



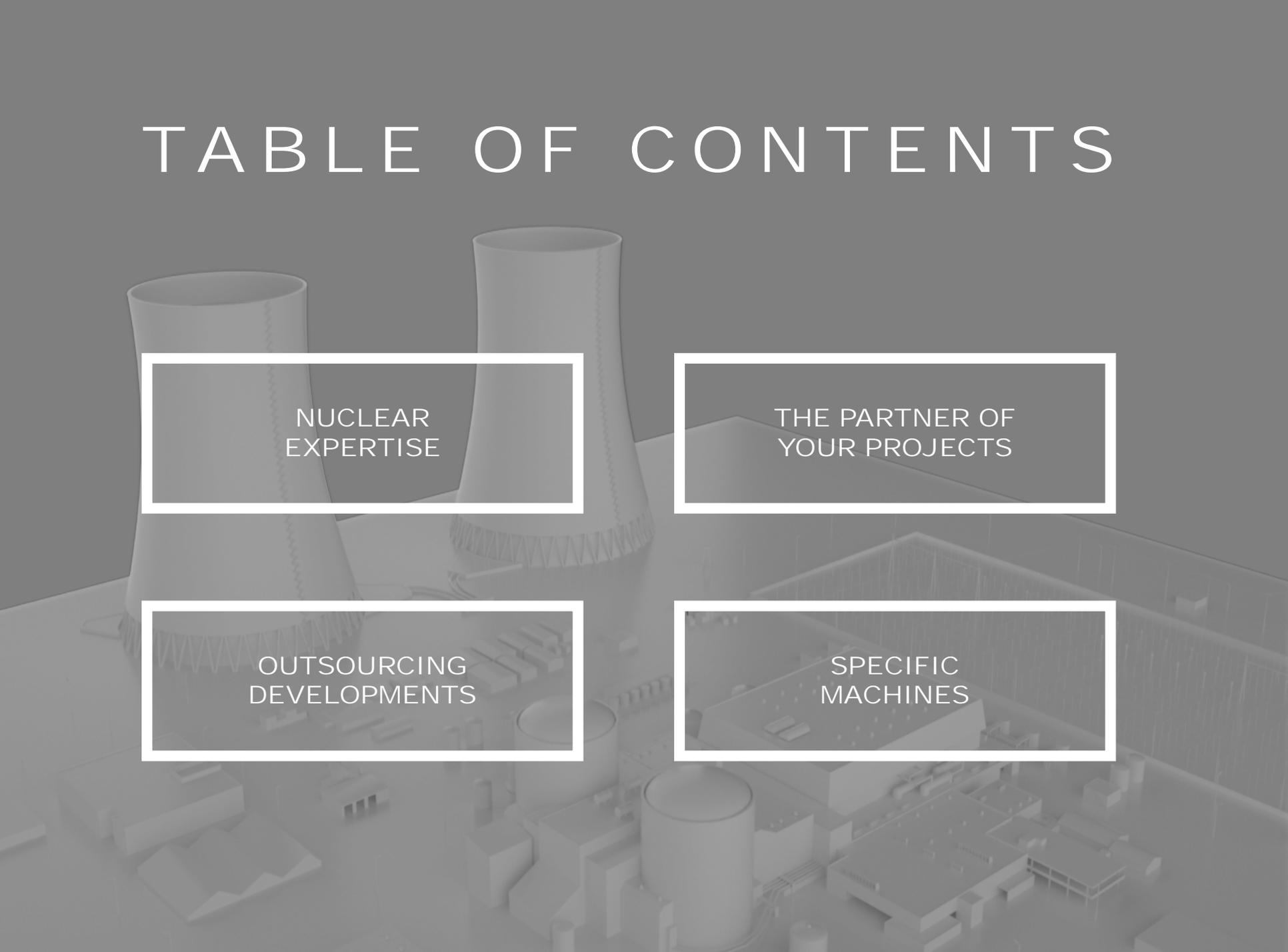
# NUCLEAR EXPERTISE

OUR EB SOLUTIONS MEET ALL YOUR CHALLENGES

**ELECTRON BEAM WELDING**

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# TABLE OF CONTENTS



NUCLEAR  
EXPERTISE

THE PARTNER OF  
YOUR PROJECTS

OUTSOURCING  
DEVELOPMENTS

SPECIFIC  
MACHINES



# WE HAVE THEIR TRUST... SEVERAL NUCLEAR CLIENTS

TECHMETA  
GROUPE Bodycote

TIER-1 SUPPLIER  
FOR MOST OF  
OUR CLIENTS



AREVA  
FBFC  
TECHNICATOME  
AREVA TA  
CEZUS  
MECAGEST



SEIV  
ALCEN

ALSTOM  
Power



NEUTRONS  
FOR SCIENCE



ASTRIUM  
AN EADS COMPANY



china eu india japan korea russia usa



CLEMESSY

SPX

ClydeUnion Pumps



NUCLEAR  
EXPERTISE

# THE PARTNER OF YOUR PROJECTS

OUR WILLING IS TO GO FURTHER BY YOUR SIDE

