

## **Series Inverter Technology**

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The eadelin INDUCTION TECHNOLOGY

www.indopower.in

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INDO POWER

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#### **About INDO POWER**

**Indo Power** founded in 2005, offering custom built melting solutions for ferrous and non ferrous industries.

**Indo Power** company is having interest primarily in engineering and beyond. with innovation in product line, timely implementation with able leadership of technocrats.

**Indo Power** meets the most significant quality standards and offering the latest technology and process.

**Indo Power's** series invertor technology offers the state of art induction thermal technology which is widely accepted as the best choice for efficient induction melting.

indo Power has its presence in more than 950 + equipment in 15 places India and SIX places in abroad (CANADA, MEXICO, USA, OMAN, SRILANKA, NEPAL, ZAMBIA, SOUTH AFRICA, SAUDI ARABIA, PERU, COLAMBIA and other counties on going).





## **PRODUCTS RANGE**

- Induction melting Furnace
- Induction crucible
- Induction heating system
- Induction hardening system
- Induction Billet heater
- Induction Pipe & Tube Heater

Company product line includes Melting of various type matel such as Ferrous & non ferrous categories, Heat-Treating for selective Case Hardening, Forging, End Pipe Heating, Through Heating of Pipes, Tempering, Annealing, Bonding and Brazing. The Company Focus Is In Designing And Manufacturing Induction Heating Equipment's For Industrial Application And Serves A Variety of Industries, Including Automotive, Aerospace, Industrial, Mining, Oil And Gas, Marine, Railways, Construction, Power Generation, Agriculture, Wind Energy, OCTG, Etc.



INDOPOWER has achieved the fastest growth with the support from the customers. It takes upon itself responsibility to serve its customers as a trusted ally, providing enhanced customer satisfaction by meeting all their technical needs with principles of fairnes and transparency. It improves the production rates and quality of customers by using IGBT/SCR based power units for heating quickly, efficiently and with maximum repeatability.



Our mission is based on continuous development of products and processes. Due to this mission today we could propose to our customer's high technological products with top performance and great reliability. Flexibility, fast reply to customers request and post selling service are our prime motto.







#### **PRODUCTS**

**INDO POWER** super heat furnace is house of reliable, economic and efficient induction melting, heating and various application.

### **MELTING & HOLDING FURNACES**

Your operations desire unquestioned safety competence coupled with high energy efficiency. Designed suitable for all type of foundries

## Solid State Power Supply

- Highest efficiency.
- Low power consumption.
- Maximum production.
- Design up gradation to suit futuristic trends.
- Low cost of production and trouble free operation.
- Power optimizer
- 0.99 power factor under all operation
- Fully digitally control safety module entre system.





#### PRODUCTION UNIT

The manufacturing plant is fully equipped with the latest state of art machinery. every step in manufacturing is followed as per the standard, Right from the concept is a creation and is designed for trouble free operation year after year.

#### **OUR VISION**

- To manufacture the best induction melting furnaces in industry as per customer's melting needs.
- Implementing best manufacturing practices.
- Provide the best spares and services in time to minimize shut down and maximize production at customer end.
- Steer the organization to serve customer in better way.

#### **PHILOSOPHY**

Producing the "Best Quality part" at appropriate time in "Reasonable price" must be flexible enough to respond quickly for highest productivity

#### **BUILT IN QUALITY**

Selection of components with international standard for better performance and reliability of induction melting furnace

#### PROFILE OUR VALUED CUSTOMERS

We supply Melting Furnaces to the Automobile Industries, Investment Casting Industries, Centrifugal Casting, Non Ferrous Casting Industries, Steel plant.







# Application

## Melting



Aluminum Melting



Brass & Copper Alloys Melting



Ingot Plants



Heating

Investment Casting

Bar heater

Brazing



End bar heater

Hardening

Steel & Alloy Melting

Pipe heater



Forging



### **INNOVATIVE SPECIALISTS** FOR YOUR MELTING TASK

#### Mfr. of

**Induction Melting**, Heating, **Spare Parts & Related Equipments** 

#### Sales & Service Stations

- Ahmedabad
- Bangalore
- Agra
- Jamnagar
- Hyderabad
- Rajkot
- Pune
- Belgaum
- Kolhapur
- Jaipur
- Jalandhar
- Houston (USA)\*



(AN ISO 9001:2015, CE, GMP Certified Company)

Plot No 56 / A / 4, Road No - B, Phase - 1,G.I.D.C, Nr Bank Of India, Vatva, Ahmedabad- 382443. Gujarat. India.

