

# RESISTANCE WELDING MACHINES





ACT Automotive has been working in automotive industry to manufacture checking fixture, welding jig, special machinery and automated assembly lines since 2005. MACTERA trade mark was created for Resistance Welding and Riveting Machines at 2011.

Experienced and specialised engineering team of MACTERA serves customized machinery according to customer special requirements and products beside standard machinery about spot, projection, seam, wire and butt welding machines.

Each and every project requires unique approach and the MACTERA Engineering Team is highly focused on to analyse customer needs and expectations on the projects.

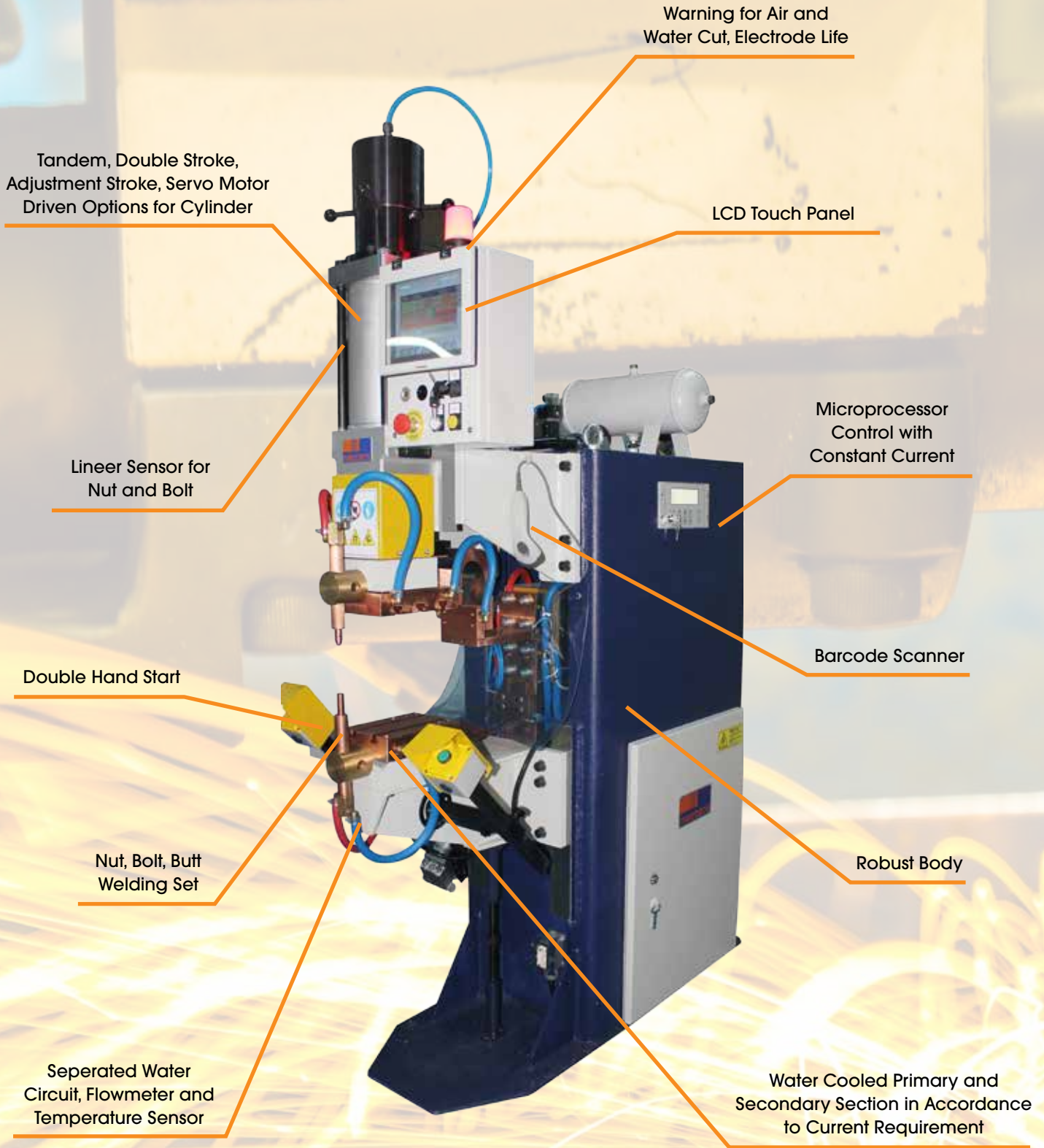
R&D team who created MACTERA are working on new technologies and solutions in R&D Office in Uludağ University Ulutek Teknopark.

