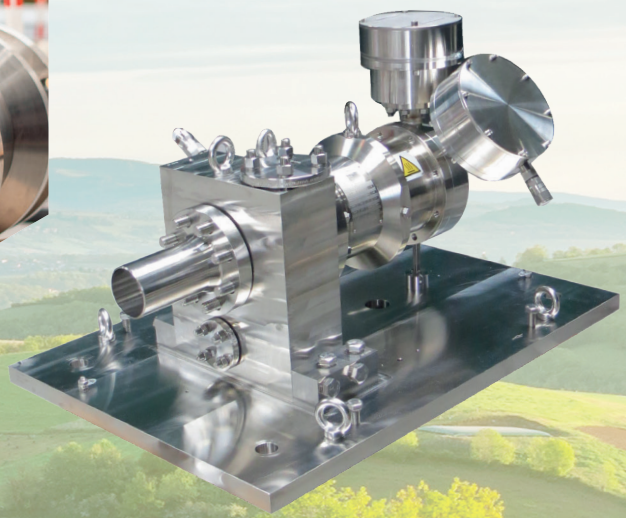
SEALLESS PUMPS MANUFACTURER

THE ULTIMATE LEVEL OF SAFETY SOLUTIONS



OPTIMEX
SEALLESS PUMPS

100% FRENCH COMPANY • 100% FRENCH COMPANY •

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DEDICATED EXPERTS FOR EACH STAGE OF YOUR NUCLEAR PROJECT

Optimex has been manufacturing canned motor pumps since 1998 and has become an important actor in the nuclear market.

Thanks to their double containment and the absence of dynamic sealing, canned motor pumps ensure the very highest level of safety against the risk of leakage.

They are capable of withstanding very high static pressure and can be fully submerged.

Thanks to our extensive experience and continuous training, we have established a strong nuclear safety culture and an in-depth understanding of the specific requirements of the nuclear sector.

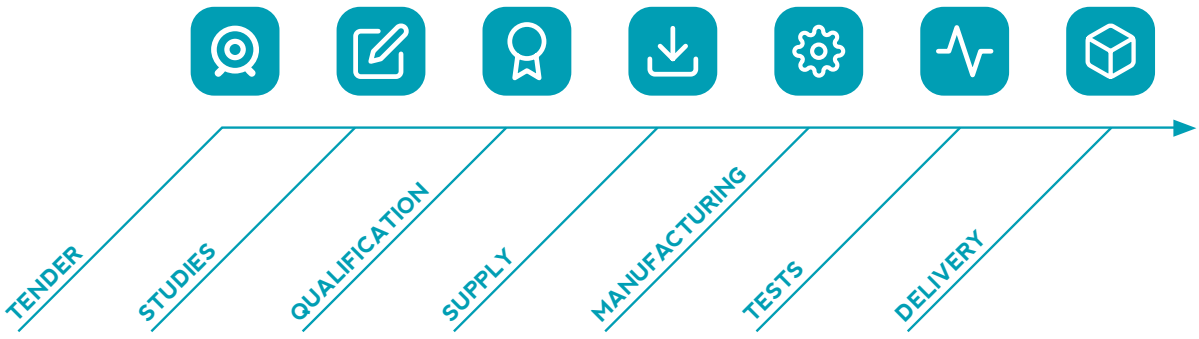
All our teams are trained to manage and execute projects with stringent requirements using quality processes and working methods required in this environment.

+ ROBUST QUALITY MANAGEMENT SYSTEM

Our quality management system complies with ISO 9001 and ISO 19443 standards, to meet the stringent requirements of the nuclear industry.

Our team undergoes regular training to maintain a high level of expertise and ensure continued compliance with safety standards. Nuclear projects are managed by the dedicated Optimex nuclear department. This team is responsible for all stages of project follow-up: scheduling, manufacturing progress, surveillance management & project reporting.

+ DEDICATED EXPERTS FOR EACH STAGE OF YOUR NUCLEAR PROJECT



STUDIES & DESIGN

Our expertise in motors and centrifugal pumps allows us to offer adapted solutions for all applications.

In some situations, we are also able to propose “retrofit” or “fit in place” of an existing pump to solve some process or maintenance issues notably in terms of safety and reliability.

The studies and design are carried out in-house and include:

- Complete motopump design and associated drawings
- Hydraulic calculations & simulation including fatigue analysis
- Motor calculations & design
- Hydrodynamic bearings & thrusts design
- Hydrodynamic thrust balancing system design
- Thermal / pressure balance control

The construction of our machines is adapted to the relevant standards and the construction codes (EN13445, RCC-M, RCC-E etc.).

DOCUMENTATION & QUALITY RECORDS

Our nuclear projects include comprehensive documentation and traceability management in accordance with customer requirements and applicable standards.

We coordinate the entire documentation flow notably procurement specifications, welding books, procedures (hydrostatic and performance tests, cleaning, non-destructive tests etc.), drawings, calculations notes, end of manufacturing reports.

Follow-up documents clearly identify the various witness points required for activity surveillance, ensuring full transparency and quality control throughout the project.

All documentation is prepared, verified, and delivered in line with customer specifications and regulatory expectations.

PRODUCT QUALIFICATION

The Optimex motor range is qualified against normal and accidental conditions.

Our qualification plan also complies with international standards and construction codes:

- RCC-E 2012
- CEI 60068
- CEI 60980

Qualifications are carried out in certified laboratories where we conduct the following tests:

- Irradiation & thermal ageing
- Seismic & shock resistance
- Magnetic field compatibility
- Vibration and earthquake resistance
- Global mechanical resistance

SUPPLY

Optimex entrusts activities that are not carried out in-house to qualified external service providers.