**USA OFFICE : INDO POWER INDUCTION** 3310, Mulligan Court, Sugar Land, TX - 77498

**CANADA OFFICE : INDO POWER INDUCTION** 29-133 Major Mocknzie Dr., Maple, Toronto - L6A 4W4

### www.indopower.in www.inductoheats.com

Mfr. of Induction Melting, Heating, Spare Parts & Related Equipments

#### **Contact No:**

Mr. Tarkesh Shah +91 81602 19803, 94276 00625 Mr. Manoj Kumar +91 99986 94273 Phone : (O) +91 79 4037 2835

E-mail Id indopowerenggs@gmail.com info@indopower.in sales@indopower.in







## Induction Melting Furnace for Ferrous & Non Ferrous Metal



**Melt** Series

Series Inverter Technology

INDO POWER

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FREQUENCY RANGE : 30 KHz - 200 Hz



- Super heat I-Melt is technologically highly reliable and efficient Series Inverter based IGBT/SCR inverter design.
- Short circuit proof Power Circuit.
- Compact panel and machine design to maximize working area.
- The I-Melt Series Inverter offers near straight line performance across the melt cycle with an operating efficiency of around 98% while maintaining hear unity power factor.
- Constant output power irrespective of variation in input power supply. Auto sintering process will help proper sintering at the some line reduces. The human error & enhances the living life (Optional).
- The human error & enhances' the living life (Optional). HMI touch screen display with operator interface (Optional).
- Automatic power control.
- Robust design feature to safely operate at unbalancing power supply.
- Constant power factor above 99%, from zero to full power and from empty coil condition to full load condition.

Special design for ferrous and nonferrous melting.

#### HIGHLIGHTS

- Low switching loss
- Less inductive loss
- Less component & compact design
- Digital Control Motherboard
- Maximum Demand Control (Optional)
- Auto Centering Function (Optional)
- Noise reduction
  - Better protection for power component
- Fast Melt rate
- Low unit consumption



More then 5-15%

power saving

compare with Existing System

24X7 Customer Structured Technical

Continuous Research

& Development

Training

365 Support

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#### Technical Performance

	Melt Rate* / HR					
kW	KVA	Steel 1650°c	Iron 1480 <sup>°</sup> c	Bras/Copper 1100°c	Cooling Capacity/TR	Cable Size / Al.
75 kw	80 kva	115 kg / hr	130 kg / hr	270 kg / hr*	200 lpm / 20 TR	150 sq mm
100 kw	105 kva	150 kg / hr	170 kg / hr	360 kg / hr*	200 lpm / 20 TR	185 sq mm
175 kw	185 kva	295 kg / hr	325 kg / hr	600 kg / hr*	300 lpm / 30 TR	240 sq mm
250 kw	263 kva	450 kg / hr	500 kg / hr	810 kg / hr	400 lpm / 40 TR	400 sq mm
350 kw	368 kva	650 kg / hr	710 kg / hr	1050 kg / hr	500 lpm / 50 TR	240 x 2 sq mm
450 kw	473 kva	850 kg / hr	910 kg / hr	1500 kg / hr	600 lpm / 60 TR	300 x 2 sq mm
550 kw	578 kva	1030 kg / hr	1130 kg / hr	1800 kg / hr	800 lpm / 80 TR	400 x 2 sq mm
650 kw	685 kva	1176 kg / hr	1330 kg / hr	2100 kg / hr	800 lpm / 80 TR	Copper Busbar fitting
750 kw	790 kva	1400 kg / hr	1540 kg / hr	2500 kg / hr	1000 lpm / 1000 TR	Copper Busbar fitting
1000 kw	1052 kva	1860 kg / hr	2058 kg / hr	3310 kg / hr	1200 lpm / 120 TR	Copper Busbar fitting
1250 kw	1315 kva	2330 kg / hr	2570 kg / hr	4120 kg / hr	1200 lpm / 120 TR	Copper Busbar fitting
1500 kw	1580 kva	2800 kg / hr	3090 kg / hr	4930 kg / hr	1500 lpm / 150 TR	Copper Busbar fitting
2000 kw	2105 kva	3740 kg / hr	4120 kg / hr	6620 kg / hr	1800 lpm / 180 TR	Copper Busbar fitting

\*Note : Under Ideal Condition with Clean and dence charge and operating panel at rated power.

