



WE ARE WELDING

# Welding 4.0 – Multi-process MIG/MAG welding machine

Titan XQ puls | Titan XQ puls compact



**3 Years**  **5 Years**  
transformer  
and rectifier  
**ewm-warranty\***  
3 shifts / 24 hours / 7 days

\*For details visit [www.ewm-group.com](http://www.ewm-group.com)

[www.ewm-group.com](http://www.ewm-group.com)

## Allow us to introduce: Titan XQ puls Welding 4.0 – the future of welding

### Conquer the new dimension - welcome to the world of welding 4.0 by EWM.

The future of professional welding is networked, digital and paperless. These are the challenges of "Industry 4.0" and every company must face these sooner or later. The EWM group delivers welding companies the ideal

solution with the new Titan XQ puls multiprocess MIG/MAG welding machine and the Welding 4.0 welding management system ewm Xnet 2.0 first-class future-proofability, for even more efficient, qualitative-certifiable welding.

All innovative welding procedures and characteristics are included in the purchase price of the welding machine.

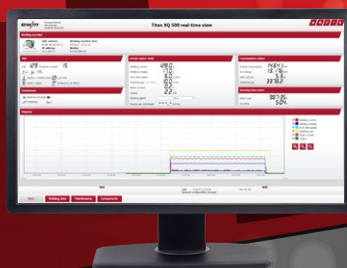
- Welding consistently at the highest levels of quality and efficiency, as all innovative welding processes from EWM are available as standard

all in

Display WPS and welding data via mobile device  
view tells you everything

- Easy parameter control directly in the welder's workplace thanks to availability of all current welding data

Welding 4.0 – ewm Xnet 2.0 welding  
management system



# Titan XQ

## Create paperless WPS – assign WPS to component parts and welders

- Efficiently create WPS and conveniently assign from the office according to quality assurance

ewm		Welding procedure specification (WPS)		WPS No.	Rev.	Page 1 - 1
				200		
Manufacturer		S 1000 A3		Joint		Butt joint
Steel		S235JR		Weld seam details		One-sided without backing bar
CEN		EN 10025-2		Type of preparation and cleaning		None
WPS No.		01-100-044-1-200008-001-12		Working on the test plate		None
Factor or test authority		-testlab		Parent metal specification 1		S 235 JR
				Parent metal specification 2		S 235 JR
				Material thickness 1 [mm]		10
				Material thickness 2 [mm]		10
				Outer diameter [mm]		0
				Welding position		PA
				Component geometry		Plate/plate
Weld preparation		Welding sequence				

## Component management for efficient manufacturing – step-by-step to perfection

- Minimised risk of welding defects thanks to convenient and component-based allocation of WPS for each individual run/seam



## PM welding torch with graphic display – information directly on the workpiece

- Conveniently save time reading and acknowledging the current welding task according to the welding sequence plan via welding torch on the workpiece



## System overview

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- Versions
  - Titan 350 XQ puls 350 A (100% DC)
  - Titan 400 XQ puls 400 A (80% DC)
  - Titan 500 XQ puls 500 A (80% DC)
  - Titan 600 XQ puls 600 A (40% DC)
- Gas or water cooled
- With separate wire feeder
- Compact with integrated wire feed drive eFeed



#### Titan Drive XQ wire feeder

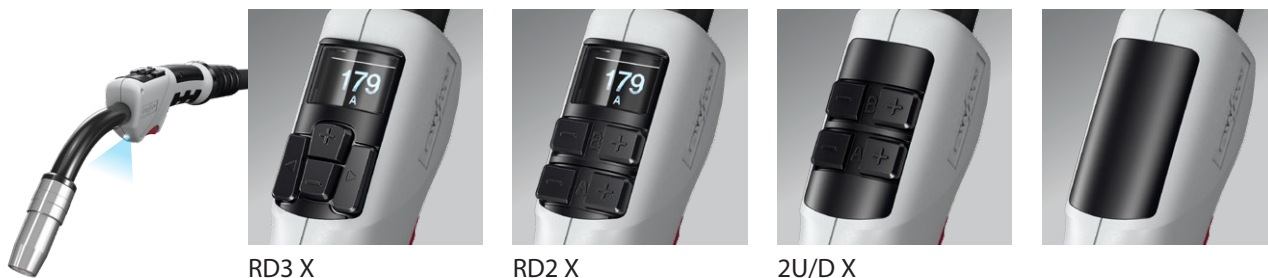
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#### PM welding torches

