

# acArc puls – a revolution for aluminium welding

Titan XQ 400 AC puls



# EWM acArc puls XQ – perfectly clean weld seams

With the AC welding process of the new Titan XQ 400 AC puls, MIG aluminium welding becomes even easier in both manual and automated sectors. Clean weld seams without residues of smoke on thin sheets, even with AlMg alloys, are possible with MIG-AC.

With the **acArc puls XQ** process, the polarity switches between positive (pulse) and negative in the process, with the heat shifting from the material to the welding consumable. As such, air gaps are effectively bridged and welding fume emissions reduced.

## Advantages

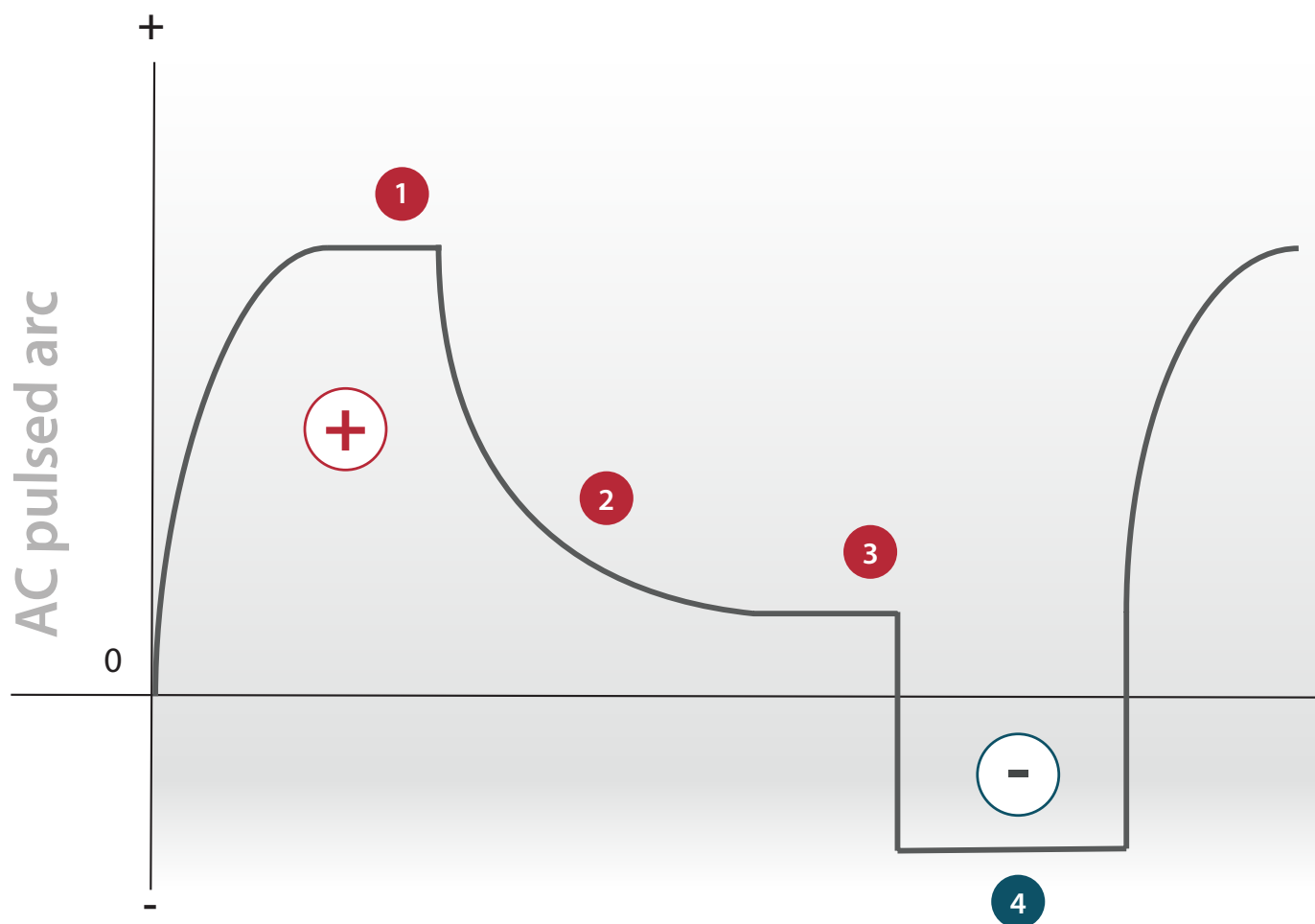
- Perfect aluminium welding, even with thin sheets
- Very good ignition characteristics
- Excellent gap bridging, even with automated applications
- Minimised heat input
- Higher welding speed
- Simple and safe handling of the arc for manual and automated welding
- Well suited for additive welding with aluminium (3D welding)
- Clean weld seams due to heavily reduced magnesium oxide
- Lower welding fume emissions
- Fast digital current regulation with **EWM RCC technology** (Rapid Current Control)



The established EWM DC welding processes are, as with all Titan XQ models, included in the machine at no extra cost.

