Hotwork
INTERNATIONAL

"We continue to transform ourselves on new challanges to improve satisfaction among clients and employees"

We at Hotwork International Group would like to extend our warmest greetings to you!

Hotwork celebrated its 61st anniversary last 2023. Although it was in 1986 that Hotwork International became fully family owned, we can trace our roots to the foundation of the Hotwork Ltd. in England, year 1962.

We have built the company through deep and lasting customer relationships with the type of trust that can only come over time. Our customers have known us, our skills and engaged us with huge variety of common or special issues or daily problems for us to solve.

We have survived for many years through constant and continuous transformations, especially in adapting to the most unpredictable situations in the markets we operate with.

The philosophy of having the clients at the heart of everything we do had become an important principle within our company. Based on this, it is critical for us that

we continue to transform amid global challenges and changes. For this to be possible, we give high regard to our employees and the people we work with. It is our priority to invest in our people with willingness to grow and be selective to those who share our philosophy for commitment, in order for us not to lose sight of the purpose we started with.

At the present, we are an innovative and market leading company with a team of 600 professionals backed up by senior engineers with over 35 years of experience.

As we continue to grow and develop our reach globally, we are proud to be in operations in over 65 countries worldwide and offices in over 15 countires.

Deep and lasting customer relationships with the type of trust that can only come over time.

Hotwork International has become a group of companies over the past years, that will never lose sight of its heritage and history.

From inception, we have created and maintained an environment where close relationships, both between our own team and with our customers, are nurtured. I am extremely proud to be CEO of a group of companies which, despite its global reach and scale of operation, still retains these core values.

My message would be lacking without a look forward to the future. Developing new ways to work safer and more efficient, but also looking to solutions out of the box to reduce emissions and improve energy efficiency is only a part of what we are developing. Reducing green house gas emissions and generally cut on CO2 either by switch to Hydrogen or alternative and sustainable fuels along with applying renewable electrical heating systems is part of our portfolio for many years. Future technology will include carbon capture and many more existing technologies our group is currently developing.
We are sure to be your expert to guide you in new trends which can improve efficiencies, lower costs, and make you a more agile organization.

To all our clients, I want to express my gratitude and thank you very much for your trust in our team and company. If you are not yet a client, we thank you very much for your interest in our company and I look forward to building a lasting relationship with many more of you in the future.

Benjamin Köster
Hotwork International Group
CEO

Hotwork
INTERNATIONAL

VISION

To be the benchmark for the industries we assist with specialized combustion and thermal process applications, recognized for our engineers, skills and ethics of our business practices and the quality of our services.

MISSION

To build on our extraordinary history of innovation and service excellence to continue shattering the boundaries of what can be achieved with thermal process application and combustion technology. As an early pioneer in reducing Both CO2 emissions and NOx emissions tremendously, we continue to focus on providing clean, environmentally safe technology to our clients. Covering multiple industries and operate in 65+ countries from eight international hubs with technology that has been replicated worldwide. We have the capacity, the experience, and the equipment to provide highly specialized services and other innovative solutions to clients who expect and deserve only the best.

TEAMWORK

We are a committed team of 600 professionals backed up by senior engineers with over 35 years of experience. We work together; respect each other's area of expertise; and share a united corporate focus on quality service.

Core Values

VERSATILITY

Our historical versatility has allowed us to respond to and adapt to unpredictable market forces over the years, and we continue to transform amid today's global challenges. Where there's a need that fits within our capabilities, we fill it. Where there is a redundancy, we make adjustments. Improving energy efficiency is only a part of what we do. Our goal is to make sure that our clients ultimately become more agile organizations.

TRUST

We develop long-term client relationships based on the kind of trust that can only come over time. We are a reliable resource for solving the big challenges brought about by special issues as well as for small ones associated with daily operations. Innovation – Founded in England in 1962, we invented high-velocity burners to dry out or heat up refractory-lined kilns, furnaces and vessels, a unique and a never- before seen approach. We became known for our precise workmanship, but just as importantly, we have become known as relentless innovators for new, better and safer ways to do the work we do.

INTEGRITY

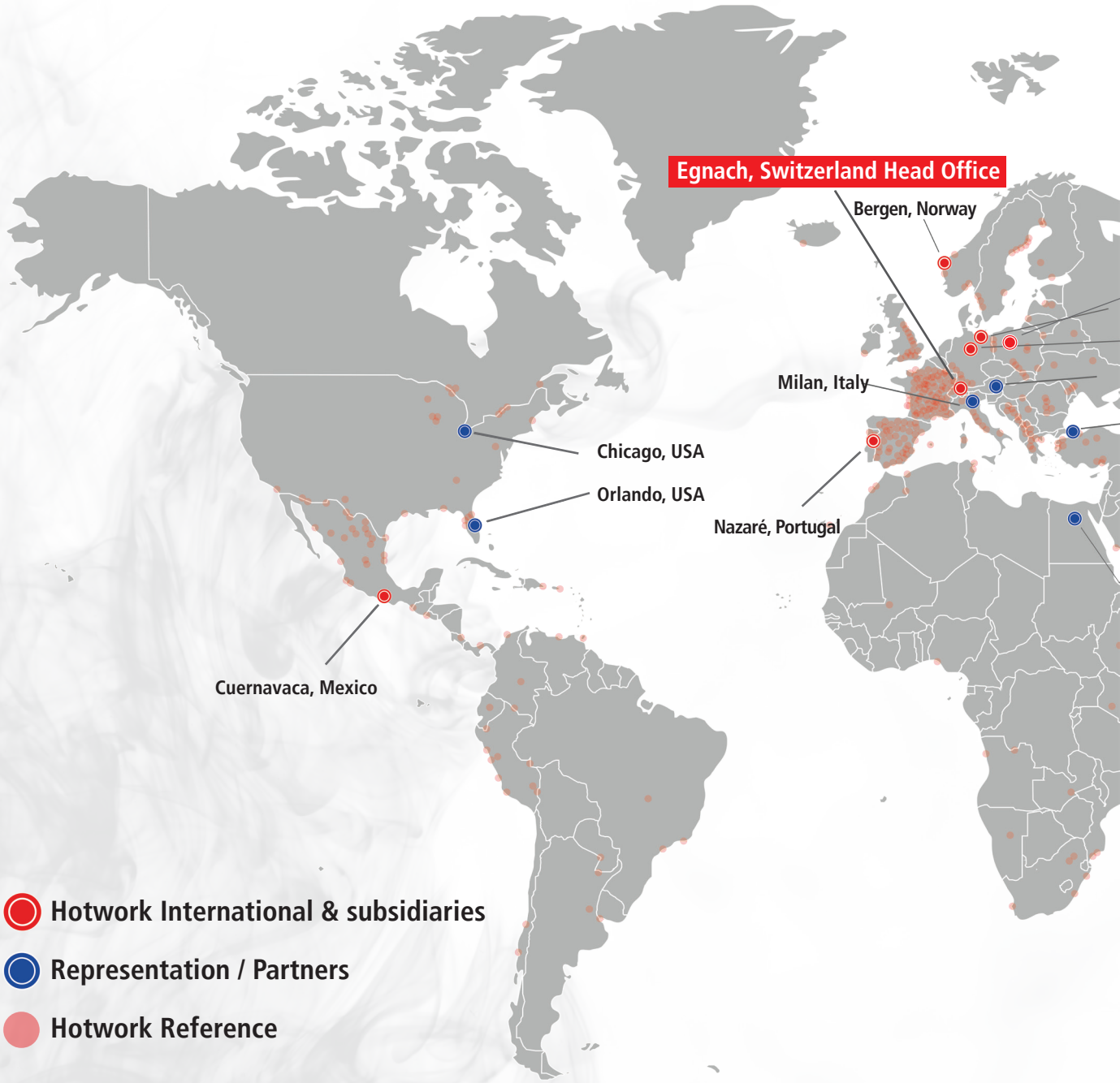
We always live up to our clients' expectations; we deliver efficient, practical solutions; we provide thorough follow-up; and we continue to make R&D investments so that we are prepared to meet today's challenges as well as those that may lie ahead. Because of our senior engineering expertise, our highly-developed technology, and our uncompromised quality assurance, our clients know that they are in expert hands.

WORLDWIDE AVAILABILITY

24/7, 365 DAYS A YEAR

Head Office:
Egnach / Switzerland

Worldwide Availability:
Chicago, USA
Orlando, USA
Houston, USA
Cuernavaca, Mexico
Bergen, Norway
Berlin, Germany
Düsseldorf, Germany
Kindberg, Austria
Milan, Italy
Istanbul, Turkey
Nazaré, Portugal
Cairo, Egypt
Abu Dhabi, UAE
Dubai, UAE
Seoul, South Korea
Osaka, Japan
Hong Kong, China
Shanghai, China
Vadodara, India
Bangkok, Thailand
Manila, The Philippines
Cebu, The Philippines
Jakarta, Indonesia
Nouméa, New Caledonia
Sydney, Australia



HISTORICAL MILESOTNES

1962
Hotwork Ltd. started in England

1986
Hotwork Germany was purchased by Jorg Koester and renamed it to Hotwork Koester. Since then, it has become a family business.

1992
Hotwork Koester supplies Burner and Combustion System to the Glass Industry

1996
Founding of HAL India

1994
Hotwork International Asia (Cebu, Philippines)

2000
Hotwork International China (Shenzhen)

2004
Hotwork International moved its new head office in Switzerland

2009
Hotwork International continues to grow with the second generation

2015
Founding of Heat Up Latin America in Mexico and Hotwork-XIX in Shanghai, China

2016
Hotwork International Indonesia (Jakarta)

2018
Founding of International Refractory Lining Services Philippines (IRSP) in the Philippines

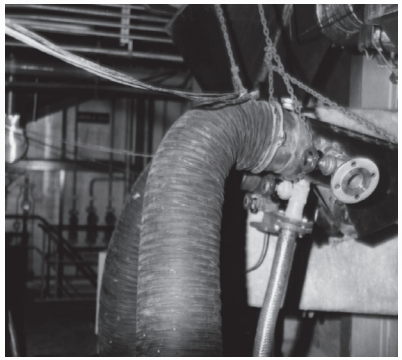
2019
Partnering with LINC in New Caledonia

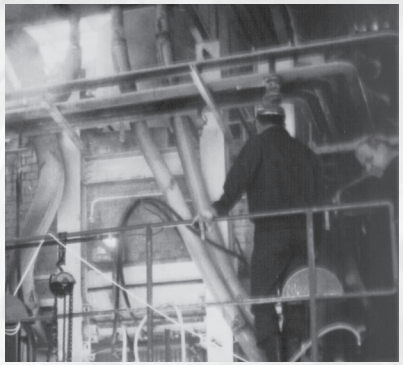
2020
Founding HAG in Sydney, Australia

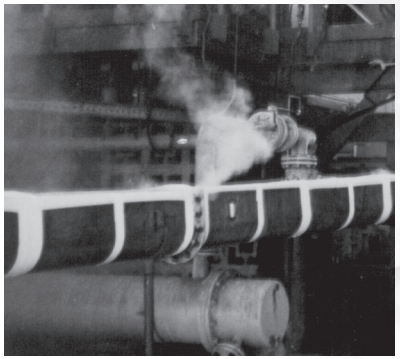
2021
Founding of Total Project Managment (TPM) New office IRSP northen Philippines

