
BENDOTTI

bendotti
Worth the difference.

This rider makes the difference between a bendotti furnace and the others.

**For its furnaces bendotti has chosen to install only riders with a nickel content of up to 50%.
In a bendotti furnace the risk of cold spots is reduced to a minimum thanks to the work of a thousand riders in super-alloy.**

This bolt makes the difference between a bendotti furnace and the others.

**bendotti has chosen to use only galvanized bolts for its furnaces.
In a bendotti furnace there are tens of thousands of them that never go rusty.**

This fused cast refractory block makes the difference between a bendotti furnace and the others.

**For its pusher furnaces bendotti has chosen fused cast blocks with a 98.5% alumina content, that is, a virtually pure compound.
In a bendotti furnace productivity is improved by hundreds of fused cast blocks in superior material.**

This anchoring system makes the difference between a bendotti furnace and the others.

**For its furnaces bendotti has chosen anchoring systems with a high content of alumina and hangers in stainless steel.
In a bendotti furnace thousands of ceramic anchors and relative hangers guarantee a long productive life.**

This guide makes the difference between a bendotti furnace and the others.

**For its pusher furnaces bendotti has chosen to install only stainless steel guides with Stellite weld beads on the top.
In a bendotti furnace maintenance is reduced to a minimum thanks to the work of these guides.**

This cast roll makes the difference between a bendotti furnace and the others.

**For its walking beam and walking hearth furnaces bendotti has chosen steel alloy cast rolls with the surface in UMCo.
In a bendotti furnace the maximum resistance to abrasion and high temperature is thus guaranteed.**

This door makes the difference between a bendotti furnace and the others.

**For its furnaces bendotti has chosen cast-iron high resistance doors with the lower plate in stainless steel.
In a bendotti furnace resistance at the moment of opening is thus guaranteed at the maximum level.**

This snorkel makes the difference between a bendotti furnace and the others.

**For its furnaces bendotti has chosen only snorkels in stainless steel.
In a bendotti furnace reliability is thus guaranteed at the maximum level.**

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Worth the difference.

These people
make the difference
between a
bendotti furnace
and the others.

bendotti furnaces
are the result of the
highly professional work
of people who, raised in
an industrial tradition
that goes back
over 100 years,
are still at the forefront
of development.
In a bendotti furnace
history and future work
at the maximum level,
made to measure,
for every customer.

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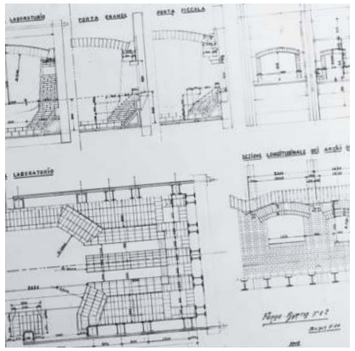
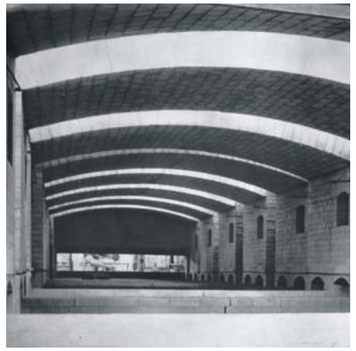
Worth the difference.
History.

FORNI INDUSTRIALI BENDOTTI was established in Costa Volpino in 1916 by engineers and designers with extensive experience in reheating furnace technology.
The original ingenious idea came from Evaristo Bendotti who created an industrial furnace to reheat steel pieces to be forged.
Since then, four generations of the family have made **bendotti** a world-wide market leader in this field.
After the second world war, **bendotti** contributed to the growth of the Italian steel industry to become, over the years, a well-known supplier of industrial reheating furnaces.
In the early '60s **bendotti** was the first to apply the innovative concept of furnace prefabrication.



