

AEROSPACE EXPERTISE

OUR EB SOLUTIONS MEET ALL YOUR CHALLENGES

ELECTRON BEAM WELDING

TABLE OF CONTENTS



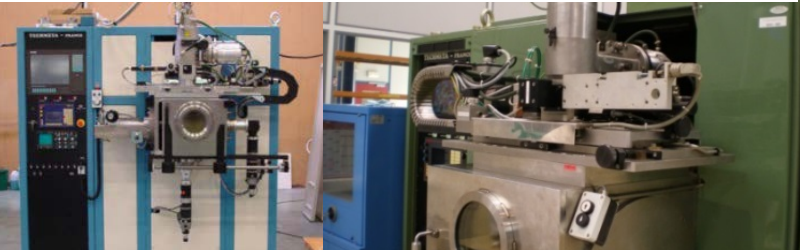
AEROSPACE
EXPERTISE

THE PARTNER OF
YOUR PROJECTS

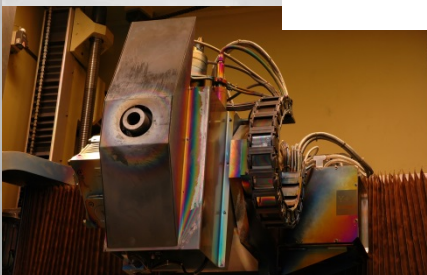
OUTSOURCING
DEVELOPMENTS

SPECIFIC
MACHINES

AEROSPACE EXPERTISE



SINCE 1992 →
24 YEARS
OF EXPERTISE



AEROSPACE
EXPERTISE

WE HAVE THEIR TRUST...

SEVERAL AEROSPACE CLIENTS

TECHMETA
GRUPE **bodycote**

TIER-1 SUPPLIER
FOR MOST OF
OUR CLIENTS



AEROSPACE
EXPERTISE

THE PARTNER OF YOUR PROJECTS

OUR WILLING IS TO GO FURTHER BY YOUR SIDE

TECHMETA
GROUPE **Bodycote**



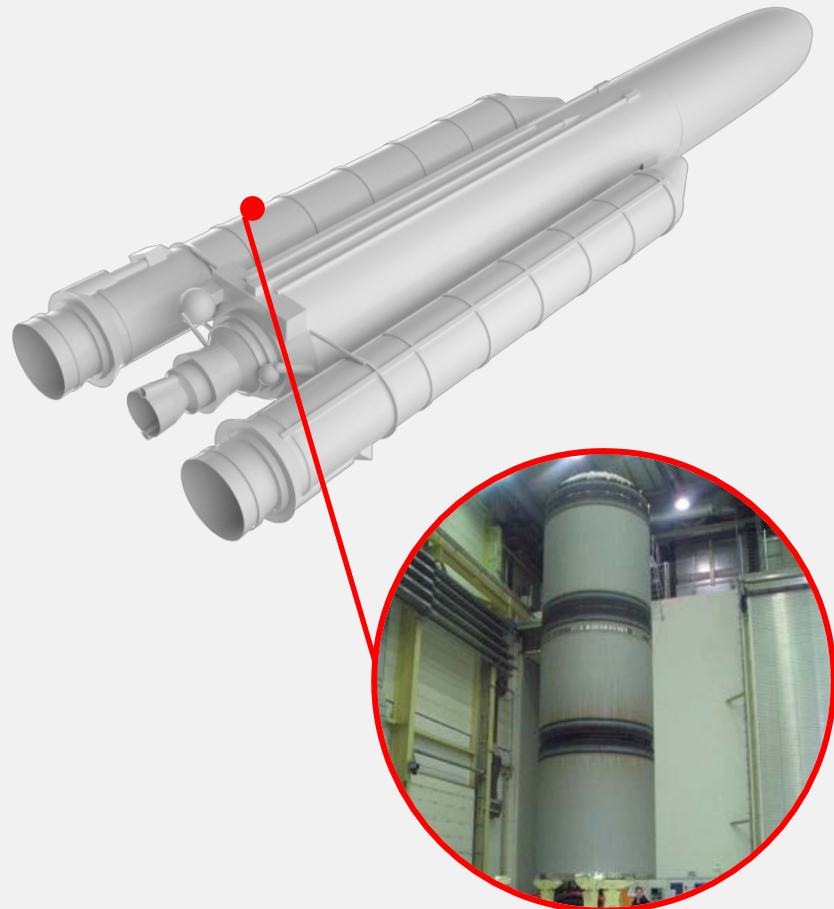
AEROSPACE
EXPERTISE

THE PARTNER OF
YOUR PROJECTS

PARTS WELDED BY TECHMETA

ON SPACE ROCKET – ARIANE V BOOSTERS

TECHMETA
GRUPE **Bodycote**



ARIANE 5
ECA



GENERAL INFORMATION

- Project developed in 3 years
- HLES steel

WELDS

- Welding depth : full-penetration – 15 mm,
- Welding possible with several EB welding pass,

