METECH

STG

ONE-STOP SOLUTIONS TO STEEL PLANTS ALL OVER THE WORLD

METECH

STG

More than 40 years of experience, specialized in the design, manufacturing and installation of whole plants and equipment for the steel industry worldwide

METECH GROUP is an international engineering and project corporation specialized in metallurgical and mining projects through comprehensive integration of Engineering, Technology, Manufacture, Supply, Construction and Financing. METECH Group's business activities cover the entire process line of the metallurgical industry, providing ONE-STOP solutions to steel plants all over the world.

The huge structure of METECH GROUP includes 1200 employees worldwide and has the competitive advantage of a number of supply bases spread across the world. Major units are located in 4 different countries and regions, namely MEPC CHINA, METECH STG ITALY, METECH HONG KONG and METECH GERMANY.

Technology, experience and process know-how are the key of METECH STG reliability.
The company counts on a team of leading professionals, highly specialized within their field of activity, who profit from a constant innovation in technology, reaching superior quality and performance.
Metech STG has a long experience in the design and construction of plants and equipment, which includes the creation of brownfield and revamping projects, greenfield and turnkey projects, as well as the supply of all the related spare parts.
The company in-house dedicated and experienced Erection and Commissioning Team, for plant fast and safe start-up, its dedicated assistance in plant operation for quick achievement of the Learning Curve, its after sales service by a highly specialized team are a pledge of utmost satisfaction for our Clients.

METECH STG ITALY

ENGINEERING
Udine, Italy

METECH STG ITALY

PRODUCTION & ENGINEERING
Brescia, Italy

MEPC CHINA

Beijing, China

METECH HK

Hong Kong, China

METECH GERMANY

Germany

Metech STG History

The company history started at the turn of the 20th century with a small workshop for wrought iron which steadily widened its scope of action till joining with other companies and creating a firmly established reality in steel plant engineering, manufacturing and installation.
Metech STG is the result of the subsequent merging, over the last 40 years of its history, of several well known Italian companies with a long steel tradition, featuring steel expertise and proven technology in different fields, which developed the engineering and manufacturing of their particular equipment.
The complementarity of these different areas of know-how and experience allow METECH STG to supply equipment and spare parts for the whole steel processing line, from scrap melting to continuous casting, to product rolling and finishing, assisting its customers with certified competence, supplying Italian quality in the creation of Electric Arc Furnaces, treatments for secondary metallurgy, continuous casting machines for billets and blooms, de-dusting and fume treatment plants, reheating furnaces, hot rolling mills for long products, water treatment plants, auxiliary equipment and automation.

STB - Tecnosiderurgica Bresciana
was focused on the engineering and manufacturing of Electric Arc Furnaces - EAF, Ladle Furnaces - LF, Continuous Casting Machines - CCM for billets, blooms and slabs, Vacuum Degassers - VD, Vacuum Oxygen Degassers - VOD, Argon Oxygen Degassers – AOD and on the related auxiliary equipment for melt-shops.

TECOAER - Tecnologie Ecologiche Aerauliche
was centered on the development of De-dusting Systems for EAF, BOF, BF, heat recovery solutions, energy saving systems, recycling technologies for waste products.

GETECO
was experienced in the design, manufacturing and supply of Rolling Mills for long products: rounds, rebars, wire rods, profiles, sections, etc. as well as on Reheating Furnaces solutions (walking beam, walking hearth, pusher type).

SINTEC
was leader in the development of engineering solutions for Rolling Mills for long products.

SIDFORNI
was a leading provider of advanced Reheating Furnace and heat treatment furnace technology.