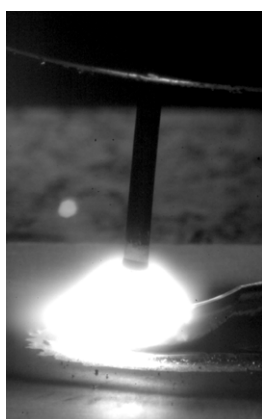
- **rootArc XQ/rootArc puls XQ** – perfect root welding, perfect gap bridging
- **coldArc XQ/coldArc puls XQ** – minimises heat for thin sheet welding
- **forceArc XQ/forceArc puls XQ** – heat-reduced, directionally stable high-performance arc with deep penetration
- **wiredArc XQ/wiredArc puls XQ** – heat-reduced, directionally stable high-performance arc with penetration stabilisation for changing stick-out
- **Positionweld** – for simple and perfect positional welding
- **Pulse XQ and Standard XQ**
- **TIG and MMA welding, gouging**





**+ Positive phase**

1



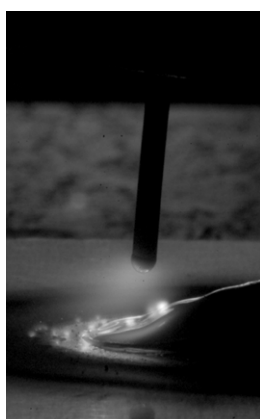
Droplet formation in the pulse phase

2



Droplet detachment after the pulse phase

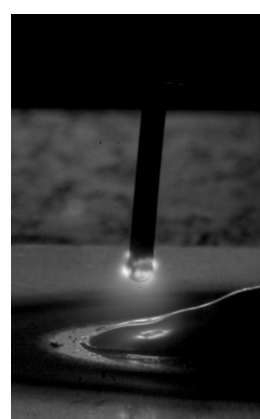
3



Basic current phase

**- Negative phase**

4



Cleaning and preheating of the wire in the negative phase

# Weld seams, as pure as diamonds

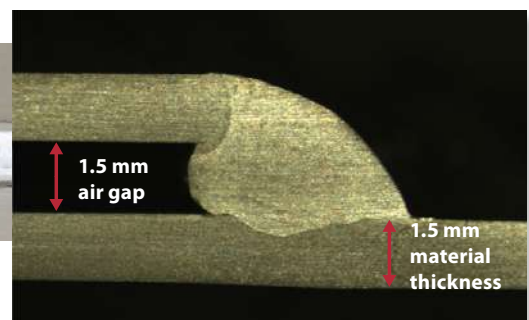
## acArc puls XQ – perfect for AC aluminium welding of lap welds

acArc puls XQ is the optimal arc for aluminium welding with thin sheets. The easy-to-control arc is brilliantly suited to both manual and automated welding. Through the reduction in welding fume emissions, the welder is not as loaded and the weld seam remains clean – as pure as a diamond.



### Advantages

- Clean weld seams due to heavily reduced magnesium oxide thanks to the lower droplet temperature
- Lower welding fume emissions
- Stable arc, even with large air gap
- Reduced heat input into the sheet



Lap weld:  
Material thickness 1.5 mm | 1.2 mm AlMg 4.5 wire | Argon 100% |  
69 A | 15.4 V | Welding speed 70 cm/min. | Air gap 1.5 mm

### Advantages

- Perfect aluminium welding, even with thin sheets
- Excellent gap bridging, even with automated applications
- Minimised heat input, no fall-through of the sheet

## acArc puls XQ – perfect for AC aluminium welding of fillet welds

With acArc puls XQ, you can weld with sheets with just 1.0 mm material thickness – even manually – thanks to the low heat input, without falling through.



Fillet weld:  
Material thickness 1.0 mm |  
1.2 mm AlMg 4.5 wire | Argon 100% | 48 A |  
14.1 V | Welding speed 60 cm/min.

### Advantages

- Minimised heat input
- Higher welding speed
- Simple and safe handling of the arc for manual and automated welding
- Clean weld seams due to heavily reduced magnesium oxide
- Lower welding fume emissions

## acArc puls XQ + Positionweld – for the perfect TIG look

With Positionweld, make MIG weld seams with a perfect TIG look. Even positional welding is really easy with Positionweld.