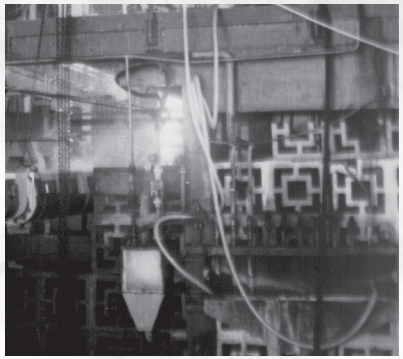
2022
Integration of Hotwork Heat Treatment and Specialized Services (HTS) New Office & Warehouse Portugal

2023
Hotwork International welcomes HAL & HAG to the International group







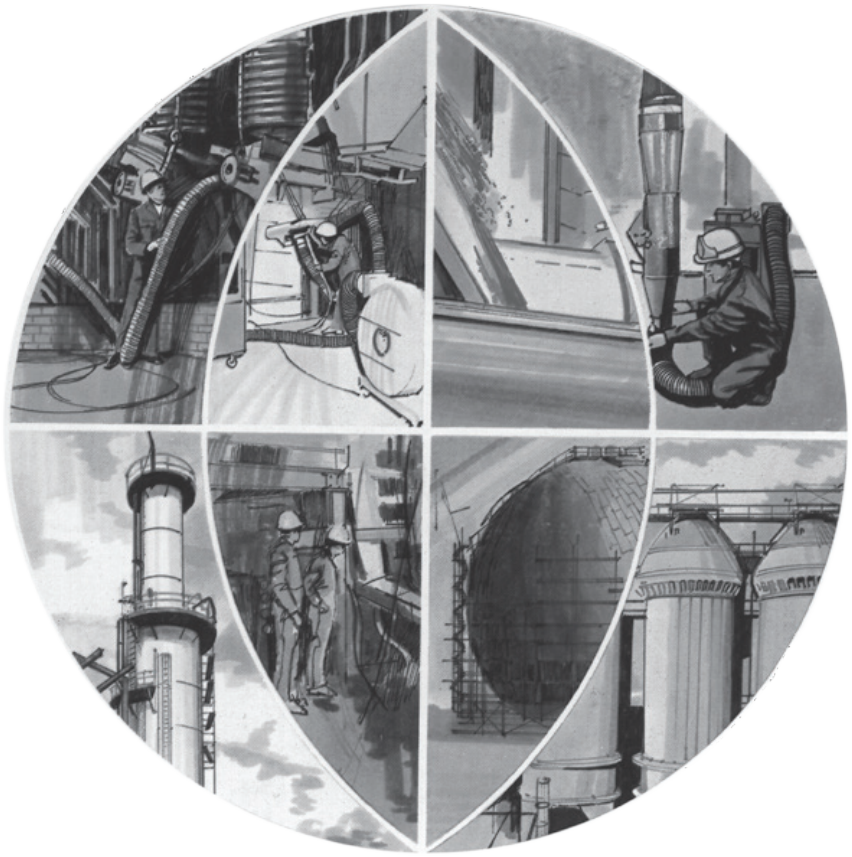


How we started...

Hotwork Limited, founded in England in 1962, invented high-velocity burners to dry out or heat up refractory lined kilns, furnaces and vessels - a unique and a never-before seen approach. Such technology was applied in glass, cement, steel, aluminum, petrochemical and other industries.

In 1990's, under a new management as Hotwork Köster, the company took multiple steps forward and developed combustion technologies to be applied mainly for the glass industry. Started with majority of the furnaces in Europe, and subsequently outspread worldwide, burners were operated to provide low NOx and improved energy efficiency.

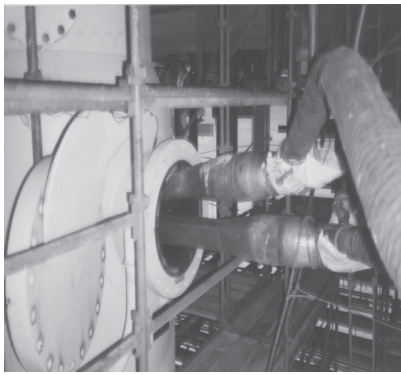
...your partner in thermal process application since 1962

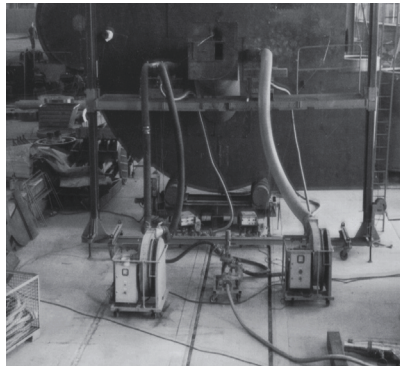


Around year 2000, the company was rebranded as Hotwork International and the research and development remained as its utmost priority. Innovations – such as its flameless burners, auxiliary fuel injection and waste gas recirculation – were realized in partnership with different field experts.

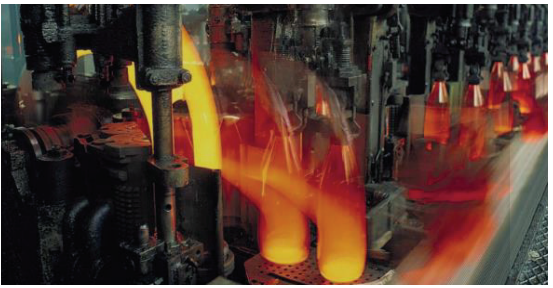
In 2009, tailor-made Quadrafalo Sweep Burner technology was commissioned for the secondary Aluminum Melting process; providing low emissions, high energy efficiency (up to 60%) and extremely low dross (~20%).

Since 2010, Electric Boosting and Bubbling were incorporated to the Hotwork range of products, which gave clients additional reliable options of a primary heat source that increased melting performance and improve glass quality;





GLASS



Services

- Furnace Glass Draining
- Furnace Heat Up
- Furnace Cool Down
- Furnace Expansion Control
- Cullet Fill-in
- Thermal Regenerator Cleaning
- Welding and Hot Repair
- Regeneration Rebuild withouth Production Loss

Products

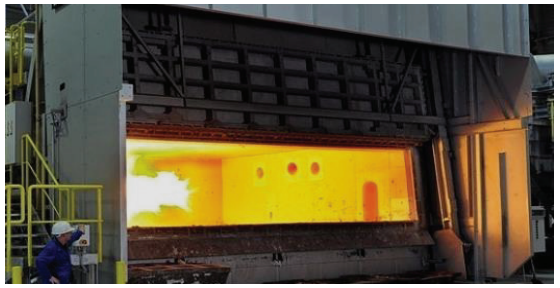
- Air-Fuel Combustion
- Oxy-Fuel Combustion
- Electric Melting/Boosting
- Bubbling

STEEL

Services

- Dry Out and Pre-heating
- Blast Furnace Repair
- Blast Furnace Re-line
- Heating Hotblast Main and Bustlepipe
- Blast Furnace Stove Heat Up/Hold Hot
- Reheat Furnace (Walking Beam/Pusher)
- Dry Out Iron throughs /Slag runners

ALUMINUM



Services

- Dry Out and Pre-heating
- Secondary Aluminum/Smelter
- Aluminum Calciner
- Post Weld Heat Treatment

Products

- QuadrafloSweep Melting Technology
- Quadraflo Rotary Furnace Burner
- Oxy-Fuel Combustion

POWER GENERATION

Services

- Dry out of refractory lining
- Heat Treatment of components
- CFB Boilers
- Heat Recovery Steam Generator
- Incinerator
- Other types of boilers
- Post Weld Heat treatment

...serving the industry since 1962

CEMENT/ MINERALS

Services

Dry out/Pre-heating of refractory lining:

- Complete units/Greenfield
- After Maintenance
- Partial After Maintenance
- Post Weld Heat treatment

Services performed on:

- Tower
- Cooler
- Mill Heating
- Tertiary Air Duct
- Firing Hood
- Nose Ring
- Tertiary Take-off
- Bullnose
- Drop out chute
- Curbs
- Walls
- Burner Dry out
- Electrical dry out

HYDROCARBON/ CHEMICAL/REFINERY

Services

Dry out/Pre-heating of refractory lining:

- Dry out of refractory lining
- Post weld heat treatment
- Individual component heating/drying

Services performed on:

- Fluid Catalytic Cracking units
- Cat Crackers
- Flexicokers
- Reactors
- Reformer
- Condenser
- SYNGAS units
- Coke/Carbon Calciner
- Sulphur recovery units Hydrocrackers
- Waste Heat Boiler
- Spheres Tank Coating Cure
- Wet Gas Scrubbers
- Thermal Oxiders

COKE OVENS

Services

- Heat up of full battery
- Heat up of End Walls
- Heat up of Through Walls
- Heat up of Battery Sections including regenerators
- Hold Hot of ovens
- Hold Hot of Regenerators

OTHER INDUSTRIES

Services

- Mining Precius Metals
- Pulp & Paper
- Geothermal Pour
- Solar Pour
- Nuclear Pour
- Ship Buildes
- Food Processing
- Aero Space
- Heavy Industry
- Pipelines
- Offshore Drilling
- Offshore Platforms
- Tank farms

SERVICES

Furnace Draining

WITH COMPLETE WATER RECYCLING

600T of glass drained in 32hours using a scraper and cooling tower with only 5Nm³/h fresh water.

Do you need to empty the glass out of your furnace?

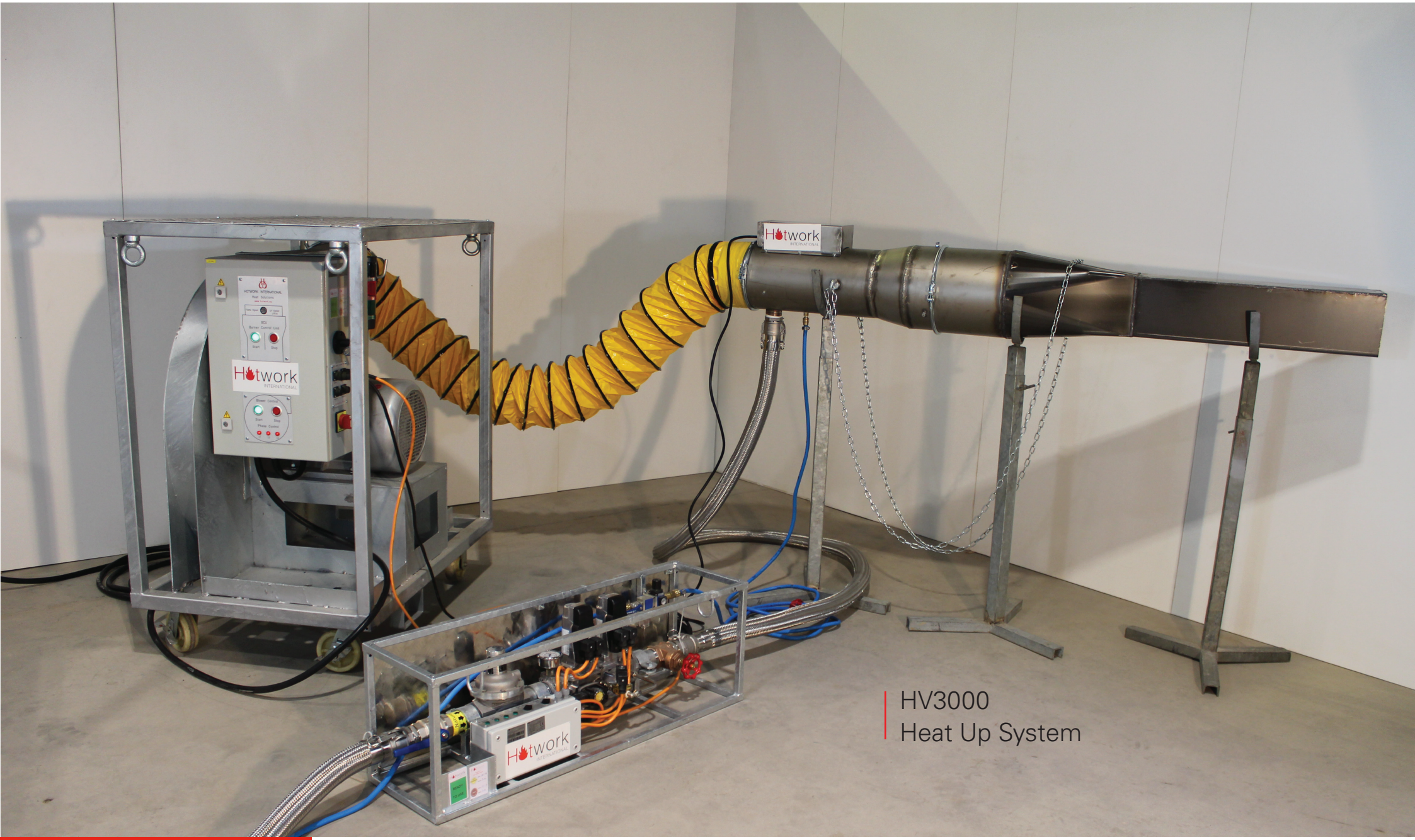
We help you plan for the best location to position a hole to drain your glass through. Drain channel , which could be up to 60 meters long, shall be installed to take the glass on a location appropriate to your need.