MACHINE

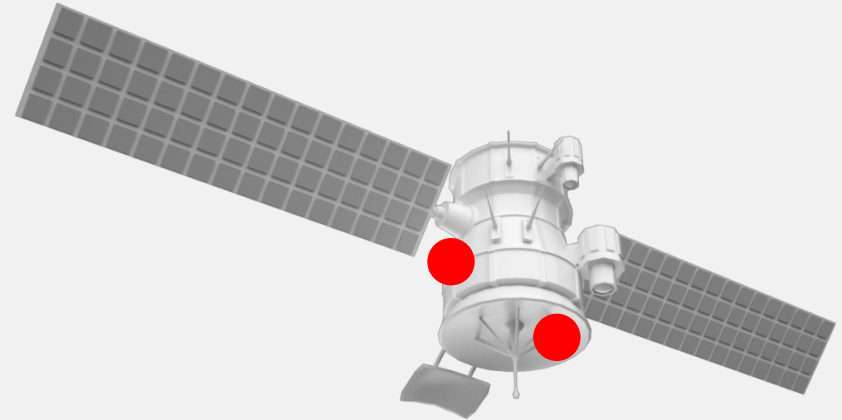
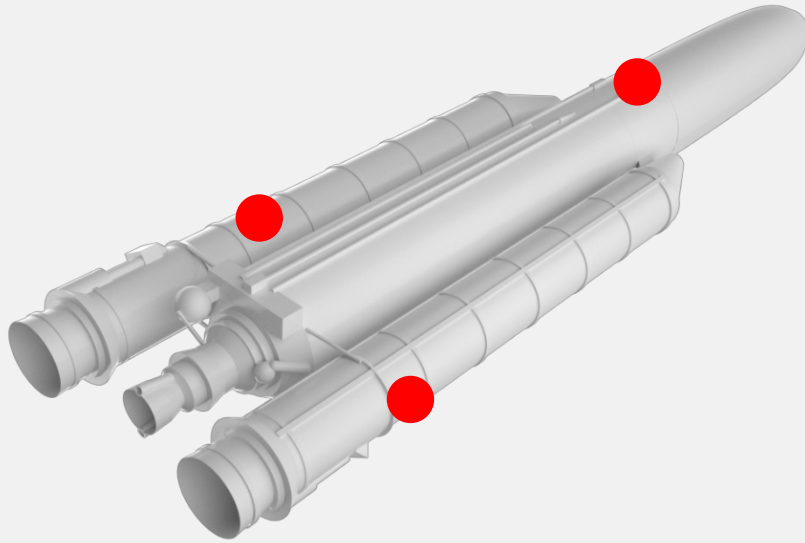
- 12 meters high – 3 years for manufacturing,
- 1 external gun for full penetration,
- 1 internal gun for smoothing the weld
- Integrated radioscopy system
- Welding chamber: Ø 5 m x 15 m