Fillet weld:  
Material thickness 2 mm | 1.2 mm AlMg 4.5 wire |  
Argon 100% | 73 A | 15.4 V | Welding speed 45 cm/min.

### Advantages

- MIG welding with a TIG look
- Simplified positional welding
- Excellent at joining different material thicknesses

# Titan XQ 400 AC puls – acArc puls XQ for aluminium welding

In the new Titan XQ 400 AC puls, the new AC welding process **acArc puls XQ** and all DC welding processes are included in the machine – and at no extra cost. In this way, EWM is revolutionising MIG-AC aluminium welding. The Titan XQ 400 AC puls is fitted with Expert 2.0 XQ control and water cooling. With many

options and extensive accessories, every user can adapt the machine to themselves and their area of application. Only one thing remains the same: optimum quality, high duty cycle and subsequently long service life, excellent welding properties and intuitive operation.

all in

**All AC and established DC-MIG/MAG processes are included in the machine at no extra cost!**

With the new **RCC inverter technology**, the welding features of the Titan XQ puls have been significantly improved in all welding processes.

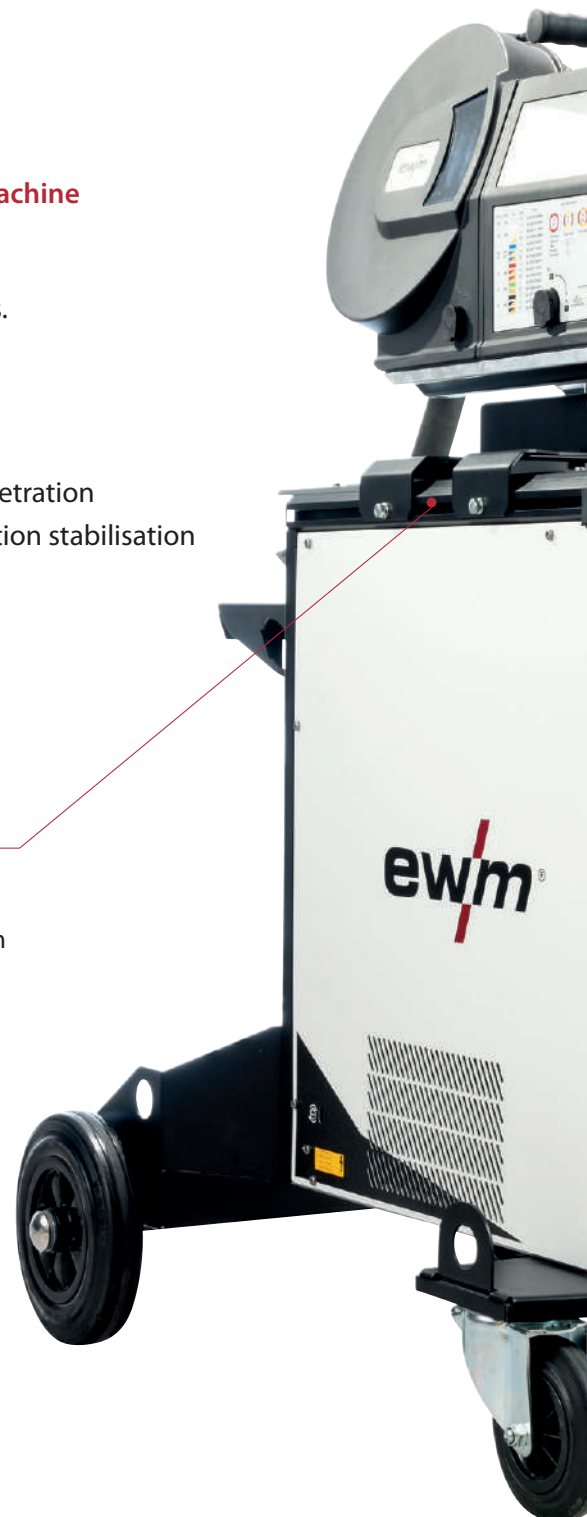
- **New! acArc puls XQ** – ideal for aluminium welding with thin sheets
- **rootArc XQ/rootArc puls XQ** – for perfect root welding
- **coldArc XQ/coldArc puls XQ** – minimises heat for thin sheet welding
- **forceArc XQ/forceArc puls XQ** – high-performance arc with deep penetration
- **wiredArc XQ/wiredArc puls XQ** – high-performance arc with penetration stabilisation thanks to dynamic wire control
- **Positionweld** – for positional welding
- **Pulse XQ and Standard XQ**
- **TIG and MMA welding, gouging**

**flexFit casing system with numerous mounting options – organisation is half the welding**

- Intermediate hose package holder, wire feeder cross arms – you name it: a large number of individually-used accessories and options can be secured to the continuous-cast aluminium profile of the top cross member of the casing by means of handy slot nuts

