



**Solid State H.F./M.F.
Induction Heating Equipment
SiC Mosfet & IGBT Module**



| Focus | Quality | Integrity |

HISEN ENTERPRISES CO., LTD.

Professional Manufacturer of Induction Heating Equipment

History

- 1967** HISEN incorporated in June
- 1975** Technical cooperation with FUJI Dempa Koki, Japan on H.F. Plastic welding machine & preheater
- 1978** Computerization of operations
- 1984** Started using Computer Aided Design and testing of machine system
- 1995** Honored with an award for excellence by Medium-Small Business association in achieving overall improvement in management system and company operations by using computerization
- 1996** Obtained ISO 9001 Quality System Certificate from DNV
- 1997** Obtained ISO 14001 Quality System Certificate from DNV
- 1998** Transferred technology from Japan on the manufacture of Medium and High Frequency Transistor Generators, resulting in a big leap in the output of our machines to 2000KW.
- 2006** Exhibited at the Tube Duesseldorf 2006 for the first time, becoming the first company in Asia making HF Induction machines joining an international exhibition
- 2009** Renewed Technology Transfer contract with Neturen Japan for another 10 years.
- 2017** Celebrated company's 50th anniversary.
- 2019** Renewed Technology Transfer contract with Neturen Japan for another 10 years.
- 2020** Transistors are fully upgraded to SiC Mosfet

Technical Comparison

Traditional Mosfets vs SiC Technology Per 80KW/400KHz bridge

Traditional Mosfets
12 x Si Mosfets



Power Loss 8KW

New SiC
2 SiC Mosfets



Power Loss 0.8KW

Quality System Certification

Precision

Durability

Refined Design

Economy

Customization Requirements

Stability

Energy Saving, Carbon Reduction,
Environmental

Sustainability



Product Showcase

Solid State H.F. Generator(SiC MOSFET)



Compact design

The comprehensive solid-state and low voltage design makes the unit compact in size and reduces the required installation space to one-fourth the space required by conventional vacuum-tube oscillator models.

Energy savings

Because transistors are used instead of vacuum tubes, input power can be reduced by about 35% and cooling water can be saved by 50%.

Beginning year 2020, Si MOSFET transistor was upgraded to SiC MOSFET.

Additional power savings of 15%

Frequency and Output

The generator accommodates a frequency range of 1KHz to 400 KHz at an output range of 5KW to 2000KW. In case of short time heating, output power can be increased.

Technical Info	
Continuous output power	5-2000KW
Power regulation range	1-100%
Frequency range	10-400KHz
Voltage supply	380~480V ±10% 50/60Hz
Power factor	>0.95 at any load

Product Showcase

Solid State M.F. Generator(IGBT)



Easy maintenance and inspection

Transistors, printed circuit boards and other components are all placed at the front for easy maintenance access. Cooling water circulation system(option) helps to solve the cooling problems.

Dependable protective circuits

The protective circuits ensure safe inverter operation in case of touching coils, no-load operations, over-load operations and other operation errors.

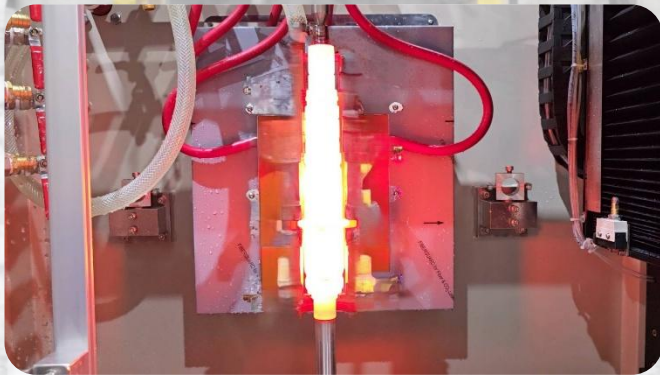
Tripping operations

Door interlock ·Cooling water flow·Water inlet/outlet temp·IAC trip IDC trip·Phase fault·LOW.F trip·HI.F trip·Tank fault(coil short) Tank capacitor over voltage.