**TECHMETA**  
GROUPE **bodycote**



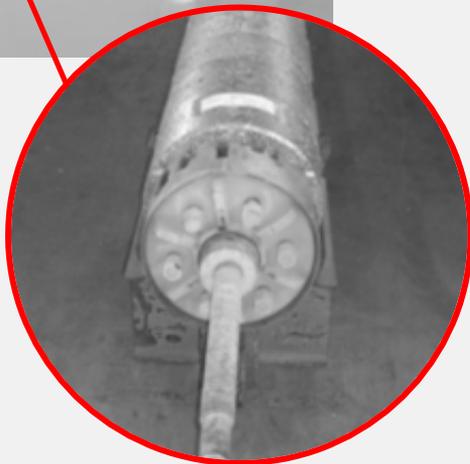
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# PARTS WELDED BY TECHMETA

## FURNACE – FUEL ROD

**TECHMETA**  
GRUPE **Bodycote**



### PART DIMENSION

- Diameter : 600 mm,
- Length : 6000 mm.

### WELDS

- 40 mm width,
- 1 to 7 mm depth,
- 6 welds,
- Partial penetration.

### MACHINE

- 1 in France, 1 in India
- Welding of sponges and compacts,
- Vacuum :  $5 \cdot 10^{-3}$  mbar in 2 hours
- 3 upgradations,
- 6 welds of 40 mm width, 30 mm depth

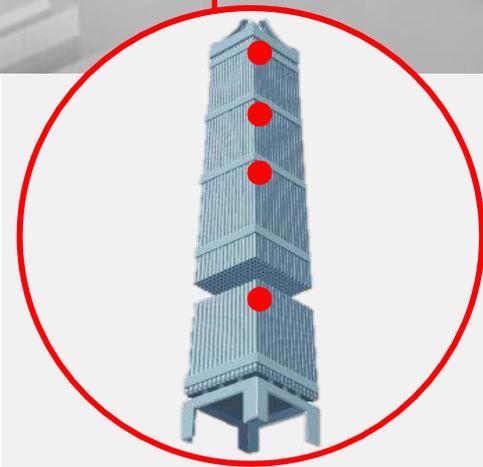
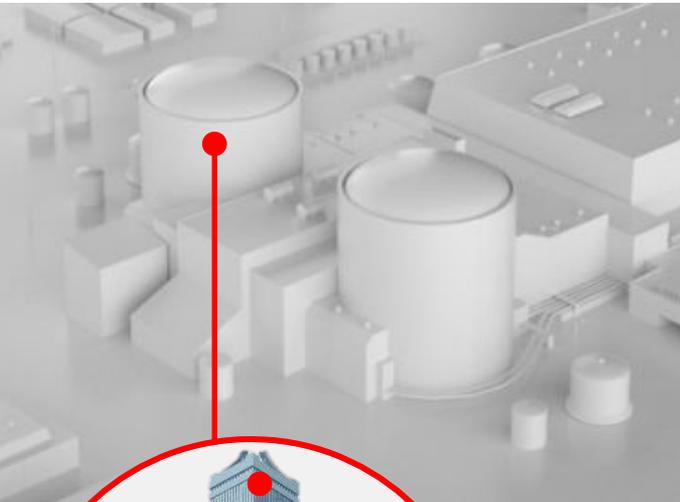
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# PARTS WELDED BY TECHMETA

