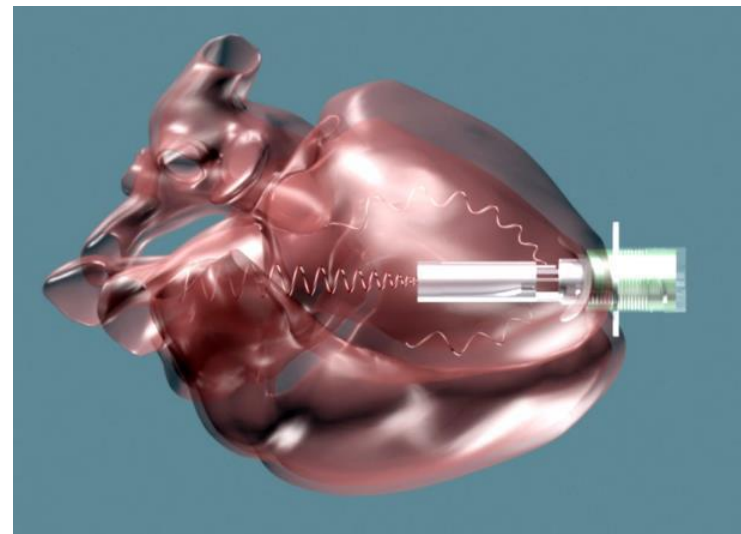
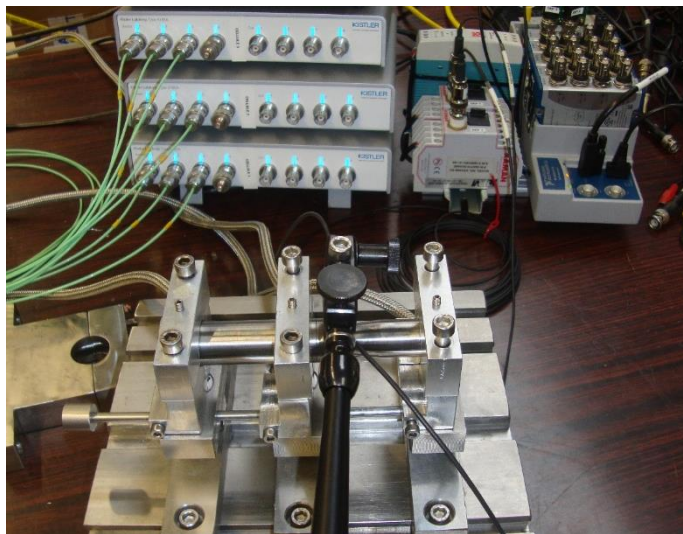




