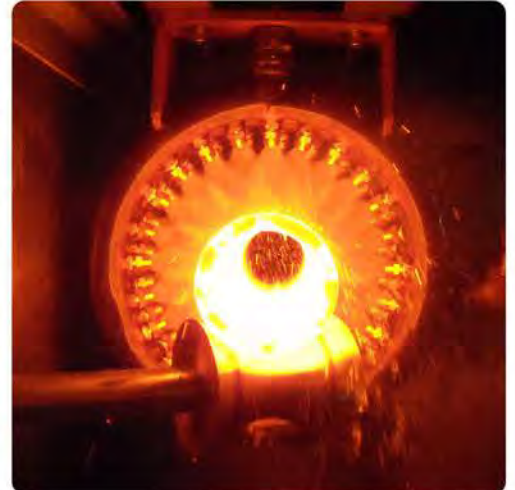


Interpower INDUCTION



WORLD CLASS INDUCTION HEATING EQUIPMENT

POWER SUPPLIES | FORGING | HEAT TREATMENT | COATING



VESSEL HEATERS | INLINE HEATERS | PIPE HEATERS

SPECIALISTS IN HEATING AND MELTING EQUIPMENT

INTRODUCTION

Welcome to Interpower Induction, one of the fastest growing induction heating companies in the world. Interpower Induction has provided world class induction mass heating equipment and systems with the highest level of technology available and a personal service unmatched by anyone else in the industry since 1995. This unique combination of advanced induction technology and service is a competitive advantage built into everything we provide – giving you more power to compete in your industry.

Interpower Induction Europe has been established as a full manufacturing and service centre, where we are able to provide the full range of Interpower products and local service in Europe. This has been achieved by the acquiring UK based Melting Solutions, a specialist in manufacturing both induction and gas/oil fired heating and melting systems.

This way Interpower Induction Europe can provide full engineering support for new equipment as well as repairs and service by skilled staff with in excess of 30 years experience in the heating industries.

Today we serve hundreds of customers worldwide. We have produced equipment for forging, automotive, truck and bus, wind turbine, aerospace, military, railroad, handtools, mining, marine, farm machinery and off road vehicle industries.



POWER SUPPLIES

Interpower Power Supplies for Induction Heating (5 to 5000kW) are solid-state units employing state-of-the-art technologies in both power and control electronics. The units are designed to operate in the harshest of environments and will provide long term trouble-free operation.

The power transistor, called IGBT (Insulated Gate Bi-Polar Transistor) allows absolute turn-on and turn-off even at high operating frequencies. The ability to turn off these devices at any time during the operating cycle makes this one of the most reliable systems on the market today. The technology allows for power, voltage or current control. The power supply can run over a wide range of frequencies set by the configuration of the heat station. Interpower power supplies consist of the units along with a line disconnect switch, power components, solid-state controls, all operator controls and safety devices.

Series	Characteristics	Fixed v. Swept Frequency	kW	kHz	Applications
Power-Link 1.3	Low power, wide match capability	Fixed	10 - 100 kW	30 - 100 kHz	Small Billet & Bar End
Power-Link 2.1	Low frequency, higher power	Swept	1000 - 5000 kW	100Hz - 3 kHz	Billet, Bar & Tube
Power-Link 3.0	General MF Applications	Swept	100 - 1500 kW	100Hz - 10 kHz	Billet, Bar, Bar End Heating
Power-Link 4.0	Low cost option IGBT	Swept	10 - 100 kW	10 - 50 kHz	Annealing, Drying, Curing, Coating
Power-Link 6.0	Single full power rectifier, multiple remote inverter sections, high power	Swept	500 - 5000 kW	100 Hz - 10 kHz	Billet, Bar and Tube
Power-Link 7.0	High Frequency MOSFET Technology	Swept	10kW - 100 kW	135 - 450 kHz	High Frequency
Power-Link 7.1	Low power, high frequency IGBT	Swept	7.5 kW	135 - 300 kHz	High Frequency
Power-Link 8.0	Fine tune technology to switch between mains and battery	Fixed	200 kW	10 kHz	Crystal Growing

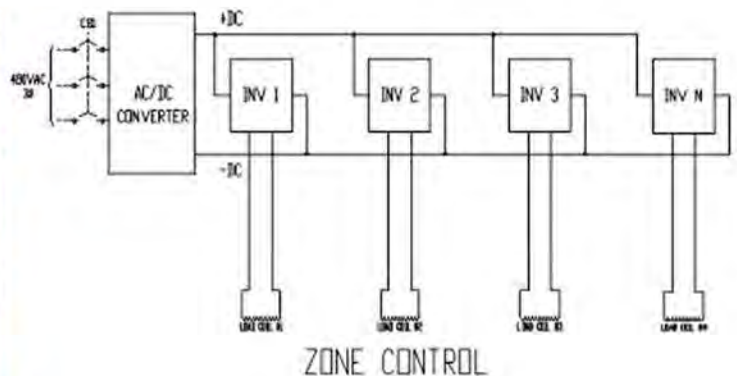
POWER SUPPLIES

Interpower Zone Control

Interpower has developed a new technology for billet heating that we term "Zone Control". Zone Control offers major advantages over conventional billet heating systems. This technology allows for individual coil control instead of one large power supply connected to a multi-coil line. Power can be managed with a high power distribution as required to provide the best heating profile allowing for ideal surface-to-core uniformity and the highest efficiencies available on the market today.