## IN NUCLEAR POWER PLANT – TUBE END

**TECHMETA**  
GRUPE **Bodycote**



### PART DIMENSION

- Length : maximum 4000 mm
- Diameter : up to 15 mm

### WELDS

- Depending on the types and sizes

### MACHINE

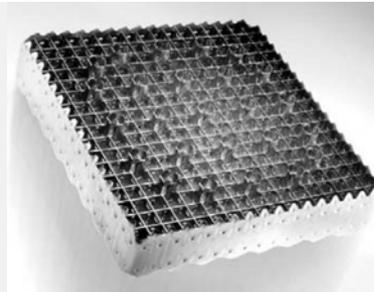
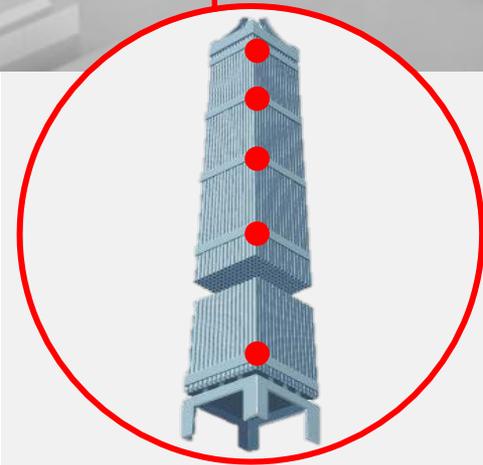
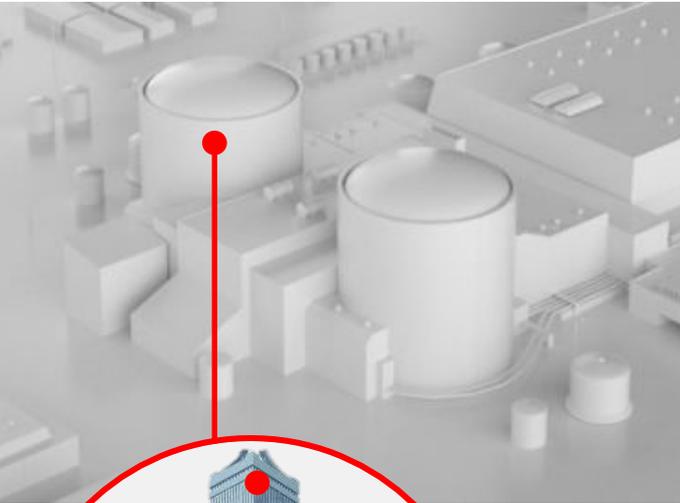
- Continuous production mode,
- Batch of 55 tubes workpiece,
- Changeable mandrel system according to the size of the parts,
- Robotized loading / unloading

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# PARTS WELDED BY TECHMETA IN NUCLEAR POWER PLANT – GRID

**TECHMETA**  
GRUPE **bodycote**



## PART DIMENSION

- Composed of platelets and springs welded together,
- Material is either Zy4 or M5,
- Many types and sizes.



## WELDS

- Tack weld on each brace (several hundreds),
- Linear welds on each platelet,
- Pulsed beam to optimize energy.



## MACHINE

- NC control,
- Optical deflection,
- Chamber : 3,7 m<sup>3</sup>
- 1 robot
- 5 mechanical axis : X, Y, Z, U, V

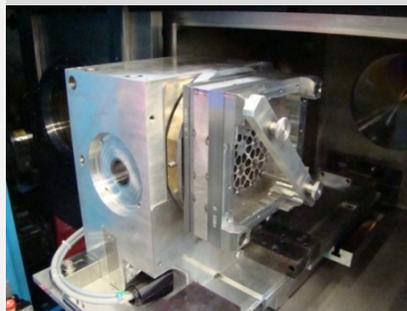
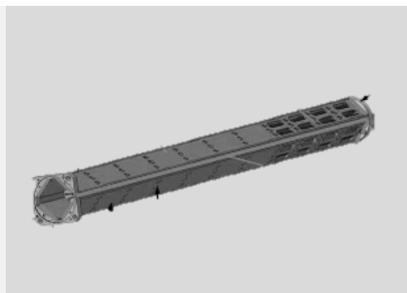
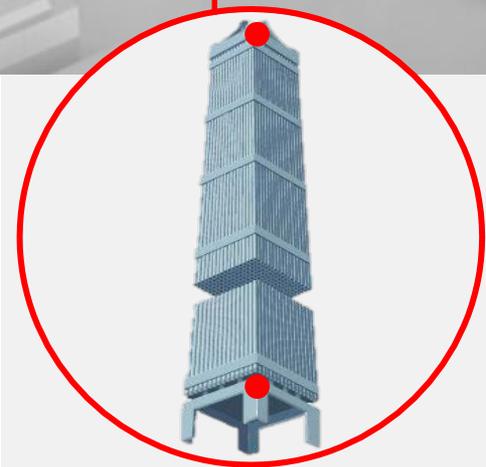
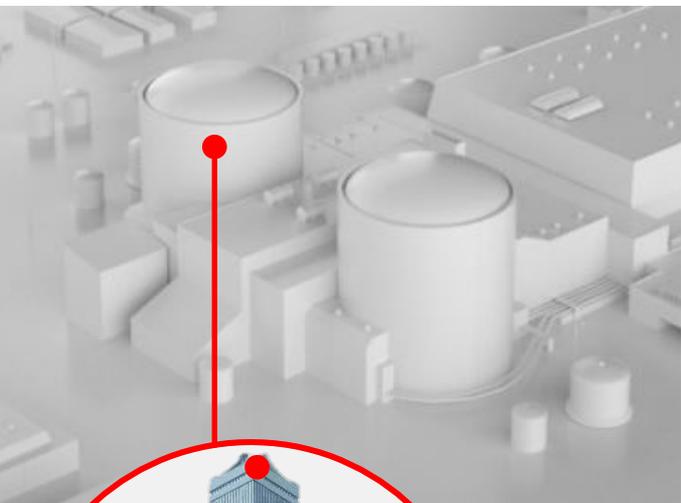
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# PARTS WELDED BY TECHMETA

