

COMPLETE STUD WELDING

Products • Service • Knowledge • Integrity

SECTION 13

STUD WELDING EQUIPMENT

FOR INQUIRIES, TO PLACE ORDERS,
SERVICE AND TECHNICAL SUPPORT CONTACT
ANY OF THE FOLLOWING:

OFFICE: 216.904.4008

EMAIL: SALES@COMPLETESTUDWELD.COM

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STUD WELDING – RENTAL EQUIPMENT

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Stud Welding Equipment

RENT STUD WELDERS

Complete Stud Welding has CD, ARC and Short Cycle stud welders available for rent to satisfy all applications.

Common stud types / applications are listed below:

CD Applications:

- CD Threaded Studs
- CD Non Threaded Studs
- CD Tap Studs
- CD Cable Tie Bases
- CD Weld Pins
- Insulation Pins
- Power Point Pins
- Cupped Head Pins
- Tap studs

ARC Applications:

- Headed Concrete Anchors
- Headed Shear Connectors
- Weld Thru Deck
- Deformed Bar Anchors
- Threaded Weld Studs
- Non Threaded Weld Studs
- Boiler Tube Pins
- Rectangular Weld Studs
- Collar Studs
- Shoulder Studs

Short Cycle (SC) Applications:

- SC & CD Studs all types
- SC Collar Studs

We accept most major credit cards or we can assist with the credit approval process.

We have a full line of weld studs and accessories to go with your Stud Welder Rental!

For personnel assistance **call (216)904-4008** or email **Sales@completestudweld.com**.
We have the expertise to determine the right equipment for your needs!

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SECTION 13

STUD WELDING EQUIPMENT PROCESS & CAPABILITY SUMMARY

CD EQUIPMENT • ARC EQUIPMENT • SHORT CYCLE EQUIPMENT

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website www.completestudweld.com e-mail sales@completestudweld.com
32035 Creekside Drive, Cleveland, Ohio 44124 fax 216.378.0349 telephone 216.904.4008

Stud Welding Equipment - New

EQUIPMENT PROCESS AND CAPABILITY SUMMARY

Model Designation	Page Number	Automation	Maximum Capacity By Stud Diameter			Comments
			CD	ARC	Short Cycle	
TWP 2	13.6		3/16"			Great Pin Welder
TWE 250	13.7		1/4"			Contact & Gap availability
TWE 321	13.8		5/16"			Contact & Gap availability
TWE 375	13.9		3/8"			Contact & Gap availability
TWE 250SPC	13.10		1/4"			Contact & Gap availability
TWE 321 SPC	13.10		5/16"			Contact & Gap availability
TWE 375 SPC	13.10		3/8"			Contact & Gap availability
CDi 1502	13.11		1/4"			Contact & Gap availability
CDi 2302	13.12		5/16"			Contact & Gap availability
CDi 3102	13.13		3/8"			Contact & Gap availability
CI 03	13.14		12 gauge pins			CD Contact Gun
C 08	13.15		3/8"			CD Contact Gun
CA 08	13.16		3/8"			CD Gap Gun
SC900	13.17			1/2"	7/16"	Single Gun System
SC1400	13.18			5/8"		Single Gun System
SC1600	13.19			3/4"		Single Gun System
SC1900	13.20			7/8"		Single Gun System
SC2400	13.21			1"		Single Gun System
SC2402	13.22			1"		Single Gun System 50 Hz
SC2420	13.23			1"		Dual Gun System
SC3400	13.24			1.25"		Single Gun System
SC3402	13.25			1.25"		Dual Gun System
Generator	13.26			1.25"		Field Stud Welding System
TWE 19000	13.27			1/2"	1/2"	ARC Stud Welding Gun
TWE 18500	13.28			5/8"		ARC Stud Welding Gun
TWE 17000	13.29			1.25"		ARC Stud Welding Gun
ARC 500	13.30			7/16"	3/8"	Single Gun System
ARC 800	13.31	Optional		1/2"	7/16"	Single Gun System
IT 1002	13.32	Optional		1/2"	1/2"	Single Gun System
ARC 1550	13.33	Optional		3/4"	1/2"	Single Gun System
IT 2002	13.34	Optional		1"	5/8"	Single Gun System
IT 130	13.35			1"	5/8"	Single Gun System
IT 3002	13.36			1"	5/8"	Single or Dual Gun System
AI 06	13.37			1/4"		ARC Stud Welding Gun
A 12	13.38			1/2"	1/2"	ARC Stud Welding Gun
A 16	13.39			5/8"	5/8"	ARC Stud Welding Gun
A 22	13.40			7/8"		ARC Stud Welding Gun
A 25	13.41			1"		ARC Stud Welding Gun
SC 2401	13.42				3/16"	Short Cycle System
Auto Feed Equipment	13.43					
CDMI 2402	13.44					Power Supply
CDM 3201	13.47	Automation	3/8"			Power Supply
IT 50	13.50	Automation		5/8"	1/2"	Power Supply
IT 90	13.51	Automation		1"	5/8"	Power Supply
KAH 412 LA	13.52	Automation	3/8"	1/2"	1/2"	Weld Head
KAH 412	13.53	Automation	3/8"	1/2"	1/2"	Weld Head
PAH-1	13.54	Automation	5/16"		5/16"	Weld Gun
VBZ-3	13.55	Automation	5/16"	5/16"	5/16"	Stud Feeder
PMB-LS2	13.56	Automation				Pneumatic Clamp
PMB-S	13.57	Automation				Pneumatic Clamp
CNC Systems	13.58					
PC-S	13.59	Automation	1/2"	1/2"	1/2"	
MPW 1010	13.60	Automation	1/2"	1/2"	1/2"	
MPW 2010	13.60	Automation	1/2"	1/2"	1/2"	
Other:						
MARC 3 - PAD Welding System	13.61			1.26"		Specialized PAD Welding System

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Stud Welding Equipment - CD

TWP 2 CAPACITOR DISCHARGE PIN WELDER



Pin Welder Description

Incorporates the latest solid state technology into a compact and rugged, portable CD Pin Welder. This system has the capacity to weld pins (including Cup Head pins) up to 10-gauge and CD Studs up to #10.

SPECS	TWE-PIN WELDER
SIZE	12.5" L x 10.1" W x 6.0" H (315mm x 255mm x 150mm)
WEIGHT	Approx. 12.5 lbs.
WELD RANGE	Weld Pins - Up to 10 gauge CD Studs - Up to #10 Cup Head Pins
DUTY CYCLE	16-20 pins per minute
PRIMARY POWER	110 VAC @ 50/60Hz 15 Amp circuit 220 VAC @50/60Hz 7.5 Amp circuit
CHARGE VOLTAGE	35-110 VDC

Operational and Safety Features

- LED Voltage Meter
- Safety Shutdown
- Cooling Fan
- Front-Panel Informational LED's
- Dial-Down weld voltage control

Made In the USA

Version 1.4 4/25/2011

** Specifications are subject to change without prior notice

FEATURES

- Digital DC voltage readout (allows for more accurate and repeatable weld settings).
- Cooling fan for increased efficiency.
- Dial-down DC voltage setting (no need to turn off the unit when resetting to a lower voltage).
- Only 15 amp circuit requirement (unit fused @ 15 amps).
- Terminal connections on the capacitor are over 5/8" in diameter for a good seat of the terminal buss bars to increase reliability.
- The terminal connections on the capacitor have 1/4-28 socket set screws inserted into each one. The socket set screw is used to make the connection to the buss bar. This eliminates damaging the threads in the aluminum connectors of the capacitor, ensuring a solid connection.
- Rigid internal construction connecting the entire internal unit to the front and rear panels minimizes the opportunity of the components coming loose during handling or operations.
- The TWE-Pin Welder is mounted in a rugged outer case for greater durability, texture, and appearance.
- The TWE-Pin Welder weighs less than 13 pounds for ease of carrying.
- Stud Guns are ergonomically designed for better hand fit and comfort (reduces operator fatigue for increased weld repeatability).
- Stud Guns have a permanent internal spring with easy adjustment for various spring pressures allowing an increased opportunity to apply the correct spring pressure to the weld (no need for a variety of different springs for various applications).
- Stud Guns can be configured for "B" Collets, "CI" Collets, Euro Collets or standard tapered chucks.

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Stud Welding Equipment - CD

TWE 250 CAPACITOR DISCHARGE STUD WELDER



Stud Welder Description

Incorporates the latest solid state technology into a compact and rugged CD Stud Welder. This system has the capacity to weld studs and pins (including cupped head pins) ranging from 14-gauge through 1/4" full flanged stainless steel studs.

SPECS	TWE-250
SIZE	16" Length, 8-1/2" Width, 9" Height
WEIGHT	28 lbs.
WELD RANGE	14 gauge through 1/4" Stainless
DUTY CYCLE	30 studs per minute (including 1/4")
PRIMARY POWER	110 VAC @ 50/60Hz 10 Amp circuit or 220 VAC @50/60Hz 5 Amp circuit
CHARGE VOLTAGE	35-200 VDC

Operational and Safety Features

- LED Voltage Meter
- Safety Shutdown
- Cooling Fan
- Front-Panel Informational LED's
- Dial-Down weld voltage control

Made In the USA

** Specifications are subject to change without prior notice

Version 2.0 05/09/2013

FEATURES

- Digital DC voltage readout on all models (allows for more accurate and repeatable weld settings).
- Cooling fan in all models for increased efficiency.
- Dial-down DC voltage setting (no need to turn off the unit when resetting to a lower voltage).
- Only 10 amp circuit requirement (unit fused @ 10 amps).
- 66,000 micro farad capacitors charging to 200 VDC for greater power output @ lower DC voltage requirements.
- Terminal connections on the capacitors are over 5/8" in diameter for a good seat of the terminal buss bars to increase reliability.
- The terminal connections on the capacitors have 1/4-28 socket set screws inserted into each one. The socket set screw is used to make the connection to the buss bar. This eliminates damaging the threads in the aluminum connectors of the capacitor, ensuring a solid connection.
- Rigid internal construction connecting the entire internal unit to the front and rear panels minimizes the opportunity of the components coming loose during handling or operations.
- Sheet metal is powder-coated for greater durability, texture, and appearance.
- Stud Guns are ergonomically designed for better hand fit and comfort (reduces operator fatigue for increased weld repeatability).
- Stud Guns have a permanent internal spring with easy adjustment for various spring pressures allowing an increased opportunity to apply the correct spring pressure to the weld (no need for a variety of different springs for various applications).
- Stud Guns can be configured for "B" Collets, "CI" Collets, Euro Collets or standard tapered chucks.

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Stud Welding Equipment - CD

TWE 321 CAPACITOR DISCHARGE STUD WELDER



Stud Welder Description

Incorporates the latest solid state technology into a compact and rugged CD Stud Welder. This system has the capacity to weld studs and pins (including cupped head pins) ranging from 14-gauge through 5/16" full flanged stainless steel studs.

SPECS	TWE-321
SIZE	16" Length, 8-1/2" Width, 9" Height
WEIGHT	31 lbs.
WELD RANGE	14 gauge through 5/16" Stainless
DUTY CYCLE	30 studs per minute (including 5/16")
PRIMARY POWER	110 VAC @ 50/60Hz 10 Amp circuit or 220 VAC @50/60Hz 5 Amp circuit
CHARGE VOLTAGE	35-200 VDC

Operational and Safety Features

- LED Voltage Meter
- Safety Shutdown
- Cooling Fan
- Front-Panel Informational LED's
- Dial-Down weld voltage control

Made In the USA

** Specifications are subject to change without prior notice

Version 2.0 05/09/2013

FEATURES

- Digital DC voltage readout on all models (allows for more accurate and repeatable weld settings).
- Cooling fan in all models for increased efficiency.
- Dial-down DC voltage setting (no need to turn off the unit when resetting to a lower voltage).
- Only 10 amp circuit requirement (unit fused @ 10 amps).
- 99,000 micro farad capacitors charging to 200 VDC for greater power output @ lower DC voltage requirements.
- Terminal connections on the capacitors are over 5/8" in diameter for a good seat of the terminal buss bars to increase reliability.
- The terminal connections on the capacitors have 1/4-28 socket set screws inserted into each one. The socket set screw is used to make the connection to the buss bar. This eliminates damaging the threads in the aluminum connectors of the capacitor, ensuring a solid connection.
- Rigid internal construction connecting the entire internal unit to the front and rear panels minimizes the opportunity of the components coming loose during handling or operations.
- Sheet metal is powder-coated for greater durability, texture, and appearance.
- Stud Guns are ergonomically designed for better hand fit and comfort (reduces operator fatigue for increased weld repeatability).
- Stud Guns have a permanent internal spring with easy adjustment for various spring pressures allowing an increased opportunity to apply the correct spring pressure to the weld (no need for a variety of different springs for various applications).
- Stud Guns can be configured for "B" Collets, "CI" Collets, Euro Collets or standard tapered chucks.