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Standard and function torch with and without graphic display and LED illumination of the join area



RD3 X

RD2 X

2U/D X

## Contents

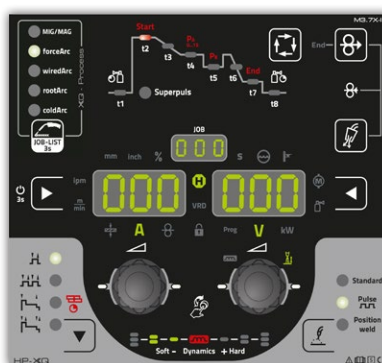
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### Practical, phased operation concept

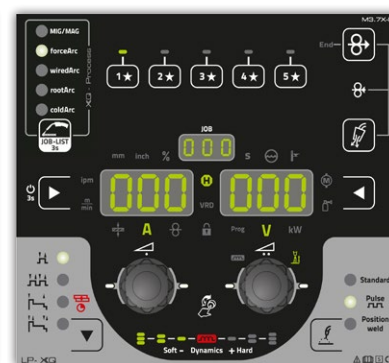
24-33



Expert XQ 2.0



HP-XQ



LP-XQ

### Innovative welding processes

34-55

The optimum arc for every application

MIG/MAG:

- **forceArc XQ / forceArc puls XQ** – high-performance arc with deep penetration
- **wiredArc XQ / wiredArc puls XQ** – high-performance arc with penetration stabilisation through dynamic wire feeding
- **rootArc XQ / rootArc puls XQ** – for perfect root welding
- **coldArc XQ / coldArc puls XQ** – minimises heat for thin metal sheet welding
- **Positionweld** – for positional welding
- **Pulsed XQ and standard XQ arc**

TIG and MMA welding, gouging

### Welding 4.0 – ewm Xnet 2.0 welding management system

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### Options, accessories

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### Technical data

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## Titan XQ puls – A perfect series

### Wishful thinking becomes reality

Maximum operating convenience, long service life and all pulse, standard and innovative welding processes optimised and included in the machine at no extra charge. The members of the Titan XQ family are taking a quantum leap in welding technology. Here, perfect weld seams are already pre-programmed for low- and high-alloy steels and aluminium in all material thicknesses and all positions.

Thanks to the many options and accessories for the Titan XQ puls series, you can put together your machine in the way that best suits you, your needs and your applications. An exceptionally long duty cycle of 100% at up to 350 A, for example, makes for effective working. Perfect welding becomes sustainable – 24 hours a day, 7 days a week.



**Titan XQ puls compact**



**Titan XQ puls**



**Titan XQ puls  
double wire feeder**

**all in**

#### **All MIG/MAG processes included in the machine at no extra charge!**

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

- **rootArc XQ/rootArc puls XQ** – for perfect root welding
- **coldArc XQ/coldArc puls XQ** – minimises heat for thin metal 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
- **Pulsed XQ and standard XQ arc**
- **TIG and MMA welding, gouging**

# Titan XQ puls compact – with integrated eFeed wire feeder

## Consistently perfect results

The Titan XQ puls compact, with its 350 A and 400 A models is ideal for welding booths, trade and training. In conjunction with the optional miniDrive intermediate drive, the action radius can be expanded to up to 30 m. Using our welding torch models with control function, you can operate the Titan XQ puls compact quite

conveniently from your workplace. The integrated eFeed wire feeder increases operating convenience for every user and optimises results. Precise wire feeding has a positive effect on welding features and ensures optimal results.

### Control

- Users may select from three controls:
  - HP-XQ
  - LP-XQ
  - Expert XQ 2.0, also with LAN/Wi-Fi gateway
- More details from page 24

### LED status bar

- Indicates the current operating status in colour



### Connection panel

- Easy manual switching of the polarity without tools

### Euro torch connector

- Global standard
- Thanks to digital X technology Remote control of the function torch without a control cable

### Torch cooling

- Can be gas cooled or water cooled
- High cooling capacity of 1,500 W, powerful centrifugal pump and 8-litre water tank

### Wire feeding – precise and practical

- Four driven wire feed rolls
- Automatic wire inching saves time
- Simple, tool-free roll change
- Permanently secured roll fastener

More details from page 17

### Wire spool diameter D200/300

- Thanks to interior lighting, changing wires and operating the machine is easy even where lighting conditions are poor

Optional



**WHS – wire spool heater**



**WRS – wire reserve sensor**

More details from page 17

## Titan XQ puls – For even greater flexibility

### Ideal for demanding jobs

If you are working on large components or in hard-to-reach areas, the Titan XQ puls is the right welding machine for you. Its mobile wire feeder with integrated control gives you greater flexibility in application and range.

