Fonderia
Maspero
Società soggetta ad attività di direzione e coordinamento di ELLE.GI.EMME S.R.L
Stampaggio Metalli non ferrosi
Non-Ferrous metals Forging
Idroformatura
Hydro-Forming

Connecting Innovative Small & Big Businesses

29 June 2015

Crowne Plaza Brussels – Le Palace,
Rue Gineste 3, Brussels

www.spire2030.eu

FONDERIA MASPERO SRL

OWNERSHIP

Since **July, 1st 1909** we have been working in the field of **non ferrous metals**.

The Company was established and continues to be run by the **Maspero family**.

 # OF EMPLOYEES: 85

2014 TURNOVER: 12,700,000 €

ACTUAL BUSINESS AREAS:

- Hot forging of non ferrous metals
- Tube Hydroforming

SPIRE Sustainable Process Industry through Resource and Energy Efficiency

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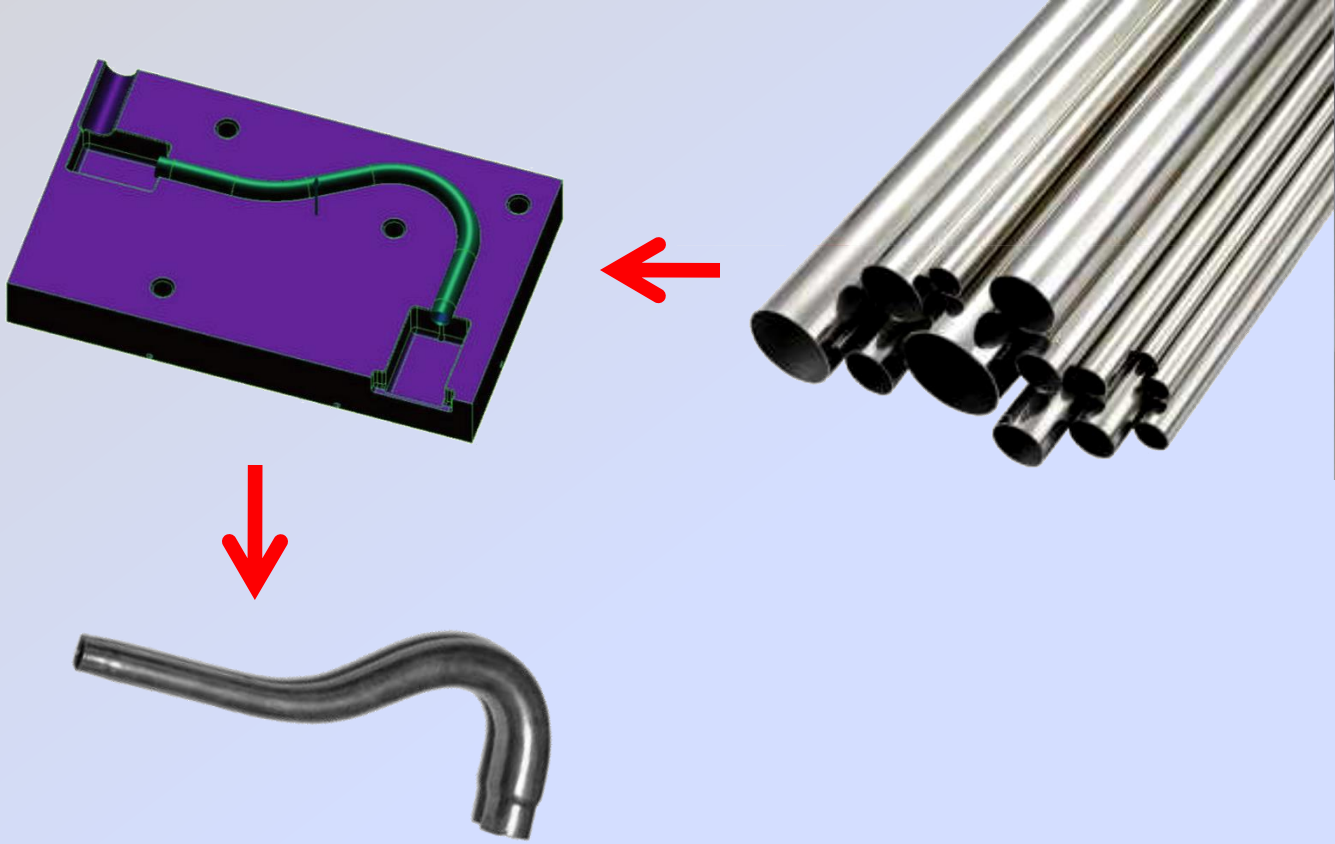
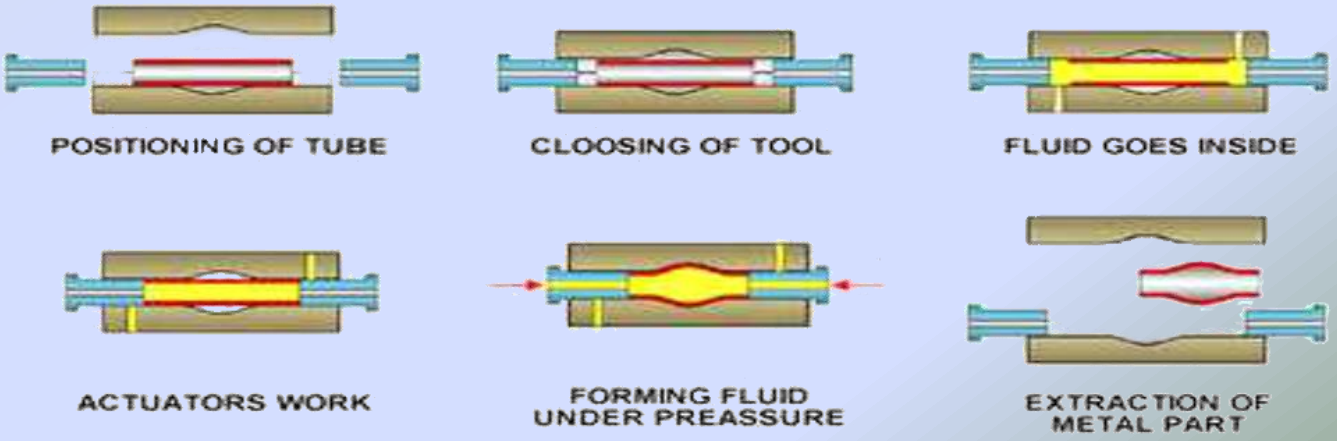
Hydroforming