The molten glass falls into a jet and is projected with water at very high pressure through the channel. The mixture, hot water/glass, is separated in the scraper. The glass falls into a metallic bay where it can be picked up by a bugger and consequently recycled as cullet. The hot water (+/-98°C) is channelled through various tanks for cooling and decantation. In the last stage, the water passes a cooling tower and finally is pumped back to the jet. The complete closed circuit only needs water to replace the one lost by evaporation, making this system perfect for situations where water availability is scarce.

The Hotwork International System is suitable for all furnace designs and allows very fast furnace drainings with minimum water loss.

The service can include:

- ZAC Plate installation
- Plugging the hole after draining
- Special and dark glass draining
- Installation of Cullet Bay infront of scraper
- Complete Electrical Setup with own equipment and more.



HV3000
Heat Up System

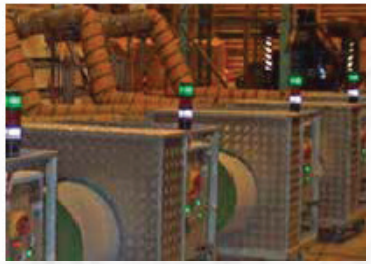
SERVICES

Furnace Heat Up

- Furnace Heat Up
- Furnace Cool Down
- Furnace Expansion Control Monitoring
- Furnace Cullet Fill in
- Wet Cullet Fill
- Vibrating Channels
- Water Cooled Vibrating Chanel
- Cullet Blowing

HV3000 & with Silencer and Filter installed on a Float Furnace Doghouse

HV3000 Heat Up burners have a max. Capacity of 300 Nm3/h natural gas and max. 5.800 Nm3/ combustion air.



Temperature & Furnace Expansion Control Monitoring

A proper expansion control will result in a stable furnace condition and longer life campaign.

Low Dusting, Wet Cullet Mixing & Vibrating Channels

An advantage of the Wet Cullet Fill In is a precise control of the moisture being added and mixed to the Cullet.

Since 1962 Hotwork has provided Furnace Heat-Ups to the major glass manufacturer worldwide. Our special heat-up technology is based on the use of Hotwork International High Velocity Burners operating on an excess air basis, which have been especially developed for the heat up of all types and sizes of glass melting furnaces. The system permits a positive furnace pressure assuring uniform temperatures in the furnace and regenerators.

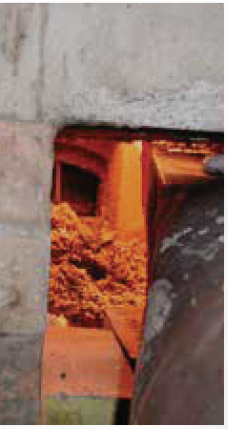
The system has been developed to ensure that precise temperature control of hot gas emissions from the burner can be regulated at all stages between 60°C and 1200°C, simultaneously eliminating of hot-spots or stagnant areas within the furnace.

The Hotwork International Technology permits temperature uniformity within a glass melting furnace of ± 3°C.

SERVICES

Thermal Regenerator Cleaning

RESULTING TO SIGNIFICANT EFFECTS ON FURNACE EFFICIENCY



WHY melt out of blocked Regenerator?

- So that the furnace can «breathe» again
- To reduce fuel costs
- To avoid the need for an unscheduled furnace repair

The plugging of checker packs is a common and troublesome occurrence in regenerator furnaces as it age and thus create major problems such as undesirable furnace pressure and inefficient heat transfer. The sulphate deposits can cause severe damage to the checker pack refractory by corrosion or mechanical attack during sublimation.

Our method is a tried and proven effective process, applying additional heat from the bottom. Sulphates melt become liquid in excess of 850°C and will start to melt and run down to the bottom of the regenerator, where they can be collected and later on removed.

The operation can be carried out on single or multiple chambers at the same time, while our highly experienced engineers will continuously adjust the melting rate in cooperation with the furnace operator to avoid any influence on the production.

This method has been successfully carried out on hundreds of regenerative furnaces.

> “Clogged Regenerator are often more than a “tolerable inconvenience”.
>
> Potential savings will invariably far outweigh our service cost.”

Since the early 1990s, Research and Development (R&D) has been a continuous endeavor for Hotwork International. The company has consistently invested in its internal research and development while also involving itself in publicly funded research projects.

Today, almost 20 years after, Research and Development remains a part of the company's principle and ideology. The evolving regulations require us to refine and tune our products; to meet the latest emission limits specifically for NOx. High energy prices lead
to the need for reduced fuel consumption.

We invest in the progress of each innovation, using new CAD softwares which enables us to not only generate 3D models of our products but also allow us to validate new products using integrated simulation systems before they are installed in a client's furnace.

Now, hundreds of furnaces worldwide have been equipped with Hotwork's technology since its first developments in the combustion field. Specially for the glass industry, our Regulating Gas Burners provide highly luminous and fully adjustable flames
with high degree flame coverage, which maximizes the heat transfer to the glass and enables a superior melting performance. The RGB provides excellent NOx levels and excellent full flame control.

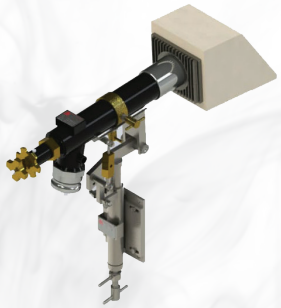
With more emphasis that is put on CO2 neutrality, Hotwork International is proud to be among the first companies to successfully have implemented Hydrogen Combustion technology, offering Hydrogen ready Burners as well as looking back to history of pioneering possible Bio fuels, where we have been firing a fuel mix made of fish oil and remains from the food production in the Nordics, melting glass with good quality and thus gaining a 80-90% CO2 reduction. Today other alternative liquid Bio Fuels are available which can be used. Speak to us to see how this can be implement.

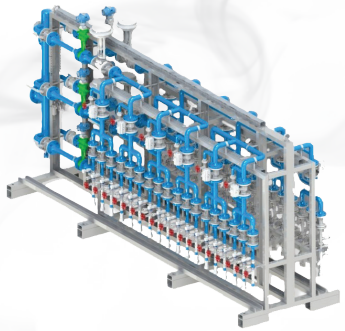
Further development to reduce CO2 emissions and new technology is currently being tested. We continue to transform your process to be more efficient and sustainable.

Combustion Technology for Glass melting

Hydrogen & Biofuel Technology

- Low NOx
- Improved Energy efficency
- High glass bath coverage
- High Luminosity
- Adjustable Flame Lenght/Width
- High Turn down 4:1 and more
- Low Maintenance





BURNERS FOR:

- Container, Float, Fiber and other Glass
- Under-, Side- and Through Port application
- Gas Burner with 1 and 2 Gas connection
- Oil Burner with adjustable spray nozzle
- Burner for recuperative Furnaces
- Oxygen Burner for various application
- Oxygen Burner for forehearth/feeder

BURNERS ACCESSORIES:

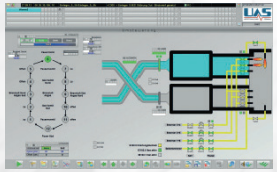
- Burner Bracket/Holder
- Sealing Plate and Holder
- Flexibles and Non-Return valves

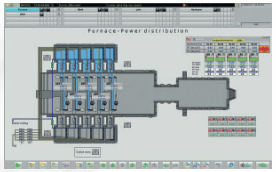
COMPLETE ENGINEERING AND SUPPLY:

- Gas, Oil and/or Oxygen
- Stations
- Furnace Control
- Furnace DCS

Container Glass / Fiber Glass / Float Glass / Oxy-Fuel

- Flexible Combustion Control
- Station (NG/LPG/Oil)
- Automated Control
- DCS/PLC Process Control System
- Failsafe Redundancy
- Bath Control System
- Lehr Control System
- Bushing Control
- Single Burner Control
- Failsafe Redundancy
- Burner Technology
- Automatic Heat Value Control
- Forehearth and Feeder Control





SERVICES

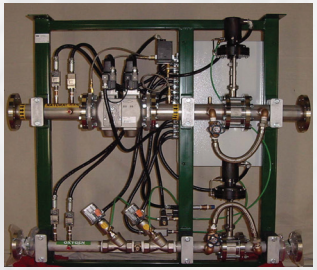
Quadraflo® Sweep Burner Aluminium Melting System

- Proven energy saving from 15 – 60%
- Typical heat dross reduction about 20%
- Low NOx / reduced CO2 emissions
- High bath coverage
- Custom configuration

QUADRAFLO® Automatic Sweep Burner

Roof mounted QUADRAFLO® Sweep Burner in 3 sizes 600, 1200, 1800kW

- flame dynamically sweeps from side to side in an angle of approx. 30°
- Sweeping angle can be programmed for constant sweeping or dynamic position
- Use the burner flame up to your current production requirements- Colliding gas streams resulting in a low momentum flame



Oxygen and Natural Gas Safety & Flow Control Pipe Train

- Compact pipe trains for fully automatic oxygen/fuel gas safety & flow control
- Automatic pressure control
- Automatic leak check during each start sequence
- UV flame supervision and automatic ignition system
- Precise Flow ratio control, SCADA communications and data recording with PLC
- All piping components are stainless steel and brass
- Redundant safety circuits in hardwiring/-software with safety PLC
- System meets CE and EN norms