Technical Info	
Continuous output power	50-2000KW
Power regulation range	1-100%
Frequency range	1-30KHz
Voltage supply	380~480V ±10% 50/60Hz
Power factor	>0.95 at any load

Vertical Scanner Quenching Machine

Suitable For: Shafts, Gears, Rollers, And Pins



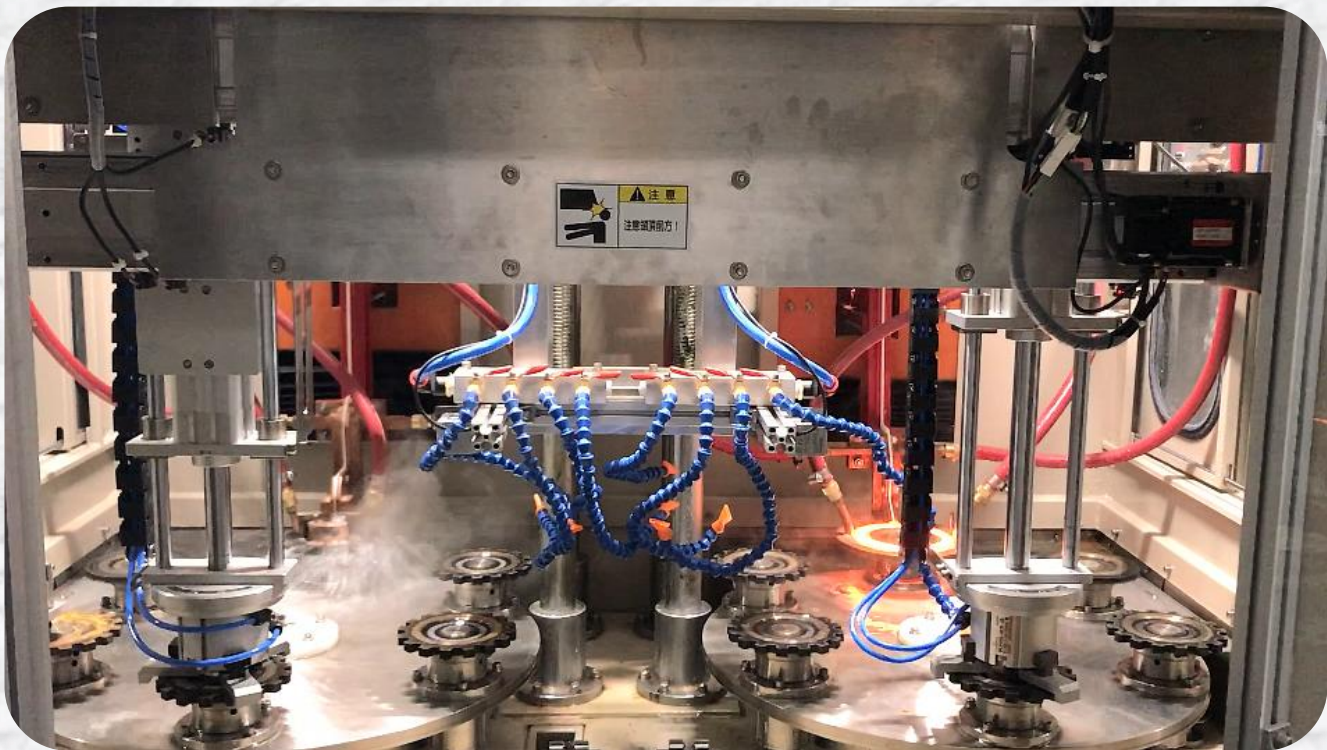
Product Information

Driver	Servo Motor
Controller	Industrial PC 15" or HMI
Stroke	200mm~2000mm
Moving Speed	50~10000mm/MIN
Workpiece Rotating Speed	50~300RPM

Display and record: Voltage, Current, Power, Energy, Quenching liquid Pressure, Flow, Temperature

