

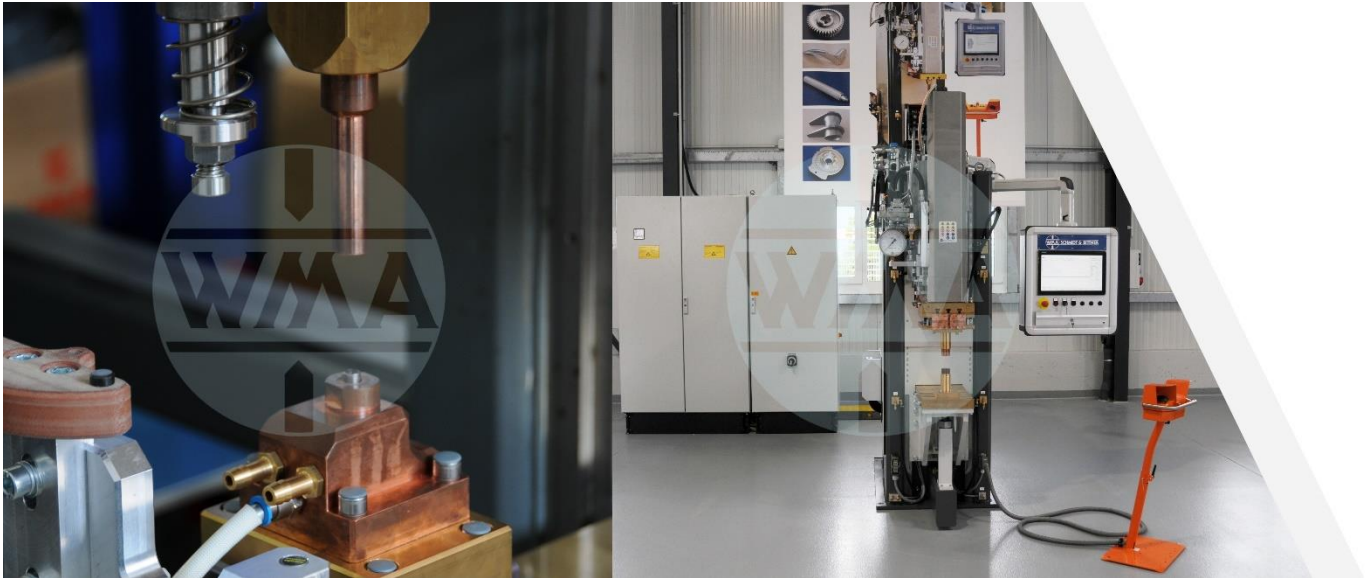


Capacitor Discharge Welding

MEGA-CD-Flex Projection Welding Machine

Date: 09-2020

Capacitor Discharge Welding (CD-Welding)



Innovations and special solutions from the German-Welding-Group: Get to know a new generation of capacitor discharge welding technology – out MEGA-CD-Flex projection welding machine with impulse technology.

Technical data

Performance:	12.500 j or 37.500 J, extendable up to 100.000 J
Electrode force:	preselectable 2.5-30 kN, extendable up to 60 kN
Pre-stroke:	200 mm
Working stroke:	0-40 mm
Standard projection:	350 mm, 550 mm or 750 mm
Loading times:	0.5-3 sec., dynamic, depending on the charging setting
Welding times:	dynamic, depending on the charging setting
Efficiency:	> 90 %



Order-No.: XN8.4375000B000

WMA reserves the right to make any technical changes in the interest of progress.

