

A large, glowing, circular metal component, possibly a turbine or engine part, is being processed in a factory setting. The component is bright orange and yellow, indicating it is extremely hot. It is surrounded by industrial machinery and structures, including a large black metal frame above it. The background shows a dimly lit industrial environment with various pipes and structures.

**A HISTORY OF VALUE,  
A FUTURE OF INNOVATION**

The logo for PINGMIL S.p.A. features a stylized, bold letter 'P' in black and red. The 'P' is composed of a black shape on the left and a red shape on the right, which together form a continuous, curved path. To the right of the 'P' is the word 'INGMIL' in a bold, black, sans-serif font. Below 'INGMIL' is the text 'S.p.A.' in a smaller, black, sans-serif font.

**PINGMIL** S.p.A.



# A history of excellence

**Ring Mill was founded in 1978. Since then the Company has supplied rolled rings, open and close-die forgings in all type of steel and non-ferrous alloys, becoming a leader on the international market.**

The main plant, located in Dubino, in Northern Italy, covers a production area of 110000 square meter with a capacity of more than 55,000 tons of forgings per year.

Dedication and competence of all the skilled workers allowed Ringmill to emerge as one of the most valid and qualified producers of forgings in every application where extremely high quality standards and reliability are required.



**A highly professional staff enables Ringmill to meet the demanding needs of today's markets, thereby ensuring further investment and expansion.**

# Four Companies, One goal

Ring Mill growth occurred following industrial investments and expansion through the acquisition of three leading companies in their sectors.



**1978**  
Ring Mill establishment

**RT Pipe establishment**

RT Pipe is specialized in rough and final machining processes such as turning, milling, boring and drilling.

**2010**

**Rubiera Special Steel acquisition**

The company is world leader of special high quality steel, with wide range of ESR and VAR products for the main technological applications.

Rubiera Special Steel was the first Italian steelmaker to introduce the vacuum degassing process and since then it has specialized in the production of high integrity steels with a production of 150.000 ton/year.

**2013**   
RUBIERA SPECIAL STEEL S.P.A.

**Sesia Fucine acquisition**

Sesia Fucine has been producing high quality forgings, according to customer specifications and drawings and/or international standards, for a wide range of application such as Oil&Gas, Nuclear, Power Generation, Aerospace, Boilers.

**2015**



# Melting, Refining, Remelting

Located in the Province of Reggio Emilia, Rubiera Special Steel was founded in 1965 and was the first Italian steelmaker, without a forgeshop, to introduce the vacuum degassing process and since then it has specialized in the production of high integrity steels.

Today our products are used in all areas that demand the highest performance. Starting from selected scrap and using our improved facilities, we can produce vacuum degassed ingots weighing up to 145 tons, with a capacity of more than 150.000 tons per year.

In 2016 we started the production of Martensitic stainless steels.

## Rubiera Special Steel facilities

1 Direct current Electric Arc Furnace (EAF)	Max 80 Tons
3 Ladle Furnace (LF)	35 tons - 75 tons
3 Vacuum Degassing Stations (VD)	35 tons - 75 tons
2 Bottom Pouring Area	plant n°1 40 tons max capacity plant n°2 145 tons max capacity
17 Annealing Furnaces	30 - 150 tons, max lenght 10,8mt
15 Slow cooling boxes	max lenght 12,5mt
2 Electro Slag Remelting plant (ESR)	plant n°1 from 8 to 35 tons capacity plant n°2 froms 20 to 100 ton capacity
1 Vacuum Arc Remelting Plant (VAR)	From 5 to 27 tons capacity



One of the primary advantages of Rubiera Special Steel's production are the customizations upon specific requests of customers, whether it's remelted steel, or custom ingot sizes.

# Heating, Forging, Rolling

Over the years, the Company has acquired the know-how necessary to work with a vast array of steels, from simple carbon steel to the most sophisticated alloys used in the offshore industry, in the production of both conventional and nuclear energy and in all high-technology applications.

Ringmill uses the most modern equipment available, in a constant effort to obtain high-quality products that meet the customers' increasingly demanding requirements.