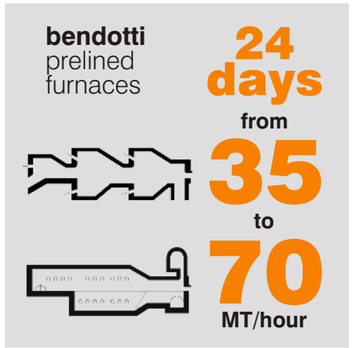
1916

First furnace designed by Evaristo Bendotti



1967

First prefabricated furnace by bendotti. The furnace was manufactured in modules and completely pre-assembled in the workshop before being shipped to the site.

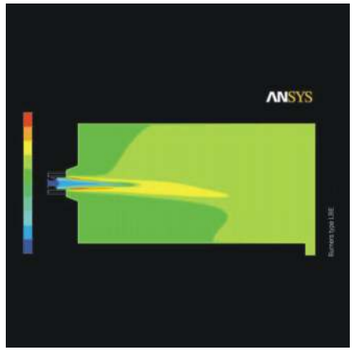


1982

First top/bottom fired furnace: thanks to the prefabrication concept, an old 35 tph furnace was replaced in only 24 days.

2006

First prefabricated walking beam furnace for slabs and blooms up to 500 mm thick.



2010

Development of Ultra Low NOx burners with thermo-fluid-dynamic SW.

2016

Car bottom furnace with regenerative burners.

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Way of working.

For all the furnaces supplied by **bendotti**,
design and manufacturing are carried out in-house.
This enables **bendotti** to achieve continuous
quality control throughout the entire cycle from
the enquiry stage up to the performance tests.
The Project Management Team works in cooperation
with the customers in order to meet
the most demanding requirements and schedules.
The company is certified ISO 9001 by
Lloyd's Register Quality - Ukas Quality Management.

