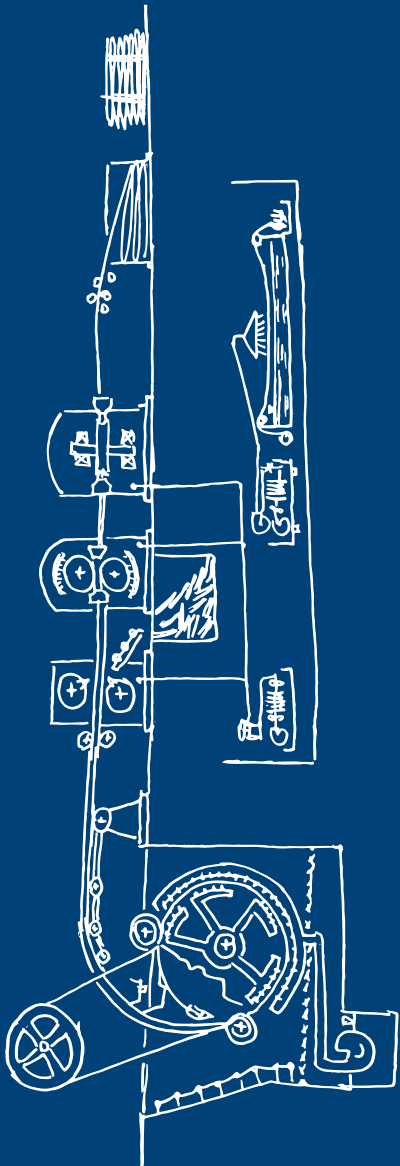




Continuus  
Properzi

# Aluminium Rod Lines



*Properzi*





The first Continuous Casting and Rolling Line (CCR Line) for Al rod production, invented by Mr. Ilario Properzi in 1947, still remains the essence and basis of the modern CCR Line. At that time the production capacity was much lower and the knowledge of Al alloys was very different from today.

Over the years Continuus-Properzi, starting from the seed planted by Mr. Ilario Properzi, has developed an extensive portfolio (like a thick tree) of CCR Line configurations to satisfy all market requirements in terms of capacity (from 1.5 tph to 15 tph) and alloy range (1xxx, 2xxx, 3xxx, 4xxx, 5xxx, 6xxx, 7xxx and 8xxx series).

The CCR Line sketched here below represents a typical line configuration and provides a short description of each main machine and the possible solution proposed. The position of the main equipment can vary according to specific needs. Starting from the left side of the sketch we have the following main equipment:

**"1" VertMelt Furnace:**

it has several operational advantages and it has been designed to minimize fuel consumption, grant constant and homogeneous melting rate and characteristics of the liquid aluminium with a capacity ranging from 1.5 tph up to 10 tph and higher.



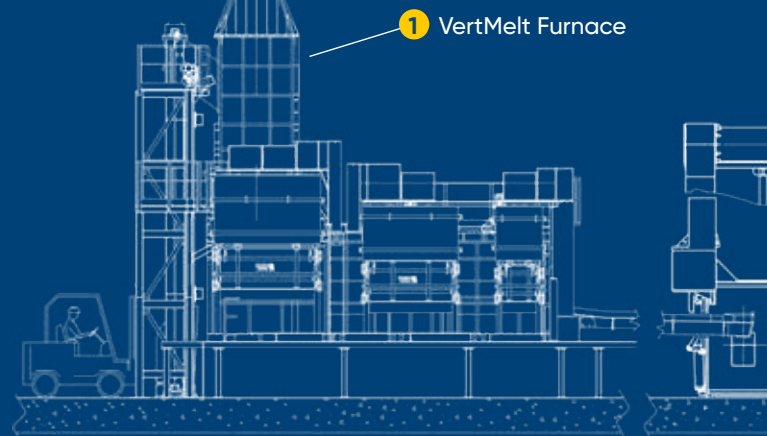
EXAMPLE OF PROPERZI ROD

**QUALITY OF PROPERZI ROD:**

- Highest worldwide percentage of premium quality
- Highest rod quality exceeding the standards, worldwide recognized bench mark
- Rod quality repeatable and constant
- All alloy families (1xxx, 2xxx, 3xxx, 4xxx, 5xxx, 6xxx, 7xxx, 8xxx) can be produced, from pure Al to the most complex alloys
- Widest range of commercial Al rod diameters
- Increased mechanical properties using the 2-roll rolling process in the roughing mill
- Best geometrical quality using the 3-roll rolling process in the finishing mill
- Perfect coil shape in both pitch-to-pitch and random mode



**Alluminium Alloys casting line layout**





### "2" Holding Furnace(s):

the capacity is defined in accordance with the melting rate of the VertMelt, the production rate of the Casting Machine, and the alloy range to be produced in order to have the proper time to homogenize the liquid metal bath.

