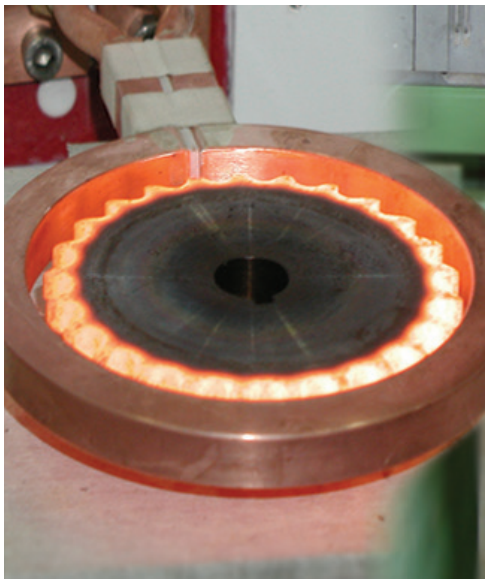
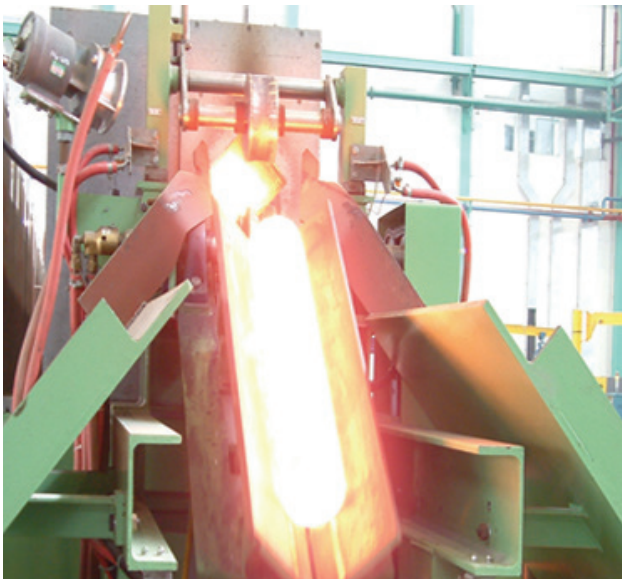
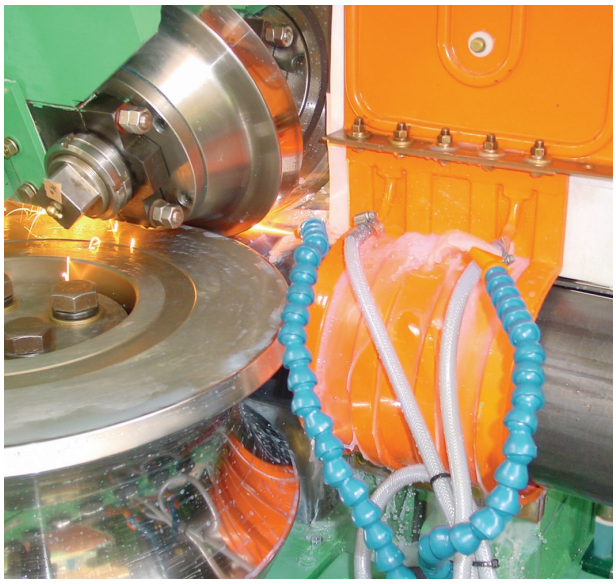
INDUCTOTHERM GROUP







Leading the world in induction heating & welding technology

INDUCTOTHERM HEATING & WELDING

INDUCTOTHERM

Who We Are

Inductotherm Heating & Welding Ltd. is part of the Inductotherm group which brings together some forty companies strategically located around the world. They all share a focus on serving the metals and materials industry and all are leaders in their respective disciplines.

From the brilliant yellow of gold and the warm glow of copper to the cold grey of iron and steel, no matter what metal you melt, mold, heat or otherwise process, there's an Inductotherm Group company with the equipment, technology or services you need.

Inductotherm group companies provide the equipment and services that allow industry to process metals from melting through casting heating, rolling, drawing, forming and shaping into their final products.

As a multi-technology organisation, the Inductotherm Group offers many advantages:

- The unique ability to offer the best solution from a broad range of available technologies.
- A single point of contact and single source of project responsibility.
- The support of a global network of engineering design, manufacturing and service facilities.
- Access to a full range of engineering, installation and after sales.
- Innovative technology advances through group synergy.

