



**HERON**

**DIGITAL RESISTANCE  
WELDING**

# **Medium Voltage Capacitor Discharge Resistance Welding Technology**

# COMPANY OVERVIEW

## Company Profile

- Founded in Guangzhou in **1991**
- More than 300 employees
- Factory with **54,000m<sup>2</sup>**
- More than **20 global customers**
- Full range of **resistance welding** products
- **Tog-L-Loc** and **FSPR** equipment
- With **automation production lines** in with appliance, compressor, low-voltage electrical manufacturing industries
- Heron manufactures our own controllers and transformers
- Full range of machine shop



# COMPANY OVERVIEW

## Corporate Culture

### VISION

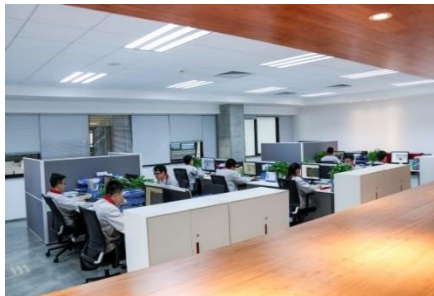
Become an internationally renowned brand in the resistance welding field.

### CORE VALUE

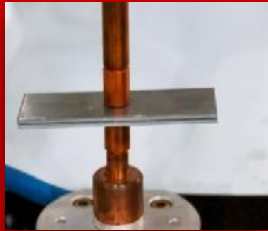
Growing together with our partners based on innovation and win-win cooperation.

### MISSION

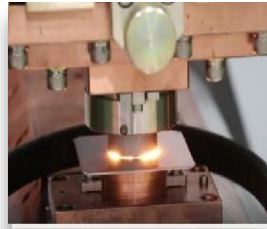
Innovate new technical processes to create value for our partners.



# PRODUCT COVERAGE



**Spot Welding**



**Projection  
Welding**



**Butt Welding**



**Seam Welding**



**Resistance  
Diffusion Welding**



**Resistance  
Brazing**



**FSPR**

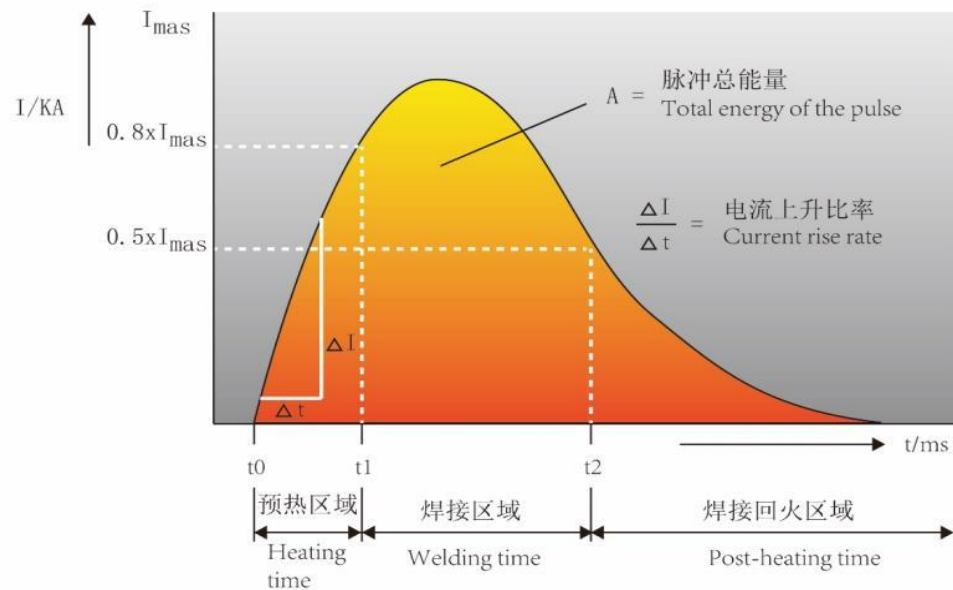


**Tog-L-Loc  
Lance-L-Loc**

# About CD Welding Machine

## CDW Resistance Welding Technology

—The maximum short-circuit current reaches 1000KA!