High-pressure hydraulic fluid is used to give a specific shape to a sheet or tube of metal by forcing it against the surface of a die.





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Why Hot Tube Gas Forming?

- ✓ Lots of material with poor formability
- ✓ Low metal elongation at temperatures of about 20 °C

Solution #1

More steps of Hydroforming
+
Annealing operation before each hydroforming process

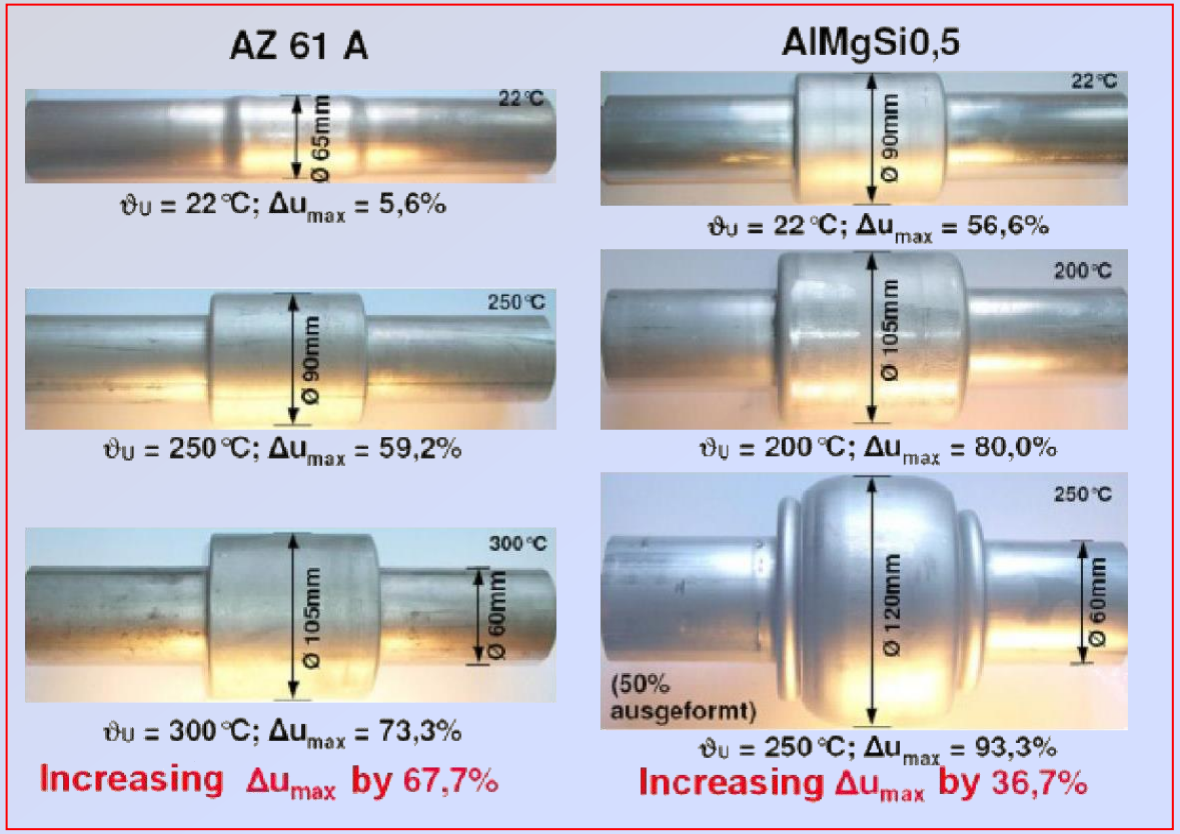
Solution #2

Hot Tube Gas Hydroforming

Studied in lab by

-Fraunhofer Institut
-Politecnico di Milano
-Università Padova

Technical Reasons



Hot metals have higher plasticity:

- Push formability's limits
- Shape complex parts in single operations

- Forge tube shapes impossible before
- Reduce cost and save energy
  (30-50% less than classic Hydroforming)