• The Inductotherm Group

Inductotherm Heating & Welding Ltd. was formed to bring together Thermatool Europe and three divisions of Inductoheat Europe Ltd. in order to create a single, more capable company comprising four internationally established brand names:

THERMATOOL RADYNE NEWELCO BANYARD

Inductotherm Heating & Welding Ltd. operates an integrated manufacturing and technical centre, strategically located within the UK at Basingstoke in Hampshire. Inductotherm Heating & Welding Ltd. product lines range from standard, general purpose heating and welding machines to those which are specially engineered to address new applications and emerging markets.

This expanded operation brings many benefits to customers of Inductotherm Heating & Welding Ltd. with its greater concentration of applications knowledge, technical strength and expertise in many fields of Induction Technology.

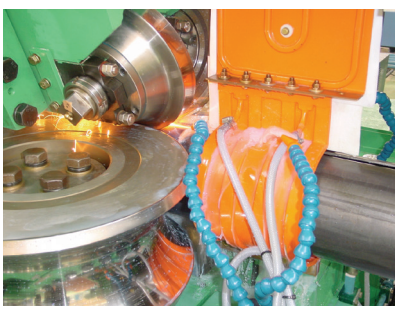
Customers of the four leading brands get all the advantages of the above plus the benefits of extensive global customer service and technical support.

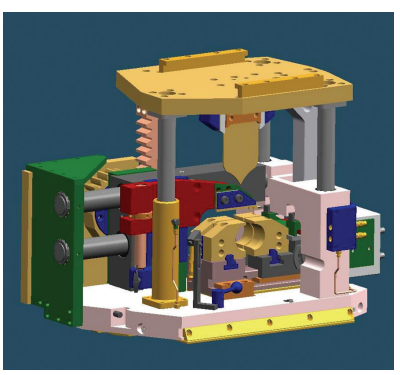
A single point of contact provides customers with in-depth applications knowledge on a wide range of induction heating applications including:

- HF welding, cutting and seam annealing of tube and pipe
- General induction heat treatment and hardening
- Induction heating for forging and extrusion
- Heating and coating of API line pipe
- Induction coil design and repair
- Turnkey wire line processing
- Low frequency heating
- Quench and tempering

THERMATOOL

Tube Welding & Cutting Systems





Thermatool specialises in the design and manufacture of high quality tube and pipe production equipment. With the largest installed base of solid-state HF welders worldwide, Thermatool also offers the widest range of welders in the industry today, designed to satisfy even the most challenging and complex tube and pipe welding applications.

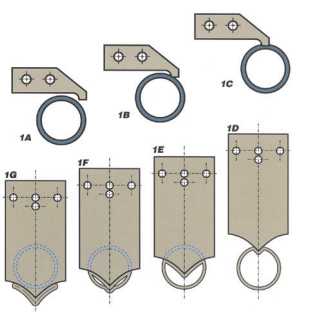
Based on proven MOSFET technology using a Current-Fed Inverter (CFI) design, the Thermatool family of CFI solid-state welders are available in many standard power ranges from 50kW up to 1500kW.

Thermatool provides today's tube and pipe producers with superior weld quality, the highest efficiency, the lowest running costs and most important of all, operational reliability that is second to none.

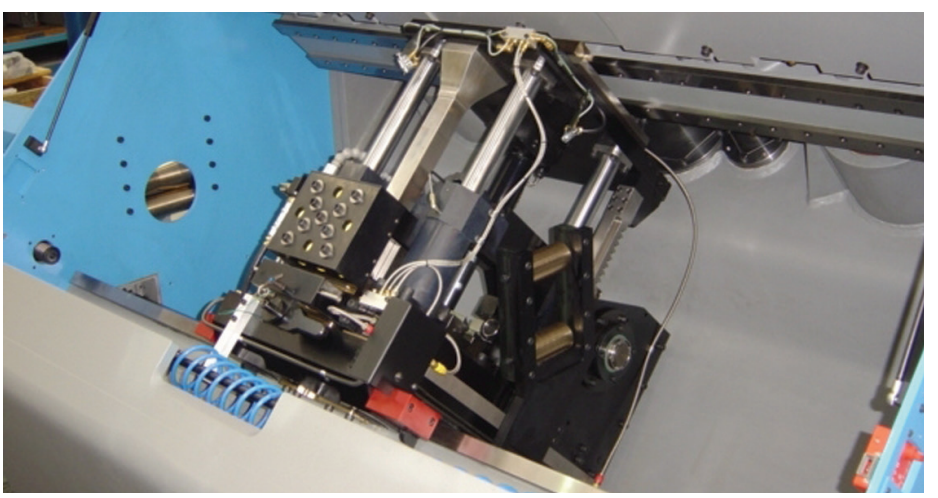
Offering the widest range of welding frequencies from 120kHz to 800kHz, CFI solid-state welders are the natural choice, capable of welding carbon, stainless and boron steels in addition to brass, copper and aluminium. More complex, higher tensile alloys, coated and galvanised materials are also well suited to the latest CFI technology.