### "3" Degaser, Filter and TiBor Feeder:

these devices are usually required to carry out the liquid metal treatment just prior to casting. The main purpose is to reduce the hydrogen content, capture the solid inclusions and oxides in the metal, and inoculate the grain refiner, if needed.

### "4" Casting Machine:

a wide range of Casting Machine models, differing mainly in the Casting Wheel diameter and cross section of the cast bar, can be provided in accordance with the production rate, the alloy range to be produced, and the environmental conditions.

### "5" Cast Bar Straightener:

to straighten the cast bar before entering the Induction Bar Heater, the Cast Bar Cooling Tunnel, and the Milling Machine.

### "6" Automatic Bar Shear:

to cut the bar automatically during the start-up and in the unlucky event of an emergency downstream.

### "7" Milling Machine:

required when producing aluminium alloys 5xxx series to remove the upper layer of the cast bar.

### "8" Induction Bar Heater:

when producing some alloys, electrical alloys in particular, it is required to increase the cast bar temperature before entering the Rolling Mill.

### "9" Cast Bar Cooling Tunnel:

designed to reduce the cast bar temperature before entering the Rolling Mill in order to achieve the desired temper grade, particularly with 1xxx series alloys.

### "10" Rolling Mill:

we have twelve Rolling Mill models, with 2-roll and 3-roll rolling stands, that can be combined in several Rolling Train combinations defined by considering the cast bar section (linked to the production rate), the alloy range, and the rod diameters to be produced. The Properzi unique combination of a Roughing Mill with 2-roll rolling

#### PLANT:

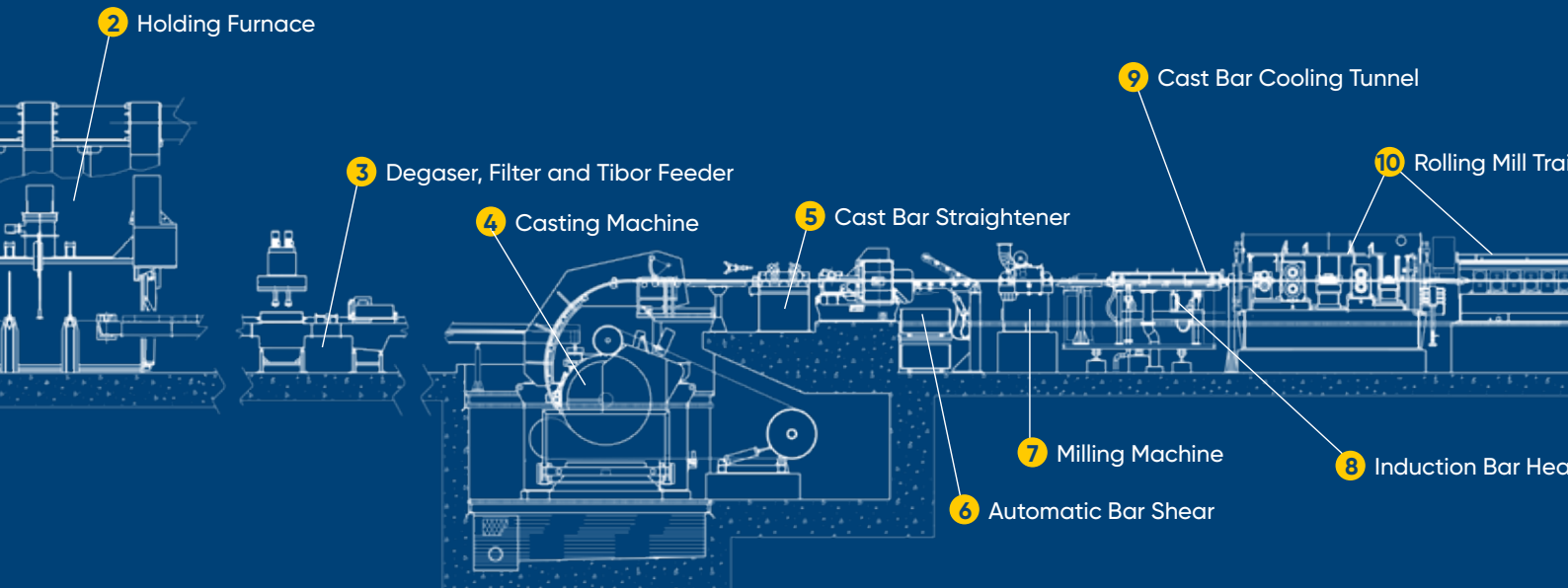
- 100% engineered internally, tailor made, from lay-out to software
- Our equipment is manufactured and assembled at our headquarters in Italy
- Only the highest quality and safety in our equipment
- Lowest operational costs in the industry
- Lowest consumption of utilities
- Incomparable longevity of our plants
- Overall equipment efficiency above 85%
- Several models of Casting Machine, Rolling Mills and coilers to satisfy all possible customer requirements
- Rod can be coiled in loose or tight coils
- Tight coils can be produced both in European and American standards
- Complete technical assistance for training, commissioning and start-up
- Continuous customer service: remote and on-site
- Longest availability of spare parts even several decades after equipment supply
- Prompt and precise spare parts service
- Latest available technologies and automation, ready for industry 4.0