**EWM intermediate hose packages – the highest standards of quality for a long service life**

- Industrial-quality plug
- Highly flexible control and welding cables for handling high bending and torsional stress
- Fabric-sheathed hoses for high pressure and temperature loads
- Diffusion-proof gas hoses in accordance with EN 559
- Heavy-duty protective hose casings
- Strain relief on both ends
- Quick replacement – all connections are accessible from the outside





### Drive XQ – brings all functions to the workplace

- Expert XQ 2.0 with plain text display for welding parameters and functions

### Protective cap – doesn't give dirt a chance

- Protects the entire control system against contamination and knocks
- Easy opening of the protective cap, even with gloves, thanks to its ergonomically shaped gripping surface

### Option: Rotatable wire feeder

### Handle – very practical

- Ergonomic design
- For effortless gripping even with gloves and safe movement of the machine
- The workpiece lead or torch hose package can be hung from the overhang in a practical and neat way
- Option to attach a torch holder to either handle as desired to suit right and left-handed people (optional)

### Handlebar

- Robust continuous-cast aluminium pipe with ergonomic rounded back and diameter within a comfortable grasping distance for easy movement of the welding machine
- Flexible when in use thanks to the flexFit system on the underside for carrying accessories and options using slot nuts

### LED status bar

- Indicates the current operating status in colour



### Connection panel

- Connections on the front and back angled slightly downward prevent kinking of the connected cables
- All cable connections can easily be made without tools

# Drive XQ wire feeder – ease and precision

Whether on uneven scaffolding, on difficult-to-access work positions or large components – the flexible Drive XQ wire feeder is an agreeable companion. Only 13 kg (without wire spool) to carry with the ergonomically balanced handle – even through

a manhole if necessary. The high-precision wire feeding with four rolls guarantees constant welding results, saves aggravation and pays off – a long service life is assured, even when used in tough three-shift operating conditions.

## Wire spool cap – protective dust cap with inspection window

- Dust-proof wire spool cap
- Inspection window indicates level of wire spool
- Simple and convenient spool change
- Fully insulated wire space

## Locking system – always reliable

- Cover caps stay closed even under the most demanding conditions

## Equipment – sophisticated design

- Tool-free changing of intermediate hose packages
- No need for interference in the electric area due to the externally accessible connections
- Tension-relieved hose package with strap and turnbuckle
- Protected hose package connections



## Optional



### DGC – electronic gas flow control saves for you

- No gas blast with turbulence when igniting the arc as electrical valve opens and closes gently
- Efficiency through gas savings thanks to accurate settings
- Prevents welding errors caused by too much or too little gas
- Precise, digitally adjustable gas quantity
- Suitable gas quantity for the respective welding task (JOB) optimally set at the factory
- Exact quantity of gas depending on shielding gas automatic without any conversion for argon, argon mixed gas, CO<sub>2</sub>, helium
- Welding stop when dropping below the critical quantity of gas (shielding gas cylinder empty or gas supply interrupted)
- Calculation made easier due to recording of the exact gas consumption in combination with ewm Xnet 2.0 software (optional)

### Wire feeding – precise and practical

- Four driven wire feed rolls
- Automatic wire inching saves time
- Simple, tool-free roll change
- Captive roll fasteners
- Equipped with Ø 1.2 mm U-groove rolls (red/yellow) for aluminium ex works



Drive rolls with U-groove are available for Ø 0.9–1.0/1.2/1.6/2.0/2.4 mm



### Useful functions for everyday use

- Key switch – for locking the control protection against operator error
- Changeover switch program or up/down mode

### Interior lighting – for roll change

- Easy changing of wire and simple operation, even in poor lighting

### Wire inching push-button

- Automatic wire stop on contact

### Gas test push-button

### Connections – stable and protected

- Recessed Euro torch and water connector
- Impact protection due to protruding plastic edge

### flexFit casing system – robust and variable

- Solid base made from continuously cast aluminium
- Mounting options for sliding rails, rubber feet, wheel kit, etc.



### WHS – wire spool heater, the new dry period

- Pre-heating prevents moisture accumulating on the welding wire
- Controlled temperature to 40 °C
- Reduced risk of hydrogen pores



### WRS – wire reserve sensor, no unexpected occurrences during welding

- Warns when the wire spool is at 10% residual quantity using control lamp
- Minimises the risk of weld defects as a result of the wire running out during the welding process
- Forward-looking production planning reduces non-productive times and thus production costs as a new wire spool can be inserted in good time

# Expert XQ 2.0 control – with intuitive operation

The Expert XQ 2.0 control shows what the machine offers. The user only needs to choose by click-wheel: welding procedure, material gas, wire diameter. The appropriate characteristic for the welding task (JOB) is immediately shown on the robust and easy-to-read LCD display and it's ready to go – for more fun through efficient work.

