



Save Money

Secure Jobs

Protect the Environment

Blue

Evolution<sup>®</sup>

The Sustainability Initiative  
from the Inventors  
of the "Welding Code"



/// simply more

# Reach your Full Potential in Welding, Cost Saving and Climate Protection – with **BlueEvolution**®.

As a leading technology company, we support your contribution towards reducing CO<sub>2</sub> emissions with our **BlueEvolution**® sustainability initiative. After all, a weld can only be perfect if the welding process conserves energy and raw materials. With our resource-saving inverter technology and energy-reducing joining processes, we unite economic efficiency and eco-friendly techniques. Be part of it, and let us help you:

## SaveResources.

Inverter technology from ewm allows machines to be built that are more compact and lighter. This automatically reduces the consumption of welding materials – and saves resources like copper, aluminium and steel. Transportation costs are also significantly reduced. And because our patented processes\* result in less spatter, no material is wasted. There's no more effective way for you to save raw materials.

## ReduceEmissions.

Heat-reducing ewm welding processes produce fewer harmful welding fume particles and cut down on emissions – thus improving working conditions for everyone utilising these welding processes. A reduction of the passes to be welded also cuts down on welding times, so emissions are not only reduced but their production is avoided from the outset.

## ConserveEnergy.

When used in conjunction with power-saving ewm joining processes, the high efficiency of our inverter technology saves primary energy and cuts electricity costs. These savings are further enhanced by weld seam geometries that use less wire and gas. Together with shorter welding times and minimal finishing work, you not only conserve energy – but also save production costs.

## The Welding Code.

At ewm, the "Welding Code" means an in-depth understanding of what constitutes a perfect weld in the context of your specific welding task. With this knowledge and decades of experience it is possible to make sustainable improvements to your complete welding process.



\* EP 1640100 B1, EP 1944115 B1, EP 1563938 B1,  
EP 0743126 B1, EP 1726395 B1



Sustainable energy production:  
welded with the innovative forceArc®  
welding process – because ewm  
has everything under control.

PRODUCTION OF STEEL  
STRUCTURES FOR OFFSHORE  
WIND ENERGY PLANTS

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ANDRITZ HYDRO GMBH, RAVENSBURG,  
PRODUCTION OF HIGH-PERFORMANCE IMPELLERS  
FOR HYDROELECTRIC POWER PLANTS



▲ Save raw materials with forceArc®: fewer passes, less weld metal, minimal spatter – all with more reliable root penetration from one side.

◀ Whether welding machines, wire feeders, welding torches, welding consumables or industrial safety products: your entire welding process can be designed efficiently with the complete range from ewm.



Save up to

- 90% Use of Raw Materials

- 99% Spatter

- 50% Shielding Gas

- 50% Welding Consumables



# SaveResources.

## Sustainability thanks to Compact Design and Advanced Technology.

Inverter technology makes ewm welding machines particularly compact and light, meaning fewer raw materials are required even at the manufacturing stage. You save more material when welding, as the patented\* ewm welding processes coldArc®, forceArc® and pipeSolution® reduce spatter by 99% in combination with ewm welding torches. At the same time, the torches save shielding gas, welds are flawlessly produced and the amount of finishing work is minimised. That means: when you save raw materials, you'll always save production costs, too!

### The key benefits of ewm inverter welding machines:

**Small, light, universal: highly portable machines**  
With innovative inverter technology and robust plastic casing, the ideal solution for building sites and assembly work.

**Affordable entry point: modular systems**  
Gas-cooled MIG/MAG welding, stationary or mobile, cooling unit can be changed quickly without the need for tools or opening the welding machine.

**Self-explanatory operation**  
Easy to use thanks to intuitive operating concepts. Choose from four different controls to match your specific requirements.

**Large action radius**  
Exceptional power reserves and high duty cycle permit the use of intermediate hose packages up to 40 metres long.

**High mains voltage tolerance**  
Safe operation of welding machines even on long mains cables, with mains voltage fluctuations and on generators.

#### Warranty of up to 5 years

Advanced future-oriented technology of the highest quality – we guarantee it. That's why we give you a warranty of up to five years – even in multiple-shift operation\*.

\*On all ewm welding machines in accordance with the respective valid warranty terms.



### alpha Q®

Our leading machine range alpha Q® – with a power source and multiple processes: coldArc®, forceArc® and pipeSolution®, MIG/MAG pulse and standard, TIG and MMA welding, plus high-speed if required. You are ideally equipped for all applications: from portable and modular to mobile and compact

\* EP 1640 100 B1, EP 1044 134 B1, EP 1563 938 B1  
EP 0743 126 B1, EP 1226 395 B1

# ReduceEmissions.

## Sustainability thanks to Heat-reducing Joining Processes.

Make your contribution towards lowering emissions with the heat-reducing and energy-saving ewm welding processes coldArc and forceArc: intelligent regulation processes reduce welding fume particles and fewer passes mean shorter welding times – stopping emissions before they're even produced. The same goes for the reduced need for primary energy and new weld geometries that use less wire and gas: they save electricity and materials, so their production does not generate emissions that are harmful to the environment.