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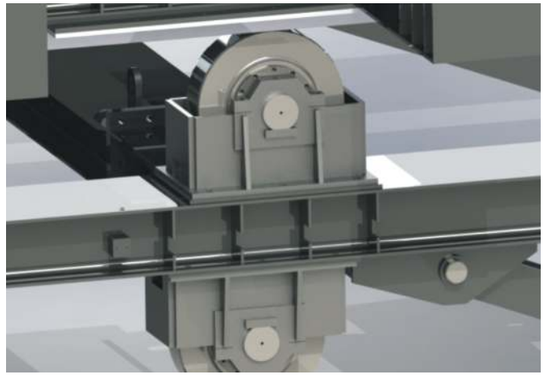
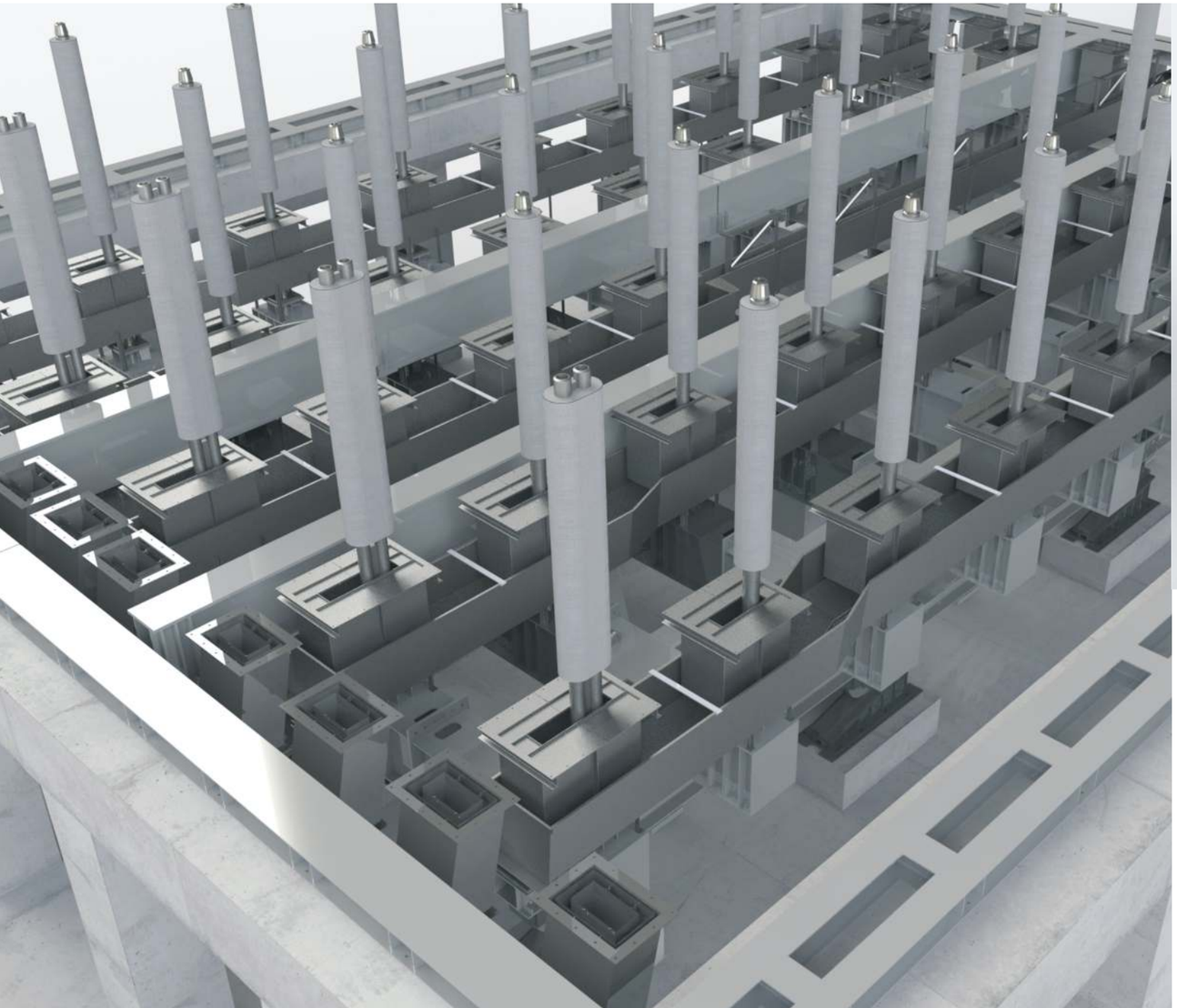
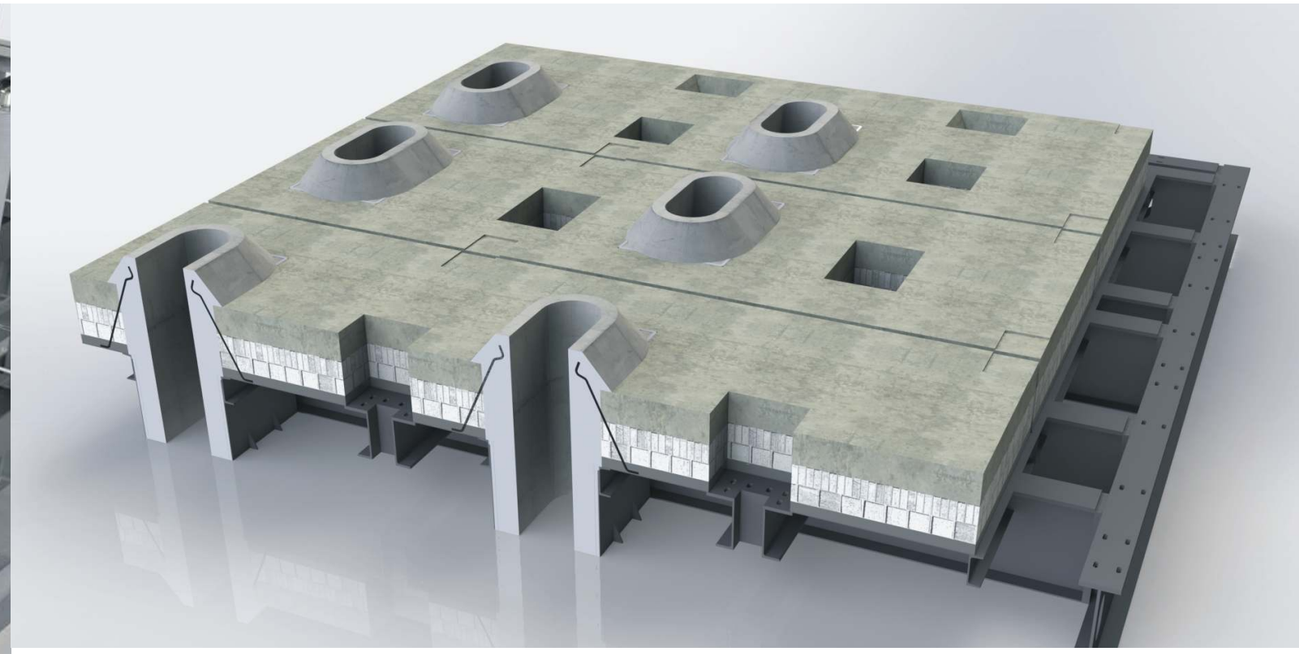
Design.



