

A Brand New 1.25 grams Microcar

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The basque technological centre TEKNIKER has developed a brand new microcar to test all its capabilities in the micromanufacture.

It is driven by an electric motor, **the smallest in the market with an external diameter of 1.9 mm and longitude of 5 mm**, a stator coil wound with **30 μm** diameter wire and a rotor with permanent magnets. This micromotor is run off a 12 V d.c. supply and has speed variation of between 0 and 100,000 rpm.

The transmission of movement, conceived, manufactured and assembled by TEKNIKER Micro Machining (TMM), is by means of a three-stage reduction which reduces spin speed and increases the outlet pair. The 1st

and 3rd stages are identical and consist of a 42 μm -module drive pinion-crown pair with 12 and 60 teeth respectively. The 2nd transmission stage consists of a planet gear speed reducer made up of an 18-toothed (inlet), an fixed external ring with 64 teeth, and three planet gears (outlet) with 23 teeth, all 12 μm module. The final result is a vehicle weighing 1.25 grams and with 20 x 10 mm dimensions – the new microcar.

Source: [Elhuyar Fundazioa](#)

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