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Stud Welding Equipment - CD

TWE 375 CAPACITOR DISCHARGE STUD WELDER



Stud Welder Description

Incorporates the latest solid state technology into a compact and rugged CD Stud Welder. This system has the capacity to weld studs and pins (including cupped head pins) ranging from 14-gauge through 3/8" full flanged stainless steel studs.

SPECS	TWE-375
SIZE	16" Length, 8-1/2" Width, 9" Height
WEIGHT	34 lbs.
WELD RANGE	14 gauge through 3/8" Stainless
DUTY CYCLE	30 studs per minute (including 3/8")
PRIMARY POWER	110 VAC @ 50/60Hz 10 Amp circuit or 220 VAC @ 50/60Hz 5 Amp circuit
CHARGE VOLTAGE	35-200 VDC

Operational and Safety Features

- LED Voltage Meter
- Safety Shutdown
- Cooling Fan
- Front-Panel Informational LED's
- Dial-Down weld voltage control

Made In the USA

** Specifications are subject to change without prior notice

Version 2.0 05/09/2013

FEATURES

- Digital DC voltage readout on all models (allows for more accurate and repeatable weld settings).
- Cooling fan in all models for increased efficiency.
- Dial-down DC voltage setting (no need to turn off the unit when resetting to a lower voltage).
- Only 10 amp circuit requirement (unit fused @ 10 amps).
- 132,000 micro farad capacitors charging to 200 VDC for greater power output @ lower DC voltage requirements.
- Terminal connections on the capacitors are over 5/8" in diameter for a good seat of the terminal buss bars to increase reliability.
- The terminal connections on the capacitors have 1/4-28 socket set screws inserted into each one. The socket set screw is used to make the connection to the buss bar. This eliminates damaging the threads on the aluminum connectors of the capacitor, ensuring a solid connection.
- Rigid internal construction connecting the entire internal unit to the front and rear panels minimizes the opportunity of the components coming loose during handling or operations.
- Sheet metal is powder-coated for greater durability, texture, and appearance.
- Stud Guns are ergonomically designed for better hand fit and comfort (reduces operator fatigue for increased weld repeatability).
- Stud Guns have a permanent internal spring with easy adjustment for various spring pressures allowing an increased opportunity to apply the correct spring pressure to the weld (no need for a variety of different springs for various applications).
- Stud Guns can be configured for "B" Collets, "CI" Collets, Euro Collets or standard tapered chucks.

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Stud Welding Equipment - CD

CAPACITOR DISCHARGE STUD WELDER SPECIAL PACKAGE



Product Description

The TWE-SPC Package incorporates the latest solid state technology of our CD Welders into a compact and rugged mobile capacitor discharge unit. This special packaging is available for all of our Capacitor Discharge Welders - The TWE-250, TWE-321, TWE-375.

TWE-250SPC

TWE-321SPC

TWE-375SPC

Operational and Safety Features

LED Voltage Meter

Safety Shutdown

Cooling Fan

Front-Panel Informational LED's

Dial-down weld voltage control

Storage space for weld gun and cable

Ease of transport due to extension handle and wheels.

Stud Welding Equipment - CD

CDI 1502 TECHNICAL DATA SHEET



Inverter-Capacitor Charging Technology

Maximum welding rates
Minimum energy consumption
Minimum weight
Maximum efficiency

Only power unit in its class (66.000 μ F), which officially fulfills the requirements of the Technical Bulletin 0903 „Capacitor-discharge stud welding with tip ignition“ for studs diameter M8 with a required charging voltage of 220 V.

CDi 1502

Stud Welding Unit (with digital display)

For CD stud welding (capacitor discharge welding)
according to current standards

Technische Daten

Automatic	Option
Welding range	Studs #4 to 5/16", dia. 14 ga to 5/16"; cupped head pins dia. 14 ga and 12 ga; insulation pins dia. 14 ga and #4 (studs M3 to M8, dia. 2 to 8 mm; cupped head pins dia. 2 and 2.7 mm; insulation pins dia. 2 and 3 mm)
Welding material	Mild steel, stainless steel, aluminum and brass
Welding rate	M3 = 40 studs/min. (Charging voltage 60 V) M8 = 14 studs/min. (Charging voltage 200 V) M8 = 12 studs/min. (Charging voltage 220 V)
Capacitance	66,000 μ F
Welding time	1 to 3 msec
Energy	1,600 Ws
Charging voltage	50 to 220 V (stepless voltage regulation)
Primary power	115 V, 50/60 Hz, 10 AT
Power source	Capacitor
Cooling type	F (temperature controlled cooling fan)
IP-code	IP 23 (92-12-1502), IP 21 (92-12-1504)
Dimension L x W x H	15.75" x 8.07" x 9.84" (400 x 205 x 250 mm) without handle
Weight	30.87 lbs (14 kg)
Order No	92-12-1502 92-12-1504 (Automatic)

General Information

Application

- Especially suitable for thin sheets (at least 0.5 mm)
- ISO – especially suitable for fixing heating, ventilation and air-conditioning mats (HVAC)

Process variants

- Contact welding
- Gap welding

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Stud Welding Equipment - CD

CDi 2302 TECHNICAL DATA SHEET



Inverter-Capacitor Charging Technology

Maximum welding rates
Minimum energy consumption
Minimum weight
Maximum efficiency

CDi 2302

Stud Welding Unit (with digital display)

For CD stud welding (capacitor discharge welding)
according to current standards

Technische Daten

Welding range	#4 to 5/16" (7/16" limited), dia. 14 ga to 5/16" (dia. 3/8" limited) (M3 to M8 (M10 limited), dia. 2 to 8 mm (dia. 10 mm limited))
Welding material	Mild steel, stainless steel, aluminum and brass
Welding rate	M3 = 33 studs/min. (Charging voltage 60 V) M8 = 12 studs/min. (Charging voltage 170 V) (M10 = 9 studs/min. (Charging voltage 210 V))
Capacitance	99,000 µF
Welding time	1 to 3 msec
Energy	2,400 Ws
Charging voltage	50 to 220 V (stepless voltage regulation)
Primary power	115 V, 50/60 Hz, 10 AT
Power source	Capacitor
Cooling type	F (temperature controlled cooling fan)
IP-code	IP 23
Dimension L x W x H	18.90" x 8.07" x 9.84" (480 x 205 x 250 mm) without handle
Weight	37.48 lbs (17 kg)
Order No	92-12-2302

General Information

Application

- Especially suitable for thin sheets (at least 0.5 mm)

Process variants

- **Contact welding**
- **Gap welding**

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Stud Welding Equipment - CD

CDI 3102 TECHNICAL DATA SHEET



Inverter-Capacitor Charging Technology

Maximum welding rates
Minimum energy consumption
Minimum weight
Maximum efficiency

CDi 3102

Stud Welding Unit (with digital display)
For CD stud welding (capacitor discharge welding)
according to current standards

Technische Daten

Welding range	#4 to 7/16", dia. #4 to 3/8" (M3 to M10, dia. 3 to 10 mm)
Welding material	Mild steel, stainless steel, aluminum and brass
Welding rate	M3 = 20 studs/min. (Charging voltage 50 V) M8 = 10 studs/min. (Charging voltage 140 V) M10 = 6 studs/min. (Charging voltage 200 V)
Capacitance	132,000 µF
Welding time	1 to 3 msec
Energy	3,200 Ws
Charging voltage	50 to 220 V (stepless voltage regulation)
Primary power	115 V, 50/60 Hz, 10 AT
Power source	Capacitor
Cooling type	F (temperature controlled cooling fan)
IP-code	IP 23
Dimension L x W x H	18.90" x 8.07" x 9.84" (480 x 205 x 250 mm) without handle
Weight	39.68 lbs (18 kg)
Order No	92-12-3102

General Information

Application

- Especially suitable for thin sheets (at least 0.5 mm)

Process variants

- **Contact welding**
- **Gap welding**

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Stud Welding Equipment - CD

CI 03 STUD WELDING GUN (FOR INSULATION)



CI 03

Stud Welding Gun (for insulation)
for CD stud welding
according to current standards

Technical Data

Welding range	Cupped head pins dia. 14 ga/12 ga (dia. 2/2.7 mm)
Pin length	0.37" to 6.00" (9.5 to 152.4 mm)
Pin material	Mild steel, stainless steel
Pin type	Cupped head pins
Spring pressure	Adjustable, arresting
Welding cable	32.81' (10 m)
IP-Code	IP 20
Workplace noise level	> 90 dB (A) may occur during welding
Dimension L x W x H	6.89" x 1.97" x 5.71" (175 x 50 x 145 mm) without cable and tripod
Weight	1.54 lbs (0.7 kg) without cable and tripod
Order No.	92-20-254

General Information

Application

- Especially suitable for thin sheets (at least 0.5 mm)
- **ISO** – especially suitable for welding on cupped head pins (for fixing heating, ventilation and air-conditioning mats - HVAC)
- Especially suitable for insulation mats with and without aluminum cover. The cupped head pin has a special tip which permits particularly easy penetration of the insulation materials. Variably adjustable spring pressure allows the stud welding gun to be optimally adjusted to a wide range of material densities
- The fixing method with cupped head pins *replaces* the complex procedure: weld on pin – press mat over pin – affix clip – pinch off or bend over projecting tip

Process variants

- **Contact welding**

Stud Welding Equipment - CD

C 08 STUD WELDING GUN



C 08

Stud Welding Gun
for CD stud welding
according to current standards

Technical Data

Welding range	#4 to 5/16", dia. 14 ga to 5/16" (M3 to M8, dia. 2 to 8 mm) other dimensions on request
Stud length	0.24" to 1.57" (6 to 40 mm); longer studs can be welded with optional accessories
Stud material	Mild steel, stainless steel
Stud type	Any type or shape (special chucks if required)
Spring pressure	Adjustable, arresting
Welding cable	21.33' (6.5 m)
IP-Code	IP 20
Workplace noise level	> 90 dB (A) may occur during welding
Dimension L x W x H	6.70" x 1.57" x 5.51" (170 x 40 x 140 mm) without cable
Weight	1.10 lbs (0.5 kg) without cable
Order No.	92-20-256

General Information

Application

- Especially suitable for thin sheets (at least 0.5 mm)
- **ISO** – especially suitable for welding on insulation pins with flange and ignition tip

Process variants

- **Contact welding**

Advantages

Structure

- Rigid casing made of impact-resistant plastic
- Torsion-resistant basic shell (casing) to accommodate all function elements (e.g. ball bearing guide) and accessories (e.g. foot ring)
- Zero-play ball linear bearing for guiding the welding piston
- Sealed welding piston guidance
- Ergonomic design
- Compact dimensions
- Stud length freely adjustable (up to 40 mm; from 40 mm with tripod)
- Mechanical structure tested in production

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Stud Welding Equipment - CD

CA 08 STUD WELDING GUN



CA 08

Stud Welding Gun
for CD and ARC stud welding
according to current standards

Technical Data	
Welding range	#4 to 5/16", dia. 14 ga to 5/16" (M3 to M8, dia. 2 to 8 mm) other dimensions on request
Stud length	0.24" to 1.57" (6 to 40 mm); longer studs can be welded with optional accessories
Stud material	Mild steel, stainless steel, aluminum, brass
Stud type	Any type or shape (special chucks if required)
Stroke	Adjustment range 0.18" (4.5 mm), lockable
Spring pressure	Adjustable, arresting
Welding cable	9.84' (3 m)
IP-Code	IP 20
Workplace noise level	> 90 dB (A) may occur during welding
Dimension L x W x H	7.48" x 1.57" x 5.51" (190 x 40 x 140 mm) without cable
Weight	1.54 lbs (0.7 kg) without cable
Order No.	92-20-255

General Information

Application

- Especially suitable for thin sheets (at least 0.5 mm)

Process variants

- **Gap welding**
- **Short cycle drawn arc welding**

Advantages

Structure

- Rigid casing made of impact-resistant plastic
- Torsion-resistant basic shell (casing) to accommodate all function elements (e.g. ball bearing guide) and accessories (e.g. foot ring)
- Zero-play ball linear bearing for guiding the welding piston
- Sealed welding piston guidance
- Ergonomic design
- Compact dimensions
- Integrated lift and spring-loaded adjustment
- Stud length freely adjustable (up to 40 mm; from 40 mm with tripod)
- Mechanical structure tested in production

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Stud Welding Equipment - ARC

SC900 STUD WELDING SYSTEM



Made In the USA

DESCRIPTION

The SC900 is a fully integrated stud welding system for ferrule-shielded and gas-shielded drawn arc stud welding. The SC900 contains digital controls for weld time, weld current, and gas purge time. The system was designed to be a perfect fit for shop use, welding up through 1/2" studs. This is all contained in a compact, portable package.

