

CORPORATE INFORMATION

DENGESHATO A's Welding equipment is used by companies all over the world.

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Products Guide

Resistance
Welding Machines
& Components

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Scope of Registration:
THE DESIGN / DEVELOPMENT, MANUFACTURE AND SERVICING
(TRAINING OF OPERATION / MAINTENANCE AND SUPPLY OF SPARE PARTS)
OF RESISTANCE WELDING MACHINES AND RELATED EQUIPMENT.
ASSOCIATED ORGANIZATION: [SCOPE OF ACTIVITY: SAME AS ABOVE]
- KAWASAKI PLANT
- TOYAMA PLANT
- OMI PLANT

No.000KY04③ 1803 2,000

From Japan to top-ranking fields in the world as a manufacturer of all types of resistance welders

Supplying excellent welding equipment to help develop Japan's industry

Since its establishment in 1935, Dengensha Toa has been working to develop and apply welding technology and producing epoch-making products one after another, thereby working to help develop welding equipment technology in Japan.

In its first years, the company has been supplying numerous high-performance and high-efficiency welding machines in the fields of producing aircraft and the subsequent rise of the automobile industry, and in so doing making considerable contribution. It has also been providing excellent welding technology in steel, railroad, building materials, home electronics, and various other industries, thereby being a great help in modernizing and developing various industries.

Aiming to become a truly global corporation

Dengensha Toa supplies high-quality products not only to Japan but to a wide range of other countries as a manufacturer of all types of resistance welding machinery with a long track record. To meet the demands of society and the expectations of its customers, Dengensha Toa will continue its efforts to develop products that are environmentally friendly, resource-saving, safe, and high in quality and go on bettering itself even further as a truly global company.



C O N T E N T S

Resistance welders	Stationary spot welders	Single-phase AC NDZs Single-phase AC NDZs (with an adjustable lower arm) DC inverter NDZs DC inverter NDZs (with an adjustable lower arm) AC inverter NDZs Capacitor NDZs	P 3
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STATIONARY SPOT WELDER

Stationary spot welders — NDZ series

Single-phase AC NDZs

Easy data management on a PC

These machines connect to a PC instead of a program box. You can manage data easily on a PC, such as setting and storing welding conditions and storing welding results.

Environmentally friendly and highly durable

An oil-free cylinder is mounted to achieve a clean working environment.
FEM structural analysis is incorporated to provide a rigid body.
A well-balanced cooling method is used to control temperature rises in welders.

High quality management capacity

A high-precision linear encoder is used to locate the electrodes, thereby sensing impurities and deficiencies and detecting deficiencies and excesses in the downward settings in welding.

Other functions

- This connects easily to our company's feeders.
- It betters current rises, resulting in higher welding strength [in case of projection welding].
- High-precision secondary current detection and control.
- The initial current heat ratio can be set to a desired level, thereby displaying its performance in nut welding.
- Three types of current control are available.
- Pressure rise time has been reduced (about 30% down from our company's earlier models).
- Up to 255 conditions can be set.

■ Specification table for single-phase AC NDZs

Model	Specification			
	Model code	Rated capacity	Max. short-circuit current	Max. pressure (at 0.5 MPa)
		kVA	A	kN
Model	NDZ-035-46**J--D	35	17000	6
	NDZ-035-66**J--D	35	15000	6
	NDZ-050-46**J--D	50	20000	6
	NDZ-050-41**J--D	50	20000	10
	NDZ-050-66**J--D	50	17000	6
	NDZ-070-41**J--D	70	25000	10
	NDZ-100-41**J--D	100	33000	10

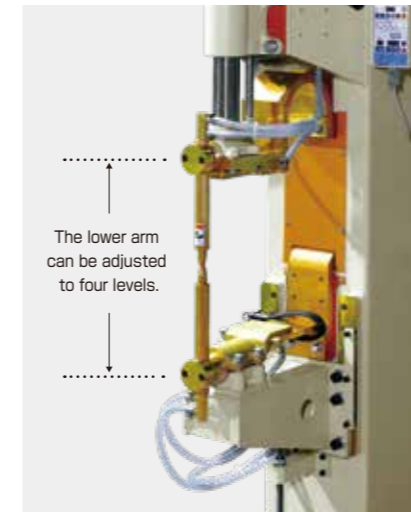
Note: *1. A lineup of 75 mm, 115 mm, and 155 mm is available throughout the stroke.



Advanced mechatronics greatly increases work efficiency!

Single-phase AC NDZs (with an adjustable lower arm)

- The lower arm can be adjusted to four levels according to the dimensions of the workpiece or jig.
- Throat opening: 200 mm to 365 mm



■ Specification table for single-phase AC NDZs (with an adjustable lower arm)

Model	Specification			
	Model code	Rated capacity	Max. short-circuit current	Max. pressure (at 0.5 MPa)
		kVA	A	kN
Model	NDZ-070-57**J--D	70	22000	10
	NDZ-070-51**J--D	70	22000	10
	NDZ-070-77**J--D	70	18000	6
	NDZ-100-51**J--D	100	30000	10
	NDZ-100-77**J--D	100	25000	6

Note: *1. A lineup of 115 mm and 155 mm is available throughout the stroke.



STATIONARY SPOT WELDER

Stationary spot welders — NDZ series



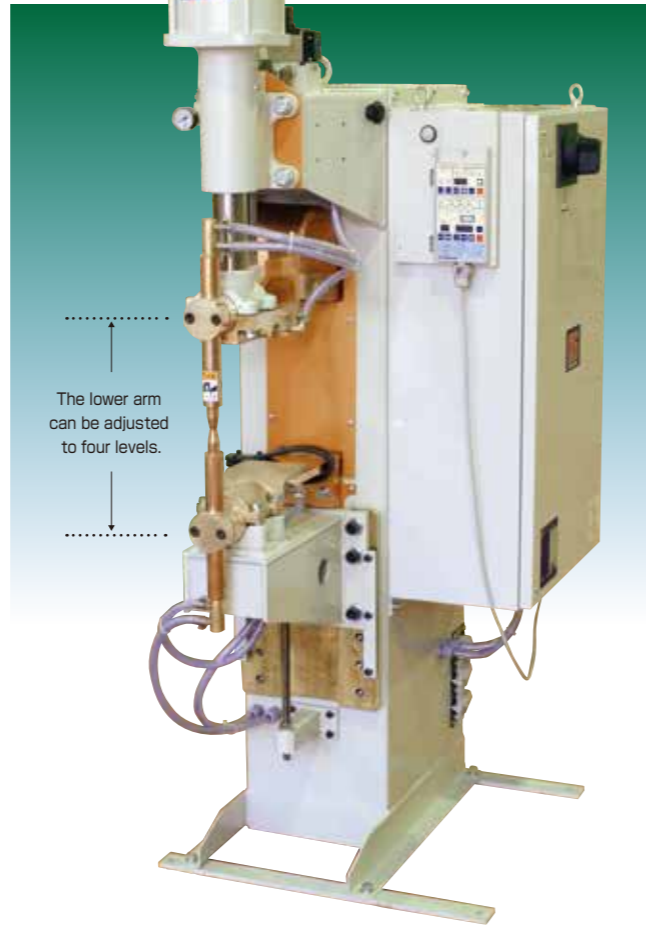
DC inverter NDZs

- The welding unit is continuously heated up, resulting in higher thermal efficiency and stable welding.

■ Specification table for DC inverter NDZs

Model	Model code	Specification		
		Rated capacity	Max. short-circuit current	Max. pressure (at 0.5 MPa)
		kVA	A	kN
	NDZ-E35-46**J-S-D	35	17000	6
	NDZ-E50-46**J-S-D	50	20000	6
	NDZ-E50-41**J-S-D	50	20000	10
	NDZ-E50-66**J-S-D	50	19000	6
	NDZ-E70-41**J-S-D	70	25000	10

Note: *1. A lineup of 75 mm, 115 mm, and 155 mm is available throughout the stroke.



