

# RETROFIT SOLUTIONS

UPGRADE AND MODERNISE

The background image shows a large industrial factory floor. In the center, a large, shiny metal roll is mounted on a blue machine. To the right, a tall blue vertical structure is visible. The floor is made of metal grates, and various cables and equipment are scattered around. In the background, there are more industrial structures and a sign that says "KASSA NR 2103 REVOLTN NR 517".

NEW OPPORTUNITIES FOR PRODUCTIVE SUBMERGED ARC WELDING



# BRING NEW LIFE INTO YOUR EQUIPMENT

Even old carriers of welding equipment can be revitalised to secure continuous production. ESAB Retrofit is a solution to modernise your SAW equipment for extended life and increased productivity.

We offer standardised packages for welding equipment run by the PEG or the PEH process controller for single or tandem wire set-up. The packages include a choice of power source(s) depending on application and needs, and specialised components for retrofit.

**Increased** productivity by upgrading your power source or welding head

**Maintained** high integration between controller and CaB motion

The PEK process controller share the same logic as PEG and PEH

Same type of wear parts used



## Benefits of upgrading from PEG or PEH to the modern PEK process controller

- Access quality data displaying welding parameters from previous welds
- Access production statistics displaying historical deposition rates
- More precise welding values and higher process stability due to encoder feedback with all motors
- Display heat input based on actual welding conditions
- User-friendly interface and menus
- Increased number of weld data settings available
- Quicker software upgrade using USB
- Connectivity to a wider range of automation power sources including Aristo® 1000 AC/DC SAW
- Enables upgrade to ICE™ technology (on request)

*Please note: The PEG controller was replaced by PEH in late 1990's. The PEH was made obsolete in 2009 and with the ESAB 10 year spare part supply policy the product will not be supported from 2019.*

## Benefits of upgrading your power source

### Upgrading from 1000 A to 1250 A

Increased welding current which allows the full utilisation of twin technology. Twin kit is required.

### LAF/TAF to Aristo 1000 inverter

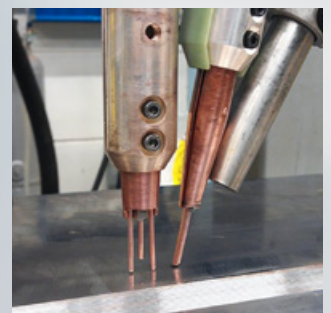
Aristo 1000 offers AC/DC capability all in one power source. DC+ to secure penetration in root pass and AC for higher deposition rate in fill pass.

### Additional features:

- Parameter and polarity change on the fly. No need to stop welding to change polarity or parameter set-up
- Refine the process and improve deposition rate by adjusting frequency, balance and off-set
- Multi process power source with additional capability for gouging
- Cable boost function ensures stable parameters even with long cables



Tandem setup with PEK



Closeup of ICE wire

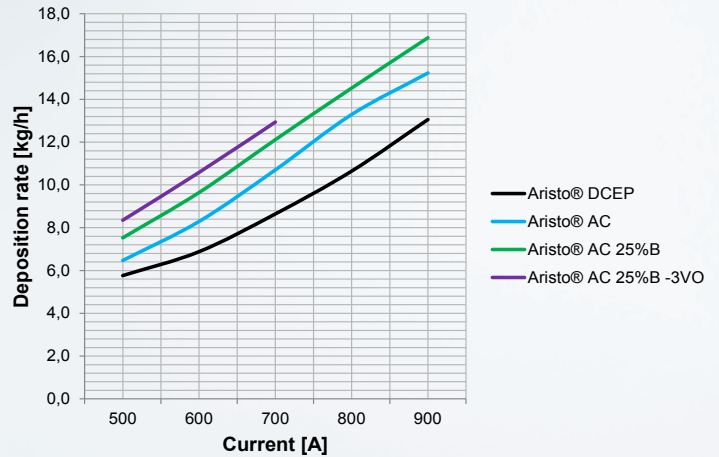
# INCREASED PRODUCTIVITY

## Using multiple wires or polarity

Improve deposition rate in two ways - adding more wire or changing polarity. This is accomplished by going from single to tandem (wire) or from DC+ to AC (polarity). However, only using AC yields a higher deposition rate but risks of lack of penetration. The solution is tandem with DC+ (penetration) on the lead wire and AC (higher deposition) on the trail. Another option is using Aristo 1000 where DC+ can be used in the root pass for penetration and then switching to AC during hot and fill passes.

With the use of balance, frequency and off-set the power source is able to generate much higher deposition rate compared to a conventional AC transformer.

