



## Product

## BG Series Geared Motor

## Application

## Wastewater Eccentric Screw Pump

## Highlights

- BG Series compact, economical gear motor features high-tensile cast housings
- IE3 Permanent magnet synchronous motor (PMSM)
- Torque rating to 18500 Nm
- Complies with NA and International standards, including NEMA, IEC, CSA and CE
- Low-noise gearing
- IP65 Enclosure (Standard), IP66 (Optional)
- Completely enclosed, sealed against dust and moisture
- Corrosion protection COR01, COR02, COR03

Eccentric screw pumps at the sewage treatment in Bayreuth, Germany operate almost continuously 24/7/365. When it was time to replace the motor on one of the pumps at the site, the operators seized the opportunity, after a successful technology upgrade to their sedimentation tank drives (see P-8000-BGM), to specify an optimized replacement unit from Bauer Gear Motor.

Bauer was ready to offer an innovative permanent magnet synchronous motor (PMSM) solution that provided improved efficiency and increased cost-effectiveness. Working with the pump manufacturer, Bauer discovered that the installed 15kW IE3 asynchronous motor (ASM) could be downsized to a 5.5 Kw IE3 drive with PMSM technology.

The downsized motor provided significant energy efficiency. However, the exceptionally efficient rotor design of Bauer PMSM drives utilizes specialized permanent magnets, which provide additional power savings and improved environmental credentials compared to traditional motors.

Heat losses from the rotor are eliminated and total losses are reduced by 25%, which results in consistent motor efficiency improvements of over 10% compared to competitor drives. These characteristics ensure high efficiency, even across varied duty requirements. A minimum 10% overall efficiency improvement extending over yearly operating cycles delivered considerable cost savings of up to € 9.000 per pump per year along with reduced CO<sub>2</sub> emissions.

Eccentric screw pumps operate at different speeds and operating points depending on requirement, which suits the wide partial load operation and speed range offered by the PMSM. Furthermore, this range offers a higher overload capability, which is advantageous if another pump fails on-site and the same duty requirements are spread across fewer pumps.

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