Includes;

800 Amp Power Supply Controller, TWE19000 Light Duty stud gun, 25 feet of #2 AWG combo cable, and 15 feet of #2 AWG ground cable with clamp.

** Specifications are subject to change without prior notice

Version 1.2 05/09/2013

FEATURES

Weld Range	1/8" to 1/2" reduced base	Consistent welding regardless of stud diameter.
Duty Cycle	1/8" through 1/4" - unlimited 3/8" - 5 to 6 per minute 1/2" - 2 to 3 per minute	<ul style="list-style-type: none">Adjustable weld time, weld current, gas purge time for a wide range of process control.Great short cycle performance on thick and thin base materials.Two handle lift for practical portability.Stud Job Counter that can be reset for every job.
Dimensions	Height Width Length Weight	12.6" (320mm) 11" (280mm) 22.4" (570mm) 106 lbs. (48Kg)
Input Voltages		230 / 460 VAC 3-Phase 60Hz
Fusing Requirements	(Slow Acting)	230 / 50 Amps 460 / 25 Amps

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Stud Welding Equipment - ARC

SC1400 STUD WELDING SYSTEM



Made In the USA

DESCRIPTION

The SC1400 is fully integrated stud welding system with digital controls for time and current. This system was designed to be a perfect fit for shop use excelling at small to medium-sized diameter studs, all in a compact, affordable package.

Includes;

1400 Amp Power Supply, TWE18500 Medium Duty stud gun, 35 feet of 2/0 weld and control cable and 25 feet of 2/0 ground cable.

** Specifications are subject to change without prior notice

Version 1.5 2/13/2012

FEATURES

Weld Range	1/4" - 5/8" Diameter	Consistent welding regardless of stud diameter.
Duty Cycle	1/4" Thru 3/8" - Unlimited 1/2" - 22 to 24 per minute 5/8" - 9 to 10 per minute	<ul style="list-style-type: none">• Smooth arc curve targeted for small to medium-sized diameter studs.• Enhanced Duty Cycle for production requirements.• Capable of up to 100 feet of 2/0 welding cable accommodates a large variety of work station layouts.• Stepless time and current control allow for infinite settings for fine-tuning the welding output.
Dimensions	Height Width Length Weight	22" (559mm) 25" (635mm) 30" (762mm) 380 Lbs. (172kg)
Input Voltages		230 / 460 / 575 VAC 3 Phase 60Hz
Fusing Requirements	(Slow Acting)	230 / 120 Amps 460 / 60 Amps 575 / 50 Amps

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SC1600 STUD WELDING SYSTEM



Made In the USA

DESCRIPTION

The SC1600 is fully integrated stud welding system with digital controls for time and current. This system was designed to be a perfect fit for shop use excelling at small to medium-sized diameter studs, all in a compact, affordable package.

Includes;

1600 Amp Power Supply, TWE17000 Heavy Duty stud gun, 35 feet of 4/0 weld and control cable and 25 feet of 4/0 ground cable.

** Specifications are subject to change without prior notice

Version 1.5 2/13/2012

FEATURES

Weld Range	1/4" - 3/4" Diameter	Consistent welding regardless of stud diameter.
Duty Cycle	1/4" Thru 3/8" - Unlimited 1/2" - 22 to 24 per minute 5/8" - 9 to 10 per minute 3/4" - 4 to 5 per minute	<ul style="list-style-type: none">• Smooth arc curve targeted for small to medium-sized diameter studs.• Enhanced Duty Cycle for production requirements.• Capable of up to 100 feet of 4/0 welding cable accommodates a large variety of work station layouts.• Stepless time and current control allow for infinite settings for fine-tuning the welding output.
Dimensions	Height Width Length Weight	22" (559mm) 25" (635mm) 30" (762mm) 380 Lbs. (172kg)
Input Voltages		230 / 460 / 575 VAC 3 Phase 60Hz
Fusing Requirements	(Slow Acting)	230 / 120 Amps 460 / 60 Amps 575 / 50 Amps

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Stud Welding Equipment - ARC

SC1900 STUD WELDING SYSTEM



Made In the USA

DESCRIPTION

The SC1900 is fully integrated stud welding system with digital controls for time and current. This system was designed to be a perfect fit for shop use excelling at small to medium-sized diameter studs, all in a compact, affordable package.

Includes;

1800 Amp Power Supply, TWE17000 Heavy Duty stud gun, 35 feet of 4/0 weld and control cable and 25 feet of 4/0 ground cable.

** Specifications are subject to change without prior notice

Version 2.0 2/13/2012

FEATURES

Weld Range	1/4" - 7/8" Diameter	Consistent welding regardless of stud diameter.
Duty Cycle	1/4" Thru 3/8" - Unlimited 1/2" - 22 to 24 per minute 5/8" - 9 to 10 per minute 3/4" - 4 to 5 per minute 7/8" - 3 to 4 per minute	<ul style="list-style-type: none">• Smooth arc curve targeted for small to medium-sized diameter studs.• Enhanced Duty Cycle for production requirements.• Capable of up to 100 feet of 4/0 welding cable accommodates a large variety of work station layouts.• Stepless time and current control allow for infinite settings for fine-tuning the welding output.• Stud Job Counter that can be reset for every job.
Dimensions	Height Width Length Weight	22" (559mm) 25" (635mm) 30" (762mm) 390 Lbs. (177kg)
Input Voltages		230 / 460 / 575 VAC 3 Phase 60Hz
Fusing Requirements	(Slow Acting)	230 / 120 Amps 460 / 60 Amps 575 / 50 Amps

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Stud Welding Equipment - ARC

SC2400 STUD WELDING SYSTEM

Heavy Duty Steel Fabrication Shop Stud Welding System



Made In the USA

DESCRIPTION

The SC2400 is a fully integrated stud welding system with two digital controls for time and current. The system was designed to meet the most challenging stud welding jobs.

Includes;

Power Supply Controller, TWE17000 Heavy Duty stud gun, 50 feet of 4/0 weld and control cable and 25 feet of 4/0 ground cable

FEATURES

Weld Range	1/4" - 1" Diameter	Consistent welding regardless of stud diameter.
Duty Cycle	1/4" Thru 5/8" - Unlimited 3/4" - 18 to 24 per minute 7/8" - 12 to 14 per minute 1" - 6 to 8 per minute	<ul style="list-style-type: none">Enhanced Duty Cycle for production requirements.Powerful output for even the largest diameter jobs.Stepless time and current control allow for infinite settings for fine-tuning the welding output.Safety welding interlock keeps system from double triggering and saves on chuck wear.Stud Job Counter that can be reset for every job.
Dimensions	Height Width Length Weight	29" (736.6mm) 28" (711.2mm) 36" (914.4mm) 665 Lbs. (302kg)
Input Voltages		230 / 460 / 575 VAC 3 Phase 60Hz
Fusing Requirements	(Slow Acting)	230 / 180 Amps 460 / 90 Amps 575 / 80 Amps

** Specifications are subject to change without prior notice

Version 2.1 12/18/2013

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32035 Creekside Drive, Cleveland, Ohio 44124 fax 216.378.0349 telephone 216.904.4008

Stud Welding Equipment - ARC

SC2402 STUD WELDING SYSTEM

Heavy Duty Steel Fabrication Shop Stud Welding System



Made In the USA

DESCRIPTION

The SC2402 is a fully integrated stud welding system with two digital controls for time and current. The system was designed to meet the most challenging stud welding jobs, including thru-deck applications (this also includes G90 decking).

Includes;

Power Supply Controller, TWE17000 Heavy Duty stud gun, 50 feet of 4/0 weld and control cable and 25 feet of 4/0 ground cable

FEATURES

Weld Range	1/4" - 1" Diameter	Consistent welding regardless of stud diameter.
Duty Cycle	1/4" Thru 5/8" - Unlimited 3/4" - 18 to 24 per minute 7/8" - 12 to 14 per minute 1" - 6 to 8 per minute	<ul style="list-style-type: none">Enhanced Duty Cycle for production requirements.Powerful output for even the largest diameter jobs.Stepless time and current control allow for infinite settings for fine-tuning the welding output.Safety welding interlock keeps system from double triggering and saves on chuck wear.Stud Job Counter that can be reset for every job.
Dimensions	Height Width Length Weight	29" (736.6mm) 28" (711.2mm) 36" (914.4mm) 760 Lbs. (345kg)
Input Voltages		380 / 400 VAC 3 Phase 50Hz
Fusing Requirements	(Slow Acting)	380 / 100 Amps 400 / 100 Amps

** Specifications are subject to change without prior notice

Version 2.0 05/15/2013

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Stud Welding Equipment - ARC

SC2420 STUD WELDING SYSTEM

Dual-Gun Shop Stud Welding System



Made In the USA

DESCRIPTION

The SC2420 is a fully integrated stud welding system with two digital controls for time and current. The system was designed to meet the most challenging stud welding jobs.

Includes;

Power supply controller, two (2) TWE17000 heavy duty stud guns, two (2) sets of 50ft of 4/0 weld and control cable, and two (2) sets of 25ft of 4/0 ground cable w/ HD clamp.

FEATURES

Weld Range	1/4" - 1" Diameter	Consistent welding regardless of stud diameter.
Duty Cycle	1/4" Thru 5/8" - Unlimited 3/4" - 18 to 24 per minute 7/8" - 12 to 14 per minute 1" - 6 to 8 per minute	<ul style="list-style-type: none">Enhanced Duty Cycle for production requirements.Powerful output for even the largest diameter jobs.Stepless time and current control allow for infinite settings for fine-tuning the welding output.Safety welding interlock keeps system from double triggering and saves on chuck wear.Stud Job Counter that can be reset for every job.
Dimensions	Height Width Length Weight	29" (736.6mm) 28" (711.2mm) 36" (914.4mm) 695 Lbs. (317kg)
Input Voltages		230 / 460 / 575 VAC 3 Phase 60Hz
Fusing Requirements	(Slow Acting)	230 / 180 Amps 460 / 90 Amps 575 / 80 Amps

** Specifications are subject to change without prior notice

Version 2.0 05/11/2013

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Stud Welding Equipment - ARC

SC3400 STUD WELDING SYSTEM



Made In the USA

DESCRIPTION

The SC3400 is a fully integrated stud welding system with two digital controls for time and current. The system was designed to meet the most challenging stud welding jobs, including thru-deck applications (this also includes G90 decking).