Rotary Table Scanner Quenching Machine

Suitable For: Shafts, Gears, Disc-shaped Parts, And Rolling Element Parts



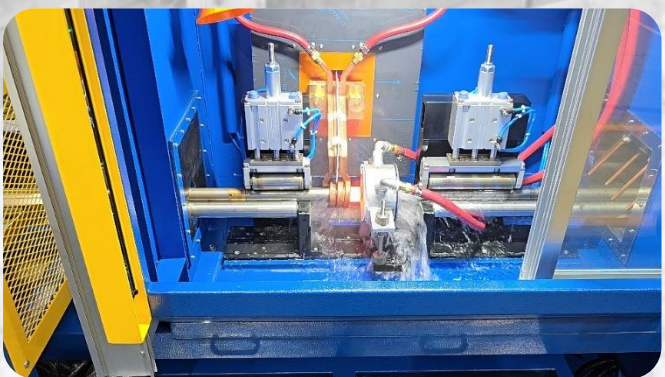
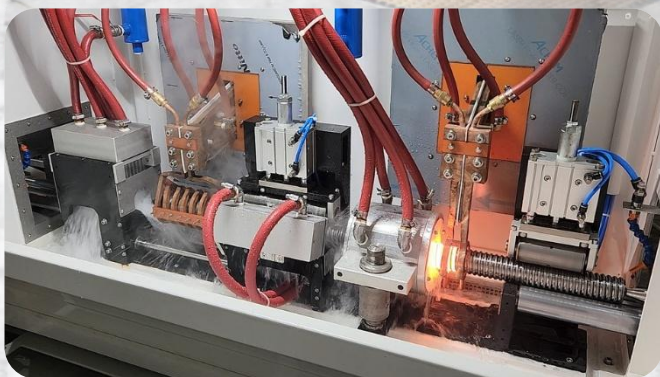
Product Information

Driver	Servo Motor
Controller	Industrial PC 15" or HMI
Stroke	100mm~600mm
Moving Speed	50~10000mm/MIN
Workpiece Rotating Speed	50~300RPM

Display and record: Voltage, Current, Power, Energy, Quenching liquid Pressure, Flow, Temperature

Horizontal Scanner Quenching Machine

Suitable For: Ball Screws, Linear Guides, Tubes, Wires, And Rods



Product Information

Driver	Servo Motor
Controller	Industrial PC 15" or HMI
Stroke	600mm~20000mm
Moving Speed	50~15000mm/MIN
Workpiece Rotating Speed	50~300RPM

Display and record: Voltage, Current, Power, Energy, Quenching liquid Pressure, Flow, Temperature

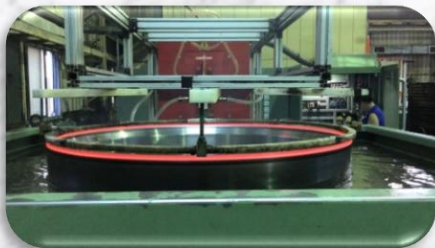
Quenching Liquid Cooling System

The water tank and piping are made of 304 stainless steel and can monitor water level, pressure, temperature, and flow rate data



Product Information	
Water Tank Capacity	500~5000L
Heat Exchanger	300K~3000K BTU
Cooling Pump	2~20HP(IE3)
Barrel Filter	90~400L/Min.
Oil Skimmer	Stainless Net Type Oil Skimmer
Display and record:Quenching liquid Pressure, Flow, Temperature	

