

# 70kJoule Electromagnetic Welding/Forming Machine

## System Specifications

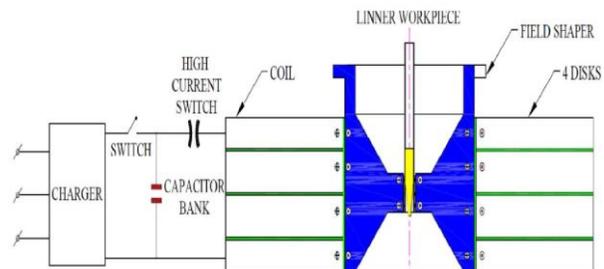
Parameters	Specifications
Maximum Energy	70kJ
Capacitance	224 $\mu$ F
Proof voltage	25kV
No. of sub-banks	2
Short-Circuit current	700kA@25kV
Short Circuit Freq.	~22kHz
Controls	PLC & HMI
Trigger generator	IGBT & Fiber optic
Current Sensing	Rogowski coil
Charging Supply	CCPS 3kJ/s

## Applications

70kJoule Electromagnetic Welding/Forming is presently used for D9 tube to SS316LN eng welding trials that has potential application in Fast Breeder Reactor Fuel Pin.



70kJoule EMM System



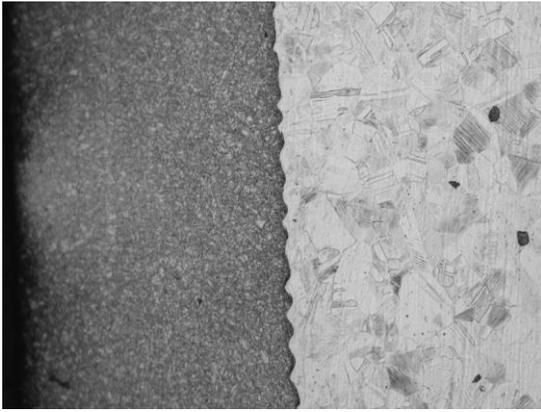
Welding Fundamentals



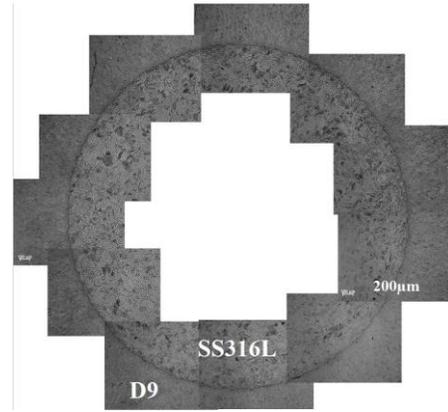
Coil & Job Placement with Fixture



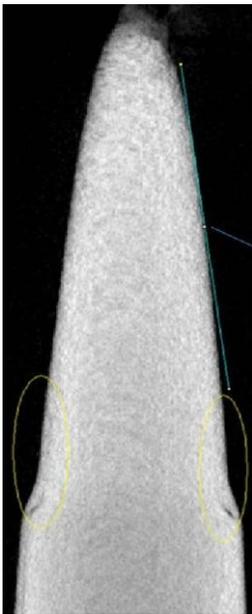
Pre & Post Weld Samples



**Axial Micrograph of Weld Sample showing wavy interface**



**Radial Micrograph of Weld Sample 4mm from tip**



**Tomograph of Weld Sample**



**Weld sample after Burst Test failing at TIG Weld point @ 105MPa**