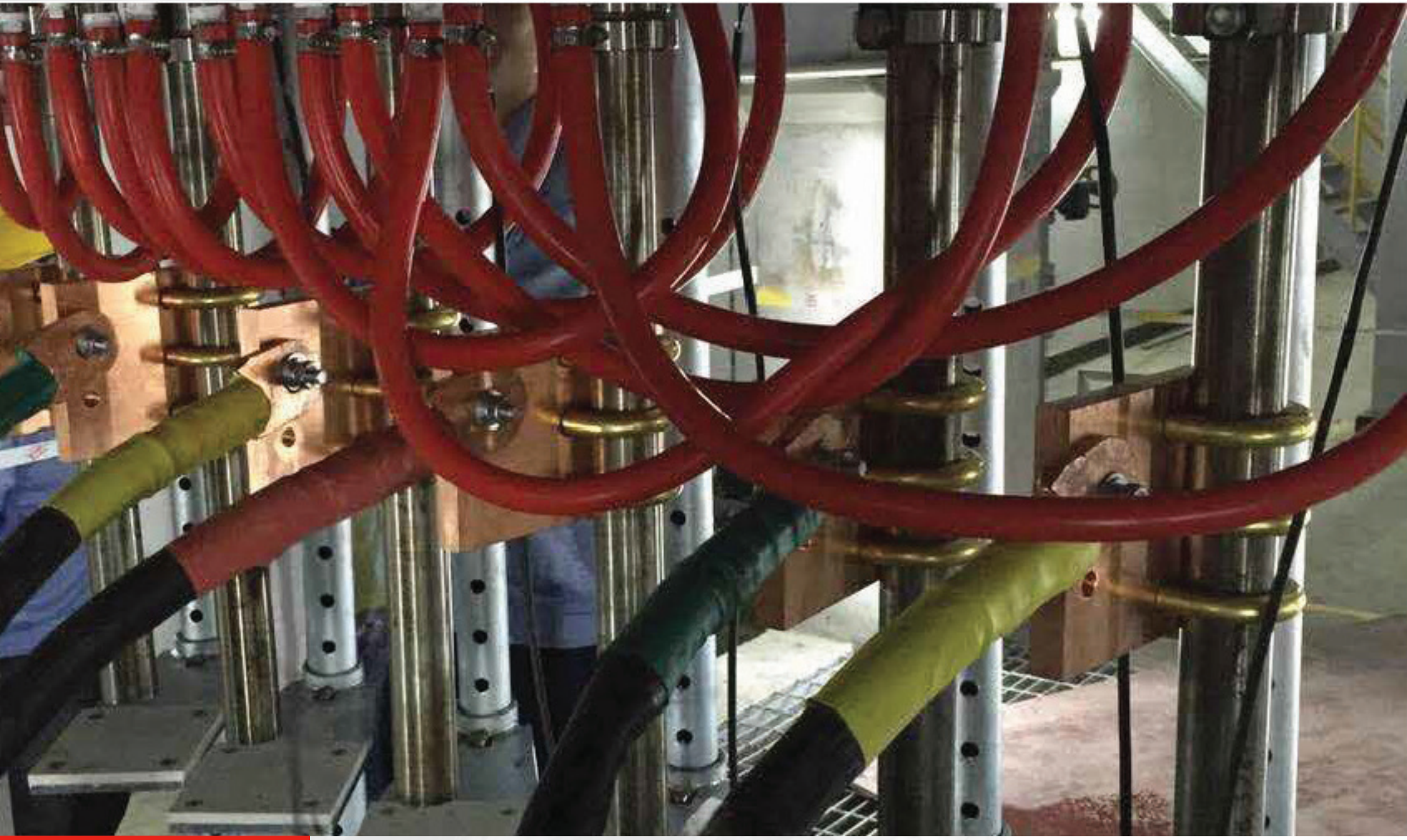
- Material charging:
- Molten metal pump control
- Furnace temperature display
- Furnace Camera system
- Chlorine injection
- Nitrogen Bubbling
- Furnace door opening and closing
- Furnace pressure control

The original QUADRAFLO® Automatic Sweep Burner was developed by XOTHERMIC specifically for the aluminum Industry. Instead of applying a burner used in other high temperature applications like glass, steel, copper or other industries, XOTHERMIC researched aluminum melt applications and developed, through field trials, an optimal design. This resulted in the highest energy efficiency, lowest dross formation for the best economics. With XOTHERMIC having their head office in the USA, Hotwork International bought the rights on the Quadraflo® Burner technology in order to provide a local service. We are cooperating very close with XOTHERMIC on all projects.

Initial start into the aluminum market was the traditional aluminum Reverberatory furnaces. A heat sources from the combustion system transfers heat into the cold metal with sufficient force to cause the metal to retain the heat until the melting point is reached, on average 657°C. Further heating is required to provide sufficient energy to maintain the aluminum in a molten state during the final end process of the production cycle, on average 750°C. During this process it is most desirable to do this heat transfer with minimum amounts of oxidation to the aluminum.

The Quadraflo® Sweep burner system minimizes the generation of a hot spot on the charge material. This was achieved with the use of a flat fishtail shaped flame that moved or swept across the charge. Another requirement is that burner velocities are low momentum to eliminate disturbing the molten metal bath. The flame movement is up to a 30-degree angle.

Moving the flame over a period of several seconds allows the heat to be transferred over a significantly greater area than a fixed flame. Fixed flame burners heat an area of the charge to excessive temperatures in an effort to transfer heat to other parts of the pile. This creates significant hot spots and greater dross formation. Also provided are flow control systems that maintain a very close tolerance on the oxygen to fuel ratio. Because pure oxygen is used does not mean the dross will go up. It is the excess temperature that has a greater
effect. In fact, putting a blanket of pure oxygen over an undisturbed bath of molten aluminum at 657 degrees C and no flame will show little or no increase in dross over a blanket of air at 21 percent oxygen. Using the Quadraflo® Sweep reduces heat dross by a minimum of 20% of what is produced by the combustion.



SERVICES

Electric Melting / Boosting

ON-SITE INSTALLATION, MAINTENANCE AND 24/7 SERVICE AVAILABILITY

CO^2 Reduction

- Increased Melting Performance
- Improved Glass Quality
- Easy to apply
- Easy to operate
- Reduced NOx, SO2, CO2
- Better Energy Efficiency

Services to drill and change electrode holders

Modern 2500m² Production Facility

All In-House: Transformer Design to Final Product production of Special Transformer, Bath Heating, Transformer, etc.

OUR ELECTRIC MELTING AND BOOSTING TECHNOLOGY IS AVAILABLE FOR:

- Fiberglass
- Container Glass / Forehearth
- Float Glass
- Special Glass, Crystal etc

We design:

- Energy Distribution
- Electrode Position and Layout
- Electrical System Design
- Energy calculation for your specific case

OUR COMPLETE SUPPLY FEATURES:

- Power Supply Transformer
- SCR Controller
- Monitoring and PLC System
- Electrode Holders
- Molybdenum Electrodes
- Design and Layout
- On Site Installation
- Start Up and Commissioning
- Maintenance and after Sales Service
- Hot Drilling and Hot Installation
- Hot Maintenance,
- Replacement of Holders

In modern glass manufacturing the batch is traditionally melted into molten glass by gas or oil as the primary heat source.

Hotwork International supplies all kind of fossil melting technology.

Some Furnace designs are using only electric heat which is injected into the top, sides or bottom of the furnace by electrodes as primary heat source for melting the batch.

Hotwork International and its partner XIX Electric supply SCR Controllers, Transformers and Power System to provide highly accurate controlled power to the electrodes of the furnace.

An electric boosting system can be installed in various positions and with various functions in the furnace area. It supplies additional energy directly to the glass bath and helps to increase the melting capacity or increases the bottom temperature to improve the glass quality.

Molybdenum electrodes can be installed horizontally through the tank side walls, or vertically through the furnace bottom.

Electric boosting can be installed in an operating furnace, but installation options have to be carefully analyzed in each case.

OptiFlame Aluminum Melting Technology

- Higher Combustion Efficiency
- Low Maintenance
- Reduced Exhaust Gas Volume
- Lowest fuel Consumption
- Lowest Oxygen Participation
- Low CO^2 Generation
- Ultra-Low NOx
- Highest Melting Rate

The **OPTIflame Melting burner** is a cutting-edge hybrid system that efficiently fires natural gas, hydrogen, or both. This versatile burner seamlessly integrates the combustion advantages of lower OpEx Air-fuel and higher productivity Oxy-fuel in one unified design. **Why OPTIflame for Oxy-Fuel Combustion?**

Energy Efficiency: Nitrogen molecules from air, constituting ~50% of energy input to a melter, are less effective in absorbing or radiating energy, resulting in wasted energy up the flue. Oxy-fuel nearly doubles the heat transferred to the bath compared to Air-fuel.

Heat Transfer Mechanisms: OPTIflame utilizes both radiative and convective energies as heat transfer mechanisms, maximizing homogeneity of the bath, increasing productivity, while maintaining/improving yield.

Optimal Firing at All Levels: Our fully automated flame shape control device ensures optimal firing at all levels, essential for delivering heat precisely where needed regardless of the firing rate.

Consistent Performance: With hundreds of references worldwide, OPTIflame consistently delivers what is promised when promised.

Performance Guarantee: Parameters such as O2/ton, NG/ton, kg/m2/hr are guaranteed, with realistic ROI's of 6-12 months.

Tailor-Made Design: OPTIflame burners are tailor-made to each melter, firing between 10 kW up to 20 MW.

Hydrogen ready:
We are ready for the future! All our burners are made hydrogen ready and will operate with natural gas, hydrogen, or any combination of these two fuels.

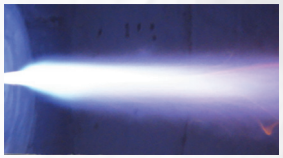
NATURAL GAS FLAME

HYDROGEN FLAME

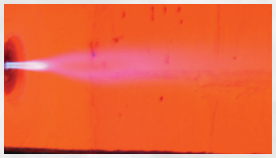
Less Emissions:
The uniqueness of OPTIflame combustion reduces both NOx and CO2 generation dramatically. OPTIflame operates with near perfect oxidant: an ideal mixture of pure oxygen and air, with proven results of CO2 and flue gas reductions up to 75%. In our flameless mode, we have observed NOx reductions up to 80%, fully complying with current EU & US regulations.

Automation: Our regulation skids come complete with a Burner Control Unit (BCU) or can operate with SIL devices slave to a higher-level CPU. Whatever a customer needs, we will design to meet that requisite interface. From standard to tailor-fit solutions.

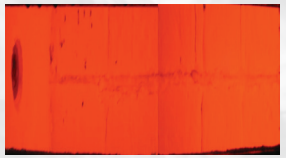
Flameless Combustion: When in flameless mode, our OPTIflame burner fires primarily at temperatures above 900°C. The primary benefits of our Flameless Combustion mode are uniformity of heat transfer and improved homogeneity between the center of the furnace and the walls up to 75%. Our regime delivers up to 40% higher heat flux (the rate of heat actually transferred to the bath) over traditional air-fuel combustion. In addition, with lower flame temperatures, NOx emissions are reduced dramatically. From a quality and yield standpoint, our soft-flame reduces surface oxidation/dusting and thus improves yield.



Cold furnacet 3 % primary O2



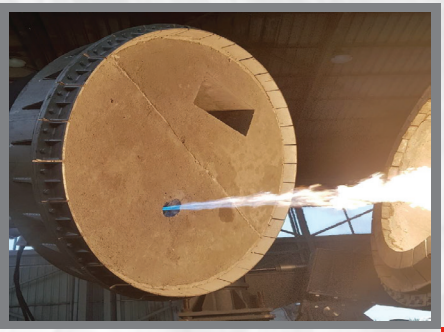
Furnace temperature 900 °C 3 % primary O2



Furnace temperature 900 °C (O2sec. = 100%) Flameless Oxidation Mode

Available for

Rotary Furnace



IPCU (Integrated Pressure Control Unit)

- Continuous pressure measurement
- Furnace Pressure Control
- Reliable Design
- Ultra-low maintenance
- Hands-off operation
- Tailor-made fit

MPOT®- IPCU: In the sector of profitable aluminum casting, the Integrated Pressure Control Unit (IPCU) plays a crucial role in optimizing efficiency. Many operators of reverb melters overlook the continuous measurement of furnace pressure, resulting in significant waste in fuel, productivity, margin, and emissions. Our solution simplifies this process with a groundbreaking design, featuring a circular refractory sleeve that creates a circumferential air blade using our 360-degree air knife. The IPCU stands out as the simplest, lowest maintenance, and most reliable pressure control unit available. Unlike traditional methods, our design eliminates the need for a damper, utilizing a circular refractory sleeve and ambient air to manage furnace pressure. The refractory sleeve is engineered with a limiting orifice specific to melter effluent volume. By modulating the upper sleeve up and down based on measured pressure, the IPCU effectively maintains setpoint pressure without relying on a damper.