With their wide range of options and accessories for the Drive XQ wire feeder, the models for 350 A, 400 A, 500 A and 600 A (whether gas or water cooled) can be adapted to any special or exceptional requirements you may have.

This includes, for example, a wheel kit with large wheels, the heavy-duty set with a protective plate and stable crane suspension for even greater freedom of movement.

#### The 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
- More detailed information from page 62

#### 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 handling 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 changing – all connections are accessible from the outside





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

- Wire feeder, available in three practical, phased control variants
- More detailed information from page 16

### 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

### Very practical handle

- 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

- Rugged, 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

### Connection panel

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

## Can be individually configured exactly to your needs

Customised design: with or without gas cylinder holder for one or two cylinders, mains cable length up to 15 m, versions for two wire feeders and more.

### Option of two wire feeders – change welding tasks with no set-up time

- Effortlessly change between two different wires and shielding gases, e.g. for welding solid and flux cored wires

### Safe crane transportation – levitation made easy

- 4 rugged mounts (40 mm dia.) for easy hook-in or through connection of the crane harness



### Large wheels to overcome obstacles

- Generous 250 mm diameter means that the machine can be easily moved and effortlessly overcome obstacles such as cables or thresholds
- Large track widths ensure stability, even on inclinations of up to 15°

### Guide castors – reach your target

- Above-average 160 mm diameter makes moving, steering and overcoming obstacles easy
- Features parking brake to prevent rolling away, even on slopes





### Gas cylinder holder on top – for a secure hold

- For single or double cylinders (optional)
- Quick and easy securing of the shielding gas cylinder using straps with turnbuckles
- Secure strain relief for intermediate hose packages using holders



Strain relief for intermediate hose package



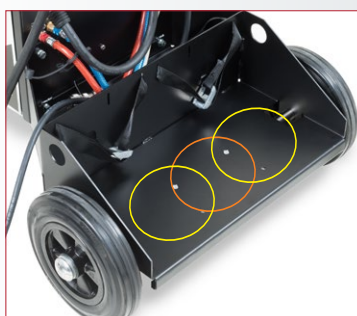
Gas cylinder holder for one shielding gas cylinder



Two shielding gas cylinders

### Gas cylinder holder at the bottom – a good position

- For single or double cylinders as standard
- Easy placement of the shielding gas cylinder thanks to the low, flat loading edge of the cylinder cart



### Torch cooling – large volume for great performance

- Excellent torch cooling reduces costs through lower consumption of torch consumables
- High cooling capacity of 1,500 W, high-performance centrifugal pump and 8-litre water tank
- More detailed information from page 14

## An inverter power source that doesn't even dry up in the desert

### Tough performer. Generous giver.

Providing a sustainable and power-saving welding current is the art of the electronic inverter. The new Titan inverter technology excels even in the toughest continuous operation and extreme environmental conditions. The reasons for this: above-average high duty cycle, high efficiency and the EWM proverbial longevity and robust workmanship.

The generous dimensioning of all components is also responsible for these outstanding inner values. The cooling of the semiconductor, in particular, guarantees this innovative welding machine has an especially long service life.

### High availability in production – a true workhorse

# 80% DC\*

at 40 °C ambient temperature

### Ready to use anywhere – Titan XQ doesn't know the word "no"

- Can be used under all climatic conditions, including heat, frost, rain, snow and dusty conditions
- Operating range –25 °C to +40° C
- Splash-proof – safety class IP23
- Multi-voltage capability – optionally works with 400 V, 415 V, 460 V, 480 V and 500 V mains voltage