Aiming to provide the most efficient and highest quality level of products MACTERA is in cooperation with most respected and well-known brands in welding Technologies in the World such as DENGENSHA, SAFCO, LASERVORM, UNITROL ve SMK JAPAN.

Quality of MACTERA resistance welding machines have been approved by leading companies such as Mercedes Benz (Daimler), Toyota, Tofaş (FCA), Oyak Renault, Toyotetsu, Beyçelik Gestamp, Autoliv, Arçelik and Legrand.

MACTERA is not only a high quality welding machine producer, MACTERA is also an efficient service provider to its customers on training, spare parts provides and maintenance.





Warning for Air and Water Cut, Electrode Life

Tandem, Double Stroke, Adjustment Stroke, Servo Motor Driven Options for Cylinder

LCD Touch Panel

Linear Sensor for Nut and Bolt

Microprocessor Control with Constant Current

Double Hand Start

Barcode Scanner

Nut, Bolt, Butt Welding Set

Robust Body

Seperated Water Circuit, Flowmeter and Temperature Sensor

Water Cooled Primary and Secondary Section in Accordance to Current Requirement



# SPOT/PROJECTION RESISTANCE WELDING MACHINE

SW MEGA



## Standart Features

- 64 Program Microprocessor Control
- Constant Current Mode
- Acces to Welding Parameters by PC Connection
- Air Switch
- Flow and Temperature Sensor
- Double Hand Start
- Spot Counter
- Lower Arm Height Adjustment (700-1000mm)

## Optional Features

- 256 Program Microprocessor Control
- Spot Welding Option
- Projection Welding Option
- Nut, Bolt, Butt Electrode Set
- Double Stroke Cylinder (60+40mm)
- Adjustment Cylinder (80+20mm)
- Servo Motor Driven
- Propotional Valve
- Hydraulic Balancing

## Technical Data

| 50Hz AC                                    |          | SW - 120 - 160 - SP - N - M | SW - 180 - 160 - SP - N - M | SW - 250 - 160 - SP - N - M |
|--|----------|-----------------------------|-----------------------------|-----------------------------|
| Single Phase Input 50Hz                    | V        | 400 AC                      | 400 AC                      | 400 AC                      |
| Rated Power (%50 duty)                     | kVA      | 121                         | 180                         | 247                         |
| Secondary Short Circuit Current (%50 duty) | kA       | 13,6                        | 17,1                        | 19,8                        |
| Secondary Voltage                          | V        | 8,9                         | 10,5                        | 12,5                        |
| Fuse                                       | A        | 250                         | 400                         | 630                         |
| Electrode Force (6 bar)                    | daN      | 1200                        | 1200                        | 1200                        |
| Air Pressure                               | bar      | 2 - 6                       | 2 - 6                       | 2 - 6                       |
| Cooling Water Temperature                  | °C       | 18 - 21                     | 18 - 21                     | 18 - 21                     |
| Water Consumption (3 bar)                  | lt / min | 12                          | 15                          | 15                          |
| Distance Between Projection Plates         | mm       | 200 - 450                   | 200 - 450                   | 200 - 450                   |
| Throat Depth (Projection)                  | mm       | 300 / 400 / 500 / 600       | 300 / 400 / 500 / 600       | 300 / 400 / 500 / 600       |
| Stroke                                     | mm       | 100                         | 100                         | 100                         |
| Dimensions (W / L / H)                     | mm       | 600x1100x1800               | 600x1100x1800               | 600x1100x1800               |
| Weight                                     | kg       | 800                         | 815                         | 835                         |