The availability of ring-rolling mills, hydraulic presses, manipulators, forging furnaces and a wide range of complementary equipment gives us the ability to obtain forgings with a shape very close to the finished product. This optimizes the material flow, enabling Ring Mill to obtain the best mechanical properties possible.

The Company is present in all fields where the reliability of high quality products is required to satisfy the ever-growing needs of a market that is in constant evolution.



## ROLLED RINGS

- ID min. 380 mm - OD Max 4.400 mm
- 1.450 mm Height Max
- 750 mm Thickness Max
- 20.000 Kg Forged Weight Max

## FORGED RINGS

- All rings with ID smaller than 400 mm.
- All rings with more than 20.000 Kg Forged Weight.
- Ø 3.350mm finished dimensions
- 60.000 Kg Forged Weight

## DISCS

- Ø 3.350 mm OD Max finished dimensions.

## SLEEVES

**(1.000 mm ID Max forged over the mandrel)**

- 60.000 Kg Forged Weight Max.
- 12.000 mm Length Max.

## SLEEVES

**(more than 1.000 ID mm i.e. enlarged over the mandrel)**

- 60.000 Kg Forged Weight Max.
- 4.300 mm Length Max.
- Ø 3.350mm OD Max.

## SHAFTS / BARS / HOLLOW FORGINGS

**(not forged over the madre)**

- 60.000 Kg Forged Weight Max.
- 22.000 mm Length Max.

Equipment Type	Description
<b>Hydraulic presses:</b> 6.300 tons 3.500 tons 3.200 tons	Max power capacity 4.550 mm vertical clearance 3.400 mm diameter capability
<b>Rails Integrated Manipulators:</b> 100 tons 25 tons	Max bending moment 250 tons mt Max carrying capacity 100 tons
<b>Rolling Mill:</b> radial 400 tons axial 300 tons	Max outside diam. 4.400mm Max height 1.450 mm Max weight 20.000 kgs
<b>Forging Furnaces:</b> 12 forging furnaces with regenerative burners	Max dimensions: 11.400 x 4.800 x 3.000 mm Max load 200 tons All with programmer device and temperature recording

# Annealing, Quenching, Tempering

Ring Mill has acquired the expertise to work with any type of steel, from simple carbon steel to the most sophisticated alloys, important investments have been made in furnaces and quenching tanks.

Where vertical heat treatment is required, Ring Mill has developed a special rotating heat treatment device used on horizontal furnaces, to achieve the same quality while assuring a consistent through-thickness properties.

## ALL FURNACES ARE EQUIPPED WITH:

- A minimum of 6 recording thermocouples
- Time/temperature recording
- Electronic controller for heating, soaking and cooling control

## ALL TANKS ARE EQUIPPED WITH:

- A minimum of 16 engines to ensure water circulation
- Liquid temperature cooling system

Equipment Type	Description
25 Gas Truck-hearth furnaces	Max internal dimensions 27.000 x 3.300 x 2.600 mm 13.000 x 4.000 x 4.000 mm
2 Electric Truck-hearth furnaces	Max internal dimensions: 5.000 x 3.000 x 2.200 mm
4 Water quenching tanks	Max dimensions 22.000 x 4.400 x 5.000 mm
1 Polymer quenching tank	Max dimensions 9.900 x 4.380 x 2.850 mm

Heat treatment area equipped with state-of-the-art furnaces.  
Very high efficiency of the quenching tanks secures consistent through-thickness properties



# Machining

The capacity to perform 150.000 hours of machining annually guarantees flexibility and the ability to satisfy our Customers' requirements.

