# ANFO CHARGING OFFERING





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# ANFO CHARGING

We have gathered extensive expertise in underground charging from the launch of the first Normet - charger in the 1970's. Ever since, we have continuously developed our charging equipment and solidified our place as the world-leading underground explosives charger manufacturer.



Our purpose-built, mechanized charging systems improve the safety and productivity of your underground blasting operations. Our charging product range, the Charmec offering, includes equipment for charging with packaged cartridge explosives and bulk explosives like ANFO, water gel and modern, site-sensitized emulsions in environments from different-sized tunnel faces to large underground production stopes. In addition to charging use, our equipment comes with built-in storage spaces, allowing for safe transportation of explosives and detonators to the site.

### THE NO. 1 CHARGING SYSTEM

Over the past 50 years, we have delivered hundreds of mobile Charmec systems to hard rock mines and civil tunnelling projects all around the world. They meet the highest safety, productivity and quality requirements and ensure that your underground explosive charging processes are cost-effective. You can depend on our chargers for low lifetime costs, superiorly safe and reliable operation and maintenance as well as consistently high resale value.

### FOR ALL ANFO CHARGING NEEDS

ANFO is a mainstream explosive in many locations around the globe, and we can support your operations with a broad offering of purpose-built ANFO charging products. Our ANFO chargers are known for their robustness and superior reliability, but we also have extensive knowledge of handling and delivering different types of powder, heavy and high viscosity ANFO.









## FOR SAFE AND EFFICIENT EXPLOSIVES CHARGING

The requirements for safe and productive uphole charging, in particular, can be extremely challenging, but we can provide you with various technologies to improve your process efficiency, increase in-hole density and reduce waste rebound. Our state-of-the-art ANFO modules are mostly bolt-on systems, enabling later switch to emulsion and back quickly and effortlessly.

### SOLUTIONS FOR BOTH MINING AND TUNNELLING

Charging equipment can be generally divided into mining and tunneling machines based on their size, load capacity, person lifting height and a possible twin-boom configuration. We have a wide offering of solutions for explosives charging processes in both environments. For example, the Charmec SF offering is comprised of agile machines with compact outer dimensions, thriving in development charging in underground mines, while the Charmec RM series, a twin-boom tunnelling platform, is purpose-built to enable efficient operation in wide and high tunnel faces.



Charmec MC 605 DA(V) is our most versatile charger.



### CHARMEC SF - COMPACT AND AGILE

The Charmec SF offering includes our nimblest, most compact ANFO chargers with excellent maneuverability in narrow tunnels.

Designed for the specific needs of development charging in harsh underground conditions and allowing access to tunnels with a width of only 3.7 meters, our dedicated ANFO chargers in the SF offering can be equipped with useful features like an on-board compressor for increased productivity and electric process drive for clean and efficient operation.





Machines in the SF offering are equipped with different purposebuilt underground booms with a lifting height of either 4, 5 or 6 meters. Furthermore, they come with a bolt-on ANFO kit that enables fast swapping from ANFO to emulsion charging and back if needed, thus increasing the machines' versatility.

The Charmec SF offering is comprised of three machines: the agile knuckle-boomers SF 404 DA(V) and SF 504 DA(V), and the SF 605 DA(V), a compact multi-purpose charger with a high-reach, mine-proof telescopic boom.

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Enabling electro-hydraulic charging without diesel fumes with the optional power pack, machines in our Charmec MF front cabin offering are equipped with a FOPS/ROPS cabin and come with a Stage III or a low-emission Stage V powertrain architecture.

The MF models are fitted with either our proven NBB3S boom or our unique NBB3XS person lifting boom with a durable slew ring construction, offering both shorter length and the ability to protect the boom by parking it on the spacious extended working deck while driving. Both purpose-built boom types allow for excellent maneuverability and an impressive underground working reach.

CHARMEC MF OFFERING

Charmec MF 605 DA(V)

Charmec MF 605 DA XS

CHARMEC SF OFFERING

Charmec SF 404 DA(V)

Charmec SF 504 DA(V)

Charmec SF 605 DA(V)

A very compact and agile offering for small to medium-sized tunnel profiles.