\*\*IGBT Technology

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Mfr. of Induction Melting & Heating Equipment ( AN ISO 9001:2015, CE, GMP Certified Company )

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### www.indopower.in

#### Mfr. of Induction Melting, Heating, Spare Parts & Related Equipments

#### Contact No :

Mr. Tarkesh Shah +91 81602 19803, 94276 00625 Mr. Manoj Kumar +91 99986 94273 Phone : (O) +91 79 4037 2835 E-mail Id indopowerenggs@gmail.com info@indopower.in sales@indopower.in





## **U-Melt**

# Precious Metal Gold Platimum & Other Metals







## **Precious Metal Melting Furnace**

- Durable body with high temperature top, ensures hassle free heavy use.
- Improved production values through higher melting rates.
- Temperature controller-works with thermocouple probe.
- Space-saving, Compact design & Simple to operate.
- Hassle-free maintenance & minimal downtime.
- IGBT switching with low energy consumption.
- Advance controls with diagnostic features.
- Dual metal melting Gold & Silver.
- Reliable safety precautions.

Majority Application...

INTER POWER

## **Gold -** Silver - Brass Steel - Copper - Platinum

Suitable for Ferrous & Non-Ferrous Metal

**Power Range:** - 5 kW - 25 kW **Product Range:** - 1kg, 2kg, 5kg, 10kg, 15kg & 30kg

## **Technical Performance**

Description	FMG-1 (1KG Gold)	FMG-2 (2KG Gold)	FMG-4 (4KG Gold)	FMP-1 (1KG Platinum)	FMS-15 (15KG Silver)	FMS-30 (30KG Silver)
Line Power	1 Phase, 230v AC	3 Phase, 440v AC	3 Phase, 440v AC	3 Phase, 440v AC	3 Phase, 440v AC	3 Phase, 440v AC
Input Line Frequence	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Absorbed Power	5.0 kW	7.0 kW	8.0 kW	8.0 kW	15.0 kW	30.0 kW
Oscillate Frq.	1kHz ~ 20kHz	1kHz ~ 20kHz	1kHz ~ 20kHz	$1 k H z \sim 20 k H z$	1kHz ~ 20kHz	$1 \rm kHz \sim 20 \rm kHz$
Power Switch	IGBT	IGBT	IGBT	IGBT	IGBT	IGBT
Crucible Capacity	1kg Gold, 24k Pure	2kg Gold, 24k Pure	4kg Gold, 24k Pure	1kg Platinum, Pure	15kg Silver, Pure	30kg Silver, Pure
Melting Temp. (max)	1200Č	1200°C	1200°C	1800°C	1200°C	1200°C
Melting Time (+/- 10%)	4 to 6 mins	4 to 6 mins	6 to 8 mins	8 to 10 mins	25 to 30 mins	35 to 40 mins
Cooling Water Temp.	20 to 30 °C	20 to 30 °C	20 to 30 °C			
Water Pressure / Flow	3 Bar / 3Lt. / mins	3 Bar / 3Lt. / mins	4 Bar / 4Lt. / mins	4 Bar / 4Lt. / mins	4 Bar / 4Lt. / mins	4 Bar / 4Lt. / mins
Temp. Measurement	K- type/Digital	K- type/Digital	K- type/Digital	K- type/Digital	K- type/Digital	K- type/Digital

\*Note : Under Ideal condition with clean and dence charge and operating panel at rated power



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Plot No. 56 / A / 4, Road No - B, Phase - 1, G.I.D.C., Nr. Bank of India,Vatva, Ahmedabad - 382 443. Gujarat, India.

USA OFFICE : INDO POWER INDUCTION 3310, Mulligan Court, Sugar Land, TX - 77498

## www.indopower.in

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#### Contact No :

**Mr. Tarkesh Shah** +91 81602 19803, 94276 00625 **Mr. Manoj Kumar** +91 99986 94273 Phone : (O) +91 79 4037 2835

#### E-mail Id

indopowerenggs@gmail.com info@indopower.in sales@indopower.in







INDUCTION HEATING FOR HEAT TREATMENT



#### Forge your future from our rich experience using the latest unitized modular concept for induction billet heating system







24X7 Customer Support 365



**Continuous Research** & Development

# Afr. of Induction Melting & Heating Equipment

Plot No 56 / A / 4, Road No - B, Phase - 1,G.I.D.C, Nr Bank Of India, Vatva, Ahmedabad- 382443. Guiarat. India.