METECH STG

TURNKEY PLANTS

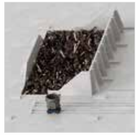
The full implementation and commissioning of international turnkey projects is one of the main strengths of Metech STG. The significant experience of our technical team provides 3D feasibility studies based on analysis and value engineering after a thorough assessment of all possible variables, including emission control management for a safe compliance with environmental exigencies and regulations, water systems and auxiliary plants supply, whole plant execution according to budget, schedules and required performances.
Our technical experts and engineering teams can follow the various phases of project development: Engineering, Procurement, Construction, Commissioning and Performance Tests. Our project managers address with a targeted method all exigences as they arise, adopting a specific approach, devising a clever sub-contracting strategy, planning time schedules and devising state of the art solutions, quality oriented and aimed at cost savings.
Metech STG main asset is the capability to provide a total in-house job accomplishment, from the general design and coordination of the project layout, through detail engineering development, equipment manufacturing in our internal workshops, erection and commissioning by our dedicated teams, till plant completion, subsequent know-how transfer and on site personnel training.

METECH STG

MINIMILLS and INTEGRATED PLANTS WITH MULTI FLEXIBLE ROLLING MILLS

Metech STG conceives minimills and integrated plants with a compact layout, where the whole steel production process takes place, starting from scrap melting in the Electric Arc Furnace, proceeding through continuous casting and ending with product rolling and finishing. These arrangements simplify organization and raw material transportation, allow production flexibility and reduce logistic costs for final product distribution.
Using Metech STG updated technologies, it is now possible to design high efficiency minimills whose environmental impact is close to zero. Advanced automation and control systems allow process optimization and very low emissions, in line with ecological exigencies.

Product range	
Round and deformed bars	from 6 to 40 mm dia.
Wire rod	from 5.5 to 20 mm
Angles	from 25 x 25 to 60 x 60 mm
Channels	from 35 x 15 to 60 x 40 mm
Tees	from 25 x 3 to 50 x 6 mm
Flats	from 30 x 5 to 80 x 30 mm
Starting Material	billets up to 160 mm Sq 12 m length


1. Scrap Yard


2. Electric Arc Furnace


3. Ladle Furnace


4. Continuous Casting Machine


5. Reheating Furnace Hot/Cold Charge


6. Rolling Mill


7. High Speed Block


8. Wire Rod Mill


9. Flying Dividing Shear


10. High Speed Bar Delivery


11. Cooling Bed


12. Bundling, Stacking and Packaging Area

MELTSHOP and CONTINUOUS CASTING MACHINE










Main meltshop and CCM characteristics:
- Supply of ultra-high power EAF with EBT bottom tapping system.
- Semi-automatic EAF tilting system allowing safe checking of furnace tapping.
- Modern EAF / LF Electrode Control System for furnace operation and melting control optimization, to improve energy efficiency.
- Level 2 automatic EAF melting process control.
- Efficient and powerful dedusting systems for the treatment of EAF and LF off-gases during scrap melting and steel refining, fulfilling the strictest environmental requirements, aimed at energy consumption reduction and at attaining improved working conditions in the melt-shop.
- Level 1 and Level 2 automatic CCM speed casting and secondary cooling control.

Possible plant features	
Production capacity	up to 1,000,000 t
Starting material	scrap or scrap + DRI
Steel making process	Electric Arc Furnace Capacity from 30 to 220 t
Secondary metallurgy	- Ladle furnace - Capacity from 30 to 220 t - Ladle Furnace + Vacuum degasser / Vacuum oxygen degasser (for special steels)

Continuous Casting Machine	
Annual output capacity	from 300 t/y to 1.000,000 t/y
Number of strands	from 1 to 6
Casting radius	from 5 to 12 mm
Casting sections	round blooms from 200 to 400 mm square billets from 125 to 250 mm beam blank up to 430 x 300 mm

LONG PRODUCT ROLLING MILLS




Metech STG rolling mills are the result of the joint efforts of an engineering department with a longstanding experience in this field. Our highly skilled professionals cover the whole plant development, from billet heating in the reheating furnace, to long product rolling and packaging in the finishing area.
Metech STG provides to its customers full rolling mill design, manufacturing and commissioning and can create customized machines which can meet any kind of requirements, finding the best specific solution and adapting to special needs.

