



C\*BLADE

forging & manufacturing



1963\*2013



## Company

**C\*Blade** Forging & Manufacturing is a company specialized in the manufacturing of forged blades for thermal and nuclear steam turbines and forged compressor blades for gas turbine in the field of power generation. **C\*Blade** can produce a wide range of blades in terms of size, weight and finishing grade: from envelope forged blades to those ready to fit, from the biggest forged to the smallest, machined from bar. Working in this sector since 1963, **C\*Blade** is one of the few companies in the world able to produce machined blades with overall length up to 1500 mm (59 inch) and initial weight up to 180 kg (400 lb).

**C\*Blade** has been always looking for improvement and completion of the manufacturing process, working accordingly to ISO 9001:2008 standard and complying also to ISO 14001 and OHSAS 18001 standards.

### ADVANTAGES

- Capability to forge blades up to 1500 mm of overall length*
- Fully integrated production process and supply chain*
- Over 50 years of experience and knowledge*
- Capability to supply ready to fit blades*
- Knowledge of the main technology types*
- Co-design capability*
- Reverse engineering capability*
- Quick manufacturing*
- Reliable deliveries*
- Excellent quality*





## Processes

**C\*Blade** is specialized in the forging and manufacturing of stainless steel and titanium alloys turbine blades. The materials are bought only from certified suppliers working in the power generation sector and in compliance with the customers specification and the most strict international standard:

*Martensitic stainless steel*

*Precipitation hardening stainless steel*

*Titanium alloys*

From the drawing to the finished blades, each step is carried out inside the company thanks to the knowledge of the technicians and high qualified processes. The team of **C\*Blade** is able to design the dies and produce any kind of turbine blade starting from 3D model, from the drawings or even from reverse engineering.

Highly qualified personnel can perform a wide range of controls in compliance with the most rigorous standards and with the customer requirements.

### MAIN EQUIPMENT

*Hot preforming hydraulic press with 4 axis control*

*Drop-forging hammers with respectively 50000 kgm, 35000 kgm and 12500 kgm of power*

*Water jet robotized cutting system*

*Heat treatment furnaces*

*20 spindles CNC milling machines with 4, 5, 6 axis*

*Metabo CNC polishing machines*

*Coordinate Measuring Machines (CMMs)*

*Structured-light 3D scanner*

*Vibration and momentum measurement stations*



# Steam Blades

**C\*Blade** produces forged and machined blades with overall length up to 1500 mm and initial weight amounting up to 180 kg. Expertise and equipment allow the company to manufacture big low pressure blades quickly and with excellent quality.

