

# XLED

## TECHNOLOGY AND OFFERING



DEFINING THE FUTURE  
**UNDERGROUND**

**normet**

[normet.com](http://normet.com)

## DEFINING THE FUTURE UNDERGROUND

We are a fast-growing and innovative company with a mission to lead the transformation into a safer and more sustainable tomorrow. We specialize in technologies and solutions for underground mining, tunnelling and civil construction and provide our customers with safe, high-quality equipment, services, construction chemicals and rock reinforcement solutions for projects around the world.

### UNDERGROUND EXPERTISE

We support our customers with expertise gained from working on thousands of underground mining and tunnelling projects all over the world. To date, we have delivered more than 14,000 purpose-built underground machines while improving safety and productivity through our range of construction chemicals and rock reinforcement products. We also offer a range of services and support for our customers. Our company employs about 2,000 professionals with more than 50 locations in 30 countries.

### SAFETY IS OUR PRIORITY

Safety is our first priority in everything we do. Our goal is to help our customers increase their level of safety while improving their productivity and profitability. We develop our equipment, technologies and solutions with safety, sustainability and the welfare of people as the key drivers, taking the impact on the environment in careful consideration as well.

### CONTINUOUS DEVELOPMENT

We constantly develop new equipment, technologies and chemicals to provide additional value for our customers' underground processes. Our development teams consist of world-class experts using state-of-the-art methods and tools. We use our own laboratories to develop our cutting-edge construction chemicals and perform field tests for our entire offering in real-world environments. In all our work, we aim to enhance safety and reduce environmental impact.



# ELECTRODYNAMIC TECHNOLOGY

By combining the best features of our battery-electric Normet SmartDrive® platform and state-of-the-art low-emission engine technology, Normet ElectroDynamic® architecture allows for increased payload capacity while ensuring superior driving dynamics, high performance and superb fuel efficiency.

A key element of the new ElectroDynamic powertrain is that the need for a drive shaft is eliminated through driving the externally

cooled mining axles with permanent magnet motors in a highly efficient direct-drive configuration. This not only renders a low and compact load end design, instant torque and economical electric retardation possible, but also increases component lifetime.

Normet ElectroDynamic® also enables one-pedal driving, where the machine automatically controls both acceleration and deceleration with the operator's accelerator pedal input.



Rear motor drives

Electric motors in direct drive configuration

Oil-cooled axles and brakes

Braking resistor

250 kW Volvo Penta Stage V engine

Front axle suspension

Generator

Front motor drives and generator drive

No drive shaft

### DECOUPLING ENGINE RPM FROM SPEED

In essence, the engine generates electricity, which is then used to drive the electric motors at the axles. This power conversion decouples the engine RPM from the speed of the machine and, consequently, enables optimizing it for both best possible fuel economy and performance.

### NORMET ELECTRODYNAMIC® VS. TRADITIONAL POWERTRAIN

- Lower fuel consumption and emission levels
- Better driving dynamics - engine always on optimal RPM
- Improved productivity with smaller outer dimensions
- Free component placement for easier maintenance

## UTIMEC XL ED CARRIER

The completely new Utimec XL ED carrier is designed for heavy transportation applications with its remarkable payload capacity of 24 tonnes.

All models in the Utimec XL ED offering utilize our new Normet ElectroDynamic® technology with a specifically tailored platform to complement it. The key design objective for the new XL ED platform was to build a new type of carrier, allowing for both high-capacity transportation applications and the smallest possible outer dimensions.



**Volvo Penta 250 kW Stage V diesel-generator**

**No drive shaft for maximum productivity**

**Efficient direct-drive electric motors**

**Oil-cooled axles & front axle suspension**

**Infinitely variable transmission**

**Oil-cooled brakes, braking resistor & engine brake**

**Astonishingly robust and durable design**

The Normet ElectroDynamic® architecture allows for a very low and compact load end design and opens up a completely new level of driving comfort for the operator.

All XL ED series units are powered with 6-cylinder, liquid-cooled and turbocharged 250 kW Volvo Penta engines with a Stage V emission rating, enabling clean and efficient operation.

The machine is equipped with an electrodynamic powerline and Kessler planetary axles with dual-circuit, spring applied and hydraulically released (SAHR) fail-safe safety brakes with a separate hydraulic tank and flushing circuit.

The electric system of the new XL ED carrier is specifically designed for the harsh underground environment with its self-extinguishing wire harnesses, tinned wires and watertight conduits. In addition, the vehicle layout renders easy access to all service points

possible, allowing all daily checks to be conducted from the ground level.

All XL ED vehicles have an advanced front axle suspension system which significantly improves safety and driving comfort while also increasing component lifetime. The multifunctional display (MID) in the cabin enables comprehensive access to different types of key driving information (such as speed, RPM, temperatures, safety warnings and alarms etc.), which can also be recorded for further analysis.