AEROSPACE
EXPERTISE

THE PARTNER OF
YOUR PROJECTS

PARTS WELDED BY TECHMETA

TECHMETA
GRUPE **bodycote**



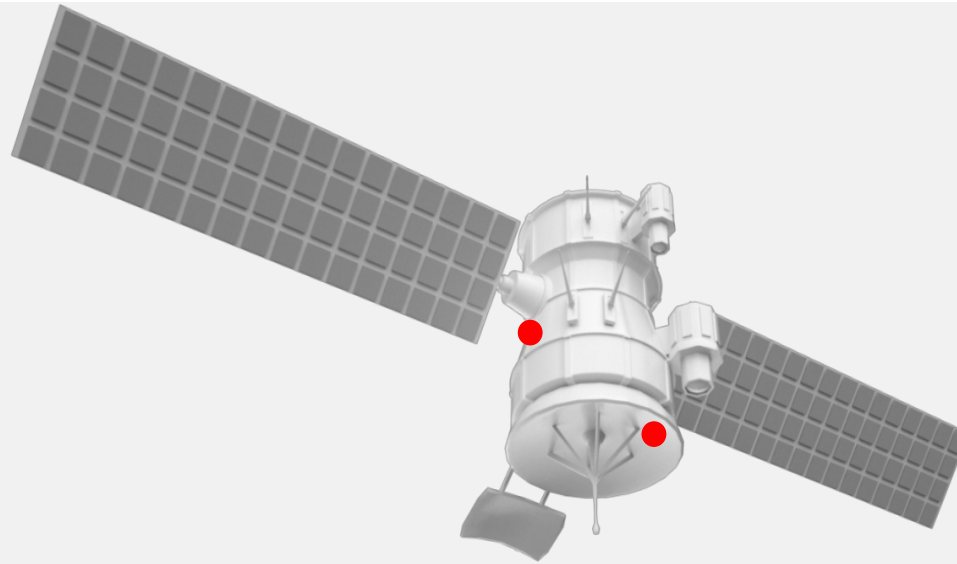
OVER 5 PARTS WELDED FOR
SATELLITES AND SPACE ROCKETS

AEROSPACE
EXPERTISE

THE PARTNER OF
YOUR PROJECTS

PARTS WELDED BY TECHMETA ON SATELLITES

TECHMETA
GRUPE **odycote**



2 PARTS WELDED FOR SATELLITES

AEROSPACE
EXPERTISE

THE PARTNER OF
YOUR PROJECTS

OUTSOURCING
DEVELOPMENTS

PARTS WELDED BY TECHMETA

ON SATELLITE – CRYOGENIC FLUID HEAT EXCHANGER SYSTEM

TECHMETA
GRUPE **odycote**



MAIN FEATURES

- Cryogenic device
- Heat exchanger for out of Earth gravity experimentation,
- Understructure in titanium welded by EBW → geometrical precision to obtain during the constitution
- Heat exchanger in copper alloy welded by EBW → specific welding development
- Titanium sphere for cryogenical liquid
- Welding penetration : 4 mm

AEROSPACE
EXPERTISE

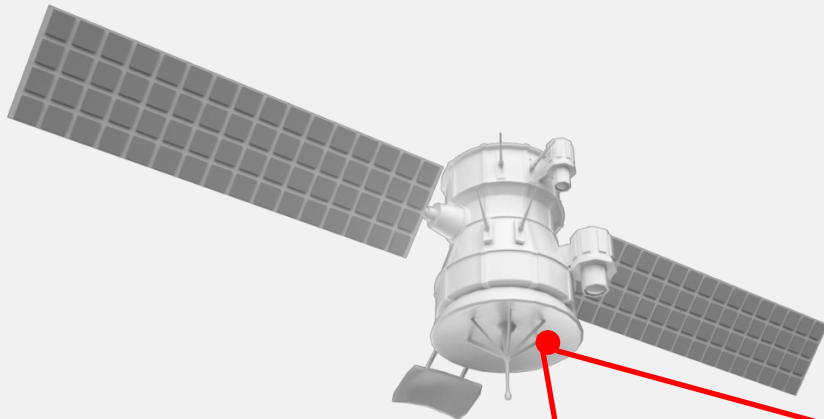
THE PARTNER OF
YOUR PROJECTS

OUTSOURCING
DEVELOPMENTS

PARTS WELDED BY TECHMETA

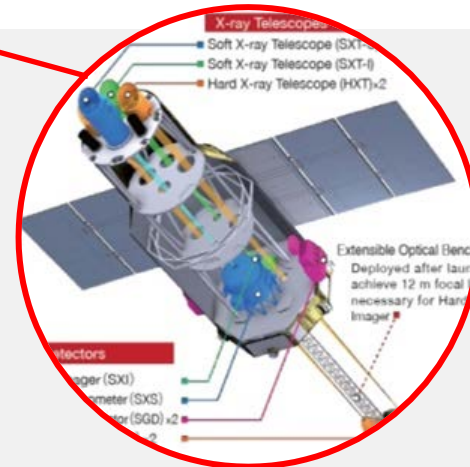
ON SATELLITE – HIGH-DEFINITION MIRRORS CARRIER

TECHMETA
GRUPE Bodycote



MAIN FEATURES

- High-definition mirror,
- Titanium
- Absolutely no deformation of the parts,
- Development on a specific process,
- Welding depth : 5-6 mm.