The current curve during discharging



Type H

6-40KJ



Type L  
3-6KJ



80KJ-150KJ

# About CD Welding Machine

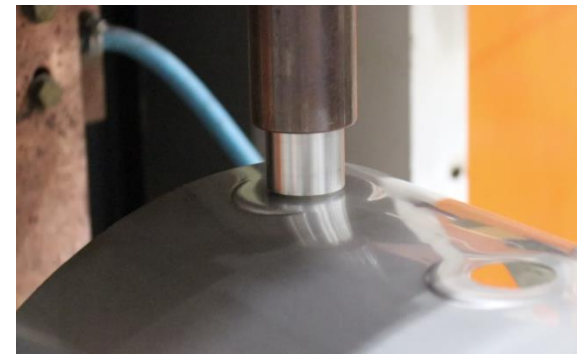
## Keep Innovating New Process Technology

- Resistance welding process for the connection of silver and copper tubes and steel shells
- Resistance welding process for reservoir
- Resistance welding process for brake gas chamber
- Resistance welding process for the connection of silver and copper
- Resistance welding process for air conditioning compressor upper and lower cover
- Resistance welding process for stainless steel bucket inlet and outlet

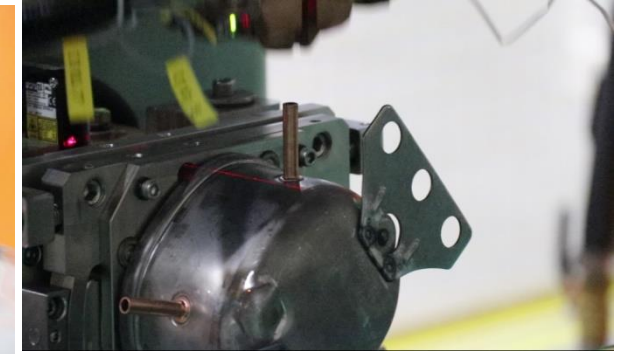
Resistance welding process for  
brake gas chamber



Resistance welding process for the  
connection of silver and copper



Resistance welding process for stainless  
steel bucket inlet and outlet



Resistance welding process for copper  
tubes and steel shells

# About CD Welding Machine



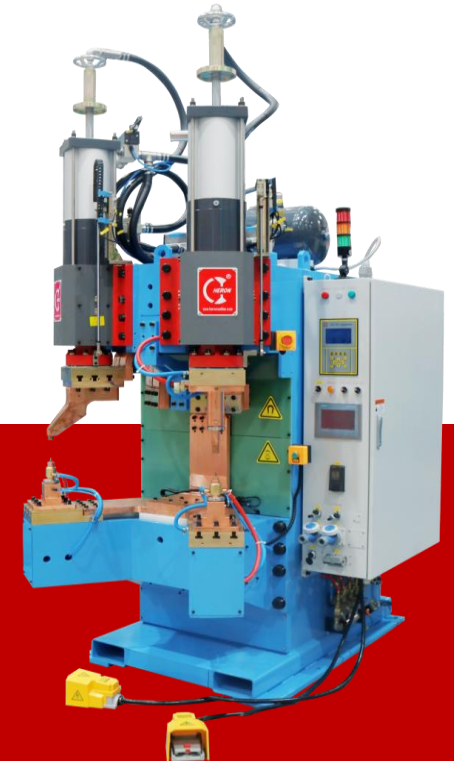
**Type L**  
3-6KJ



**Type H**  
10-40KJ



**Type H**  
10-40KJ



**Double Head  
CDW Equipment**  
10-40KJ

# About CD Welding Machine

## Advantages

- Stable welding quality for projection welding.
- Small heat affected zone, lower energy consumption, electrode loss, cost saving.
- When welding galvanized parts, the galvanized layer in the non-welding area can not be damaged, no grinding and post-treatment is required.
- The welding process is not affected by grid fluctuations, especially when the nut convex welding of high-strength and thermoformed steels is very stable.