DC inverter NDZs (with an adjustable lower arm)

- The lower arm can be adjusted to four levels according to the dimensions of the workpiece or jig.
- Throat opening: 200 mm to 365 mm

■ Specification table for DC inverter NDZs (with an adjustable lower arm)

Model	Model code	Specification		
		Rated capacity	Max. short-circuit current	Max. pressure (at 0.5 MPa)
		kVA	A	kN
	NDZ-E75-58**J-S-D	75	28000	6
	NDZ-E75-51**J-S-D	75	28000	10
	NDZ-E75-78**J-S-D	75	27000	6
	NDZ-HA0-51**J-S-D	100	32000	10
	NDZ-HA0-78**J-S-D	100	31000	6
	NDZ-EF0-51**J-S-D	150	42000	10

Note: *1. A lineup of 115 mm and 155 mm is available throughout the stroke.



AC inverter NDZs

- The welder is continuously heated up, resulting in high thermal efficiency and stable welding.
- Single-phase AC welders can be turned into AC inverter welders at low cost.

■ Specification table for AC inverter NDZs

Model	Model code	Specification		
		Rated capacity	Max. short-circuit current	Max. pressure (at 0.5 MPa)
		kVA	A	kN
	NDZ-A35-46**J-S-D	35	17000	6
	NDZ-A50-46**J-S-D	50	20000	6
	NDZ-A50-41**J-S-D	50	20000	10
	NDZ-A50-66**J-S-D	50	17000	6
	NDZ-A70-41**J-S-D	70	25000	10

Note: *1. A lineup of 75 mm, 115 mm, and 155 mm is available throughout the stroke.



Capacitor NDZs

- High-quality welding is possible with little heat strain, burn, or dent.
- The power supply is very small in capacity, resulting in low subscriber electricity fees.
- The use of capacitor-accumulated energy protects welding practices from changes in supply voltage.
- Current control mode is mounted to make it possible to set fine settings in welding current and energization time.

■ Specification table for capacitor NDZs

Model	Model code	Specification		
		Rated capacity	Max. short-circuit current	Max. pressure (at 0.5 MPa)
		kVA	A	kN
	NDZ-CA0-46B*J-Y-D	6	50000	6
	NDZ-CA0-47B*J-Y-D	6	50000	6
	NDZ-CA0-48B*J-Y-D	6	50000	6
	NDZ-CA0-41B*J-Y-D	6	50000	10

Note: *1. A lineup of 75 mm is available throughout the stroke.

AUTOMATIC FEEDER

Automatic feeders



Nut feeders / bolt feeders

Vibrating type Rotary type

- Cassettes can be replaced to adapt to various nuts, large and small (for cassette types only).
- Easily connectable to our company's NDZ series.
- Compact feeders are also available for space conservation.
- Two types are available: a vibrating type that feeds nuts and bolts by using vibration and a rotary type that produces low noise.



A typical combination with a stationary welder

Connectable to our company's stationary welders

These units come equipped standard with combination functions connectable to our company's stationary welders by connector. They can be provided in combination with welders.

Secure adsorption

- Magnetic type** · The spindle tip is magnetized with a permanent magnet, thereby eliminating the possibility of nuts falling during power feed.

Basic specification table by model

	Nut feeder
Applicable nut	Square, hexagon, tee, round
Nut size	M5~M12
Feed stroke	200mm
Type	Single (S), double (W)

Note 1: Please consult us for other nuts and bolts as well.

Two types with excellent feed capacity

- Separator type** · Nuts are separated one by one by using our company's unique system.
- Separated bolts and nuts are fed to the feed unit by air chute.

- Separator type** · Some models need no separator depending on the shape of the nut.

	Bolt feeder	
Bolt dimensions	Head diameter	9~20mm
	Thread diameter	M5~M10
	Max. length beneath the head	11~32mm
Feed stroke	200mm	
Type	Single (S), double (W)	

Patented

Upper electrode feed nut feeder

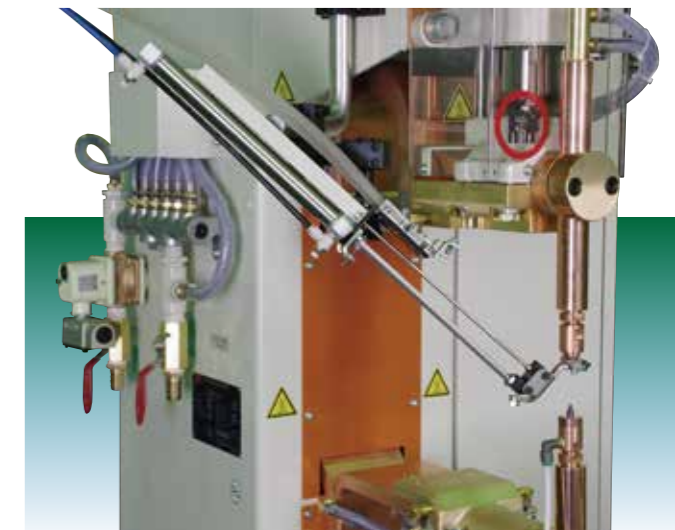
A simple electrode structure based on magnets that hold nuts onto the upper electrode

The old type with lower electrode feed has an issue in that the panel tended to interfere with the feeder when nuts are fed to the deep drawing panel. The upper electrode feed type, on the other hand, has nuts supplied on the upper electrode, thereby enabling welding without interference.

- A magnet holds the nuts, and does not let them fall even when the supply of air or electricity stops.
- Electrodes are used that can be mounted on standard electrode poles by taper.
- An upper guide pin is thrust in when pressurized, resulting in the retention force of the nuts declining. This enables the delivery of the nut to the lower guide pin.

A unique linking mechanism enables nuts to be securely fed.

- The feeder receives the nut.
- The cylinder goes forward, moving the nut to underneath the upper electrode.
- The tension rod stops, turns the feeder tip, and feeds the nut to the upper electrode.



Shorter cycle time

A nut is fed to the upper electrode in advance. After the panel is set, you can weld it immediately, thereby shortening cycle time.

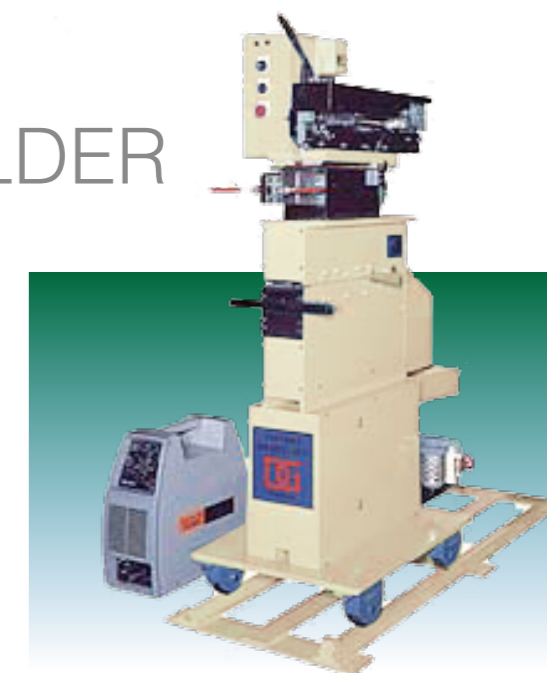
PORTABLE SHEAR WELDER

Portable shear welders

Easy and rational connection of hoop material!

Model P-250SW / P-380SW

These semi-automatic shear welders are for pipe-making line, forming line, press line, and other hoop materials. Its slim structure is two-tiered, with shear station and welding station, thus being useful on existing lines as well. Models with casters can be used in multiple lines.