False air, a common issue behind negative pressure, is mitigated by our IPCU, enhancing melt efficiency, conserving fuel, reducing unnecessary CO2 emissions, and improving overall productivity. Moreover, the use of ambient air extends the lifespan of the refractory, ensuring longevity in performance. Upgrade your furnace to the 21st century with our IPCU, offering unparalleled efficiency and reliability with minimal maintenance requirements.

Our Integrated Pressure Control Unit (IPCU) boasts a robust design comprising a fixed limiting orifice lower section, a sliding upper sleeve, a fixed top hat with a limiting orifice – all refractory lined. Equipped with a 3-phase electrical motor and a worm drive actuator, our IPCU ensures reliable and enduring performance.
To enhance control and accessibility, our IPCU includes a local Manual/Auto control enclosure positioned in proximity to the unit. In the event of negative pressure, the upper sleeve is lowered to a position just above neutral pressure, typically in the range of 0.01-0.05" WC. As furnaces age, potential voids in the refractory, charge doors, and seals can allow ambient air ingress, leading to increased fuel consumption to combust false air. The IPCU is designed to address these challenges, offering robust engineering and minimal maintenance requirements, typically after years, not months.

Featuring worm drive gearing for dependable upper sleeve movement, our IPCU employs a control algorithm that manages instantaneous dP signals from the furnace's pressure transducer. This ensures smooth sleeve action while dampening signal noise.

Our system is complemented by a Siemens Sitrans P pressure transducer, providing precise measurements translated to the desired output (" WC or mBar). The pressure transducer includes a ceramic measurement probe and free contacts for additional IO, such as Door Open, E-Stop, etc. Proper placement of the pressure transducer in close proximity to the dP probe is crucial for optimal performance.

Cost Savings: Have you ever considered the true cost of false air in any of your melters? The table below estimates the economic impact negative furnace pressure can cost an aluminum refining operation: additional fuel, slower production, and creation of unnecessary CO2. Our IPCU is a tool you can use to move the needle on your year-end bottom line as well as carbon managment. "If you are not watching your pennies, you may not have dollars to count at the end of the year."

Based on 12mmBtu at $7.50/mmBtu

	Loss Production Value		
1" Gap	4" Gap	10" Gap	Neg. Pres. Equiv.
1%	2%	10%	(% impact)
-50,000	-100,000	-500,000	(lbs/mth)
-22'679	-45'359	-226'796	(kg/mth)
-$6,750	-$13,500	$67,500	($/mth)

	Loss Fuel Value		
1" Gap	4" Gap	10" Gap	Neg. Pres. Equiv.
2%	4%	18%	(% loss)
-175,104	-350,208	-1,575,936	(scf/mth)
-281'041	-562'083	-2'529'377	(Nm^3/h)*
-$1,313	-$2,627	-$11,820	$/mth Loss

*based on Nm^3/h or scf per month

	Benefit Potential with Furnace Pressure Control		
Small	Medim	Large	Relative Air Ingress
$8,063	$16,127	$79,320	$/ mth gained
$96,759	$193,519	$951,843	$/ yr gained

OptiFlame Ladle Pre-heating Technology

Hydrogen Ready

The **OPTIFLAME** technology has proven significant improvements for Ladle Pre-heating and Drying, showing reduced fuel consumption by up to 75%, as well as reducing CO^2 Emissions by up to 75% and reducing the heating time by up to 65%. With a flameless operation, where the flame operates in the invisible spectrum for our human eyes, not only drastically reducing the NO_x emissions by up to 80% but also improving the heating of the refractory lining and maximizing refractory lifetime, resulting in optimized utilization of your investment.

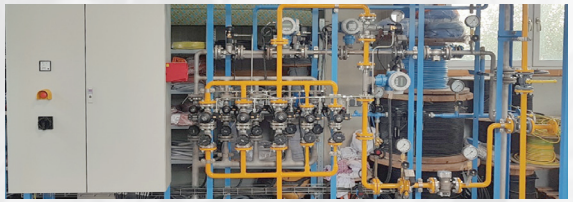
Why Oxy-Fuel Combustion?
Nitrogen molecules form air don't absorb or radiate energy well, which results in 50% of energy input being wasted, going right up the flue. Oxy-fuel nearly doubles the heat transferred compared to Air-fuel. Our OPTIFLAME Lade Pre-heating Technology employs these advantages to maximize the energy transfer and to reduce the total heating time. This improves not only the heating rate, but also the way how the ladle heats through and thus reduces temperature shock on the refractory and maximize the refractory lifetime. Holding the temperature inside a ladle consumes much less energy as well, reducing CO^2 at the same time. Reducing the heating time allows a reduction of pre-heating stations and to better utilize your assets.

Refractory Drying Station option:
Drying newly lined Ladles can be improved with our dedicated drying station, applying Oxy-Fuel Technology to improve the efficiency, and reducing fuel consumption along with the CO^2 emissions. Also available as Hybrid System, all in one Drying and Heating station.

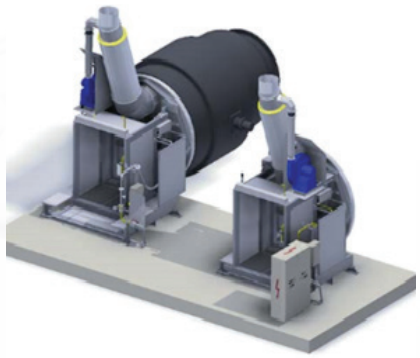
Flameless Combustion: When in Flameless mode, the flame is not visible to human eyes. The flame turns into Flameless mode above 900°C. The primary benefits of our Flameless Combustion are uniformity of heat transfer and improved homogeneity between the center of the ladle and the walls. Additionally, it delivers up to 40% higher heat flux (the rate of heat actually transferred) over traditional air-fuel combustion. Flame temperatures decrease with better uniformity, which reduces NO_x emissions drastically.

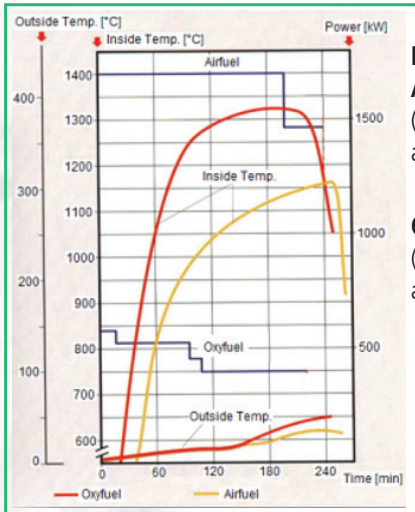
Automation: Our regulation skids come complete with a Burner Control Unit (BCU) or can operate with SIL devices slave to a higher-level CPU. Whatever a customer needs, we will design to meet that requisite interface. From standard to tailor-fit solutions. Lade Pre-Heating Station (vertical) and Drying Station (e. g. horizontal) is part of our supply scope as well, and will be designed custom made based on clients needs including all automatic heating features needed for a smooth process.

Burner Control: Compact single or multi-burner regulation skids with high-end components, fully compliant with the EN 746-2, NFPA86 and ISO13577 meeting required SIL level and are CE compliant. All skids are made in Austria, Germany, and Switzerland.



Less Emissions: The uniqueness of OPTIflame combustion reduces both NO_x and CO^2 generation dramatically, with proven results of CO^2 and flue gas reductions. In our flameless mode, has provem NO_x reductions up to 80%, fully complying with current EU & US regulations.





Pre-Heating Sample:
Air-Fuel: Reaching 1150°C (internal temperature) after 240 minutes with 1700kW

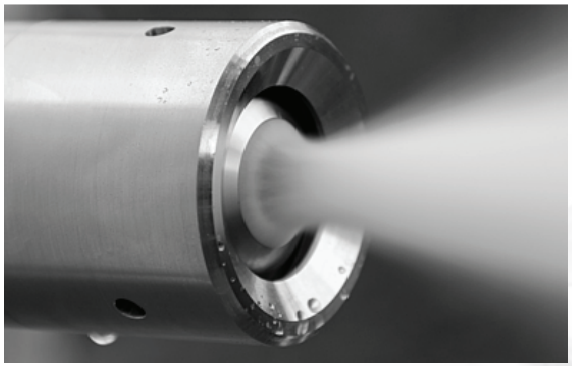
Oxy-Fuel: Reaching 1320°C (internal temperature) after 190 minutes with 500kW

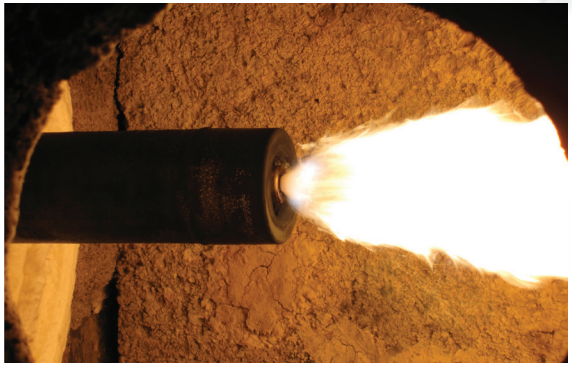
Duration	Air		Oxy-fuel	
[min]	[kW]	Temp [°C]	[kW]	Temp [°C]
75	1700	910	530	1150
120	1700	1050	400	1290
210	1470	1140	400	1320

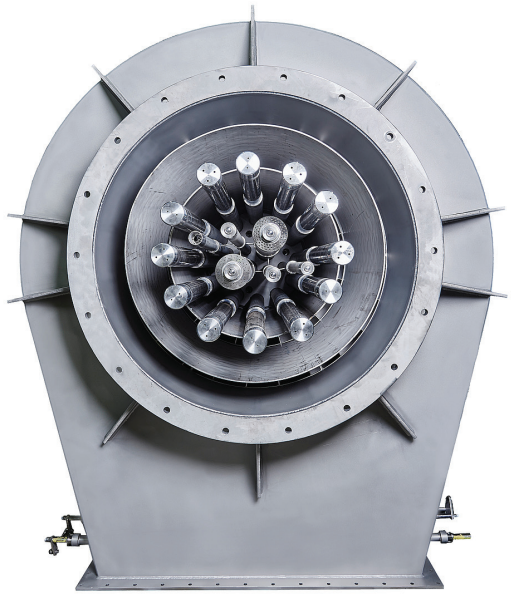
Savings	[%]
Natural Gas (NG)	70
Duration (up to 1150°C)	65

OptiFlame Oil Burner

- **ULTRASONIC ATOMIZATION**
- Any Liquid Fuel: Light Fuel Oil, Heavy Fuel Oil, Tar, Sulphur, Solvents, Bio Fuels etc.
- No clogging of the atomization nozzle despite type of fuel
- Low pressure Fuel supply 300-500mbar
- Atomizing with any gaseous media: Oxygen, Nitrogen or Compressed Air , Natural Gas, Steam
- Very low Maintenance
- Easy implementation into any furnace
- Optional Water Cooling
- Optional Burner Block
- Oxy-Fuel Burner or Air fuel burner
- Optional Flexible Flame length adjustment via remote controlled Motor
- Optional Retraction device for auto removal from Furnace







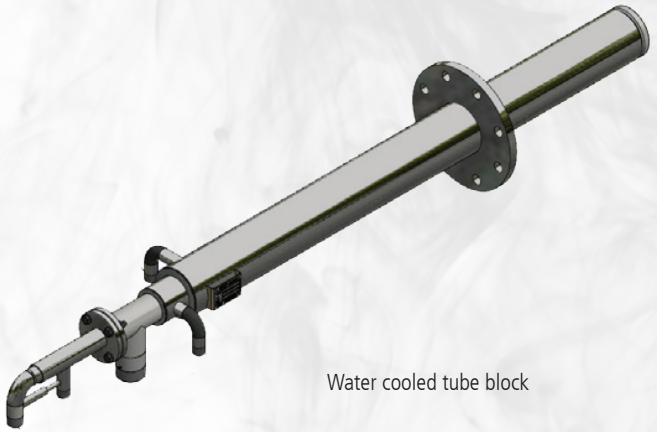
Example of a Multi Burner System for complex reactors or boilers

The **OptiFlame Oil Burner** is based on its unique atomization nozzle, which is based on **ULTRASONIC ATOMIZATION**. This unique atomization permits the use of any type of oil fuel, from light fuel oil to heavy fuel oil and even high viscosity liquid fuels such as tar, but also sulphur and solvents can be utilized. Our ultrasonic atomizing nozzle activates a high-frequency vibration (18,000 - 23,000 Hz). The high-frequency vibration creates a high turbulence, and this leads to the atomizing of any type of liquid.