Includes;

3000 Amp power supply, TWE17000 Heavy Duty stud gun, 50 feet of 4/0 weld and control cable and 25 feet of 4/0 ground cable.

FEATURES

Weld Range	1/4" - 1-1/4" Diameter	Consistent welding regardless of stud diameter.
Duty Cycle	1/4" Thru 5/8" - unlimited 3/4" - 22 to 24 per minute 7/8" - 16 to 18 per minute 1" - 12 to 14 per minute 1-1/4" - 4 to 5 per minute	<ul style="list-style-type: none">• Smooth arc curve allows for the wide range of welding.• Enhanced Duty Cycle for production requirements.• Powerful output for even the largest diameter jobs.• Stepless time and current control allow for infinite settings for fine-tuning the welding output.• Safety welding interlock keeps system from double triggering.• Stud Job Counter that can be reset for every job.
Dimensions	Height Width Length Weight	28" (736.6mm) 29" (711.2mm) 36" (914.4mm) 760 Lbs. (345kg)
Input Voltages		230 / 460 / 575 VAC 3 Phase 60Hz 400 VAC 3 Phase 50Hz
Fusing Requirements	(Slow Acting)	230 / 200 Amps 460 / 100 Amps 575 / 90 Amps

** Specifications are subject to change without prior notice

Version 2.0 05/15/2013

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Stud Welding Equipment - ARC

SC3402 DUAL-GUN STUD WELDING SYSTEM



Made In the USA

DESCRIPTION

The SC3402 is fully-integrated, dual-gun, stud welding system with two digital controls for time and current. The system was designed to meet the most challenging stud welding jobs, including thru-deck applications (this also includes G90 decking).

Includes;

3000 Amp power supply, two (2) TWE17000 heavy duty stud guns, two (2) cable sets of 50-ft. of 4/0 weld and control cable, and two (2) sets of 25-ft. 4/0 ground cable.

FEATURES

Weld Range	1/4" - 1-1/4" Diameter	Consistent welding regardless of stud diameter.
Duty Cycle	1/4" Thru 5/8" - unlimited 3/4" - 22 to 24 per minute 7/8" - 16 to 18 per minute 1" - 12 to 14 per minute 1-1/4" - 4 to 5 per minute	<ul style="list-style-type: none">• Smooth arc curve allows for the wide range of welding.• Enhanced Duty Cycle for production requirements.• Powerful output for even the largest diameter jobs.• Stepless time and current control allow for infinite settings for fine-tuning the welding output.• Safety welding interlock keeps system from double triggering.• Stud Job Counter that can be reset for every job.
Dimensions	Height Width Length Weight	28" (736.6mm) 29" (711.2mm) 36" (914.4mm) 875 Lbs. (397kg)
Input Voltages		230 / 460 / 575 VAC 3 Phase 60Hz 400 VAC 3 Phase 50Hz
Fusing Requirements	(Slow Acting)	230 / 200 Amps 400 / 100 Amps 460 / 100 Amps 575 / 90 Amps

** Specifications are subject to change without prior notice

Version 1.6 10/03/2012

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Stud Welding Equipment - ARC

GENERATOR STUD WELDING SYSTEM

Heavy Duty Steel Stud Welding System



Made In the USA

The **TRU-WELD** Diesel Generator is a fully-integrated, stud welding system that offers portability along with your stud welding needs. This system incorporates a SC3400 Heavy Duty Stud Welder with its own portable power source, which enables you to finish jobs effectively and efficiently, without the costly task of disconnecting the power and moving the unit as the job requires.

SYSTEM FEATURES

- Aluminum weather enclosure
- Full sound attenuation
- Critical Sound muffler
- Block engine heater
- Battery charger
- Electronic governor
- Auto-Start control w/over-speed and over-crank shut down
- Automatic low-water shut down
- Alternator w/Permanent Magnet Generator and Automatic Voltage Control
- Two (2) 120 VAC outlets



Version 1.4 10/03/2012

SPECIFICATIONS

Power	480 VAC, 3 Phase
Amp Load Capacity	300 Amps
Generator	256 KVA
Circuit Breaker	350 Amp (Main Line)

** Specifications are subject to change without prior notice

[HTTP://TruweldStudWelding.com](http://TruweldStudWelding.com)

SYSTEM INCLUDES;

- Mobile Generator
- SC3400 Heavy Duty Welder
- TWE17000 Heavy Duty Stud Gun
- 25 ft. 4/0 ground cable w/clamp
- 50 ft. 4/0 starter combo cable
- 100 ft. 4/0 combo cable



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Stud Welding Equipment - ARC

TWE 19000 LIGHT DUTY STUD GUN



DESCRIPTION

The TWE19000 has been designed to fit comfortably for all hands, including when wearing a work glove. The neck of the handle has been tapered so that when grasped, the trigger can be accessed easily, without any unnecessary strain. The handle length allows for better balance of the stud gun and it keeps the welding cable and connector away from your hand, minimizing operator fatigue.

FEATURES

The TWE19000 is approximately 8.0" long from the weld cable to the back cap, and approximately 7" long from the top of the stud gun to the bottom of the handle. The overall weight of the stud gun is approximately 4.2 pounds (excludes 8.5 feet of 2/0 weld cable and 9 feet of control cable. This also excludes all connectors, legs, and foot piece.)

The TWE19000 can be ordered to operate with any type of stud welding equipment. Simply specify the make and model of your equipment and we will provide you with a stud gun connection that is compatible with your unit, regardless of the manufacturer.

Order your TWE19000 Light Duty Stud Gun from your local TRU-WELD Equipment Distributor.

** Specifications are subject to change without prior notice

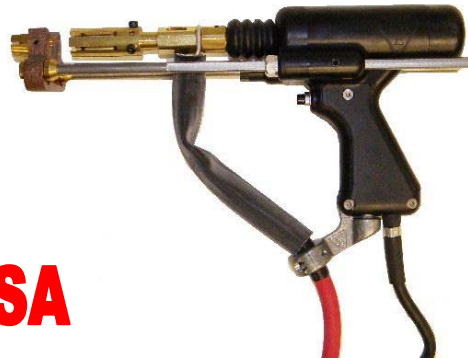
Version 1.4 12/20/2011

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Stud Welding Equipment - ARC

TWE 18500 MEDIUM DUTY STUD GUN



Made In the USA

DESCRIPTION

The TWE85000 has been designed to fit comfortably for all hands, including when wearing a work glove. The neck of the handle has been tapered so that when grasped, the trigger can be accessed easily, without any unnecessary strain. The handle length allows for better balance of the stud gun and it keeps the welding cable and connector away from your hand, minimizing operator fatigue.

FEATURES

The TWE18500 is approximately 8.5" long from the weld cable to the back cap, and approximately 7" long from the top of the stud gun to the bottom of the handle. The overall weight of the stud gun is approximately 4.8 pounds (excludes 8.5 feet of 2/0 weld cable and 9 feet of control cable. This also excludes all connectors, legs, and foot piece.)

The TWE18500 can be ordered to operate with any type of stud welding equipment. Simply specify the make and model of your equipment and we will provide you with a stud gun connection that is compatible with you unit, regardless of the manufacturer.

Order your TWE18500 Medium Duty Stud Gun from your local TRU-WELD Equipment Distributor.

** Specifications are subject to change without prior notice

Version 1.5 10/03/2012

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Stud Welding Equipment - ARC

TWE 1700 HEAVY DUTY STUD GUN

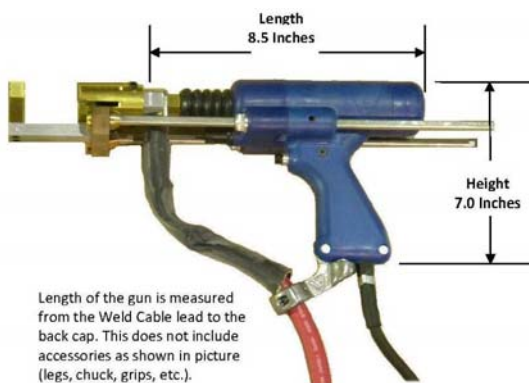


DESCRIPTION

The TWE17000 has been designed to fit comfortably for all hands, including when wearing a work glove. The neck of the handle has been tapered so that when grasped, the trigger can be accessed easily, without any unnecessary strain. The handle length allows for better balance of the stud gun and it keeps the welding cable and connector away from your hand, minimizing operator fatigue.

FEATURES

The TWE17000 heavy duty stud gun has a welding range from 1/8" through 1-1/4" diameter studs.



The TWE17000 is approximately 8.5" long from the weld cable to the back cap, and approximately 7" long from the top of the stud gun to the bottom of the handle. The overall weight of the stud gun is approximately 15 pounds (with 8.5 feet of 4/0 weld cable and 8 feet of control cable (This also includes all connectors, legs, and foot piece.).

The TWE17000 can be ordered to operate with any type of stud welding equipment. Simply specify the make and model of your equipment and we will provide you with a stud gun connection that is compatible with you unit, regardless of the manufacturer.

Order your TWE17000 Heavy Duty Stud Gun from your local TRU-WELD Equipment Distributor.

** Specifications are subject to change without prior notice

Version 1.4 12/20/2011

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Stud Welding Equipment - ARC

ARC 500 STUD WELDING UNIT



ARC 500

Stud Welding Unit
for ARC stud welding
according to current standards

Technical Data

Welding range	#4 to 7/16", dia. 14 ga to 5/16" (M3 to MR10, dia. 2 to 8 mm)	
Welding material	Mild steel, stainless steel	
Welding rate	5 to 15 studs/min (depending on application and stud dia.)	
Welding current	580 A	
Welding time	5 to 350 msec	
Primary power	230/460 V 3 phases, 50/60 Hz, 50/35 AT or 575 V, 3 phases, 50/60 Hz, 25 AT (alternative input voltages available)	
Power source	Transformer/Rectifier	
Cooling type	F (temperature controlled cooling fan)	
IP-Code	IP 23	
Dimension L x W x H	18.50" x 9.06" x 8.66" (470 x 230 x 220 mm) without handle	
Weight	68.34 lbs (31 kg)	
Order No.	230/460 V: 93-16-0401A	575V: 93-15-0401A

General Information

Application

- Especially suitable for thicker sheets of about 2 mm or higher
- **ISO** – especially suitable for attaching cut-to-length ARC-ISO and Fiberfix pins; also material with high heat resistance; excellent for insulation applications in building construction and fire-resistant insulation (FRI)

Process variants

- **Short cycle drawn arc welding**
- **Drawn arc welding**

Equipment

- **Welding with ceramic ferrule (series)**

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Stud Welding Equipment - ARC

ARC 800 STUD WELDING UNIT



ARC 800

Stud Welding Unit
for ARC stud welding
according to current standards

Technical Data		
Gas/Automation	Series/Option	
Welding range	#4 to 1/2", dia. 14 ga to 3/8" (M3 to MR12, dia. 2 to 10 mm)	
Welding material	Mild steel, stainless steel	
Welding rate	7 to 17 studs/min (depending on application and stud dia.)	
Welding current	800 A	
Welding time	5 to 1,000 msec	
Primary power	230/460 V 3 phases, 50/60 Hz, 50/35 AT or 575 V, 3 phases, 50/60 Hz, 25 AT (alternative input voltages available)	
Power source	Transformer/Rectifier	
Cooling type	F (temperature controlled cooling fan)	
IP-Code	IP 23	
Dimension L x W x H	18.50" x 9.06" x 8.66" (470 x 230 x 220 mm) without handle	
Weight	81.57 lbs (37 kg)	
Order No.	230/460 V: 93-16-0702A (Gas) 93-16-0704A (Gas/Automation)	575V: 93-15-0702A (Gas) 93-15-0704A (Gas/Automation)
General Information		
Application		
<ul style="list-style-type: none">Especially suitable for thicker sheets of about 2 mm or higher		
Process variants		
<ul style="list-style-type: none">Short cycle drawn arc weldingDrawn arc welding		
Equipment		
<ul style="list-style-type: none">Welding with ceramic ferrule (series)Welding with shielding gas (series)Automatic (optional)		