Interpower Zone Control Technology Provides the Following Advantages

- Transistor Technology:** IGBT Transistor technology is used for IP Zone Control. This offers higher electrical efficiencies over SCR/Conventional billet heaters. Using transistors in the inverters yields higher pounds per kilowatt as compared to SCR / Conventional systems. In addition, the input power factor is maintained near unity at all times.
- Temperature Feedback:** IPC technology is unique with the option to include temperature feedback. Infrared pyrometers look inside the induction coil as the billets are being heated and the temperature is fed back to the PLC controls. With this feedback to the software, the user enters the billet diameter, length, cycle time, and temperature, and the controls calculate the best power distribution automatically.
- Startup and Hold:** IPC software is used to ramp the system into production and minimise the number of lost billets. In addition, the billet line can be stopped and held. The system will monitor the temperature of the billets and allow for recovery from hold with a lower number of billets sent to the reject bin.
- Coils and Shuttle:** Every coil on the system can be placed in any location on the line. There are no unique coils, and therefore only one spare is required per set of coils. In addition, the system can be configured with a coil shuttle to minimise the amount of time required to change between coil sets.



VESSEL AND PIPE HEATERS

Fluid and Gas Heaters Vessel and Pipe Heaters for Continuous or Batch Processing

Over the past 20 years, Interpower has developed, designed, manufactured, installed and commissioned Vessel and Pipe Heating systems. Through the use of state of the art control systems benefits include:

- Instant start-up and shut-down
- No thermal inertia
- Low heat loss
- Precision product and vessel wall temperature control without over shoot generating consistent product quality
- High energy input. Ideal for automatic or micro-processor control
- Safe hazard area or standard industrial operation at line voltage
- Pollution free uniform heating at high efficiency
- Low running costs
- Low or high temperature working
- Minimum maintenance
- Pipe heaters can be of a standalone design
- Vessel Continuous and Batch Process Heaters can be self-contained and are mounted directly onto on vessel generating minimum floor space requirement



Induction heating embodies all the conveniences of electricity taken direct to the process and transformed to heat exactly where it is required. It can be applied successfully to virtually any vessel or pipe system needing a source of heat. Induction offers many benefits unobtainable by other means and gives improved plant production efficiency and better operating conditions since there is no significant emission of heat to the surroundings. The system is particularly suitable for close control reaction processes such as the production of synthetic resins in a Hazard Area.

Typical industries using induction process heating:

- Paint manufacturers
- Adhesive and special coatings
- Chemical, gas and oil
- Food processing
- Metallurgical and metal finishing



The Interpower Induction In-Line Heater arrangement can be used for applications include:

- Air and Gas heating for Chemical and Food Processing
- Hot Oil Heating for Process and Edible Oils
- Vaporising and Superheating: Instant steam raising, low and high temperature / pressure (up to 800°C at 100 bar)



HEAT TREATMENT

Previous Vessel and Continuous Heater projects include:

Reactors and kettles, autoclaves, process vessels, storage and settling tanks, baths, vats and still pots, pressure vessels, vapourisers and superheaters, heat exchangers, rotary drums, pipes, dual fuel heated vessels.

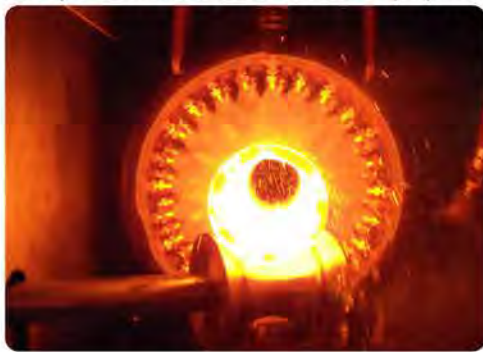


Previous In-Line Heater projects include:

High pressure super heated steam heaters, regenerative air heaters, lubricating oil heaters, edible oil and cooking oil heaters, gas heaters including nitrogen, nitrogen argon and Catalytic Rich Gas (CRG) heaters.

HEAT TREATMENT EQUIPMENT

Interpower manufactures equipment and full lines for most Heat Treatment Processes.