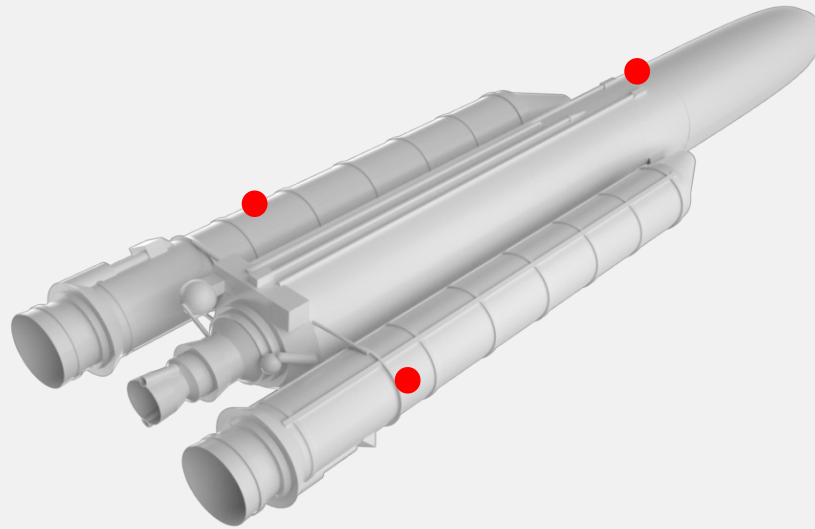
AEROSPACE
EXPERTISE

THE PARTNER OF
YOUR PROJECTS

OUTSOURCING
DEVELOPMENTS

PARTS WELDED BY TECHMETA ON SPACE ROCKETS

TECHMETA
GRUPE **odycote**



3 PARTS WELDED FOR SPACE ROCKETS

AEROSPACE
EXPERTISE

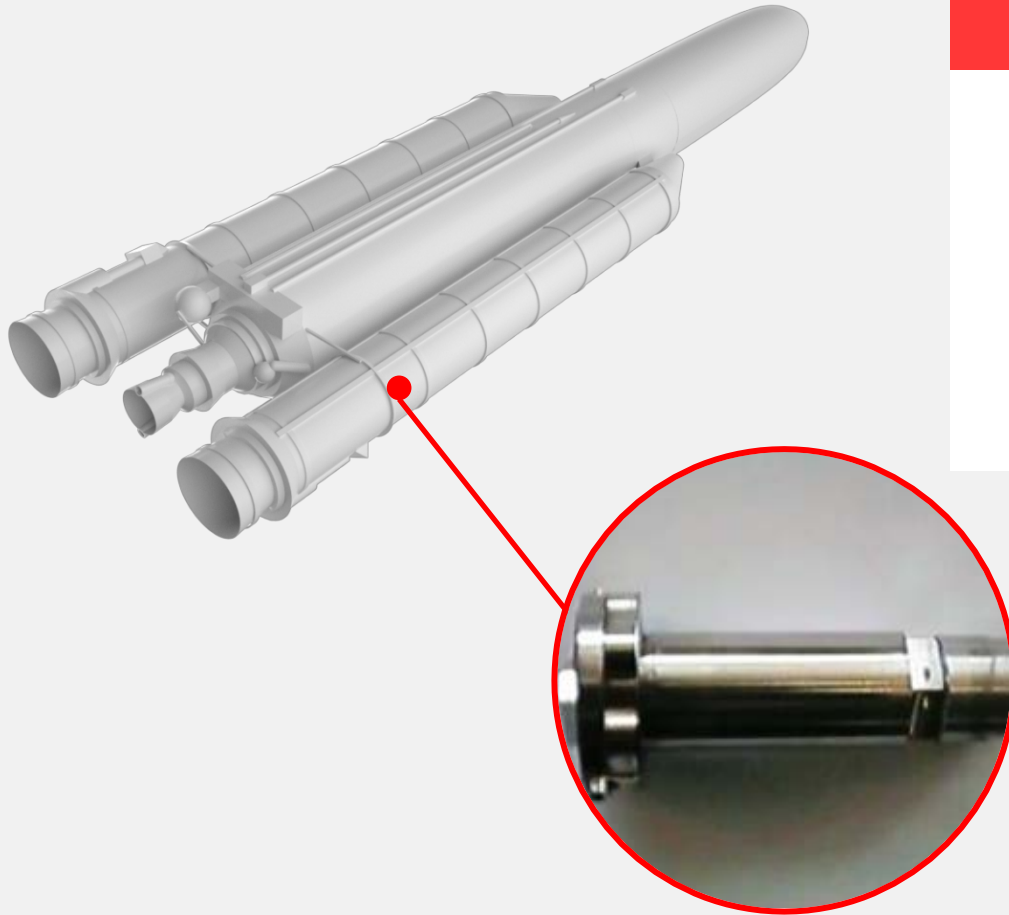
THE PARTNER OF
YOUR PROJECTS

OUTSOURCING
DEVELOPMENTS

PARTS WELDED BY TECHMETA

ON SPACE ROCKET – HYDRAZINE PARTICLE FILTERS

TECHMETA
GRUPE **bodycote**



MAIN FEATURES

- For Ariane V :
 - Welding depth : 5 mm,
 - Stainless steel
- Long development – 2 years ,
- Handle the cleanliness of the parts.