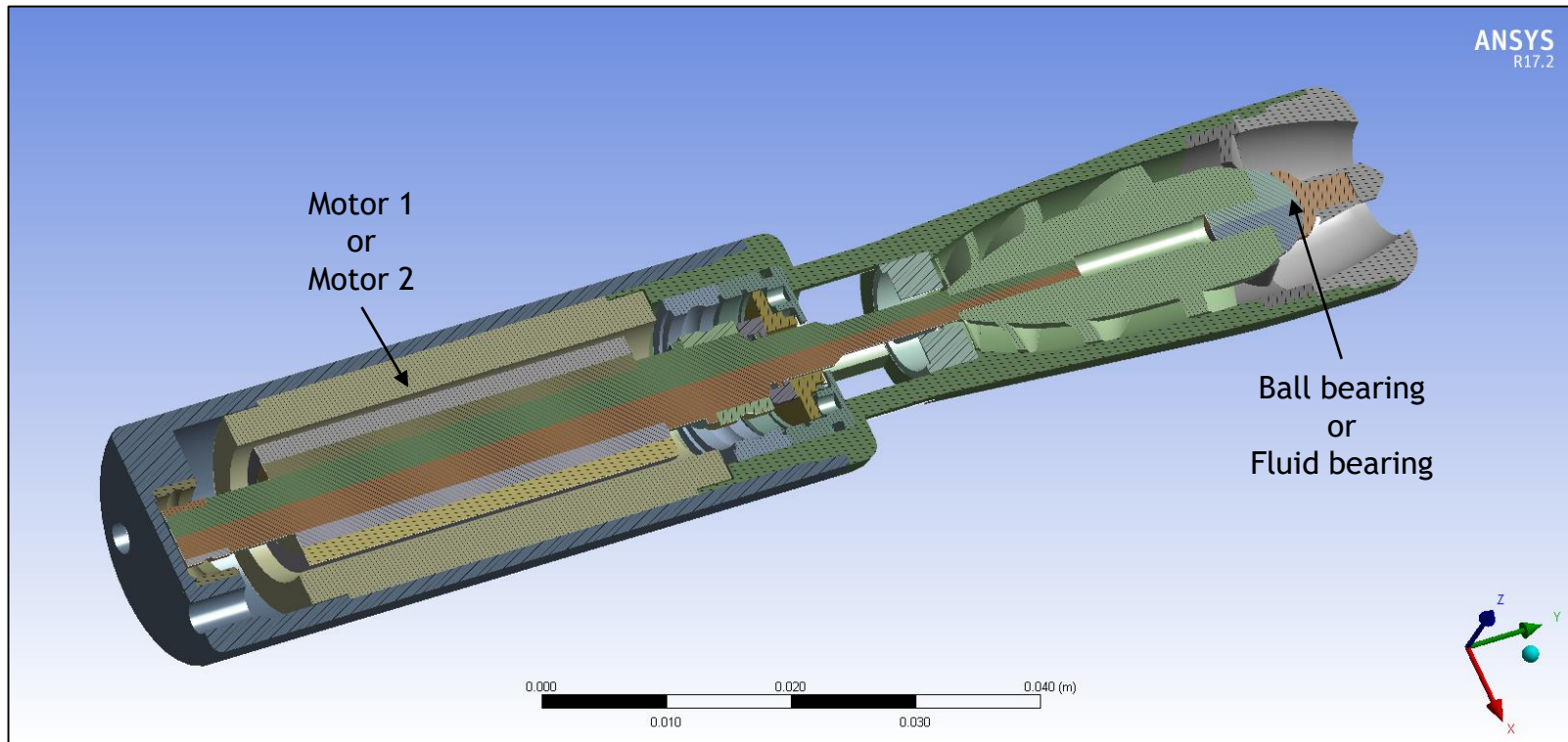
TEST BENCH

2057.001

IMPLANTABLE CARDIAC TURBINE PERFORMANCE IMPROVEMENT



IM.R.05.11.B

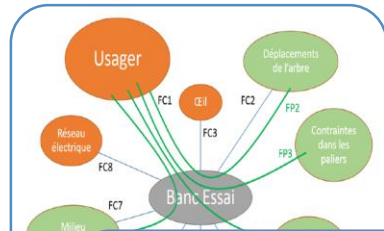


Device lifetime // Bearings lifetime // vibration performance

Forces induced by turbine at bearing levels

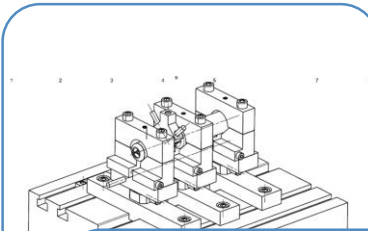
Noise and vibration behavior of the system.