## IN NUCLEAR POWER PLANT – STAINLESS STEEL NOZZLE OR FOOT

**TECHMETA**  
GRUPE Bodycote



### PART DIMENSION

- Maximum size : 235 x 235 x 165 mm,
- Diameter : 332 mm.

### WELDS

- Stainless steel assembly

### MACHINE

- 3 mechanical movements
- Numerical control
- Chamber size: 700x600x600 mm
- Maximum loading capacity : 30 kg

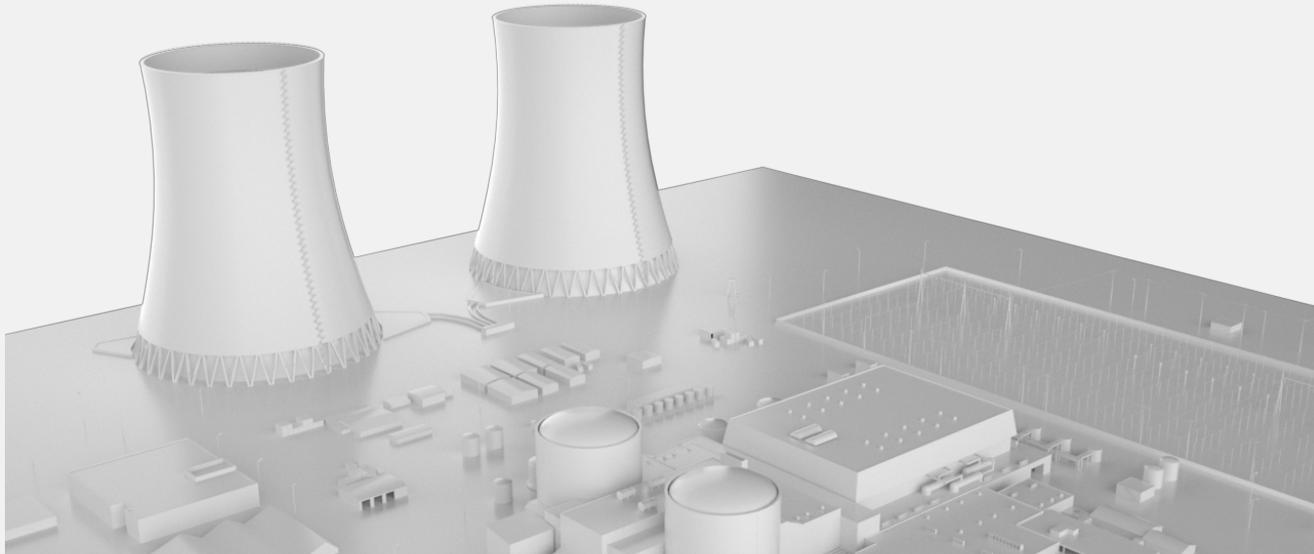
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# PARTS WELDED BY TECHMETA

