

KEMROC EKT 220 and EK 150 milling machines

TEAMWORK IN PIPE-LINE CONSTRUCTION

At a project to demolish and re-construct the Ludwig-Uhland-Halle in Gärtringen (Baden-Württemberg, Germany), the company Peter Gross Bau was awarded the contract for the complete renewal of the pipeline layout in order to integrate the future building into the municipal infrastructure. Included in the tender was the low-vibration removal of around 3,000 m³ of dolomite rock. Using unconventional equipment – a 35-tonne excavator with a KEMROC EK 150 chain cutter and a 75-tonne excavator with a KEMROC EKT 220 drum cutter – the project was almost fully completed by the winter break.

The various requirements of school and club sports on the one hand and cultural events on the other, are to be harmonised in the new Ludwig-Uhland-Halle in the municipality of Gärtringen (Böblingen district, Baden-Württemberg, Germany). Replacing the old building, which has since been demolished, a new sports and social centre with a modern, barrier-free multi-purpose hall, together with new outdoor facilities, parking spaces and sports field, will make significant improvements to the town's cultural hub. The contract for installation of underground services for the new building together with connection to the local supply and disposal networks was secured by the company Peter Gross Bau, based locally in Villingen-Schwenningen. An existing combined sewer from the 1950s has also to be replaced with new rainwater and wastewater sewers (total length around 1,200 m).

When construction began on July 15, 2024, it was necessary to excavate trenches for the new sewers, which had to go down to depths of 6 m underground in places. Site investigation reports indicated difficult ground conditions were to be expected: under a layer of semi-solid to solid marl and a deeper layer of rock-like marl, lay class 7 solid dolomite rock, in some places starting at a depth of 2 to 2.5 m. Therefore the tender included the removal of an estimated 3,000 – 3,500 m³ of rock, with an important condition, that the excavation work in close proximity to residential and commercial buildings must be carried out with low noise and vibration.

Impressive performance on the double

The team at Peter Gross Bau are very familiar with the use of excavator cutter attachments and they have several units from the manufacturer KEMROC in their fleet of machines. When the project manager was deciding on the equipment to be used at the construction site in Gärtringen, one of his major concerns was that – in addition to excavating trenches



A new multi-purpose hall being built in Gärtringen. For the earthworks, contractor Peter Gross Bau chose a 75-tonne and a 35-tonne excavator.



The 35-tonne excavator from the contractor's fleet was equipped with a rented KEMROC EK 150 chain cutter attachment.

for the new rainwater and wastewater pipes – he had to install two cisterns (2 x 24 m long) and a retention basin (36 m long) made of reinforced concrete pipes with an inner diameter of 2,000 mm at the centre of the construction site between the school and the main village thoroughfare. The project manager consulted in detail with his assistant site manager and the two foremen on how to achieve the required production rates for the removal of the rock. Working as a team, they decided to use an unusual machine pairing – namely a 75-tonne and a 35-tonne crawler excavator. In consultation with KEMROC sales consultant Otmar Riester, they chose the following attachments: a KEMROC EK 150 chain cutter (150 kW) for the 35-t excavator and a KEMROC EKT 220 (220 kW) rotary drum cutter for the larger excavator. Both machines were also equipped with hydraulic quick couplers so that they could switch quickly between milling the rock and excavating the milled material.

The unique chain cutter attachments from KEMROC have a circumferential cutter chain studded with carbide tipped picks between the two cutter drums. When working, the chain removes the rock that would have been left between the two rotating cutter drums. In solid rock formations, trenches can be excavated to a precisely defined width because there is no need for lateral movement of the drum cutter attachment. Eliminating oversized trenches saves time, fuel and costs associated with wear and tear to the equipment – a patent-protected, almost ideal concept for trenching. Dominik Schmitz and his colleagues chose the 35-tonne excavator with the KEMROC EK 150 chain cutter to excavate the rainwater and wastewater trenches because the milled width corresponded exactly to the required width of the trench.

The EKT range of rotary drum cutters from KEMROC are used in trenching and pipeline applications as well as in the quarrying of soft to medium hard rock. This range of attachments do not have the circumferential cutter chain running between the two cutting drums and are therefore comparatively inexpensive, but they can be retrofitted with cutter chains if required. The Peter Gross Bau engineers at the construction site in Gärtringen chose to use the EKT 220 model, the largest attachment in this range from KEMROC, with the 75-tonne excavator to excavate the large volume of rock in the centre of the site to install the cisterns. Here, the priority was not cutting accuracy, but rather sheer cutting performance.

In the end, it's the result that counts

The project manager was asked several times about his choice of equipment, because a large 75-ton excavator is very unusual in urban infrastructure construction projects. But here in Gärtringen there was a precisely defined deadline of March 28, 2025 for all work in the southern end of the site to be completed to allow for the subsequent stages in the construction process. As difficult ground conditions were expected, it was considered appropriate to have enough production capacity to ensure the deadline would be met.



In consultation with KEMROC's sales consultant, the 75-tonne excavator was equipped with a KEMROC EKT 220 rotary drum cutter attachment.



The rotary drum cutter attachment in action. Mounted on the large excavator, this attachment cut a large proportion of the solid dolomite rock.

By early December 2024, the project manager was optimistic: "We are even a little ahead of schedule. Before the winter break started, we have excavated around 90% of the rock and installation of the water pipes is almost finished. We are therefore very confident that we will be able to carry out the remaining work on time in the new year." ■



Video from the construction site:
[https://projector.kemroc.net/
web/?id=MQWFReYLux1iVPQAGHjs](https://projector.kemroc.net/web/?id=MQWFReYLux1iVPQAGHjs)

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