Aristo® 1000 AC/DC deposition rate chart  
A6, 4mm wire, ESO 32mm

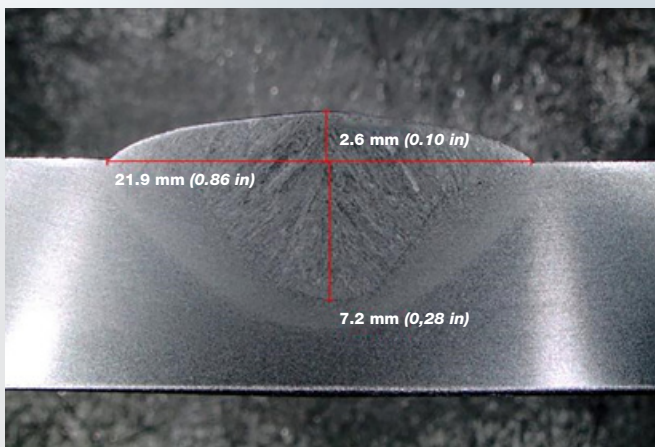
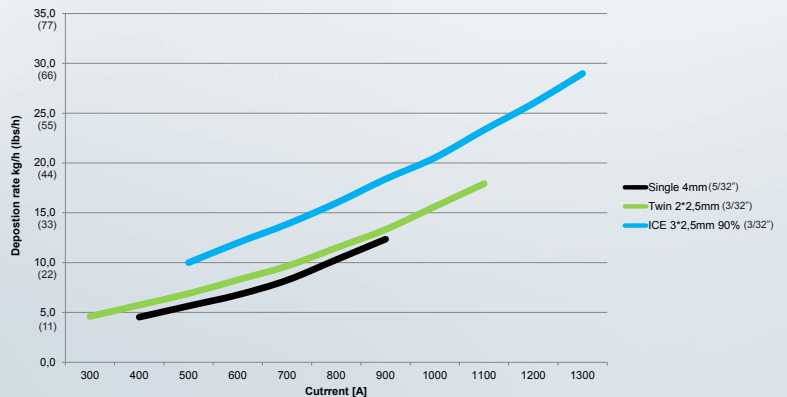


## Using ICE technology

ICE is a patented technology using three wires where the third wire is electrically insulated and placed between and parallel to the two hot wires. All three wires have the same diameter of 2.4/2.5 mm (3/32"). The cold wire melts as a result of the excess heat generated by the two hot wires connected to a single power source.

The cold wire feed speed is software controlled in full CA regulation with the hot wire feed speed to ensure the most stable cold wire welding process. By increasing the cold wire feed with ICE the heat input remains unchanged, while increasing the deposition rate.

Deposition rate DCEP



## Bead Profile Modelling using Aristo balance

- 650A, 33V, 450 mm/min (17 in/min), balance 75%
- Lowering balance will primarily increase deposition rate
- Increasing balance will increase penetration



## Two run - Tandem (single + ICE)

- Deposition rate 31 kg/h (68 lbs/h) average
- Welding speed 1000 mm/min (40 in/min)
- Heat input 3,4 kJ/mm (86 kJ/in)

# WELDING PROCESS QUALITY SYSTEMS

## WeldQAS

Automated welding processes require automated quality checks. The WeldQAS system is an automatic welding process monitor and controls 100% of the production. Parameters are directly monitored during the welding process, enabling an immediate reaction in case of error to avoid consequential damage. WeldQAS can be used to acquire the latest knowledge about welding production, optimisation and cost-effective use in the production processes.

### Avoid having to rework or recall your product

WeldQAS uses a 100% checkup of all welded seams by trend analyses and evaluation tools to force reproducible evaluation of the welding parameters. Recognising these changes in welding parameters quickly prevents further production of faulty parts.



Multi-wire setup with PEK and WeldQAS

## ESAB RETROFIT KITS

PRESENT CONFIGURATION			NEW CONFIGURATION			
Controller	Power source	Wire setup	Controller	Power source	Wire setup	Kit no.
PEG	LAE	Single	PEK	LAF 1001	Single	0906 210 880
			PEK	LAF 1251	Single	0906 211 880
			PEK	Aristo 1000 AC/DC SAW	Single	0906 212 880
PEH	LAF	Single	PEK	LAF 1001	Single	0906 213 880
			PEK	LAF 1251	Single	0906 214 880
			PEK	Aristo 1000 AC/DC SAW	Single	0906 215 880
PEG	LAE/TAE	Tandem	PEK	LAF 1251/TAF 801	Tandem	0906 216 880
			PEK	LAF 1251/TAF 1251	Tandem	0906 217 880
			PEK	2 x Aristo 1000 AC/DC SAW	Tandem	0906 218 880
PEH	LAF/TAF	Tandem	PEK	LAF 1251/TAF 801	Tandem	0906 219 880
			PEK	LAF 1251/TAF 1251	Tandem	0906 220 880
			PEK	2 x Aristo 1000 AC/DC SAW	Tandem	0906 221 880

The kits above contain parts for a standard retrofit. Additional work outside of the kit will be quoted separately. Other functions and features on request.

We also offer tailored retrofits on various types of SAW stations including other brands than ESAB.

Retrofits using above standard kits do not require re-certification in accordance with EU regulations.



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