Each project is designed by the in-house technical department and checked by the R&D experts before manufacture.
The customization of each furnace is possible thanks to **bendotti**'s engineering flexibility, while quality is certified by an exchange of information which includes manufacturing and feedback data from years of operating in this field.
The technical department is equipped with the most advanced computerized programmes which permit the analysis of finite elements and CFD simulations.






CARRARA
OMIS
CARRARA
OMIS

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Prefabrication.

Prefabrication is carried out at the in-house workshops and consists mainly of the installation of the complete furnace with relevant refractory material, including waste gas duct and chimney, handling system, machines, hydraulic unit, combustion system complete with burners. Moreover the installation of the refractory material cast in the in-house mixing plant guarantees an optimal quality of the refractory lining.

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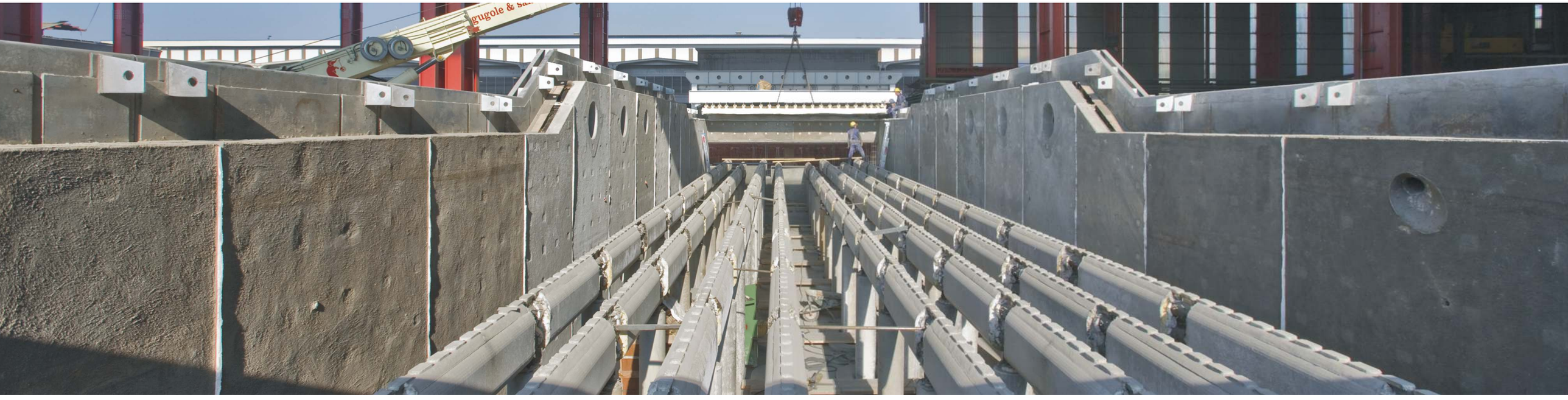
Assembly.

