, for example, less susceptible to knocking and only has to be cleaned, filtered and dried before use, while automotive gas can only be obtained using complex refinery processes.

Engines reach a higher degree of efficiency with CNG than with gasoline (up to 32% compared with 25%). What’s more, under the stringent Californian emission legislation of 2004, a CNG vehicle belongs to the eco-friendly AT-PZEV category (Advanced Technology Partial Zero Emission Vehicle).

Irrespective of the MILA Concept, which is an initial important step in the right direction, Magna Steyr will focus more on the development of natural gas engines in the future. Here the company’s engineers will benefit from Magna Steyr’s long-standing experience in the field and specific technical expertise in the development and manufacture of fuel tanks and fuelling systems.

The engine used in the MILA Concept, installed in the rear as a mid-engine, is a standard 1.6-litre four-cylinder model that was converted to monovalent CNG operation, which means it will run on natural gas alone. Apart from installing CNG-specific injection valves, no other modifications had to be carried on the original gasoline engine. Its maximum power of 110 kW (150 hp) gives the concept vehicle a top speed of over 200 km/h and acceleration from 0 to 100 km/h in 6.9 seconds.

The fuel tank is a composite CNG safety pressure cylinder (aluminium liner wrapped with carbon fibre) and located safely behind the driver's seat should there be a crash. In the version on show at the IAA, the tank volume is 76 litres, which gives the vehicle a driving range of around 200 km at any one time.

The attractive, Class-A stampings made of glass-reinforced polyester designed by the Magna Steyr Styling Department conceal an ultramodern, extra light and extra stiff space frame in 6000 series aluminium alloy – weighing only around 100 kg. The entire chassis is a lightweight construction made of high-strength steel. Given the consistent lightweight design throughout, the complete vehicle weighs in at around 850 kg.

The current version of the MILA Concept test vehicle has a closed body with a Perspex bubble over the driver. If the vehicle goes into volume production at a later date, a three-part bubble made of laminated glass would be conceivable instead of the Plexiglas one.

Since a basic principle in Magna Steyr's corporate strategy is not to market any vehicles of its own, the MILA Concept does not involve any plans or proposals to build a vehicle under the Magna Steyr brand. In fact, the company is seeking an OEM as a partner in the promising MILA Concept project with a view to jointly turning it into a production mature and marketable vehicle. Magna Steyr estimates the time required for production development to be about 23 months.

Studies have revealed that there are definitely market opportunities for a vehicle of the MILA Concept type. Potential customers range from

- Individualists, techies and lifestylers with a penchant for innovative, original, pioneering vehicles
- Drivers who are looking for a vehicle using eco-friendly alternative fuels that they can drive in built-up areas, even when environmental regulations close city centres to private traffic (e.g. ban on driving because of particulate emissions)
- Fresh-air aficionados who don't really want to miss the feeling of riding a motorcycle, but still prefer to drive on four wheels (perhaps only because they don't have a motorcycle licence) with a roof over their heads if need be
- Potential buyers who already have one or two conventional vehicles in the family and are therefore interested in something "completely different" as a second or third car – a vehicle with a hint of Formula One fascination, a funky fun car with a sporty look, power and performance but at an affordable price.

Presenting the MILA Concept at IAA 2005 is primarily intended as living proof of the comprehensive range of services provided by Magna Steyr's development engineers. It is also aimed at gauging public opinion: how will the experts and IAA visitors react to a vehicle of this type?

The custom-built show car on display at the IAA naturally works and can be driven at any time. After the trade fair, Magna Steyr is also considering giving the media and OEM representatives the chance to test drive the vehicle.

It only took six months to completely develop and build the vehicle on show. All the development steps up to the complete concept vehicle were modelled virtually – including crash performance, fatigue strength, ergonomics, thermal analysis, aerodynamics, etc.

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Dimensions:

Length mm:	3586
Width mm:	1720
Height mm	1348
Wheelbase mm	2340
Track	1492 / 1492 mm
Clearance Cycle	10,5 m
Tank capacity	7,9 kg net
Weight	700 kg
Load Space	130 l
Range	>400 km