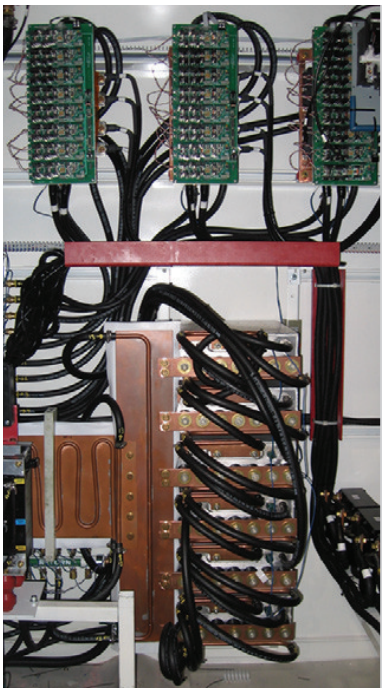
Thermatool Alpha high speed flying shears continue to extend the frontiers of tube cutting technology. Capable of shearing tube and profiles at up to 300 m/min, Alpha shears have productivity and reliability engineered into them.

The latest generation of Alpha shears have the power to precision cut high tensile materials such as 300 and 400 series stainless steels with excellent blade life.



In recent years, increased market demand for both high strength structural tubing and architectural, decorative stainless steel tubing, has made the Alpha the choice of top producers.





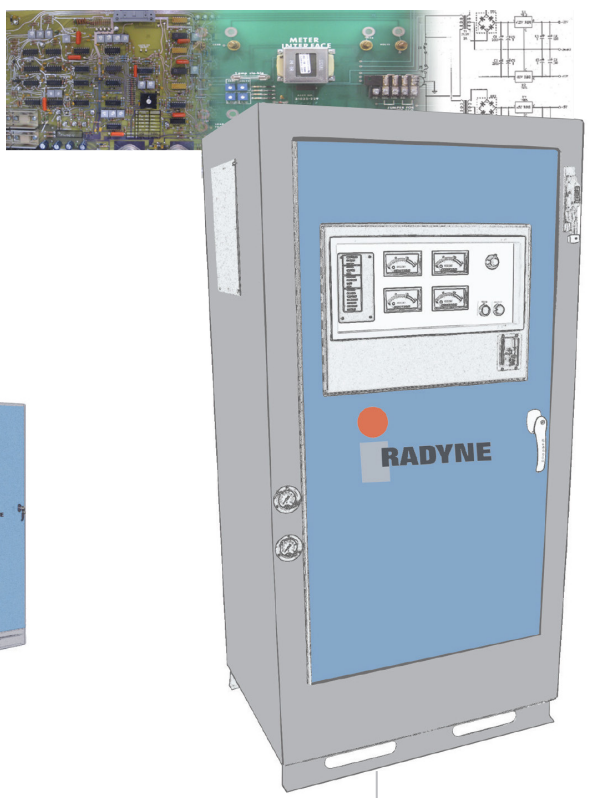
Power Supplies

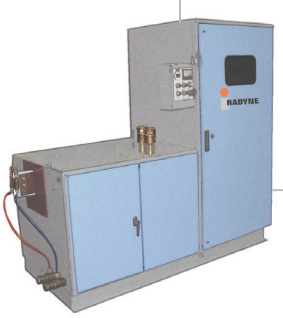
Radyne power supplies are known throughout the world for their rugged design and steadfast reliability. Standard units with outputs from 5kW to 7MW can be configured to operate with a wide variety of heating coils to meet specific customer requirements.

There is a Radyne power supply for every application whereby customers can select a unit to operate over various frequency ranges between 30Hz and 1MHz.