## LIST OF THE PARTS

TECHMETA  
GRUPE **bodycote**



OVER 15 PARTS WELDED FOR  
NUCLEAR SECTOR

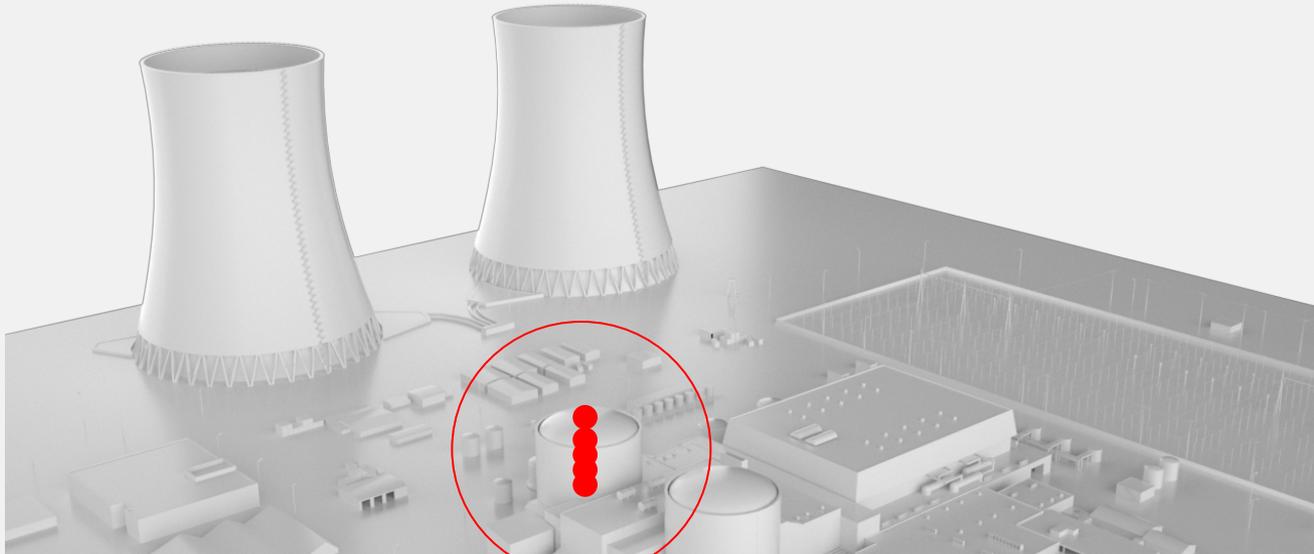
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# PARTS WELDED BY TECHMETA

IN NUCLEAR POWER PLANT

TECHMETA  
GRUPE **odycote**



OVER 5 PARTS WELDED FOR NUCLEAR  
POWER PLANTS

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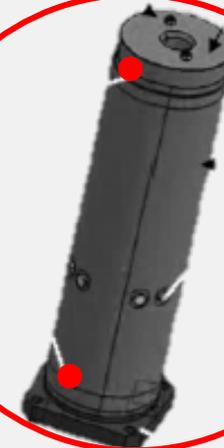
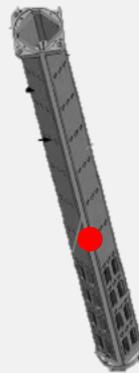
# PARTS WELDED BY TECHMETA

IN NUCLEAR POWER PLANT – GUIDING TUBES FOR NUCLEAR BUNDLES

TECHMETA  
GROUP **bodycote**

## MAIN FEATURES

- Welding end-to-end over 3000 mm length
- Radial welding.



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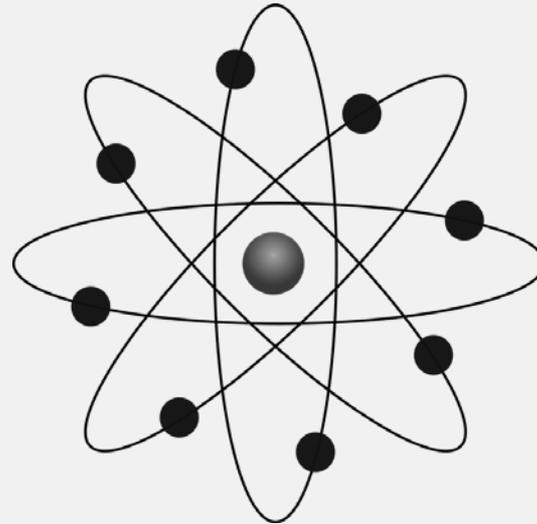
THE PARTNER OF  
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OUTSOURCING  
DEVELOPMENTS

# PARTS WELDED BY TECHMETA

OTHER NUCLEAR PARTS

TECHMETA  
GRUPE **bodycote**



OVER 8 PARTS WELDED FOR OTHER  
NUCLEAR APPLICATIONS

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DEVELOPMENTS

# PARTS WELDED BY TECHMETA

OTHER NUCLEAR PARTS – 1300 MW ALTERNATOR ROD CONNEXIONS

TECHMETA  
GROUPE **Bodycote**



## MAIN FEATURES

- Part in copper alloy,
- Maximum length : 8 meters
- Penetration: 40 mm.