# SPOT/PROJECTION RESISTANCE WELDING MACHINE

SW MIDI



## Standart Features

- 128 Program Microprocessor Control
- Constant Current Mode
- Air Switch
- Double Hand Start

## Optional Features

- Acces to Welding Parameters by PC Connection
- Spot Welding Option
- Projection Welding Option
- Nut, Bolt, Butt Electrode Set
- Double Stroke Cylinder (60+40mm)
- Adjustment Cylinder (80+20mm)
- Servo Motor Driven
- Propotional Valve
- Flow and Temperature Sensor
- Hydraulic Balancing

## Technical Data

| 50Hz AC                                    |          | SW - 30 - 100 - SP - N - M | SW - 60 - 125 - SP - N - M | SW - 80 - 125 - SP - N - M |
|--|----------|----------------------------|----------------------------|----------------------------|
| Single Phase Input 50Hz                    | V        | 400 AC                     | 400 AC                     | 400 AC                     |
| Rated Power (%50 duty)                     | kVA      | 30                         | 63                         | 80                         |
| Secondary Short Circuit Current (%50 duty) | kA       | 6,4                        | 10,2                       | 10,4                       |
| Secondary Voltage                          | V        | 4,65                       | 7,2                        | 7,7                        |
| Fuse                                       | A        | 80                         | 160                        | 250                        |
| Electrode Force (6 bar)                    | daN      | 470                        | 735                        | 735                        |
| Air Pressure                               | bar      | 2 - 6                      | 2 - 6                      | 2 - 6                      |
| Cooling Water Temperature                  | °C       | 18 - 21                    | 18 - 21                    | 18 - 21                    |
| Water Consumption (3 bar)                  | lt / min | 8                          | 8                          | 8                          |
| Distance Between Projection Plates         | mm       | 200                        | 200                        | 200                        |
| Throat Depth (Projection)                  | mm       | 300 / 400 / 500 / 600      | 300 / 400 / 500 / 600      | 300 / 400 / 500 / 600      |
| Stroke                                     | mm       | 100                        | 100                        | 100                        |
| Dimensions (W / L / H)                     | mm       | 600x800x1700               | 600x800x1700               | 600x800x1700               |
| Weight                                     | kg       | 450                        | 670                        | 690                        |



# MEDIUM FREQUENCY SPOT/PROJECTION RESISTANCE WELDING MACHINE

MFDC



## Standart Features

- 64 Program Microprocessor Control
- Constant Current Mode
- Acces to Welding Parameters by PC Connection
- Propotional Valve
- Air Switch
- Flow and Temperature Sensor
- Double Hand Start
- Spot Counter
- Lower Arm Height Adjustment (700-1000mm)

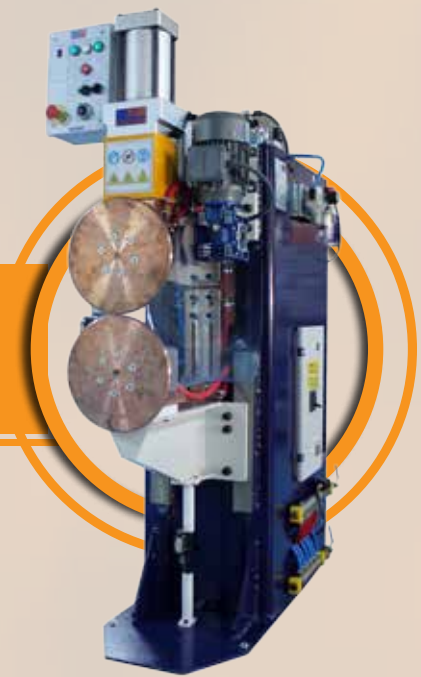
## Optional Features

- Spot Welding Option
- Projection Welding Option
- Nut, Bolt, Butt Electrode Set
- Double Stroke Cylinder (60+40mm)
- Adjustment Cylinder (80+20mm)
- Servo Motor Driven
- Hydraulic Balancing