AEROSPACE
EXPERTISE

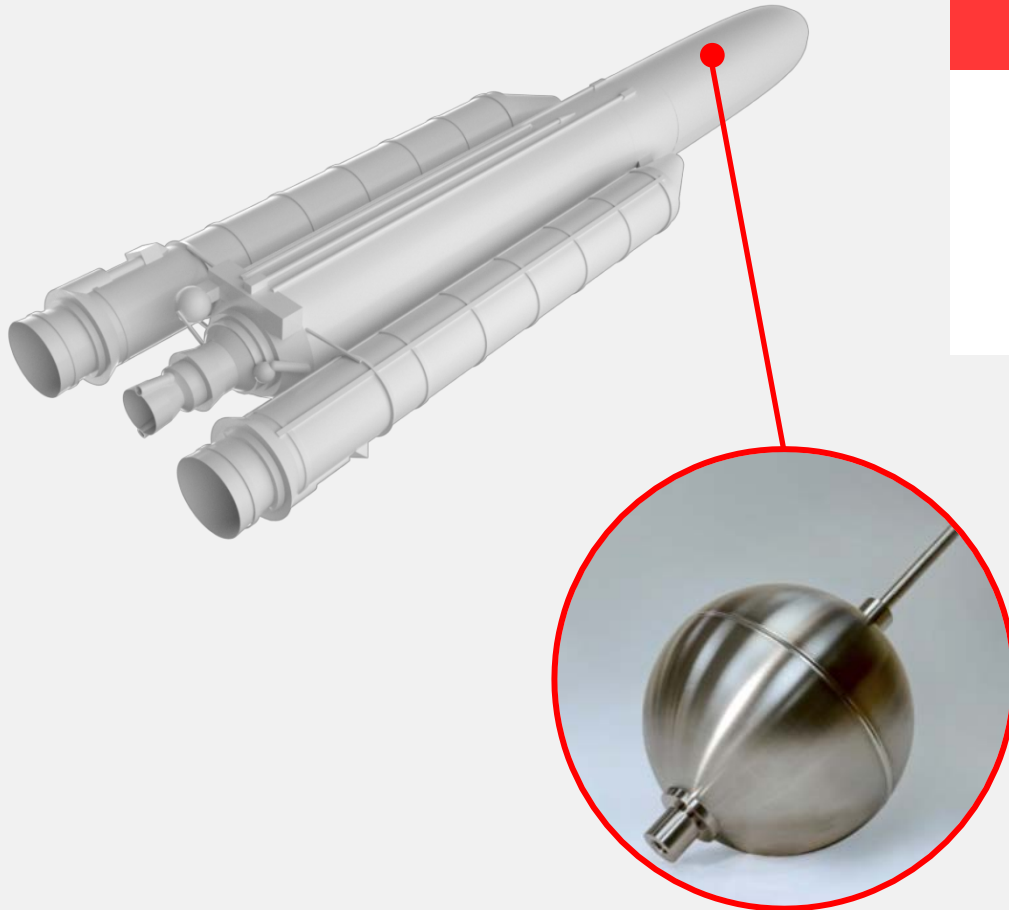
THE PARTNER OF
YOUR PROJECTS

OUTSOURCING
DEVELOPMENTS

PARTS WELDED BY TECHMETA

ON SPACE ROCKET – STORAGE TANK LIQUEFIED GAS FOR SATELLITE PROPELLER

TECHMETA
GRUPE Bodycote



MAIN FEATURES AND DIFFICULTIES

- Titanium,
- Penetration depth precision (low tolerance),
- Penetration inferior to 5 mm,
- Project developed in 4 years.

AEROSPACE
EXPERTISE

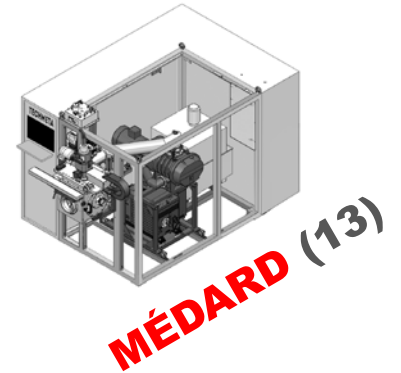
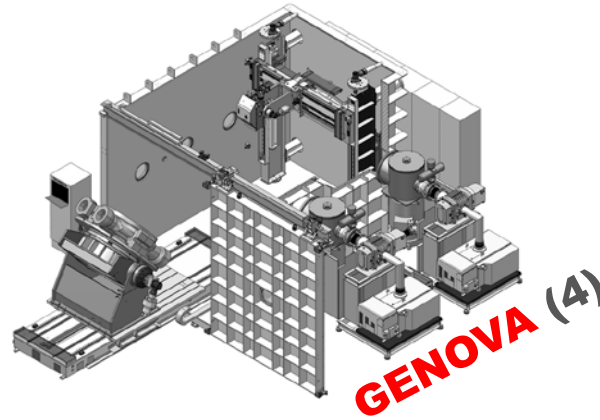
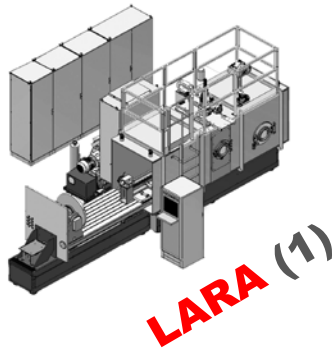
THE PARTNER OF
YOUR PROJECTS