Stud Welding Equipment - ARC

IT 1002 STUD WELDING UNIT



Inverter

Maximum welding quality
Maximum welding rates
Minimum energy consumption
Minimum weight
Maximum efficiency

IT 1002

Stud Welding Unit
for ARC stud welding
according to current standards

Technical Data

Gas/Automation/Process control	Series/Option/Option
Welding range	#4 to 5/8", dia. 14 ga to 9/16" (M3 to MR16, dia. 2 to 14 mm)
Welding material	Mild steel, stainless steel, aluminum
Welding rate	1/2" (M12) = 25 studs/min
Welding current	1,000 A (max.)
Current adjustment range	Stud welding 100 to 1,000 A, electrode 50 to 400 A (stepless)
Welding time	5 to 1,000 msec (stepless)
Primary power	480/460 V, 3 phases, 50/60 Hz, 35 AT (alternative input voltages available)
Connected load	50 KVA (with 400 V mains), 40 kW
Cooling type	F (temperature controlled cooling fan)
IP-Code	IP 23
Dimension L x W x H	26 " x 11" x 13.4" (660 x 280 x 340 mm) without handle
Weight	63.9 lbs (29 kg)
Order No.	93-66-1202 (Gas) 93-66-1204 (Gas/Automation) 93-66-1206 (Gas/Automation/Process control)

General Information

Application

- Especially suitable for thicker sheets of about 2 mm or higher

Process variants

- Short cycle drawn arc welding
- Drawn arc welding

Equipment

- Welding with ceramic ferrule (series)
- Welding with shielding gas (series)
- Automation (optional)
- Process sequence control (optional)

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Stud Welding Equipment - ARC

ARC 1550 STUD WELDING UNIT



ARC 1550

Stud Welding Unit
for ARC stud welding
according to current standards

Technical Data

Gas/Automation	Series/Option
Welding range	#4 to 3/4", dia. 14 ga to 3/4" (M3 - M20 RD, dia. 2 to 19 mm)
Welding material	Mild steel, stainless steel
Welding rate	3 to 35 studs/min (depending on application and stud dia.)
Welding current	1,550 A
Current adjustment range	500 to 1,550 A (500 A - 800 A – 1,000 A – 1,200 A – 1,550 A)
Welding time	5 to 1,500 msec (stepless)
Primary power	460 V, 3 phases, 50/60 Hz, 63 AT (alternative input voltages available)
Connected load	40 kVA (460 V mains)
Power source	Transformer/Rectifier
Primary cable	16.40', 1/0 (5 m, 6 mm ²), 460 V; max. cable length 98.42' (30 m), 1/0 (6 mm ²) at 400 V
Max. welding cable extension	65.62', 4/0 (20m, 95 mm ²)
Cooling type	F (temperature controlled cooling fan)
IP-code	IP 23
Dimension L x W x H	18.11" x 15.74" x 28.74" (460 x 400 x 730 mm) without handle
Weight	293.21 lbs (133 kg)
Order No.	93-16-1552A (Gas) 93-16-1554A (Gas/Automation)

General Information

Application

- Especially suitable for thicker sheets of about 2 mm or higher

Process variants

- Short cycle drawn arc welding
- Drawn arc welding

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Stud Welding Equipment - ARC

IT 2002 STUD WELDING UNIT



Inverter

Maximum welding quality
Maximum welding rates
Minimum energy consumption
Minimum weight
Maximum efficiency

IT 2002

Stud Welding Unit
for ARC stud welding
according to current standards

Technical Data

Gas	Option
Welding range	#4 to 1", dia. 14 ga to 1" (M3 to M24, dia. 2 to 25 mm)
Welding material	Mild steel, stainless steel, aluminum
Welding rate	Dia. 7/8" = 7 studs/min (dia. 22 mm = 7 studs/min)
Welding current	2,000 A (max.)
Current adjustment range	300 to 2,000 A (stepless)
Welding time	5 to 1,500 msec (stepless)
Primary power	480/460 V, 3 phases, 50/60 Hz, 63 AT (alternative input voltages available)
Connected load	100 KVA (with 400 V mains), 80 kW
Cooling type	F (temperature controlled cooling fan)
IP-Code	IP 23
Dimension L x W x H	23.6" x 19.7" x 32.7 " (600 x 500 x 830 mm) without handle
Weight	209.4 lbs (95 kg)
Order No.	93-66-2201 93-66-2202 (Gas)

General Information

Application

- Especially suitable for thicker sheets of about 2 mm or higher
- Especially suitable for welding of concrete anchors/shear connectors for job site applications
- Suitable for through deck welding

Process variants

- **Short cycle drawn arc welding**
- **Drawn arc welding**

Equipment

- **Welding with ceramic ferrule** (series)
- **Welding with shielding gas** (optional)

COMPLETE
STUD WELDING
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Stud Welding Equipment - ARC

IT 130 STUD WELDING UNIT



Inverter

Maximum welding quality
Maximum welding rates
Minimum energy consumption
Minimum weight
Maximum efficiency

IT 130

Stud Welding Unit
for ARC stud welding
according to current standards

Technical Data

Gas/Process control	Series/Series
Welding range	#4 to 1", dia. 14 ga to 1" (M3 to M24, dia. 2 to 25 mm)
Welding material	Mild steel, stainless steel, aluminum
Welding rate	Dia. 1" = 6 studs/min (dia. 25 mm = 6 studs/min)
Welding current	2,500 A (max.)
Current adjustment range	300 to 2,500 A (stepless)
Welding time	5 to 1,500 msec (stepless)
Primary power	480/460 V, 3 phases, 50/60 Hz, 63 AT (alternative input voltages available)
Connected load	150 KVA (with 400 V mains) 120 kW
Cooling type	F (temperature controlled cooling fan)
IP-Code	IP 21
Dimension L x W x H	25.6" x 22" x 50.8" (650 x 560 x 1,290 mm) without handle
Weight	352.7 lbs (160 kg)
Order No.	93-66-12133 (Gas/Process control/1 Gun connection)

General Information

Application

- Especially suitable for thicker sheets of about 2 mm or higher

Process variants

- Short cycle drawn arc welding
- Drawn arc welding

Equipment

- Welding with ceramic ferrule (series)
- Welding with shielding gas (series)
- Process sequence control (series)

COMPLETE
STUD WELDING
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Stud Welding Equipment - ARC

IT 3002 STUD WELDING UNIT



Inverter

Maximum welding quality
Maximum welding rates
Minimum energy consumption
Minimum weight
Maximum efficiency

IT 3002

Stud Welding Unit
for ARC stud welding
according to current standards

Technical Data

Gas	Option
Welding range	#4 to 1", dia. 14 ga to 1" (M3 to M24, dia. 2 to 25 mm)
Welding material	Mild steel, stainless steel, aluminum
Welding rate	Dia. 1" = 6 studs/min (dia. 25 mm = 6 studs/min) Through deck welding 3/4" = 12 studs/min (300 feet, AWG 4/0) Industrial application 3/4" = 14 to 15 studs/min
Welding current	2,600 A (max.)
Current adjustment range	300 to 2,600 A (stepless)
Welding time	5 to 1,500 msec (stepless)
Primary power	480/460 V, 3 phases, 50/60 Hz, 125 AT (alternative input voltages available)
Connected load	150 KVA (with 400 V mains), 120 kW
Cooling type	F (temperature controlled cooling fan)
IP-Code	IP 23
Dimension L x W x H	25.6" x 22" x 50.8" (650 x 560 x 1,290 mm) without handle
Weight	93-66-3211: 352.74 lbs (160 kg) 93-66-3221: 394.63 lbs (179 kg)
Order No.	93-66-3211 (1 Gun connection) 93-66-3221 (2 Gun connections)

General Information

Application

- Especially suitable for thicker sheets of about 2 mm or higher
- Especially suitable for welding of concrete anchors/shear connectors for job site applications
- Suitable for through deck welding

Process variants

- **Short cycle drawn arc welding**
- **Drawn arc welding**

Equipment

- **Welding with ceramic ferrule (series)**

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Stud Welding Equipment - ARC

AI 06 STUD WELDING GUN (FOR INSULATION)



AI 06

Stud Welding Gun (for insulation)
for ARC stud welding
according to current standards

Technical Data

Welding range	ARC-ISO pins dia. #4 to 1/4" (dia. 3 to 6 mm)
Pin length	0.39" to 15.74" (10 to 400 mm) depending on tripod
Pin material	Mild steel, stainless steel
Pin type	ARC insulation pin, ARC fiberfix pin, ARC threaded stud, ARC pin
Length compensation	0.12" (3 mm) automatic
Stroke	Adjustment range 0.12" (3 mm), lockable
Spring pressure	Adjustable, arresting
Welding cable	32.81' (10 m)
IP-Code	IP 20
Workplace noise level	Up to 90 dB (A) may occur during welding
Dimension L x W x H	7.09" x 2.56" x 5.51" (180 x 65 x 140 mm) without cable, with foot piece
Weight	1.76 lbs (0.8 kg) without cable and tripod
Order No.	93-20-250 (gun including foot piece) 93-40-026 (tripod ISO with support tube) 93-40-066 (tripod ISO with support tube aluminum-teflon)

General Information

Application

- Especially suitable for thicker metal sheets from approx. 2 mm
- **ISO** – especially suitable for welding on ARC-ISO and Fiberfix pins
- Automatic compensation of length tolerance of welding elements through integrated length adjustment

Process variants

- **Short cycle drawn arc welding**
- **Drawn arc welding** with ceramic ring or shielded gas

Advantages

Structure

- Rigid casing made of impact-resistant plastic
- Torsion-resistant basic shell (casing) to accommodate all function elements and accessories (e.g. foot ring)
- Zero-play ball linear bearing for guiding the welding piston
- Sealed welding piston guidance
- Ergonomic design
- Compact dimensions

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Stud Welding Equipment - ARC

A 12 STUD WELDING GUN



A 12

Stud Welding Gun
for ARC stud welding
according to current standards

Technical Data

Welding range	#4 to 1/2", dia. 14 ga to 1/2" (M3 to M12, dia. 2 to 12 mm)
Stud length	0.39" to 15.74" (10 to 400 mm) depending on tripod
Stud material	Mild steel, stainless steel
Stud type	Any type or shape (special chucks if required)
Length compensation	0.12" (3 mm) automatic
Stroke	Adjustment range 0.12" (3 mm), lockable
Spring pressure	Adjustable, arresting
Welding cable	16.40' (5 m)
IP-Code	IP 20
Workplace noise level	Up to 90 dB (A) may occur during welding
Dimension L x W x H	7.87" x 2.56" x 5.51" (200 x 65 x 140 mm) without cable, with foot piece
Weight	1.76 lbs (0.8 kg) without cable
Order No.	93-20-270 (gun including foot piece) 93-40-021 (tripod gas complete) 93-40-022 (tripod ceramic ferrule (CF) complete)

General Information

Application

- Especially suitable for thicker metal sheets from approx. 2 mm
- **ISO** – especially suitable for welding on ARC-ISO and Fiberfix pins
- Automatic compensation of length tolerance of welding elements through integrated length adjustment

Process variants

- **Short cycle drawn arc welding**
- **Drawn arc welding** with ceramic ring or shielded gas

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Stud Welding Equipment - ARC

A 16 STUD WELDING GUN (CLAMPED)



A 16

Stud Welding Gun (damped)
for ARC stud welding
according to current standards

Welding range	Dia. #4 to 5/8" (dia. 3 to 16 mm)
Stud length	0.39" to 9.45" (10 to 240 mm) depending on tripod
Stud material	Mild steel, stainless steel
Stud type	Any type or shape (special chucks if required)
Length compensation	0.24" (6 mm) automatic
Stroke	Adjustment range 0.16" (4 mm), (0.01" (0.25 mm) steps, arresting)
Damping	Adjustable oildamper
Welding cable	15.91', 1/0 (4.85 m, 50 mm ²)
IP-Code	IP 20
Workplace noise level	Up to 90 dB (A) may occur during welding
Dimension L x W x H	10.24" x 2.91" x 8.66" (260 x 74 x 220 mm) without cable, with foot piece
Weight	4.41 lbs (2 kg) without cable
Order No.	93-21-280