## Technical Data

| 1000Hz MFDC                                |          | MFDC - 60 - 125 - SP - N - P | MFDC - 100 - 125 - SP - N - P | MFDC - 180 - 160 - SP - N - P |
|--|----------|------------------------------|-------------------------------|-------------------------------|
| Single Phase 3 Phase Input                 | V        | 500                          | 500                           | 500                           |
| Rated Power (%50 duty)                     | kVA      | 60                           | 112                           | 190                           |
| Secondary Short Circuit Current (%50 duty) | kA       | 13,5                         | 15,4                          | 24,5                          |
| Secondary Voltage                          | V        | 7                            | 11,5                          | 12,3                          |
| Fuse                                       | A        | 100                          | 100                           | 250                           |
| Electrode Force (6 bar)                    | daN      | 735                          | 735                           | 1200                          |
| Air Pressure                               | bar      | 2 - 6                        | 2 - 6                         | 2 - 6                         |
| Cooling Water Temperature                  | °C       | 18 - 21                      | 18 - 21                       | 18 - 21                       |
| Water Consumption (3 bar)                  | lt / min | 12                           | 15                            | 15                            |
| Distance Between Projection Plates         | mm       | 200                          | 200 - 450                     | 200 - 450                     |
| Throat Depth (Projection)                  | mm       | 300 / 400 / 500 / 600        | 300 / 400 / 500 / 600         | 300 / 400 / 500 / 600         |
| Stroke                                     | mm       | 100                          | 100                           | 100                           |
| Dimensions (W / L / H)                     | mm       | 400x800x1700                 | 600x1100x1800                 | 600x1100x1800                 |
| Weight                                     | kg       | 650                          | 720                           | 720                           |

# SEAM WELDING MACHINE



**DKE - Transversal**

DKE1 - Top Driven

**DKB - Longitudinal**

DKE2 - Bottom Driven

DKE3 - Top & Bottom Driven

## Standart Features

- 16 Program Electronic Control
- Flow and Air Sensor
- Air Switch
- Foot Pedal

## Optional Features

- 64 Program Microprocessor Control
- Constant Current Mode
- Acces to Welding Parameters by PC Connection
- Servo Motor Driven
- Propotional Valve
- Double Hand Start
- Flow and Temperature Sensor
- Disc Dresser (Auto/Manual)
- Welding Jig

## Technical Data

| 50Hz AC                                    |          | DK - 120 - 125 - E - N - M | MFDC DK - 150 - 125 - E - N - M |
|--|----------|----------------------------|---------------------------------|
| Single Phase 3 Phase Input                 | V        | 400 AC                     | 500 DC                          |
| Rated Power (%50 duty)                     | kVA      | 121                        | 165                             |
| Secondary Short Circuit Current (%50 duty) | kA       | 13,6                       | 16                              |
| Secondary Voltage                          | V        | 6,7 - 7,3 - 8,2 - 8,9      | 7,3 - 10,3                      |
| Fuse                                       | A        | 250                        | 250                             |
| Electrode Force (6 bar)                    | daN      | 180 - 750                  | 180 - 750                       |
| Air Pressure                               | bar      | 2 - 6                      | 2 - 6                           |
| Cooling Water Temperature                  | °C       | 15 - 25                    | 15 - 25                         |
| Water Consumption (3 bar)                  | lt / dak | 20                         | 20                              |
| Distance Between Projection Plates         | mm       | 100 - 350                  | 100 - 350                       |
| Throat Depth (Projection)                  | mm       | 400 / 500 / 600            | 400 / 500 / 600                 |
| Stroke                                     | mm       | 100                        | 100                             |
| Disk Velocity                              | m / dak  | Max. 7                     | Max. 7                          |
| Dimensions (W / L / H)                     | mm       | 550x1400x1800              | 550x1400x1800                   |
| Weight                                     | kg       | 900                        | 800                             |