Adopting this technology, permits the use of large oil nozzle orifices, leading not only to very low fuel supply pressure of only 300-500mbar, but also to a practical non clogging of nozzles. This impacts the maintenance and reduces tremendously cleaning intervals in some cases to none.

Another feature of our OptiFlame Oil Burner is the high momentum injection which leads to a dilution of the flame with exhaust gas, resulting in a flameless combustion. With this, archiving a cooler and more voluminous flame, optimizing the homogeneous heat distribution, which reduces the NOx values by up to 80% compared to conventional highly luminous flames. The OPTIflame Oil burner can utilize any gaseous atomization media, such as compressed air, nitrogen, oxygen, natural gas, steam etc. at pressures ranging from 3-5 barg, offering an excellent controllability and flexibility. The flame length and geometry can be adjusted by changing the oxygen exit velocity. Optional Motorized controls allow a remote flame geometry adjustment without touching the burner.

Our objective was to engineer an unique Oil Burner adaptable to diverse industries, furnaces, and processes. The OPTIflame Oil Burner offers versatile installation options, serving as an injector, Air-Fuel, or Oxy-Fuel Burner. Optional features such as Burner Blocks, Water Cooling, Automatic Retraction Systems, Burner Cases, and complete automation, including Burner Control Units with UV Flame Supervision, Safety and Flow Control Systems integrated into a certified Safety Control, empower us to deliver tailor-made solutions for a wide array of global applications.



Water cooled tube block

SERVICES

Bubbler

Energy Saving / CO_2 Reduction

- Increased bottom temperature
- Reduced fuel consumption up to 5%
- Reduced Furnace Temperatures
- Batch barrier to the refining area
- Quicker color change
- Increased production

OUR BUBBLING TECHNOLOGY IS AVAILABLE FOR:

- Fiberglass
- Contain er Glass / Forehearth
- Float Glass
- Special Glass, Crystal etc

OUR BUBBLER TUBES CAN BE MADE OFF:

- Ceramic (Operating Temp. 1950°C)
- Water Cooled
- Platinum or Platinum Coated
- Inconel

ADVANTAGE OF OUR CERAMIC BUBBLERS:

- Multi holes improve Bubbling effect
- Bubblers can be "switched off" without glass blocking the holes later on
- Bubblers can be pushed to avoid wear out of furnace bottom/paving
- Equipment and Installation cost are budget friendly

OUR COMPLETE SUPPLY FEATURES:

- Bubbler Tube
- Control System for Air/N2/O2
- Design and Engineering
- Bubbler Holders
- Installation and Hot Drilling
- Overcoating and replacement
- Maintenance and pushing services

A bubbling system creates a controlled disturbance in the glass melt. Air or other gases are blown through special bubbler nozzles into the furnace. Depending on the design, multiple or large bubbles rising from the bottom installation to the glass surface, where the bubbles exhaust the gas into the furnace atmosphere.

These bubbles bringing cooler glass from the bottom of the furnace towards the surface, where it can absorb the heat from the flame, thus avoiding excessive crown temperatures to bring heat to the furnace bottom.

The bursting bubbles on the glass surface also create an effective barrier that prevents unmelted batch from moving forward. Thus producing a physical barrier to the batch/foam blanket.

Benenfits of bubbling are not only decreased fuel consumption and reduced firing temperature but also an increase of production capacity and quality of the product due to the improved homogenity. The improved glass flow in the furnace help to eliminate cords.

The System has major advantages for the melting of coloured glass as it reduced product loss due to stone inclusions.

Emergency availability 24/7
Hot Replacment
100+ Bubbler in stock
Worldwide shipping

How can we continue to produce?

SERVICES

Regenerator Rebuild without Production Loss

(TURNKEY REPAIR PROJECTS)

- Collapsed Regenerators?
- Blocked Checkers?
- Increase of Production?
- Cold Repair of Regenerators *without production loss*
- Reduced NOx
- Increased Production
- Improved Quality

When Regenerators are partly or completely defective, wherein the necessary combustion air cannot be supplied and air pre-heating as well as exhaust conditions are not functional anymore, the melting capacity or glass quality will not only be affected but the complete furnace might be in danger of shutting down.

Hotwork International know-how and technology allows the replacement of conventional air-fuel burners with our specially designed oxy-fuel underport burner to replace combustion air partly or completely.

Our proven technology have saved our clients Millions of Euro in production loss. Enabling them to pay for the repair for their Regenerator with the money they saved because they were able to keep on producing.

Oxy-fuel Technology and the temporary installation of our special replacement burner including the complete control station is used to make sure the melting capacity is stable.

Hotwork and its partners supply a complete solution including repairs, refractory supply and installation, Combustion Control, Exhaust Control and re-routing, Project Management, Method Statement and Risk Analysis, etc., providing a turn-key solution.

Results of previous projects:

- Superstructure temperature didn´t change
- Furnace operated under 120% of capacity
- Imptroved Batch melting
- Improved Glass quality (due to oxy-fuel)

Advantages of our Technology:

- Melting Capacity is secured
- Glass quality is often improved
- Investment cost is relatively low
- ROI in a couple of days

Our Complete Supply features:

- Oxy-Fuel Burner and Brackets
- Oxygen and Natural Gas Piping
- Oxy-fuel control station (transportable)
- Engineering on engineering
- Turkey Repair project with our partner
- Assistance with Installation
- Combusting Engineer Supervision

SERVICES

Refractory Dry Out

- Dry Out of Refractory Lining
- Improve Campaign Life
- Prevent Pre-mature Refractory Failure
- Serving All Sizes of Vessels
- Individual Component Heating/Drying
- Adaptable to Client's Requirements
- Worldwide Availability

Modern design technology requires the installation of large amounts of expensive refractory for high temperature process.

Newly installed refractory require a carefully controlled initial heating.

If the initial heating is carried out too rapidly and or with local hot spot, then different rates of expansion between adjoining refractory areas may occur, creating stresses which cause severe cracking or worst damages.

Service performed for:

- Steel/Iron Making
- Aluminum
- Power Generation
- CFB Boiler
- Cement/Minerals
- Hydrocarbon/Refinery
- Non-ferrous Metals
- Container Glass / Forehearth
- Float Glass
- Special Glass, Crystal etc

Residual moisture may be converted to steam too quickly, resulting in a explosion.

Both vents will naturally have an impact to the efficiency and life time of the refractory.

Most conventional process heat sources do not afford the close temperature control in the lower ranges (during which steaming will normally take place) and are less ideally suited to carry out the initial dry out or heat up. Moisture might drive into the refractory and is trapped, even so the refractory hot face may appear dried out.

Some temporary installed heating sources might also create hot spots, uneven temperature distribution and take much more time for the dry out or heat up than is usually necessary.

In most industries it has become widely accepted, the only truly effective means of drying out and heating up refractory is to deploy a heat source, passing large volume of hot gases over the refractory surface, providing an even temperature distribution and removing all moisture from refractory.

This will not only save time and money from fuel consumption, it also protects the initial investment in expensive refractory and enhances the furnace refractory life time.

Post Weld Heat Treatment

Hotwork
Heat Treatment & Specialized Services

- Equipment Calibration Services
- Preheating
- Dehydrogenation Heat Treatment
- Hydrogenation Bake out
- Heat treatment in-House
- Heat treatment in Furnaces on site (Temporary)
- Space heating for coating and linings

The Post Weld Heat Treatment (PWHT) service offerd by:

HOTWORK HEAT TREATMENT & SPECIALIZED SERVICES, LDA (HTS), helps improve the weld microstrtucture, wich in turn reduces the residual stress that often develops during the welding stage.

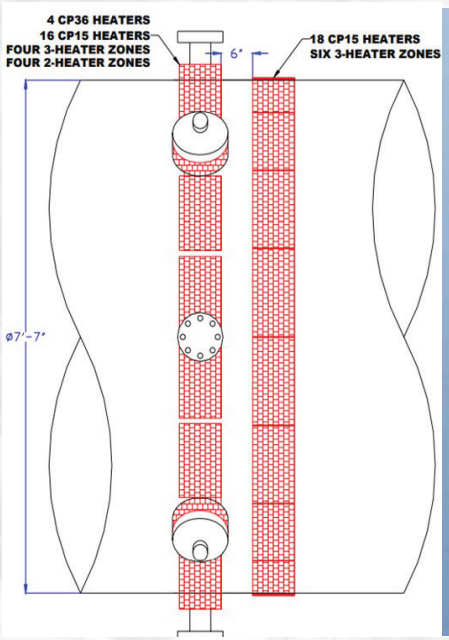
This is crucial to maximize the life of your vessels, pressure tanks, towers, equipment and pipes etc. Our team of engineers and highly experienced specialists is able to perform a wide array of PWHT services for industries like construction, pressure piping, bridges, offshore platforms, storage tanks, pressure vessels, petrochemical plants, refineries, and others.

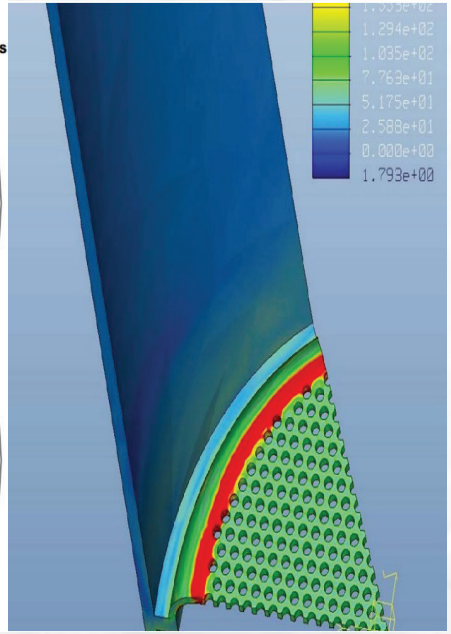
Our post-weld heat treatment procedure includes software based heat and thermal calculations, band width, weight and wind load analysis and Zick analysis for horizontal vessels and fully comply with the latest welding codes and other mandatory requirements for metals like stainless steel, carbon steel, work-hardened steel, and high alloy steel.

PWHT, helps to reduce and redistribute the stress brought on by the weld and assembly process. The technique uses soaking, heating, and cooling of the machined surface or weldment by controlling temperatures. Doing this helps to improve the properties of the machined or weldment surface.