General Information

Application

- Especially suitable for thicker metal sheets from approx. 2 mm
- Automatic compensation of length tolerance of welding elements through integrated length adjustment

Process variants

- **Short-cycle drawn-arc welding**
- **Drawn-arc-welding** with ceramic ring or shielded gas

Advantages

Structure

- Rigid casing made of impact-resistant plastic
- Slide bearing for guiding the welding piston
- Sealed welding piston guidance
- Ergonomic design
- Compact dimensions
- Lift adjustment
- Stud length freely adjustable
- Mechanical structure tested in production

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Stud Welding Equipment - ARC

A 22 STUD WELDING GUN (CLAMPED)



A 22

Stud Welding Gun (damped)
for ARC stud welding
according to current standards

Technical Data

Welding range	Dia. 9/16" to 7/8" (dia. 1") (dia. 14 to 22 mm (dia. 25 mm))
Stud length	0.39" to 15.35" (10 to 390 mm) depending on tripod
Stud material	Mild steel, stainless steel
Stud type	Any type or shape (special chucks if required)
Length compensation	0.35" (9 mm) automatic
Stroke	Adjustment range 0.24" (6 mm), (0.01" (0.25 mm) steps, arresting)
Damping	Adjustable oil damper
Welding cable	15.91', 3/0 (4.85 m, 95 mm ²)
IP-Code	IP 20
Workplace noise level	Up to 90 dB (A) may occur during welding
Dimension L x W x H	10.24" x 2.91" x 8.66" (260 x 74 x 220 mm) without cable, with foot piece
Weight	4.41 lbs (2 kg) without cable
Order No.	93-21-290

General Information

Application

- Especially suitable for thicker metal sheets from approx. 2 mm
- Especially suitable for through deck welding
- Automatic compensation of length tolerance of welding elements through integrated length adjustment

Process variants

- **Drawn arc welding** with ceramic ring

Advantages

Structure

- Rigid casing made of impact-resistant plastic
- Slide bearing for guiding the welding piston
- Sealed welding piston guidance
- Ergonomic design
- Compact dimensions
- Lift adjustment
- Stud length freely adjustable
- Mechanical structure tested in production
- Reduced heating of the stud welding gun body thanks to externally positioned welding current cable

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Stud Welding Equipment - ARC

A 25 STUD WELDING GUN (CLAMPED)



A 25

Stud Welding Gun (damped)
for ARC stud welding
according to current standards

Technical Data

Welding range	Dia. 9/16" to 1" (dia. 14 to 25 mm)
Stud length	0.39" to 15.35" (10 to 390 mm) depending on tripod
Stud material	Mild steel, stainless steel
Stud type	Any type or shape (special chucks if required)
Length compensation	0.35" (9 mm) automatic
Stroke	Adjustment range 0.24" (6 mm), (0.01" (0.25 mm) steps, arresting)
Damping	Adjustable oil damper
Welding cable	4.92', 4/0 (1.5 m, 120 mm ²)
IP-Code	IP 20
Workplace noise level	Up to 90 dB (A) may occur during welding
Dimension L x W x H	10.24" x 2.91" x 8.66" (260 x 74 x 220 mm) without cable, with foot piece
Weight	4.41 lbs (2 kg) without cable
Order No.	93-21-295

General Information

Application

- Especially suitable for thicker metal sheets from approx. 2 mm
- Especially suitable for through deck welding
- Automatic compensation of length tolerance of welding elements through integrated length adjustment

Process variants

- **Drawn arc welding** with ceramic ring

Advantages

Structure

- Rigid casing made of impact-resistant plastic
- Slide bearing for guiding the welding piston
- Sealed welding piston guidance
- Ergonomic design
- Compact dimensions
- Lift adjustment
- Stud length freely adjustable
- Mechanical structure tested in production
- Reduced heating of the stud welding gun body thanks to externally positioned welding current cable

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Stud Welding Equipment - Short Cycle

SC 2401 STUD WELD UNIT



SC 2401

Stud Welding Unit

for short cycle drawn arc stud welding
according to current standards

Technical Data	
Welding range	Short Cycle: #4 to 3/16", dia. 14 ga to 3/16" (M3 to M5, dia. 2 to 5 mm)
Welding material	Mild steel, stainless steel
Welding rate	10 to 15 studs/min (depending on application and stud dia.)
Capacitance	99,000 µF
Welding current	800 to 2,200 A (by charging voltage)
Welding time	10 msec
Energy	2,400 Ws
Charging voltage	70 to 220 V (stepless voltage regulation)
Primary power	115/230 V, 50/60 Hz, 10 AT
Power source	Capacitor
Cooling type	F (temperature controlled cooling fan)
IP-Code	IP 23
Dimension L x W x H	20.08" x 7.09" x 9.84" (510 x 180 x 250 mm) without handle
Weight	57.32 lbs (26 kg)
Order No.	91-12-2401A
General Information	
Application	
<ul style="list-style-type: none">• ISO – especially suitable for attaching cut-to-length ARC-ISO and Fiberfix pins; also material with high heat resistance; excellent for insulation applications in building construction and fire-resistant insulation (FRI)	
Process variants	
<ul style="list-style-type: none">• Short cycle drawn arc welding	
Advantages	
Features	
<ul style="list-style-type: none">• Microcontroller – for precise process times, optimal functional reliability and maximum operating convenience• Function monitoring – automatic function test following power-up; monitoring of all internal system functions• Display of error codes – on digital display• Library function – automatic specification of charging voltage through selection of stud diameter according to welding range; fine adjustment via arrow keys	

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SECTION 13

STUD WELDING EQUIPMENT – AUTO FEED

FOR INQUIRIES, TO PLACE ORDERS,
SERVICE AND TECHNICAL SUPPORT CONTACT
ANY OF THE FOLLOWING:

OFFICE: 216.904.4008

EMAIL: SALES@COMPLETESTUDWELD.COM

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Stud Welding Equipment - Auto Feed

CDMi 2402 TECHNICAL DATA SHEET



Inverter-Capacitor Charging Technology

Maximum welding rates
Minimum energy consumption
Minimum weight
Maximum efficiency

CDMi 2402

Stud Welding Unit
for CD stud welding (capacitor discharge welding)
according to current standards

Technical Data

Automation	Series
Welding range	#4 to 5/16" (7/16" limited), dia. 14 ga to 5/16" (dia. 3/8" limited) M3 to M8 (M10 limited), dia. 2 to 8 mm (dia. 10 mm limited)
Welding material	Mild steel, stainless steel, aluminum and brass
Welding rate	M3 = 40 studs/min. (Charging voltage 60 V) M8 = 21 studs/min. (Charging voltage 170 V) (M10 = 17 studs/min. (Charging voltage 210 V))
Capacitance	99 000 µF/33 000 µF*
Welding time	1 to 3 msec
Energy	2 400 Ws/800 Ws*
Charging voltage	50 to 220 V (stepless voltage regulation)
Primary power	115 V, 50/60 Hz, 10 AT
Power source	Capacitor
Cooling type	F (temperature controlled cooling fan)
IP-Code	IP 21
Dimension L x W x H	22.44" x 11.22" x 11.42" (570 x 285 x 290 mm) without handle
Weight	57.32 lbs (26 kg) * with change over of capacitors
Order No.	92-12-22412 (Automation)

General Information

Application

- Especially suitable for thin sheets (at least 0.5 mm)

Process variants

- Contact welding
- Gap welding

Equipment

- Automation (series)
- Menu navigation in various languages: German, English, French, Italian, Russian, Portuguese, Spanish and Chinese

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STUD WELDING
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Stud Welding Equipment - Auto Feed

CDMI 2402 TECHNICAL DATA SHEET

Advantages

Features

- **Microcontroller** – for precise process times, optimal functional reliability and maximum operating convenience
- **Function monitoring** – automatic function test following power-up; monitoring of all internal system functions
- **Display of error codes** – on LCD display
- **Function control** – All functions are visible on the operator panel via LED or display

Structure

- **Compact**
- **Robust** – metal housing withstands rough treatment in shop and on site
- **Industrial plugs** – standardised and sturdy plugs
- **Two ground connections** – direct coupling of several stud welding machines possible when installed in complex welding systems

Safety

- With integrated **mains filter** (protection against voltage peaks)
- **Optimal for construction sites with large mains voltage fluctuations** – use even with critical voltage supply (- 25 % + 20 %)
- Fulfills the requirements according to DIN EN 60974-10: 2008-09 - **EMC test**
- Fulfills the requirements according to DIN EN 60974-1: 2013-06 - **Logged high voltage test**
- **Logged capacitor forming** for quality control of the stud welding capacitors
- **Controlled capacitor forming** – step-by-step charging of capacitors after long standstill times for longer service life of capacitors
- **Retriggering lock-out** – prevents welding on a welding element that has already been welded
- **Thermal control of inverter-capacitor charging unit and internal temperature of stud welding unit** – automatic switch-off in the event of overheating
- **Temperature controlled cooling fan** – reduces noise and dust in the stud welding unit (greater system reliability)
- **Control unit galvanically separated from welding lines** – high degree of functional safety
- **Optimal cooling air stream** – protection of the electronic components against contamination and ideal cooling of the inverter-capacitor charging circuit board for high cycle sequences
- **Shock-resistant operation panel** – operation panel protected by protruding casing
- **Shock-resistant capacitors** – capacitors protected by shock proofing elements
- **Accessory: Control guard made of acrylic glass (lockable)** – prevents damage and unauthorised access

Welding

- **Graphic display** – clear operator guidance via large LCD display
- **Setting of charging voltage in V and charging energy in Ws** – when changing the charging voltage, the charging energy is automatically adjusted
- **Process sequence control** – detection and evaluation of influencing variables of the welding process via the process control (CP); after every welding, a comparison of the reference CP value and the actual values is performed; display of the actual and target value; welding stop when limit values are exceeded can be activated; limit values can be selected in steps; manual entry of CP value possible
- **15 programs can be stored** – in every program, the parameters (charging voltage, capacity, CP settings and automatic settings) can be selected digitally via a superior control system and specific to the application
- **Remote control of the stud welding machines via standardised RS232 interface possible** – the stud welding machines can be controlled directly via the PC or CNC welding systems
- **Library function** – library with stored welding parameters for different diameter and material combinations for a quick start of the welding process
- **User-specific settings** – weld counter (display of previously executed welds); menu navigation in various languages; units (metric, imperial); date; time; setting of the transmission rate of the interfaces

Stud Welding Equipment - Auto Feed

CDMI 2402 TECHNICAL DATA SHEET

- **Gun / welding head test** – functionality check of the welding guns or the welding heads with a lifting test (check of the lifting function of the gap welding guns and bolt welding heads without contact with the workpiece); functionality check of the welding guns or the welding heads by recording the movement time of the solenoid from triggering to the contact with the workpiece
- **Reading out of CP values via standardised RS232 interface** – for the output of data such as the date, time and welding parameters of each weld with the superior control system; welding parameters of every weld are logged
- **Powerful** – built-in power reserves
- **Inverter-capacitor charging technology** – makes high cycle rates possible
- **Trouble-free changing of welding voltage polarity** possible by reconnecting welding current and ground cables
- **Use of special capacitors** (developed for stud welding)
- **Capacitance switching** – 33 000 µF or 99 000 µF

Suitable stud welding guns/ heads

- C 08
- CA 08
- PAH-1
- KAH 412
- KAH 412 LA

Issue 06/14
(Technical data may change)

Stud Welding Equipment - Auto Feed

CDMi 3202 TECHNICAL DATA SHEET



Inverter-Capacitor Charging Technology

Maximum welding rates
Minimum energy consumption
Minimum weight
Maximum efficiency

