

EMMEDI Line of Products

For over five decades, EMMEDI has earned an outstanding reputation in the tube industry for reliability through superior technology and quality of design. The EMMEDI line of products is recognized worldwide as an industry leader with over 1000 global installations.

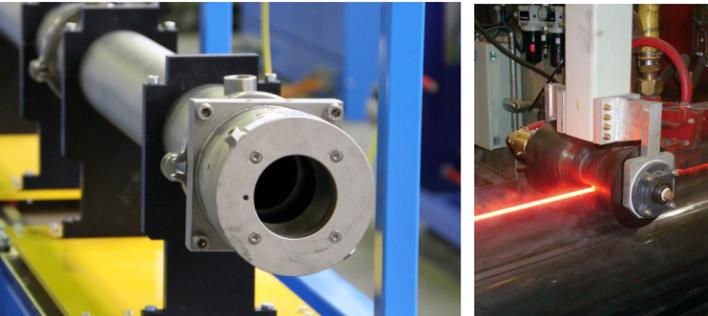
EMMEDI welders have been installed throughout the world since the early 1960's. Our welders have earned a reputation for their reliable design and advanced engineering. From vacuum tube welders to solid-state welders and now with the NEW SiC technology, EMMEDI continues to lead technological advancements in the market. EMMEDI supplies a full line of products to the bar, tube, and wire industries.

With our affiliation within the Ajax TOCCO family of global companies, we now offer expanded global solutions with more localized parts and service capability.



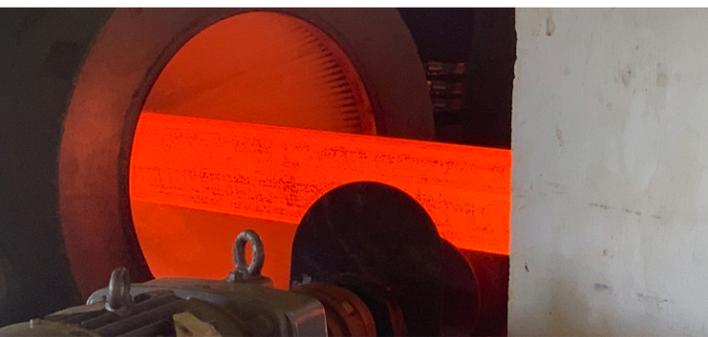
COATING SYSTEMS - WIRE, BAR, & TUBE

EMMEDI has provided complete coating systems for the wire, bar, and tube industries for several decades, including pre and post heat curing of coatings, FBE-Fusion Bonded Epoxy, paint, varnish, and acid wash pre-heaters. Our in-line systems offer advanced proportional control capabilities which deliver superior quality and process integration. We supply numerous OEM coating line builders around the world and are capable of complete turn-key systems.



BRIGHT, FULL BODY, AND SEAM ANNEALING

The in-line bright annealing process is mainly used with stainless steel AISI 300, AISI 400, duplex, super-duplex, and titanium pipes for various application such as petrochemical, furniture, automotive, food, and beverage. Seam annealing focuses on the HAZ coverage of a welded seam, while full body heats the entire pipe. EMMEDI meets API standards for the oil and gas industry, proving a solution for even the most challenging mill heating requirements.



QUENCH & TEMPER - BAR & TUBE

The quenching and tempering process involves the induction heating of steel and other iron-based alloys, followed by rapid cooling in a controlled setting to strengthen and harden the material. Our product line ranges from 2-42 tons per hour and can process API upsets in-line with sophisticated multi-frequency technology. The use of induction heating in this process creates a finer grain, better process control, versatility, and ease of computer-aided controls resulting in a superior end product.



MOSWELD SiC

THE ORIGINAL SiC HFI WELDER BEST IN CLASS EFFICIENCY WITH SILICON CARBIDE TRANSISTORS

ADVANTAGES

- **ENERGY SAVING:**
Reduced energy costs through major reduction in semiconductors paralleled with switching and conduction loss reductions in excess of 70%
- **DUAL CAPABILITY:**
Dual welding technology capable; Induction and resistance welding
- **COMPACT DESIGN:**
Mini MosWeld SiC Oscillator
Tube Replacement
Single cabinet up to 500 kW
Dual cabinet up to 1200 kW
- **INCREASED PRODUCTIVITY:**
Removable 50 kW modules allow you to stay in production if a module fails
- **VERSATILITY:**
 - ✓ HMI based coil adjustment
 - ✓ Component buffering up to 30%
 - ✓ Auto, adaptive, & manual control modes
 - ✓ Full short circuit protection
 - ✓ Siemens and AB control platforms
 - ✓ Industry 4.0 connectivity
 - ✓ Reduced harmonics distortion
 - ✓ Regional module exchange program