## LCD display – everything at a glance

- Plain text display for welding parameters and functions
- Easy to read through a welding helmet
- Good contrast even with reflected light thanks to anti-reflective surface

## Display screen – tough performer

- Scratch-proof protective display screen made of acrylic glass with hard coating
- Always easy to read – no signs of wear, unlike touchscreens, for example
- 3 mm-thick protective acrylic glass washer protects the LCD display from damage

## Control – logical due to being needs-oriented

- Membrane keyboard is clear, intuitive and resistant against dust, dirt and moisture
- Quicker to change between levels due to needs-oriented operation



## USB connection – for new tasks

- Offline documentation of welding data
- Update of characteristics
- Software update

## Process change

- Quicker to change between welding procedures:
  - acArc puls XQ
  - forceArc XQ/forceArc puls XQ
  - wiredArc XQ/wiredArc puls XQ
  - rootArc XQ/rootArc puls XQ
  - coldArc XQ/coldArc puls XQ
  - Positionweld
  - Pulse XQ and Standard XQ

## Xbutton – the key for welding

- Individual access rights and menu adaptation

## Click wheel operation – turn, press, finished

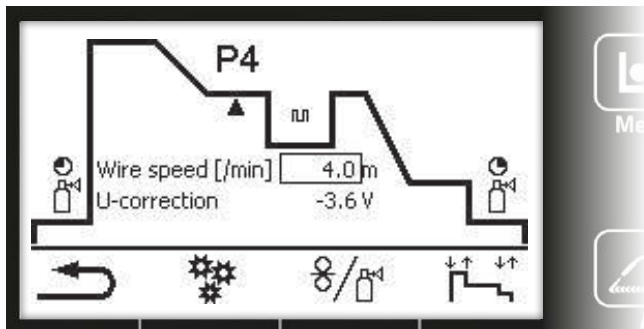
- Direct access for all essential welding parameters through intuitive operating concept with click wheel function

## Language selection – more languages than some professors

- Pre-configured languages for the user menu: German, English, French, Italian, Dutch, Polish, Danish, Latvian, Russian, Spanish, Czech, Swedish, Portuguese, Turkish, Hungarian, Romanian

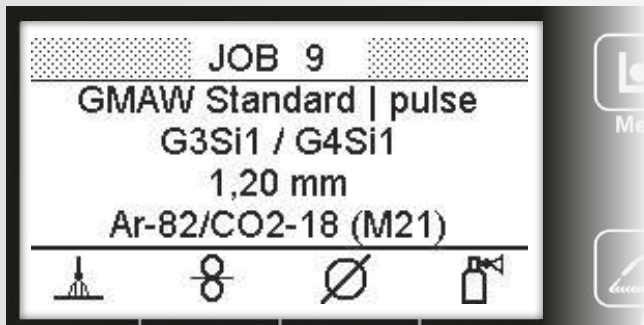


## Optional display of values in national or international units (mm/inch)



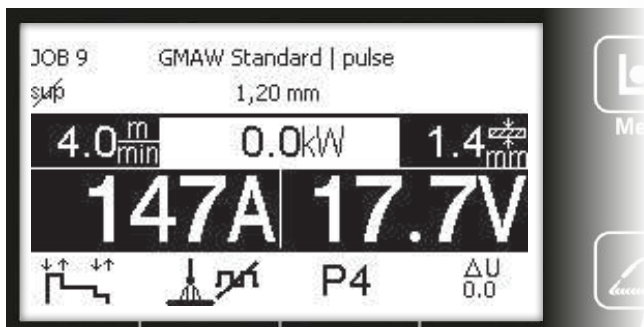
### Welding program sequence – lots of steps at a glance

- Simple configuration of all welding parameters in program sequence, such as starting current and end-crater current



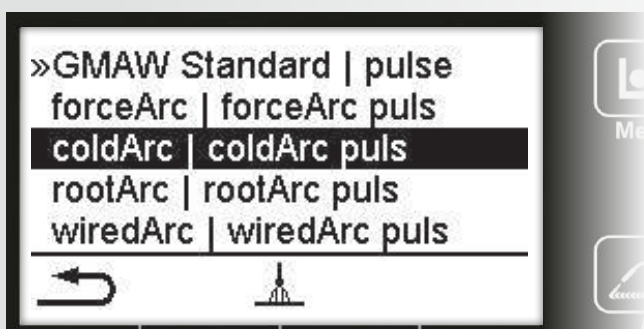
### JOB window – which welding task would you like?

