

SPOT WELDING MACHINE

Micron control type with constant current timer

- ◇◇ Alternating current SL-AJ Series
- ◇◇ High efficient timer VX Series

Alternating current
SL-AJ Series

SL-AJ 50-601



Super timer
VX-400K

Super timer
VX-300K



- Alternating current depends on thickness (SL-AJ) Series
- Save energy, high quality and easy to operate.

Spot welding Quality at reasonable price! Direct current inverter

The environment of work will change!
Improvement in operation environment and power supply!

Save energy and reduce flicker!

Direct inverter

Compared to single phase input current the Direct current instant start requirement is half of alternating current, minimizes voltage flicker and has a high power factor of 80-90%.

	単相交流 SLAJ 50
Rated current	18,000A
Maximum welding input power	150kVA
Equivalent sequence current (Target of electricity fee)	176A (Ratio: 1)
1 line of moment current	750A

Half save!

No oil supply cylinder required

Easy maintenance, and the elimination of oil mist exhaust contributes to a better work environment

Quality will change

Fast heat generation means able to weld in short time!

Direct inverter

Fast

Direct current inverter machine

alternating current machine

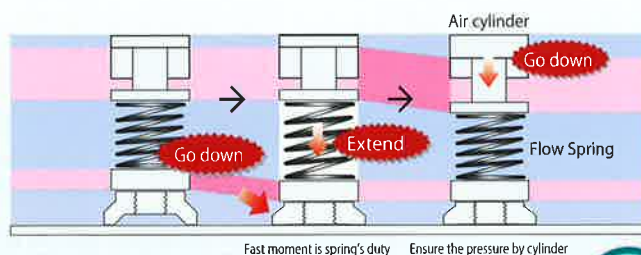
3Cycles
4Cycles
5Cycles

Welding specification: SPCC 0.6t 2 sheets layer, 500A 2kn

Super safety with Follow Spring equipment.

Is Follow Spring in side?

Such kind of nut projection, while the welding thing is under electric welding the penetration phenomenon will be appeared. This phenomenon shows tracking that pressure welding done or not. It may impact the quality of welding stabilization.



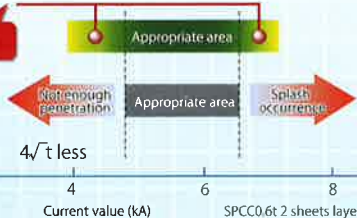
The welded area becomes wider improving quality!

Direct inverter

Alternating current and direct current inverter practical welding area

Safety zone is wider

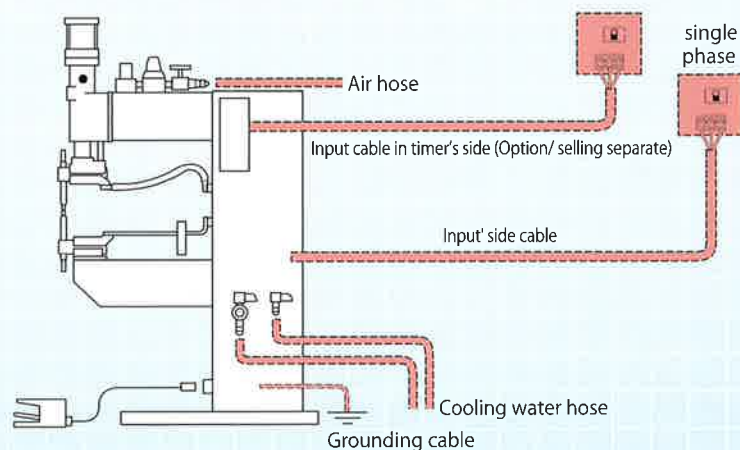
Direct inverter
Single phase alternating current



