

Description of equipment

POWER WAVE 450 is a digitally controlled source of welding current of high output, for complex and high-speed control with pulse modulation, provided with wire feeder Synergic 7.

Power wave 450 is designed as a multiprocess source of welding current. It is preprogrammed for the best range of welding parameters setting, in dependence on the type of wire, its diameter and on the range of gases. Intelligent control of all welding parameters, ensured by 16-bit processor predestines this source for use in the heavy-duty operation conditions, including working places controlled by robots.

POWER WAVE 450 is intended for synergic welding. The word „synergistic“ takes its origin from the word „synergism“, which means „two or more things working together to achieve effect, which cannot be achieved individually. “POWER WAVE 450 and wire feeder are working together like a team. ALL the time either of these „knows“ what the other is doing. Both know, which process, type and diameter of wire they are to use. In the synergic system, the source and wire feeder must „talk“ in one language. Synergic feeder has its special circuit to be able to „speak“ to the source and „listen“ to it at the same time.

Welding experts programmed the system to achieve the best setting of process parameters in dependence on the type of wire, its diameter and the gas used. If the wire feed speed changes, the system automatically changes the voltage and current course in such a way, in order that the welding characteristics are the best possible. The quality of welds, their appearance and repeatability is improved in this way.

All parameters programmed into the POWER WAVE 450 have been sufficiently tested to achieve weld of high quality, with excellent appearance and minimal spatter. POWER WAVE 450 is designed in such a way, in order that it can work normally, when welding steel, in the sphere between the spray and short-circuiting arc.

POWER WAVE 450 can be a valuable machine for increase or decrease of the heat being brought in for given procedure. Delivery of heat can be substantially increased when welding steel with high deposition rate. On the other hand, the heat delivery can be decreased, when pulse welding. We can also substantially decrease the heat delivery into the piece being welded, when welding stainless steels with a low current, using processes programmed into the POWER WAVE 450.

In all cases these procedures have been tested to give stabile welds of high quality. The set procedures can be manually influenced. However it is on the responsibility of user to change the process in the best way, in order that the weld being performed is as best as possible.

POWER WAVE 450 is controlled by panel with push buttons from functional overlays, which can be interchanged according to use of this source. Use of these overlays represents a new concept in control of welding sources. Three of these overlays, which can be ordered as accessories, are included in the source delivery. The overlays are made from special artificial material. They have specified number of symbols and push buttons printed on one side and a bar code giving for the source POWER WAVE an information concerning selection of the control system and function for each push buttons. The overlays enable easy control even when the operator is wearing gloves.



POWER WAVE 450
with SYNERGIC 7

Advantage Lincoln

- top equipment with easy control
- In SYNERGIC proces the source is controlled only by one button!!!
- range of welding current is 5 – 500 A
- DZ 100% 450A
- can be controlled when using gloves
- databank of filling materials (total 76 programs) enables very quick setting of parameters according to changing production and increases productivity of work
- wave modulation enables fine tuning of metal drops transfer at different weld positions
- adaptable control is adjusting the output voltage, in order that the constant length and voltage of arc for the changing outlet of electrode is maintained
- two-row LCD display for easy setting and monitoring of welding process
- trigger on welding gun selects one of two welding procedures from memory
- enables connection of two wire feeders Synergic and their individual use
- controls are inside, behind the diaphragm of panel, insulated. In this way the controls are protected against environmental influences (dust, smoke etc.)
- welding source cooled with fan is provided with complete protection against heavy-duty working conditions
- source is of modular design, because of easy and quick service
- simple interconnecting panel for different feed voltage
- electronic and thermal protection against current overloading and excessive temperatures
- 3-year warranty for parts and labour
- sources are made in accordance with ISO 9002