Reduce emissions with forceArc:  
Welding tasks on a locomotive frame  
used for heavy-duty goods transport



SIEMENS AG, MUNICH,  
PRODUCTION OF LOCOMOTIVES





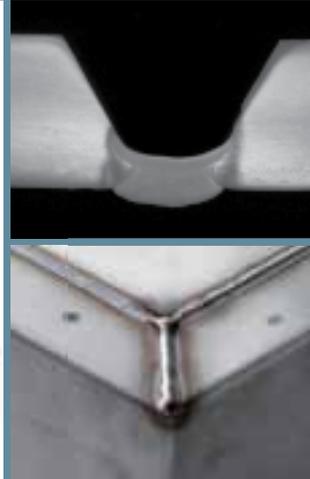
## coldArc/coldArc puls

Perfect welding and brazing.

**coldArc:** Heat-reduced, low-spatter short arc for high dimensional stability welding and brazing, plus root welding with excellent gap bridging capabilities.

**coldArc puls:** The optimum enhancement for higher performance ranges, with focused heat input where the heat is required.

- For thin metal sheets and dissimilar joints
- Secure and easy gap bridging
- Reduced welding fumes mean fewer harmful emissions
- Less finishing work thanks to reduced spatter
- Less distortion thanks to minimised heat
- Lower electricity costs



## The key benefits of ewm welding processes:

### Up to 75% Lower Emissions

when comparing coldArc vs. standard short arc.

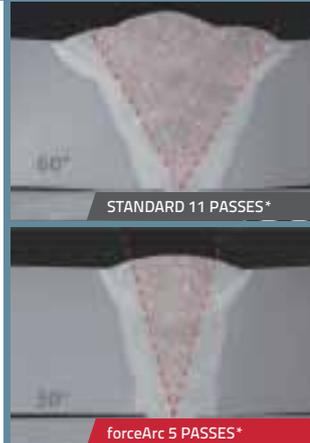


## forceArc/forceArc puls

Efficient and cost-effective welding.

Low-heat, directionally stable and powerful arc with deep penetration for the upper power range. Un, low and high-alloy steels as well as fine-grained steel.

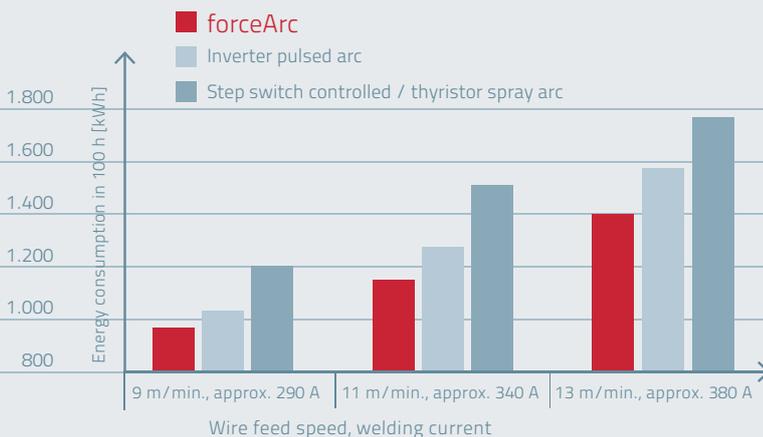
- Cost savings thanks to reduced weld volume
- Lower electricity costs
- Less spatter means less finishing work
- Highly dynamic current control produces a directionally stable arc with great force and great penetration depth with fewer undercuts
- Fewer harmful emissions thanks to reduced welding fumes



### Up to 60% Total Cost Savings

when comparing forceArc vs. standard spray arc.

\*) TWI test results



◀ Save electricity costs by using ewm technology: the forceArc process saves approx. 4 kW compared with conventional welding machines at the same deposition rate of 13.0 m/min (1.2 mm; G3Si1)

Less finishing work, greater profitability –  
aluminium welding with pulsed arc and  
superPuls



## Sustainability thanks to Fast, Safe, Clean and Flexible **ewm Welding Processes.**

HEESEN YACHTS, THE NETHERLANDS,  
SHIPBUILDING





## pipeSolution

TIG reliability at MAG speed

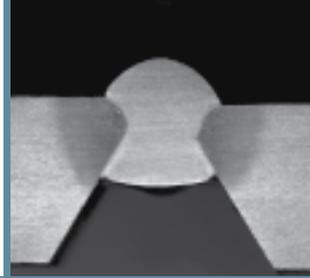
Powerful arc for rapid welding in every position, with and without gap.

- Totally reliable root welding in any position
- High arc force for good root formation
- Minimised spatter formation means less finishing work

## Further benefits of ewm welding processes:

### Up to 400% faster

when comparing pipeSolution vs. manual MMA/TIG welding.



## rootArc/rootArc puls

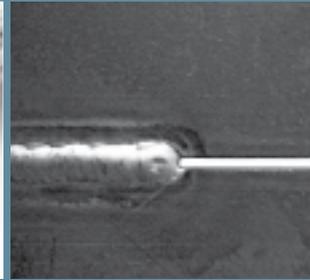
Arc with perfect weld pool control

**rootArc:** Short arc with easy weld modelling capabilities for effortless gap bridging and positional welding.  
**rootArc puls:** The perfect enhancement for focused heat input for higher performance ranges.