# CAPACITOR DISCHARGE SPOT/PROJECTION RESISTANCE WELDING MACHINE

NDZ



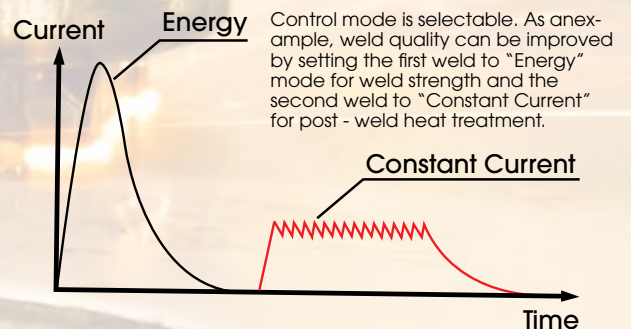
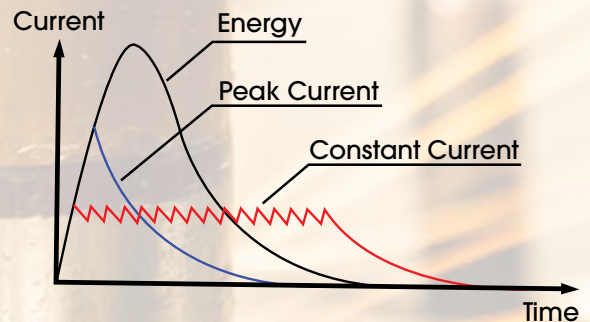
**Power Supply** : 200V, 6kA  
**Maximum Energy** : 3000 joule  
**Short Circuit Current** : 50kA

**Three Current Control Modes**  
 - Energy  
 - Peak Current  
 - Constant Current

- Smaller footprint with cost - efficient compact design.
- Weld current as high as 50kA, yet requiring only a small 6kVA and 200V power supply (a step-down transformer provided).
- Unique selectable current control modes will enable fine tuning of weld quality.
- High current in short bursts allows minimum heat transfer and workpiece distortion.
- Consistent welding during unstable power supply conditions.
- Maximum energy output of 3,000 joule.
- Consistent current feedback standard.
- Ideal for welding small projection parts on high-strength steel.

## Technical Data

| Series Name     | NDZ             | NDZ Series                                       |
|-----------------|-----------------|--|
| Weld Controls   | CA 0            | Capacitance Discharge                            |
| Throat Depth    | 4               | 400mm  |
| Electrode Force | 6               | 6kN(HornØ60)(Electrode holderØ25)(ElectrodeØ16)  |
|                 | 7               | 6kN(HornØ70)(Electrode holderØ32)(ElectrodeØ20)  |
|                 | 8               | 6kN(HornØ70)(Electrode holderØ32)(ElectrodeØ16)  |
|                 | 1               | 10kN(HornØ70)(Electrode holderØ32)(ElectrodeØ20) |
|                 | A               | 10kN(HornØ70)(Electrode holderØ32)(ElectrodeØ16) |
| Stroke          | B               | 75mm   |
|                 | S               | Spot   |
| Application     | N               | Nut  |
|                 | L               | With defect nutless and wrong nut                |
|                 | R               | For automatic cell                               |
|                 | B               | Bolt   |
|                 | M               | With defect nutless and wrong bolt               |
|                 | T               | For automatic cell                               |
|                 | U               | Conforms to UL/CSA                               |
| Specification   | C               | 200V±15% 50/60Hz                                 |
| Power Source    | Y               | 200 V±15 % 50 / 60 Hz                            |
| Revision        | A, B, C, D, ... |  |





# BENCH TYPE RESISTANCE WELDING MACHINE

MP



## Standart Features

- 16 Program Electronic Control
- Air Switch
- Foot Pedal

## Optional Features

- 256 Program Microprocessor Control
- Constant Current Mode
- Acces to Welding Parameters by PC Connection
- Projection Welding Option
- Nut, Bolt, Butt Electrode Set
- Fast Cylinder
- Propotional Valve
- Flow and Temperature Sensor
- Servo Motor Driven
- Spot Counter