### CHARMEC MF – A MULTI-PURPOSE CHARGER



Charmec MF 605 DA





### CHARMEC MC – SUPERIOR VERSATILITY

The MC is our most versatile Charmec platform with the broadest spectrum of process-related options and accessories. Featuring a center cabin layout for excellent driving comfort and visibility, the extremely durable machines in the Charmec MC offering are equipped with our proven ANFO charging technology.

Offering the best production charging capability and the possibility for uphole charging with more than 25-meter long holes with our performance package, Charmec MC units render it unnecessary to have a dedicated production charger, allowing for reduced costs, a higher equipment utilization degree, a much faster learning curve for operators and a smaller inventory of spare parts.



Charmec MC 605 DA



Suitable for the most demanding ANFO charging solutions in the market using powder ANFO, heavy ANFO and high viscous sticky ANFO, the Charmec MC is equipped with our advanced ANFO module with an extremely useful high-capacity compressor and optional electric process drive for increased productivity and a cleaner underground working environment.

## **CHARMEC RM – PURPOSE-BUILT FOR TUNNELLING**

Offering shorter cycle times, an excellent payload capacity and doubled productivity with a high-coverage twin-boom system, the Charmec RM offering is specifically designed for modern tunnelling operations.

Built with a rigid frame layout for maximal driving and working stability and unrestricted mounting space, the machines in the offering are equipped with unmatched safety features and crabwalking ability for increased agility in tight underground spaces. The RM is fitted with a dedicated person-lifting boom with full maneuverability instead of one that can execute just up and down movements like a typical telehandler.

The offering features a modular structure to fit both charging and spraying kits and different kinds of rear trays. In addition, it comes with a large mounting area at the front of the carrier with the ability to accommodate booms from the Normet basket boom family.

The Charmec RM offering is tailored for tunnelling operations where all risk factors and technical requirements for underground work need to be taken into account. Consequently, the RM is equipped with a wide variety of different safety features like a FOPS/ROPS approved cabin and available with the latest lowemission Stage V engine technology.

CHARMEC MC OFFERING

Our most versatile Charmec for both development and production charging.

CHARMEC RM OFFERING

Charmec RM 905 TA(C)



### Charmec MC 605 DA(V)







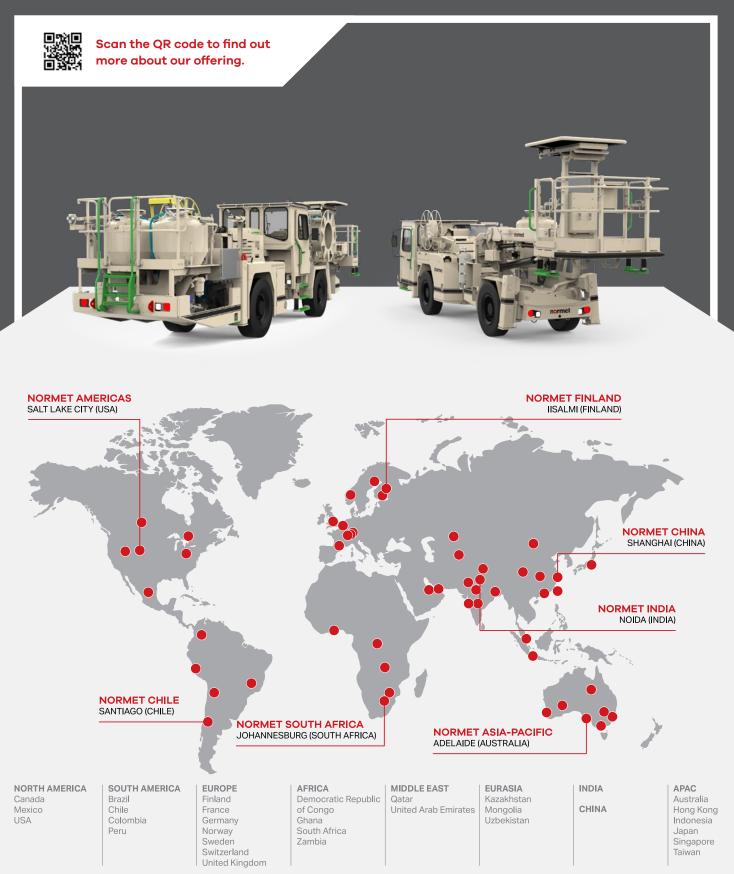
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Charmec RM 905 TA(C).





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