**The XL ED carrier defines the future of underground transportation.**

## THE XL ED OFFERING



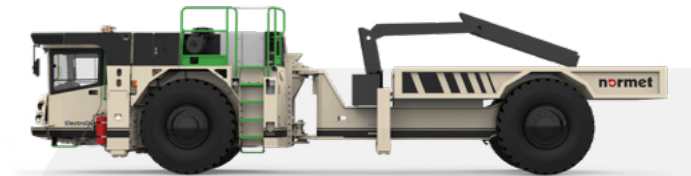
### Utimec XL 1100 Agitator ED

A capable concrete transportation vehicle with a practical concrete carrying capacity of 10.5 m³.

## COMING IN THE FUTURE

### Utimec XL 240 Material ED

A heavy-duty underground material truck with a payload capacity of 24 tonnes.



### Utimec XL 240 D ED

A purpose-built underground dumper with an impressive payload capacity of 24 tonnes.



### Utimec XL 2000 Water ED

A dedicated water/fuel/lube transportation vehicle with a voluminous 20 m³ tank.





## UTIMEC XL 1100 AGITATOR ED

Utimec XL 1100 Agitator ED with a practical concrete carrying capacity of 10.5 m<sup>3</sup> is designed for concrete transportation in underground mines and tunnels with a tramming height of 3.3 m or more. Built on the new low-emission Normet ElectroDynamic<sup>®</sup> platform, the XL 1100 Agitator ED paves the way to the future of more sustainable underground operations.

The rotation speed of the wear-resistant, remote-controllable concrete drum can be adjusted between 0 and 13 RPM while the hydraulically operated discharging chute allows for more versatile vehicle positioning. Both mixing and unloading are controlled elec-

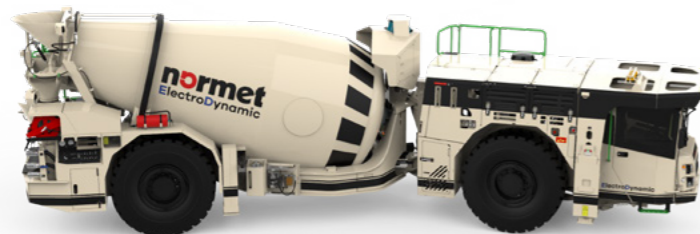
trically and can be operated with zero local emissions by plugging the machine into the mine's power grid. This increases operator comfort by significantly reducing heat output and noise and by eliminating underground emissions. The vehicle is also equipped with a manual concrete drum locking system and a 500-litre water tank with a hydraulically driven pump and a high-pressure washer.

Additionally, the Utimec XL 1100 Agitator ED can be fitted with front and rear support legs to ensure maximum operating stability, and a form oil system to effectively prevent concrete from adhering to the vehicle's surfaces.

High pressure washer with water tank

Accelerator transfer system

Form oil system



Power pack for zero-emission mixing and unloading

Reversing camera system

Front and rear support legs

## THE NEW NORMET 180° CABIN – DEFINING A NEW LEVEL OF OPERATOR COMFORT

A result of our decades-long experience in designing underground equipment is here – the completely new Normet 180° cabin, setting new industry standards for safety, operator ergonomics, visibility and serviceability.

The forward-angled windscreen prevents the accumulation of dropping water and dust, ensuring that the windscreen remains clean in harsh underground conditions. The new wide-angle mirrors with three separate sections guarantee an excellent level of visibility in every direction. When it gets dark, the high-intensity LED driving lights illuminate the way ahead.

The high-definition reverse camera with multiple alternative placement options provide real-time video footage from the back or the sides of the vehicle while the large window area with narrow a-pillars allow for a broad, unobstructed field of view.

Our new advanced suspension control allows the operator to glide over rough road conditions with ease for a world-class driving experience, while the low noise level of the new cabin increases comfort and allows speaking at normal voice levels. The cabin's roomy interior design increases space, providing comfortable accommodation for up to three passengers.



