

> OBJECTIVES

CEDRAT TECHNOLOGIES develops customised ElectroMagnetic Actuators, which are dedicated to customer's specific applications when off the shelves standard products are not suitable. They cover a wide spectrum of applications and markets such as industry, automotive (for example, [e-Lift 3 project](#) with PSA), air & space, medtec, etc.

> PRESENTATION

CEDRAT TECHNOLOGIES's customised Solenoid Actuators are designed to be:

- Reliable since the coils are located at the fixed part of the actuator and the mobile part is made of iron
- Robust (simple parts, robust interface, adapted guiding)
- Compatible with severe environments (high temperature, vacuum, etc)
- Mass production-ready

> ADVANTAGES

- High acceleration
- High force density
- Easy integration
- Easy to manufacture

> VERSATILITY

CEDRAT TECHNOLOGIES's customised electromagnets have been used in different ranges of:

- stroke: 1mm to 6.6mm
- force: 5N to 120N

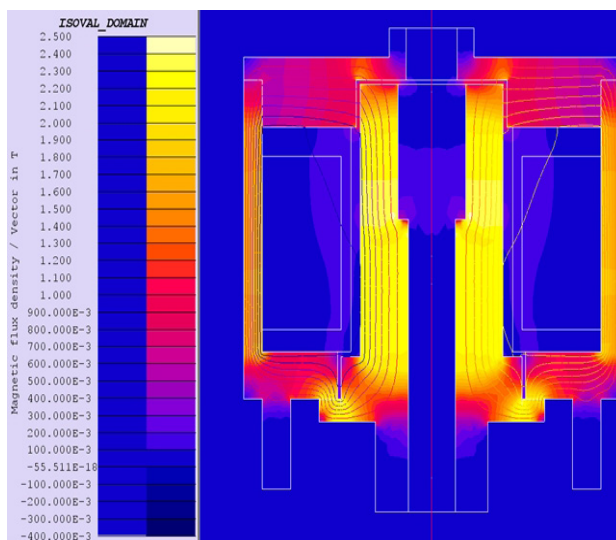


Fig4: 2D model of an ElectroMagnetic Actuator using the Flux software



Fig1: Valve ElectroMagnet Actuator developed for the e-Lift3 project



Fig2: e-Lift3 ElectroMagnetic Actuators integrated in a 3-cylinder thermal engine

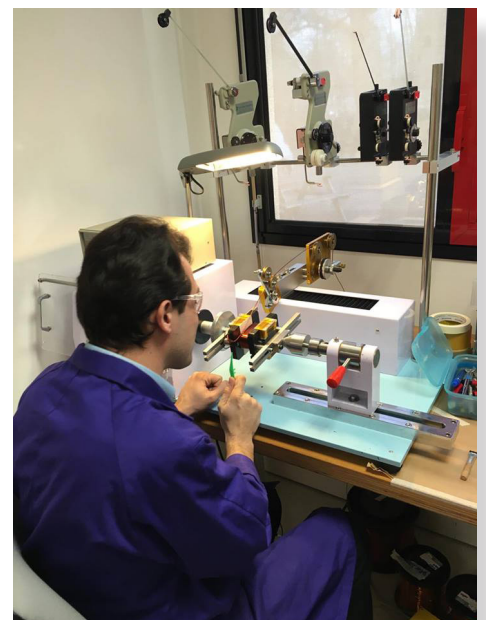


Fig3: CTEC's winding machine

EXAMPLES OF ACTUATORS PERFORMANCES

This table summarizes the main characteristics of ElectroMagnetic Actuators already designed and manufactured by CTEC.

	VALVE ELECTROMAGNETIC ACTUATOR 1	VALVE ELECTROMAGNETIC ACTUATOR 2	UNLOCKING ELECTROMAGNETIC ACTUATOR	BRUCE PIN-PULLER
Stroke (mm)	1.8	1.7	3	6.6
Magnetic Force (N)	120	30	5	40
Mobile mass (g)	100	8	21	8
Size	Diameter 41mm Depth 86mm	Diameter 20mm Depth 23mm	Diameter 32mm Depth 23mm	Diameter 32mm Depth 57mm
Application	Fluidic	Thermal engine	Space (ECSS Compliant)	Space (ECSS Compliant)

APPLICATIONS

- Valve actuation
- Locking and unlocking
- Pin-puller
- Contactor



Fig7: BRUCE Pin-Puller



Fig5: Valve ElectroMagnetic Actuator 1, developed for a fluidic application



Fig8: Space certified Unlocking ElectroMagnet Actuator

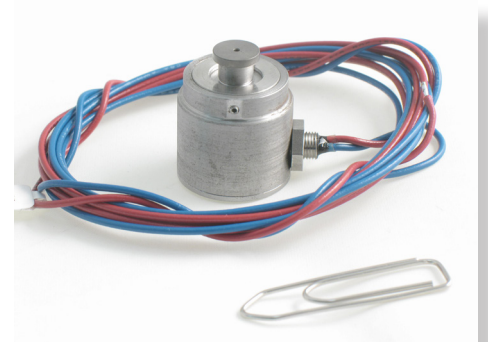


Fig6: Valve ElectroMagnet Actuator developed for the e-Lift3 project

For more information, please contact:

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