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Fields of application



Automotive Industry

- Hot formed components
- Aluminium components
- High-alloy steel



Mechanical Engineering

- Hardened components
- Sintered metals



Heating Industry

- Non-ferrous metals
- Mixed joints
- High-alloy steel



Filter Industry

- Wire cloth



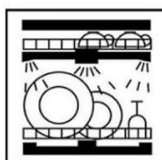
Water Management

- Steel and grey cast iron
- High-alloy steel



Renewable Energies

- Hardened components
- High-alloy steel



Tinplate Industry

- High-alloy steel

Advantages of the CD-Projection Welding Machine

- **Reduction of CO2 emissions** due to low grid connection
- **Reduction of air consumption** due to servo motor drive
- **Reduction of electrode wear** due to bounce-free positioning of the welding electrode
- **Increased cycle time** due to delta drive
- **Welding in the force application**
- Welding without repositioning units: **Low-spatter welding due to fast repositioning** of the air-bag projection welding machine
- **No power transformer** required
- **Symmetrical power supply load** due to the three-phase connection
- **Pre-selectable fuse** of 16, 32 or 63 A

Welding examples



Typical CD-weldings:

Contour projection welding, double annular projection welding, tarnish-free welding, welding without reworking, steel-brass welding, hardened steel ball welding, galvanized components



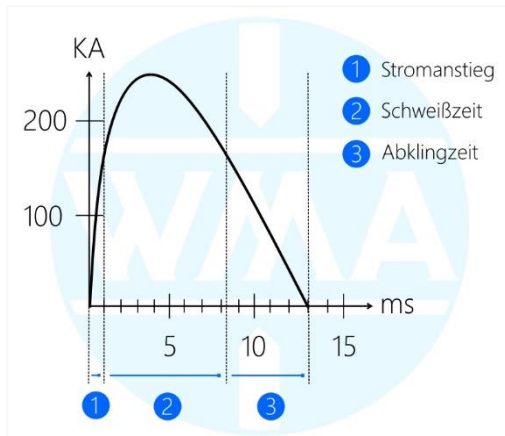
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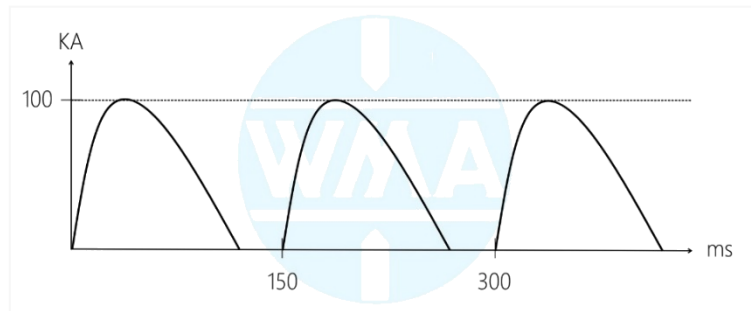
Performance curves

Figure 1: Welding impulse
(Individually adjustable power curves)



(1) current increase, (2) welding time, (3) decay time

Figure 2: Welding impulse sequence
(Individually adjustable power curves)



Technical features

1. Delta drive

The delta drive consists of an “E5 positioning drive”, “F3 high-speed welding cylinder” and the “air-bag projection welding system (ABBSS)”.

2. SER control technology

Due to the new developed welding controller MEGA-CD1 and the new developed inverter MEGA-CD1, reaction times from 1 ms are realisable. The new technology replaces the usual pre-charging control by a PLC.

- Weld with 1, 2 or 3 impulses (expandable to 6 or more impulses, to weld with the current control or with interpolating impulse technology)
- Weld with adjustable break times between the welding impulses
- Individual adjustable performance curves

- QA-system WIN-QA, Power Cloud or Pro MEGA with data protection (expandable to a fault knowledge database for analyzing welding faults and process disturbances)
- Secure remote maintenance system via Power Cloud

3. CD machine frame (standard)

- Torsional stiffness, stiffness calculation according to the finite element method
- Frame construction according to the expandable modular system
- Designed for electrode forces up to 6 t
- Press table and window opening adjustable between upper and lower clamping plate
- Water cooled current carrying parts
- Water flow and return control with temperature display and flow rate regulator

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Further information

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