The machining process includes the use of:

- Honing machines
- Boring machines
- Horizontal lathes
- Vertical lathes
- Machining centers

Equipment Type	Description
8 Vertical lathes	Max Ø on mandrel 4.500 mm Max height 2.750 mm Max weight 50 tons All CNC controlled
8 Horizontal lathes	Max Ø on mandrel 2.800 mm Max length 27.000 mm Max weight 70 tons All CNC controlled
3 Machining centers	Max table dimensions 2.000 x 2.500 mm Max weight 40 tons All CNC controlled
1 Boring machine	Max Ø 1.700 mm Max boring length 17.000 mm All CNC controlled
1 Honing machine	Max Ø 1.400 mm Max honing length 10.000 mm



Cutting-edge expertise is essential when tight tolerances on dimensions and finishes are required





# Testing

All forgings will be supplied with certification attesting the technological properties of the materials used , manufacturing process and controls carried out to assure conformity to required specifications.

## TESTS PERFORMED BY THE RING MILL LABORATORY

- Tensile test at room temperature
- Tensile test at hot temperatures up to 900°C
- Charpy test at temperatures from -196°C to +150°C
- PWHT
- Step cooling test
- Bend test
- Stress rupture / creep test
- Microstructure examination for intermetallic phases and precipitates checking
- Micrographic examination
- Macrographic examination
- Inclusion content
- Ferrite and austenite content
- Grain size determination
- Positive material identification
- Product analysis
- Hardness test HB - HV - HRC
- Baumann test
- Strain testing

## NDT TESTS PERFORMED BY THE RING MILL QUALIFIED PERSONNEL

- Dimensional Inspection with CMM
- Ultrasonic testing
- Magnetic particle testing
- Liquid penetrant testing
- Hardness testing
- Heat stability test
- Residual stress measurement

NDT personnel is qualified according to Recommended Practice SNT-TC-1A and ISO 9712 Standard, in the following methods:

Ultrasonic Testing	1 Level III 10 Level II
Magnetic Particle Testing	1 Level III 5 Level II
Liquid Penetrant Testing	1 Level III 5 Level II
Visual Testing	1 Level II
Strain Testing (ISO 9712)	2 Level II