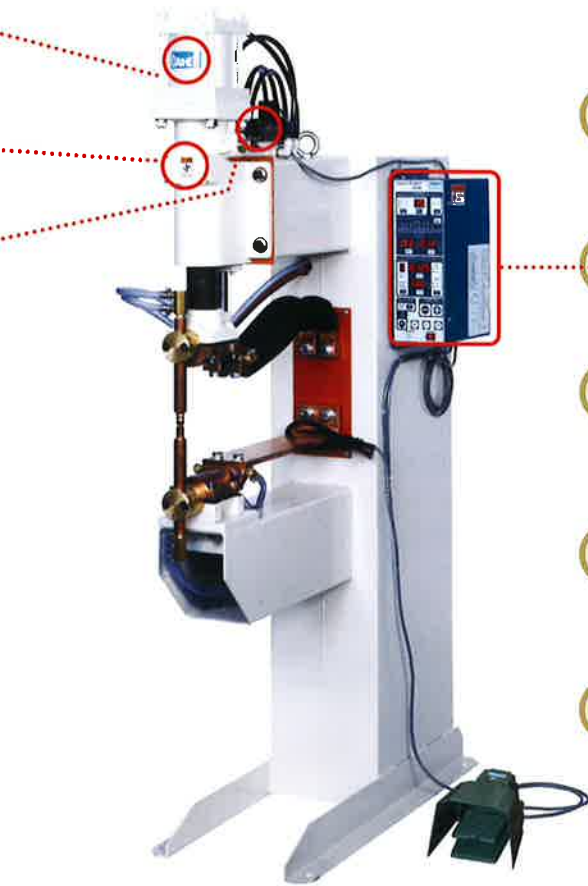
Welding figure

Preparation for customer

Alternating current SL-AJ Series



● The apex of spot welding technology in one machine



Alternating current

Save energy (SL-AJS type)

alternating current

- At unbelievable depth as 400mm, by optimization welding transformer can save energy

Microcomputer control timer VX-300K

※Please refer detail at timer's page.

Enlargement of pressure gauge (Type 601 only)

- Enlarge air pressure gauge from 40 to 50 to drastically improve operation efficiency and visibility.

Utilization of Ball valve (Type 601 only)

- During electrode changing time, water cooling and operation must stop. Considerably faster than a conventional stop valve.

Equipped with a power supply connection cover (Type 601 only)

- The attached terminal cover ensures operator safety to drastically improve operation efficiency.



It's time for options!

Large size part	▶ long frame 800-1000
Electrode grinding	▶ electrode automatic dropping
Pipe welding	▶ C-type horn
Supply water, draining water by one touch	▶ strengthening draining valve
Checking water cooling	▶ visible gauge
First step, point to position, 2nd step welding	▶ 2nd step welding by foot switch pushing

● Alternative current timer standard specification

Machine		Type	R-50T
No. of control line-No. of step			1 line-1 step current
Control power supply voltage			AC 100V 50/60Hz
Control type			Synchronization
Standard time (Cycle)	Squeeze		3~120
	Welding		1~99
	Hold		3~60
	Stop		3~60
	Upslope		1~5
Welding current adjustment range			15~100%

Just change to Super Timer, get amazing efficiency

Super Timer

VX Series creates a new standard! Leave weld results quality control to the Super timer

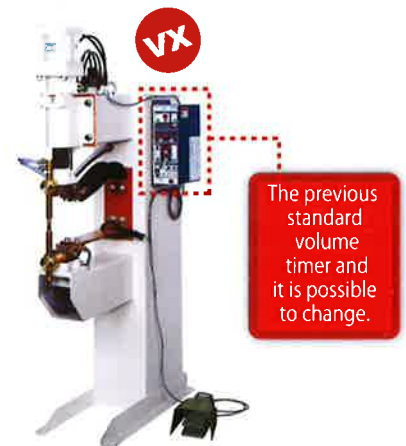
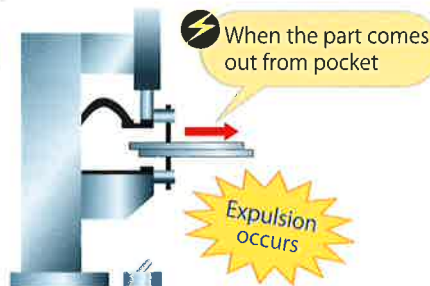
Current change due to part insert direction in pocket volume timer to Super Timer

Just change your standard volume timer to the Super timer...
...and transform to high quality production!
Improve your yield rate!



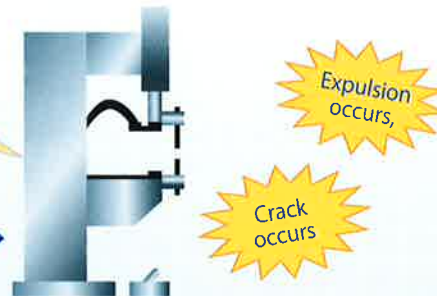
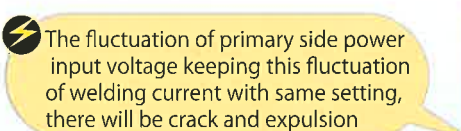
Point 1 Current change due to part insert direction in pocket

Standard volume timer is



Point 2 Current change due to part insert direction in pocket For Super Timer VX-300K, it is safe and stable

Standard volume timer is



Alternating current spot welding machine SL-AJ installation sample

Option // VX-400K is possible to connect with computer!



The connection with computer is to help manufacturing control also to record data about welding condition



※For more detail, please contact to our sales and marketing department.

