

Induction Heating System

20 kW/25 kW Preheat

Issued May 2002 • Index No. IN/10.0

Induction Heating
System



Quick Specs

Applications

Maintenance
Construction
Power Piping
Petrochemical
Shipbuilding
Mining
Heavy Construction Equipment
Transmission Pipeline

Process

Induction Heating

Input Power

Intellifire 204

3-Phase, 400 VAC, 50/60 Hz

Intellifire 250

3-Phase, 460 VAC, 50/60 Hz

Rated Output

20 kW at 100% Duty Cycle, 50/60 Hz

25 kW at 100% Duty Cycle, 60 Hz

Input Amperes at Rated Output

39 Amps – 25 kW

35 Amps – 20 kW

Recommended Pipe Size

12–52 in

Dimensions*

H: 27-1/4 in (692 mm)

W: 15 in (381 mm)

D: 31-1/2 in (800 mm)

Weight*

Net: 165 lb (74.9 kg) Ship: 205 lb (93.2 kg)

*Power source only.

The Power of Blue®

The **portable** unit is **compact** (footprint of 3.3 sq. ft), **lightweight** (165 lb) and ideal for heavy-wall materials or when speed counts (such as production work).

Highly energy-efficient system (near 95% efficient) transfers more energy to the part, decreasing heating times compared to resistive or flame-heating methods (less than 50%).

Variable power control allows operator to control rate at which material heats by presetting the exact value over the entire output range.

The power source is equipped with patent-pending **ground fault protection**® which provides automatic system shutdown should power source output short to ground. A sense lead cable provides direct feedback to the power source of a fault condition.

Induction heating permits **welding while blankets remain attached to weldment** and **improves safety** by eliminating open flame, explosive gas and hot element hazards associated with propane and resistive heating.

A **variety of standard size blankets** support a wide range of heating applications including flat applications and standard pipe diameters from 12 to 52 in.

Specially designed **Kevlar® sleeve** protects the blanket from damage due to abrasion, cuts and tears. Hook-and-loop Velcro® on sleeve allows trouble-free replacement.

The induction process heats the material from within providing **heat uniformity** along and throughout the heat zone of the part and eliminates cold spots in hard-to-reach areas.

Air-cooled system eliminates the need for conventional water-cooled equipment, provides greater flexibility and reduces installation costs. Thermostatic protection safeguards against over-heating and thermal failure.

Multiple controller options meet a variety of applications. Remote Contactor Control provides remote on/off operation of the power source output. The IH/TC Temperature Control provides active temperature feedback to the power source for maintaining the desired preset temperature. The IH/PC Pendant Controller is valuable for troubleshooting and verification of system performance and operating parameters.



TRUE BLUE®
WARRANTY



Miller

Miller Electric Mfg. Co.

An Illinois Tool Works Company
1635 West Spencer Street
Appleton, WI 54914 USA

International Headquarters

Phone: 920-735-4505
USA FAX: 920-735-4134
Canadian FAX: 920-735-4169
International FAX: 920-735-4125

Web Site

www.MillerWelds.com



System Components



① Intellifire™ Power Sources



The Miller Intellifire™ is an inverter-based, solid-state, high-frequency induction heating power source that provides infinite control over a range of 0 to 25 kW and 0 to 20 kW for the 400-volt power source. It combines flexibility, precision and reliability into a compact lightweight package that provides all the features required

for reliable, consistent and efficient heating using the induction process. The Intellifire™ 100%-duty-cycle, air-cooled unit is perfect for heating operations—especially large diameter pipe, heavy-wall steel plate and critical time-to-temperature applications. Shown with optional running gear.

② Remote On/Off Switch



The Miller Remote Contactor Control is a simple lightweight control for manually and remotely turning the power source output on and off. It is designed to interface with the Intellifire™ power source through the 14-contact receptacle.

The simple rocker-style contact switch is mounted in a rugged housing and includes a 25 ft (7.6 m) cable and 14-contact connector.