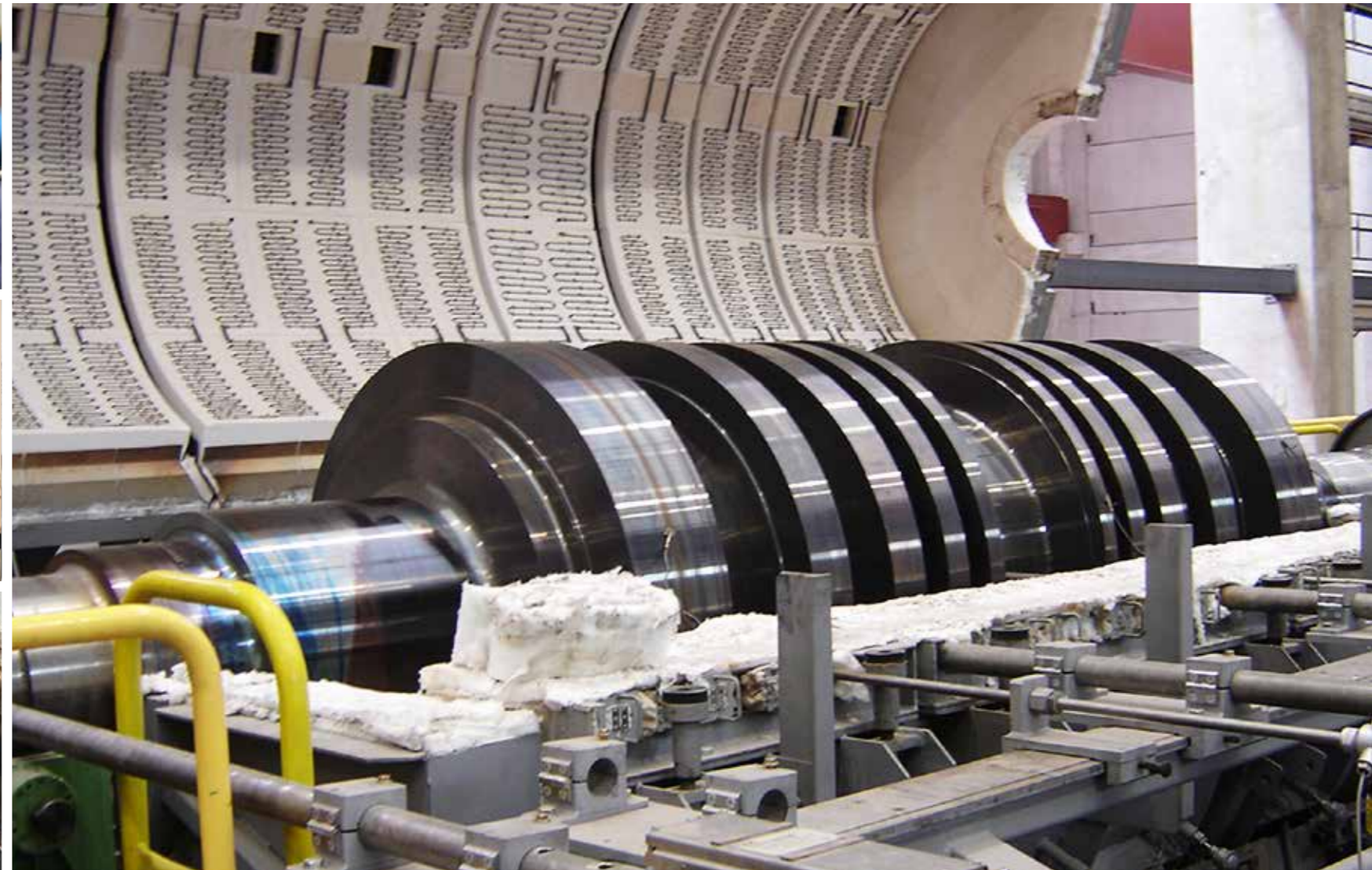


## TESTS PERFORMED BY QUALIFIED EXTERNAL LABORATORIES

- Drop-weight test (DWT)
- CTOD
- Corrosion test: HIC test - SSCC test / Corrosion test ASTM G48-A262 Method "E"
- Fatigue test
- Compression test
- DCB test
- K1C
- Cracking test

### HEAT STABILITY TEST

Equipment Type	Description
Heat Stability Rotating Furnace	Max capacity (shaft weight) 60.000 kg Max shaft diam. in the furnace 1.800 mm Max heated length of shaft in the furnace 4.900 mm



# Quality & Sustainability

Ring Mill's primary target is to consolidate its position as a global leader in the production of forgings.

In order to reach this important goal, Ring Mill's policy is to meet and satisfy both internal and customer requirements, while sustaining a continuous effort to guarantee:

- the level of quality performance while minimizing costs;
- continuous quality improvement in order to satisfy increasingly demanding customer requirements.

## Certificates:

Ring Mill is certified by the the most important and prestigious international institutions in specific sectors:

**ISO 9001:2015 • ISO 14001:2015 • ISO 45001:2018 • DNV GL • Lloyd's Register • A B S • TÜV (PED) • TÜV AD 2000-Merkblatt W0 / TRD 100 • ARAMCO 9COM materials • RINA • Bureau Veritas • Material Organization ASME Sect. III-Subsect. NCA 3800/4200 • HAF604 China's Nuclear Certification.**

Work in progress: **AS/EN 9100 - ISO 50001:2018**

These certificates testify the company's ability to manufacture high-quality products for specific applications

## Sustainability:

A choice that started in 2016 with important investments in photovoltaic plants and sustainable infrastructure. An environmentally approach that represents a constant vision of the future by reducing CO2 emissions, recycling water and reducing waste.

Ring Mill supports sustainability standards in the implementation of its projects, assuring high quality standards and promoting welfare treatment for all its employees. It has been and will continue to be socially active, with donations and a focus on the local community, always respecting and protecting human rights.

Ring Mill is a "4 R" company from the steel production to delivery of forgings.