Specification table for portable shear welders

Model code	Welding material			Power supply		Shear drive	Clamp type	Outer dimensions (mm) Width x Depth x Height
	Plate thickness (mm)	Plate width (mm)	Tensile strength (MPa)	For welding	For control			
P-250SW	0.4 ~ 2.0	MAX.250	MAX.490	1φ.200V 18kVA	1φ.100V 50VA	Pneumatic cylinder	Manual toggle clamp	550×950×1870
P-380SW	0.4 ~ 2.0	MAX.380	MAX.490	1φ.200V 18kVA	1φ.100V 50VA	Pneumatic cylinder	Manual toggle clamp	550×1400×1870

- Notes: 1) If you already have an arc welder, order the machine proper only. In that case, make sure that the arc welder comes equipped with high frequency starter, gas valve, after-flow timer, and magnetic switch for breaking and making a power supply circuit.
2) The TIG welding torch is designed for this model. Therefore please do not specify a type.
3) A 3-meter earth cable between arc welder and machine included.

WELDING GUN

Welding guns

Servo spot guns These increase welding quality and shorten cycle time, resulting in higher work efficiency.

- The optimal pressure can be set for each welding spot.
- Their soft touch hardly ever leave dents, and produce little noise.
- No exhaust air comes out, resulting in no air contamination.
- Synchronous operation is possible with robots.
- Squeeze time is greatly shortened.
- These units consume less than a half of the electricity used by air guns.

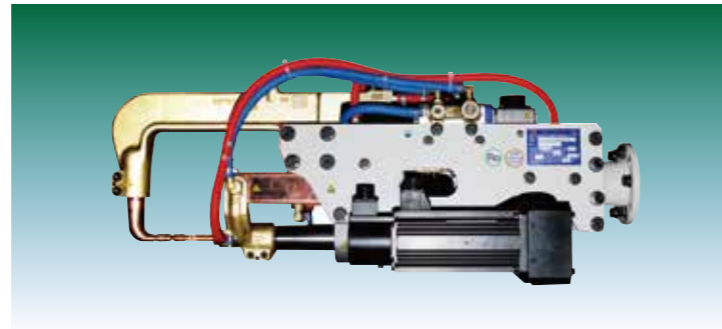
Servo spot guns type S, model C

AC type Inverter type

- Small-sized, lightweight
- Dustproof, drip-proof
- Parts are commonalized to reduce spares.

Basic specification table

Max. short circuit current	Equivalent continuous current	Max. pressure	Throat opening	Mass
15000A	4110A	4.0kN, 6.0kN	70~400mm	84~130kg



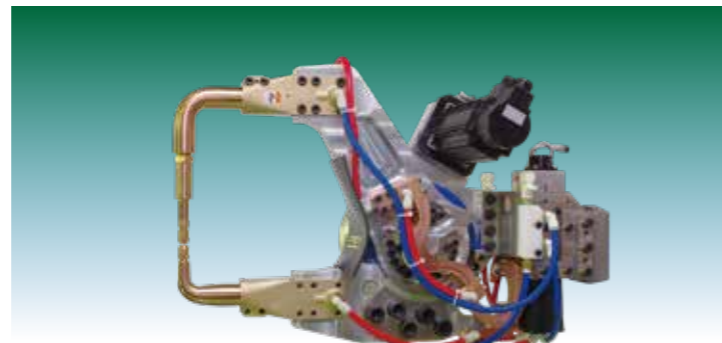
Servo spot gun, reducer type, model X

AC type Inverter type Inverter lightweight type Patented

- Maintenance-free
- Highly rigid
- Slim, compact gun body
- Dustproof, drip-proof
- Parts are commonalized to reduce spares.

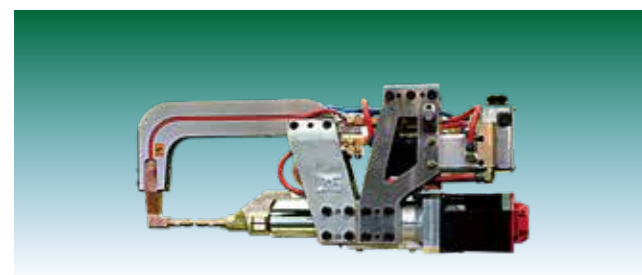
Basic specification table

Max. short circuit current	Equivalent continuous current	Max. pressure	Throat opening	Mass
15000A	4110A	5.0kN	290~350mm	103~144kg
18000A	5728A	4.8kN~7.0kN	250~500mm	88~96kg



Lightweight, compact guns More lightweight and compact than our earlier versions, these units are more user-friendly.

- 35 to 50% lighter in mass
- 40 to 50% more compact in volume
- Robots can be reduced in size by making them lighter in weight.
- Slim body, a compact drive unit.
- 1,200 Hz super-lightweight inverter transformer

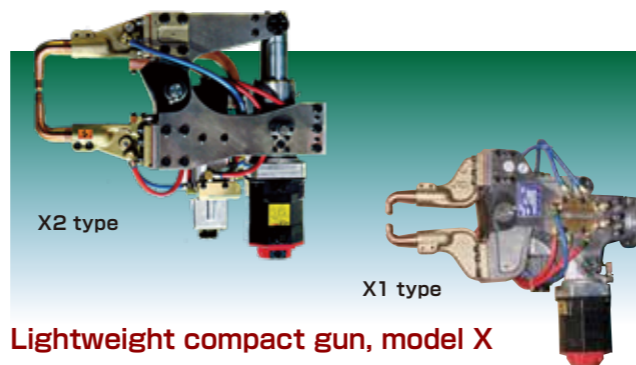


Lightweight compact guns, model C

Inverter type Patented

Basic specification table

Max. short circuit current	Equivalent continuous current	Max. pressure	Throat opening	Mass
15000A	4110A	6.0kN	70~500mm	57~71kg



Lightweight compact gun, model X

Inverter type Patented

Specification table for lightweight compact guns, model X

Type	Max. welding current	Equivalent continuous current	Max. pressure	Throat opening	Mass
X1	15000A	4110A	4.0kN~6.0kN	260~410mm	62~72kg
X2	15000A	4110A	4.0kN~6.0kN	260~410mm	65~73kg

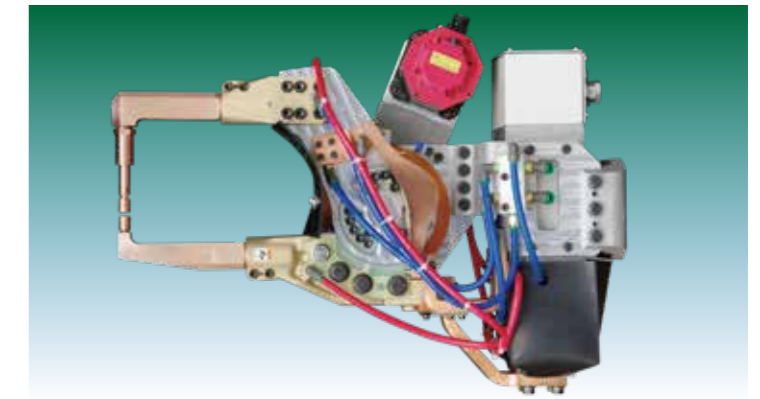
Servo spot guns for aluminum welding

Inverter type

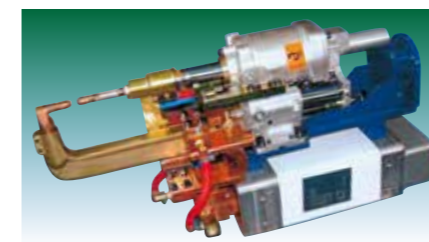
- These high-pressure, large-current guns are suited for spot-welding aluminum materials.