**H type---CD  
welding machine**

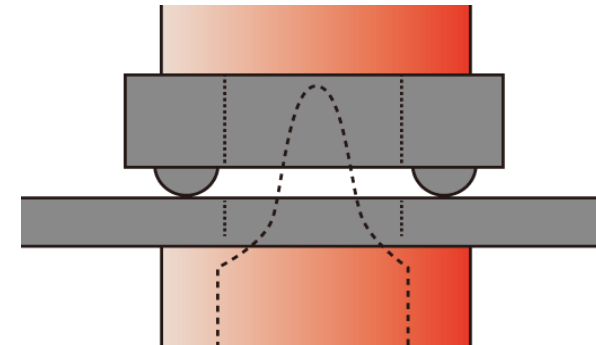


# About CD Welding Machine

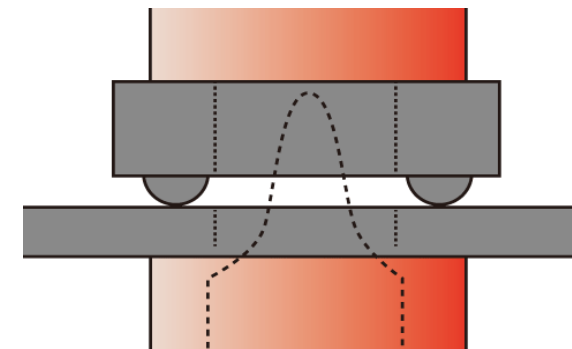
## Principle of CD welding process

**Molten pool: refers to the resistance heating and melting into liquid metal in the plastic ring of the two interfaces of the metal to be welded.**

- Conditions for the formation of molten pool: When the current density reaches a certain value, the bump is not softened but the molten pool is formed.
- When the molten pool is already formed: the contact resistance  $R$  decreases.
- How to melt more bumps: According to  $Q=I^2RT$ , the current has to be increased continuously in order to generate more heat to melt more bumps and ensure the welding quality.

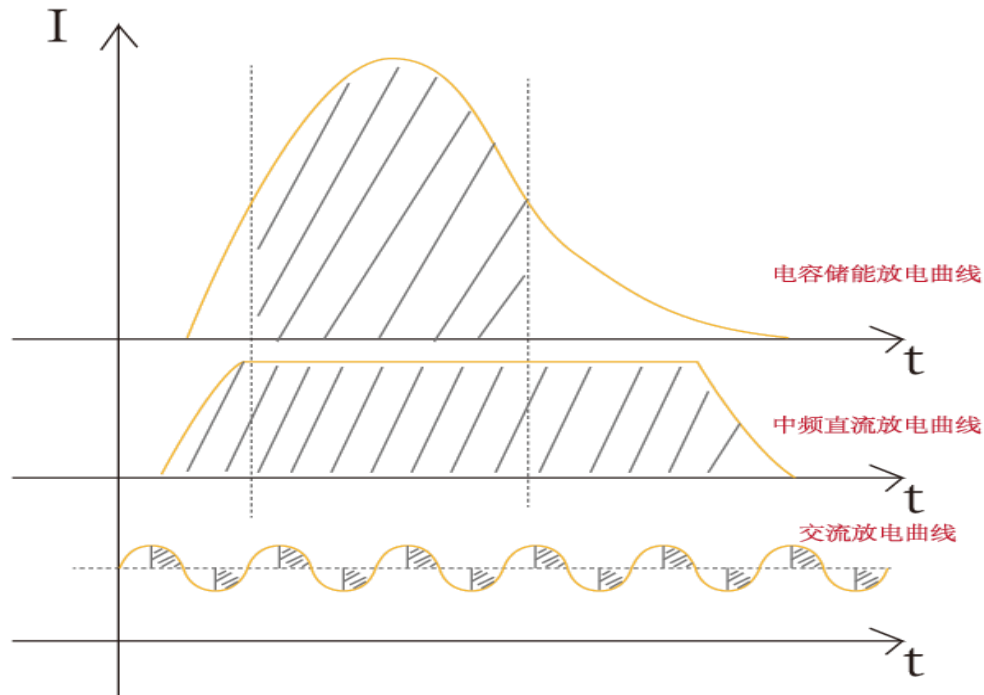


On the contrary, if the current density can't reach the requirement in a short time, the molten pool can't be formed between the bump and the plate, then under the action of pressure, the hot bump will be flattened, and the contact area will become bigger, and this way on it won't be able to reach the current density needed to produce the molten pool, and form a false welding.