Metech STG rolling mills for long products feature:
- High equipment reliability
- Wide range of product sizes
- Highest allowable material yield
- Low transformation costs
- Low spare parts costs
- Low maintenance/set up production down time
- Higher quality on finishing products
- Shortest equipment delivery/erection/start up time

FINISHING AREA



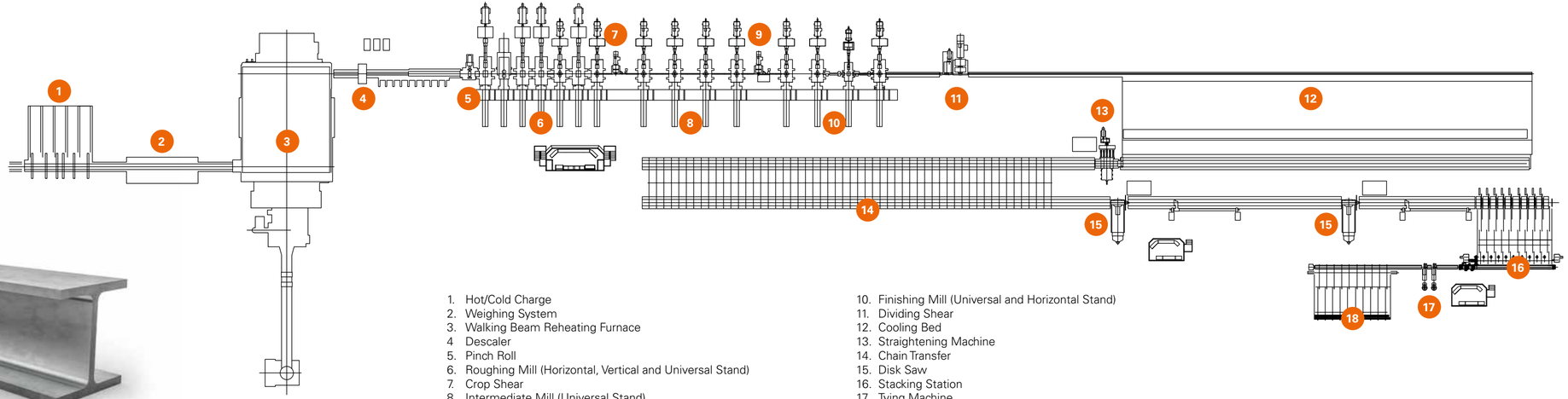


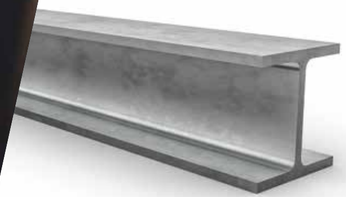
Metech STG rolling mills for rebar, medium sections, wire rod and special steels feature fully equipped areas for rolled stock finishing after quenching and tempering for rebars, or thermal treatment for rounds and wire rod.
After being cut by the dividing shear, the product enters the finishing area. Metech STG can supply apron type discharging or twin channel system on cooling bed for rebar, rounds and sections, laying head and conveyors systems for wire rod and Garret units for big rounds in coil.
According to the kind of rolled stock, Metech STG finishing line is completed by different machines for product bundling and packing: bar counting device, bundling and lowering units, stacking units and controlled cooling lines, trestle carousels, tying and strapping machines and other equipment.
In-house machine production allows Metech STG to provide to its customers fast technical assistance and subsequent spare parts availability.

MEDIUM SECTION ROLLING MILL

The experienced process engineers of Metech STG dedicated Rolling Mill team devise medium sections RM for a wide product range. Billets or beam blanks, coming from hot or cold charging, enter the stand mill area which consists of Metech STG robust housing-less rolling stands with alternated horizontal and vertical stands in the roughing mill; horizontal, vertical or universal stands in the intermediate mill; horizontal and universal stands in the finishing mill, according to roll pass design.
After its stay on the cooling bed, the product enters the finishing area for final processing through our sturdy, fully equipped Multistrand Straightening Machine.
In the end, the product goes through the last part of the finishing area, which is composed by cold saws for final length cutting, stacking unit, tying or strapping machine, discharging unit, weighing machine and collecting station, and is finally moved to the packing and storage area by crane with magnets.