### With unrivalled EWM quality warranty

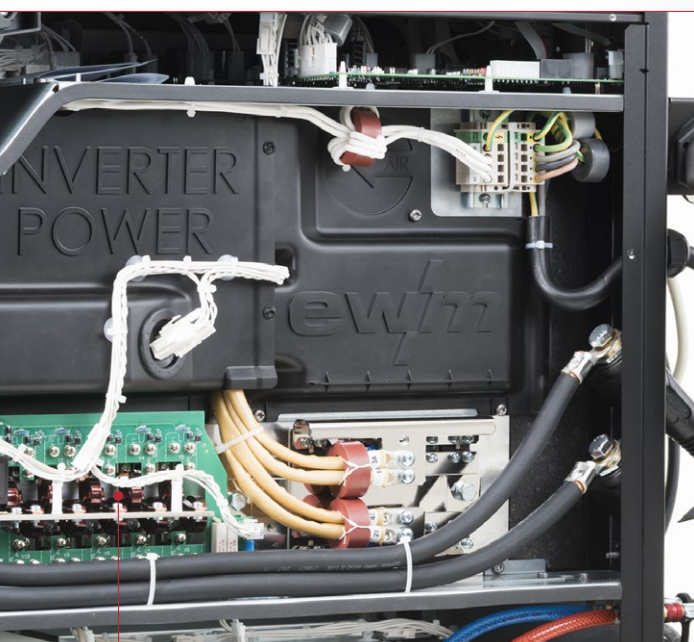
- 3-year warranty for welding machines and 5-year warranty for transformers and rectifiers
- No restriction to the number of operating hours – even when used in 3-shift operation 24 hours a day, 7 days a week



**Inverter**



\* Titan XQ 400 / 500 puls



#### **RCC power module (rapid current control) – high process stability**

- Rapid, digital welding current control – even with long hose packages

#### **Fan control in the inverter – energy-saving**

- Temperature and performance-controlled fan
- Low pollution and quiet fan noise

#### **Easy servicing and maintenance**

- Easy accessible components in the power unit

#### **Earth fault monitoring (PE protection)**

- Switching off the welding current in the event of an error, in the presence of stray welding currents
- Protection of PE lines

#### **Generous design of all components – high power reserves, high duty cycle 80% DC**

- Long service life thanks to large heat sink for reduced heating of semiconductor components
- High machine availability thanks to large power reserves
- High-quality components arranged to protect against dust and dirt promise fail-safe operation

#### **Energy-cost-saving inverter technology**

- Lower power consumption thanks to high efficiency and automatic power-saving mode (standby function)
- Electricity costs fall, so production costs do too

The major sustainability initiative from EWM

**Blue Evolution<sup>®</sup>**

# Refreshingly innovative – especially when things hot up Thanks to torch cooling

## Always keep a cool welding torch

Particularly efficient welding torch water cooling for high-performance arcs guarantee cold torches and thus low follow-up costs for consumables and torch maintenance, even under difficult ambient conditions.

### High cooling capacity of 1500 watts – saves money

- Reduces wear of consumables of the welding torch and prolongs its service life
- 8 litre water tank, sufficient coolant water reserves even for long hose packages
- Allows comfortable operation thanks to reliable cooling, even in continuous operation

### Customise exactly as you like

- Titan XQ is available in gas and water cooled versions
- Standard version with 3.5 bar pump
- Heavy duty 4.5 bar pump for using with long hose packages or with great height differences, e.g. in shipping and vehicle construction

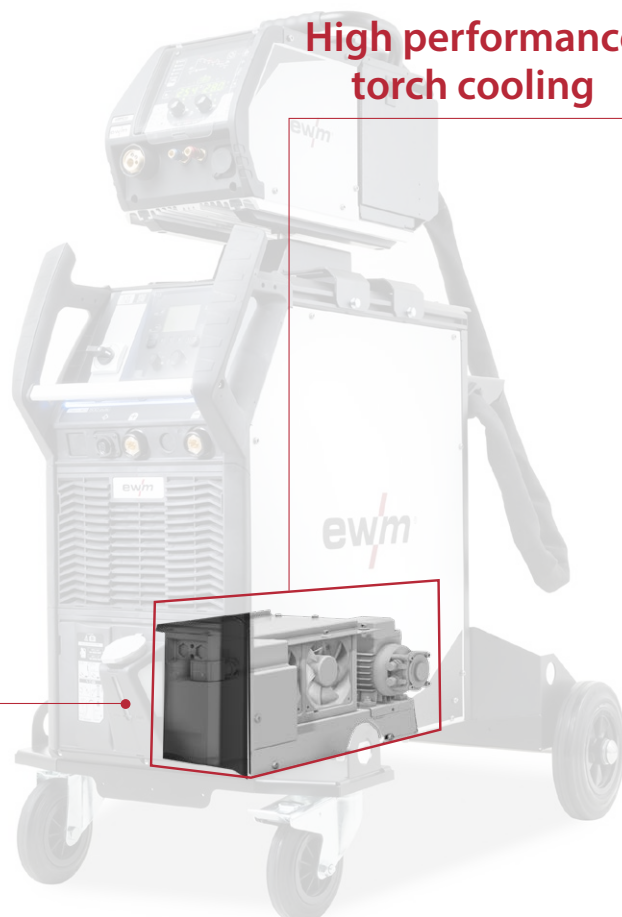
### Flow monitor as standard – insurance against failure