## Technical Data

| 50Hz AC                                    |          | MP - 30 - 63 - S | MP - 60 - 63 - S |
|--|----------|------------------|------------------|
| Single Phase Input 50Hz                    | V        | 400 AC           | 400 AC           |
| Rated Power (%50 duty)                     | kVA      | 30               | 63               |
| Secondary Short Circuit Current (%50 duty) | kA       | 6,4              | 10,2             |
| Secondary Voltage                          | V        | 4,65             | 7,2              |
| Fuse                                       | A        | 80               | 160              |
| Electrode Force (6 bar)                    | daN      | 185              | 185              |
| Air Pressure                               | bar      | 2 - 6            | 2 - 6            |
| Cooling Water Temperature                  | °C       | 18 - 21          | 18 - 21          |
| Water Consumption (3 bar)                  | lt / min | 8                | 8                |
| Distance Between Projection Plates         | mm       | 160              | 160              |
| Throat Depth (Projection)                  | mm       | 210              | 210              |
| Stroke                                     | mm       | 40               | 40               |
| Dimensions (W / L / H)                     | mm       | 660x1400x1360    | 660x1400x1360    |
| Weight                                     | kg       | 167              | 200              |

# ROCKER ARM RESISTANCE WELDING MACHINE

PP



## Standart Features

- 16 Program Electronic Control
- Air Switch
- Foot Pedal

## Optional Features

- 256 Program Microprocessor Control
- Constant Current Mode
- Acces to Welding Parameters by PC Connection
- Propotional Valve
- Double Hand Start
- Flow and Temperature Sensor
- Spot Counter
- Double Stroke

## Technical Data

| 50Hz AC                                    |          | PP - 30 - 125 - 5 | PP - 60 - 125 - 5 |
|--|----------|-------------------|-------------------|
| Single Phase Input 50Hz                    | V        | 400 AC            | 400 AC            |
| Rated Power (%50 duty)                     | kVA      | 30                | 63                |
| Secondary Short Circuit Current (%50 duty) | kA       | 6,4               | 10,2              |
| Secondary Voltage                          | V        | 4,65              | 7,2               |
| Fuse                                       | A        | 80                | 160               |
| Electrode Force (6 bar)                    | daN      | 960               | 960               |
| Air Pressure                               | bar      | 2 - 6             | 2 - 6             |
| Cooling Water Temperature                  | °C       | 18 - 21           | 18 - 21           |
| Water Consumption (3 bar)                  | lt / min | 8                 | 8                 |
| Distance Between Arms                      | mm       | 200               | 200               |
| Throat Depth (Projection)                  | mm       | 200 - 600         | 200 - 600         |
| Stroke                                     | mm       | 100               | 100               |
| Dimensions (W / L / H)                     | mm       | 600x900x1300      | 600x900x1300      |
| Weight                                     | kg       | 167               | 200               |



# BUTT WELDING RESISTANCE WELDING MACHINE

BW



## Standart Features

- 16 Program Electronic Control
- Air Switch
- Foot Pedal

## Optional Features

- 256 Program Microprocessor Control
- Constant Current Mode
- Acces to Welding Parameters by PC Connection
- Servo Driven
- Double Hand Start
- Flow and Temperature Sensor
- Spot Counter

## Technical Data

| 50Hz AC                                |          | BW - 30                     | BW - 60     |
|--|----------|-----------------------------|-------------|
| Single Phase Input 50Hz                | kVA      | 30                          | 60          |
| Rated Power (%50 duty)                 | kA       | 13                          | 18          |
| Welding Current (max)                  | kA       | 15                          | 15          |
| Secondary Voltage                      | V        | 2,9 - 3,3 - 3,8 - 4,4 - 4,8 | 6,3         |
| Throat Depth                           | mm       | 10                          | 10          |
| Distance Between Eelectrodes (min-max) | mm       | 10                          | 10          |
| Stroke                                 | mm       | 20                          | 20          |
| Air Pressure                           | bar      | -                           | 2 - 6       |
| Electrode Force (min-max)              | daN      | 80                          | 100 - 300   |
| Clamping Force                         | daN      | 200                         | 200 - 600   |
| Air Consumption (10mm Stroke-5 bar)    | lt       | -                           | 1,17        |
| Cooling Water Pressure (min-max)       | bar      | -                           | 3 - 6       |
| Cooling Water Temperature (min-max)    | °C       | 15 - 25                     | 15 - 25     |
| Water Flow (min)                       | lt / min | 4                           | 5           |
| Dimensions (W / L / H)                 | mm       | 550x370x1500                | 650x900x750 |