Product range	
Angles	from 80x80 to 200x200 mm
Channels UPN	from 80 to 280 mm
IPE beams	from 80 to 400 mm
HE beams	from 80 to 240 mm
Starting material	Billets up to 200 mm Beam blanks up to 430 x 300





1. Hot/Cold Charge
2. Weighing System
3. Walking Beam Reheating Furnace
4. Descaler
5. Pinch Roll
6. Roughing Mill (Horizontal, Vertical and Universal Stand)
7. Crop Shear
8. Intermediate Mill (Universal Stand)
9. Crop Shear
10. Finishing Mill (Universal and Horizontal Stand)
11. Dividing Shear
12. Cooling Bed
13. Straightening Machine
14. Chain Transfer
15. Disk Saw
16. Stacking Station
17. Tying Machine
18. Collecting Station



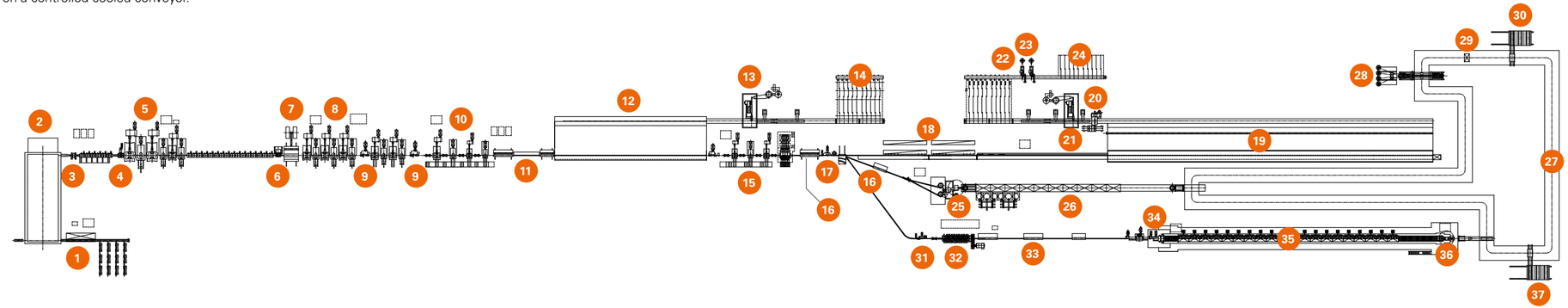




SPECIAL STEEL ROLLING MILL

Metech STG expert evaluation of rolling mill arrangement allows our engineering department to provide technical advice and support, both on mill revamping issues and on new rolling mill projects in view of particular production needs and customer exigencies.
Our process engineers conceive special steel rolling mills with hot or cold charging.
After the Rolling Stand Mill area, rounds for machining and springs and spring flats are directly conveyed to the cooling bed and subsequently to the finishing area.
As far as wire rod and big rounds in coil are concerned, the rolled stock is conveyed to different production lines. In the Wire Rod Line the product undergoes water cooling before and after both the Finishing and the Sizing Block, reaching the finishing area through a controlled cooling conveyor. In the Big Rounds in Coils Line the rolled stock is water cooled before and after the Sizing Block, it enters the Garret coilers and reaches the finishing area on a controlled cooled conveyor.

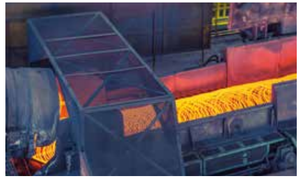
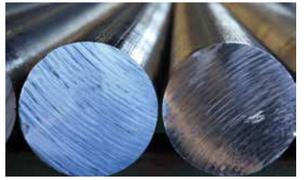
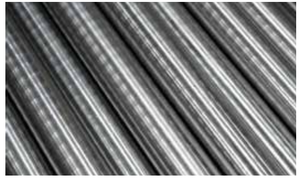
Product range	
Wire rod	from 5.5 to 16 mm
Big round in coil	from 18 to 50 mm
Rounds for machining and springs	from 18 to 60 mm
Spring flats	from 50x4 to 120x40 mm
Starting material round blooms	up to 350 mm