Specification table for servo spot guns for aluminum welding

Max. short circuit current	Equivalent continuous current	Max. pressure	Throat opening	Mass
50000A	7000A	8.0kN	250mm	133kg

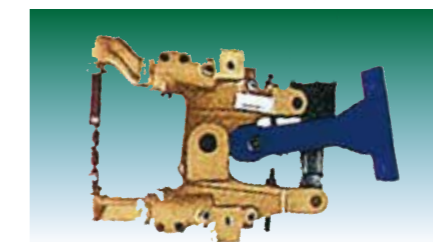


Various guns



Robot guns with transformer

- Their wide variety of models suit various welding regions.



Multiple guns

Model X Model C Locker type

- Compact, durable, multiple-spot welders.



Portable guns

- Their wide variety of models suit various welding regions.

Robot seam welders



DC inverter type seam welders RCGR-188

Realized by robot-assisted small seam welders and leading-edge robot technology based on the DC inverter technology that we have long cultivated, robot seam welders enable the application of seam welding to hitherto-difficult regions and the automation of seam welding.

Specification table for robot seam welders

Specifications					
Model	Model code	Rated capacity	Secondary current	Max. pressure	Mass
	RCGR-188	188kVA	32000A 10%	6.0kN (servo motor type)	165kg
			17000A 50%		

CONTROL DEVICE

Controllers (timers)

For Robot application Robot-integrated timers and DC inverter power supply units

■ Specification table for robot-integrated timers and DC inverter power supply units

Model	Robot-integrated timers	Model code		Manufacturer	
		Model code	Manufacturer	Model code	Manufacturer
		RWI-2100series	FANUC		
		RWI-3200series	NACHI		
		RWI-4200series	YASKAWA		
		RWI-5200series	KAWASAKI		

Model	DC inverter power supply units (common)	Model code		Output current		Duty cycle		
		Model code	Water-cooled	A	%	Model code	A	%
		RWI-900-WS40-**-	Water-cooled	400	10			
		RWI-900-KA30-**-	Air-cooled	300	10			



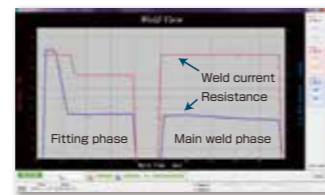
E-IP VMC timers and DC inverter power supply units

■ Connectable to robots equipped with an E-IP.

■ Typical waveform (board gap mode) of variable mode control

■ Specification table for E-IP VMC timers

Model	DC inverter power supply units (common)	Model code		Output current		Duty cycle		
		Model code	Water-cooled	A	%	Model code	A	%
		RWIE-960-WS40-H10-**-	Water-cooled	400	10			



If, when initially energized, you find that there is a plate gap and move on to running-in mode, and then perform permanent welding

Stand-alone Standalone timers, DC/AC inverter power supply units

■ Specification table for standalone timers and DC/AC inverter power supply units

Model	Standalone timers and DC inverter power supply units	Model code		Output current		Duty cycle		
		Model code	Water-cooled	A	%	Model code	A	%
		RWI-890-WS40-**-	Water-cooled	400	10			
		SWI-901-WS45-**-		450	10			
		SWI-901-WS60-**-		600	10			
		SWI-901-WS80-**-		800	10			
		SWI-901-WS100-**-		1000	15			
		SWI-901-WS200-**-		2000	15			

Model	Standalone timers and AC inverter power supply units	Model code		Output current		Duty cycle		
		Model code	Water-cooled	A	%	Model code	A	%
		SWI-951-WS45-**-	Water-cooled	450	10			
		SWI-951-WS60-**-		600	10			
		SWI-951-WS80-**-		800	10			
		SWI-951-WS100-**-		1,000	15			
		SWI-951-WS200-**-		2,000	15			



Inverter power supply units

DC inverter controllers: DIT series
AC inverter controllers: AIT series



■ Specification table for DC inverter controllers (DIT series)

Model	For spot projection welding	Model code	Output current		Duty cycle			
			Water-cooled	A	%	Model code	A	%
		DIT- 723-5	Water-cooled	700	6.5			
		DIT-1123-5		1100	6.5			
		DIT-1623-5		1600	6.5			
		DIT- 543-5		500	6.5			
		DIT- 843-5		800	6.5			
		DIT-1043-5		1000	6.5			
		DIT-1643-5		1600	6.5			
	For seam welding	DIT- 825-5		800	40			
		DIT- 845-5		800	40			

■ Specification table for AC inverter controllers (AIT series)

Model	For spot projection welding	Model code	Output current		Duty cycle			
			Water-cooled	A	%	Model code	A	%
		AIT- 724-5	Water-cooled	700	6.5			
		AIT-1124-5		1100	6.5			
		AIT-1624-5		1600	6.5			
		AIT- 544-5		500	6.5			
		AIT- 844-5		800	6.5			
		AIT-1044-5		1000	6.5			
		AIT-1644-5		1600	6.5			
	For seam welding	AIT- 826-5		800	40			
		AIT- 846-5		800	40			

Decom Star 900 series

Timer contactor DS-941

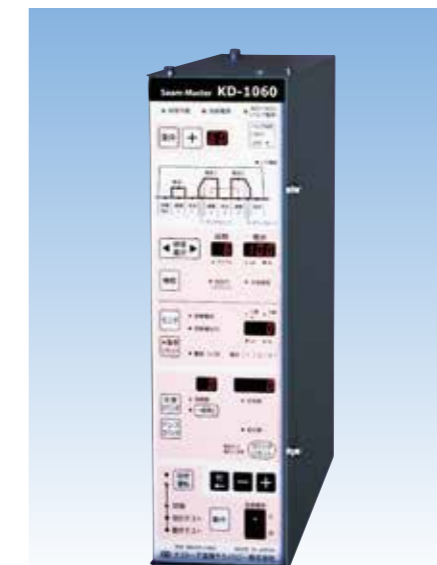


Microcomputer-type controllers



Micro-Combi KD-1060

Seam welder controllers



Seam-master KD/SD-1060

Stationary welding controllers



Micro-Combi SD-1060

■ Specification table for microcomputer controllers

Model	Installation	Model code	Applicable welders	Standard setting for current control	Valve drive output		Power supply
					Secondary constant-current control	2-circuit (output capacity 100V AC: 0.6 A / 24V DC: 80 mA)	
	Wall-hung	MC-KD-1060	Single-phase AC welders, single-phase rectification (DC) welders	Secondary constant-current control	100V AC / 24V DC Selective type (switchable)		Single-phase 50/60 Hz 160 to 240 V / 320 to 480 V*
	Stationary	MC-SD-1060			Primary constant-current control	1-circuit (output capacity 100V AC: 0.6 A / 24V DC: 80 mA)	

Note: *Changeable to 350 to 525 V (480 V) by changing internal wiring.

■ Specification table for seam welding controllers

Model	Installation	Model code	Applicable welders	Standard setting for current control	Valve drive output		Power supply
					Secondary constant-current control	1-circuit (output capacity 100V AC: 0.6 A / 24V DC: 80 mA)	
	Wall-hung	SM-KD-1060	Single-phase AC welders	Secondary constant-current control	100V AC / 24V DC Selective type (switchable)		Single-phase 50/60 Hz 160 to 240 V / 320 to 480 V*
	Stationary	SM-SD-1060			Primary constant-current control	1-circuit (output capacity 100V AC: 0.6 A / 24V DC: 80 mA)	

Note: *Changeable to 350 to 525 V (480 V) by changing internal wiring.

MEASURING EQUIPMENT

Measuring equipments

Welding ammeters

WS-80

- These measure welding current and energization time.
- They allow 15 monitoring conditions to be set.
- When an abnormality occurs, these warn of it by means of lamps and buzzer and produce relay contacts.
- They allow graphic waveforms and numerical values to be printed out.