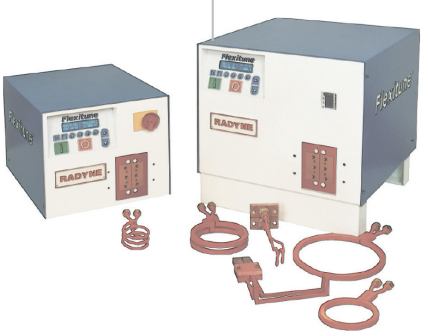
The ultimate power supplies, tailored to your application;

- Hardening
- Tempering
- Annealing
- Tube Heating
- Wire Heating
- Forge Heating
- Brazing
- Low Frequency Heating





Simply connect three phase 400 V input power, cooling water and heating coil and you're ready to begin heating.

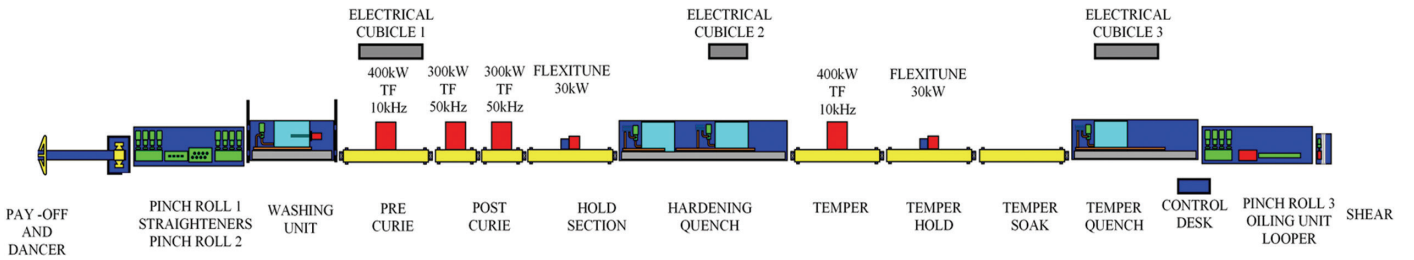


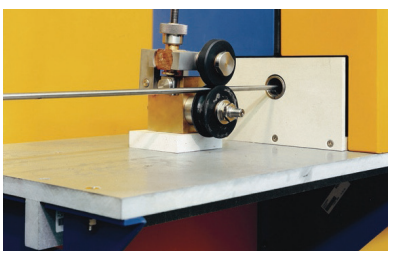
Radyne **VIP, TF, TC, LFi and Flexitune** power supplies are designed making use of the latest advances in electronic component technology in addition to making extensive use of field proven SCR, MOSFET and IGBT power modules.

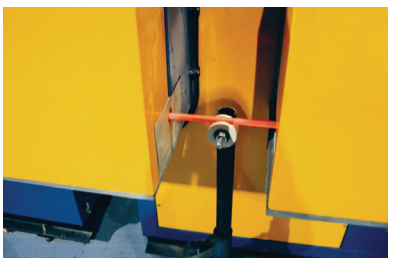
RADYNE

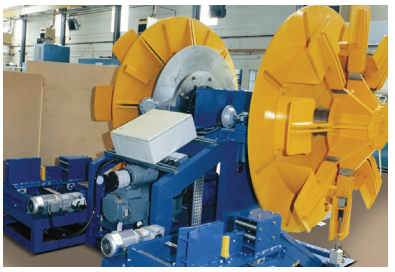
Wire Processing Technology

Radyne is the leading name in wire processing technology. Whether the requirement is for a complete turnkey system, an upgrade or an addition to an existing wire processing line, Radyne offers the ability to improve your heat treatment process, providing long term benefits and cost savings.