CDMi 3202

Stud Welding Unit
for CD stud welding (capacitor discharge welding)
according to current standards

Technical Data

Automation	Series
Welding range	#4 to 7/16", dia. 14 ga to 3/8" M3 to M10, dia. 2 to 10 mm
Welding material	Mild steel, stainless steel, aluminum and brass
Welding rate	M3 = 43 studs/min. (Charging voltage 50 V) M8 = 25 studs/min. (Charging voltage 140 V) (M10 = 18 studs/min. (Charging voltage 200 V))
Capacitance	132 000 µF/66 000 µF*
Welding time	1 to 3 msec
Energy	3 200 Ws/1 600 Ws*
Charging voltage	50 to 220 V (stepless voltage regulation)
Primary power	115 V, 50/60 Hz, 10 AT
Power source	Capacitor
Cooling type	F (temperature controlled cooling fan)
IP-Code	IP 21
Dimension L x W x H	22.44" x 11.22" x 11.42" (570 x 285 x 290 mm) without handle
Weight	59.53 lbs (27 kg) * with change over of capacitors
Order No.	92-12-23212 (Automation)

General Information

Application

- Especially suitable for thin sheets (at least 0.5 mm)

Process variants

- Contact welding
- Gap welding

Equipment

- Automation (series)
- Menu navigation in various languages: German, English, French, Italian, Russian, Portuguese, Spanish and Chinese

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Stud Welding Equipment - Auto Feed

CDMI 3202 TECHNICAL DATA SHEET

Advantages

Features

- **Microcontroller** – for precise process times, optimal functional reliability and maximum operating convenience
- **Function monitoring** – automatic function test following power-up; monitoring of all internal system functions
- **Display of error codes** – on LCD display
- **Function control** – All functions are visible on the operator panel via LED or display

Structure

- **Compact**
- **Robust** – metal housing withstands rough treatment in shop and on site
- **Industrial plugs** – standardised and sturdy plugs
- **Two ground connections** – direct coupling of several stud welding machines possible when installed in complex welding systems

Safety

- With integrated **mains filter** (protection against voltage peaks)
- **Optimal for construction sites with large mains voltage fluctuations** – use even with critical voltage supply (- 25 % + 20 %)
- Fulfils the requirements according to DIN EN 60974-10: 2008-09 - **EMC test**
- Fulfils the requirements according to DIN EN 60974-1: 2013-06 - Logged **high voltage test**
- Logged **capacitor forming** for quality control of the stud welding capacitors
- **Controlled capacitor forming** – step-by-step charging of capacitors after long standstill times for longer service life of capacitors
- **Retriggering lock-out** – prevents welding on a welding element that has already been welded
- **Thermal control of inverter-capacitor charging unit and internal temperature of stud welding unit**– automatic switch-off in the event of overheating
- **Temperature controlled cooling fan** – reduces noise and dust in the stud welding unit (greater system reliability)
- **Control unit galvanically separated from welding lines** – high degree of functional safety
- **Optimal cooling air stream** – protection of the electronic components against contamination and ideal cooling of the inverter-capacitor charging circuit board for high cycle sequences
- **Shock-resistant operation panel** – operation panel protected by protruding casing
- **Shock-resistant capacitors** – capacitors protected by shock proofing elements
- **Accessory: Control guard made of acrylic glass (lockable)** – prevents damage and unauthorised access

Welding

- **Graphic display** – clear operator guidance via large LCD display
- **Setting of charging voltage in V and charging energy in Ws** – when changing the charging voltage, the charging energy is automatically adjusted
- **Process sequence control** – detection and evaluation of influencing variables of the welding process via the process control (CP); after every welding, a comparison of the reference CP value and the actual values is performed; display of the actual and target value; welding stop when limit values are exceeded can be activated; limit values can be selected in steps; manual entry of CP value possible
- **15 programs can be stored** – in every program, the parameters (charging voltage, capacity, CP settings and automatic settings) can be selected digitally via a superior control system and specific to the application
- **Remote control of the stud welding machines via standardised RS232 interface possible** – the stud welding machines can be controlled directly via the PC or CNC welding systems
- **Library function** – library with stored welding parameters for different diameter and material combinations for a quick start of the welding process
- **User-specific settings**– weld counter (display of previously executed welds); menu navigation in various languages; units (metric, imperial); date; time; setting of the transmission rate of the interfaces

Stud Welding Equipment - Auto Feed

CDMI 3202 TECHNICAL DATA SHEET

- **Gun / welding head test** – functionality check of the welding guns or the welding heads with a lifting test (check of the lifting function of the gap welding guns and bolt welding heads without contact with the workpiece); functionality check of the welding guns or the welding heads by recording the movement time of the solenoid from triggering to the contact with the workpiece
- **Reading out of CP values via standardised RS232 interface** – for the output of data such as the date, time and welding parameters of each weld with the superior control system; welding parameters of every weld are logged
- **Powerful** – built-in power reserves
- **Inverter-capacitor charging technology** – makes high cycle rates possible
- **Trouble-free changing of welding voltage polarity** possible by reconnecting welding current and ground cables
- **Use of special capacitors** (developed for stud welding)
- **Capacitance switching** – 66 000 µF or 132 000 µF

Suitable stud welding guns/ heads

- **C 08**
- **CA 08**
- **PAH-1**
- **KAH 412**
- **KAH 412 LA**

Issue 06/14
(Technical data may change)

Stud Welding Equipment - Auto Feed

STUD WELDING EQUIPMENT – ARC EQUIPMENT



Inverter

Maximum welding quality
Maximum welding rates
Minimum energy consumption
Minimum weight
Maximum efficiency

IT 50

Stud Welding Unit
for ARC stud welding
according to current standards

Technical Data

Gas/Automation/Process control	Series/Series/Series
Welding range	#4 to 5/8", dia. 14 ga to 9/16" (M3 to MR16, dia. 2 to 14 mm)
Welding material	Mild steel, stainless steel, aluminum
Welding rate	1/2" (M12) = 25 studs/min
Welding current	1,000 A (max.)
Current adjustment range	300 to 1,000 A (stepless)
Welding time	5 to 1,000 msec (stepless)
Primary power	480/460 V, 3 phases, 50/60 Hz, 35 AT (alternative input voltages available)
Connected load	50 KVA (with 400 V mains), 40 kW
Cooling type	F (temperature controlled cooling fan)
IP-Code	IP 21
Dimension L x W x H	25.6" x 22" x 50.8" (650 x 560 x 1,290 mm) without handle
Weight	264.5 lbs (120 kg)
Order No.	93-66-42056 (Gas/Automatic/Process control/4 Gun connections)

General Information

Application

- Especially suitable for thicker sheets of about 2 mm or higher

Process variants

- Short cycle drawn arc welding
- Drawn arc welding

Equipment

- Welding with ceramic ferrule (series)
- Welding with shielding gas (series)
- Automation (series)
- Process sequence control (series)

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Stud Welding Equipment - Auto Feed

IT 90 STUD WELDING UNIT



Inverter

Maximum welding quality
Maximum welding rates
Minimum energy consumption
Minimum weight
Maximum efficiency

IT 90

Stud Welding Unit
for ARC stud welding
according to current standards

Technical Data

Gas/Automation/Process control	Series/Series/Series
Welding range	#4 to 1", dia. 14 ga to 7/8" (M3 to M24, dia. 2 to 22 mm)
Welding material	Mild steel, stainless steel, aluminum
Welding rate	Dia. 7/8" = 7 studs/min (dia. 22 mm = 7 studs/min)
Welding current	2,000 A (max.)
Current adjustment range	300 to 2,000 A (stepless)
Welding time	5 to 1,500 msec (stepless)
Primary power	480/460 V, 3 phases, 50/60 Hz, 63 AT (alternative input voltages available)
Connected load	100 KVA (with 400 V mains) 80 kW
Cooling type	F (temperature controlled cooling fan)
IP-Code	IP 21
Dimension L x W x H	25.6" x 22" x 50.8" (650 x 560 x 1,290 mm) without handle
Weight	93-66-12096: 315.26 lbs (143 kg) 93-66-42096: 363.76 lbs (165 kg)
Order No.	93-66-12096 (Gas/Automation/Process control/1 Gun connection) 93-66-42096 (Gas/Automatic/Process control/4 Gun connections)

General Information

Application

- Especially suitable for thicker sheets of about 2 mm or higher

Process variants

- Short cycle drawn arc welding
- Drawn arc welding

Equipment

- Welding with ceramic ferrule (series)
- Welding with shielding gas (series)
- Automation (series)
- Process sequence control (series)

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STUD WELDING
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Stud Welding Equipment - Auto Feed

KAH 412 LA AUTOMATIC STUD WELDING HEAD WITH LENGTH COMPENSATION



KAH 412 LA

Automatic Stud Welding Head with length compensation
for CD or ARC stud welding with automatic stud feeding
according to current standards

Technical Data

Welding range	#4 to 5/16", dia. #4 to 5/16" (M3 to M8, dia. 3 to 8 mm); dia. 3/8" to 1/2" (dia. 10 to 12.7 mm) with modification only
Stud length	0.31" to 1.57" (8 to 40 mm) other lengths on request
Stud material	Mild steel, stainless steel, aluminum, brass
Total stroke of piston	0.28"
Stroke/Length compensation	0.2"/0.08", 0.16"/0.12"
Spring pressure	Arresting
IP-Code	IP 20
Workplace noise level	> 90 dB (A) may occur during welding
Dimension L x W x H	14.76" x 2.60" x 5.71" (375 x 66 x 145 mm) with chuck and quick change system
Weight	7.50 lbs (3.4 kg)
Order No.	94-37-412 (with length compensation)

General Information

Application

- Especially suitable for thin sheets (at least 0.5 mm)
- Automatic compensation of length tolerance of welding elements and height tolerance of the work piece through integrated length adjustment

Process variants

- Gap welding
- Short cycle drawn arc welding
- Drawn arc welding (optional)

Advantages

Structure

- Rigid casing made of metal
- Torsion-resistant aluminum-casing to accommodate all function elements and accessories
- Zero-play ball linear bearing for guiding the welding piston, to ensure maximum precision and reproducibility for welds
- Sealed welding piston guidance
- Compact dimensions
- Integrated lift and spring-loaded adjustment
- Stud length is freely adjustable (up to 40 mm; other lengths available on request)
- Infinitely adjustable spring-loaded adjustment can be read off the scale directly
- Prisma clamping system for fast exchange of the complete stud welding head
- Pushbutton detent system to facilitate changing the feeding tube
- Mechanical structure tested in production

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Stud Welding Equipment - Auto Feed

KAH 412 AUTOMATIC STUD WELDING HEAD WITH DIGITAL DISPLAY



KAH 412

Automatic Stud Welding Head with Digital Display
for CD or ARC stud welding with automatic stud feeding
according to current standards

Technical Data

Welding range	#4 to 5/16", dia. #4 to 5/16" (M3 to M8, dia. 3 to 8 mm); dia. 3/8" to 1/2" (dia. 10 to 12.7 mm) with modification only
Stud length	0.31" to 1.57" (8 to 40 mm) other lengths on request
Stud material	Mild steel, stainless steel, aluminum, brass
Stroke	Adjustment range 0.20" (5 mm), arresting
Spring pressure	Arresting
IP-Code	IP 20
Workplace noise level	> 90 dB (A) may occur during welding
Dimension L x W x H	14.76" x 2.60" x 5.71" (375 x 66 x 145 mm) with chuck and quick change system
Weight	7.50 lbs (3.4 kg)
Order No.	94-31-412C

General Information

Application

- Especially suitable for thin sheets (at least 0.5 mm)

Process variants

- **Contact welding** (optional)
- **Gap welding**
- **Short cycle drawn arc welding**
- **Drawn arc welding** (optional)