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# PARTS WELDED BY TECHMETA

OTHER NUCLEAR PARTS — COMPONENTS FOR NEW AND USED FUEL TRANSPORT CONTAINER

TECHMETA  
GRUPE Bodycote



## MAIN FEATURES

- Part of big length and important geometrical precision,
- Important stainless steel variety,
- High length welds.

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# PARTS WELDED BY TECHMETA

OTHER NUCLEAR PARTS – TARGET BASE – PARTS FOR THE GRENOBLE SYNCHROTON – ESRF CAVITIES AND COOLING PANELS

TECHMETA  
GRUPE Bodycote

## MAIN FEATURES

- Part of complex shape and weld in aluminum alloy



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# PARTS WELDED BY TECHMETA

## OTHER NUCLEAR PARTS – HP FLUID CONNECTOR

**TECHMETA**  
GRUPE **bodycote**

### MAIN FEATURES

- Part of complex shape and weld in aluminum alloy



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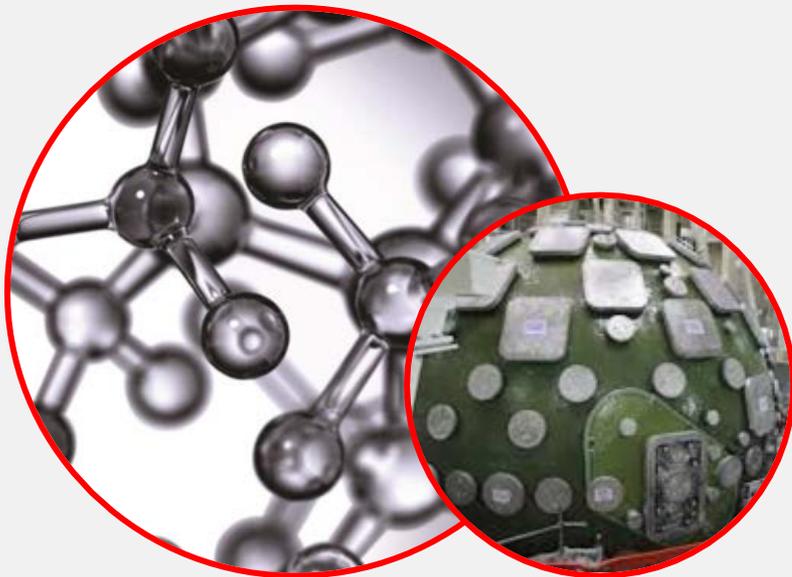
# PARTS WELDED BY TECHMETA

## MIRRORS CARRIER STRUCTURE FOR MEGAJOULES LASER

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GRUPE **odycote**

### MAIN FEATURES

- Length : 8 m,
- Penetration : 45 mm maximum.