## TECHNOLOGY REFERENCE LIST

ALSTOM-ABB, GEC-Alsthom

ANSALDO

FRANCO TOSI

GE

HITACHI

MAN

PARSONS

SIEMENS, KWU, AEG

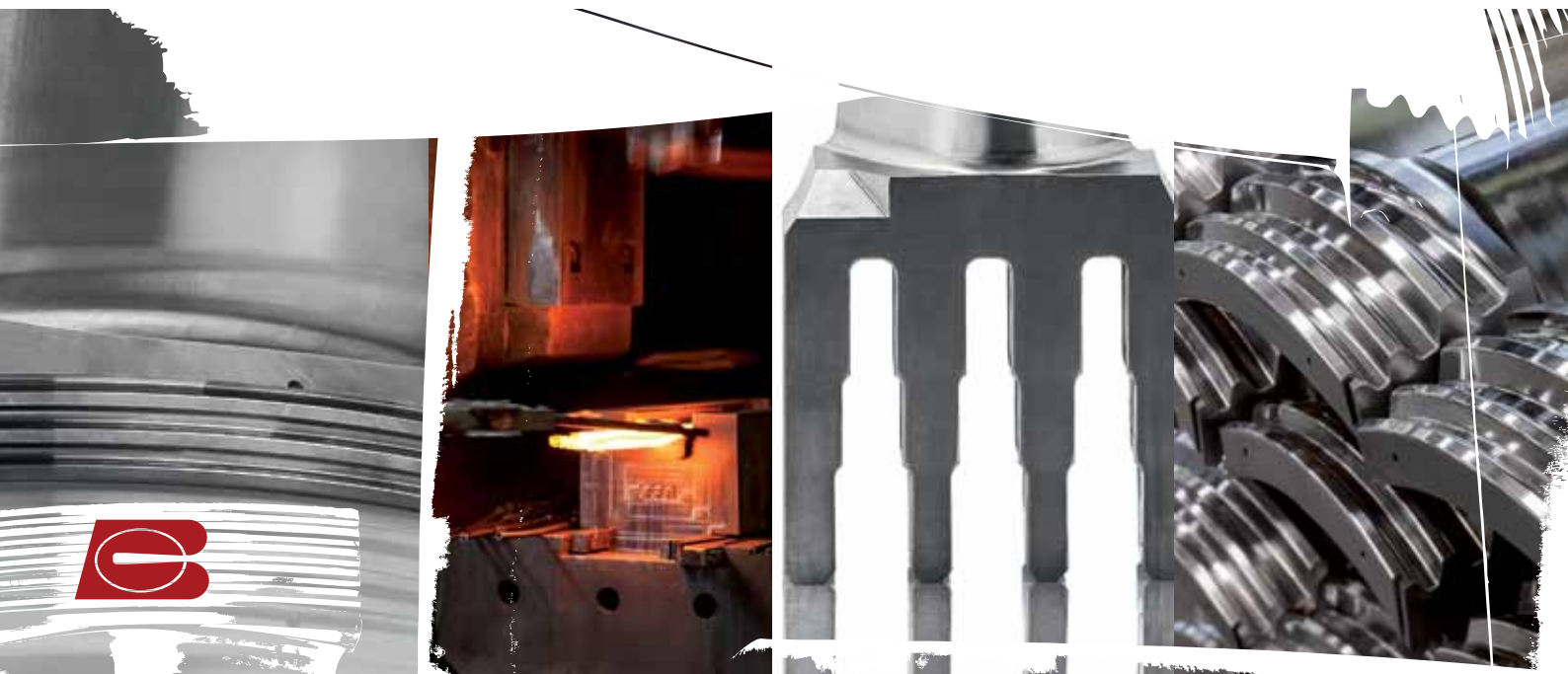
SKODA

TURBOATOM

URAL

WESTINGHOUSE

ZAMECH





# Compressor Blades

**C\*Blade** is able to supply several types of blades, from the bigger stages, forged and machined, up to the small ones machined from bar. Thanks to its know-how, **C\*Blade** can manufacture complex shapes for the big stages of blades and vanes quickly and with excellent quality.

## TECHNOLOGY REFERENCE LIST

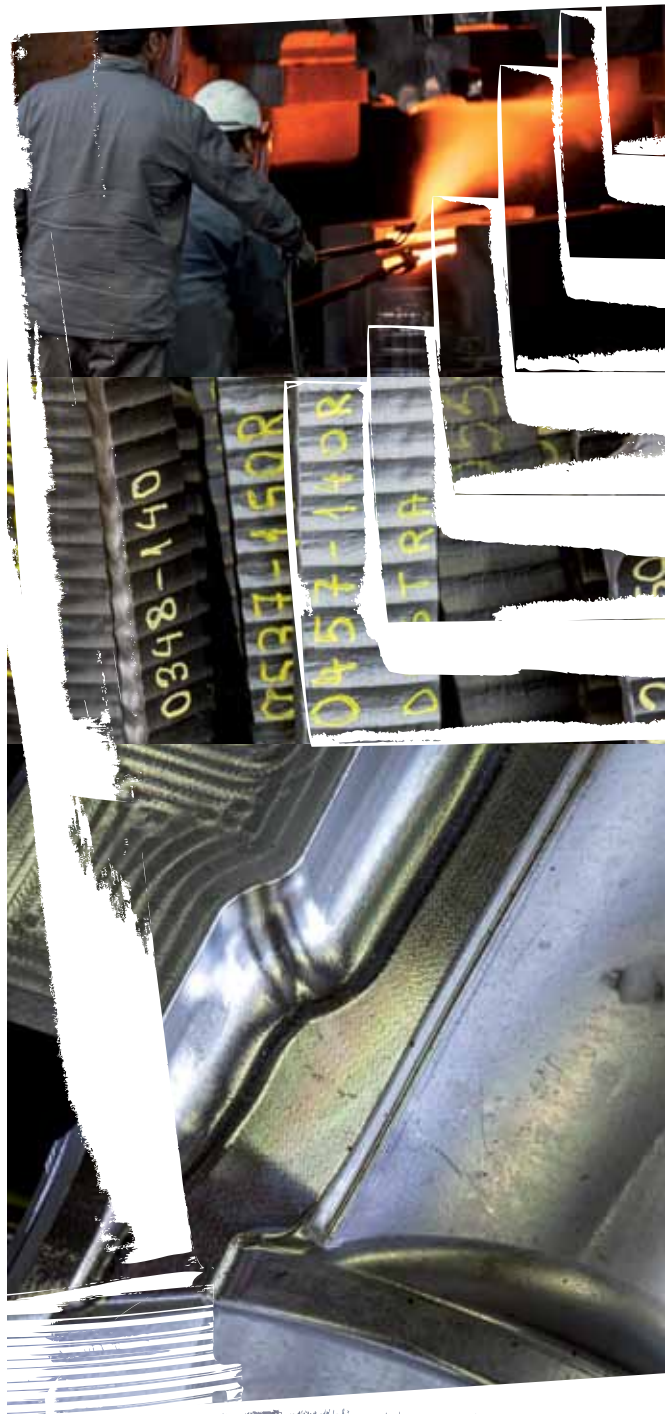
ALSTOM

ANSALDO

MITSUBISHI

SIEMENS

WESTINGHOUSE





Maniago  
Venice

## Locations

**C\*Blade** facilities are located in Maniago. Maniago is a part of the Friuli-Venezia Giulia region in north-east Italy. The small city founded in 981 AD by Romans, has over 550 years of history in blacksmith industry and in particular in the forging of blades.

We are easily reachable from Venice Marco Polo Airport.

### Plant A

Offices, forging, incoming warehouse

Via D'Aronco, 34 - 33085 Maniago (PN) - ITALY

Phone +39 0427 735411 - Fax. +39 0427 700141

### Plant B

Heat treatments, machining and polishing, inspections and shipment

Via Genova, 1 - 33085 Maniago (PN) - ITALY

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