## **DEDICATED RESISTANCE WELDING MACHINES**



### **SHOCK ABSORBER CLAVIS BRACKET PROJECTION WELDING MACHINE**

2x300kVA MFDC Safco Inverter

### **SERVO DRIVEN SPOT/PROJECTION WELDING MACHINE**

180kVA MFDC Safco Inverter



### **1100 mm THROAT DEPTH SPOT/PROJECTION WELDING MACHINE**

200kVA MFDC Bosch Rexroth Inverter



### **DISWASHER BASKET PROJECTION WELDING MACHINE**

250kVA AC Safco Timer



# DEDICATED RESISTANCE WELDING MACHINES

## SHOCK ABSORBER PIPE SPOT WELDING MACHINE

250kVA AC Dengsha Timer



## GAS PIPE COVER WELDING MACHINE

60kVA AC Safco Timer



## SHOCK ABSORBER PIPE SPOT WELDING MACHINE

125 kVA AC Dengsha Timer



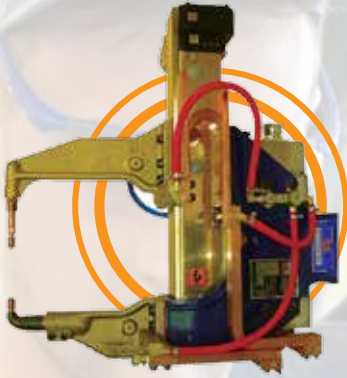
## DOUBLE HEAD SPOT/PROJECTION WELDING MACHINE

180 kVA MFDC Safco Inverter

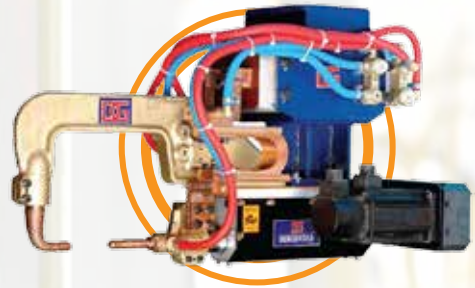


## LINEER MOTION GUNS

X TYPE GUN

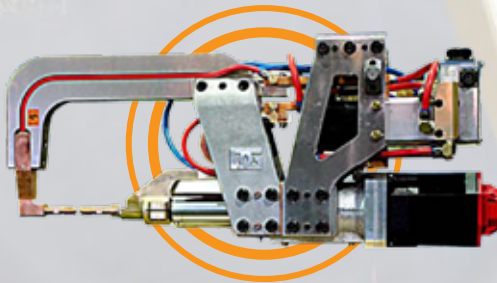


C TYPE GUN



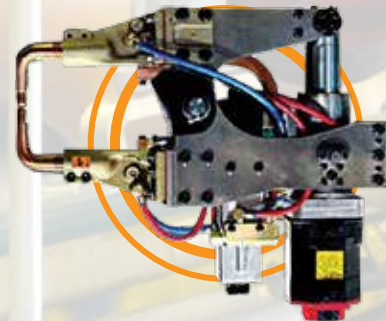
