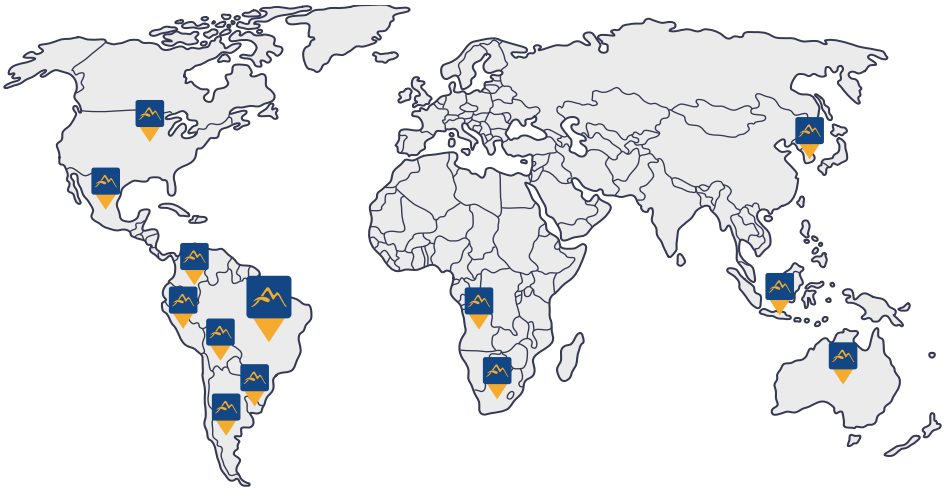
PUMPING SOLUTIONS IN MINING

Higra Mining offers the perfect water pumping solution for mining operations through the amphibious pumps.

Global reference in amphibious pump technology, Higra Mining combines **innovation and sustainability** through a team with over 45 years of experience in pump design and manufacturing and 33 years in product distribution within the mining industry. Focused on customer needs, Higra Mining is renowned for delivering **solutions** with **high hydropower efficiency.**

HIGRA MINING APPLICATIONS AROUND THE WORLD



FACILITIES IN BRAZIL

TECHNICAL SUPPORT

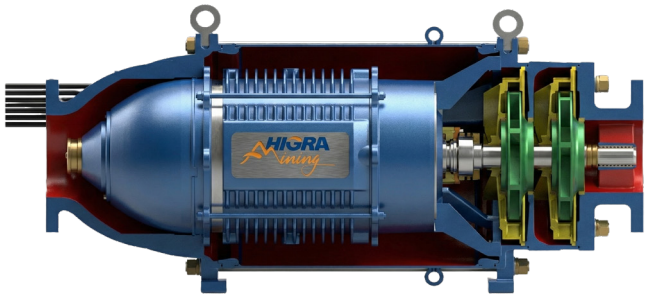
We offer **Authorized and Specialized Technical Support** in several markets.

AMPHIBIOUS PUMPS

The amphibious pumping concept is a pioneering and exclusive development. The ability to operate both in and out of water using the same equipment is a result of its innovative design. This design allows water to be drawn in through a flanged axial suction, which then passes through a centrifugal impeller along the motor. This system ensures effective heat exchange, reduces noise emissions, offers installation versatility, requires low maintenance, and achieves high energy efficiency.

- Operation inside and out of water
- Longer life and lower maintenance demand
- Easy installation
- Water cooled electrical and mechanical systems
- No need for lubrication
- Maximum noise level: 60 dB