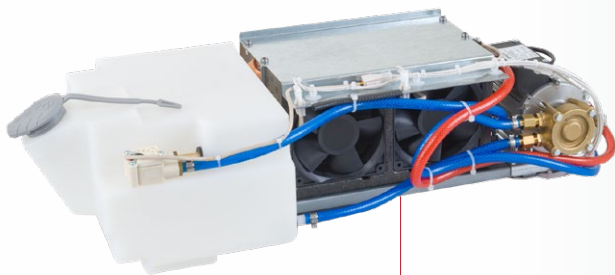
- Protects water-cooled welding torches from overheating and damage caused by low coolant flow

### High performance torch cooling

### Fill level indicator – always up-to-date

- Easy to read fill level indicator with MIN/MAX scale





**Can also be retrofitted – if there is currently no demand**

- The cooling unit has a modular design and can be retrofitted or replaced with only a few steps

**Temperature-monitored coolant – always in the green range**

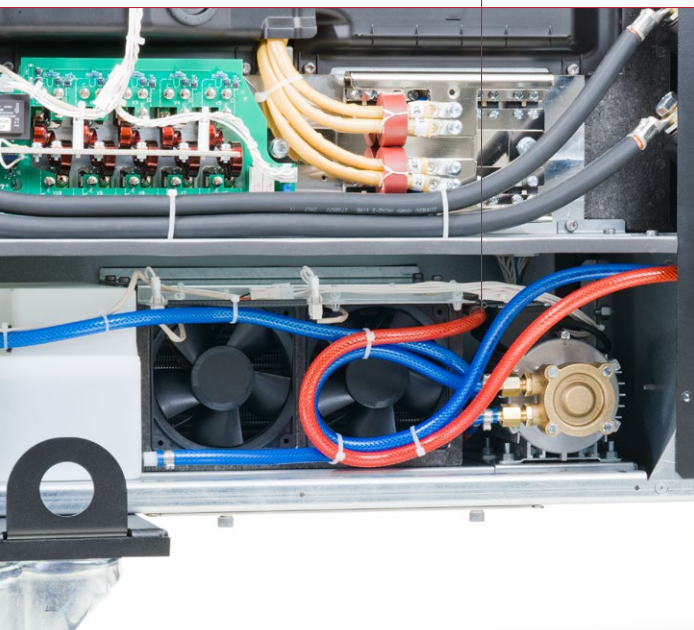
- Protects the welding torch from overheating through hot coolant water

**Easy servicing and maintenance**

- Easy accessible components in the cooling unit

**Temperature and speed-controlled cooling fan**

- Reduced contamination of the cooling unit and less noise emissions, as fan only runs when needed



# Always wired – with ease and precision

## Drive XQ wire feeder

### Hard work can be made so easy

Whether on impassable scaffolding, difficult to access work positions or large components – the 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 three-shift.

### 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 cap stays closed even under the most demanding conditions

### Equipment – sophisticated design

- Tool-free changing of intermediate hose packages
- No need for intervention in the electric area thanks to externally accessible connections
- Strain-relieved hose package with strap and swivel
- Protected hose package connections



## Optional



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

- Prevents welding errors caused by too much or too little gas
- Efficiency through gas savings thanks to accurate settings
- Precise, digitally adjustable gas quantity
- Suitable gas quantity for the respective welding task (JOB) optimally set at the factory
- Exact gas quantity depending on the shielding gas automatically without conversion for argon mixed gas, CO<sub>2</sub>, helium
- No gas blast with turbulence when igniting the arc as electrical valve opens and closes gently
- Welding stop when dropping below the critical quantity of gas (shielding gas cylinder empty or gas supply interrupted)
- Simplified calculation by recording the exact gas consumption via the 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
- Permanently secured roll fastener



