

Introducing the
**Revolutionary
Electromagnetic
Pulse Technology**



WELDING



FORMING



CRIMPING

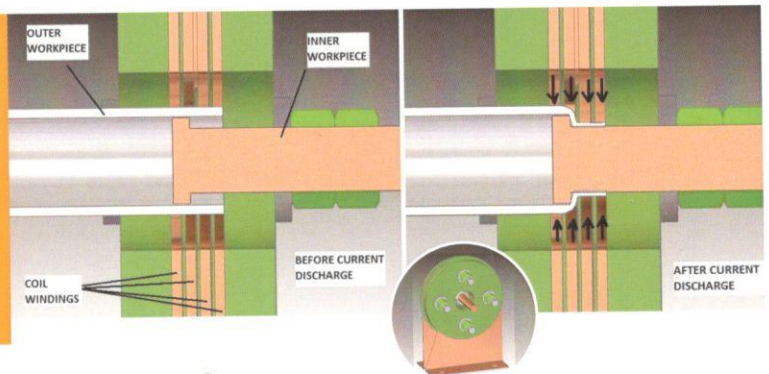


Technology
Transfer from
Bhabha Atomic
Research
Centre (BARC),
Mumbai

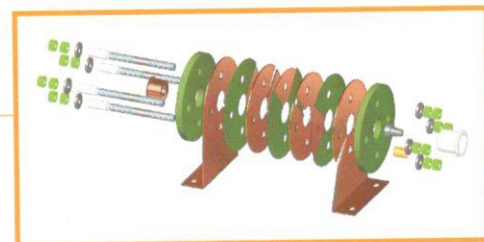
WHAT IS MAGNETIC PULSE TECHNOLOGY?

Magnetic Pulse Technology

Magnetic Forming / Pulse Forming & Pulse welding is a cold process for forming or joining conductive metals by non – contact method. This method is more commonly used for Aluminum & Copper, though it can also be used for Stainless steel, low carbon steel and other materials.



Typical Equipment Layout



- ① High voltage Capacitor bank
- ② Custom-designed Electromagnetic Coil
- ③ Magnetic Pulse Welding/Forming/Crimping Unit
- ④ Advanced control unit
- ⑤ Safety enclosure for Unit

Note: Machines can be further customised for automated loading/unloading, pick and place task on request.

Key Advantages to you

WELDING

- Contact less** joining
- Easily welds** complex geometries
- Welds dissimilar** metals
- Green welding** without smoke
- Requires **no fillers**
- No stresses** in the parts joined
- Eliminates possibility** of corrosion in the welded area

FORMING

- Contact-less** process
- Negligible** spring back effect
- Significant reduction** in wrinkling
- No contamination** or tooling marks
- Eliminates need** for Lubricants in the process
- Complex shapes** can be formed

A WHOLE NEW WAY FOR WELDING, FORMING AND CRIMPING

FORMING

The parts to be formed or joined are held in a coil and a high current pulse is generated through a capacitor bank and the induced magnetic field generates energy which accelerates the work-piece on to the die. The speed of deformation is such that the material is transformed in to a plastic state which increases the formability of the material.

APPLICATIONS

- Forming of 3D shapes from Sheet Metal parts/tubes



WELDING

The welding process leverages the same set-up with essential modifications. The welding pulse is extremely short with high current amplitude and frequency. The parts to be welded go beyond a velocity of 300 m/s and impact on each other producing a molecular joint. This process is applicable to a variety of metals and geometries.

APPLICATIONS

- Off-highway Automotives
- HVAC Components
- Sheet Metal Welding
- High pressure vessels
- Connectors (especially copper)
- Filters



CRIMPING

The Crimping achieved with Magnetic Pulse Technology is highly uniform, and free of radial or longitudinal misalignment typically observed in case of mechanical crimping methods. Further, the technology does not require any additional mechanical joining such as adhesives, welds, rivets etc. All types of compressions such as round, elliptical, or rectangular, required in crimping can be produced from tubular sections with use of Magnetic Pulse Technology.

APPLICATIONS

- Cable crimping, Electrical parts
- Connecting rods
- Construction/Lifting applications
- Aluminium lugs on cables
- Crimping of Steel/Aluminium



ABOUT ARTECH WELDERS



Artech Welders is a market leader in Capacitor Discharge Welding technology. As one of the few companies, globally, to have developed the capacitor discharge welding technology, Artech Welders has proven success in development and implementation of new, innovative welding technologies for small to large companies, in multiple industries.

The first to launch Magnetic Pulse Welding Technology!

Artech Welders is also the first to launch the revolutionary Electromagnetic Pulse technology in India. Several notable capabilities and achievements of Artech Welders, in view of leveraging the Electromagnetic pulse technology, include:

- Deep and wide ranging applications engineering expertise
- Specialised design team to develop and successfully commercialise critical welding applications
- Proven track record in successfully launching new welding technologies in Indian market

Ready to explore new possibilities?

Magnetic Pulse Welding technology is a highly specialised field and developing new applications requires deep application engineering expertise and strong R&D.

For the past several years, Artech Welders has been researching the possibilities in commercial scale application of Magnetic Pulse Welding technology in **Defense, Automotive, Medical Devices, High-end equipment and other areas**. Empowered by technology transfer from Bhabha Atomic Research Centre (BARC), Mumbai and a know-how from its four decade long experience in development and engineering of new welding applications, Artech Welders is well equipped to bring new possibilities in to reality.

Artech Welders is keen to partner with businesses that want to bring about break-through improvements in quality and productivity of their forming, welding and crimping processes by using Magnetic Pulse Welding Technology. Get in touch with one of our representative to understand how Electromagnetic Pulse technology can revolutionise your manufacturing.



artech
Trusted World Over

Artech Welders Private Limited
A-24/1, H- Block, MIDC, Pimpri, Pune,
Maharashtra 411 018, India.

Ph: +91 20 2747 6160 / +91 20 2746 2771 / 72

Email: sales@artechwelders.com

Website: www.artechwelders.com



**Prompt.
Nationwide
Support.**