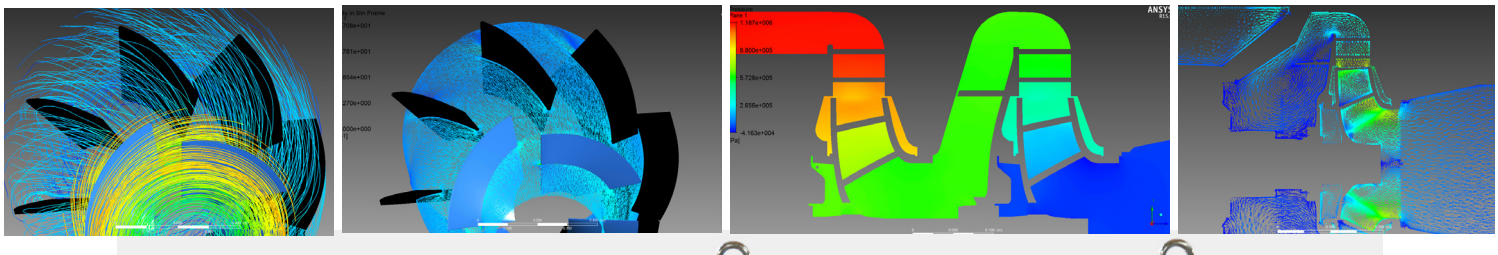
ADVANTAGES OF THE MONOBLOCK AMPHIBIOUS PUMP

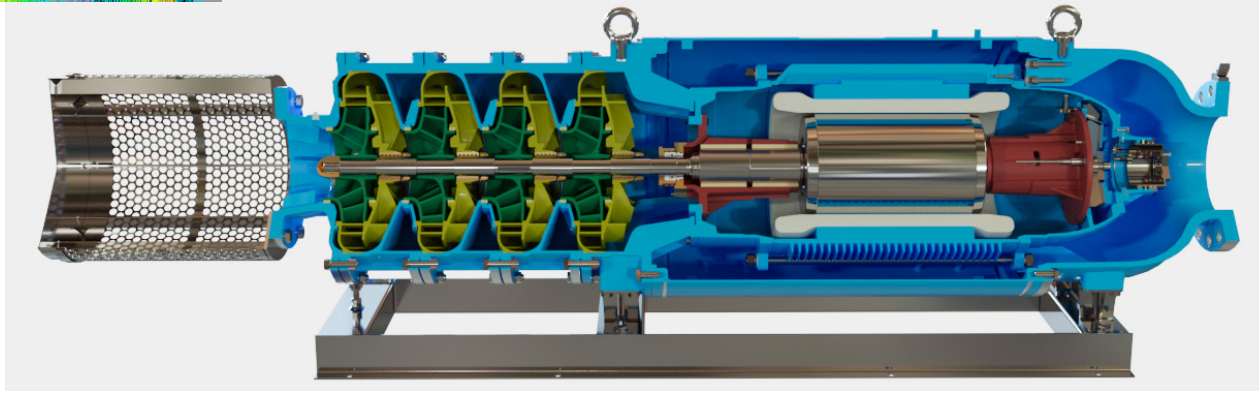


- Eliminates vibration problems due to misalignment of the assembly.
- The pumped fluid creates an acoustic shield between the motor and the external environment, and the generated noise is below 60 dB.
- Low motor temperature (<55°C) due to constant heat exchange with the pumped fluid.
- Compact equipment with up to 30% less weight compared to a vertical shaft pump.
- Compact weight and dimensions.
- The pump can be installed by the discharge flange, becoming an extension of the pipeline.
- Not affected by weather conditions such as sun, rain, or flooding.
- Can operate in any position, serving various stages of the project.
- Impellers and Diffusers designed with state-of-the-art software (Inventor and ANSYS CFX), through hydrodynamic simulation that provides high hydropower efficiency.

COMPUTATIONAL FLUID DYNAMIC

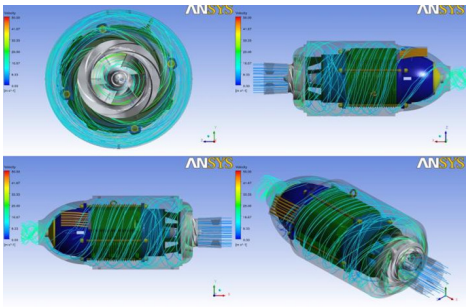
Better performance guaranteed by state-of-the-art CFD software technology.