**USA OFFICE : INDO POWER INDUCTION** 3310, Mulligan Court, Sugar Land, TX - 77498 Tel.: +1 281-896-3363

**CANADA OFFICE : INDO POWER INDUCTION** 29-133 Major Mocknzie Dr., Maple, Toronto - L6A 4W4 Tel : +1 289-242-8853 | canada@indopower in

Structured Technical

Training

### **Features/ Benefits**

- Thvristorised / IGBT Power supply unit.
- Input Power Factor 0.98 and above.
- Suitable for ferrous and non-ferrous metal.
- RS-232 / RS-485 interface for computer monitoring and control.
- Exceptionally superior performance
- True temperature uniformity control
- Refractory casted / Liner Induction coil design
- Quick coil change features
- Discharge quick extractor
- Highly efficient & reliable performance
- Quick start even with coil is full with cold billets / hot billet
- Reliability, low power consumption, ease of maintenance

### **Technical Specification**

#### RANGE : 50 kW to 2500 kW

Frequency Range : 10 kHz to 200 Hz Billet size : 16mm to 400mm (Round/RCS) Output Regulation : Voltage, Power or Current

### **Mechanical Handling System**

- Hydraulic & Pneumatic pusher system
- Automatic billet feeding system
- Heavy duty in-feed chain conveyor
- Heavy duty pinch roller system

### **Customer Benefits**

- Less change over time for induction coil Energy Saving
- Superior temperature control
- Rapid startup
- Latest technology at a fair & competitive price



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#### **Contact No:**

Mr Tarkesh Shah +91 98244 12949, 942760 0625 Mr Manoj Kumar +91 99986 94273 Phone : (O) +91 79 4037 2835

#### E-mail Id info@indopower.in sales@indopower.in indopowerenggs@gmail.com

- Bin tipper
- Vibro feeder
- Stepper converyor
- Elevator type billet loader
- Negligible scale losses
- Uniform heating



## **J**- Tube & Pipe Heating

### **Tube & Pipe Heating**

**Heating Prior to coating** 

**Heating for Bending** 

**Surface or Through Hardening** 

**Stress Relieving** 

**Tube / Pipe Anealing** 

## LEADING IN INDUCTION HEATING TECHNOLOGIES











# Advances in Pipeline Coating using induction Heating

The various types of pipes used today for oil and gas lines where high pressure is required. International standard various diameters pipes with various wall thickness used this section.

#### **Corrosion Protection**

Protection the most important requirements in the coating system for steel pipes are the following.

- Strong adhesion to the surface.
- Long term chemical and mechanical resistance of coating materials at operational temperatures.
- High mechanical impact strength and penetration resistance.

#### **Basic pipe coating line**

Induction pre-heating of steel pipe prior to Application of 3 year polyethylene coating

#### **Process**

- 1. Pipe is shot blast cleaned.
- 2. Pipe is pre-heated by induction for application
- 3. Epoxy primer sprayed onto pipe.
- 4. Copolymer layer applied to pipe.
- 5. Polyethylene layer applied to pipe.
- 6. Pipe is water quenched.
- 7. Coating is inspected by applying electrical current.
- 8. Pipe is ready for shipments.

# induction Heating of Rebar prior to epoxy coating application

Fusion boned epoxy coating, commonly referred as FBE coating is widely used to protect concrete reinforcing rebars, steel, pipes, piping connections, etc. used in construction. It has been found that FBS coatings the practical and scientific way for protecting steel reinforcement against corrosion. Applying an expoxycoating to steel rebar (reinforce bar) prevents the chlorides from reaching the steel surface.

FBE coating are in the form of dry power at normal atmospheric temperature. The powder when applied electrostatically on the cleaned surface of hot steel bars (heating is generally done with Induction Heater), fuses, melts, flows and cures to an adherent continuous chemically cross linked protective film against corrosion.

## SUCEESS How We Serve You

INDOPOWER offering custom built heating solution for ferrous and non ferrous industries.

**INDOPOWER** meets the most significant quality standards and offering the latest technology and process.

**INDOPOWER** series invertor technology offers the state of art induction thermal technology which is widely accepted as the best choice for efficient induction heating.

**INDOPOWER** can supply complete installations for specific processes incorporating induction power supplies, heating coils, controls, mechanics and cooling systems.



