

Orbital systems  
Launchers  
Satellites  
Transversal competencies



ERNEO is a French company specializing in the custom design and the manufacture of electric motors, electric generators and magnetic systems.

We propose solutions for embedded systems (e.g. space launchers) and harsh environment applications (cryogenic, vacuum, high temperature, etc.).

All systems are developed in respect with quality standard (EN9100).

## COMPETENCIES & CAPABILITIES

### Competencies:

- Electric motors and generators (permanent magnet, induction, etc.)
- Magnetic gear and magnetic coupling
- Resolver
- Electromagnet
- Rotary transformers

### Capabilities:

- Manufacturing of electric motors and components: stacking laminations, windings, gluing magnets, assembly, testing
- LN2 test bench: 29 bar and 34 l/min
- High rotation speed test bench



# ERNEO

## PRODUCTS & SERVICES

### Products:

- Cryogenic electric motors for e-valve (from 300K to 20 K, LOx/LH2 environment, high pressure)
- Cryogenic electric motors for e-pump (25 000 rpm, LOx environment)
- High temperature generators (+ 300°C)
- Redundant electric motors (double star winding, five phase motors)
- Redundant and cryogenic resolver (2 channels)

### Services:

- Built-to-Spec: Custom design and manufacture of electric motors, electric generators and magnetic systems
- Built-to-Print: Manufacture of electrical parts under customers drawings (windings, staking lamination, gluing magnets, etc.)
- Cryogenic test with our LN2 test bench 29 bar - 34 l/min

## MAJOR SPACE PROJECTS & REFERENCES

- BOREAS project – E-cryogenic chamber valve – Ariane Group
- PROMETHEUS project – E-cryogenic chamber valve – Ariane Group
- ENLIGHTEN project – E-cryogenic chamber valve – European research program – Horizon Europe
- ENLIGHTEN-ED project – E-cryogenic generator valve – European research program – Horizon Europe
- HURACAN Rocket engine project – E-Pump LOx – The Exploration Company
- Several research programs with CNES

## POINT OF CONTACT

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**TURNOVER:** 1.3 (in M€)

**WORK FORCE:** 14 employees

**SPACE TURNOVER:** 0.4 (in M€)

**SPACE WORK FORCE:** 5 employees