System Components (Continued)

② IH/TC Temperature Controller



The Miller IH/TC is a temperature control package designed specifically to interface with the IHPS™ II and Intellifire™ power sources. The single-station controller processes temperature feedback from a single thermocouple sensor and adjusts power source output to regulate or maintain part temperature. The IH/TC is supplied with a temperature sensor, sensor extension cable and interconnect control cord for use with the induction heating systems.

Temperature Control Flexibility: The IH/TC is capable of maintaining temperature at a specified set-point or following a defined temperature profile.

"Heat On" Indicator Light: The IH/TC is supplied with a panel-mounted LED that illuminates when the induction coil is energized. The LED turns off when the desired temperature is reached or the coil is de-energized.

Local or Remote On/Off Capability: The IH/TC is easily configured for either local or remote on/off control of induction power via a front-panel-mounted selection switch. When set in the panel mode, output is activated by the panel-mounted output switch. When set in the remote mode, a Remote Contactor Control or IH/PC™ attached to the 14-pin output connector on the rear of the IH/TC allows for remote on/off of the system output.

Module Lock-Out: A manual lockout feature is provided on the IH/TC control module to protect against manipulation of temperature settings or

module programming. The factory-set lockout code can be easily programmed to a user-defined code, if desired.

Remote Programming and Data Recording

Capability: A dedicated RS-232 communications port on the rear of the unit provides the option to remotely program and record temperature data. With the use of a personal computer and optional Windows-based software, pre-existing temperature profiles from a user-created library can be downloaded to the IH/TC. Additionally, using the same computer/software setup, real-time temperature data can be recorded to document preheat temperatures or temperature profiles.

Thermocouple Input: K type

Communication Input Port: RS-232, 9-pin rectangular D

Dimensions: Height 4.0 in (102 mm); width 6.5 in (165 mm); depth 9.0 in (229 mm)

Net Weight: 4 lb (1.8 kg)

② IH/PC Pendant Controller



The IH/PC provides real-time system monitoring via a LCD display, which is valuable for troubleshooting and verification of system performance and operating parameters. One is recommended

to support one or more systems. See Literature Index No. IN/4.0 for additional information on this product.

③ Induction Blanket



Miller's Flexible Induction Blanket (patent-pending) is the newest innovation in preheat technology from a leader in the welding industry. The flexible, lightweight induction heating blankets come in a variety of sizes and are capable of preheat temperatures up to 400° F (204° C). The blankets easily conform to circular and flat parts and install in a matter of seconds. Manufactured from durable high-temperature materials, flexible induction blankets are designed to withstand the tough conditions in both industrial and construction applications.

Each blanket is supplied with two spare blanket-securing straps and one replaceable Kevlar® sleeve which provides added protection against abrasion, cuts and tears, extending blanket life.



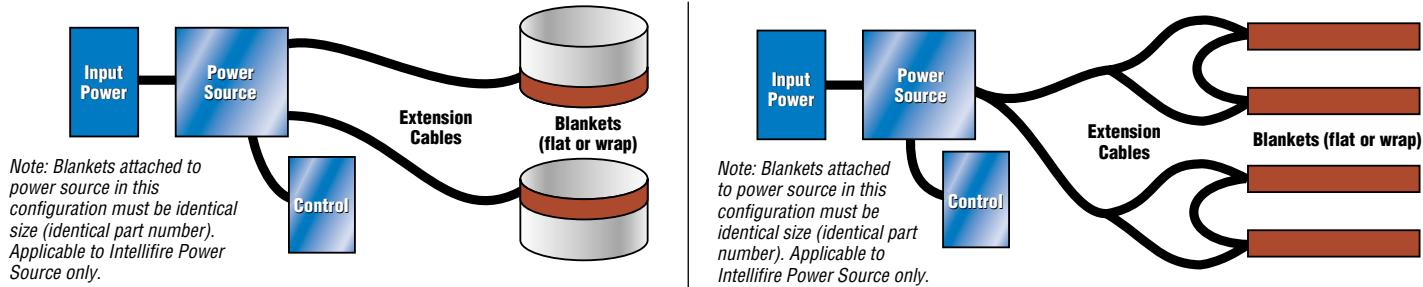
④ Power Extension Cables



Available in 25 and 50 ft (7.6 and 15.2 m) lengths. Interconnection between the power source and Flexible Induction Blanket is accomplished through Miller-manufactured Output Extension Cables. This product includes durable twistlock connectors for attachment to the

induction blanket. Power source connection is made using ring lugs to the rear of the Intellifire™ power source. A special cable-potting process is utilized at the cable ends to assure the product withstands the rugged environment experienced in the industrial and construction markets.

