



Excavator / Bucket wheel: FGH 40 supplies 1 million pulses per rotation for stone recognition at the bucket wheel excavator

- High-resolution encoder improves safety for excavator personnel
- Rapid detection of the smallest changes to rotation speed when excavating stone
- Avoids mechanical damage to the power train
- Robust design features high resistance to shock and vibration



The operator cabin of the bucket wheel excavator is located at the end of the boom.



The high-resolution encoder FGH 40 detects even the smallest changes of rotation speed very rapidly.

Task

A seam of lignite can be as deep as 100 m below the surface of the earth. In the majority of cases bucket wheel excavators are used to recover the lignite. The so-called stone excavation masks a high risk. The bucket wheel can become blocked if a tooth of a bucket wheel comes up against a pocket of firmly entrenched stone. The increased load moment can result in the rotation speed of the bucket wheel dropping within a very short period of time. The blockage simultaneously causes the bucket wheel boom to lower. The entire construction of the bucket wheel excavator performs a dipping motion in the opposite direction to the rotary movement of the bucket wheel. This results in a further drop in the rotary speed of the bucket wheel. Personnel could be exposed to a hazardous situation if the tooth of the bucket wheel slips from the stone and causes the bucket wheel boom to swing upwards.

The Hübner Giessen solution

The high-resolution incremental encoder FGH 40 is equipped with a pulse disk and optical scanning technology to provide up to 1 million pulses per rotation. Utilising this encoder ensures it is possible to stop the bucket wheel within a rotational movement of less than 2° should the speed of the bucket wheel drop by just 0.5 rpm – before damage can occur to the power train. As is the case with all Hübner devices the FGH 40 is designed for use in heavy duty applications. Suitable for temperatures ranging from -25 °C to +85 °C it is also highly resistant to shock and vibration. Standard degrees of protection to IP66 and IP67 ensure they can be used in both wet and dust-laden environments. Above all, the safety of excavator personnel is significantly improved by the new FGH 40 encoder and the considerably faster reaction time for stone recognition.

Products

- FGH 40
- Screw-in type adapter shafts
- Engineering support