However, there are a couple of other benefits to its application which include:

- Improving the ductility of the materials
- Reducing the instances brittle fractures
- Tempered metal
- Improves and in some cases, reduces the metal's hardness
- Improve metallurgical properties
- The prevention of cracking caused by hydrogen by its removal





We provide and perform PWHT both at our clients' sites and our own factories globally.

The on-site facilities include specialized furnaces of different sizes, where the weldments are placed for PWHT. Additionally, we also offer businesses the option of our pickup and delivery services.

Strategicaly located hubs globally and highly skilled and experienced PWHT engineers enable us to respond to virtually any request, following highest safety and quality standards and ensuring that all machined surfaces or weldments meet the required welding code requirements.

After treatment, our non-destructive inspections include magnetic particle inspection, hardness testing, and stress radiography.

Partnering with metallurgical laboratories and engineers providing the flexibility to execute all types of pre weld heat treatment procedures with the highest Quality Assurance.

SERVICES

Services

- Heat Shrink, Expansion and shaft/Bolt Heating
- Turbine Warming Systems
- Heat Treatment (Annealing and Normalizing)
- Hardness test services
- Engineering Technical support Group

Heat treatment in warehouse Furnaces

We have in our installations furnaces to post weld heat treating of large vessel pressures or vessel sections, approved for temperatures from ambient up to 980°C.

Heat Shrink, Expansion and shaft/Bolt Heating

Both our electrical and induction systems generate heat so fast, so we can set up our heating band to take off shafts and other tight-tolerance parts, retaining rings, bearings and sleeves, nuts, bolts

Heat Treatment (Annealing and Normalizing)

Here we use some special electrical resistance to provide a variety of services for annealing and normalizing to modify the properties of alloys according the client requirements.

Hydrogenation Bake out

Welding produces high temperature, severe temperature gradients, and rapid cooling and solidification, which increase residual stresses, grain size, and brittleness in the welds and its material base, to reduce this mechanism damage must be applied the hydrogenation bake out during the repair or modification of a component that have been introduced in services in a hydrogen enviroment.

Dehydrogenation Heat treatment:

The likelihood Oof hydrogen induced cracking (HIC), can be reduced through Dehydrogenation Heat treatment to remove the induced hydrogen prior to initiating welds during the fabrication.

Preheating

Advanced control systems and recording the preheating during the welding process minimizes thermal efforts mainly in:

- Reducing humidity released by hydrogen which could penetrate the welded steel causing porous spots and cracks.
- Reducing heat loss surrounding the welded surfaces making the weld stronger.
- Improving the microstructure and durability of the zone affected by heat.

Hardness test service

We count with the Hardness Tester NOVOTEST T-UD3, this combines two methods of measuring hardness by an indirect method: Ultrasonic Contact Impedance (ASTM A1038) and Leeb (ASTM A956).

The ability to connect both probes combines the advantages of both methods and providing users the opportunity to use the one that is most suitable for solving a specific task. The Combined Hardness Tester allows us to measure the hardness of any metals, parts of any shape and thickness, measure the hardness of the surface hardened layers and evaluate the tensile strength according to our clients requirements

Engineering Technical support Group

HOTWORK HEAT TREATMENT & SPECIALIZED SERVICES, all of this is supported by an engineering group with software for required heat and thermal calculations, band width, tower weight and wind load analysis and Zick analysis for horizontal vessels.

Rental equipment services

Hotwork
Heat Treatment & Specialized Services

Portable Electrical Heating or Portable High Velocity Burners

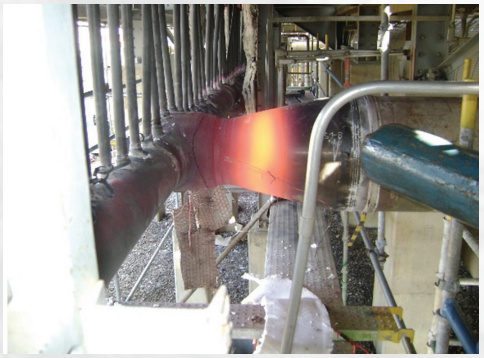
Equipped with digital control systems to achive a uniform thermal process are available in our hubs globally.

Our team is able to assist you with a wide range of heat treatment parts, equipment or products for rentaing.

Our products which include:

- Heating transformers
- Portables Heat Modules
- Temperatures Controllers
- Power Cabling
- Camlock Power Connectors
- Thermocouples
- Insulation
- Heaters
- Insulation Attachments
- Transformer Parts
- Test Equipment
- Temperatures Recorders

Hardness test services:
This combines two methods of measuring hardness by an indirect method:
•Ultrasonic impact impedance
•Leeb.

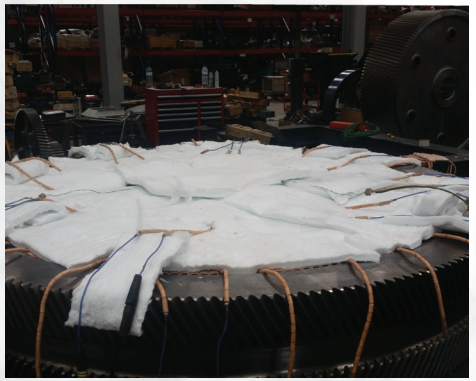


Annealing:
Using our specials heater we can reach out any temperature target according the constructions codes and client requirement

Equipment Rental and sales:
We can help you with a widely range of heat treatment parts, equipment or products for rentals or sales.

Six way Console
(the most state-of-the-art of the market in heat treatment technology, can be or not operated the process remotely increasing the response time of our technicians)

Specialized/Technicians:
Can assist you in fulfilling the recommended specifications stablished by construction codes and Clients, based in a extensive experience and our established the most sophisticated programs for training and certification of personnel.



Heat Shrink, Expansion and shaft/Bolt Heating:
Our both electrical or induction systems generate heat so fast, so we can set up our heating band and get the most accurate process.

SERVICES

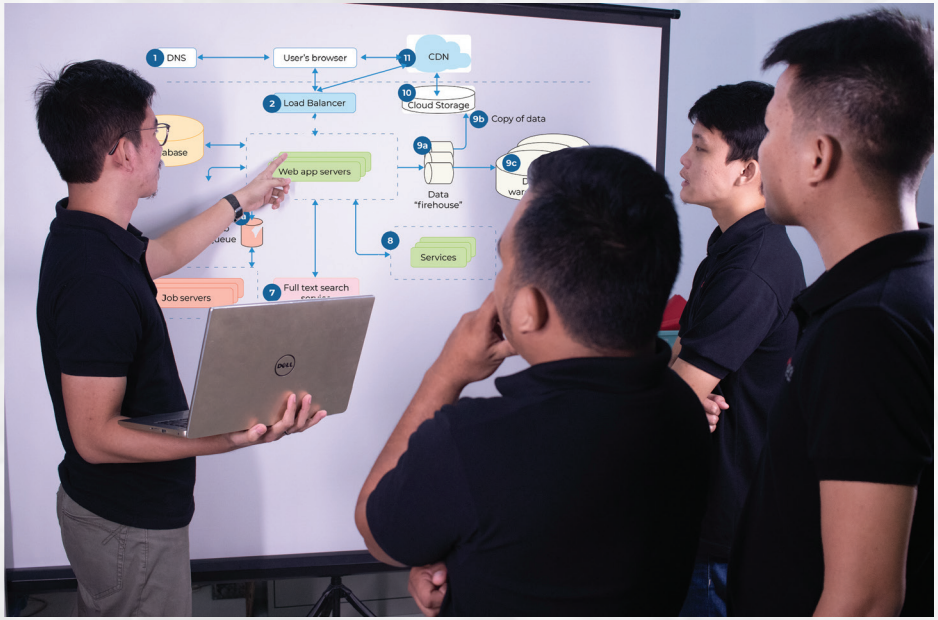
TOTAL PROJECT MANAGEMENT
Applications Ltd.

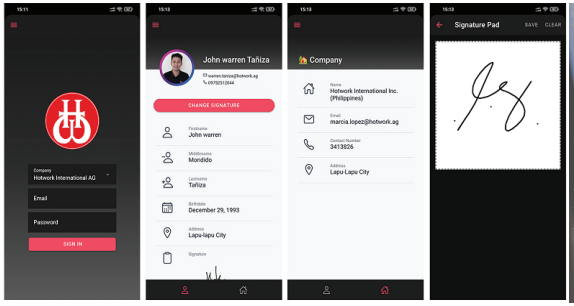
Total Project Management (TPM) was established as an internal part of the Hotwork International Group to create, design, and maintain specific software in relation to Project Management, Address Management (Clients / Suppliers), Document Management, Item Management (Inventory), Safety Reporting and Management as well as Task Management with web and mobile application accessibility.

This Software came to be known as HotWare.

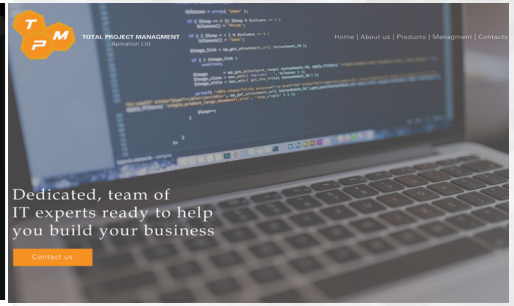
Our team of dedicated Programmers has been developing the Software Solutions mainly for internal use. With the growing demand for different modules from clients requiring specific software solutions based on our existing platform, TPM was incorporated in the year 2021 and launched in July 2022.

With the knowledge of modern technologies, TPM will offer to businesses any possible solutions to help them grow.