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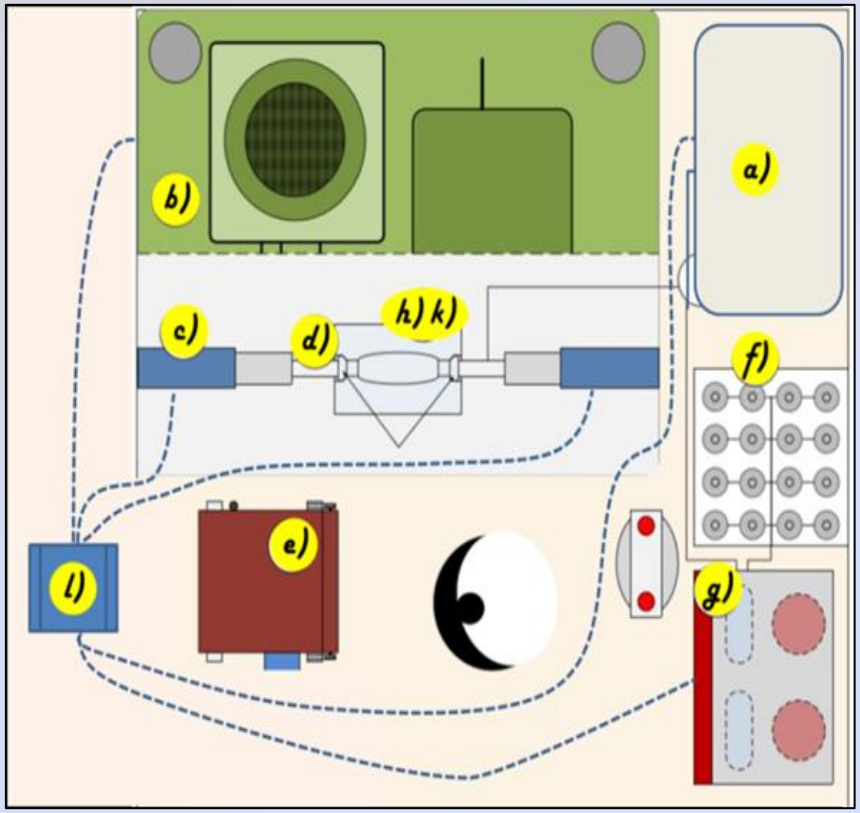
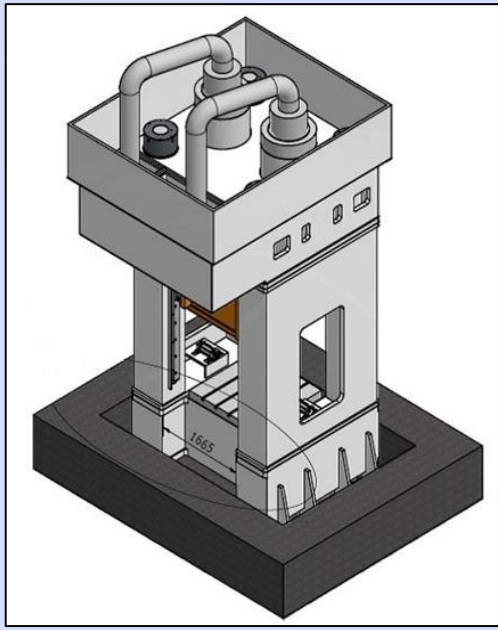
Layout





a) Water pressure intensifier, maximum pressure 100 MPa;
b) Hydraulic press, 4 posts, tonnage of 20,000 kN;
c) Hydraulic axial cylinders, force 1,500kN; **d)** Sealing rams;
e) External tube heating devices; **f)** Gas tanks, cylinders at 30 MPa; **g)** gas compressor, pressure 100 MPa; **h)** dies with thermal conditioning (cooling, heating); **k)** Insulated die-press plates; **l)** control unit

Next Steps

1- **Collect data** gathered in labs

2- **Build a system** with partners

3- **Fabricate tools** to further implement the technology

Industrialization of the process

Educate about the technology's possibilities in various markets

Convince to use this technology through dissemination

Markets

Target markets:

- **Aircraft industry**
- **Raiway industry**
- **Automotive**
- Every market in need of a technology to **reduce weight** and **increase efficiency** through **energy savings**

Reduce weight → Use tubes

Tubes with Hot Gas Forming Technology → **Precision of details**

Shape complexity

Return on Investiment Estimation

Hypothesis 1: average value of the piece **100.00 €/each**
Hypothesis 2: Investiment **(I)= 2Milions**
Hypothesis 3: New technology (x) is **30% cheaper** than the old one (y)

Break Even Point

$$\begin{cases} I + 0{,}7x = y \\ x = y \end{cases} \longrightarrow x = (10/3)\, I$$

Break Even Point is at 6.67 Milions (= 66.700 pieces)

Hypothesis 4: average production: **20 pieces/hour**
Hypothesis 5: working 1 shift of 8 hours/year

20 pcs/h x 8 hours x 220 days/year= **35.200 pieces/year**

Break Even Point is less than 2 years (considering 1 shift production)

Why Choose Maspero

We need YOUR help!

1. Our company size cannot substain the costs of implementing the technology alone

2. There is no benchmark product at this stage.
→ No b-p means undetermined time for the return of the investiments.

Venture Capitals will enable us to move forward!

FONDERIA MASPERO SRL

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THANK YOU FOR YOUR ATTENTION

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