Red-D-Arc Welderentals

When you're ready to weld.

ProHeat 35 Induction Heating Systems

Weld Preheating,
Post-Weld Heat Treatment,
Coating Removal, Shrink Fit,
Liquid- and Air-Cooled Systems

Sales, Rentals, Lease Programs

reddarc.com

1-866-733-3272

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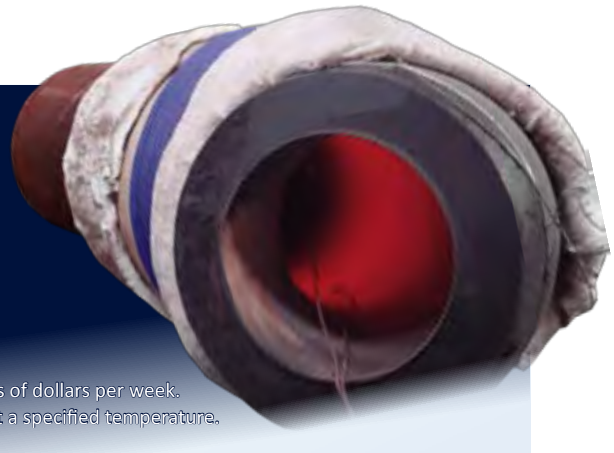

What is Induction Heating?

Induction heating is a simple, cost-effective heating process that delivers fast and consistent heat in the following applications...

Welding Fabrication and Construction
Weld Preheating and Stress Relieving
Post-Weld Heat Treatment (PWHT)
Coating Removal
Shrink Fit Applications

Compared to flame or resistance heating, induction-heating can save hundreds or thousands of dollars per week. Induction heating brings a part to temperature in a fraction of the time and holds the part at a specified temperature.

Benefits of Induction Heating

Uniformity and Quality	Provides the highest degree of temperature control across the heat affected zone (HAZ)
Reduced Cycle Times	Significantly faster time-to-temperature than resistant methods
Cost Reduction	No fuel costs and minimal insulation costs; reusable insulation reduces disposal and replacement costs
Power Efficiency	Operates at 92% efficiency transferring more energy to the part, decreased heating times, improved power efficiency
Ease of Use	Simple set-up using preheat blankets or flexible heating cables; on-board diagnostics and operator tutoring system
Reliability	Induction heating system-components make cycle interruptions unlikely; simple cabling
Versatility	Pipe preheat and stress relief; weldolets, elbows, valves, I-beams, complex shapes
Safety	Fewer fumes; eliminates fuel gases; no exposure to flame, gases, or hot elements
Environmental	Less airborne particulate; improved work environment results in higher worker productivity

How does Heating Induction work?

Induction heating induces heat electromagnetically rather than by using conventional heating elements. Induction heating acts more like a microwave oven; the appliance remains cool while the food cooks from within. In an industrial part, heat is induced in the part by subjecting it to a high-frequency magnetic field. The magnetic field creates eddy currents, exciting the part's molecules and generating heat. Because heat generation occurs slightly below the metal surface, no heat is wasted.

Unlike resistance heating, which heats the *surface* of the part, induction heating heats *within* the part. The depth of heating depends on the frequency used. High frequency (50 kHz) heats closer to the surface, while a lower frequency (60 Hz) penetrates deeper into the part. This allows more efficient heating of thicker parts. The induction coil does not heat up (as the work-piece heats up) since the conductor is large for the current being carried.

The ProHeat 35 system consists of a power source, induction blankets, and associated cables; with a built-in temperature control for manual- or temperature-based programming.

Air-cooled systems are used for pre-heat only; for applications up to 400 degrees F (204 degrees C).

Liquid-cooled systems are used for high-temperature pre-heating, stress relieving, and hydrogen bake-out for applications up to 1,450 degrees F (788 degrees C) and they can be used with an optional Digital Recorder for critical applications.

ProHeat 35
Induction Heating Systems

Quick Specs

Applications
Transmission Pipeline - Construction/Repair
Pipe Fabrication Shops
Power Piping - Construction/Repair
Petrochemical - Construction/Repair
Shipbuilding
Mining Equipment Maintenance
Drill Pipe Manufacturing
Shrink Fit

Process
Induction Heating
Input Power
460 - 575 VAC, 3-phase, 60 Hz CSA
400 - 460 VAC, 3-phase, 50/60 Hz CE
Output Frequency
5-30 kHz
Rated Output
35 kW at 100% duty cycle

kVA/kW at Rated Output
39/37
Input Amperes at Rated Output
400 V: 60 amps
460 V: 50 amps
575 V: 40 amps
Temperature Rating
Storage: -40°C to +60°C
Operation: -30°C to +50°C

Dimensions
H: 27.5 in (699 mm)
W: 21.75 in (552 mm)
D: 36.75 in (933 mm)
Weight
Net: 227 lb (103 kg)
Ship: 265 lb (120 kg)

ProHeat 35 Air-Cooled System

Designed for Preheating Applications up to 400° F (204° C), Optional Digital Recorder

The system can be operated in Manual Programming mode where a power output is applied to a part for a specified time or in the Temperature Based Programming mode where the part temperature is used to control power output. Air-cooled blankets are available for pipe diameters from 8 to 56 inches or, in the case of plate, the lengths are from 40 to 185 inches.

Typical Applications for Air-Cooled Induction Heating Systems
On-Shore Transmission Pipelines
Off-Shore Transmission Pipelines (Barge)
Ship Building
Mining

ProHeat 35 Liquid-Cooled System

Designed for High Temperature Preheating, Stress Relieving, and Hydrogen Bake-Out up to 1450° F (788° C), Optional Digital Recorder

The system can be operated in Manual Programming mode where a power output is applied to a part for a specified time or in the Temperature Based Programming mode where the part temperature is used to control power output. Liquid-cooled heating cables provide a highly versatile tool for preheating a variety of pipe diameters and even flat plate. In general, shorter cables are used for a smaller diameter pipe and are easier to handle and set-up. Longer cables are used for larger diameter pipe or small pressure vessels and tanks. Great for preheat applications on geometrics that prevent use of air-cooled blankets.

Typical Applications for Liquid-Cooled Induction Heating Systems
Pipe Fabrication Shops
Field Construction of Power and Process Piping
Shrink Fit
Shipbuilding - Propeller Shafts, Piping Systems, Plate (High Duty Cycle/High Temp)
Mining

Heavy-Duty Induction Cooler is designed with an efficient fin-and-tube heat exchanger, 2-1/2 gallon polyethylene tank, high-pressure pump and blower to yield a high cooling capacity. Includes a flow sensor/indicator and temperature sensor to provide system reliability.

For more information click www.reddarc.com/IHS or call 1-866-733-3272 to speak to an induction-heating specialist.

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ProHeat 35 Accessories

Remote Contactor Control

TC Thermocouple Extension Cable

Digital Recorder (Optional)
Stores temperature data based on time. A touch-screen enables simple programming and use. Data can be transferred to a PC for printing, storage, or analysis.

Accessories for Air-Cooled Systems

Induction Blankets

Replaceable Kevlar Induction Blanket Sleeve

Series Cable Adapter for combining two blankets in series for extra heating area

Output Extension Cables with Twist-lock Connectors (25', 50', and 75' lengths)

Accessories for Liquid-Cooled Systems

Output Extension Cables
10', 25', and 50' lengths

Liquid Cooled Heating Cables

Preheat Cable Covers

Preheat Insulation and Postweld Heat Treatment Insulation Blankets

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