Improved operator comfort and ergonomics

Upgraded visibility and serviceability

Enhanced driving experience

FOPS/ROPS approved

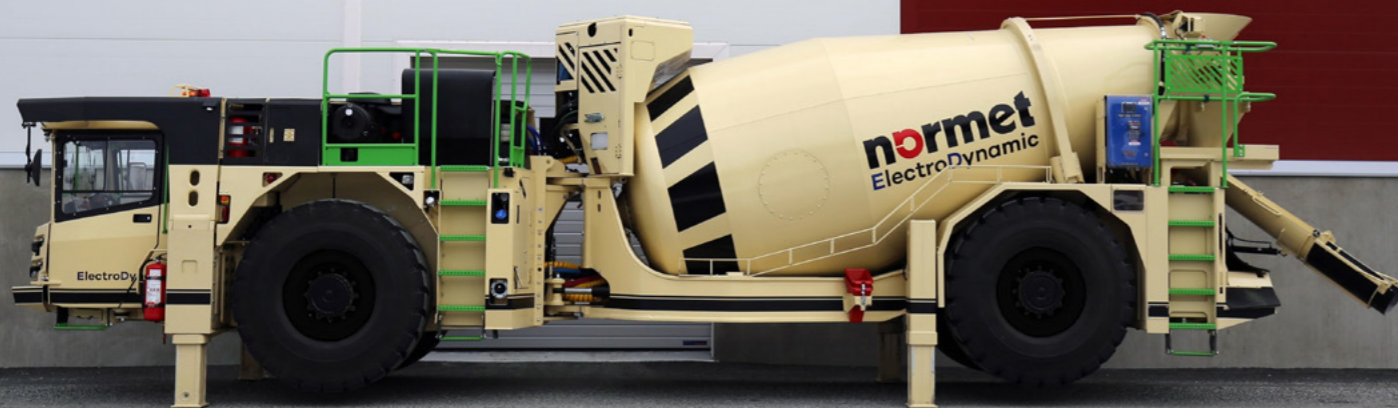
Standardized for our customers' benefit



10.5 M<sup>3</sup> DRUM CAPACITY



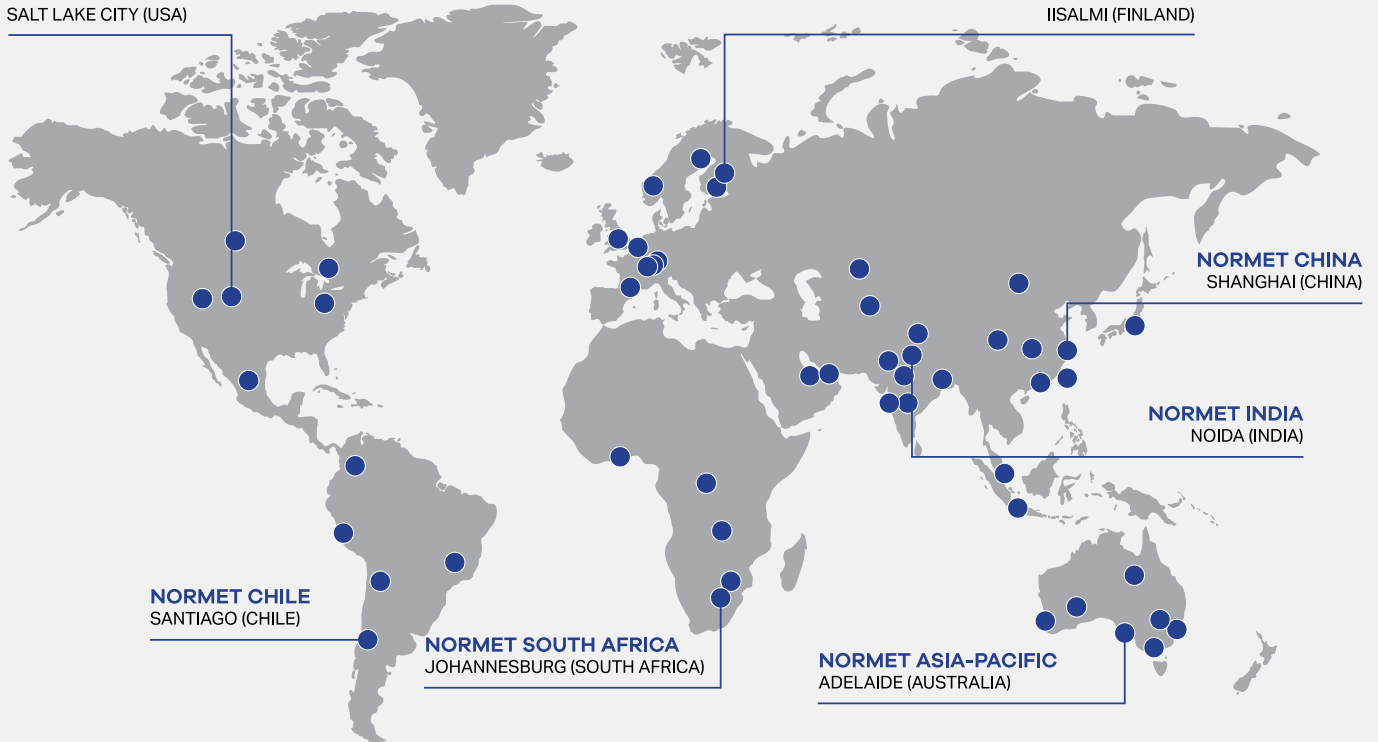
24 000 KG PAYLOAD





**NORMET AMERICAS**  
SALT LAKE CITY (USA)

**NORMET FINLAND**  
IISALMI (FINLAND)



**NORMET CHINA**  
SHANGHAI (CHINA)

**NORMET INDIA**  
NOIDA (INDIA)

**NORMET CHILE**  
SANTIAGO (CHILE)

**NORMET SOUTH AFRICA**  
JOHANNESBURG (SOUTH AFRICA)

**NORMET ASIA-PACIFIC**  
ADELAIDE (AUSTRALIA)

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Mexico  
USA

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Chile  
Colombia  
Peru

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Switzerland  
United Kingdom

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Ghana  
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Zambia

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Qatar  
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