Series and Parallel System Configurations



Ordering Information

Equipment and Options	Stock No.	Description	Qty.	Price
Intellifire™ 204	#903 761	3-phase, 400 VAC, 50/60 Hz, 20 kW power source		
Intellifire™ 250	#903 469	3-phase, 460 VAC, 50/60 Hz, 25 kW power source		
Running Gear	#043 924	For Intellifire power sources		
Controls, Cables and Accessories	#043 109 #043 932 #194 672 #200 202 #200 201 #200 200 #042 715 #042 985	IH/PC pendant controller Remote contactor control IHTC temperature control (includes #200 202, #200 201, #200 200) IHTC temperature sensor IHTC thermocouple extension cable, 25 ft, type K, armored Interconnect control cable, 36 in (IH/PC or IH/TC) Interconnect control cable, 15 ft (IH/PC or IH/TC) Interconnect control extension, 25 ft (IH/PC or IH/TC)		
Output Extension Cables (Air-Cooled)	#198 528 #194 703 #198 284	25 ft, 20/25 kW 50 ft, 20/25 kW 18 in series adapter		
Induction Blankets (Air-Cooled)	#195 967 #194 886 #194 885 #194 884 #194 699 #198 657 #198 658 #194 686 #198 659 #198 660 #198 661 #194 817 #194 818 #194 687 #194 819 #198 662 #198 663 #198 066	157" x 11.5" For 12 in pipe (47" X 10.1" with sleeve) For 14 in pipe (53" X 10.1" with sleeve) For 16 in pipe (60" X 10.1" with sleeve) For 18 in pipe (66" X 9.0" with sleeve) For 20 in pipe (72" X 9.0" with sleeve) For 22 in pipe (78" X 9.0" with sleeve) For 24 in pipe (85" X 9.0" with sleeve) For 26 in pipe (91" X 9.0" with sleeve) For 28 in pipe (97" X 9.0" with sleeve) For 30 in pipe (104" X 9.0" with sleeve) For 32 in pipe (110" X 7.5" with sleeve) For 34 in pipe (116" X 7.5" with sleeve) For 36 in pipe (122" X 7.5" with sleeve) For 38 in pipe (129" X 7.5" with sleeve) For 42 in pipe (141" X 7.5" with sleeve) For 48 in pipe (160" X 7.5" with sleeve) For 52 in pipe (173" X 7.5" with sleeve)		
Replacement Blanket Sleeves	#194 889 #194 888 #194 887 #194 707 #198 664 #198 665 #194 706 #198 666 #198 667 #198 668 #194 811 #194 812 #194 705 #194 813 #198 669 #198 670 #200 262	For 12 in pipe (49" X 10.1") For 14 in pipe (55" X 10.1") For 16 in pipe (62" X 10.1") For 18 in pipe (68" X 9.0") For 20 in pipe (74" X 9.0") For 22 in pipe (81" X 9.0") For 24 in pipe (87" X 9.0") For 26 in pipe (94" X 9.0") For 28 in pipe (100" X 9.0") For 30 in pipe (107" X 9.0") For 32 in pipe (114" X 7.5") For 34 in pipe (120" X 7.5") For 36 in pipe (127" X 7.5") For 38 in pipe (133" X 7.5") For 42 in pipe (146" X 7.5") For 48 in pipe (166" X 7.5") For 52 in pipe (179" X 7.5")		

Date:

Total Quoted Price:

Distributed by:

