



PRECISION CAST TOOLING FOR AEROSPACE APPLICATIONS



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LRQA
CERTIFIED
AS 9100

Your Strategic Aerospace Engineering Tooling Partner

With decades of experience and a passion for innovation, Ferry-Capitaine (FC) supports leading aerospace players with state-of-the-art tooling solutions. Our expertise covers both metal forming applications (SPF, HF, etc) and composite forming applications (thermoplastics, OOA, etc), and our fully integrated capabilities from design to testing through casting with the aim to ensure optimal performance, reliability, and quality.

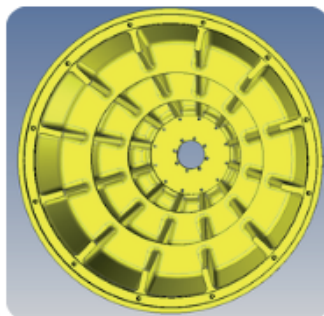
We do not just supply tooling: we co-develop solutions that help our customers meet the ever-increasing demands of the aerospace industry.

- A single Tooling Partner from concept to final machining
- Machining In-house, metallurgy and casting expertise
- Proven experience with Tier-1 aerospace manufacturers

Customer Design, FC casting and machining



5900kg
Ferry Capitain
enchanced design
Material Ferry steel 320
(through hardened)



7700kg
Material Cast Steel with
hardness coating
Mandrel tool



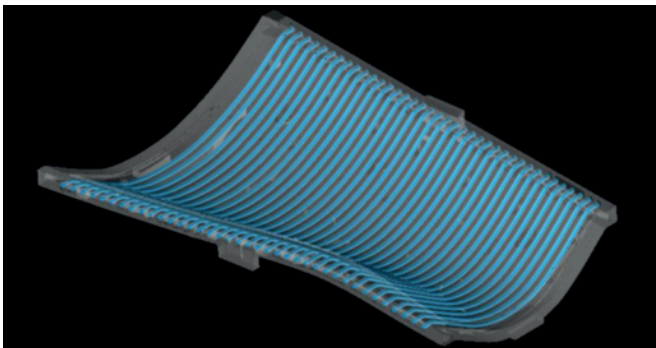
From Design to
final machining

A Tooling Partnership For Aerospace Performance

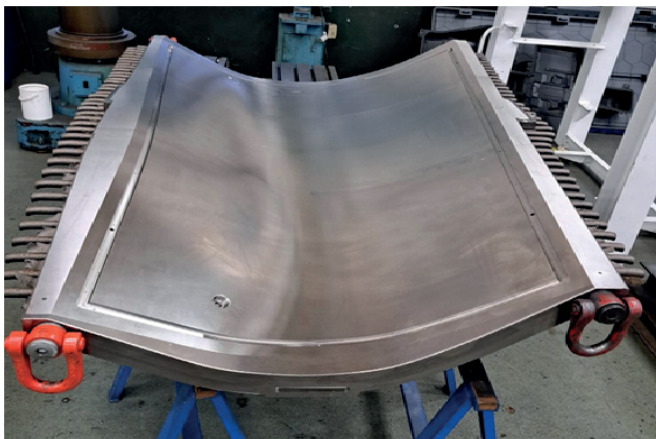
At Ferry Capitain, tooling is not treated as a standalone deliverable, but as part of a long-term industrial partnership. We rely on in-house design capabilities, Engineers & Doctors, on our R&D and innovation resources, and structured project management to support our customers from the earliest development phases.

This co-development approach with major OEMs and Tier-1 suppliers enables the joint optimization of tooling design, materials, and manufacturing processes. The result is tangible industrial benefits: shorter cycle times, controlled dimensional stability, extended tooling lifetime, and robust compliance with quality and certification requirements. Tooling therefore becomes a strategic performance lever, fully aligned with our customers' technical, industrial, and economic objectives.

Out of Autoclave solution



Self-heated tool 38 integrated channels following the molding surface



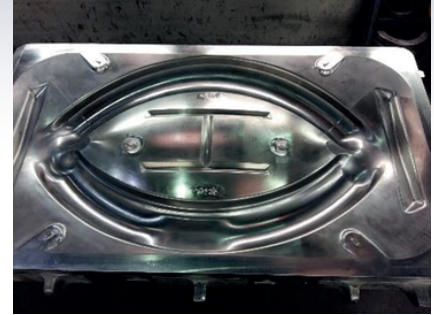
Cleansky program
From Innovation to prototype

Patented FerryNox N29K material
For thermoplastic application

High-Performance Cast Tooling for Metal Forming Processes (SPF, HF, DB)

We design and manufacture robust cast tooling for hot forming (HF), superplastic forming (SPF) and hot forming (HF), as well as diffusion bonding (DB) or brazing tools. Our proprietary heat-resistant steel grades (such as Ferrynox 25, 37, and 52S) are engineered to withstand extreme temperatures up to 950°C, delivering outstanding creep resistance, mechanical stability, and dimensional accuracy over time with the aim of increasing life time.

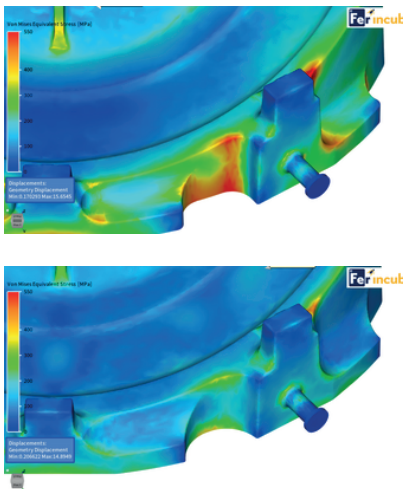
Working closely with our customers from co-design to final delivery, we continuously push the boundaries of material performance and process efficiency. Through advanced casting techniques, weight optimization, we provide tooling that meets the highest industry standards, making us a trusted partner for aerospace programs seeking innovation, reliability, and long-term value.



A330 SPF die for air inlet
Ferrynox 37



Heat Exchanger SPF tool A320
Ferrynox 52



Thermomechanical simulation

Identification of stress
concentration
optimization of design
validation through FEA



Optimized tool Ferrynox37

Design Improvements & Material Innovation



Diffusion bonding tool

We combine advanced casting simulation, in-house thermodynamic studies, and our unique material grades to deliver optimized, high-value solutions:



Heat Platens Material FerryNox 52
(finish machined, with thru boring)

- Tailored CTEs for multi-material tooling (with in-house CTE testing)
- Weight reduction to meet machine load constraints
- Long-term mechanical performance
- Heat transfer optimization and temperature uniformity for improved process control

A sample of our material selections :

	Working temperature	Creep Strength	
		Rupture (Mpa)	
		100 h	1 000 h
Ferrynox 25 HF & SPF applications	800° C	55	41
Ferrynox 37 SPF & DB processes	900° C	44	35
Ferrynox 52 SPF & DB processes	950/980° C	33	24

Advanced Cast Tooling for Composite Forming (Lay-Up, RTM, OOA)

Ferry-Capitain develops advanced tooling solutions for composite forming processes, including RTM, thermoplastic lay-up, and out-of-autoclave (OOA) applications. Our proprietary Ferrynox materials (such as A36, N36, and our patented N29K) as well as Invar alloys, are specifically designed to cure composites and thermoplastics within a temperature range of 180°C to 450°C while maintaining low thermal expansion (CTE).

Our foundry expertise in casting complex geometries, combined with integrated thermal regulation, allows us to deliver tools that reduce cycle times, minimize energy consumption, and support the evolving needs of high-rate production. Whether for small components or large-scale molds, we provide composite tooling that combines engineering precision, material innovation, and manufacturing flexibility, trusted by leading aerospace manufacturers worldwide.

Radome Tooling
FerryNod 300 Material



Helicopter lay up
toolFerryNod material



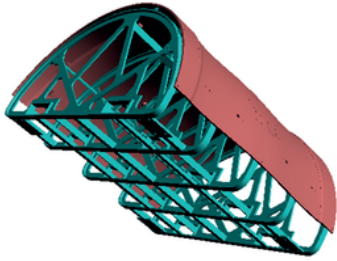
Caul plates tooling with improved
rigidity design (max single piece casting
length is 12 m)



Helicopter lower shell
mold with integrated
ribs, Ferrynox N36
equivalent to Invar 36



Innovation-Driven Tooling Design



Our commitment to R&D results in breakthrough tooling technologies.

One-piece cast eggcrate design without welding: 60% weight saving



Acoustic tool A350
Hollowed-back designs: mass reduction with structural integrity



Satellite Invar mold one-piece tooling. No welded parts: better homogeneity, less deformation

Guaranteed vacuum integrity



Lay-up Tool under vacuum test for final inspection.

Our tools enable reduced energy consumption, better part quality, longer life and faster production, especially for high-rate aerospace programs.



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