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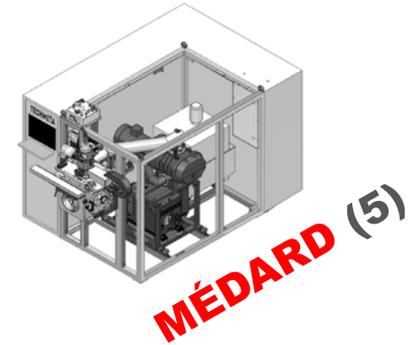
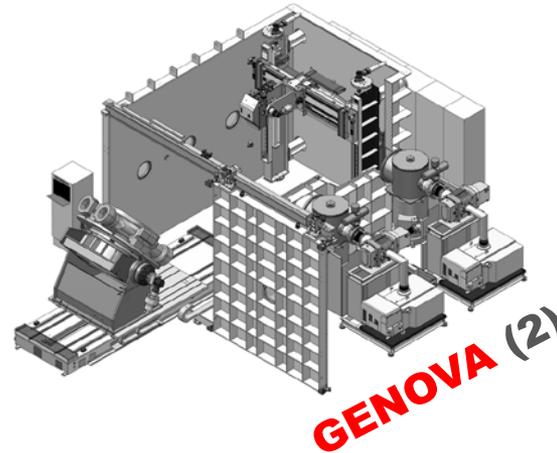
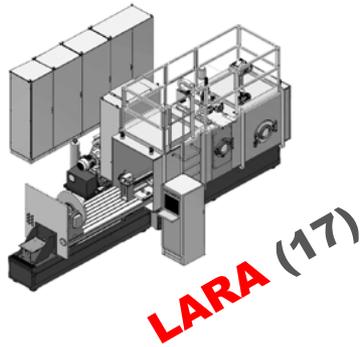
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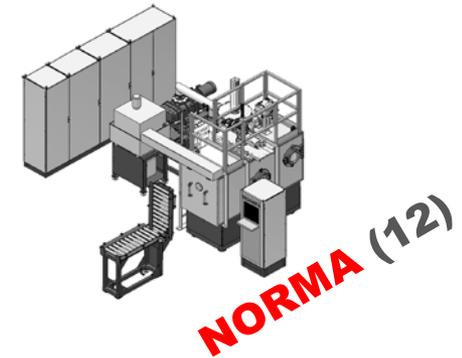
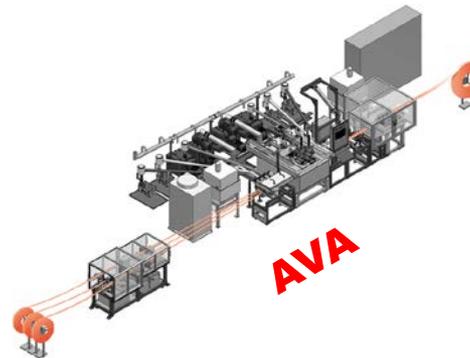
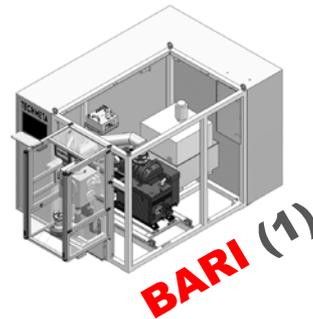
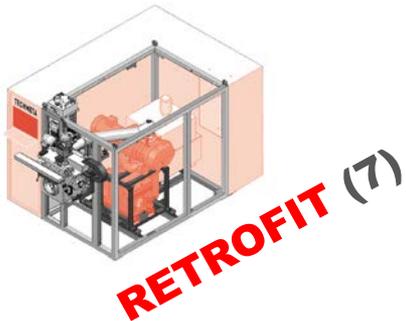
# MACHINES

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

**TECHMETA**  
GRUPE **bodycote**



OVER 50 MACHINES AROUND THE WORLD



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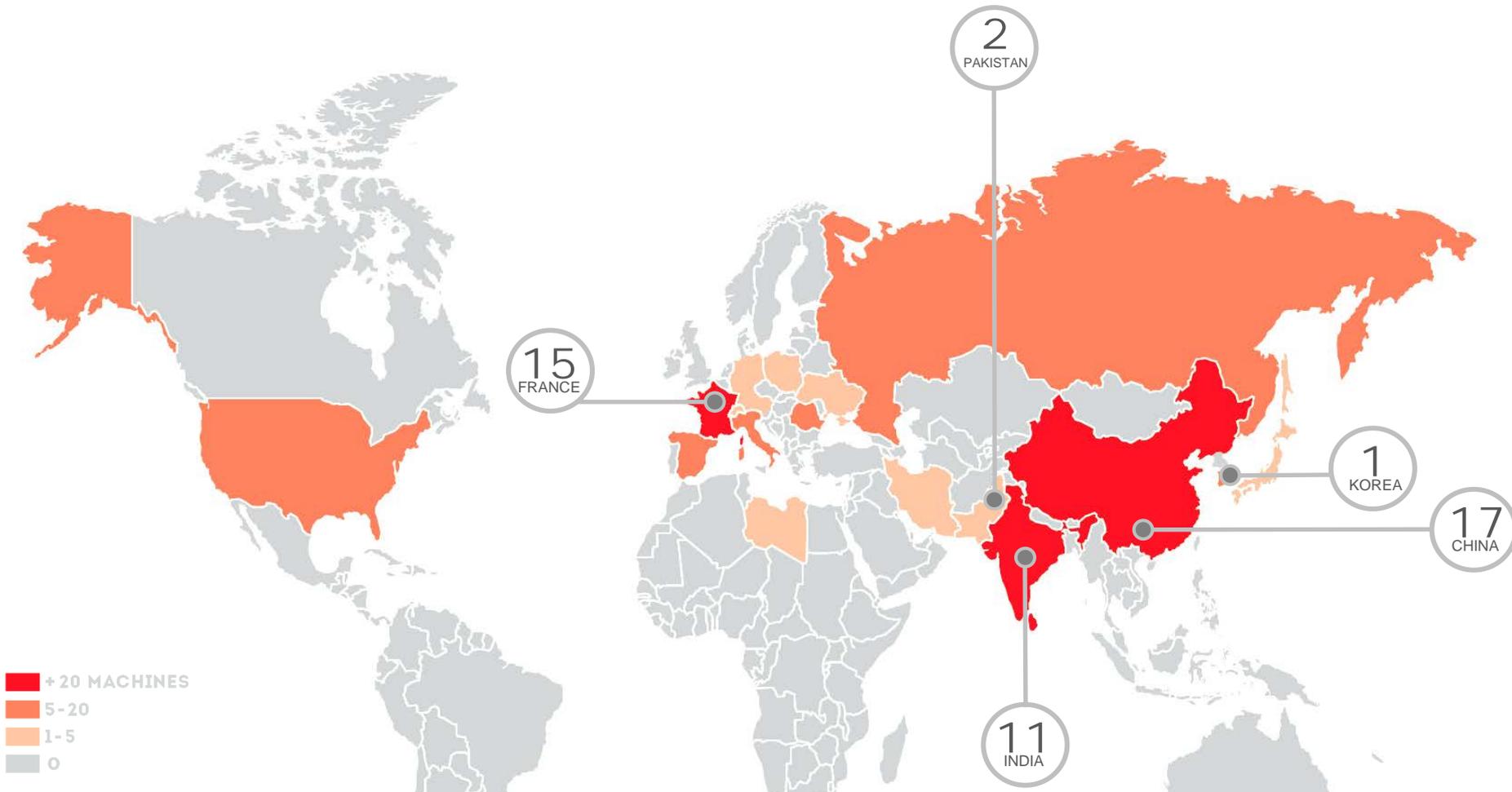
OUTSOURCING  
DEVELOPMENTS