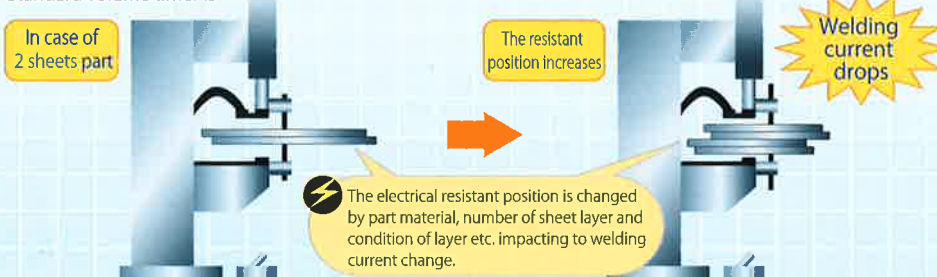
● Objective for able to record welding history

- ① Group/ welding condition
- ② Valve No.
- ③ Welding current
- ④ Welding time
- ⑤ Control angle
- ⑥ Power supply input voltage
- ⑦ Defect number
- ⑧ Welding date



Point 3 Current change due to resistant position of electrode For Super Timer VX-300K, it is safe and stable

Standard volume timer is



Just change from standard volume timer to Super Timer

(Change from difficulty to easy!

Make high quality easily)
can be remove by setting

Horizontal setting type **VX-400K**



As display of front setting side is connected with same specification of control box (PB501), it is able to control from different command location

Abundance of 60 conditions

In order to support various type of material, recording capacity can be expanded from 15 conditions up to 60 conditions.
According to 15 conditions multiply with 4 groups equal to 60 conditions, materials and commands management get better in efficiency.

Abundance of 60 conditions

Abundance of counter function

● Abundance of counter function
Able to display present production volume
Flexible to control the progression of production

● Part lighting counter

Able to control by lighting up welding number of each part
The power will show to avoid missing welding

Addition function standard equipment

Able to additionally install counter for welding slippage and necessary extend welding.

How to use counter effectively

Set production lighting counter referred to the necessary light for 1 piece of work. Only when the extended welding is necessary, push addition button to keep process progressively. Every normal button is pushed "Production counter" will calculate and display the number of completed work.



Utilization of large scale LED

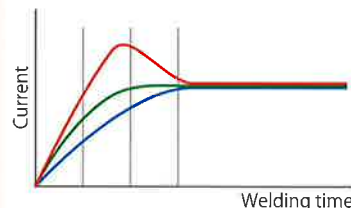
Set importance to visibility and operability, use large scale of LED for 13 mm characteristic height. (Actual size)



Start current setting function

The value of slope area and welding time are set individually. The high current gives big impact to quality of high tensile material welding. It shows the stability of projection welding.

● Various start images



Able to set start current freely

Able to set start current freely

Use password to lock in order to avoid changing welding condition



Same display of production part display light from unpreparedness except control person.

Our product is able to install in other company former spot welding machine!

From installation of VX-300K to our company former spot welding machine and other brand spot welding machine, the function-up can be attempted as the same time as quality and stability.

<Necessary part to change timer>

- ① Toroidal coil Part number STVX30-09001



- ② Bracket part number :STVX-80BKT
Necessary for our company alternating current spot welding machine (SL-AJ (S) 600, 610)Series

- ③ Connecting cables

- Cable with main spot machine body part number : STVX30-20000
- Input output signal cable (Preparation part for customer)

※ The connecting cable is subject to change due to machine, please contact our sale and marketing department.

※ Please be informed that the installation cost is separated payment.