OUTSOURCING
DEVELOPMENTS

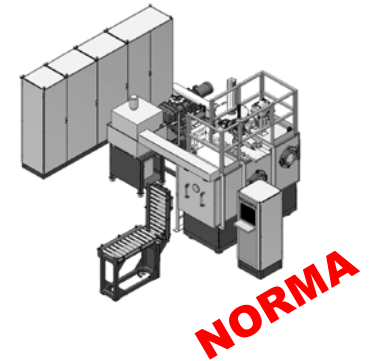
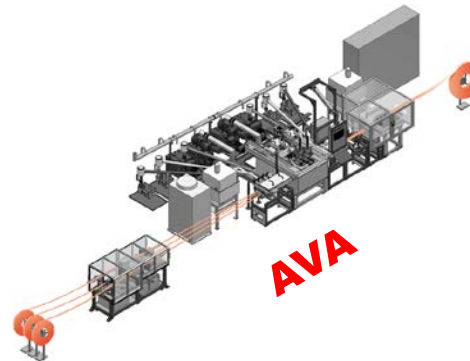
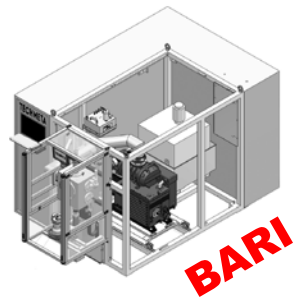
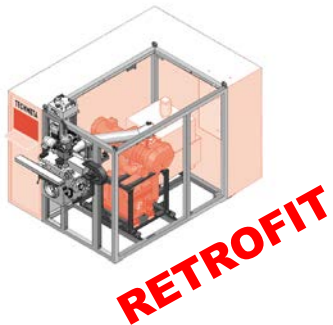
MACHINES