- Simple JOB selection for characteristics via click wheel
  - Welding procedure
  - Material type
  - Gas type
  - Wire diameter



### Welding parameter – everything has its value

- Display of the effective arc power for easy calculation of energy per unit length
- Nominal, actual and hold values
- Operating modes
- Status messages



### Quick switching between MIG/MAG welding processes – the optimum for each welding task

- acArc puls XQ – ideal for aluminium welding with thin sheets
- rootArc XQ/rootArc puls XQ – for perfect root welding
- coldArc XQ/coldArc puls XQ – minimises heat for thin sheet welding
- forceArc XQ/forceArc puls XQ – high-performance arc with deep penetration
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- Positionweld – for positional welding
- Pulse XQ and Standard XQ

# PM 551 W ALU welding torch – for consistent welding results

A system that connects everything: from the power source and the innovative acArc puls XQ welding process, to the wire feeder and welding torch. At EWM, all components are tailored to each other. The result: better and easier welding.



**Power source**  
Titan XQ 400 AC puls  
with acArc puls XQ

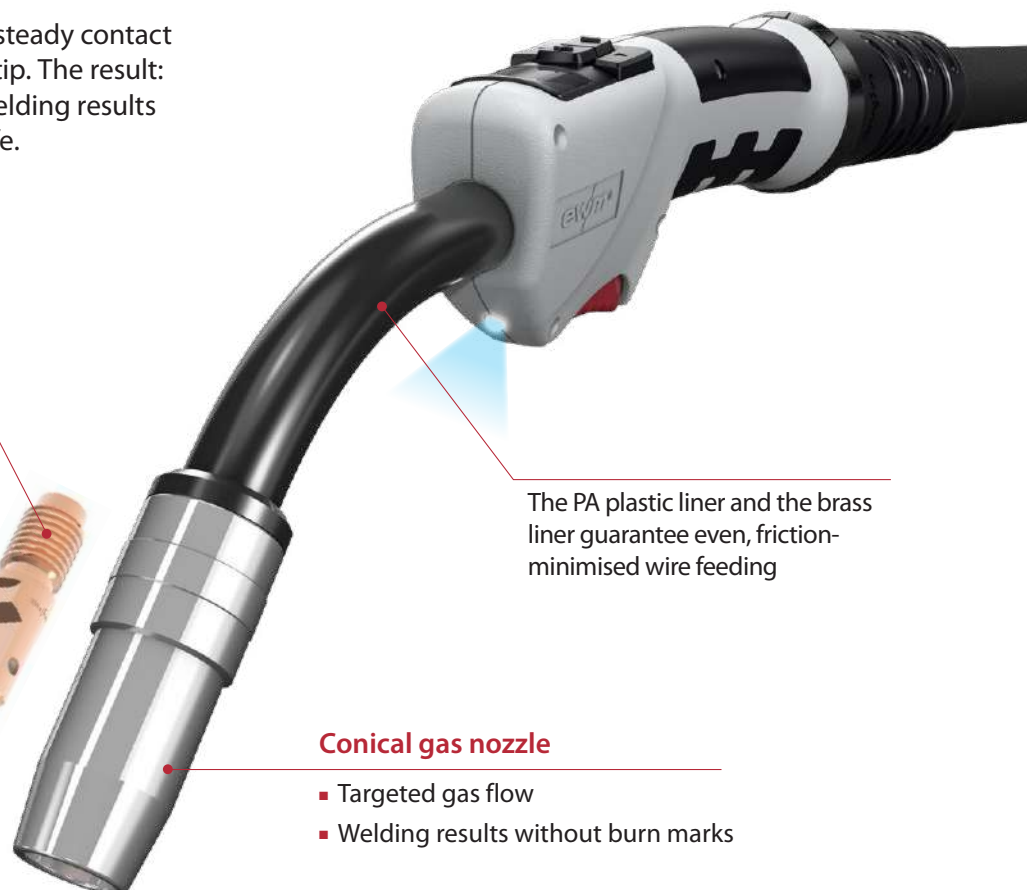
**Wire feeder**  
Drive XQ AC

**Welding torch**  
PM 551 W Alu

The forced-contact tip guarantees steady contact between the wire and the contact tip. The result: high arc stability with consistent welding results and a significantly longer service life.