Advantages

Structure

- Rigid casing made of metal
- Torsion-resistant aluminum-casing to accommodate all function elements (e.g. ball bearing guide) and accessories
- Zero-play ball linear bearing for guiding the welding piston, to ensure maximum precision and reproducibility for welds
- Sealed welding piston guidance
- Compact dimensions
- Integrated lift and spring-loaded adjustment
- Stud length is freely adjustable (up to 40 mm; other lengths available on request)
- Digital display (1/100 mm) for the position of the welding piston using integrated measuring system
- Direct reading for the adjusted plunge and lift dimension
- Infinitely adjustable spring-loaded adjustment can be read off the scale directly
- Prisma clamping system for fast exchange of the complete stud welding head
- Pushbutton detent system to facilitate changing the feeding tube

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Stud Welding Equipment - Auto Feed

PAH-1 STUD WELDING GUN



PAH-1

Stud Welding Gun

for CD or ARC stud welding with automatic stud feeding according to current standards

Technical Data

Welding range	#4 to 5/16", dia. #4 to 5/16" (M3 to M8, dia. 3 to 8 mm)
Stud length	0.31" to 1.18" (8 to 30 mm)
Stud material	Mild steel, stainless steel, aluminum, brass
Stroke	Adjustment range 0.20" (5 mm)
Welding cable	9.84' (3 m)
IP-Code	IP 20
Workplace noise level	> 90 dB (A) may occur during welding
Dimension L x W x H	11.61" x 2.36" x 6.70" (295 x 60 x 170 mm) without cable
Weight	3.09 lbs (1.4 kg) without cable
Order No.	94-20-025

General Information

Application

- Especially suitable for thin sheets (at least 0.5 mm)

Process variants

- **Contact welding** (optional)
- **Gap welding**
- **Short cycle drawn arc welding**

Advantages

Structure

- Rigid casing made of impact-resistant plastic
- Slide bearing for guiding the welding piston
- Sealed welding piston guidance
- Ergonomic design
- Adjustable lift
- Stud length convertible (up to 30 mm)
- Mechanical structure tested in production
- Electronically controlled

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Stud Welding Equipment - Auto Feed

VBZ-3 FULLY AUTOMATIC STUD FEEDER



VBZ-3

Fully Automatic Stud Feeder
for welding elements with flange
according to current standards

Technical Data

Stud diameter	#4 to 5/16", dia. #4 to 5/16" (M3 to M8, dia. 3 to 8 mm) other diameter on request	
Stud length	0.31" to 1.97" (8 to 50 mm)	
Feed speed	Up to 30 studs/min (depending on welding element and feeding tube)	
Air pressure connection	6 bar/800 liter/min	
Electrical supply	115 V, 60 Hz, 1.8 A (alternative input voltages available)	
IP-Code	IP 20	
Dimension L x W x H	18.50" x 12.20" x 11.02" (470 x 310 x 280 mm)	
Weight	52.91 lbs (24 kg)	
Order No.	94-66-103B	(for dia. 3 mm)
	94-66-104B	(for dia. 4 mm)
	94-66-105B	(for dia. 5 mm)
	94-66-106B	(for dia. 6 mm)
	94-66-171B	(for dia. 7,1 mm)
	94-66-108B	(for dia. 8 mm)
	94-66-153B	(for X-mas tree stud dia. 5)
	94-66-163B	(for X-mas tree stud dia. 6)

General Information

Application

- Feeding unit VBZ-3 for quick, fully automatic feeding for welding elements with flange according to current standards
- Fully automatically feeding of **welding elements** from **dia. 3 to dia. 8 mm** (with flange); (other dia. on request)
- Length from **8 to 50 mm (no rebuilding)**

Options

- Additional regulation of exhaust air by a throttle is possible; this allows ideal adjustment of air flow required for various sizes of welding elements
- Special feeding units on request

Advantages

Features

- Feeding bowl with special coating, to reduce abrasion and noise
- Exhaust air is pulse controlled, no permanent air consumption

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Stud Welding Equipment - Auto Feed

PMB-LS2 PNEUMATIC CLAMP



PMB-LS2
Pneumatic Clamp

Technical Data

Clamping movement	Double action air cylinder through curved sector control
Horizontal clamping way	0.30" (7.5 mm)
Vertical clamping way	0.16" (4 mm)
Max. thickness of work piece	Through elevation adjustment of clamp up to 0.39" (10 mm)
Width of clamp	0.59" (15 mm)
Air pressure connection	Up to 6 bar
Clamp pressure	300 N at 6 bar
Dimension L x W x H	3.54" x 1.97" x 1.97" (90 x 50 x 50 mm)
Weight	1.10 lbs (500 g)
Order No.	90-60-120

General Information

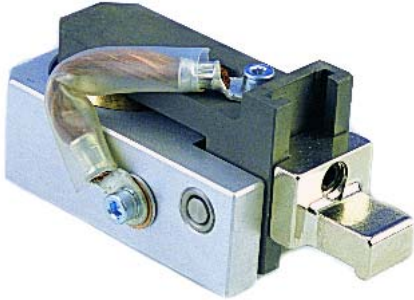
Description

- Pneumatic work piece clamps PMB-LS2 guarantees fast and accurate clamping of the work
- The patented horizontal and vertical movement of clamp fingers allow work piece loading from top or front
- Integrated ground connection to the clamp
- Forward- and clamp-movement through curved sector control
- Bellows are protecting the motor apparatus of fouling

Issue 04/08
(Technical data may change)

Stud Welding Equipment - Auto Feed

PMB-S PNEUMATIC CLAMP



PMB-S
Pneumatic Clamp

Technical Data

Clamping movement	Single action air cylinder
Vertical clamping way	0.16" (4 mm)
Max. thickness of work piece	Through elevation adjustment of clamp up to 0.79" (20 mm)
Width of clamp	0.59" (15 mm)
Air pressure connection	Up to 6 bar
Clamp pressure	300 N at 6 bar
Dimension L x W x H	3.86" x 1.77" x 1.65" (98 x 45 x 42 mm)
Weight	1.01 lbs (460 g)
Order No.	90-60-011

General Information

Description

- Compact pneumatic clamp with vertical movement
- Ground connection to the clamp
- In- and output of the work piece only from the front side

Issue 04/08
(Technical data may change)

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SECTION 13

STUD WELDING EQUIPMENT – CNC AUTO FEED SYSTEMS

FOR INQUIRIES, TO PLACE ORDERS,
SERVICE AND TECHNICAL SUPPORT CONTACT
ANY OF THE FOLLOWING:

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Stud Welding Equipment - CNC Systems



PC-S PRODUCTION CENTER STANDARD MANUAL

PC-S

Production Center Standard Manual

Technical Data

T-slot work plate	19.69" x 14.76" (500 x 375 mm)
Welding range	#4 to 5/16", dia. #4 to 5/16" (M3 to M8, dia. 3 to 8 mm); dia. 3/8" to 1/2" (dia. 10 to 12.7 mm) only possible with modification
Stud length	0.31" to 1.57" (8 to 40 mm) other dimensions on request
Stud feeding *)	Manual or automatic stud feeding (optional) *) not included in delivery
Positioning (accuracy) of welded studs	± 0.008" (± 0.2 mm)
Working stroke of stud welding head	Z-max. = 4.92" (125 mm), z-adjustable = 0.16" to 1.77" (4 to 45 mm) bottom end stop
Stud welding head *)	KAH 412 alternative: KAH 412 LA (mechanical length compensation - gap), *) not included in delivery
Max. number of stud welding heads	1
Connections	Electrical: 115 V, 16 A, 60 Hz Pneumatic: 6 bar min/10 bar max./inner hose dia. 1/4" (dia. 6 mm)
Dimension L x B x H	47.24" x 39.37" x 78.74" (1,200 x 1,000 x 2,000 mm) without cover, 55.12" x 39.37" x 86.61" (1,400 x 1,000 x 2,200 mm) with cover
Weight	Approx. 330.69 lbs (150 kg)
Order No.	90-70-5028D

General Information

Application

- All variations of stud welding
- With manual or automatic stud feeding (30% faster)

Options

- Different stud welding units
- Automatic stud feeder VBZ-3
- Work piece fixtures
- Machine protection cover
- Custom made handling systems
- Pneumatic clamp

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Stud Welding Equipment - CNC System

MPW 1010/2010 CNC MULTI PRODUCTION WELDER



MPW
CNC Multi Production Welder

Technical Data

Working range	49.21" x 41.34" (1,250 x 1,050 mm) MPW 1010; 49.21" x 88.58" (1,250 x 2,250 mm) MPW 2010 (maximum working range for up to 3 welding heads)
Welding range	#4 to 5/16", dia. #4 to 5/16" (M3 to M8, dia. 3 to 8 mm); dia. 3/8" to 1/2" (dia. 10 to 12.7 mm) only possible with modification
Stud length	0.31" to 1.57" (8 to 40 mm) other lengths on request
Welding capacity	Up to 40 studs/min (depending on stud welding unit, stud type and positioning of stud)
Traverse speed	196.85"/min (60 m/min)
Stud feeding	Automatic stud feeding (up to 3 different stud length per welding head)
Positioning accuracy of welded stud	± 0.0059" (± 0.15 mm) for steel and ± 0.008" (± 0.2 mm) for aluminum (depending on work piece and stud geometry)
Positioning and repeat accuracy	± 0.002" (± 0.05 mm)
Stud welding head	KAH 412 Optional: KAH 412 LA (mechanical length compensation - gap)
Max. number of stud welding heads	4 (up to 3 stud lengths per welding head possible)
Connections	Electrical: 400 V, 16 A (32 A), 50 Hz Pneumatic: 6 bar min./10 bar max./inner hose dia. 1/4" (dia. 6 mm)
Motor-driven Z-axis	Z = 0 to 4.53" (0 to 115 mm) free programmable because of servo drive technology
Dimension L x W x H	90.55" x 92.52" x 86.61" (2,300 x 2,350 x 2,200 mm) MPW 1010; 137.80" x 92.52" x 86.61" (3,500 x 2,350 x 2,200 mm) MPW 2010
Order No.	According to project

General Information

Application

- Basic milling operations (optional)
- Special applications like gluing, foaming etc. (on request)

Process variants

- Tip ignition (CD)
- Drawn arc welding (ARC)
- Short cycle drawn arc welding (SC)

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Welding Equipment - MARC Process



MARC 3 PAD WELDING MACHINE PC-M3

MARC 3

Pad Welding Machine PC-M3
for pad welding with rotating arc

Technical Data

Welding range	Min. dia. 5/16" (dia. 8 mm), max. dia. 1.26" (dia. 32 mm) or internal thread #8 to 0.71" (M4 to M18)
Height of pad	Min. 0.16" (4 mm), max. 1.18" (30 mm)
Welding material	Weldable, high and low alloys, mild steel
Welding rate	Depending on dia. 12 pieces/min (dia. 1.10" (dia. 28 mm) approx. 2 to 4 pieces/min)
Welding current	300 to 1,000 A stepless remote controllable
Welding time	5 to 2,000 msec stepless remote controllable
Primary power	480 V, 16 A
Gas connection	Series
Air pressure connection	6 bar/inner hose dia. 1/4" (dia. 6 mm)
Power source	Inverter
Primary power Inverter	480 V, 32 AT (IT MARC 1002)
Controller	CEL M440, 186 GHz
Programming modes	Welding current, welding time, any motion profile, welding piston, shielding gas
Welding head	Linearmotor driven
Field former unit	Tempered
Pneumatic work stroke	4.72" (120 mm)
Height adjustment	9.84" (250 mm)
Order No.	According to project

General Information

Application

- The most innovative process for welding pad type elements
- To be used for nearly any application in metal working industry: The very low heat input avoids any distortion of the work piece and you get a perfect gas-tight weld with high and dynamic loading capacity
- The most effective as well as most economical welding procedure for the welding hollow cylindrical parts
- Closed and pressure sealed weld all-over
- The welding requirements are manifold, reaching from the simplest static firmness to dynamic demanded gas tight connections at high temperature and pressure
- Austenitic stainless steel (1.4301 and similar), low alloys (RSt 37-2 / S 235J2G3)
- **High productivity** together with low manufacturing costs
- Free programmable welding head

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