

PowerSource

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Cross the
fragile tundra
with CATCO

Geotec aids in the Chilean
miner rescue

OEMs meet IT4 compliance
with John Deere engines



The power of first impressions

Free expertise and engine turn a potential customer into an advocate

The UiK 6TD 150/G2 E is the first PowerTech 6068TFM engine with ATEX certificate installed. After successful field trials, many more will follow.



You never get a second chance to make a first impression. And some companies will go all out to do just that for a new customer. Of course, you need the technology and skill to really add value if that effort is going to bear fruit. This is what John Deere engine distributor Techbud Sp. z.o.o. in Poland brought to new customer UIKSA when it worked on the design of a new prototype mining locomotive — free of charge. The first unit will soon be tested in local mines, and five more will follow this year.

Added value creates opportunities. The prototype design process for the locomotive took two years. It was an intense but fruitful collaboration. Techbud provided its added value as engine specialist, helping UIKSA design a compact yet powerful and clean locomotive. “We invested a lot of time, and a free engine, in this first project,” says Sebastian Mrowczyński, John Deere brand manager at Techbud. “But if the first prototype proves successful, there’s a lot of future opportunity for both companies.”

A marine engine for an industrial application. The UiK GLS 150 locomotive will be used in a Polish coal mine, carrying miners to and from the worksite. So the design has to provide adequate and reliable power, but take little space. These are the same characteristics that describe the John Deere PowerTech 6068TFM marine engine.

But there are more advantages to using a marine engine, explains Sebastian. “ATEX regulations dictate that the engine surface temperature should not exceed 150 °C,” he says. “Marine engines have a water-cooled exhaust manifold and turbocharger that keep the relevant engine parts safely below the 150 °C.”

Moreover, the engine has few external connections that can leak or break, while a high-capacity heat exchanger keeps it going in adverse conditions. The PowerTech 6068TFM engine will propel the hydraulic pump, along with two separate hydraulic motors connected to each set of wheels.

Safety every step of the way. As recent incidents in New Zealand and Chile have shown, mines continue today to be very dangerous environments. To minimize the risks and maximize miner safety, regulations for equipment are very strict. The new locomotive, like all UIKSA units, meets ATEX certification standards for usage in potentially explosive environments. Features such as the electronic steering system, UIKSA’s own-design hydraulic starter motor and the cooling system for exhaust gases are fire and explosion safe. All parts of the unit — from top to bottom — are sealed, as well.

The unit’s electronic fuel pump already meets Stage II/Tier 2 emissions levels: unusual for mining applications, but providing a cleaner work environment. For a comfortable ride, the locomotive uses an electric-hydraulic system to compensate speed differences between the two axles. And servicing is easy, thanks to special hydraulics that lift all engine hydraulics up. These are of UIKSA design, and unique in the mining industry.

The UiK GLS 150 locomotive has a capacity of up to 40 kN (4.50 tonf) and maximum speed up to 18 km/hr (11.18 mph)



Making a mark — together. The new partnership between UIKSA and Techbud is already flourishing, with five more PowerTech 6068TFM engines on order. “We have a real opportunity here to make a mark with John Deere,” relates Sebastian. “I am confident that the UIKSA and John Deere brands will strengthen one another.”

UiK GLS 150 locomotive:
Capacity: up to 40 kN (4.50 tonf)
Maximum speed: 18 km/hr (11 mph)
Weight: 6 t (6.6 U.S. t)
Length: 6.3 m (20.6 ft.)
Width: 1.15 to 1.35 m (3.8 and 4.4 ft.)
Height: 1.65 m (5.4 ft.)

Engine Model	PowerTech 6068TFM75
Displacement	6.8L
Rated Power	150 kW (201 hp) @ 2600 rpm
Cylinders	6
Aspiration	Turbocharged
Distributor	Techbud Sp. z.o.o. Zielona Góra - Poland +48 68 470 72 50 techbud@techbud.eu