ENGINEERING TAILOR MADE



ORIGINAL SPARE PARTS



stands that provide the necessary high reduction rate and a Finishing Mill with the legendary 3-roll rolling stands ensures rod diameter tolerance and quality surpassing the applicable specs.

**"11" Quenching Unit:**

in order to cool the rod before being coiled and, in the case of some electrical alloys, to achieve the desired temper grade of the rod.

**"12" Coiler:**

the coiler model is defined according to the preferred coil type (loose coils or tight coils), the production rate, and the coil dimensions/weight (European standard and/or American standard). The coiler is equipped with strapping and unloading units that can be manual or automatic according to customer preference.

**"13" Control Room & Electrical Control Cabinets:**

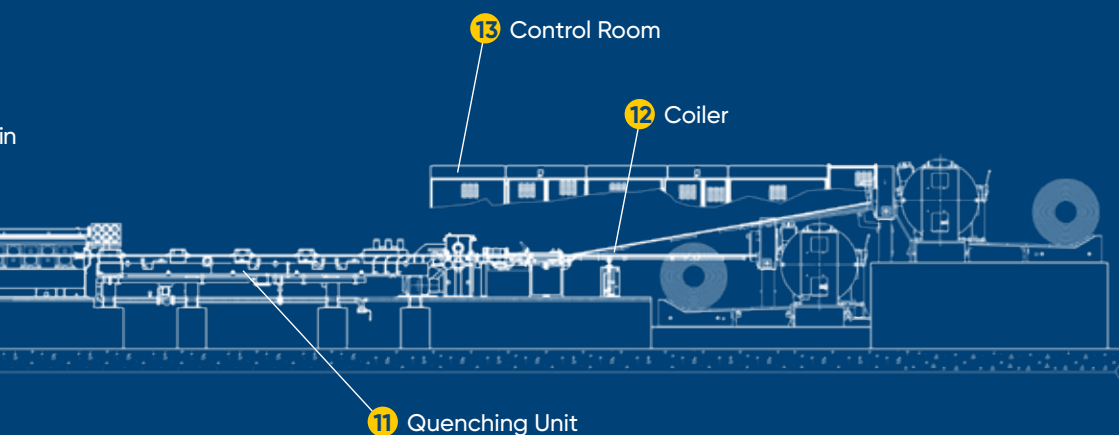
the widest range of the most common electrical/automation components can be incorporated in our design according to customer requirements/preference; including the latest market developments in automation and compatibility with Industry 4.0.



**CONTINUUS-PROPERZI MACHINE TOOL**

**COMPANY**

- Inventor of the continuous casting & rolling system for non-ferrous metals
- 70 years of experience with almost 300 casting and rolling lines designed, manufactured, and commissioned
- Widest knowledge of global market having operated in more than 60 countries
- Unique group of experts in terms of knowledge and experience
- Market share > 90% of the aluminium Rolling Mills sold, excluding local imitations
- Aluminium rod became properzi rod
- Always innovator of our innovation without comparison
- Our goal is customer satisfaction



# MORE AND MORE ON...

## CONTINUOUS-PROPERZI CCR ALUMINIUM & ALUMINIUM ROD LINES

...and also special CCR for Welding Wires & Master Alloys

### CCR ALUMINIUM ROD LINES -

#### SMALL OUTPUT RATE FOR EC GRADE AND THE MOST COMMON ALLOYS

- Production rate: from 1.5 tph to 3.5 tph
- Expected yearly output: from 7,500 t to 17,500 t
- Alloys range: 1350, 1370, 6101, 6201 and similar
- Coils type: loose coils (most used) or tight coils

LOOSE COIL >



TIGHT COIL >



### CCR ALUMINIUM ROD LINES -

#### MEDIUM OUTPUT RATE FOR EC GRADE AND THE MOST COMMON ALLOYS

- Production rate: from 4.5 tph to 6 tph
- Expected yearly output: from 30,000 t to 40,000 t
- Alloys range: 1xxx, 5xxx (Mg<2.5%), 6xxx, 8xxx
- Coils type: loose coils or tight coils (most used)