Handy welding meters

WS-100

- These measure welding current and energization time.
- With a body weight of 260 g, these are handheld welding meters that you can easily carry around.
- These connect to a PC by USB. They easily transfer your measurements. (Your PC needs to have special-purpose software WDM installed.)
- When connected to an optional pressure sensor, these can be used as pressure meters as well.



Electrode pressure gauges

Basic specification table by model

	RF-32P-1	RF-32P-2
Measurement method	Hermetic hydraulic	Hermetic hydraulic
Measuring range	kN 0.5~10	1~20
Scale range	kN 0.2	0.5
Measuring precision	Within ±3% of full scale	



WELDING RELATED DEVICE

Welding-related devices

DC inverter resistance heaters

- High efficiency Equal heating The high output! Space-saving
- A steel sheet, a pipe, a circle stick are heated high efficiency by resistance heating.
- Because D.C. inverter type is used, The heating in the short time of materials is possible. In addition, this heating method brings improvement of the productivity, energy saving.



Water coolers

Specification table for circulating water coolers

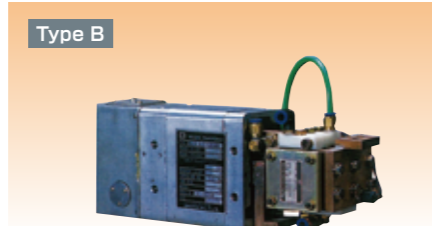
Specifications	Models			
	CU-4003	CU-8007	CU-12007	
Power supply and voltage	kVA	AC200V		
Power supply phase	Single-phase	3-phase		
Rated frequency	Hz	50/60Hz		
Cooling capacity	W	3,830/4,410	8,300/9,000	13,000/14,000
Cooling water circulation	L/min	8.5/10.0	40.0/50.0	40.0/50.0
Max. discharge pressure	Map	0.20/0.25	0.25/0.30	0.30/0.40
Power consumption	W	550/850	1,100/1,300	1,600/2,200
Tank capacity	L	12.0	28.0	35.0
Dry mass	kg	60	90	129



WELDING TRANSFORMER

Welding transformers

Inverter transformers



Inverter transformers (DC) HFGT/HFT series

Units of the HFGT/HFT series can also be manufactured.

Inverter transformers

Model code	Specifications							Reference value	
	Rated input voltage [V]	Rated frequency [Hz]	Rated capacity [kVA]	Secondary voltage [V]	Turn ratio	Mass [kg]	Cooling water flow [l/min]	Welding current [A]	Duty cycle [%]
MIR125-676120C	600	1000~1500	76	12.5	48	11.0	3	13000	10
MIR125-6100100B-S***	600	1000	85	12.5	48	15.0	5	15000	10
MIR125-6100100B-M***	600	1000	100	12.5	48	18.0	5	15000	10
MIR125-690150A-S***	600	1200~1500	85	12.5	48	14.0	5	15000	10
MIR125-690150A-M***	600	1200~1500	90	12.5	48	17.0	5	15000	10
MIR111-690180A	600	1800	90	11.1	54	10.0	2	16000	13
MIR109-69060	600	600	90	10.9	55	21.0	5+5	18000	10
MIR133-611060	600	600	110	13.3	45	23.0	5+5	18000	10
MIR115-39060	300	600	90	11.5	26	23.0	5+5	18000	10

Portable transformers

- Used in combination with portable guns.
- Equipped with two lines of pneumatic circuitry and cooling water circuitry. One such transformer can be combined with up to two portable guns.
- Primary and secondary coils are resin-molded, long-lasting and reliable.
- A wide variety of models are available according to the target to be welded, current, and duty cycle.

PACTRAN Timer-integrated portable transformers

Model: PACTHN2-150J

- No need for a timer unit.
- No need for wiring or piping between timer and transformer.
- Easy to install.
- Cost reduction by integrating timer with transformer.



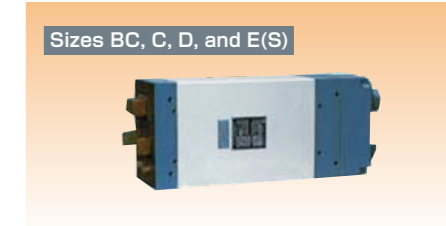
Single-phase AC portable transformers



Portable transformers

Model code	Specifications							Reference value						
	Rated input voltage	Rated frequency	Rated capacity	Secondary voltage	Turn ratio	Mass (with 2 pneumatic lines)	Cooling water flow	Secondary cable for load conditions			Capacity			
	[kVA]	[Hz]	[kVA]	[V]		[kg]	[l/min.]	Type	Cross section [mm ²]	Length [m]	Max. welding current [A]	Max. input [kVA]	Permissible duty cycle [%]	
PACTRAN	PACTHN2-150J	400	50	150	21.0	210	10	Kickless cable	200	2.5	16000	330	9.9	
		60	23.5		17							380	7.9	
Single-phase AC	NHAHN-150J	400	50	150	21.0	179	6	Kickless cable	200	2.5	16000	330	9.9	
		200			9.5							17	380	7.9
		400	60		23.5							8.5		
		200			12									
Single-phase AC	NHAH-235	400	50	235	33.3	262	6	Kickless cable	200	2.5	22000	735	5.1	
		200			6									
		400	60		36.4							11		
		200			5.5									
Single-phase rectification	NRHAH-115	400	50/60	115	23	190	10	Single-phase rectification cable	200	3.0	15000	265	9.7	
		200			11.5									

Multiple transformers



- Wound cores made of directional solenoid steel strip
- Insulated with high durable temperature
- Impregnated with vacuum varnish and vacuum resin-molded to give insulation and impact resistance
- Secondary coil with angular pipes made of extended steel with high electrical conductivity and high cooling performance

Multi-spot welding transformers, MUE series

Units of the MUE series can be manufactured as well.

Multiple transformers

Model code	Rated input voltage [V]	Frequency [Hz]	Rated capacity [kVA]	Secondary voltage [V]				Turn ratio				Mass [kg]	Cooling water flow [l/min]	Color
				TAP1	TAP2	TAP3	TAP4	TAP1	TAP2	TAP3	TAP4			
WT3C5	400	50	90	5.6	6.2	6.8	7.4	72	65	59	54	106	5	Orange
WT3D5	400	50	115	7.0	7.8	8.7	9.5	57	51	46	42	126	5	Dark green
WT3E5(S)	400	50	150	9.5	10.3	11.1	12.1	42	39	36	33	142	5	White
WT3D6	400	60	125	7.8	8.7	9.5	10.5	51	46	42	38	119	5	Dark green
WT3E6(S)	400	60	175	11.1	11.8	12.5	13.3	36	34	32	30	134	5	White
WT3BC	200	50/60	70	5.6	6.5	7.1	8.0	36	31	28	25	106	5	Orange
WT3D52	200	50	115	9.5				21				123	5	Dark green
WT3CS62	200	60	50	6.3	7.1	8.0	8.7	32	28	25	23	74	5	Orange

LC transformers (AC)

Robot gun transformers

- Thermostat switches come as standard equipment.
- Cooling water flow is 4 L/min.
- The power input comes in connector types as well, in addition to cable types.
- Power inputs of types other than the back type (top, bottom, left, and right) can be manufactured.
- Special types (those with different rated capacities and secondary voltages) can be manufactured.



