CD

STUD IN CONTACT WITH PLATE

CYCLE STARTS & CURRENT FLOWS

PROJECTION DISINTEGRATES & ARC ESTABLISHED

COMPLETED WELD

CONWELD®

Speciality Fasteners for Stud Welding

STUD WELDING PRODUCTS

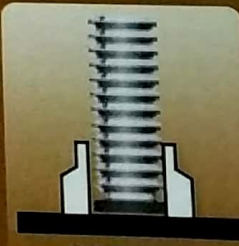
- STUD WELDING MACHINE
- STUD WELDING GUNS
- STUD WELDING COLLETS
- CAPACITOR DISCHARGE STUDS
- SHORT CYCLE WELDING STUDS
- INSULATION NAILS / PINS
- INSULATION DOME CAPS
- EARTHING CLIPS, (L & U)
- ARC WELDING STUDS
- CERAMIC FERRULES

ARC

STUD IN CONTACT WITH PLATE

PILOT ARC

POWER ARC



COMPLETED WELD

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CAPACITOR DISCHARGE STUD WELDING

What It Does

The welding of fasteners to light-gauge metals demands a system which minimizes the depth of penetration of the weld. The Capacitor Discharge range of studs, which has been specially developed for this purpose has found increasing application in almost every type of sheet-metal fabrication, in many cases providing a spectacular cost saving over alternative production processes.

Employing a weld time cycle of less than 1/100th of a second so that only the outer skin of the component/job and the end of the stud are melted, results in a shallow but nonetheless strong weld. Consistent results are obtained in a wide range of materials, even on vert light-gauge sheet, low-carbon and stainless steels down to 26 gauge and all weldable non-ferrous materials down to 22 gauge. In most cases, the reverse face can be pre-finished by painting, plastic coating, plating or anodizing, before welding, without fear of heat damage.

How It Works

In capacitor discharge stud welding, the welding energy is obtained from banks of capacitors which have previously been charged to the voltage selected for the particular application. Energy is discharged through the stud itself, giving a high density current which disintegrates the small pip/projection on the base of the stud. This leaves an ionized gap between stud and work piece across which the welding current continues to flow, in the form of work piece, completing the weld. The system operates on a single-phase 50 Hz A.C. mains supply at 220/240 volts.

Practical Advantages

- **Saves Time :** A stud weld takes only a split-second to make and only two-three seconds to re-load the welding tool/gun. Auto-feeding options are also available.
- **Saves Material :** The component to which the fasteners are welded is not weakened by drilling - as a result, plate thickness can be reduced. In addition, this process alleviates the need for punching holes and what's more - the reverse face of the component can be painted or covered as there is no rear side marking.
- **Saves Labour :** Semi-skilled operators too can quickly learn to make perfect stud welds... consistently.
- **Increases Design and Production Flexibility :** Access is only necessary from one side of the job - the equipment is readily portable and may even be bench-mounted. The designer has greater freedom and this production flexibility, with special auto-feeding studs, makes it possible to have methods of assembly that would otherwise be impractical.
- **Product Quality :** Provides leak proof fastening. Leaves a smooth unbroken finish on the rear/reverse side of the component or fabrication.
- **Wider Choice of Metals :** Dis-similar metals can be welded as long as both are conductive, e.g. brass to steel, brass to copper, aluminium to die-cast zinc.

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