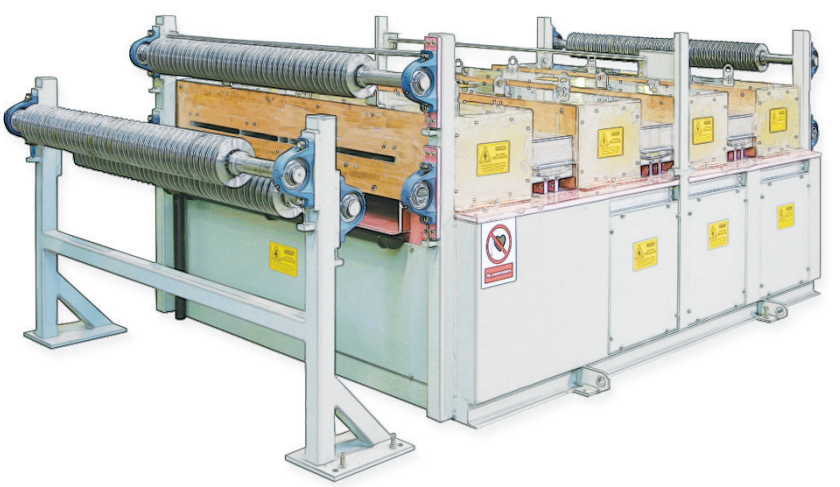


Radyne high speed spring wire lines operate at line speeds up to 180m/min, producing up to 3 tonnes per hour on diameters ranging from 4 to 16mm. Systems are energy efficient, non-polluting and environmentally friendly due to oil free quenching.

Radyne provides the industry standard for induction heating technology when applied to the production of spring steel wire such as SRS 60, 9254, 55CrSiV to international OT standards.

In addition to conventional spring wire lines, Radyne's applications expertise extends to:

- Automotive tyre cord diffusion
- Deformed pre-stressed HiBond® material for building construction
- In-line annealing on high speed wire drawing and rolling lines
- Static and mobile pre-stressed concrete low relaxation heating systems
- Pre-heating of multi-wire prior to conventional furnace heating



RADYNE

Pipe Heating & Coating Systems

Radyne specialises in the design and manufacture of high quality induction heating technology, supplied to many industries including the oil and gas sectors. Known for its world class pipe heating and coating expertise, Radyne has gained a strong international reputation in line pipe and field joint processing.

Whether the requirement is for a comprehensive turnkey system or an upgrade to an existing process, Radyne offers the ability to heat treat in a clean, safe environment.

In addition to bringing in-depth induction applications knowledge to the oil and gas sectors, Radyne has responded to the challenge of working in the frontline of an industry that is continually striving to reduce operating timescales, and the incidence of breakdowns or interruptions to oil and gas production in the field.

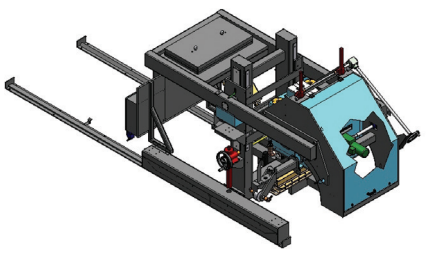
To address the needs of this very demanding sector, Radyne has developed specialist fixed and portable solutions for use on land, at sea and in some of the world's most inhospitable and potentially hazardous locations. Fully containerised systems fitted out with the necessary induction power supplies, heat coils, controls, automatic powder applications and cooling systems can be used either onshore or offshore.

- World class heating & coating expertise
- Line pipe & field joint processes
- Pipe & post-weld joint heat treatment
- Turnkey containerised systems
- Innovative SwirlCoat technology
- Line pipe coating systems

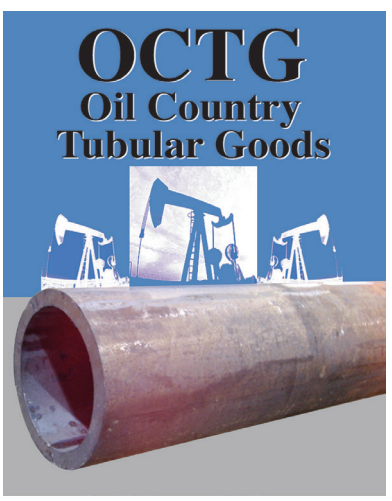
THERMATOOL

Tube & Pipe Heating Systems

The Thermatool range of seam and full-body annealers are highly efficient and offer proven reliability to tube and pipe producers. Powered by rugged Inductotherm VIP series power supplies, systems are available in modules of 200kW to 1000kW for operation at either 1, 3 or 6kHz. A single control board enables both simple operation and easy maintenance. A motorised carriage with linear tracking is supplied as standard, however, orbital seam tracking and line marking systems are also available.



With over 50 years experience in continuous, high speed production of tube and pipe, Thermatool offers producers of API grade oil and gas pipe total systems capability. To ensure process repeatability and rigorous quality control, essential requirements for API accreditation, continuous temperature monitoring is available to provide evidence that critical process temperatures have been reached during each shift.