D-Size (13000A 10%)

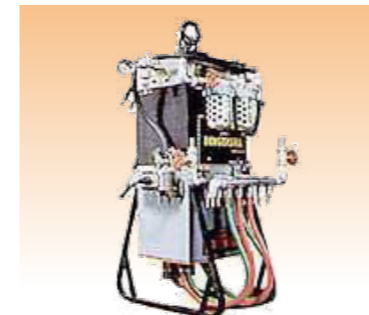
Model code	Specifications							Reference value	
	Rated input voltage [V]	Frequency [Hz]	Rated capacity [kVA]	Secondary voltage [V]	Turn ratio	Mass [kg]	Cooling water flow [l/min]	Welding current [A]	Duty cycle [%]
R71-442D5	400	50	42	7.1	56	34	4	13,000	10.0
R87-450D6	400	60	50	8.7	46	34	4	13,000	10.0
R87-450D5	400	50	50	8.7	46	39	4	13,000	10.0
R108-455D6	400	65	55	10.8	37	39	4	13,000	10.0

E-Size (15000A 10%)

Model code	Specifications							Reference value	
	Rated input voltage [V]	Frequency [Hz]	Rated capacity [kVA]	Secondary voltage [V]	Turn ratio	Mass [kg]	Cooling water flow [l/min]	Welding current [A]	Duty cycle [%]
R91-462E5	400	50	62	9.1	44	47	4	15,000	10.0
R108-472E6	400	60	72	10.8	37	47	4	15,000	10.0
R108-472E5	400	50	72	10.8	37	52	4	15,000	10.0

Portable transformers with single-phase rectification

These entail lower maximum power and better power factors than AC types. The result is lower costs for power supply equipment and lower power charges.



Various cables are also available for connectivity with portable transformers and portable guns.

300MCM kickless cables



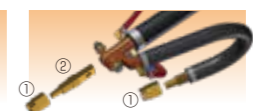
300MCM (150mm ²)
Length: 2.0m 2.4m 3.0m

Auxiliary cables



Size: 180 mm², Length: 0.6 to 0.9 m

Kickless cable accessories



No.	Part name	Part type
①	Nut	C-260
②	Terminal	2Y-0517-A

PROJECTION WELDER

Projection welders

Projection welders

Lightweight, small-sized, small footprint, and low impedance, these welders produce large currents for capacity, resulting in an economical design.

Basic specification table by model

Model	Model code	Specifications		
		Rated capacity kVA	Max. output current A	Max. pressure kN
Single-phase, AC	NPN-85	85	36000	15
	NPN-130	130	45500	15
	NPN-200	200	55000	20
DC inverters	NPN-E90	90	35000	15
	NPN-ED0	130	44000	15



AC inverter projection welders, POAI series

- Dramatic reduction in expulsion and burns.
- Effective in reducing flicker and the need for electrode polishing.
- No more eccentric wear in the electrode chips or eccentricity of weld nuggets.
- A low input (kVA) with a three-phase balanced load eliminates concerns over power supply.



POAI-100A4

AIT-1044-4

Large-current impulse welders by capacitor discharge



Gate-type frame

Capacitor welders

- These welders can weld mild steel, special steel, S45C, and other steels and are applied to transmission parts, air bag parts, pulleys, steering wheels, compressor-use hermetic parts, and other materials.
- Capacitor-based, these units need only very small power supply equipment.
- It takes only a very short time (about 10 ms) to reach a peak current, which makes it possible to produce welding without much heat strain or heat-induced discoloration.
- Energy, electrode pressure, welding current, upsetting, and other characteristics are monitored to determine their upper and lower limits, which ensures reliability in weld quality.
- These welders can weld parts of sintered metal and parts of different kinds of metal together, such as iron with brass.
- Your old equipment for electron beam, laser beam, and arc welding can be replaced with these machines to cut costs in parts and shorten cycle time.

Specification table for capacitor welders

Model	Model code	Specifications		
		Input capacity kVA	Energy J	Max. pressure kN
	GKS 60/120	70	60	120
	GKS 90/160	80	90	160
	GKS 120/200	100	120	200

Inverter capacitor welders

LinearWave

Linear Wave

- Capacitor welding is used to make direct settings for welding current and energization time.
- Best suited for aluminum plates and decorative panels.
- Neat weld finish is possible without thermal distortion.

Specification table for LinearWave

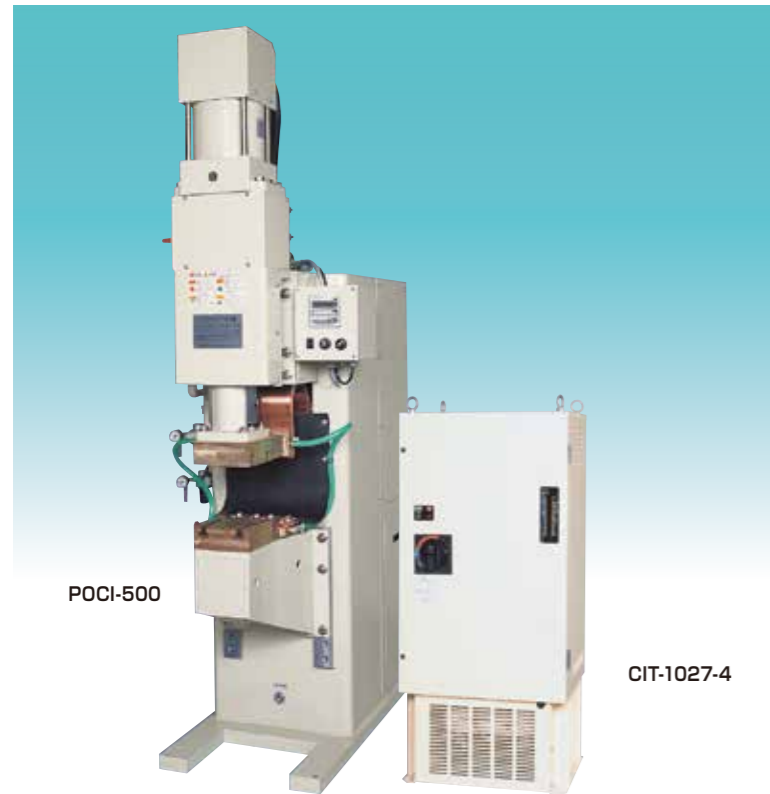
Model	Model code	Specifications		
		Input capacity kVA	Max. short circuit current A	Max. pressure (at 0.5 MPa) kN
	NICP-050-A	5	50000	15
	NICP-100-A	12	100000	30
	NICP-150-A	12	150000	30



PROJECTION WELDER

Projection welders

Inverter capacitor welders, POCI series



- Capacitor welding is used to make direct settings of welding current and energization time.
- Best suited for welding aluminum plates and decorative panels.
- Neat weld finish is possible without thermal distortion.

■ Specification table for the POCI series

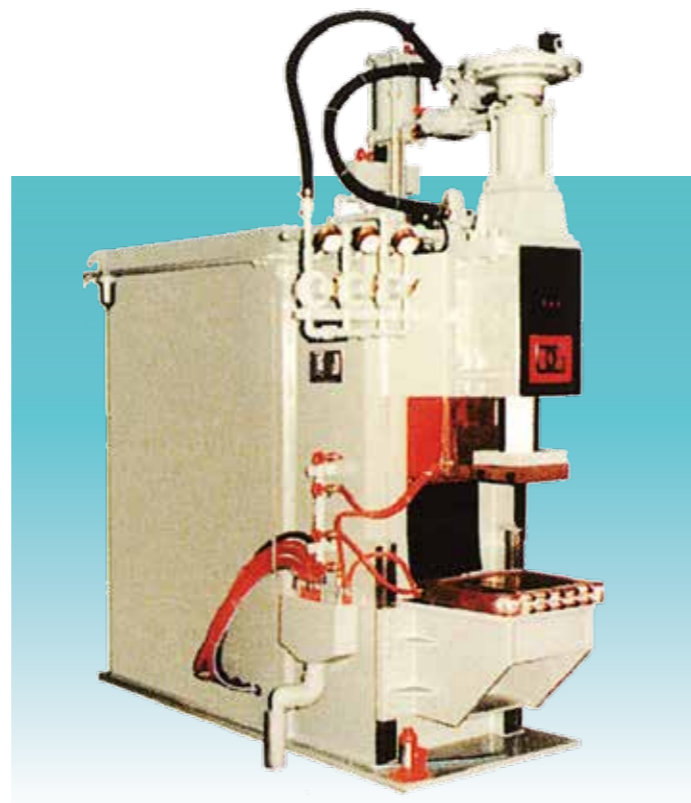
Specifications				
Model	Model code	Input capacity	Max. output current	Max. pressure
		kVA	A	kN
	POCI-500	5	50,000	15
	POCI-1000	12	100,000	30
	POCI-1500	12	150,000	30

Three-phase rectification projection welders

These projection welders are suited for applications that require large currents and high finish precision.