Examples of Processed Parts



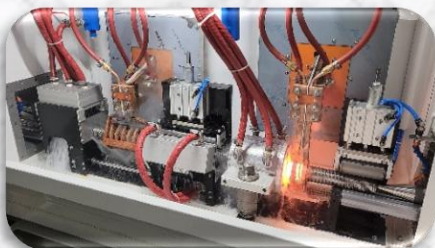
Knitting Cylinder



Ball Joint



Ax



Ball Screw



Scissor blades



Hammer



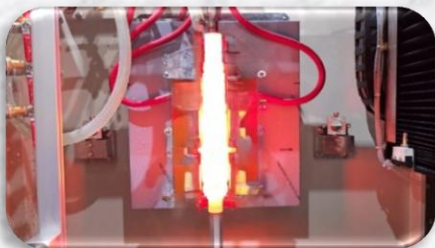
Thermal Spray



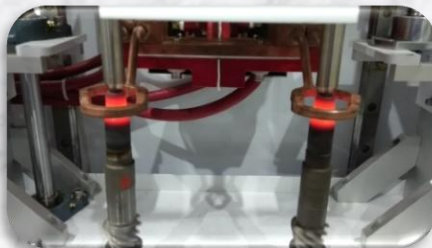
Gear



Roller



Shaft



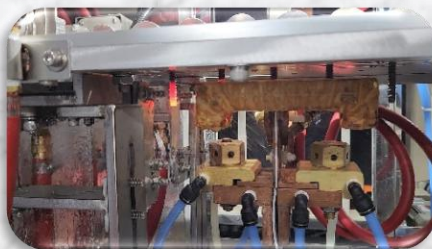
Screw thread Annealing



Powder Metallurgy



Threaded Rod



Screw



Linear Guide

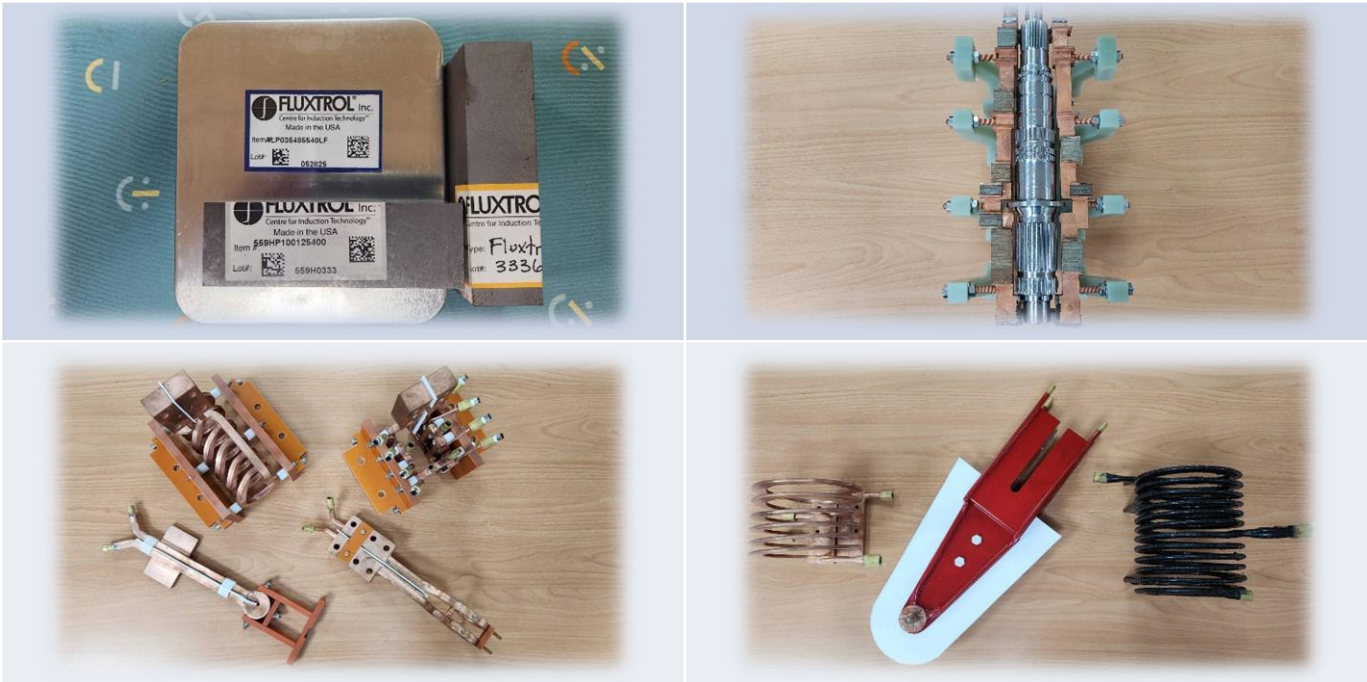
Sales Performance

Sold to 88 countries and regions worldwide



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Peripheral accessories Fluxtrol magnetic flux concentrators and Induction coils





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