The prefabrication concept, applied to all the furnaces and peculiar to **bendotti**, gives unique advantages during the erection on site such as reduced erection time and consequently lower costs and earlier production, with no need either for refractory specialists or for tools for refractory on-site installation.
In addition, the risks of mistakes are close to zero, since all the parts are preassembled and checked in-house and the erection is generally completed much more safely.
Thanks to **bendotti**'s method, a 120 t/h walking beam furnace was erected in just 93 days in 2008 (a world record).



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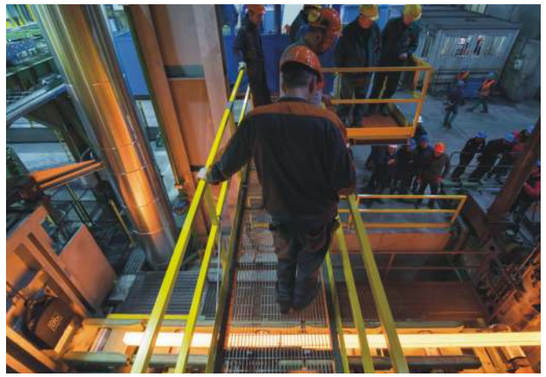
Start-up.



Time saving is second only to the quality of **bendotti**'s furnaces:
24 days to replace an existing furnace
(Lech Stahlwerke in 1982) and
13 months from the contract signing
to the first hot billet
(ArcelorMittal Montreal in 2012).


forni
industriali
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Worth the difference.

Three hundred
and sixty.

bendotti has designed, manufactured and
installed 360 furnaces in 40 different countries and
more than half of them are still in operation
to the customer's complete satisfaction.
This is a concrete sign of market leadership achieved in
almost one hundred years of uninterrupted enthusiasm.
Nowadays **bendotti** is a modern successful company,
where tradition and innovation are perfectly integrated and
where forward-looking, family-run governance
is the key to success.

ACCIAIERIE VALBRUNA
High quality is our standard

ArcelorMittal

CMC Steel Texas

COGNE
Cogne Acciai Speciali Spa

DEACERO

Duferdofin NUCOR

EVRAZ

PITTINI FERRIERE NORD

FerrieraValsabbia

GERDAU

LSW
Lech-Stahlwerke

METINVEST

NLMK

NUCOR

OR MARTIN

TATA STEEL

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Worth the difference.
Combustion, R&D.

The research and development department has always been one of **bendotti**'s first priorities.
This is the reason why the Company decided to establish an R&D Centre to help customers respect the most demanding pollution norms.
The test furnace was installed at ESA workshops in Curno (near Milan): it is equipped with a centralized recuperator and has been designed to reach a thermal capacity of approximately 3,500 Mcal/h.
Furthermore, it is provided with a water-cooled serpentine that during operation can be moved back and forward to obtain the required heat absorption and perfectly simulate operating conditions; both radiant and side burners with any kind of fuel can be tested.
The furnace is a clear example of **bendotti**'s commitment to engineering, improvement and development of burners.