■ Specification table for three-phase rectification projection welders

Specifications				
Model	Model code	Rated capacity	Max. short circuit current	Max. pressure (at 0.5 MPa)
		kVA	A	kN
	NRP3-150	150	64000	20
	NRP3-200	200	70000	20
	NRP3-250	250	75000	30
	NRP3-400	400	100000	30
	NRP3-450	450	120000	30



SEAM WELDER

Seam welders

Electrodes are rotated to weld containers, tubes, and other materials.

Horizontal seam welders

These are typical seam welders widely used in producing containers.

■ Specification table for horizontal seam welders

Specifications				
Model	Model code	Rated capacity	Rated max. short-circuit current	Rated pressure
		kVA	A	kN
	UCT-120-4	120	22000	6
	UCT-150-4	150	27500	10
	UCT-200-4	200	33000	10

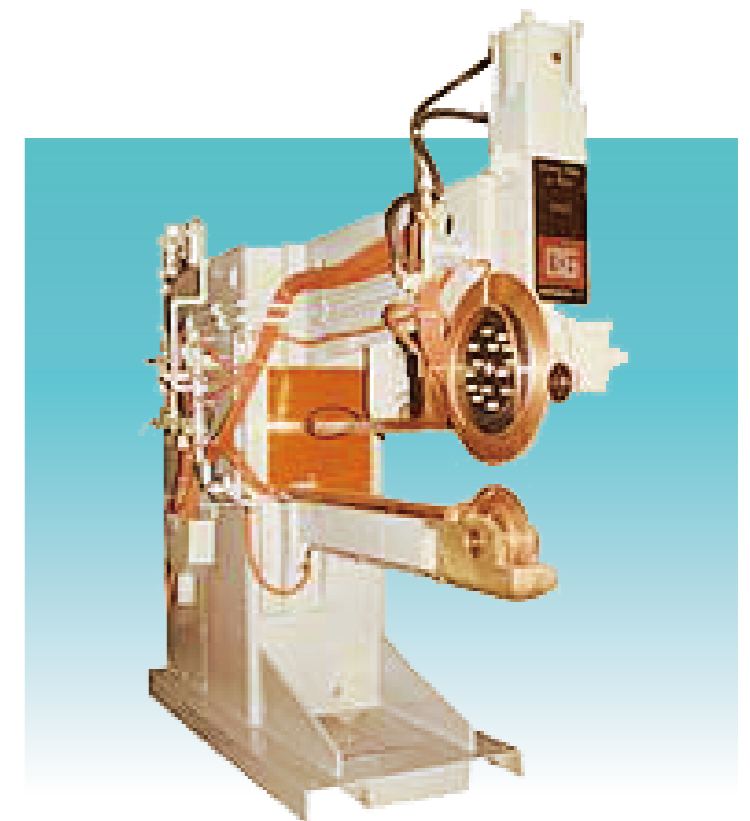


Vertical seam welders

These seam welders are designed to weld wound tanks and other tubular materials.

■ Specification table for vertical seam welders

Specifications				
Model	Model code	Rated capacity	Max. short circuit current	Max. pressure (at 0.5 MPa)
		kVA	A	kN
	UL-75-6	75	21000	6
	UL-120-6	120	24500	8
	UL-150-8	150	24500	8
	UL-150-10	150	21000	6
	UL-200-8	200	27500	8

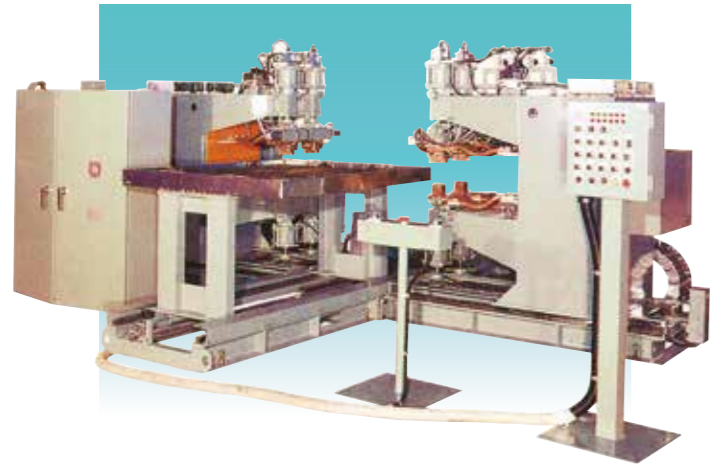


SPECIAL WELDER

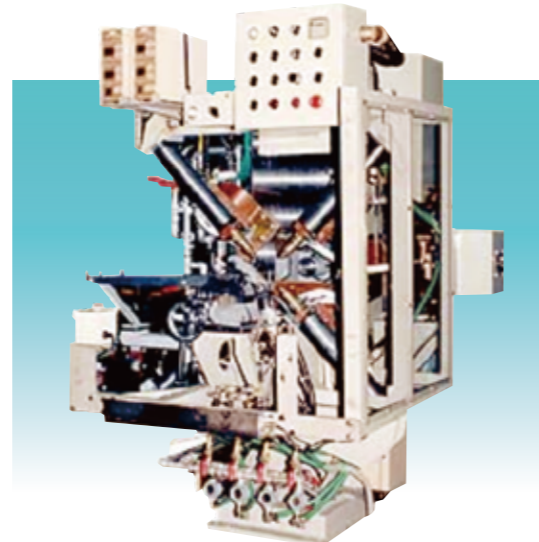
Special-purpose welders (special welders)

Spot welders Widely proven in automobile, vehicle, home electronics, building, and other applications.

As represented in automotive bodies, applications of junction of laminates are everywhere. For pieces to be welded that are shaped in the same or similar way, it is more rational to manufacture a special-purpose machine geared to the particular workpiece and weld multiple points simultaneously than weld the welding points one by one. We have been receiving orders from the automotive and many other industries and helping stabilize quality and reduce costs.



Special spot welder



4-point multi-spot welder for automobile parts

Special DC inverter welders



POI-460



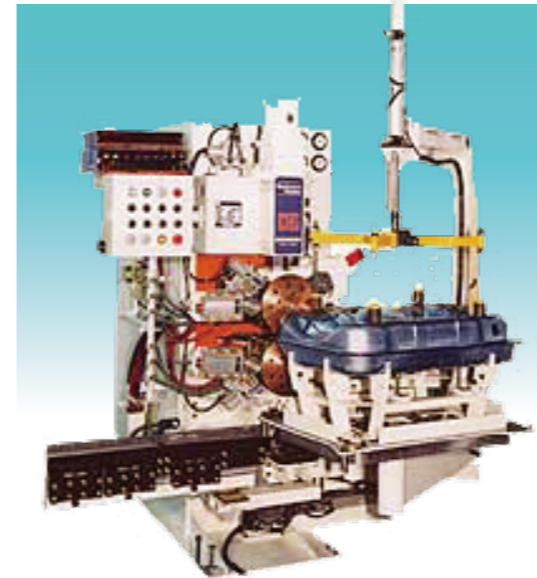
SLI-200

These special-purpose welders meet various needs.