WE DESIGN AND MANUFACTURE THE MACHINE
THAT BEST FITS WITH YOUR WELDING NEEDS

TECHMETA
GRUPE **Bodycote**



OVER 10 MACHINES AROUND THE WORLD



AEROSPACE
EXPERTISE

THE PARTNER OF
YOUR PROJECTS

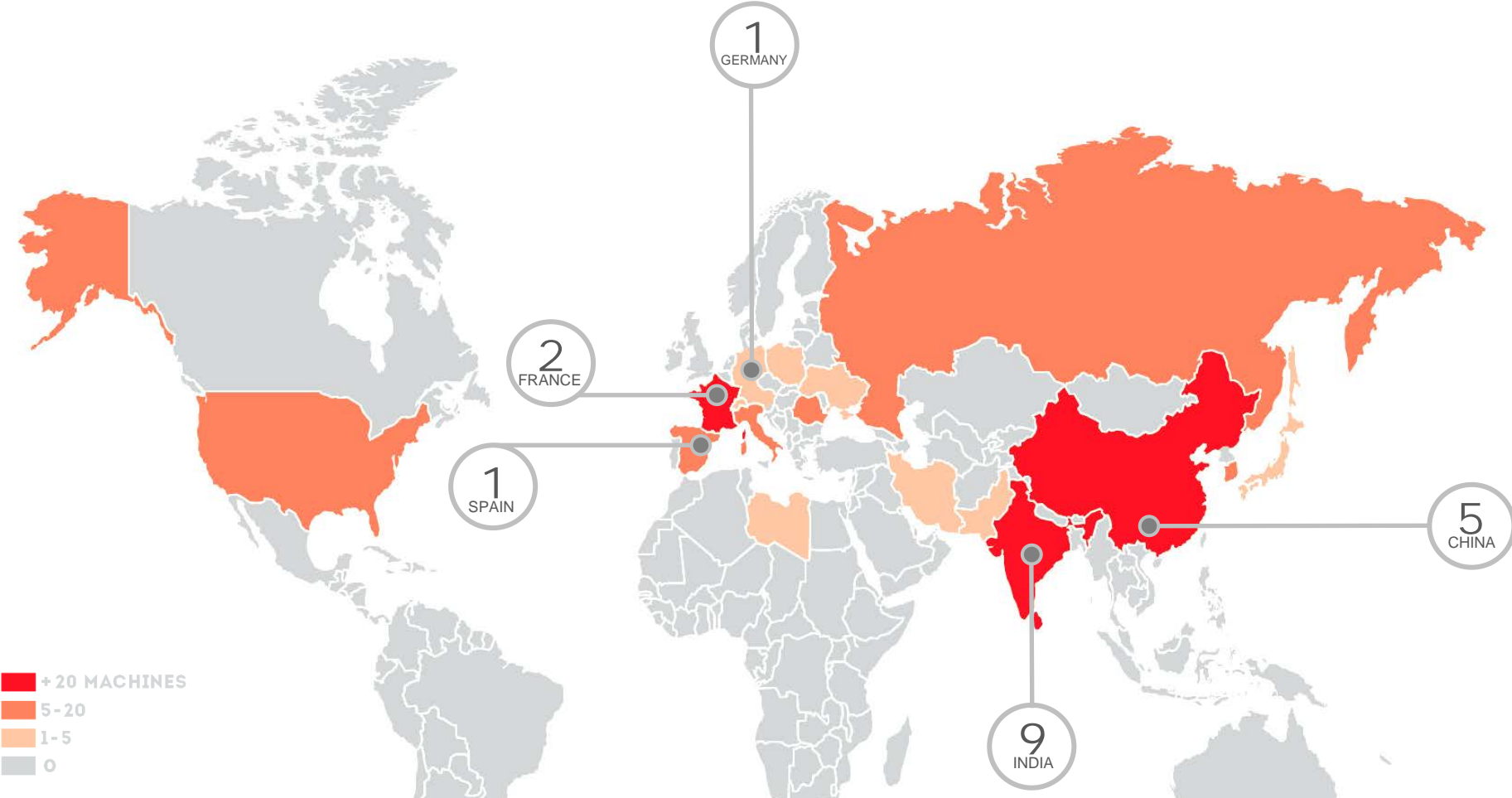
OUTSOURCING
DEVELOPMENTS

SPECIFIC
MACHINES

MACHINES

WE DESIGN AND MANUFACTURE THE MACHINE THAT BEST FITS WITH YOUR WELDING NEEDS

TECHMETA
GRUPE **Bodycote**



AEROSPACE
EXPERTISE

THE PARTNER OF
YOUR PROJECTS

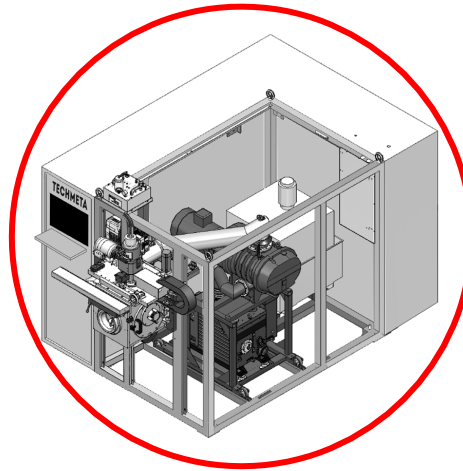
OUTSOURCING
DEVELOPMENTS

SPECIFIC
MACHINES

MANUFACTURED MACHINES

MEDARD MACHINE – SPACE ROCKET PART

TECHMETA
GRUPE **bodycote**



MAIN FEATURES

- Vacuum level : 7 10⁻³ mbar in less than 2'30 minutes
- Chamber dimensions: 500 x 500 x 500 mm
- Gun linear motion travel : 200 mm
- Working table motion travel : 200 mm
- Table dimensions : 400 x 220 mm
- Maximum loading capacity : 50 kg

AEROSPACE
EXPERTISE

THE PARTNER OF
YOUR PROJECTS

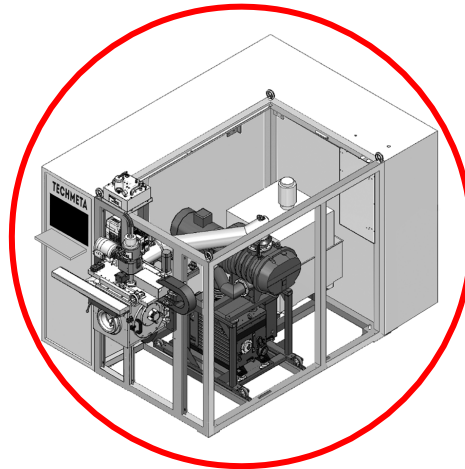
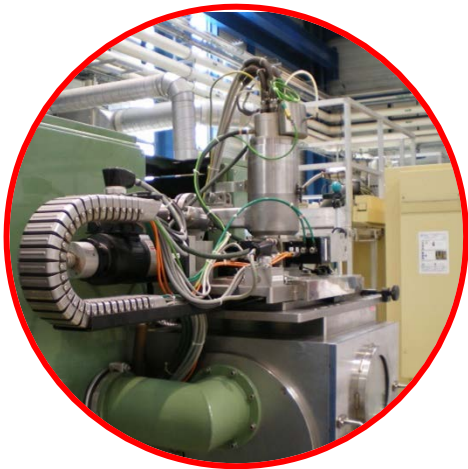
OUTSOURCING
DEVELOPMENTS

SPECIFIC
MACHINES

MANUFACTURED MACHINES

MEDARD MACHINE – SPACE ROCKET ENGINE PARTS

TECHMETA
GROUPE **bodycote**



MAIN FEATURES

For Ariane V

- Chamber dimensions : 500 x 500 x 500 mm
- Gun motion : 200 mm
- 3 mechanical axis
- C axis : orientable by 360 °
- Double Optical: video and eye,
- Magnetical deflection

