

Distributor meets DRC challenge

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Anarrow shaft being sunk in the Democratic Republic of Congo by a local mining contractor proved no challenge for earthmoving equipment distributor High Power Equipment (HPE) Africa.

The contractor required an excavator to remove material as the shaft was being sunk, but, as a result of the shaft's size, even the smallest of excavators could not be lowered into the shaft. To solve the problem, HPE Africa modified one of its Hyundai 3,5-t R35-7Z excavators so that it could be lowered vertically down the shaft to operate in the confined environment.

"Despite the excavator being small in size, it was still too large to be lowered horizontally into the shaft for the digging and excavation of material. As a result, we rigged it in such a way that it could be easily lowered on a regular basis," says HPE Africa MD Alan Grady.

The excavator, which is loading a skip at the bottom of the shaft, is removed regularly on a daily basis as blasting progresses. Grady notes that it can be lowered into the shaft four to five times a day. He adds that the machine was fitted with a quick coupler, as it uses a bucket, as well as a breaker, at times, while working in the shaft.

The modifications were tested at HPE Africa's operations yard in Jet Park using a 50-t excavator to lift the 3,5-t machine, simulating the on-site conditions. Grady reports that the rigorous testing was an essential component of the job, as the excavator had to be lowered into the mine shaft vertically, with the roof removed.

"To date, the modifications have been successful and, as a result, the client has ordered an additional six machines for the

same project," he says.

Grady adds that the R35-7Z was chosen because of its zero tail swing, which makes the machine compact and allows it to get close to the walls of the circumference of the shaft that the contractor is sinking, without damaging the walls or the machine. This is possible as the counterweight of the machine is within the radius of the tracks at any given time, explains Grady.

The zero swing R35-7Z is powered by a 27-hp Yanmar engine that offers 3,5-t performance close to walls and obstacles.

The R35-7Z is equipped with a twin variable displacement system with a gear unit for the pilot circuit. The offset boom is designed with a 125° operating range.

The excavator's bucket design has been improved with new antiwear features, additional reinforcements at the sides and a bucket lip that is combined with a heavier-duty bucket linkage. The ergonomically placed switches make operation more convenient and the engine control lever is conveniently located to the left of the operator for fast access and better control.

The excavator has a high-performance hydraulic filter, ensuring longer replacement intervals and reduced down time, and the new low-maintenance bushings, combined with polymer shims, facilitate easier routine service while extending grease intervals.

"This is the first time that we have undertaken such a project but the machine's reliability has proven itself and we recently sold a 5-t R55-7 excavator to a Zambian mining company to be used at the bottom of its shaft," says Grady.

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HEAVY WORK
The 3,5-t machine is lowered into the shaft up to five times a day



ZERO SWING
The R35-7Z allows for performance close to walls and obstacles without damaging the machine