## Forced-contact tip

- Copper/chrome/zirconium alloy
- Significantly longer service life
- Self-centring with bore to house the steel/plastic liner



The PA plastic liner and the brass liner guarantee even, friction-minimised wire feeding

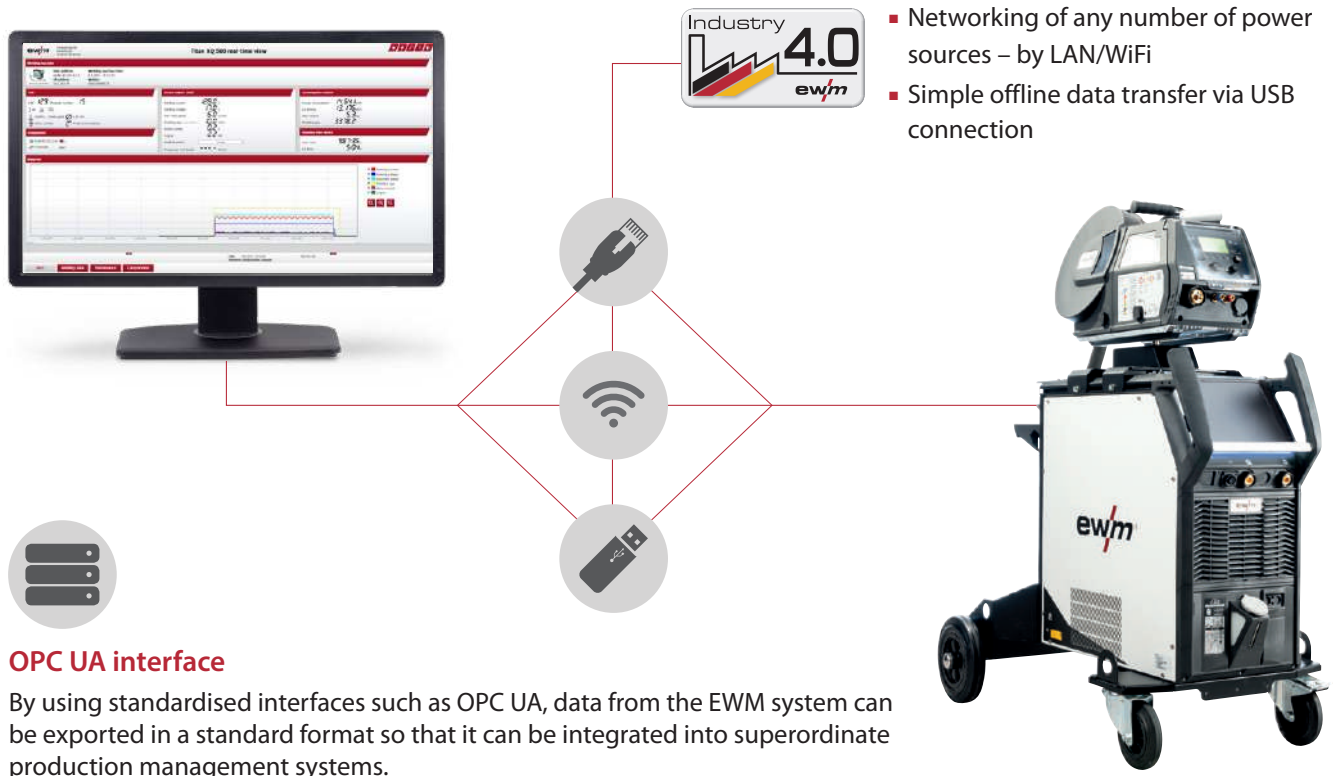
## Conical gas nozzle

- Targeted gas flow
- Welding results without burn marks

# Welding 4.0 – ewm Xnet 2.0 welding management system

Industry 4.0 is now becoming established in welding production thanks to ewm Xnet 2.0, the new and innovative Welding 4.0 welding management system. The advantages are obvious: improved networking of products and people improves efficiency and quality, reduces costs and saves

resources at the same time. Intelligent monitoring and transparent processes from planning to production and final costing of weld seams keep you informed at all times. ewm Xnet 2.0 provides the advantages of Industry 4.0 for welding operations of any size and specialisation.



## OPC UA interface

By using standardised interfaces such as OPC UA, data from the EWM system can be exported in a standard format so that it can be integrated into superordinate production management systems.

## Modules and components

- Starter set – record and manage welding data and transmit consumption values in real time
- Upgrade 1 – WPOX Manager – create, manage and assign welding procedure specifications to welders
- Upgrade 2 – component management – manage components, create welding sequence plans, assign WPS
- Upgrade 3 – project planning for complex welding tasks
- Xbutton – access rights and WPS allocation for the welder using the robust hardware key

## Advantages

- Record welding data
- Centralised saving, viewing and analysing
- Online monitoring – control and monitor the welding process for any number of welding machines from any number of computer workstations
- Transfer data to all welding machines in the network
- Analyse, evaluate, report and document logged welding parameters online for each networked welding machine using different documentation and analysis tools
- Convenient, easy-to-create graphic display of all network participants based on the floor plan, can be enlarged by zooming, navigation window and much more