SPECIFIC  
MACHINES

# MACHINES

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AERONAUTICS  
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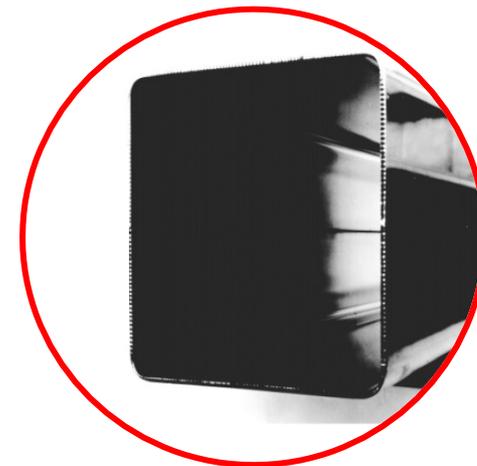
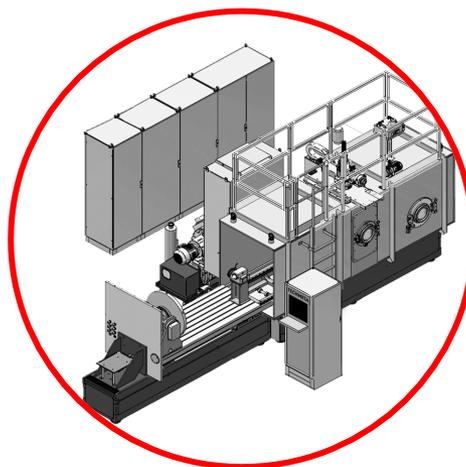
OUTSOURCING  
DEVELOPMENTS

SPECIFIC  
MACHINES

# MANUFACTURED MACHINES

## LARA – ZIRCALLOY CONTAINERS

TECHMETA  
GRUPE **bodycote**



### MAIN FEATURES

- 2 guns,
- 6 mechanical movements,
- Cryogenic pumps,
- Electron gun: 8 Kw – 60 kV.
- Thin slices welded together to make a 10 cm<sup>2</sup> and 2 m long parallelepiped,
- Chamber's volume: 2,67 m<sup>3</sup>

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DEVELOPMENTS

SPECIFIC  
MACHINES

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

43

43 YEARS OF  
EXPERTISE

15

ABILITY TO  
WELD OVER 15  
PARTS FOR THE  
SECTOR

50

OVER 50  
MACHINES  
AROUND THE  
WORLD



THANK YOU FOR  
YOUR ATTENTION

ANY QUESTIONS?

OUR EB SOLUTIONS MEET ALL YOUR CHALLENGES

**ELECTRON BEAM WELDING**

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