### Functions – useful in daily use

- Key switch – control shut-off to prevent against operator error
- Changeover switch program or up/down mode

### Interior lighting – for roll change

- Changing wires and operating the machine is easy even with poor lighting

### Wire inching push-button

- Automatic wire stop on contact

### Gas test push-button

### Connections – stable and protected

- Recessed Euro torch connector and water connections
- Impact protection through protruding plastic edge

### flexFit casing system – robust and variable

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



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

- Prevents moisture accumulation on the welding wire through preheating
- Controlled temperature to 40 °C
- Reduced risk of hydrogen pores



### WRS – wire reserve sensor, no surprises during welding

- Warns at 10% residual quantity of the wire spool by means of a 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

## Moving ahead – with precision and durability

### Wire feed mechanism eFeed

#### Moving ahead – with precision and durability.

Precise and slip-free movement thanks to ball bearings for the drive shafts and four individually driven rolls makes for an extremely stable welding process. Thanks to their robust design, the mechanics do their job even in

tough continuous operation and difficult ambient conditions. Precise, robust wire feed mechanism guarantees optimum welding results and saves aggravation for the welder.

#### Wire feed mechanism eFeed with ball-bearings and four driven drive rolls – one more step forward



#### UNI rolls for two wire diameters – saves exchanging rolls

- Can be used directly with no additional costs, factory-fitted with UNI rolls for 1.0 mm and 1.2 mm steel and stainless steel
- UNI rolls are also available for 0.8 + 1.0 mm

#### Colour-coded rolls – prevents confusion

- Colour-coded rolls for various wire diameters
- Always the right equipment thanks to colour coding
- Can be read quickly and easily

2,5	Stainless steel, steel, braze
1	Aluminium
2	Flux cored



e.g. UNI rolls for Ø 1.0 mm to 1.2 mm with V-groove (blue/red) for stainless steel, steel



e.g. Ø 1 mm with U-groove (blue/yellow): for aluminium



e.g. Ø 1 mm with V-groove, knurled (blue/orange): for flux cored wire

### eFeed wire feed mechanism – your benefits

- Robust, die cast aluminium housing for a long service life
- Dual ball bearings (instead of friction bearings) on all four drive axles reduce roll tolerances for a longer service life and less abrasion
- Time is saved due to error-free fully-automated inching without time-consuming opening of the drive
- Tool-free roll change with captive roll fasteners
- Covered gearing protects against injury
- Large roll diameter (37 mm) for optimal transfer of power
- Four driven wire feed rolls

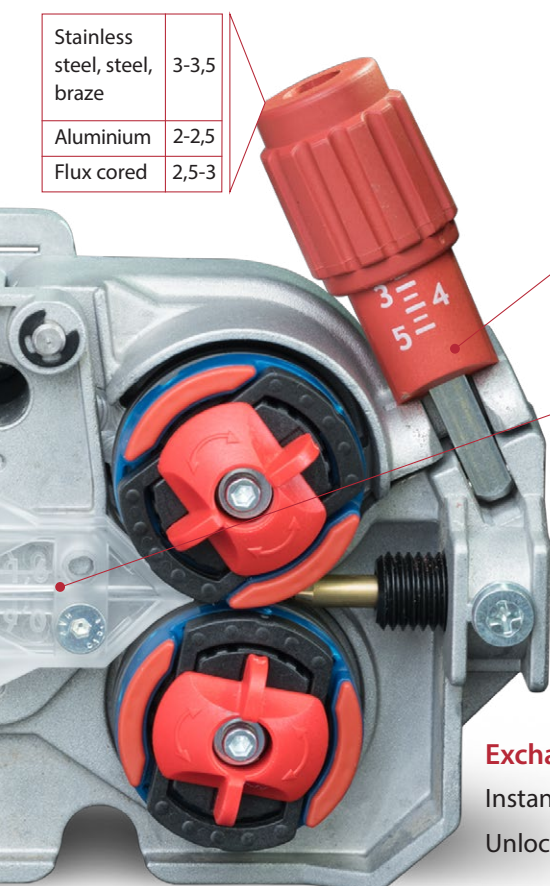
Stainless steel, steel, braze	3-3,5
Aluminium	2-2,5
Flux cored	2,5-3

### Individually adjustable contact pressure – as much as necessary

- The contact pressure for the front and rear roll pair can be set differently
- For aluminium, steel, stainless steel, braze, flux cored wire

