

DynoMiner™ Profile

Technical
Information



Description

The DynoMiner™ Profile unit has been specifically designed by Dyno Nobel as a PLC controlled, hydraulically-powered explosive delivery unit.

Its primary purpose is to operate in an underground mining environment and deliver a variable-density explosive emulsion. The raw materials required to manufacture explosive emulsion is stored in the tanks and processed at the operator's request. These raw materials are:-

- Ammonium Nitrate Emulsion (ANE)
- Gassing chemicals – N17 & NL3
- Water

The unit is integrated on a typical underground carrier vehicle that is equipped with an elevating work platform (EWP) to enable operators to get as close to the blasting face as possible. Operator controls are mounted in the work basket.

Properties

Products and Densities

The DynoMiner Profile unit is specifically designed to deliver Dyno Nobel's range of water resistant pumpable bulk emulsion explosives. Densities are optimally controlled from 0.8g/cc to 1.2g/cc.

The processed product (explosive emulsion) is pumped into the blast hole using a high pressure pump and hose-pusher system using Dyno Nobel's retract and gassing system technology.

Safety Systems

Low pressure, high pressure and high temperature detection are provided on the discharge of the product pump. On detection of low pressure, high pressure or high temperature during normal running, the pumps are stopped immediately and an error indicator on the HMI (human-machine interface) warns the operator. All product run parameters are monitored by the control system.

An emergency stop is mounted on the side panel of the process unit and at the control station in the EWP. Backup of EWP controls is provided as an added measure.



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Control Systems

The DynoMiner Profile unit has been built with a complete control system that monitors and controls all safety shutdowns, flow and rate indicators, warnings and error indicators. Operators can use either of the two (2) control panels provided – one in the EWP control station, and one on the rear panel of the DynoMiner Profile unit.

In the latest version – The DynoMiner Profile 2.5, the operator panel is a handheld device that can be plugged into the EWP or the rear panel of the unit (depending on where the operator is working).

Additionally, the DynoMiner Profile 2.5 unit has added features like data logging and automatic formulation of ingredients to suit the temperature and humidity of the environment.



Vehicle History

The DynoMiner Profile unit has been developed over a number of years of product experience in both Australia and overseas. The current standard has been established as a benchmark design within Dyno Nobel's global operations.

The learnings obtained in previous builds have been passed on as refinements on the new builds, capturing essential real-life experience and making the units more reliable.

The units are directly supported under DNAP's SAP based maintenance planning, scheduling and controlling systems.

System Advantages

- The ability to charge in all areas
- The unit can be optioned up to load:
 - Production uphole
 - Development headings
 - String loading in perimeter holes
- The ability to load different densities controllably
- Densities are available from 0.8g/ml to 1.2g/ml
- Can be integrated onto different industry standard underground carriers



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