LOOSE COIL >



TIGHT COIL >



### CCR ALUMINIUM ROD LINES -

#### MEDIUM OUTPUT RATE FOR EC GRADE AND THE MOST COMPLEX ALLOYS

- Production rate: from 4.5 tph to 8 tph
- Expected yearly output: from 22,000 t to 40,000 t
- Alloys range: 1xxx, 2xxx, 3xxx, 4xxx, 5xxx (also high Mg content), 6xxx, 7xxx, 8xxx
- Coils type: tight coils

TIGHT COIL >



### CCR ALUMINIUM ROD LINES -

#### LARGE & EXTRA LARGE OUTPUT RATE FOR EC GRADE AND THE MOST COMMON ALLOYS

- Production rate: from 8 tph to 15 tph
- Expected yearly output: from 50,000 t to 100,000 t
- Alloys range: 1xxx, 6xxx, 8xxx
- Coils type: tight coils (also jumbo coils)

TIGHT COIL >

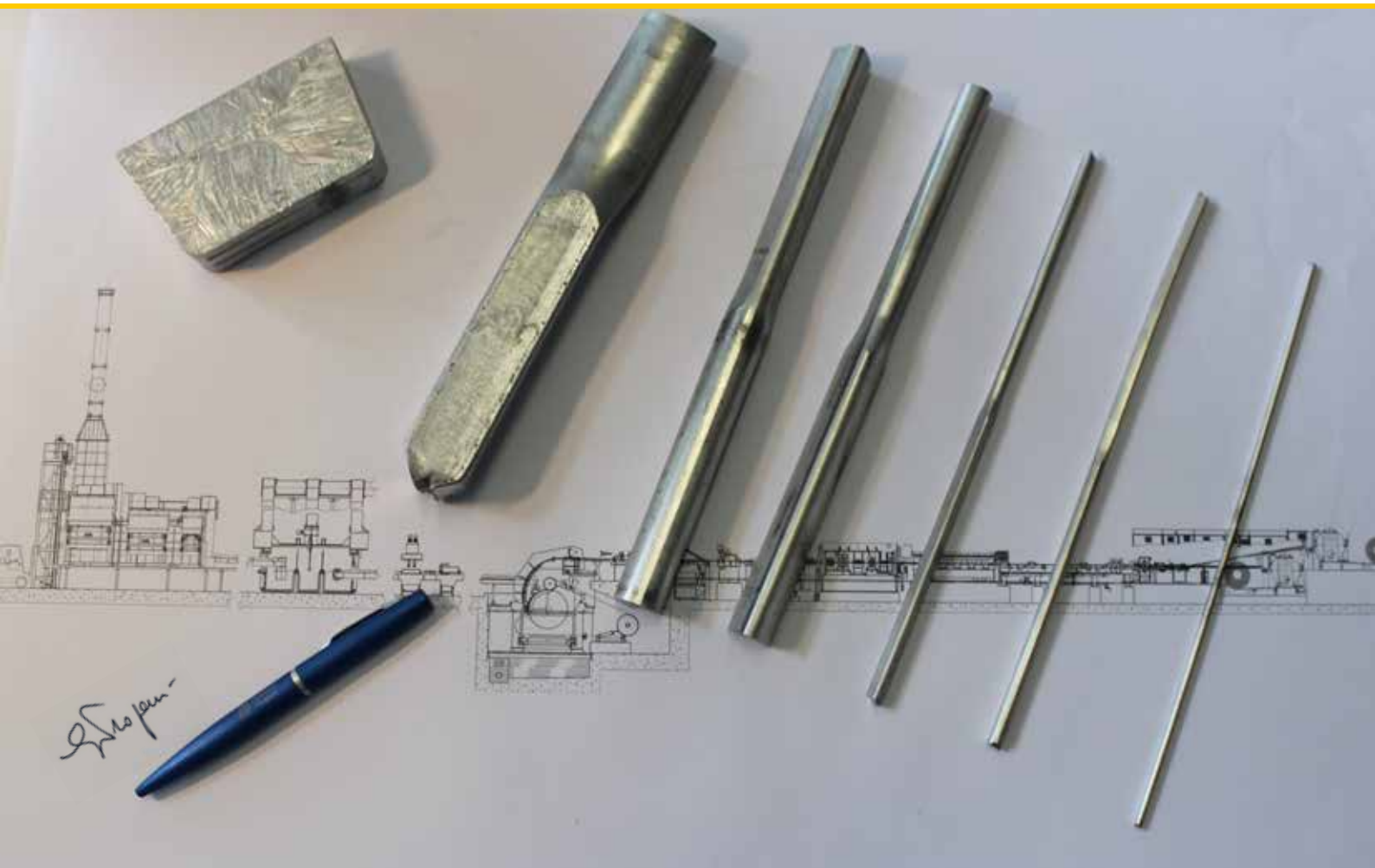


JUMBO COIL >





# A Family Passion!



## And much more...



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