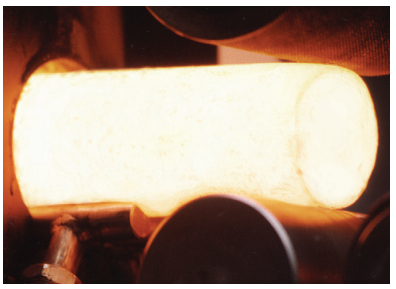


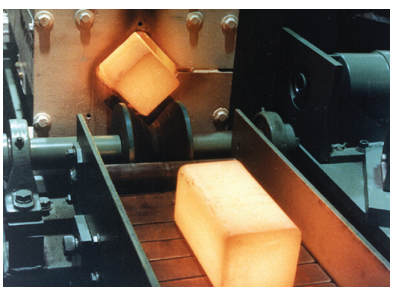
Quench and Temper systems are also available for producers of short (< 8m) lengths of automotive tube. As well as for producers of API line pipe and special OCTG (Oil Country Tubular Goods). i.e. End-upset stress relief.

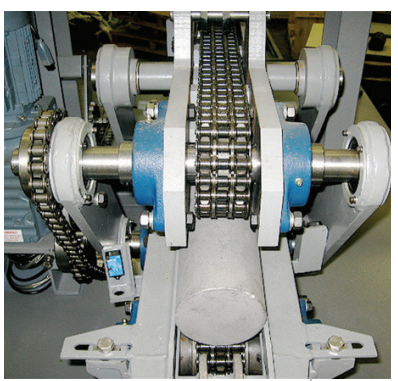
Spiral seam annealing systems are also available for producers of SAW (submerged arc welded) API pipe.

NEWELCO

Forge Heating Systems







Heavy-duty twin chain tractor in-feed drive

- *Rapid start*
- *Heavy duty design*
- *Standby hold circuitry*
- *HAZ Control Technology™*

Newelco's new InductoForge™ modular billet heating system is a revolutionary product for the forging industry.

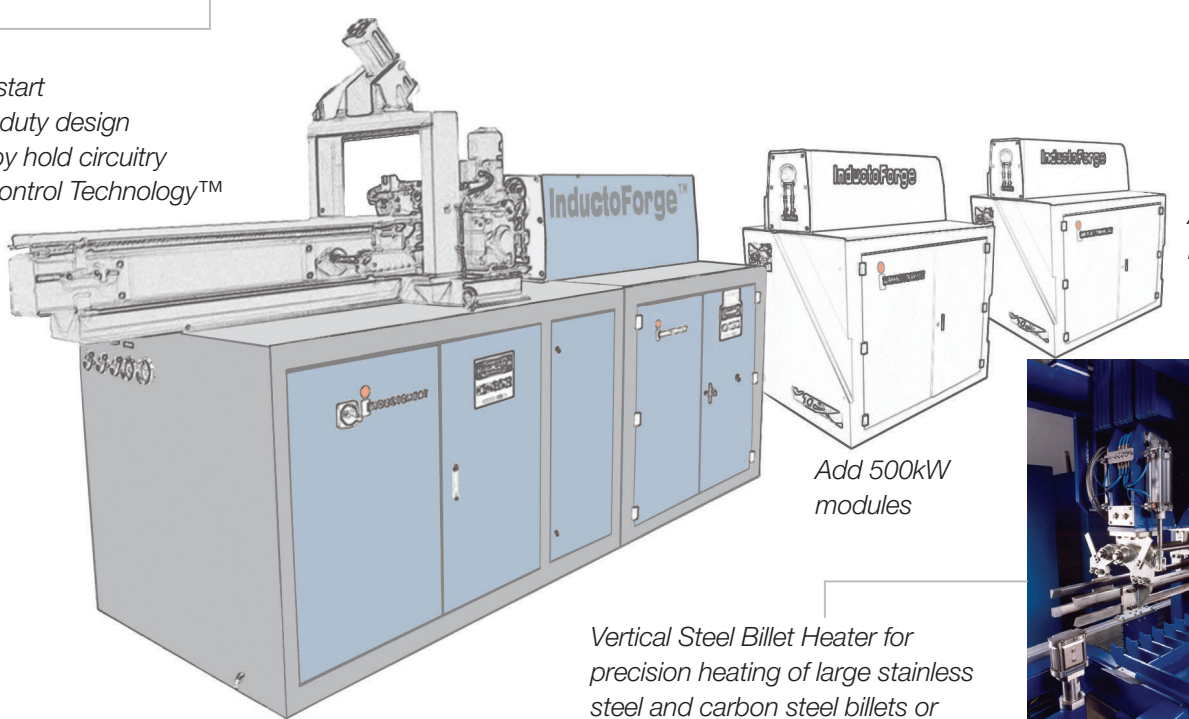
The flexible modular design allows the forge shop to assemble an induction system that exactly matches its application requirements by allowing the addition or subtraction of power modules for future production needs.