# About CD Welding Machine

## Current curve determines the welding quality



- The special discharge curve of capacitor discharge can satisfy the demand for continuous increase of welding current due to the continuous increase of the molten pool after the bump melting due to the decrease of contact resistance, overcoming the shortcomings of the traditional AC and MFDC constant current output curve, so the medium-voltage capacitor discharge bump welding is the best bump welding process in the field of resistance welding.
- Medium-voltage capacitor discharge welding energy concentration, heat-affected zone is small, the thread will not be deformed due to the heat of the welding process, and the output energy is stable and reliable, energy saving and consumption reduction.

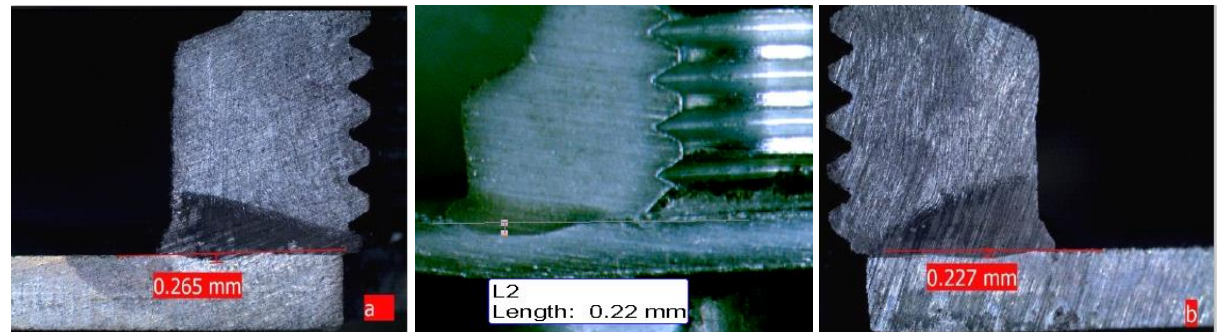
# About CD Welding Machine



## Result

**High strength steel,  
thermoformed steel nuts,  
studs projection welding**

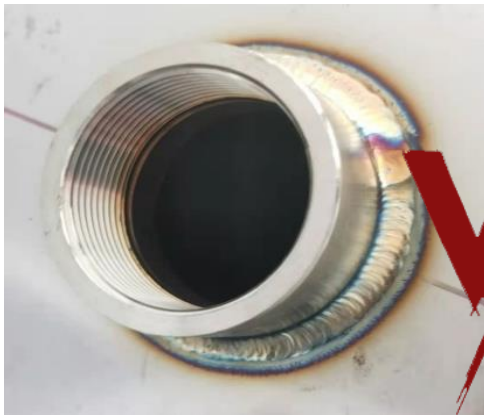
- The heat affected zone of the nut after welding is small, and the thread is not deformed.
- The galvanized layer of the thread and plate can be completely left intact.
- The galvanized layer is not destroyed and no filament is required.
- The molten core has a penetration depth greater than 0.2MM.



# About CD Welding Machine

## Reasons for successful projection welding

- Shape of the bump.
- Current density generated by the melt pool can be reached in a short period of time.
- The softening temperature of the material around the bump is not reached at the current density of the bath.
- Excellent rigidity and mobility of the welding machine, not prone to spattering.