Technology of waveform control

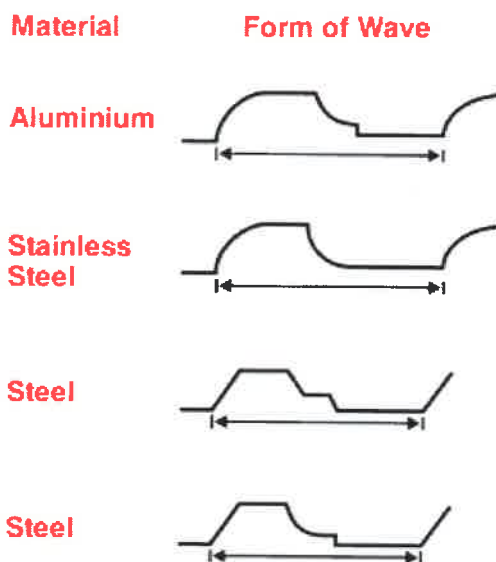
Outstanding operation features of welding source Power Wave 450 ONE are achieved by means of use of The Waveform Control Technology.

In fig. 1, there are different forms of wave, suiting best for particular material, with the purpose to get best welding results. The operator can quite easily change a lot of variable elements of welding proces, by using proper material (aluminium, stainless steel, plain carbon steel etc. according to menu from the memory inside the source).

Output of the welding source Power Wave 450 ONE is then controlled by software, developed by our experts in our „Laboratory for applied technology.“ However the operator can adjust the welding proces through controls TRIM and WAVEFORM, if he considers it important.

For customers, who would like to use abilities of Power Wave 450 ONE according their requirements we can recommend and install special program for extremely demanding applications.

Power Wave 450 ONE can be completely reprogrammed. After development of new waveforms these units can be provided with a new sowlware. Your present and future requirements can be met with and you always have an assurance that your welding machine will not get old.



Changes of Power wave 450

Power Wave 450 ONE is capable of operation with 6 different panel overall, corresponding to your requirements for outfit and control of the welding source. Each panel overall has specific system of this source control and enables for the technical welding inspection to program, store into memory and set, welding parameters. Each overall has defined possibilities of interference into the set procedures of welding. For welding inspection of Power Wave 450 ONE is thus easy to prepare welding parameters through overlay „Selection of process“ and to limit interferences of welding operator into these parameters by substitution of panel for the „Limits overlay“. Any other manipulation with welding parameters is thus limited and corrections as well.



Process Selection

Universal panel arrangement enables for operator access to all combinations of programmed process, storing and its calling.



Limits Overlay

For setting of 8 preset procedures. Permits to operator to change working processes in these limits for the purpose of flexibility of process control by means of „Process Selection“.



Weld From Memory, Dual Process

Calls 4 sets of processes (in pairs) after programming into memory by means of „Process Selection“.



Dual Wire Feeder, Dual Procedure, Memory Selection

Calls 4 sets of processes (in pairs), when using 2 wire feeders after preprogramming into memory by means of „Process Selection“. Order K946-12.



Dual Wire Feeders, Dual Procedures Calls 2 sets of processes (in pairs), when using 2 wire feeders after preprogramming into memory by means of „Process Selection“. Order K946-9.



Weld from memory Panel arrangement enables calling from memory the process preset on panel „Process Selection“.

Technical specification

POWER WAVE® 450 ONE

Name Code for order Feeding(V) Output current and voltage Input current at loading Range of output currents Weight(kg) Dimensions(mm)

Name	Code for order	Feeding (V)	Output current and voltage	Input current at loading		Range of output currents	Weight (kg)	Dimensions (mm)
				230V	400V			
POWER WAVE 450	K1439-3	230/400	500A/40V/60%	76A	44V	5-250A	137,9	905x515x1010
	K1439-4	3-phase 50/60Hz	450A/38V/100%	65A	38V			

Ranges of currents	Range of welding current in pulse	Range of welding voltage in pulse	Range of regulation	Pulse
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for welding proces	regime	regime	of pulse duration	frequency
GMAW 50-520 A				
FCAW 40-520 A	5 - 750 A	5 - 55 V	100 microsec - 3,3 sec	0,15 - 1000Hz
STICK 30-520 A				

Recommended outfit

Remote control for welding GMAW – K1449-1.

Remote control for welding with coated electrode – K941-1.

Interconnecting cable , source-feeder 2, 8, 15m.

Reel for 27 kg of wire – K303



K303



K1449-1