Newelco uses (Heat Affected Zone technology) HAZ Control Technology™ to accurately control and automatically set-up a heating profile for the InductoForge™ billet heater to provide uniformly heated billets.

The InductoForge™ system uses 500kW power modules that are capable of running at a wide range of frequencies (500Hz to 6kHz).

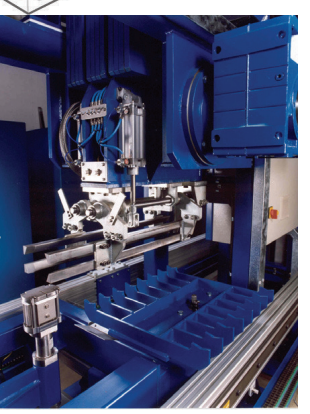
Each module is individually controlled resulting in a much finer and more accurate control of the billet temperature. In addition, this advanced technology allows for efficient heating over a wide range of billet diameters using a single size heavy-duty coil.

A significant advantage of this innovative technology is reduced energy, utility and operating costs, ultimately increasing your productivity and profitability.



Add 500kW modules

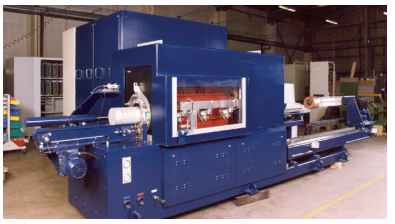
Add 500kW modules

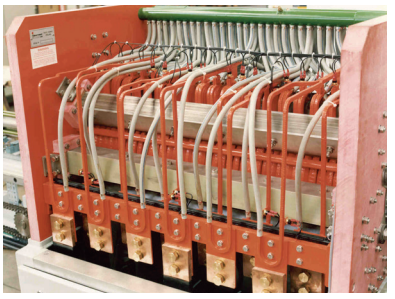


Vertical Steel Billet Heater for precision heating of large stainless steel and carbon steel billets or tubes, up to 460mm in diameter.

BANYARD

Non-Ferrous Induction Heating





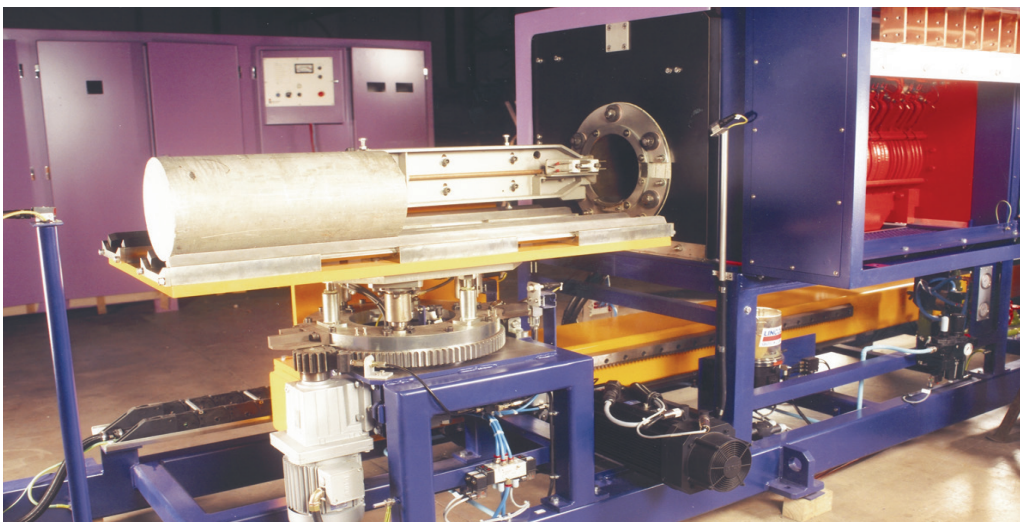
Banyard is the leading name in non-ferrous induction heating technology, providing mains and low frequency heating solutions for Aluminium, Brass, Copper, Titanium and exotic alloys for both sawn and sheared billets ranging from 127mm (5”) to 610mm (24”) in diameter.