An environmentally approach that represent a constant vision of the future by:

**Refuse** single use packing,

**Reduce** CO2 emission,

**Recycling** water and

**Reducing /Recyling** waste



**REFUSE**



**REDUCE**



**REUSE**



**RECYCLE**

## 3 times less then historical Average

Data from 2010 to 2022 compared to previous year



**-20%**

Use of electricity, increasing the production



**-10%**

Use of natural Gas, increasing the production



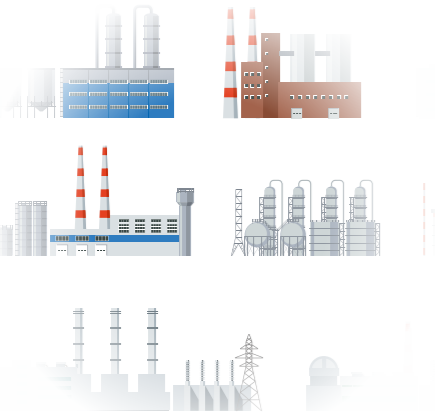
**-30% CO2**

from permitter quota compared to 2022 emission

# Main Applications

Ring Mill is a reference partner for all major global players in various industries where high quality of Rolled Rings and forgings in any type of steels and non ferrous alloys are required, offering all of its professional ability to satisfy the needs of its Customers.

## Markets



### General Industries

We produce parts and materials for heat exchangers, pressure vessels, stripper columns and any other equipment for OEM.

- Petrochemical & Hydrogen
- Mining & Cement
- Naval
- Gear Boxes & Bearings
- Pump & Compressors
- Metal Working
- Pipe Moulds
- High Pressure Hydraulic Cylinder

### Power Generation & Renewables

Ring Mill is ready for the new technologies required in thermal and nuclear power stations, wind farms, hydropower plants and coal-fired power stations with USC technology.

Main products in Power Generation fields:

- Gas turbine rotor shafts, compressor wheels, turbine wheels, couplings
- Hydraulic shafts, Steam turbine rotors, Generator shafts
- Rings for wind towers
- Pressure-seal valve bodies
- Manifolds
- High pressure forged fittings and pressure vessels



### Nuclear

From I to IV generation Primary/Secondary Circuits, Ring Mill has their quality system program verified for supplying forgings in accordance with the most sophisticated Nuclear Codes.

In the Nuclear fields Ring Mill produces:

- Feedwater nozzles
- Main tubesheets
- Primary Feedwater pumps components
- Nuclear waste casks
- Valves
- Main steam safety blocks and covers



### Oil & Gas - Valves

Exploration, drilling, production, transportation. Always better, more high-performance materials are required to meet the demands of ultra-deepwater exploration or where there is a corrosive environment with very high or very low temperatures. Turnkey products including weld-overlay, assembled and cotaed parts ready for use.

Main products in Oil & Gas fields:

- Riser pipes, stress joints, tension joints and keel joints up to 65 ft.
- Bops, christmas trees, wellheads and valve blocks to API 6A Standard
- Ball valves, extruded check and gate valves, flanges and riser flanges
- Buckle arrestors - J-Lay collars - choc pieces - forged ends
- Piggable wyes and subsea components
- Bulkhead systems and riser tower components
- Top, bottom and merlin connectors for tendon systems



### Aerospace - Defence

We produce parts in high performance steels and different aluminium grades

In the Aerospace - Defence fields Ring Mill produces:

- Rings for boosters
- Rings for satellites
- Transmission forgings, transmission ring gears
- Forged components for artillery systems
- Forged components for marine and submarine applications
- Forged components for lightweight underwater training systems


### Tool Steel

We produce high-performance and high-quality tool steel grades for the tooling industry using the same production processes and quality controls used in highly demanding application sectors such as the Aerospace, Power generation and Nuclear industries.

Main products:

- tool steel grades for die casting
- tool steel grades for hot forging
- tool steel grades for injection plastic moulding





**Ring Mill is the best partner for your special project**

**We can forge your idea from raw material to your design**

# **WORLDWIDE SUPPLIER OF OPEN AND CLOSED-DIE FORGINGS AND ROLLED RINGS**

The best of forged steel - everything from a single  
source and from a family owned business



**Ring Mill S.p.A.**

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