Interpower has designed and supplied complete lines of induction heating equipment for bar and tube heat treatment and temper lines. Typically the bars / tubes are used by the customer in the bundle format. We have the design capability and experience to manufacture equipment to accept the bundles, take the parts through an unscramble system onto a bar rack. They would then load onto the inline drive system which rotates the part through the induction coil heating system and the quench tank before proceeding onto the temper induction line. After the bars exit the tempering coils, they are transferred to a cooling rack.



FORGING AND COATING

Forging - Induction Heating Systems

Induction Heating Systems for Forging designed, built and repaired by Interpower Induction include standard billet heaters, Zone Control billet heaters, bar end heaters, bar heaters, along with complete material handling and water cooling systems. Interpower Induction is the leading provider of induction forge heating machines.

Interpower Expertise in Forging Applications:

- Bar
- Flat Plate
- Hot Shearing
- Slab
- Bar End Heat
- Coining
- Flat Bar End
- Pipe Ends
- Billet
- Graphite Coatings
- Preforms
- Pucks
- Custom Applications



Coatings, Bonding (De-bonding) and Curing

Interpower manufacture highly productive, compact coatings systems. These systems improve safety and space in the working environment. The rapid, controlled heat from induction is suited to inline curing and drying of coatings.

Applications include:

- Pre/post heat for curing (FBE) fusion-bonded epoxy on pipe and rebar.
- Hem bonding and attaching heat activated seals.
- Coatings of fasteners with nylon, Teflon, plastisol, paint, chemical, etc.
- Preheat for extrusion and injection of polyethylene jacket material.
- De-bonding of rubber materials

Advantages using Interpower Induction technology includes:-

- Localised heating
- Fast heating
- Heating of moving components
- Accurate temperature control
- Repeatability



We have wide range of induction heating equipment for the coatings market. This includes experience in both on-shore and off-shore Induction heating of pipes for the gas and oil industry for use with FBE (Fusion Bonded Epoxy) 3LPE or 3LIPP (Polyethylene) coating materials. The pipe requires induction heating so when the epoxy powder is sprayed onto the pipe the epoxy will melt and bond to the pipe. This acts as an adhesive then allows for the top coat to be applied to the pipe. The coating is used for both anti corrosion and to retain the temperature to the product within the pipe. Interpower Europe design and supply equipment for all specialised applications.

ANCILLARY EQUIPMENT

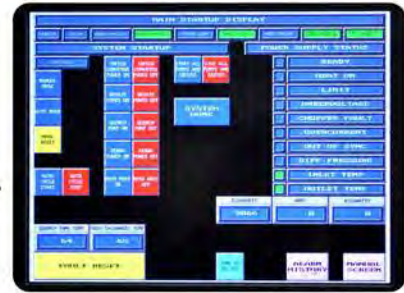
Sign LINK Coil Signature Monitor

The SIGN-LINK™ Coil Signature Monitors are specifically designed for induction heat-treating operations. They record and store the heat pattern for thousands of parts to support ISO, QC and SPC requirements.

The SIGN-LINK™ Coil Signature Monitor system allows monitoring of power, amperage, voltage, quench temperature, quench flow and part rotations. Built-in capabilities which enhance the flexibility of the system include a linking feature that allows multiple profiles, such as hardening and tempering, to be evaluated during a single cycle; signature repeat which allows evaluation of the same signature repeatedly in continuous applications, like tube welding and annealing as well as dead-banding to allow non-critical segments of heat cycle to be ignored.

SignLink Key Points:

- Monitor scan, speed, position, power, quench temperature, cycle or heat times, rotation speed & custom functions
- Touchscreen HMI displays recipes of parts & SPC data in real time, making changeover fast, easy & repeatable
- Each application is unique with simple or complex interfaces
- Eliminates costly cutting & quality checks & reduces skilled labour



Material Handling Systems for Metal Processing

Material Handling Systems for Metal Processing deliver solutions for new or retrofit machinery.

Complete automation features for:

- Exit Conveyers
- Flight Conveyers
- Bin Tippers
- Bowl Feeders
- Hot End Handling
- Vibratory Feeder Loader
- Step Feeders
- Pinch Roll Drivers
- Walking Beam
- Robotics
- Pick and Place
- Gantry



CONTACT

Interpower Induction is an established manufacturing and service business for various industries. Providing a diverse range of equipment and services, our philosophy is to enter into a partnership with our customers from the start. From concept through to installation and maintenance, we strive to deliver value.

Over the years the business has developed products that utilise different energy sources to suit the end user's resource availability. Consequently, considerable knowledge has been generated in both electrically-heated and gas/oil-fired equipment. The fuel fired product range is offered under the trade name Melting Solutions.

We also have a service division offering full engineering support, purpose-equipped facilities and fast and efficient breakdown service. We offer spares and repairs as well as modifications to meet increased production needs as well as routine preventive maintenance.



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