## MFDC LIGHTWEIGHT COMPACT SERVO GUNS

X TYPE GUN



Total Weight: 55 - 66 kg

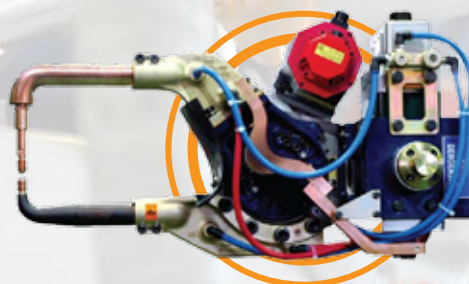
C TYPE GUN



Total Weight: 61 - 69 kg

## REDUCTION GEAR GUNS

X TYPE GUN

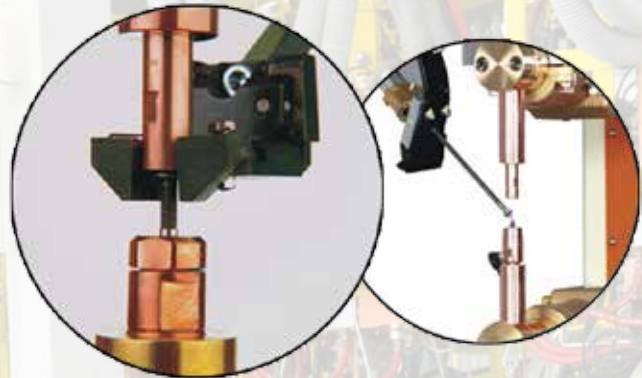




# AUTOMATIC NUT - BOLT FEEDERS



ОПЕРАЦИЯ РАБОТЫ  
Сборка цикла (шаг 1)  
Болт (шаг 2)



# WELDING CONTROLS

## RWC SERIES



## NWC SERIES

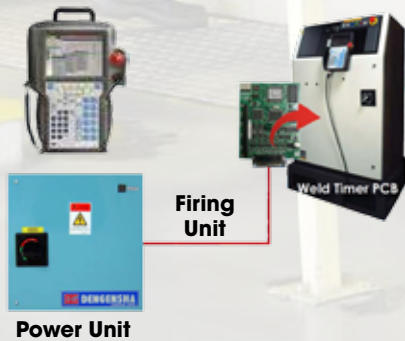


# WELDING CONTROLS WITH INTEGRATED ROBOTS QUALITY ASSURANCE TOOLS

## WS - 100



## WELD TIMER PCB



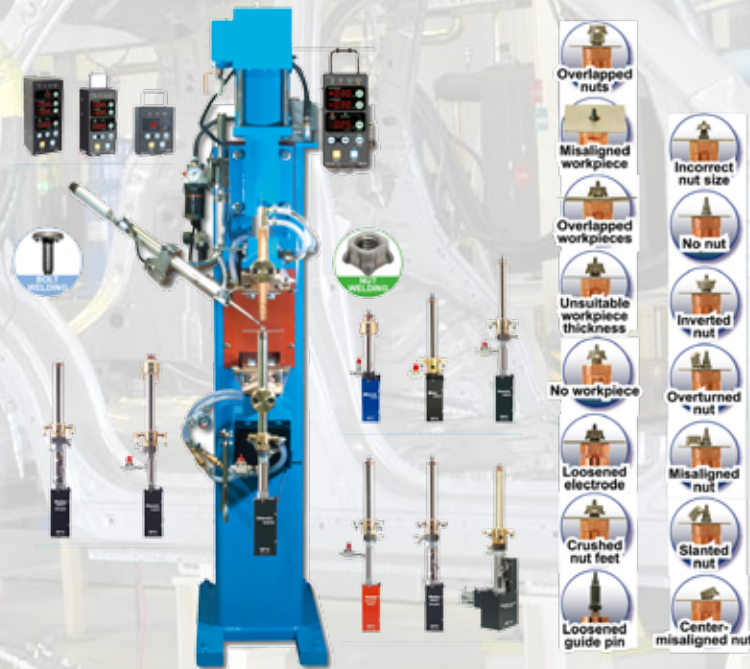


# SAFCO

- Medium Frequency Transformers
- Inverters
- Welding Controls



# SMK



- Poor Weld Detection System For Nut/Bolt Welding



**Navi Series**  
**Leads Global Standards**  
 CE marking acquisition

# UNITROL



- Pinch Point Safety System



# SOFT TOUCH



## REFERANCES







A.C.T. OTOMOTİV MÜH. DAN. SAN. TİC. LTD. ŞTİ.  
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