They are selected according to a specific qualification process, periodically audited and followed up continuously in order to adapt the level of surveillance to their performance and the criticality of their activities.

MANUFACTURING & TESTING

We have chosen to keep the main activities of canned motor pump manufacturing in-house.

Motor:

- In-house stator winding & motor impregnation
- Qualified welds for rotor & stator encapsulation
- Dielectric withstand insulation tests
- Motor tests on our test-bench

Pump:

- Performance tests
- NPSH tests
- Noise & vibration controls
- Endurance tests

PRODUCT RANGE

Our product range is composed of different solutions to guarantee a fully-secure pumping process.

We propose different type of pump constructions, such as:

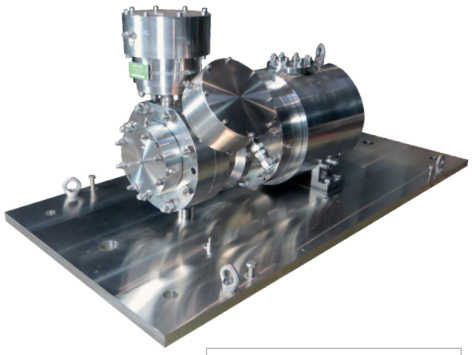
- Horizontal fixed pumps, mono or multi-stages
- Vertical fixed pumps
- Self-priming pumps
- Submerged cantilever pumps
- Submerged pool floor pumps
- Submerged mobile pumps
- Non-submerged mobile pumps

Our pumps offer an operating flow of up to 700 m³/h and a differential head of up to 900 m.

They are suited to a wide temperature range, from -135 °C to 450 °C.

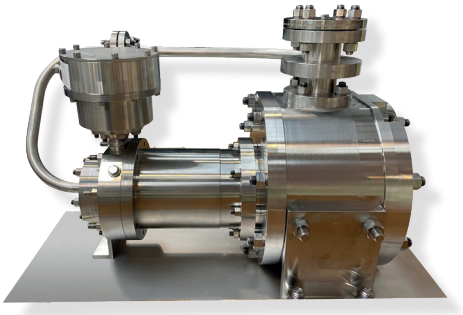
OPTIMEX is able to provide tailor-made solutions for all leakproof pumping equipment in various study cases, such as high-pressure loops (up to 300 bar), dirty applications with particle content, submersible installations, and critical environments with extreme temperatures, radiation, or magnetic fields.

Each unit is designed and manufactured in compliance with RCC-M, Mx, and MRx standards (from NC to level 1), or with EN standards, while integrating additional customer specifications when required.



Multi stages
horizontal canned motor pump

Single stage
vertical canned motor pump, inline design



Self priming
horizontal canned motor pump

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+ EXPERIENCE WITH DIFFERENT UTILITIES

EPR POWER PLANTS:

EVU Containment heat removal system
RPE Nuclear vent and drain system
PTR Fuel pool cooling (and purification) system
REA Reactor boron and water make-up system
TEP Coolant storage and treatment system
TEU Liquid waste processing system
TRI Effluent treatment building closed cooling water-system
TES Solid effluent treatment system

OTHER POWER PLANTS:

RJH MDB (Liquid effluent loop beta/gamma) / REU (Recirculation loop)
ITER DRS (Draining and Refilling System)
ILL DRG (Duct rupture detection loop)

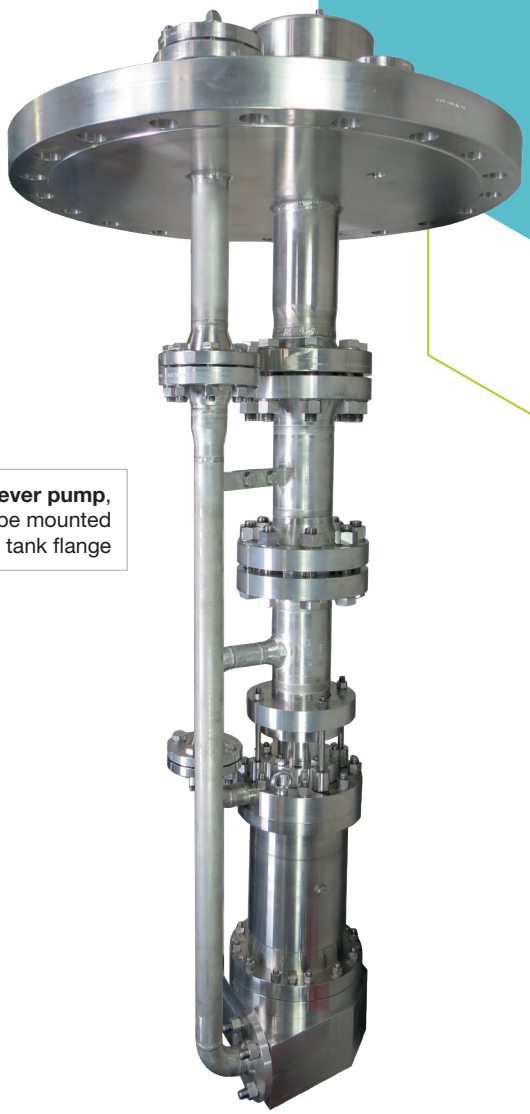
REFERENCES

Research & experimental reactors:

France	TECHNICATOME
	CEA
	ILL
	ITER
	CEA RJH
Belgium	SCK CEN

Civil nuclear plants:

France	Flamanville EPR
England	Hinkley Point C EPR
	Sizewell C EPR
China	Taishan EPR



Cantilever pump, to be mounted on a tank flange

269, rue de Montepy
69210 Fleurieux sur l'Arbresle
France

Tél : +33 (0)4 72 52 95 74
contact@optimex-pumps.com

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