# Technical data



## Titan XQ 400 AC puls

Setting range for welding current	5 A–400 A
Duty cycle welding current at ambient temperature of 40 °C	
100%	370 A
80%	<b>400 A</b>
Mains voltage 50 Hz/60 Hz	3 x 400 V (–25% to +20%) to 3 x 500 V (–25% to +10%)
Mains fuse (slow-blow)	3 x 25 A
Efficiency	88%
cos φ	0.99
Open circuit voltage at 3 x 400 V mains voltage	82 V
max. connected load	18.6 kVA
Rec. generator rating	25 kVA
Protection classification	IP 23
EMC class	A
Ambient temperature	–25 °C to +40 °C
Machine cooling	Fan
Torch cooling	Water
Coolant water tank	8 L
Safety identification	/
Standards	IEC 60974-1, -2, -10
Dimensions L x H x W	1152 x 976 x 686 mm 45.3 x 38.4 x 27 inch
Machine weight, water-cooled	128 kg/282.19 lb



# 80% DC



## Drive XQ

Duty cycle welding current  
at ambient temperature of 40 °C

100% DC 470 A

40% DC 600 A

Wire feed speed 0.5 m/min. to 25 m/min.

Factory-installed roll equipment 1.2 mm U-groove drive rolls (for aluminium wire)

Drive 4 rolls (37 mm)

Torch connector Euro torch connector

Readiness for use in manholes Complete,  
42 cm and above (oval)

Wire spool diameter Standardised wire spools of 200  
to 300 mm

Protection classification IP 23

EMC class A

Ambient temperature -25 °C to +40 °C

Safety signs **CE**

Standards IEC 60974-1, -5, -10

Dimensions L x H x W 660 x 380 x 280 mm  
26 x 15 x 11 inch

Weight 13 kg  
28.66 lb

MIG-AC



MIG/MAG



TIG



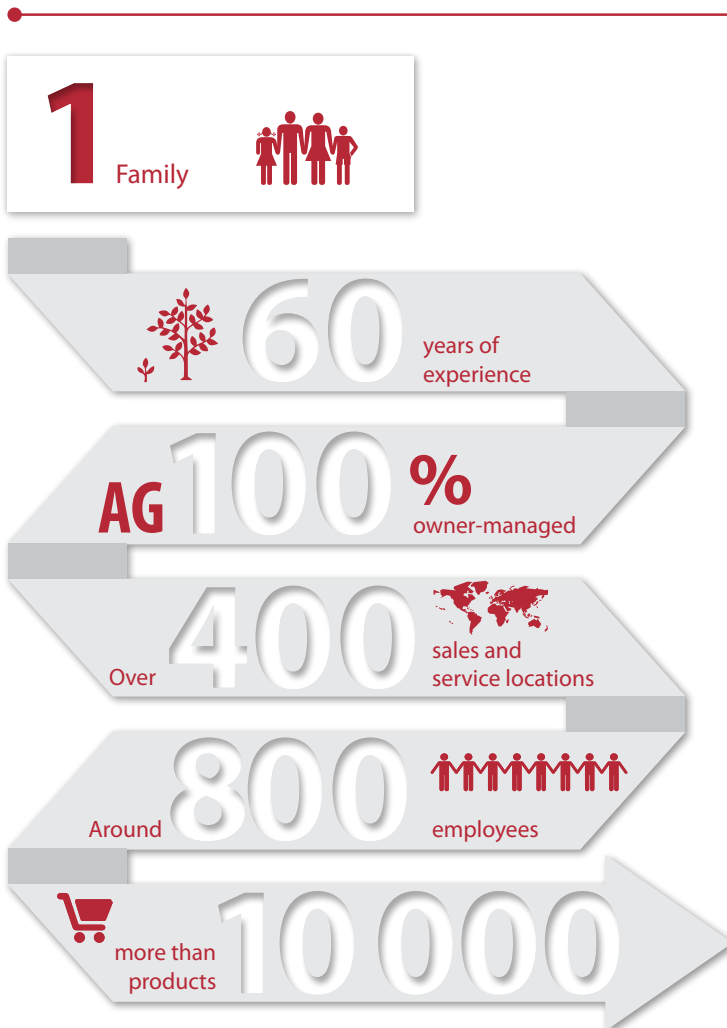
MMA



Gouging torch




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## Quality from Germany

EWM AG is Germany's largest and one of the most important world-wide manufacturers of arc welding technology and a major driving force in welding technology.

The family-run company from Mündersbach has been living its motto "WE ARE WELDING" for over 60 years with forward-looking, well thought-out and sustainable complete solutions, designed with a large helping of passion for industrial clients, as well as skilled craft businesses.

1 Partner for all your welding technology needs 

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