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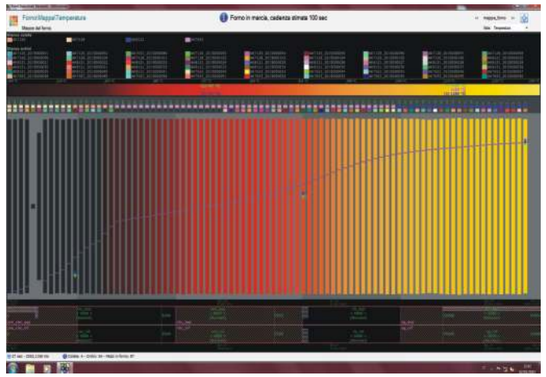
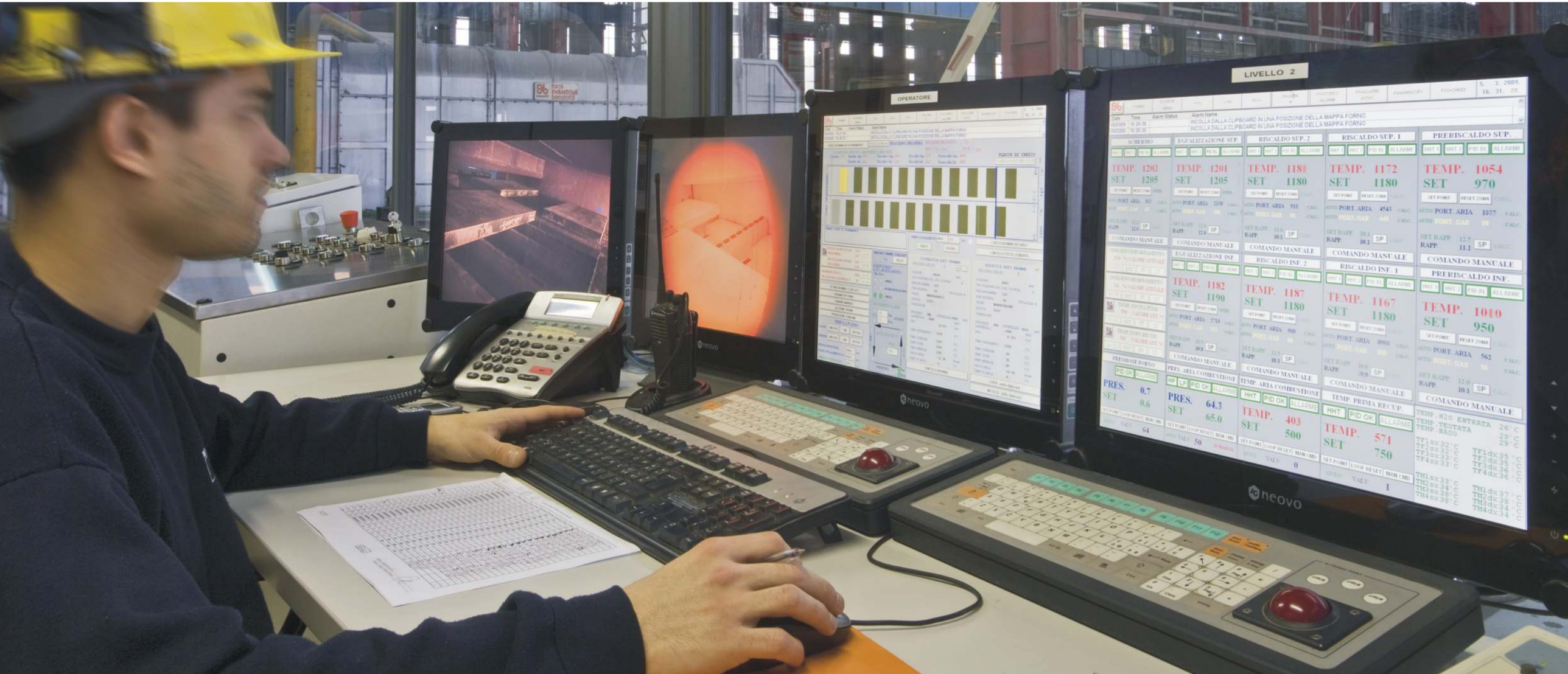
Level 2 Automation.



The furnace control system is operated via PLC based on process control (according to the customer's preference).
The system includes mainly temperature and ratio control, furnace and combustion air pressure control, flow rate compensation for combustion air temperature.
Handling motion control and material tracking are included too.
Quality in reheating steel means standardization and optimization of the reheating process.
bendotti provides mathematical models and built-in applications for this purpose.
Data for in-line and post-processing quality investigation includes temperature, decarb and oxidation calculation for each charged product.