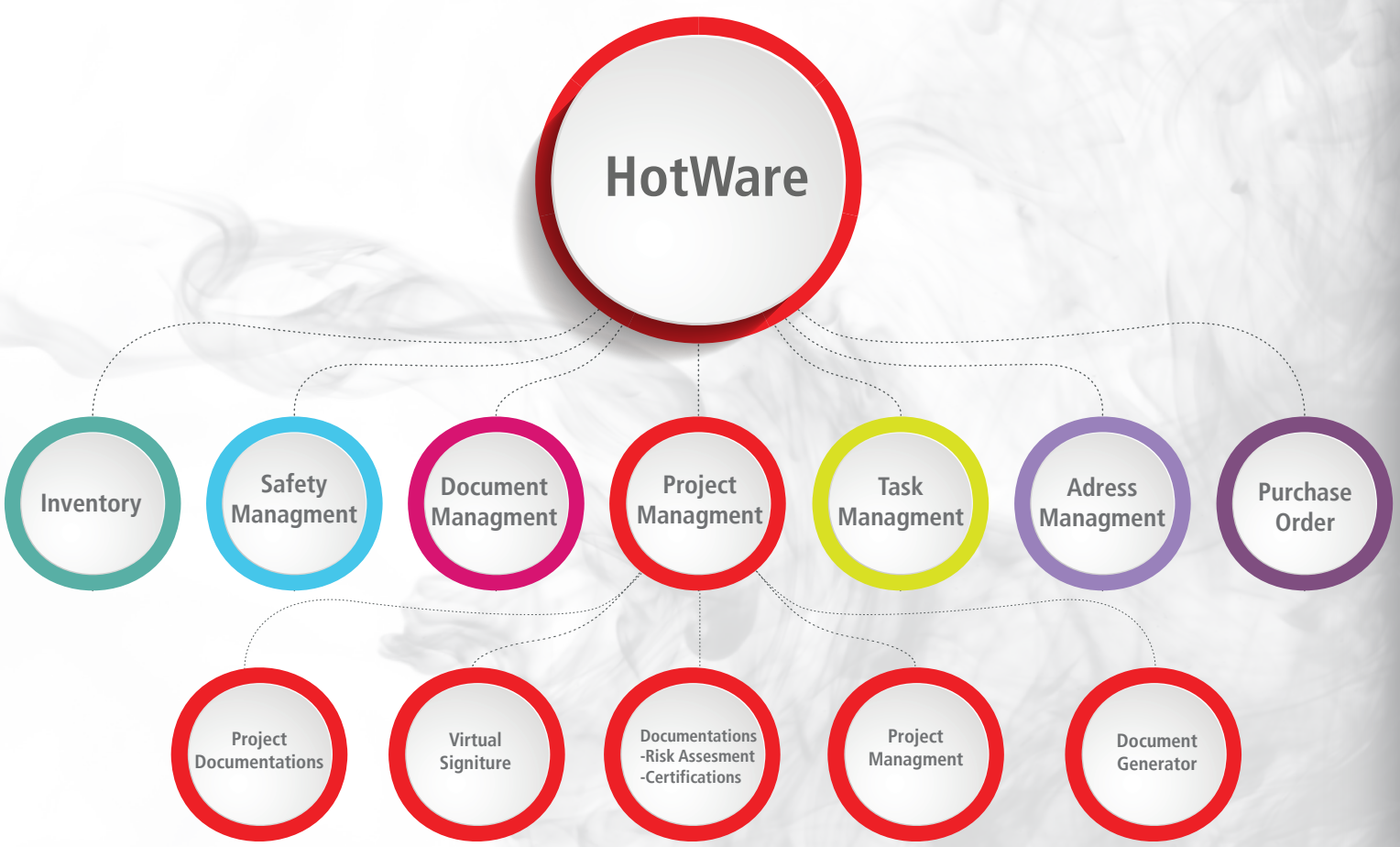


Mobile App

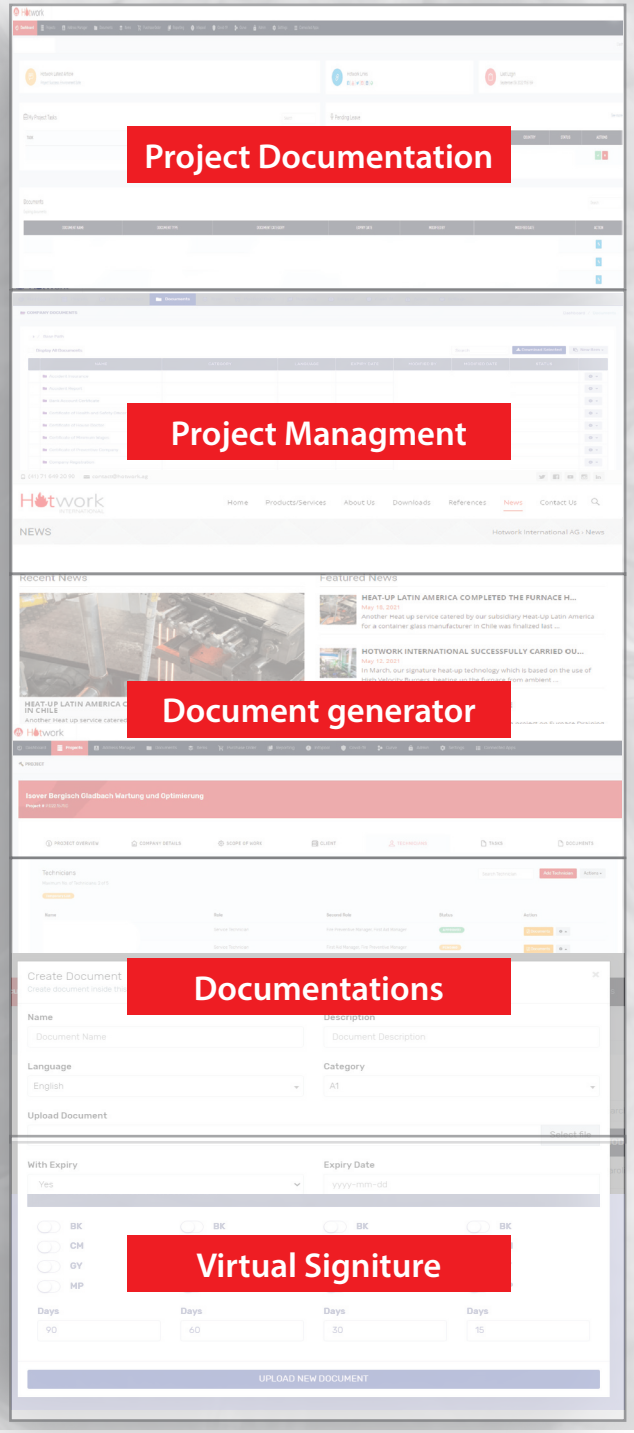


Web Design

TPM SOLUTIONS



Project Management

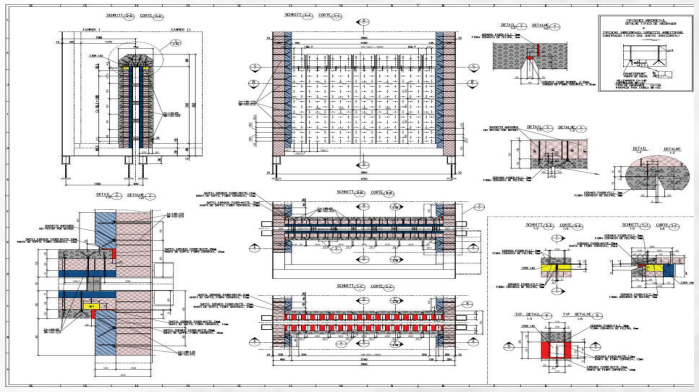


SERVICES


Engineering & Design
- CAD Drawings
- Documentation
- Quality Manual
- Usage instructions
- Project Manual
- ITP Plan
Material Supply
- Steel Parts
- Anchorage
- Bricks, Mortars
- Monolithics
- Fibers. Boards
- Others
Site Managment
- Site Managment
- Supervision
- Quality Assurance
- Warehouse Managment
- Site Logistics
COMPETENCIES
"TURN KEY"
Steel Parts Welding
- Post Weld Treatment
- Pre-Heating
Refractory
Material Installation
- Welding
- Bricking
- Casting
- Gunning
- Others
Dry-Out and
Heating-Up
Services

SERVICES

Turnkey Project Scope



Engineering - Refractory Design and Layout, CAD Project Documentation

Each different plant requires for a specific type of refractory lining due to the uniqueness of the physical and chemical process. IRSP selects the refractory lining of each project in accordance to these specific requirements whereas the Technical Specification of the client is considerd with enormous care.

Refractory Materials, Anchors and Steel Parts

Due to our worldwide networks and partnerships we are in the position to deliver all types of materials such as bricks, monolithic, mortars,
fibers,anchors, brackets, other steel parts in all grades imaginable. We have available intercontinental sources where we can provide the best grades of materials from.
In this regard, we always focus on advantages such as sources extremely near to site in order to prevent huge costs for logistics.

Installation and Human Resource, Total Equipment

IRSP has currently a work teams available, which consists of around 50 local skilled labor, with excellent experiences for all kind of work as below. Further another 100 skilled labor are available for IRSP to extend the teams whenever and wheresoever needed.

Dry Out

Dry Out, Heat Up, Cleaning etc works for all industry furnaces and plants with HWI Inc High Performance Burner technology which are (gas or oil fired in order to react the most flexible style and requirements of the site.

SERVICES

Teams of Technicians

Flexibility, Experience and 24/7 Availability

Over 150+ Fully Committed Service Technicians/Engineers Worldwide

Hotwork International technicians are its Front line workers, performing up to customer needs and even exceed client's satisfaction - an international combination of team worldwide - 20 languages spoken. The team share the same values as we do, QUALITY SERVICE.

We regularly conduct internal training at our Head Office in Switzerland. It is aimed at providing regular updates on current site situations and keeping adept knowledge on particular issues as:

- Job Safety Analysis
- Health, Safety & Environment
- Planning and Control Management
- Environmental issue awareness
- Decision-Making
- Project Communication Proficiency
- Best methods of work

SERVICES

Equipment Transport and Logistics

On-time Project completion is of vital importance and thus reservation and delivery of equipment is equally on TOP PRIORITY.

Our logistics team, having wide experience on equipment planning, coordination, and deployment, commits to deliver our equipment to your project site and work location on specified schedule. Shipment and transport are available by road, sea or air from our warehouse hubs to any locations worldwide.

For a fast and efficient temporary importation and re-exportation, attention to details and an open communication between us and our client is key point.

Certificates and Equipment Maintenace

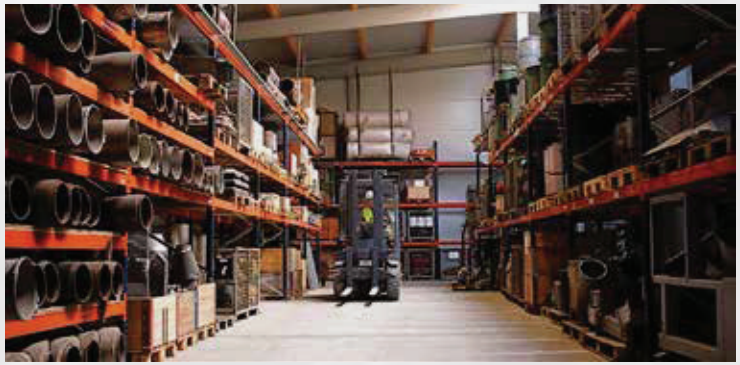
The engineering head office is located in Switzerland, while modern production facilities are situated in the Swiss headquarters, as well as in Germany and China. Certifications for quality compliance is available.

Supply and availability of well-maintained equipment is part of our service. Around 350 heat-up sets strategically located in Switzerland, Philippines, Indonesia, Japan, China, India, Thailand and Mexico to ensure a much faster response to clients' needs.

Testing facilities are made available, ensuring that all equipment maintenance are performed, the fabrication and welding works are completed before the equipment are dispatched to work site.

"Being an international company, we reach out to any location worldwide.

Whether it be in the jungle, desert or the cold north of Siberia - we'll be there for you."



Hotwork Holding

Benjamin Köster
CEO

Eva Wuillemin
Financial Director

Hotwork INTERNATIONAL

Marcelo Pires
Technical Director

Gyeong-jin Yoon
Operation Manager

Ramon Baerla
Combustion Technology
Project Manager

Hotwork INTERNATIONAL

Marcia Lopez
Managing Director

Bernard Carpio
Technical Director

Hotwork-XiX

John Dai
Managing Director

Lei Shi Qing
Engineering Director

Jun Su
VP-Combustion

Hotwork
Heat Treatment & Specialized Services

Joao Ribeiro
Managing Director

Mirna Morales
Financial Director

Dany Reyes
Operation &
Technical Director

TOTAL PROJECT MANAGEMENT
Applications Ltd.

John Warren Taniza
Project Manager
Developer

Joemy Jay Flores
Team Leader
Developer

Joshua Pongnasi
System Administrator

RSP INC.

Uwe Van Waasen
Technical Director

Giovanni Villahermosa
Project Manager

Jubert Garcia
Sales & Marketing

HEAT UP LATIN AMERICA
MEMBER OF Hotwork

Luis Weller
Managing Director

Mariana Colin
Operation Manager

Roberto Reyes
Project Manager

HAL
HEAT APPLICATIONS INDIA

Daniel Kirkham
Managing Director

Neelima Kirkham
General Director

HAG
HEAT APPLICATION GLOBAL

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