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E-mail Id

indopowerenggs@gmail.com info@indopower.in sales@indopower.in





## **Case / Surface Hardening**



- Case / Surface Hardening
- Automotive Components

(	Crank Shafts
	Cam Shafts
ŀ	Piston Rods
ł	Pinion Shafts
١	/alves
ŀ	Rear Axle Flange
١	Wheel Hub
(	Steering Rack
(	Clutch Box
(	Gearbox Parts
1	/ Joints

## INDUCTION HEATING FOR HEAT TREATMENT









## **Autotuned Induction Heating System**

### Features/Benefits:

- Thvristorised / IGBT Power supply unit.
- RS-232 / RS-485 interface for computer monitoring and control.
- Input Power Factor 0.99 for 0 to 100 % output.
- Sinale control Board.
- Heating time can be controlled by PLC / CNC. •
- Heat level can be controlled by remote potentiometer

#### **Technical Specification**: RANGE: 30 kW to 350 kW

Frequency	: 1 kHz, 3kHz, 10 kHz, 30 kHz & 50 kHz				
Energy Conversion Efficiency : 85 % minimum					
Output Regulation	: Voltage, Power or Current				
Regulation Accuracy	: + 2 % with + 10 % with line variation				

### **Scanner Assembly Features**

- Scanning facility: 300mm, 600mm, 1000mm, 2000mm upto 4000mm
- Vertical scanner is with rolled ball screw THK Japan/equivalent.
- Top tooling nib is lifted by manual lever.
- Manual adjustment of tooling to accommodate different length of parts.
- Scanner is with balance counter weight for smooth operation.

## **Quench Re circulating System**

- Distilled Water Re circulating System
- Stainless steel Quench water tank.
- Water to save S.S. Heat exchanger.
- Centrifugal mono-block pump.
- "Basket filter" with Magnetic separator.
- Quench water temperature & pressure gauges.
- Non-ferrous plumbing.

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indopowerenggs@gmail.com info@indopower.in sales@indopower.in

## Frequency Vs Hardness case depth

Frequency (kHz)	Case Depth (mm)
0.05 - 1	9 - 17
3	5 - 10
6 - 10	2.5 - 6
30	1.5 - 3.5
50	0.8 - 2



24X7 Customer

365 Support



Structured Technical



**Continuous Research** & Development

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Training

#### NDO POWER (AN ISO 9001:2015, CE, GMP Certified Company) **Spare Parts**





Hydraulic cylinder





Capacitor





Side plates

Insulation



Fuses









Di/Dt



High Freq. Transformer





Induction Coil



**DC-Link Capacitor** 



NDO POWER

(AN ISO 9001:2015, CE, GMP Certified Company)



Semi Conductor



Furnace slector switch

#### **Sales & Service Stations**

- Ahmedabad Hyderabad Kolhapur Bangalore Rajkot • Jaipur • Agra
  - Jalandhar

Top - bottom

• Houston (USA)\*

## INDO POWER

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#### HO & Plant :

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#### E-mail:

indopowerenggs@gmail.com | info@indopower.in | sales@indopower.in



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(AN ISO 9001:2015, CE, GMP Certified Company)



# **PRODUCTS** RANGE

Serfes Invertor Induction Furnace 40 kW - 2500 kW

**Medium Freq Induction Crucibe 30 Kg - 10 Mt** 

& FURNAGE SPARE PARTS





Electronics





**Contact No:** 

Mr. Tarkesh Shah

Mr. Manoj Kumar

+91 99986 94273

+91 81602 19803, 94276 00625

Phone : (O) +91 79 4037 2835

## About INDO POWER

Indo Power Engineers was conceived by two technocrats with more then 15 years experience of Induction Furnace industry in year 2005.

In a short period of eight years we have supplied 850 + furnaces for various applications viz Foundries and Ingot manufacturing industry.

Indo Power engineers has country wide service set up to provide prompt and quality service that's why customers get optimum performance from our furnaces.

Indo Power Engineers has its owned state of art manufacturing facilities having shop floor area of more then 25000 sq feet.

Indo Power has a well staffed R&D set up enabling it to introduce newer products with improved performance.

Indo power has been selected by customers who have been using furnaces of other makes because of total quality Commitment, higher efficiency and low cost of maintenance.



#### **Salient Features**

- Guaranteed melt rate
- Demand control (MD) to keep operating power at maximum level of total plant
- Lower power consumption
- Higher efficiency
- · Low cost of production and trouble free operation
- Automatic power control
- Robust design feature, to operate safety at unregulated power supply.
- Power factor always 0.98 and above at any power level.

 Indication on each temperature sensor helps easy diagnosis

· No molten metal required to

 Heavy duty EC grade copper used for higher efficiency

Ultra Fast protection system for

Heavy duty aluminum castable

Spare parts are very eco-

nomical and readily available

throw our various service

safety of power component

side plate used for crucible

station all over the India.

start the melting

## Melting



Aluminum Melting Mild Steel / Stainless Steel Casting





Investment Casting

Ingot Plants

### Heating





Steel & Alloy Melting

Application

Pipe heate







Brazino

Hardening









## ( AN ISO 9001:2015, CE, GMP Certified Company