- Good root formation and secure sidewall fusion
- Less spatter compared to standard short arc

## Simple and 100% secure

The new, low-spatter short arc.



## pulse

Less finishing work, greater profitability

Professional welding of chromium-nickel steel, aluminium and copper.

- Very low spatter process (fewer corrosion contact points)
- Welding in transitional area between short and spray arc
- Flat, smooth and notch-free welds, reduced pore susceptibility

## 100% welds

Clean seams from the start – no finishing work.



## superPuls

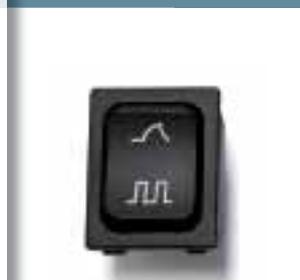
More possibilities when welding

Ideal for vertical-up welds and aluminium visible welds, perfect for transitional arcs.

- Excellent welding in the vertical-up position (PF) without weaving by automatically switching between coldArc/rootArc/pulse
- Secure root base formation, effective filling with pulse
- Good weld appearance of aluminium visible welds

## Flexible welding

using a combination of ewm welding processes.



“We all protect the **environment and save costs.**  
 Because we profit from innovative ewm  
 welding processes such as coldArc®, forceArc®  
 and pipeSolution®.”



SASCHA WILDE  
 /// WELDING SUPERVISOR  
 /// LIEBHERR WERK EHINGEN GMBH

“forceArc® has met our expectations for process reliability, in contrast to the conventional MAG process. We now work more productively and with the accustomed top quality.”



STEPHAN GUHDE  
 QUALIFIED WELDING ENGINEER (EWE)  
 /// TECHNICAL DIRECTOR  
 /// WEIHE GMBH

“With coldArc®, we save substantially: we don't have to make any bevels in advance nor operate with weld pool backing, and we need less shielding gas, energy and welding consumables.”



HARALD NIRMAIER  
 /// MANAGING DIRECTOR  
 /// VOITH INDUSTRIAL SERVICES GMBH

“With pipeSolution® we weld the roots in just one operation – and are now four times quicker than before. We trust ewm.”

## Because welding connects.

In addition to our sustainable portfolio of products and services, our customers also value the reliable, personal and energy-saving collaboration with our company – with dedicated contacts, professional advice and competent service direct from the factory. This means they are able to conserve energy in every respect.



DIPL.-ING. (FH)/IWE PHILIPP BRENNER  
 /// INTERNATIONAL WELDING ENGINEER  
 /// ANDRITZ HYDRO GMBH

“With forceArc® we achieve reliable root penetration from one side, without gouging the back root. This way we save time and material – perfect!”



DIPL.-ING. (BA)/EWE RICHARD BEITINGER  
 /// PRODUCTION MANAGER  
 /// SIEMENS AG

“With forceArc®, we need significantly less preparation work and, thanks the reduced heat, avoid welding distortion. The welding times, too, have been cut substantially.”

# ConserveEnergy.

Sustainability thanks to  
Long-term Customer Relationships.

You'll really be able to conserve energy with ewm. Not only because you'll cut down on energy use and thus contribute to the sustainable management of the world's resources, but also because you'll benefit from the economic advantages of using sustainable ewm BlueEvolution technologies. You'll weld much more easily, faster and with even more successful results – and save energy, materials, time and money in doing so.



## Locations worldwide

Production, sales, service – your one-stop global provider: ewm is Germany's largest welding machine manufacturer and a world leader in welding technology. With an extensive global presence for the benefit of customers everywhere.

## Research and Development

The backbone of ewm is the technology and innovation centre with its large team of dedicated developers, whose biggest motivation is the success of customers. The result is highly innovative welding technology that is efficient and cost-effective, guaranteeing competitive advantages.

## German engineering

As one of Germany's leading manufacturers of welding technology, ewm provides the very highest quality right from the start. This applies not only to products and technologies, but also to maintenance and service. Guarantees of up to five years are proof of this – as are the components that are all "Made in Germany".

### Which machine for which process?

The table below shows which machine is the most suitable for your requirements. More products at [www.ewm-group.com](http://www.ewm-group.com)



	alpha Q	Phoenix	Taurus Synergic
MIG/MAG	forceArc / forceArc puls	✓ / ✓	✓ / ✓
	coldArc / coldArc puls	✓ / ✓	- / -
	rootArc / rootArc puls	✓ / ✓	✓ / ✓
	pipeSolution	✓	-
	pulse	✓	✓
	superPuls	✓	✓
	Standard short arc	✓	✓
	Standard spray arc	✓	✓
MMA	✓	✓	✓
TIG (Lift arc)	✓	✓	✓
Gouging	✓	✓	✓

More on sustainability at [www.blueevolution.info](http://www.blueevolution.info)



Visit us!

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Sales / Consultancy / Service