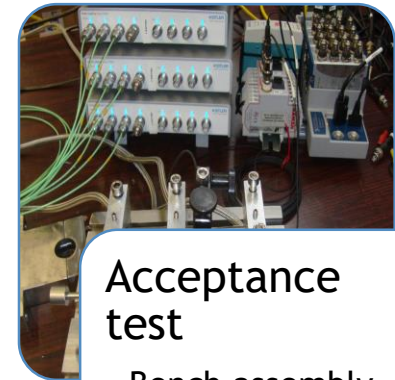
Functional specification

- Horned beast
- Octopuss
- Functions and constraint
- Preliminary sketch



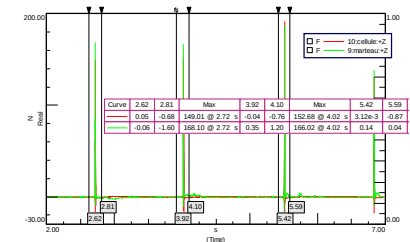
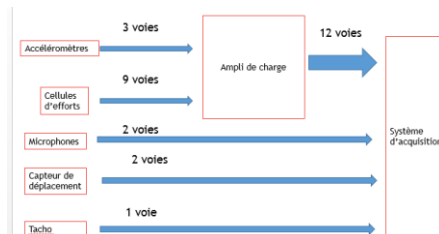
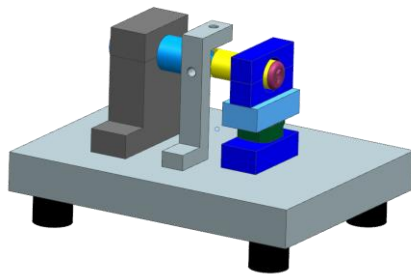
Design

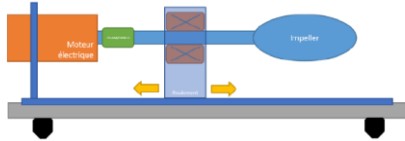
- Sensor selection
- Acquisition system definition
- CAD and drawings



Acceptance test

- Bench assembly
- Sensor calibration
- Validation



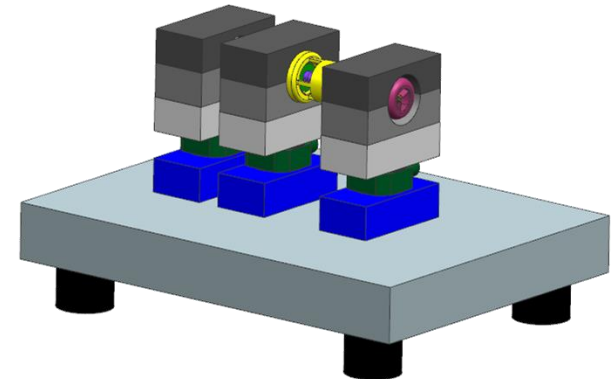
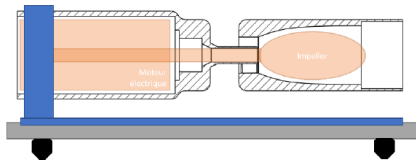
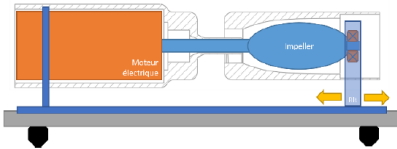


Main functions:

- Measure shaft displacement,
- Vibrations,
- Bearing forces

Constraints:

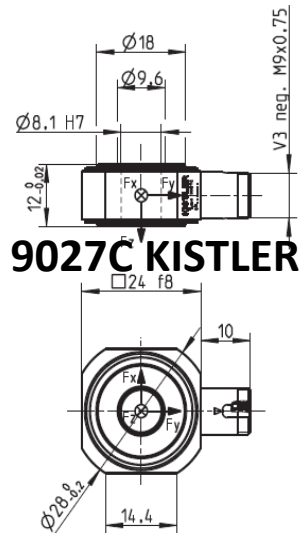
- Measurement under water,
- High precision (small vibration),
- Different sensor positions,
- Uncoupled from external environment,
- No mode in operating frequency range
- Easy to use