Standard specification is alternating current spot projection welding machine

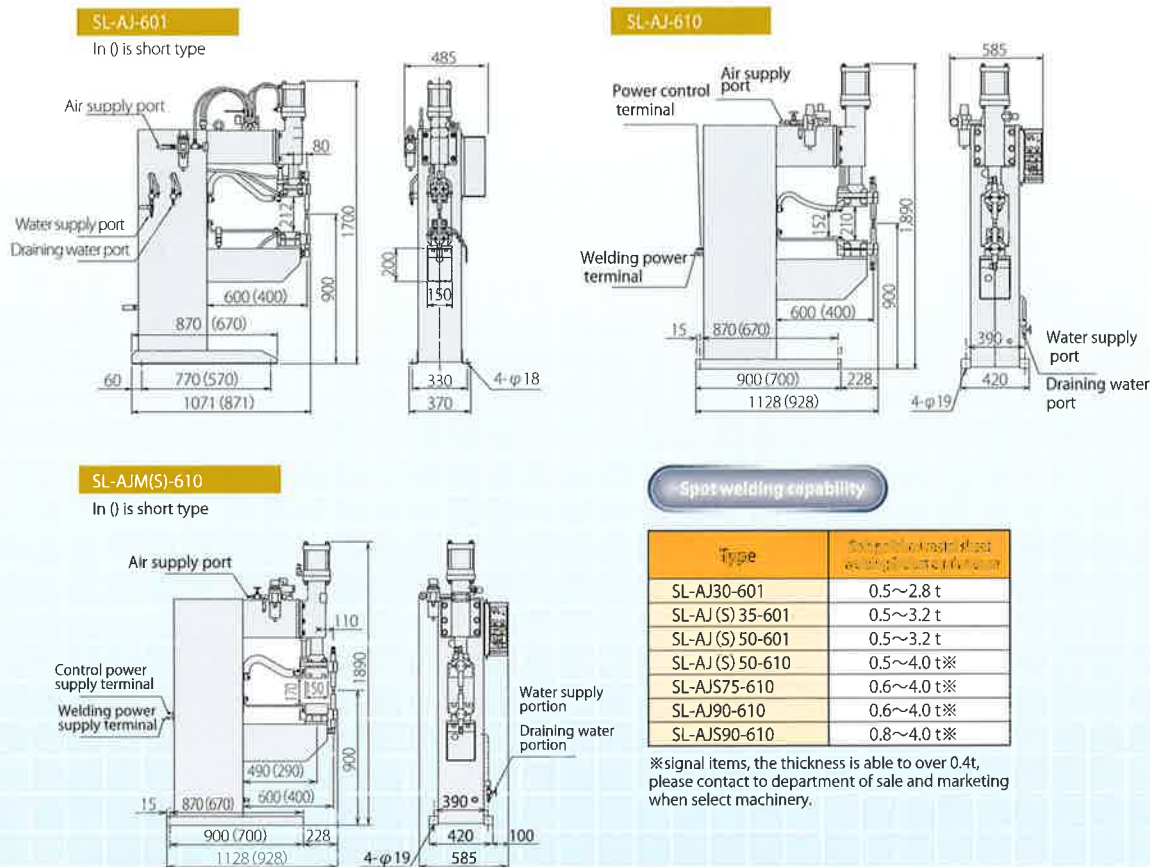
Specification Type		Rated capacity		Maximum capacity (at 50%)		Secondary short circuit current (MAX)		Maximum welding current		Rated electrode force (at 0.49MPa)		Throat depth		Throat gap		Rated duty cycle		Frequency		Rated supply voltage		Platen diameter		Electrode stroke		Electrode taper		Electrode diameter		Electrode holder		Diameter of electrode horn		Weight		Timer type		Power supply control																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
		kVA	kVA	A	A	A	A	kN (kgf)	mm	mm	mm	%	Hz	V	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg			V																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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SLAJ30-601	Spot	30	60 [66.7]		13,400		12,000	5.6 (570)		600	212	12.0 [10]	380V 50Hz	200 or 400		20/60 convert type	16	25	180	60	256	VX-300K or R-50T	100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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※Remark production part

- Maximum short circuit is measured when the throat is displayed
- [] is 60Hz time
- Alternating current · projection welding machine weight is not included attached equipment weight
- Direct inverter spot · projection welding machine weight is not included inverter power supply weight.

External dimension figure

※There is no power terminal control in inverter power supply machine.