### Visible wire feeding – full control

- After wire spool change, allows visual monitoring during automatic inching



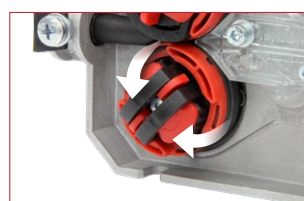
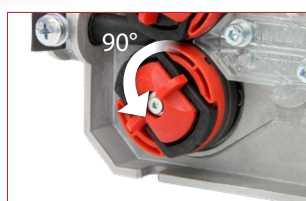
### Exchange rolls in just three steps

Instantly, without tools and with captive parts

Unlock the roll fastener

Swivel out secured roll fastener

Exchange the roll



## A joy to hold – ergonomics for welding

### Professional welding torch from the PM series

#### They hold the promise of EWM.

We all love something that fits well in the hand. The grips on the new PM welding torches are ergonomically optimised with rubber inserts so that they can be held comfortably and flexibly guided during welding. A particular advantage in difficult positions, making work easier. The balanced design of the grips, the reduced weight of the welding torch and the innovative, compact

design of the hose package with anti-kink device also help reduce welder fatigue. It keeps the amount of force required to guide the welding torch to a minimum. The practical control keys and graphic display on the function torch also increase efficiency. They can be used to adjust many functions of the welding machine directly on the workpiece.

#### Compact ball joint – optimal range of movement in any position

- Comfortable working conditions thanks to strain relief, especially for positional welding



#### Torch trigger protection – prevents misfiring

- High level of safety – no switch on caused by unintentional operation
- Protects against damage to the workpiece

#### Rubber inserts in the handle – so that welding feels good

- High degree of welding comfort thanks to ergonomically shaped handle
- Secure grip for optimum welding torch guidance, even during positional welding

#### Your benefits

##### Reduce manufacturing costs – quality pays off

- Verifiably lower consumption of consumables of contact tip and gas nozzle
- Minimised finishing work thanks to significantly less spatter due to precise gas flow
- Less consumption of shielding gas by avoiding gas loss

##### Long services life of the EWM contact tips – size matters

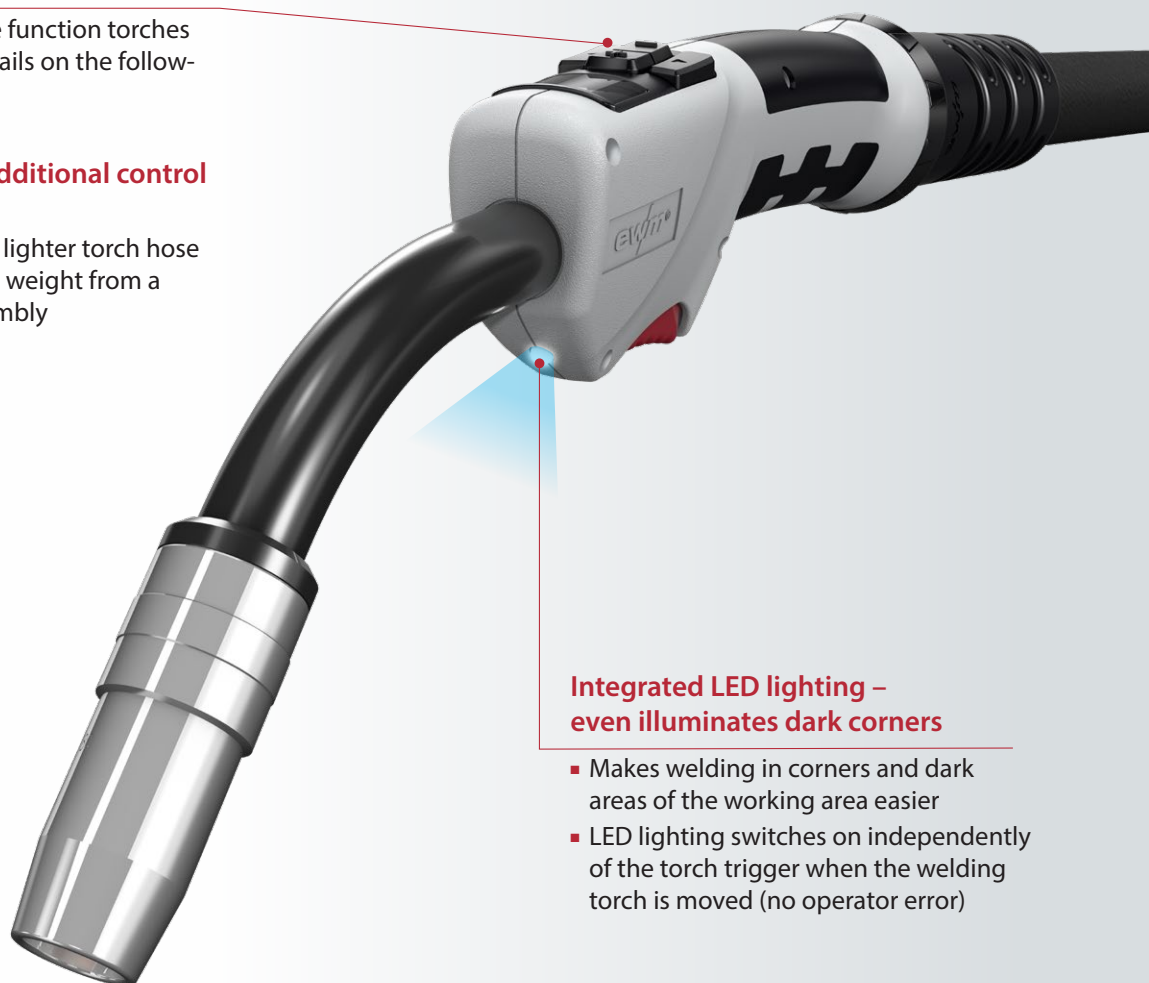
- No overheating – optimum heat transfer thanks to the 30% larger material cross-section and conical fit of the contact tip in the M7/M9 compared to conventional M6/M8 thread sizes

