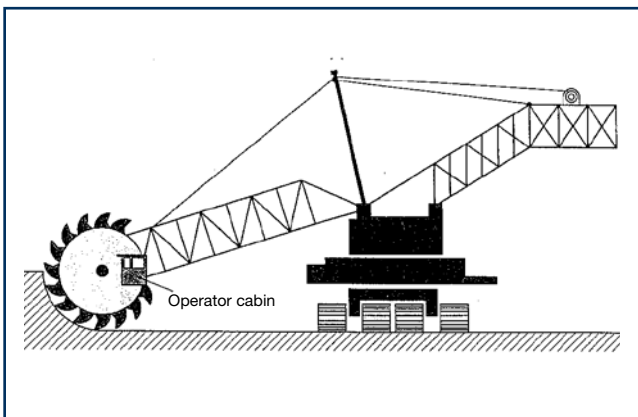


**INDUSTRY** *Mining - Open cast mining*

**FIELD** *Bucket wheel excavators*

**APPLICATION** *Stone recognition*

Even the most colossal of bucket wheel excavators are only able to operate when all requirements are met! Information provided by incremental encoders is extremely important – especially when operating in demanding environments. In mining and open-cast mining applications these include exposure to intensive sunlight, the lowest of temperatures as well as vibration and shock loads, precipitation and high levels of dust.



#### Task:

A seam of brown coal 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 coal. The so-called stone excavation involves a certain risk. The bucket wheel can become blocked if a tooth of a bucket comes up against a pocket of firmly entrenched stone. The increased load moment can result in the speed of the bucket wheel dropping within a very short period of time. At the same time the blockage causes the bigger 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. A risk is posed to the safety of personnel if the tooth of the bucket wheel slips from the stone and causes the bucket wheel boom to swing upwards.

#### Huebner solution:

The high-resolution incremental encoder FG(H) 40 is equipped with a pulse disk and optical scanning designed to provide up to 1 million pulses per rotation. Utilising this encoder ensures it is possible to halt 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 Huebner devices the FG(H) 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 new FG(H) 40 encoder in conjunction with the considerably faster reaction time to stone recognition improves the safety of excavator personnel.



#### Products

- High resolution encoder FG(H) 40 features 1 million pulses per rotation

#### Customer benefits

- Improved accuracy of speed measurements
- Avoid mechanical damage to the power train
- Increased safety for excavator personnel