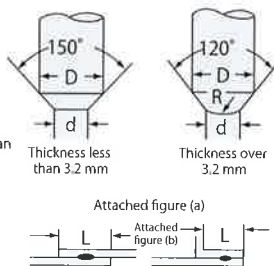




Mild steel sheet spot welding condition chart (Reference value) Alternating spot

Sheet thickness	Electrode			Minimum pitch	Minimum lap	Best condition (A class)				Medium condition (B class)				Normal condition (C class)			
	max ϕ d	min ϕ D	R			Welding time		Electrode force	Welding current	Welding time		Electrode force	Welding current	Welding time		Electrode force	Welding current
	mm	mm	mm			50Hz	60Hz			50Hz	60Hz			50Hz	60Hz		
mm	mm	mm	mm	mm	mm	Cycle	Cycle	kN	A	Cycle	Cycle	kN	A	Cycle	Cycle	kN	A
0.25	3.2	10		6	10	3	4	0.9	4,000	4	5	0.6	3,700	13	15	0.3	3,000
0.4	3.2	10		8	10	4	5	1.1	5,200	7	8	0.7	4,500	17	20	0.4	3,500
0.5	3.5	10		9	11	5	6	1.3	6,000	8	10	0.9	5,000	20	24	0.4	4,000
0.6	4.0	10		10	11	6	7	1.5	6,600	10	12	1.0	5,500	22	26	0.5	4,300
0.8	4.5	10		12	11	7	8	1.9	7,800	13	15	1.2	6,500	25	30	0.6	5,000
1.0	5.0	13		18	12	8	10	2.2	8,800	17	20	1.5	7,200	30	36	0.7	5,600
1.2	5.5	13		20	14	10	12	2.6	9,800	19	23	1.7	7,800	33	40	0.8	6,100
1.4	6.0	13		23	15	12	14	3.0	10,600	22	26	2.1	8,500	38	46	1.0	6,600
1.6	6.3	13		27	16	13	16	3.5	11,500	25	30	2.4	9,100	42	50	1.1	7,000
1.8	6.7	16		31	17	15	18	4.0	12,500	28	33	2.7	9,700	45	54	1.3	7,500
2.0	7.0	16		35	18	17	20	4.6	13,300	30	36	2.9	10,300	48	58	1.5	8,000
2.4	7.8	16		40	20	20	24	5.7	15,000	37	44	3.6	11,300	54	65	1.8	8,600
2.8	8.5	16		45	21	23	28	6.9	16,200	43	52	4.2	12,100	60	72	2.2	9,400
3.2	9.0	16	75	50	22	25	30	8.0	17,500	50	60	5.1	12,900	65	78	2.5	10,000
3.6	10.3	22	100	57	29	34	41	9.1	18,200	60	72	5.5	13,600	85	102	2.7	10,600
4.0	11.1	22	100	67	32	42	50	10.1	18,900	73	88	6.3	14,100	104	125	3.1	11,000

Remark (1) Minimum pitch comes from practical shunt effect depended on adjoining spot welding to show the neglect limit.
 (2) Minimum lap displays in (b) figure.
 (3) In case of different thickness 2 sheets welding, please refer to the thin sheet thickness for safety.
 (However, in case of thickness comparison, it is less than 1:3 in case that the convex of electrode is in thin sheet side)
 Also, less than 4 sheets welding layer becomes safety standard.
 (However, in case of sum of thickness sheet, it should be less than 4 times of one sheet.)



When do such below welding

(Refer to soft metal sheet spot welding condition chart)

	★ In case of black surface	★ In case of bonding sheet
Electrode pressure force	10~20% Increase	5~10% Increase
Welding current	5~10% Decrease	5~10% Increase
Welding time	Same	Same
Upslope	1~5 Cycle	1~5 Cycle

Stainless metal sheet reference welding condition

(Please refer to soft steel sheet spot welding condition chart)

Electrode pressure force increases 50%, welding current reduces 10% and welding time reduces 30%



Important equipment is alternative spot•projection welding machine

Function Type		Main circuit power supply			Power supply control		Cooling water		Compressed air		Installation	Grounding	
		Power supply volta	Power supply capacity	Switch	Connecting cable	Power supply voltage	Connecting Lead line	Cooling water volume	Hose diameter	Compressor capacity	Hose diameter	Base bolt	Earth cable
		V	kVA	A	mm²	V	mm²	ℓ /min	φ mm	kW	φ mm		mm²
SLAJ30-601	Single phase alternating current	30	Over 150(75)	Over 38(22)	100	1.25	5	12	2.2	13	M16	14	
SLAJ35-601		35											
SLAJS35-601		50	Over 300(150)	Over 60(38)			6						
SLAJ50-601													
SLAJS50-601		75	Over 400(200)	Over 80(50)			10	19					
SLAJ50-610													
SLAJS50-610		90	Over 500(250)	Over 100(60)									
SLAJS75-610													
SLAJ90-610		50	Over 500(250)	Over 60(38)									
SLAJ590-610													
SLMS50-610		75	Over 400(200)	Over 80(60)									
SLAJM(S)50-610													
SLMS75-610		90	Over 500(250)	Over 100(60)									
SLAJMS75-610													
SLMS90-610													
SLAJM(S)90-610													

Remark

- The cooling water pressure is due to water supply portion 0.1~0.3 MPa
- Compressed air is due to air supply port 0.5~0.7 MPa range, please use dry air. ※In case of the value number of power supply main circuit is over 50kW for high pressure receiving equipment, please refer to displayed value.
- Use value in () u when 400V utilization ※For receiving equipment which is less than 50kW, the value of main circuit power supply cannot be referred (Abolish power supply voltage value). Therefore, please refer to standard electrical power of each receiving equipment. The volume of cooling water is possible to depend on consumption in electrode heat sink. We provide an option part to improve consumption heat sink



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