With today's manufacturers demanding billets of the very highest quality at the press, precise temperature control is vital during manufacturing. Banyard taper heating equipment achieves this with multiple control zones enabling both static and dynamic heating.

The Banyard multi-zone Booster heater, powered by an Inductotherm LFi series low frequency IGBT inverter, can be retrofitted to existing extrusion lines heated by gas. The combination of increased temperature accuracy and repeatability results in both increased output and a higher quality product.

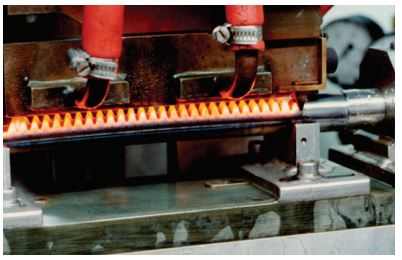
Multi-layer induction coils offer high efficiency and enable precise temperature control. In addition to this, the high repeatability associated with Banyard induction heating systems satisfies the latest automotive industry SPC requirements.

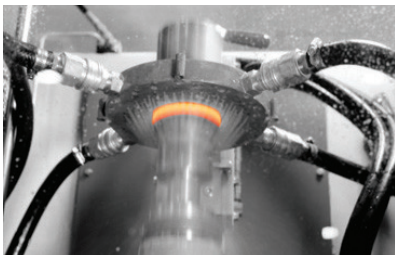
In recent years Banyard has developed systems for the aluminium micro-tubing industry which offer zero friction servo handling to eliminate billet surface damage.

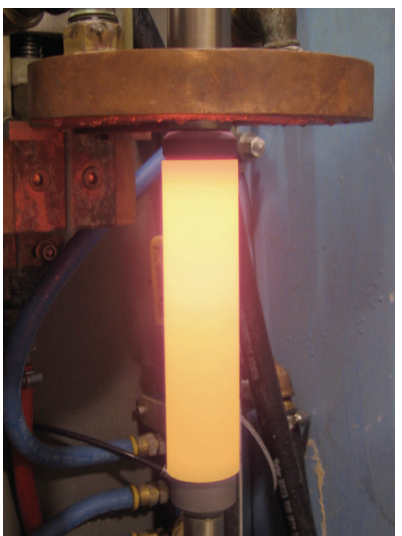


BANYARD

Heat Treatment Systems







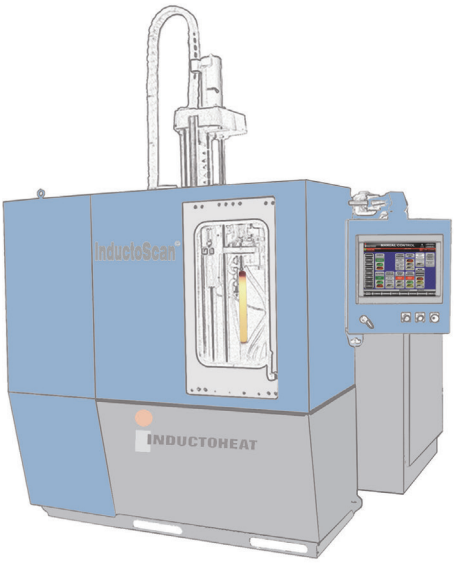
Many metals require heating and/or heat treating to achieve their optimum physical properties. Our focus is to lead the market in quality heating and heat treating equipment by providing flexible and innovative systems for long-life performance.

Advances in our technology include new standardised modular heat treating equipment such as, the InductoScan® system with PC HMI/PLC program storage and touch screen controls.

Modular machines mean they can perform various heat treating applications, such as; scan, single-shot, lift/rotate, pick & place, rotary index and linear transfer.

Banyard induction heat treatment systems are of particular interest to producers of high volume, low cost components which require heat treatment. The high speed, reliability and repeatability of the Banyard InductoScan satisfies the latest automotive industry SPC standards.

InductoScan® heat treating equipment gives you the most flexible heat treating solution for today's needs, and as tomorrow's business changes, our standardised modules can be reconfigured to match your future production needs.



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