CDW PRESS WELDING



TRADITION



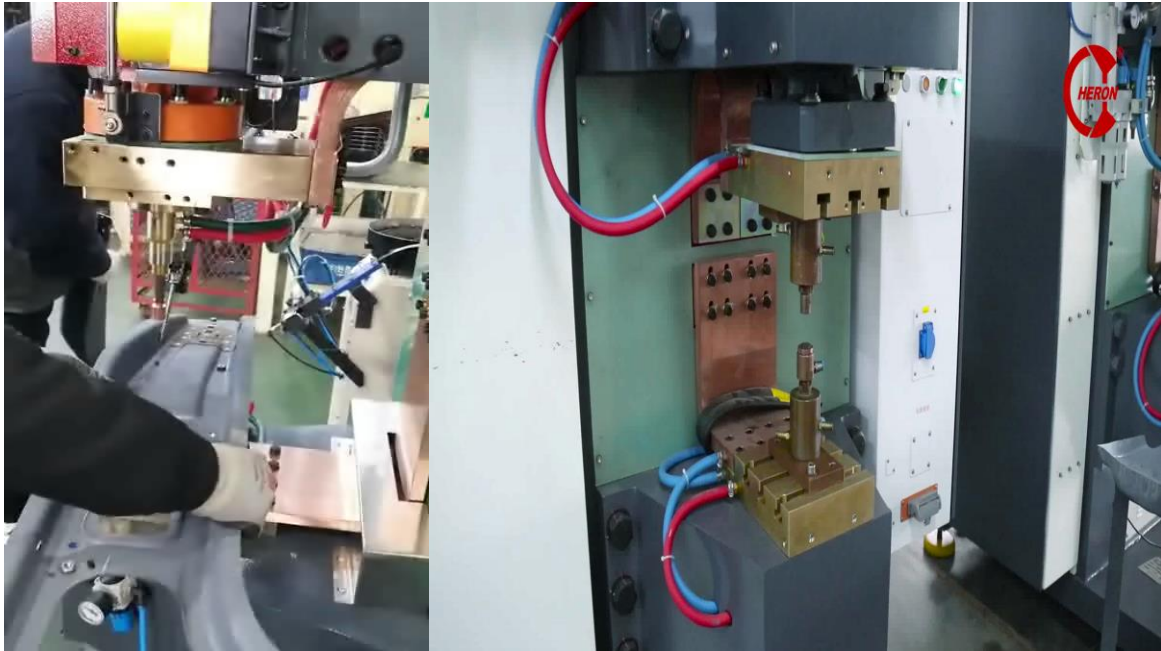
CDW PRESS WELDING



TRADITION

# About CD Welding Machine

## Thermoforming steel welding

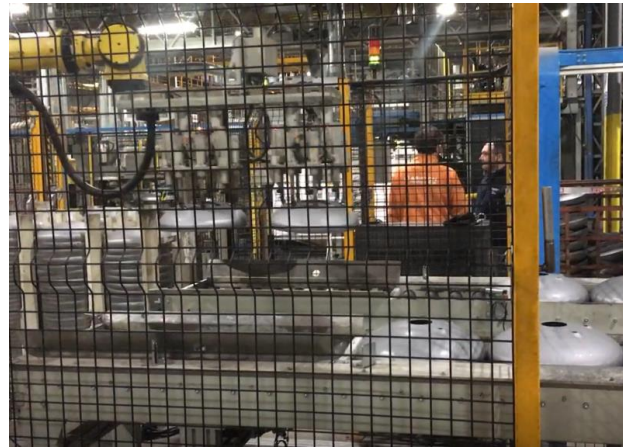


## Galvanized steel nut welding

# Application for CD Welding Machine



# Application for CD Welding Machine



# Application for CD Welding Machine

**Electric Water Heater**

**Fluid Reservoir**

**Home Appliance**





## About CD Welding Machine

**cost reduction**

**small power grid requirement**

**stable and reliable quality**

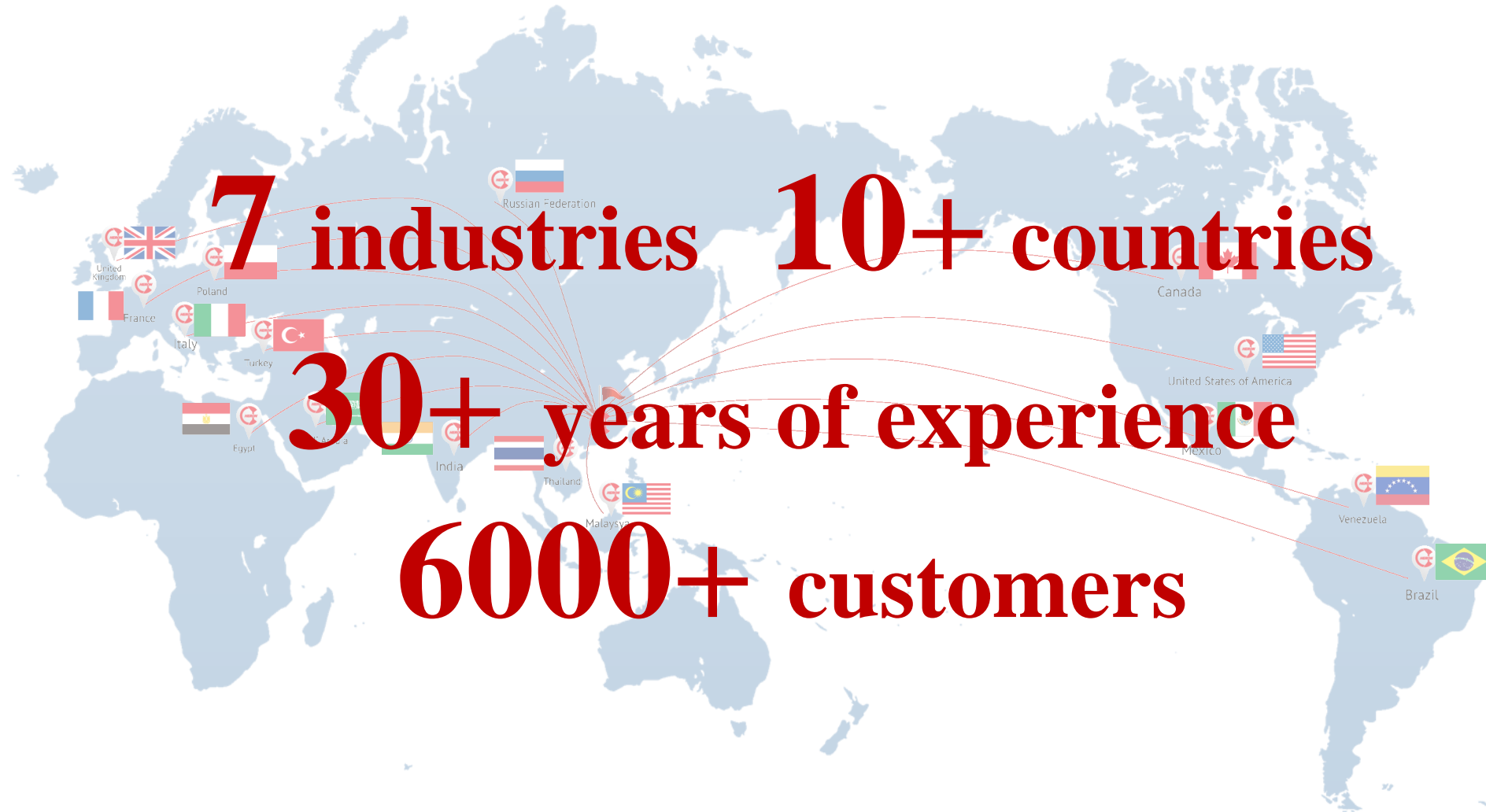
**save consumables**

**save energy**



**H type---CD  
welding machine**

# RICH EXPERIENCE



# OUR CUSTOMERS

## Auto body manufacturing industry



## Auto-part manufacturing industry



## Motor manufacturing industry



# OUR CUSTOMERS

## Compressor Manufacturing industry



## Low voltage electrical manufacturing industry



## Appliance and hardware manufacturing industry





**HERON IS ALWAYS HERE FOR YOU !**



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RESISTANCE WELDING · CLINCH**



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