AEROSPACE
EXPERTISE

THE PARTNER OF
YOUR PROJECTS

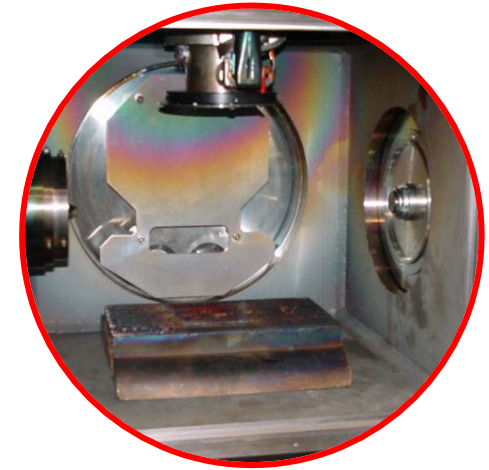
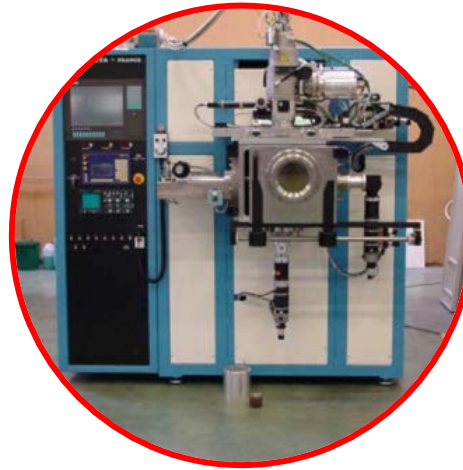
OUTSOURCING
DEVELOPMENTS

SPECIFIC
MACHINES

MANUFACTURED MACHINES

MEDARD MACHINE – SPACE ROCKET PART

TECHMETA
GRUPE **bodycote**



MAIN FEATURES

- Two rotary manipulators system
- CNC control
- Seam tracking system
- Beam deflection angle : 5°

AEROSPACE
EXPERTISE

THE PARTNER OF
YOUR PROJECTS

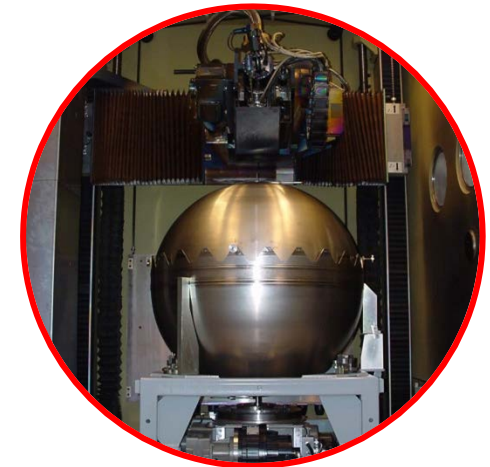
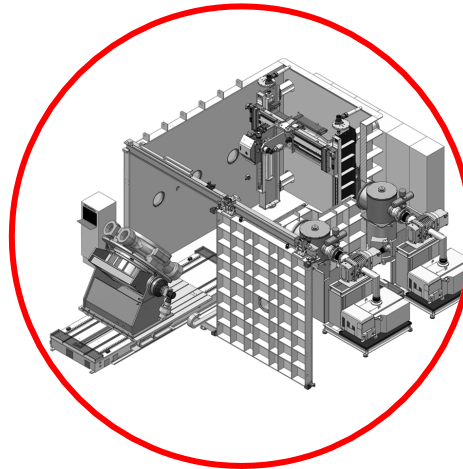
OUTSOURCING
DEVELOPMENTS

SPECIFIC
MACHINES

MANUFACTURED MACHINES

GENOVA MACHINE – ROCKET LAUNCHER TANK

TECHMETA
GRUPE **bodycote**



MAIN FEATURES

- Internal moving gun
- Video viewing system
- Internal dimension of the chamber : 3500 x 2500 x 3500 mm
- Worktable : 2000 x 1500 mm
- Travel : 1300 mm
- Penetration range : 0,1 to 40 mm for stainless steel,
- Penetration range for titanium alloys : 0,1 to 30 mm

AEROSPACE
EXPERTISE

THE PARTNER OF
YOUR PROJECTS

OUTSOURCING
DEVELOPMENTS

SPECIFIC
MACHINES

OUR EB SOLUTIONS MEET ALL YOUR CHALLENGES WHAT WILL BE YOURS?

35

35 YEARS OF
EXPERTISE

5

ABILITY TO
WELD OVER 5
PARTS FOR THE
SECTOR

10

OVER 10
MACHINES
AROUND THE
WORLD

THANK YOU FOR
YOUR ATTENTION

ANY QUESTIONS?

OUR EB SOLUTIONS MEET ALL YOUR CHALLENGES

ELECTRON BEAM WELDING