KISTLER 5165A



Bearing force
measurement



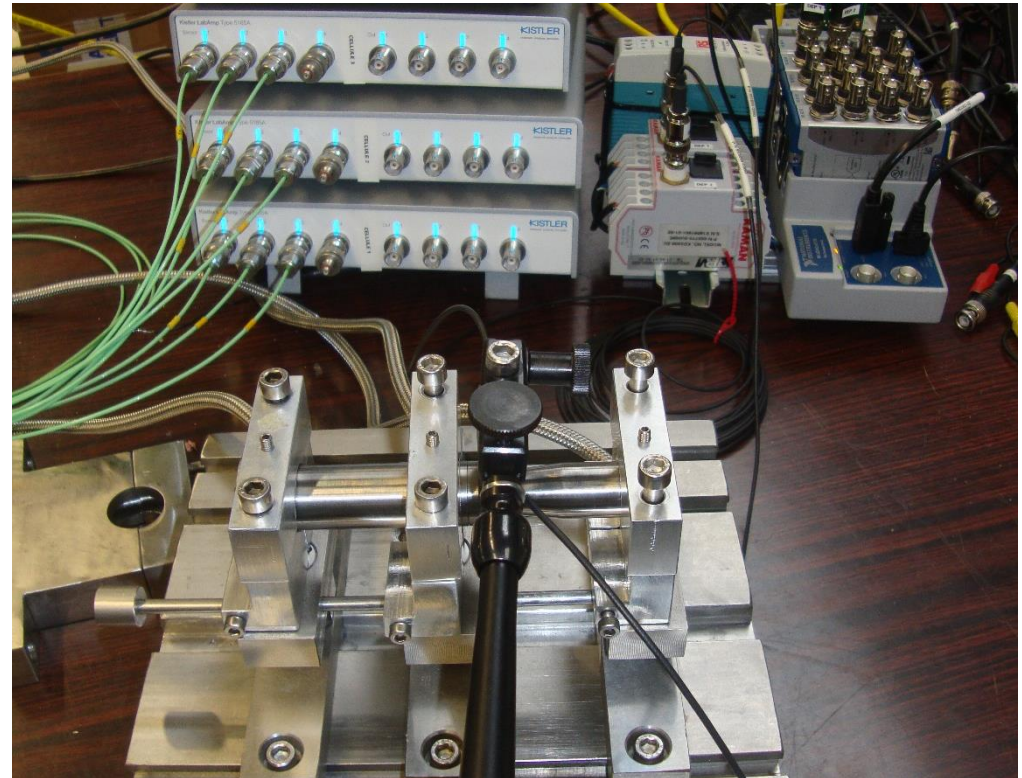
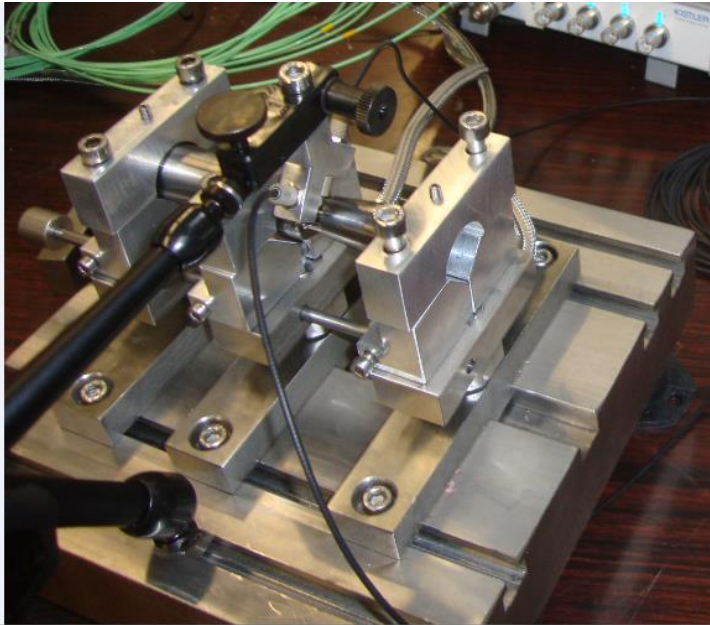
Vibration
measurement



A/27/E Accéléromètre
piézoélectrique miniature

Shaft displacement
measurement





Residual Life Assessment

Endurance test bench

Fatigue assessment

Residual life real time info on the implanted device