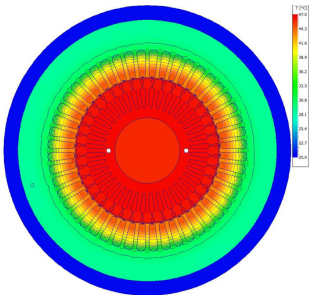




HIGRA MINING SUBMERSIBLE MOTOR

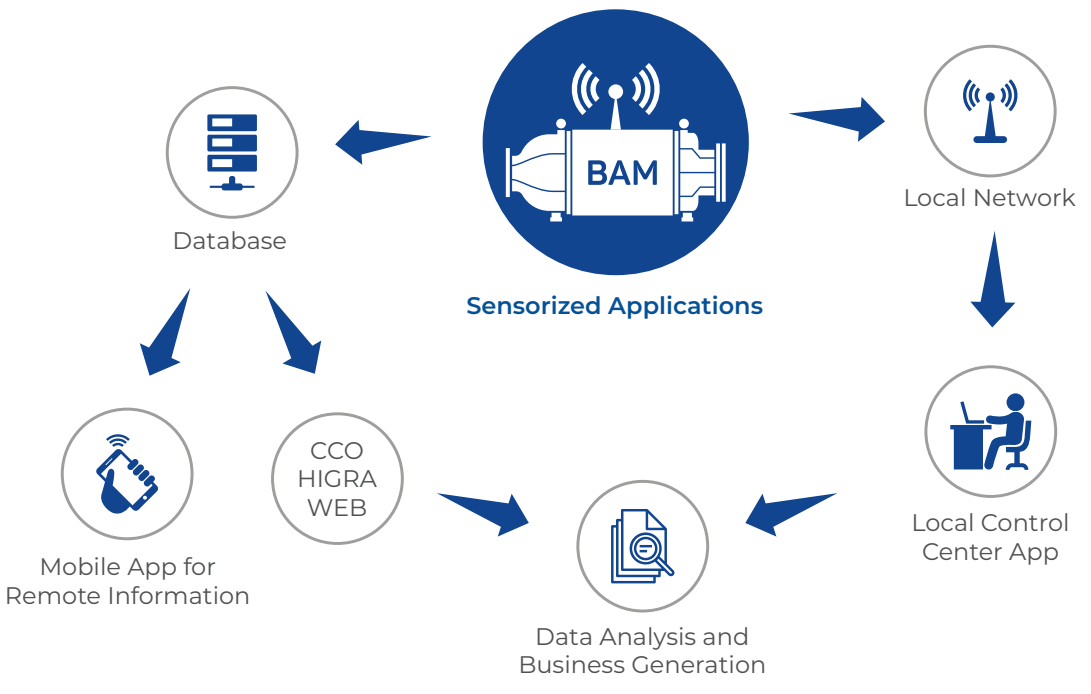
- Motors directly cooled by water.
- High current densities A/mm².
- High power in reduced dimensions.
- 1.5 to 3 times more power compared to a forced ventilation motor