1. Hot/Cold Charge
2. Walking Beam Reheating Furnace
3. Descaler
4. Pinch Roll
5. Roughing Mill
6. Shear
7. Induction Furnace
8. Intermediate Mill
9. Crop Shear
10. Finishing Mill
11. Water Cooling Control
12. Cooling Bed
13. Disk Saw
14. Bundling Stacking Station
15. Sizing Mill
16. Water Cooling Control
17. Dividing Shear
18. Slow Cooling Boxes
19. Cooling Bed
20. Shear
21. Disk Saw
22. Bundling Station
23. Tying Machine
24. Collecting Station
25. Garret Coilers
26. Walking Beam Coil Conv.
27. Power & Free Line
28. Press and Tying Machine
29. Weighing Station
30. Discharging and Collecting Station
31. Crop/Chop Shear
32. High Speed Block
33. Water Cooling Line
34. Laying Head
35. Controlled Cooling Conveyor
36. Coil Forming Station
37. Discharging and Collecting Station





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REHEATING FURNACE

Metech STG can provide a full set of reheating furnaces and heat-treatment furnaces with all type of arrangements for metallurgical plants. It is specialized in the design and construction of the whole equipment involved in the combustion process, in temperature control technology and in the control of the combustion ratio.
Metech STG supplies taylor-made solutions for an integrated connection between the continuous caster, the reheating furnace and the rolling mill, in order to perform the hot charging process of the as-cast billets from the CCM into the RHF, thus allowing energy savings in the range of 30-50% if compared to the traditional cold charging.

Main RHF focuses:
- Modern profile
- No dangerous points as separation noses
- Low fuel consumption
- Good product temperature uniformity
- Reduced product bending
- Good product heating curve
- Minimized scale loss
- Reliability during exercise
- Flexibility both with cold and hot product charge
- Low maintenance

Possible RHF features	
Rolling mill feeding	cold charge or hot charge

Reheating Furnace	
types	pusher type walking hearth walking beam
capacity	from 30 tph to 300 tph
burners	unitary thermal power from 100,000 to 5,000,000 kcal/h
burner feeding	natural gas/LPG/oil/gasoil/crude oil/ oil coming from tyre pyrolysis/coke oven gas/blast furnace gas/syngas

METECH

SERVICE and AFTER SALES

Metech STG after sales service highly specialized team applies its know-how and experience in order to detect possible faults, operating a diagnosis based on data collection and consequently implementing technical solutions to possible problems. Our technicians also devise improvement solutions, advising the customer to address specific areas liable to be perfected, providing feedback for innovation engineering, with the aim of steadily supporting the entire process value chain.

Main activities:
- Specifically aimed sales visits
- Troubleshooting
- To the point analysis
- Fault detection
- Technical improvements
- Laboratory testing
- Overhauls
- Refurbishments
- Plant optimization

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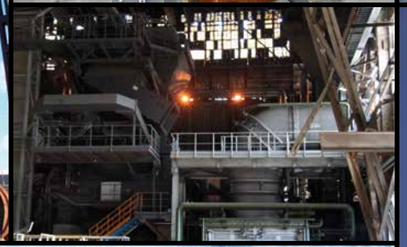
FUME TREATMENT PLANTS and WATER TREATMENT PLANTS

During its whole history, Metech STG has been helping its customers to make clean steel, boasting almost 40 years of tradition in anti-pollution systems for the steel industry. Our philosophy is to provide to our clients a complete package from the movable duct of the EAF, up to the FTP stack.
In line with the agreement for emission reduction within the global climate deal of 2015, Metech STG offers energy saving solutions in the melt-shop, by using water cooled panels, scrap preheating, electrode cooling and regulation, as well as a fully automatic process.
From this perspective, we also focus on the design and manufacturing of

- Fume treatment plants for the collection and filtration of the off-gases coming from EAF and LF during scrap melting and steel refining;
- Water treatment plants to treat water to meet the chemical and physical parameters required by the steelmaking plant and rolling mill.

Metech STG approach features:

- Care for strict environmental issues
- Dedication in pursuing energy consumption reduction
- Need to improve working conditions in the melt-shop



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