Seam welders

Active in welding containers, tubes, and absorber plates.

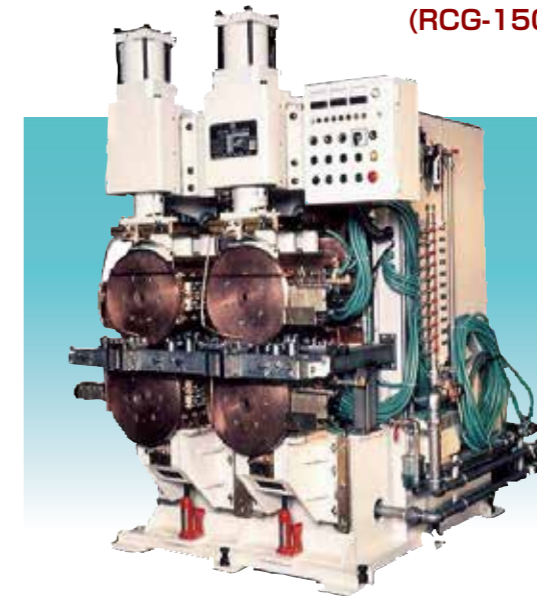
Fuel tanks, containers, transistors, and other objects requiring airtightness, along with pipes, chimneys, and other tubular materials need to be welded as if to seam plates together. In such cases, the practice of sandwiching objects to be welded with disc-shaped electrodes and energizing them while spinning the electrode ring would be called continuous spot welding, which is seam welding. This welding method is used nowadays in "tailored blanks," used for welding plates with different thicknesses and plates of different materials.



Seam welders for gasoline tanks



Entire circumference seam welders for two-wheel tanks (RCG-150S)



Two-head seam welders for motorcycle rims

SPECIAL WELDER

Special-purpose welders (special welders)

Resistance thermal caulkers

For assembling metal housings and binding enamel wires and terminals together.

Cold caulking is generally performed to enter a boss into a boss hole, crush its head, and caulk it, or to enter a bundle of enamel wires into a terminal and caulk it. Since the boss does not fit into the boss hole, resulting in rattle in the sintered region, or for enamel wires, this process involves peeling off the coat, resulting in extra work. Our thermal caulkers that heats up and softens the parts to be caulked are free of these disadvantages, thereby maintaining a securer caulked state.

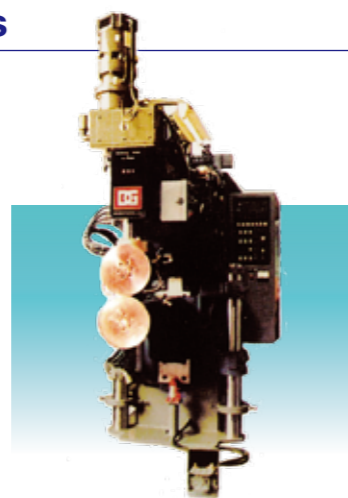


Resistance thermal caulkers

Other special-purpose machines

Three-phase low-frequency spot welders

Used mainly in spot welding for light metals in aircraft, vehicles, and other applications.



Three-phase low-frequency seam welders

Used mainly in seam-welding light metals in aircraft, vehicles, and other applications.

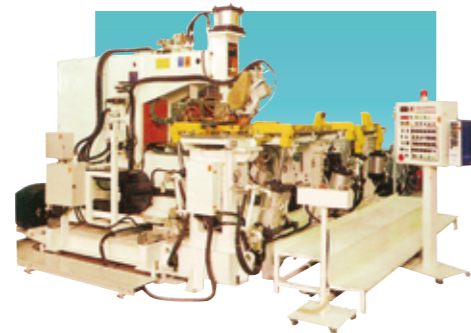


Single-phase rectification projection welders

These welders produce leeway in power supply equipment at low input, thereby saving electricity expenses.



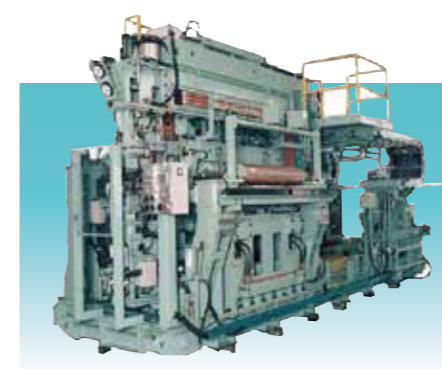
Seam welders for wound tank end plates



Mushroom welders for tailored blanks



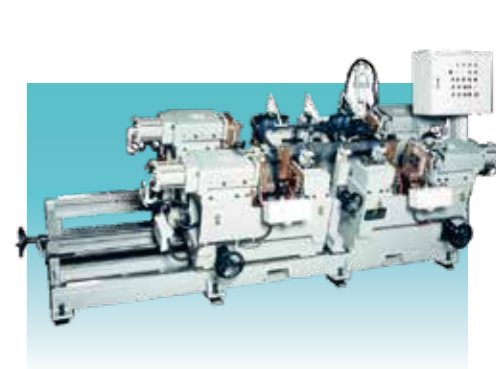
Flash welders



Narrow lap seam welders for steel lines



NC seam welders for six rows of solar collector panels

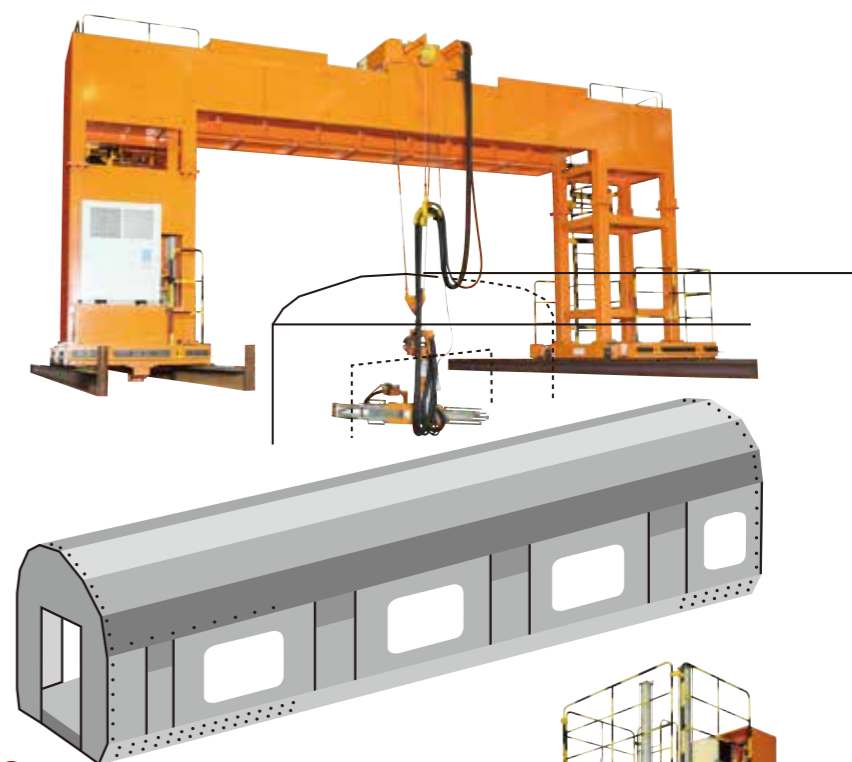


Piece projection welders for sink corners

Welders for the total assembly of stainless railroad cars

Inverter technology that lead to the future with steel

Inverter spot welders for end plates, roofing, and side plates



CNC inverter spot welders for underframes and side plates



Inverter spot welders for roofing and side plates