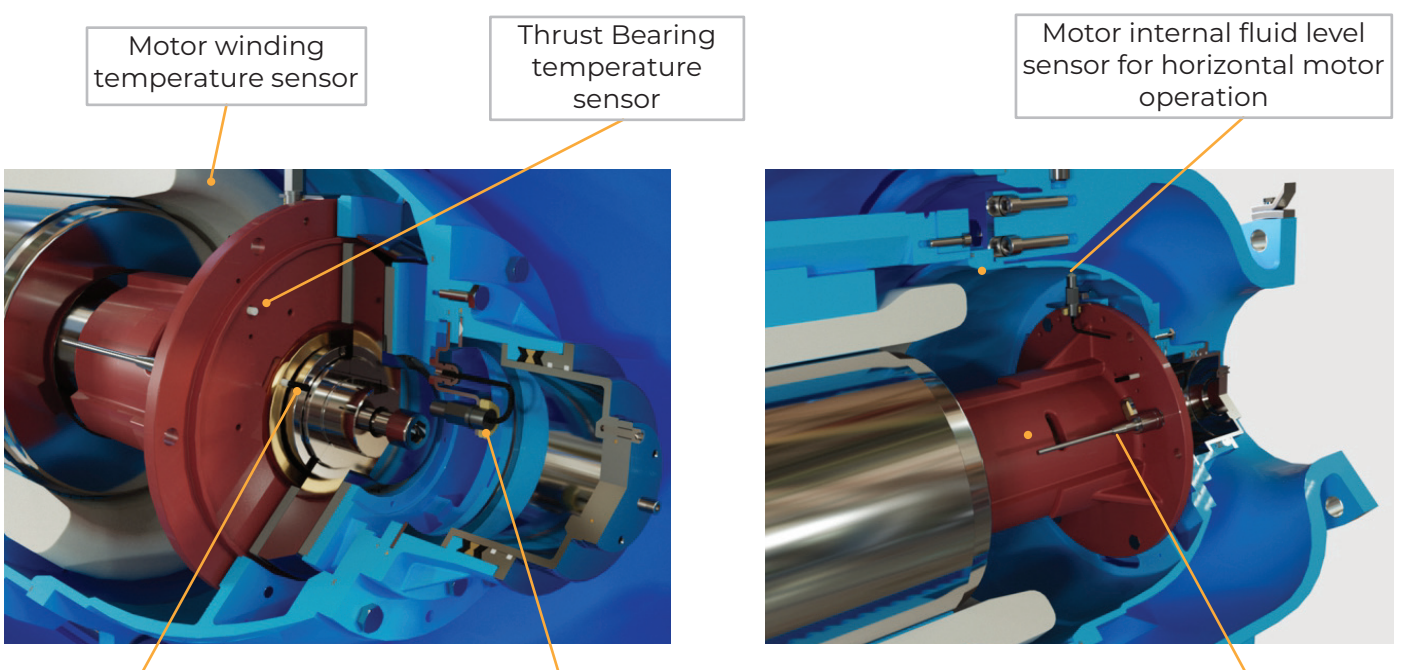




CONNECTING THE PUMP

A Novus controller, type FieldLogger, monitors the equipment sensors. It allows for input and output parameterization, alarm configuration, data logging, and communication setup with other devices.



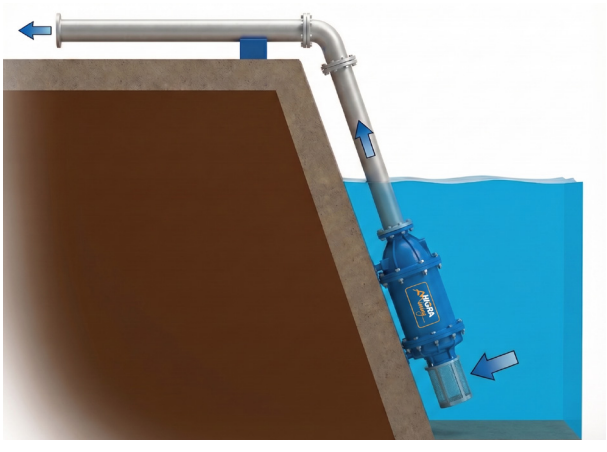


APLICATION

The amphibious pump technology represents innovation and efficiency in water pumping for mining. It operates both in and out of water, offering more versatility for installation in remote areas with fluctuating water levels. Its unique design ensures superior performance in any condition.

