

COMPONENTS PROCESSING CAPABILITIES

Steam turbine blades

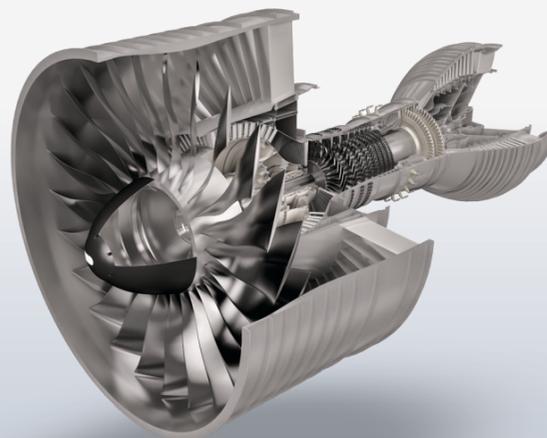
C.B.Ferrari wide spectrum of products has been specially developed for the processing of various types and sizes of steam turbine blades. Back in 2016, C.B.Ferrari developed a special machine for machining the world's largest turbine blade and sold six units in the same year. In addition, the CAM and process simulation software developed in-house enables complex profiles to be produced precisely and cost-effectively.

Gas turbine blades

The specific design of the machines, includes the latest generation torque motor and the sixth optional axis, offers the possibility to meet all the strict and indispensable requirements regarding the machining of gas turbine blades. Using the latest laser technology, C.B.Ferrari is also the ideal partner to manufacture the combustion chamber tubes and all types of turbine blades.

Turbine blades for aircraft engines

C.B.Ferrari offers revolutionary manufacturing solutions for aircraft engine blades. No matter if they are made of titanium alloys, nickel-based alloys, or if airfoils are thin and delicate, all these can be smartly resolved by the productive and reliable fabrication that C.B.Ferrari supplies. Beyond the experienced milling expertise, the advanced laser technology that C.B.Ferrari provides, makes it an excellent partner for aircraft engine companies.



**...there are enough reasons!
Are you interested?**

C.B.Ferrari

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Producing turbine components
on machining centers "Made in Italy"...

Why not?

C.B.Ferrari





Company profile

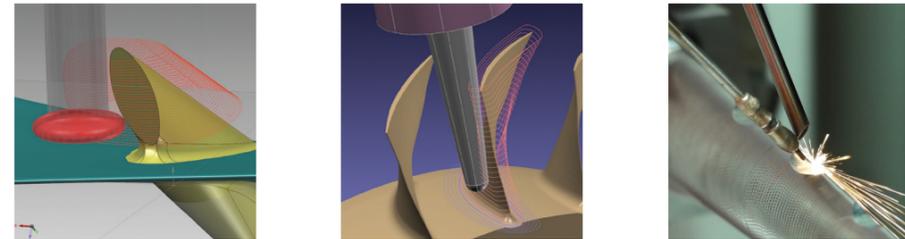
- Founded in 1966
- 170 employees
- >4.500 machines on the field worldwide
- Actually > 50% turnover with turbine blades machining centers for the Power Generation and the Aero-Engines Sectors.
- Member of Waldrich Coburg Group - Germany

Technical highlights of C.B.Ferrari machines

- Cast iron machine frame → **Rigidity, damping and stability**
- Linear axes with recirculating roller guides, swivel axes with high-precision bearings and direct Measuring systems → **Precision, repeatability and high surface quality**
- Own production for motor spindles up to 53 kW / 265 Nm / 24,000 rpm → **Guaranteed availability and easy replacement**
- High vertical range of manufacture in combination with first-class bought-in components (Siemens, Heidenhain, Schneeburger, etc.) → **Best quality**
- Excellent thermal stability through optimized cooling systems → **Optimal process control**
- Efficient tool cooling → **High-performance cutting parameters and long tool life**
- Tool magazine with up to 60 positions HSK / ISO / BT → **Flexibility**
- Loading and unloading of workpieces by robots or pallets → **Autonomy and productivity**
- Tailor-made solutions and various options → **Turnkey plant**

Special features of C.B.Ferrari machines for turbine components

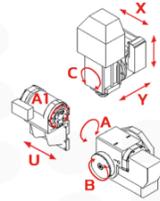
- Customer-specific fixtures for clamping bar stock and forged blanks as well as custom-made steady rests
- Own CAM programming software for simultaneous 5-axis machining
- Know-how in the use of state-of-the-art milling tool technologies
- Possibility of combination with own laser drilling technology for the introduction of formed cooling holes
- Additive repair by laser deposition welding
- Different machine types and sizes for different workpieces and dimensions



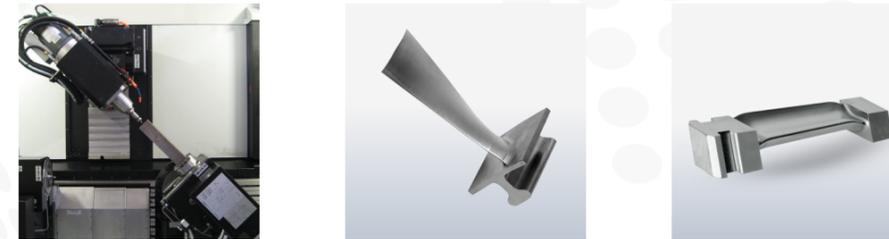
A SERIES

5-axes vertical machining center for blades and small blisks

- Center hole drilling capability by B- and C-axis
- Highly dynamic and extremely stiff blade orientation through A- and synchronously driven A1-axis with torque motors
- Tailstock or synchronized dividing head on automatic CNC sliding U axis



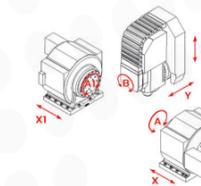
Machine	Workpiece dimensions (mm)
A236 NEW!	 300
A156	 500  480
A176	 700  480
A196	 1300  480



N SERIES

5-axes vertical machining center for large blades

- High static rigidity due to fixed column and high dynamics due to reduced moving masses
- Highly dynamic and extremely stiff blade orientation through A- and synchronously driven A1-axis with torque motors
- Synchronously directly driven dividing head on the automatic CNC-controlled moving axis X1
- Supporting steady rest for heavy and long blades



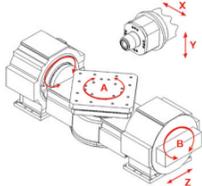
Machine	Workpiece dimensions (mm)
N316	 1000  500
N516	 1400  500
N530	 2500  700



MCO SERIES

5-axes horizontal machining center for blisks and impellers

- Compact design and rigid structure
- High dynamic and precision through direct driven linear and rotary axes
- Double machine door enables easy integration of automatic pallet change system
- Optimized chip flow by horizontal spindle orientation



Machine	Workpiece dimensions (mm)
MCO85	 600  500