EMMEDI

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EMMEDI

HIGHLIGHTS OF THE MOSWELD HFI WELDER

SiC

- Energy Saving
- Compact Footprint
- Increased Productivity
- Remote Diagnostics
- Automated Maintenance
- Increased Reliability
- Increased Versatility
- Advanced Technology

MOSWELD SiC is the ultimate solid state power supply using Silicon Carbide transistor technology. EMMEDI introduced the first SiC technology to the HFI welding industry. An advanced MOSWELD design features **REMOVABLE** 50 kW modules. If you lose a module(s), you can continue to run at a reduced rate production.

TECHNICAL COMPARISON - Traditional Mosfets vs. SiC Technology per 100 kW bridge

Traditional Mosfets

64 X Si Mosfet's

Power Loss
12.8 kW

New SiC

4 SiC Mosfet's

Power Loss
1 kW

vs.

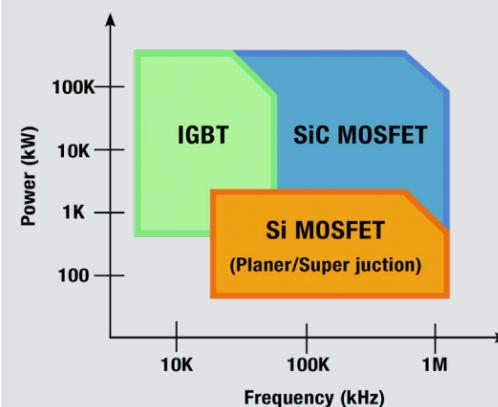


XYZ table Internally Mounted (up to 500 kW)



SEMICONDUCTOR SiC vs Si TECHNOLOGY IMPROVEMENTS

- Reduction in Power Loss (conductivity and switching)
- 10x the Critical Breakdown Strength
- Ultra High-Speed Switching (500 kHz +)
- Operates at Higher Temperatures (3x bandgap width)
- Superior Heat-Dissipation Characteristics (3x the thermal conductivity)



Precise Coil Adjustments

With a large quantity of semiconductors removed, the X, Y, and Z adjustment table is installed within the sealed power supply cabinet. This increases the reliability of all moving components in this assembly. Coil adjustments for mil alignment are accomplished through the HMI controls.



Removable module technology enables production to continue at a reduced speed in the event that a module fails. Take advantage of our *regional module exchange program* to exchange your module at one of our vast global service centers.

THE NEW EVOLUTION OF HFI WELDER

HIGH EFFICIENCY WITH SILICON CARBIDE SiC TRANSISTORS

TECHNICAL INFO

Continuous output power	100 - 1200 kW
Power regulation range	1 - 100%
Frequency range	100 - 500 kHz
Voltage supply	[400,480] V ± 10% 50, 60 HZ (no input transformer required)
Power factor	> 0.95 at any load
Power Modules	50 kW removable modules
Air Conditioning	Industrial Grade
Control welder	Siemens PLC, Allen Bradley (AB) Compatible
MosWeld Mini	Oscillator tube replacement (small single cabinet)
Dual Technology Welder	HFI and resistance contactor capable

ADVANCED CONTROLS

- ✓ Operator Control
- ✓ Part Receptions
- ✓ Water System
- ✓ Cabinet Parameters
- ✓ X, Y, & Z Table
- ✓ 3 Modes of Operation
 - Automatic / Adaptive
 - Semi Automatic
 - Manual



Removable Modules



A GLIMPSE AT SiC (Silicon Carbide) SEMICONDUCTOR TECHNOLOGY

MOSFET transistors with SiC substrate realize remarkable efficiency gains through the reduction in power switching and conduction losses. This is truly the next generation of HFI welders available today with installations in production worldwide since 2016.

The SiC Mosfet transistor is over 28 years old and has revolutionized many larger industries such as wind, solar and power generation, electric vehicles, and trains. EMMEDI is proud to have introduced the SiC Mosfet Transistor to the HFI Welding Industry.