

SMW cutter wheel on a 16-ton excavator

# EXPANDING HIGH-SPEED BROADBAND NETWORK

**The company Bautechnik Schödl from Grimma is involved in the expansion of the high-speed broadband network in the Schneeberg area of Saxony. In the first phase 26 km of conduit is being laid to connect households to the fiber optic network. The highest productivity rate is being achieved using a KEMROC SMW 80 cutter wheel on one of their 16-ton wheeled excavators.**

Fiber optic cables will soon bring data transfer at the speed of light to the German town of Schneeberg. Since April 2021 works have been carried out on the broadband expansion in the town located in the mountains in Saxony. For more than three years the municipality had campaigned for public funding for expansion of high-speed internet in undersupplied areas of the town. On receipt of the “green light” from the Federal Ministry for Transport and Digital Infrastructure, the telecom company based in Grimma, Web + Phone GmbH, were awarded the contract to connect Schneeberg to the fiber optic network.

Web + Phone specialise in cloud, IT and communication services. They awarded the contract to lay the 5cm diameter plastic conduit which will carry the fiber optic cables to the local civil engineering company Bautechnik Schödl GmbH in Grimma. To reach that goal Schneeberg, the team from Bautechnik Schödl have to lay the conduit through a variety of materials, at times through open terrain, paved roads, concrete and rock. The civil engineering specialists are also responsible for laying the cable to individual houses, including passing the cable into the basements and sealing the buildings. The final procedure then involves specialists from Web + Phone “shooting” the fiber optic cable through the conduit with compressed air, installing the routers and the householders can then start with super-fast broadband.

Around 100 households in Schneeberg are being be connected to the fiber optic network under the publicly funded project, while several hundred more will be connected on Web + Phone’s own monetary responsibility. The construction team supporting Enrico Schödl, site manager and Junior Boss at Bautechnik Schödl, are using a KEMROC cutter wheel mounted on their own 16-ton wheeled excavator to open the trenches before laying the empty conduit. Before starting this project, his father Steffen Schödl had been thinking about the best way to do the trenching and he approached the



Engineers from Bautechnik Schödl use a KEMROC SMW 80 cutter wheel to excavate trenches for fiber optic broadband in Schneeberg.



In one operation, the cutter wheel excavates a trench in overburden with rock or through asphalt while depositing the spoil along the side of the trench.

manufacturer KEMROC to request a trial with the cutter wheel. Following positive test results, KEMROC service manager Marco Schön supplied an SMW 80 (nominal power 80 kW) to the site, installed it on the excavator, and set up the hydraulics to match the requirements of the cutter wheel attachment.

## Grinding, laying, filling, compacting

In line with the catchy slogan, “Revolution of Cutting”, KEMROC’s range of specialist attachments continue to work when other attachments have reached their limits. The SMW range of cutter wheel attachments from KEMROC were designed specifically for the excavation slots and narrow trenches in soft and medium to hard rock. Available in three sizes, they can be mounted on excavators from 10 to 40-ton operating weight and they can excavate slots and narrow trenches – especially for laying cables, to depths of 1,000 mm. In practice, when excavating in rock and other hard materials, the wheel is gently worked into the ground until the support frame rests firmly on the ground. The cutter wheel is then pulled towards the excavator or the excavator tracks in reverse. The spoil or cut material is guided out of the trench and deposited along the side of the trench.

Working in this way, a six-man team has achieved record progress rates in Schneeberg since April 2021. The excavator and an assistant open the trench and make sure all health and safety measures are in place. Two men lay the empty pipe and the more specialists are responsible for covering the pipe with a layer of sand, backfilling and compacting. “In this way, we make much better progress than using conventional saws and excavators”, commented Enrico Schödl, “and compared to another company operating in Schneeberg on the same project using a tractor with a rear mounted cutting attachment, our tool combination has proven to be far more manoeuvrable. We can adjust our cutter attachment with its endless turning rotator to any angle to suit ground conditions without having to move the excavator.”

Depending on material and ground conditions, the civil engineering professionals achieved some impressive advance rates. They ranged from 30 m/h in standard depth asphalt covered paving to over 80 m/h in frost protection layers and up to 100 m/h in open topsoil. The state certified civil engineering foreman Enrico Schödl was also impressed with the economics of this excavating method. While excavating the 13 to 15 cm wide trench in asphalt, the cutter wheel produces a finely ground, homogenous material which can be used for backfilling on top of the sand layer covering the pipe. As a result, significant savings are achieved by not having to transport or purchase backfill.

In total, the public funding will cover the cost of laying 26 km of optic fiber as well as all the associated house connections. From April till September 2021, the Bautechnik



The exposed trench is ready to take the empty conduit which is protected by a layer of sand and the filled and compacted.

Schödl team have already laid around 10 km of conduit. Martin Flechsig, Managing Director of Web + Phone said, "Depending on the conditions, expanding the fiber optic broadband network can involve the use of several different types of equipment and methods including drill rigs, trenchers and / or trenchless technology. Here in mountainous territory and especially over long distances in natural terrain with soils containing large amounts of rock, you can really see the advantages of using specialist excavator attachments like those from KEMROC". ■



A video from the job site is  
available here:  
→ <https://youtu.be/lvKyJ9GQyw0>

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