

Twice the power: the new GP 16 C planetary gearhead Ø16 mm, 0.2–0.6 Nm

When it was introduced many years ago, the GP 16 A planetary gearhead represented a milestone in gear technology, thanks to its use of powder metallurgy. Now, in the new GP 16 C, ceramic components are also used. Longer life span and a doubling of the continuous torque fulfill the requirements of many customers.

The newly developed planetary gearhead with a 16 mm diameter transmits up to 600 mNm under continuous load and can even achieve close to 1 Nm for short durations. These are twice the values offered by the previous version, an improvement which can be almost entirely traced back to the ceramic axes. As demonstrated in more than a million cases, the high-tech, in-house manufactured ceramic components significantly improve the wear characteristics of critical components.

This results in:

- Longer service life
- Higher continuous torques
- Higher short-term torques
- Higher input speeds

After the same amount of running time, ceramic axes show almost no signs of wear, while steel axes show a high degree of abrasion. Planetary gearheads with ceramic axes offer significantly higher torques than those with steel axes.

In the case of the new GP 16 C gearhead, it was possible to increase the recommended maximum motor speed from 8,000 to 12,000 rpm. This gearhead is part of the modular system and is available with one to five stages and with a total of 20 different reduction ratios, from 4.4:1 up to 4592:1. The available reduction ratios are thus identical with the existing A version. The maximum continuous torque of the one-stage version is 200 mNm; the five-stage version features 600 mNm. The short-term torques are 300 mNm and 900 mNm respectively. Thanks to preloaded ball bearings, the tempered, rust-free output shaft has no axial play. The mounting has been improved and now has six M2 threads on a pitch circle diameter of 13 mm.

The GP 16 C gearhead can be combined with seven different maxon motors. With the various motor windings and the 20 different reduction ratios, this provides a wide range of combinations. In addition, the dynamic maxon motors can also be equipped with sensor systems (encoders) and various 1- and 4-quadrant controllers as well as positioning controllers are available for the motor control.

The field of application is wide and extends from precision-engineered devices to battery-operated tools, from medical technology to the aeronautics industry.

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