AMPHIBIOUS PUMPS INSTALLATION METHODS

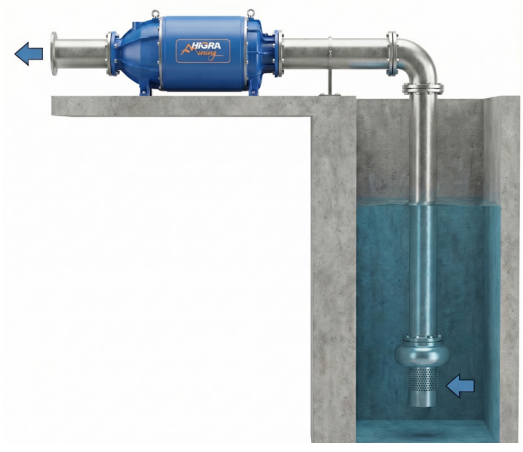
Submersible



Partially Submerged

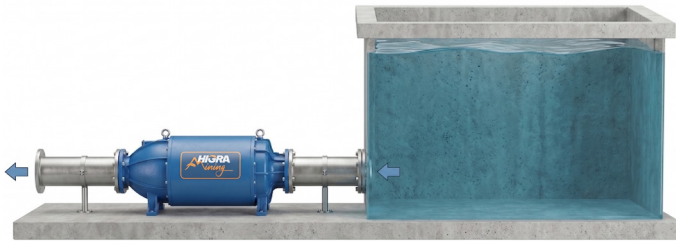
Modulated

Suction

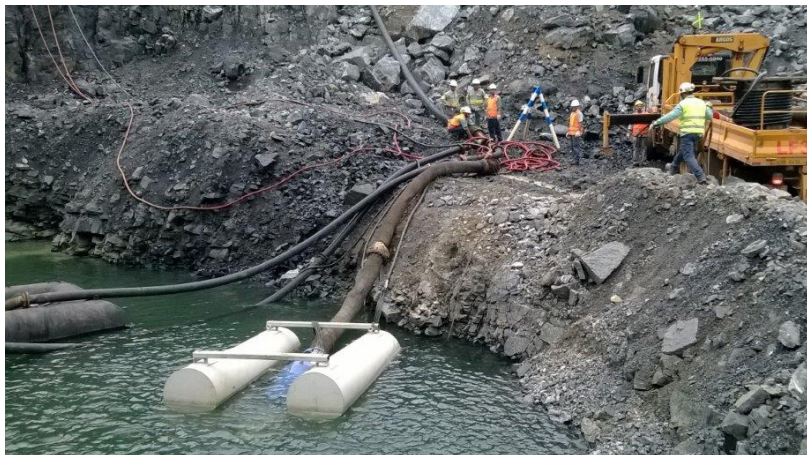


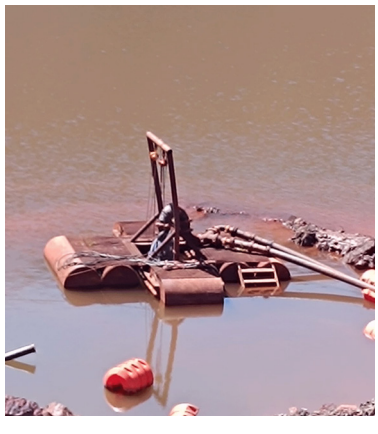
Booster

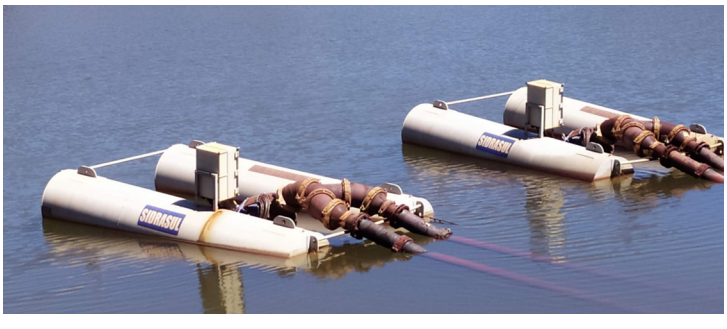
Positive Pressure



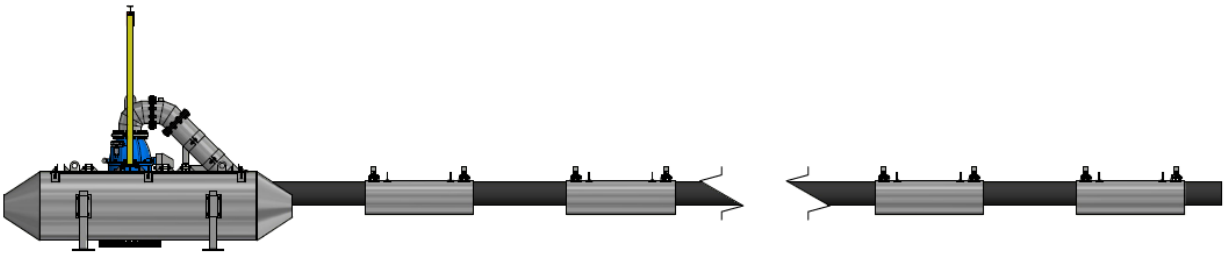
Over Floats



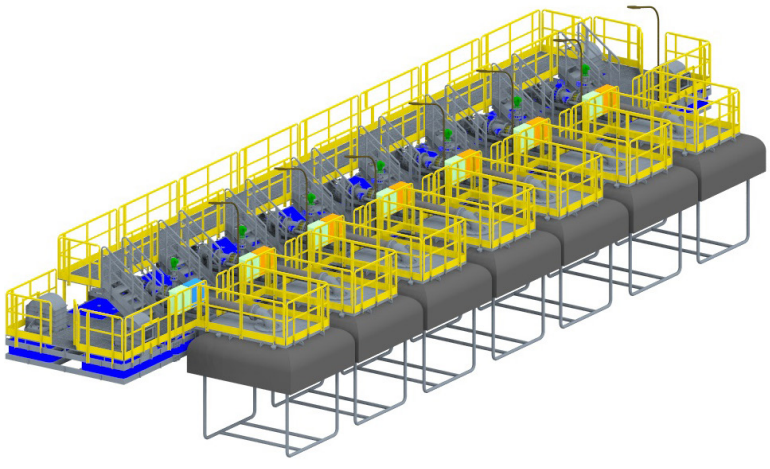




PUMPING SYSTEM SOLUTION



The versatility of installation and suitability for pre-existing installations make the amphibious pump an excellent solution for the most diverse pumping projects.



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