



NEWS RELEASE

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Vermeer Terrain Leveler® SEM can help address drill and blast, air quality restrictions

Solution to help mines extract reserves that may be left behind

PELLA, Iowa — Regulations are having a significant impact on productivity in the mining industry at a time when it's already running on thin margins. There are options that can help a mine increase production while at the same time adhering to drill and blast regulations, addressing sound and vibration abatement and reducing dust to minimize the effect on air quality.

One solution is the Vermeer T1255III Terrain Leveler® surface excavation machine (SEM). The Terrain Leveler SEM features an optional dust suppression system, GPS steering and grade control, as well as a cutting head attachment that can create an 80-degree high wall.

This technology is ideal for use in surface mine applications — especially those faced with drill and blast restrictions or urban encroachment. The advantages of the Vermeer technology are numerous:

- Access areas of surface mines where drilling and blasting cannot be done because of physical or permit limitations.
- See a reduction in noise, dust and vibration compared to drill and blast.
- Produce a smaller, more consistent particle size, helping to eliminate the primary crusher step.
- Use the Terrain Leveler SEM for haul road construction and maintenance.

“The surface excavation machine allows mines to excavate reserves they couldn’t otherwise get to due to drill and blast restrictions or air quality regulations,” says Patrick Robinson, senior commercialization manager for mining at Vermeer. “Mines have already spent considerable time and money on permitting. By integrating our surface excavation technology with their drill and blast program the mines have the ability to extract those reserves that otherwise may be left behind.”

How it works

The Terrain Leveler SEM features a patented tilt-head milling attachment with top-down cutting action that can dig up to 21 inches (53.3 cm) deep and 144 inches (365.8 cm) wide in a single pass. As the unit travels forward and the drum rotates, the teeth on top of the drum advance over the top of the mineral surface. Operators can also control material sizing by increasing or

decreasing the tooth penetration to produce an 8-inch (20.3 cm) minus product. Uniform product size also allows more efficient settings on secondary and tertiary crushing systems.

Enhanced efficiency and dust suppression

The Vermeer T1255III direct drive Terrain Leveler SEM features a fully hydrostatic motor mounted to the side of the cutting head providing direct drive power to the cutting drum. The direct drive drum design delivers more horsepower to the cutting drum, resulting in enhanced efficiency when working in hard rock conditions. In addition, the direct drive drum allows the quarry operator to cut an 80-degree high wall providing slope stability that is desired in high-wall mining applications. Vermeer also offers a chain drive drum which allows the quarry operator to cut a 90-degree high wall, and is also designed to work in hard rock conditions.

On many mine sites, dust is a challenge due to urban encroachment and air quality concerns. An optional dust suppression system on the Vermeer Terrain Leveler SEM features an enclosed cutting head with two large vacuums pulling dust from the enclosed cutting head into baghouses. The collected dust is dropped beneath the machine, helping to reduce the amount of dust entering the air. This also diminishes the need to source water to control dust during the mining process.

GPS technology and autonomous control

The T1255III Terrain Leveler SEM also features an optional GPS technology that can also be used to create a mine-by-line plan. A mine plan can be uploaded to the GPS system and the machine will automatically cut to the plan.

“Machine steering is controlled by the GPS technology, helping remove human error for cutting head overlap and maximizing efficiency of the machine,” says Robinson. “The GPS system provides an overlap cutting of only 6 inches (15.2 cm).

A patented tilt cutting head tied to GPS technology allows the operator to control the cutting head depth and pitch. This feature allows the operator to cut to the mine plan — producing a flat, almost road-smooth surface; a grade for drainage; or a sloped haul road. The technology also eliminates rapid changes in cutting depth, which can impact productivity, and can provide more precision cutting than an operator-controlled system.

Performance monitoring

The T1255III is equipped with Vermeer SmartTEC control software that assists operators with adjustments to machine operation to help maximize machine performance.

“Our SmartTEC system displays the status of the many critical elements of machine performance, with prompts providing visual cues to the operator for recommended control adjustment,” says Robinson. “The software also monitors and records various machine operation attributes for future analysis by the machine owner or fleet manager.”

Operator safety

The cab features an operator presence system that disengages the ground drive and cutting attachment if the operator leaves the seat. The machines are available with a rollover protective module (ROPM) and a falling object protective structure (FOPS) for working near a high pit wall. The machine’s low center of gravity helps maintain machine stability.

Other Features

In addition, the Terrain Leveler SEM has a pressurized cab with filtered air system to provide an increased level of operator comfort. The SEM can also be equipped with an optional full-function wireless remote, which allows the operator to run the machine from a safe distance if the project requires the machine to cut against a high wall.

For more information on Vermeer products and services, visit the company's website at www.vermeer.com or email Vermeer at salesinfo@vermeer.com.

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