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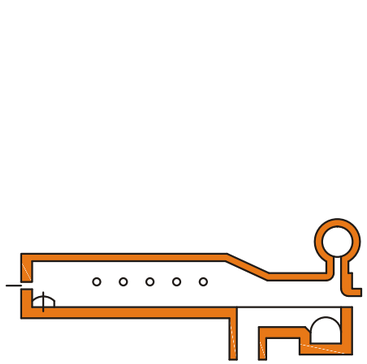
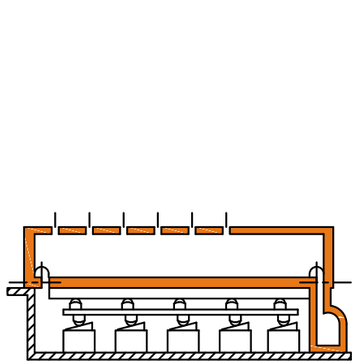
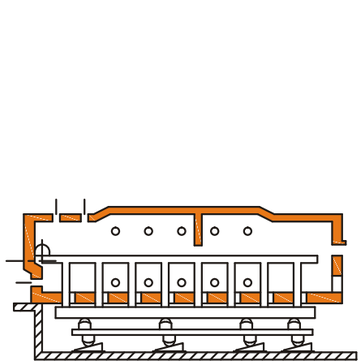
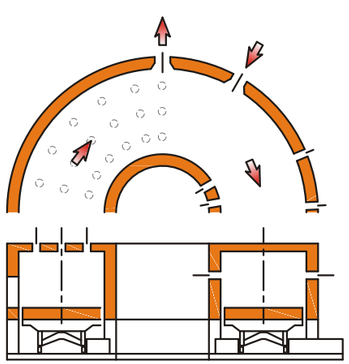
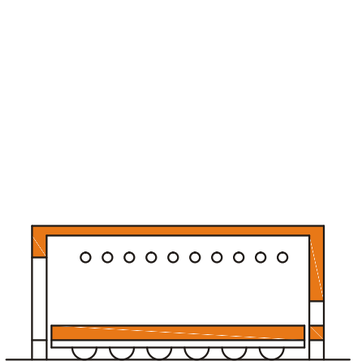
Types of furnace.

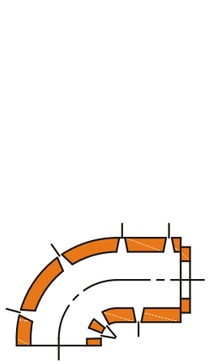












Pusher Type Furnaces

Pusher Type Furnaces
can be designed: full hearth solution,
with a waste gas recirculation system,
top and bottom fired.
Their application is appropriate
when the materials to be heated
are billets, blooms and slabs of
low/medium carbon steel,
top firing only or top and bottom
depending on stock thickness.
Normally this kind of furnace is
used where the plant layout
has space limits and when
the plant investment is limited.

Walking Hearth Furnaces

Walking Hearth Furnaces
are appropriate when the materials
to be heated are billets, blooms and
slabs with a wide variety of steel
grades, with medium thickness and
in those cases where the plant layout
has fewer limits.
The installation of this kind of furnace
requires a higher plant investment
compared with a pusher type.

Walking Beam Furnaces

Walking Beam Furnaces are
appropriate when the materials
to be heated are billets, blooms and
thick slabs with a wide variety of
steel grades, of any thickness and
in those cases where the plant layout
has no space limits.
The installation of this kind of furnace
requires quite a significant plant
investment.

Rotary Hearth Furnaces

Rotary Hearth Furnaces
are used for product types
when the materials to be heated
are short and very heavy,
with a wide variety of steel grades.
Their installation requires space
availability in the plant layout and
the investment is quite significant.

Car Bottom Furnaces

Car Bottom Furnaces
are batch type furnaces and
are particularly appropriate when
the materials to be heated
are loose pieces also of
big dimension mainly for forging
plants or special heat treatment.
The installation of this kind
of furnace requires very little space
availability in the plant layout and
the investment is quite low.

Customized solutions

bendotti always offers customized
solutions also providing handling
and/or auxiliary systems such as
Water Treatment Plants,
thus ensuring that the customer
receives a product for which
bendotti is entirely responsible.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