### Four operating variants – guarantees a good choice

One standard torch and three function torches are available for Titan XQ (details on the following pages)

### X technology – replaces additional control cable assembly

- Fatigue-free work thanks to lighter torch hose package as there is no extra weight from a separate control cable assembly



### Integrated LED lighting – even illuminates dark corners

- Makes welding in corners and dark areas of the working area easier
- LED lighting switches on independently of the torch trigger when the welding torch is moved (no operator error)

### Improved welding quality – better than good

- Errors are minimised thanks to interference-free wire guiding – 40% larger bend radius of the torch neck (from PM 301)
- Best heat dissipation in the torch body and therefore minimal warming of the consumables
- Outstanding shielding gas coverage of the arc range
- Secure contact through screw-retained contact tip and gas nozzle

### Versions

- PM series standard torches · PM221/301/401G,  
· PM301/451/551W
- PM S series Short neck · PM451/551WS
- PM L series Long neck · PM451/551WL

## A joy to hold – ergonomics for welding

### Professional welding torch from the PM series

#### Four operating variants – guarantees a good choice.

One standard torch and three function torches are available for Titan XQ. They differ in their operating concept and their display options. But they all have one thing in common: ergonomic perfection and robust EWM quality. It's your choice.

##### PM RD3X



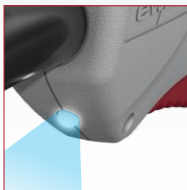
##### Function torch with graphic display and LED light

###### Setting options:

- Welding current and wire speed
- Welding voltage correction
- Welding procedure
- Welding program and tasks (JOBS)
- Operating mode non-latched/latched
- Component management:  
Selection of weld seams according to welding sequence plan

###### Display:

- All adjustable welding parameters and functions
- Status error and warning messages



##### PM RD2X



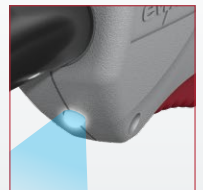
##### Function torch with graphic display and LED light

###### Setting options:

- Welding current and wire speed
- Welding voltage correction  
or
- Welding programs

###### Display:

- All adjustable welding parameters
- Status error and warning messages



### PM 2U/DX



#### Function torch with LED light

##### Setting options:

- Welding current and wire speed
- Welding voltage correction or
- Welding programs



### PM standard torch



- Standard torch trigger for all MIG/MAG machines



- Option torch trigger top

## Practical, phased operation concept

### Titan XQ puls



#### Control variants and networking options:

- Expert XQ 2.0
- Expert XQ 2.0 LG with integrated LAN gateway
- Expert XQ 2.0 WLG with integrated LAN/WiFi gateway



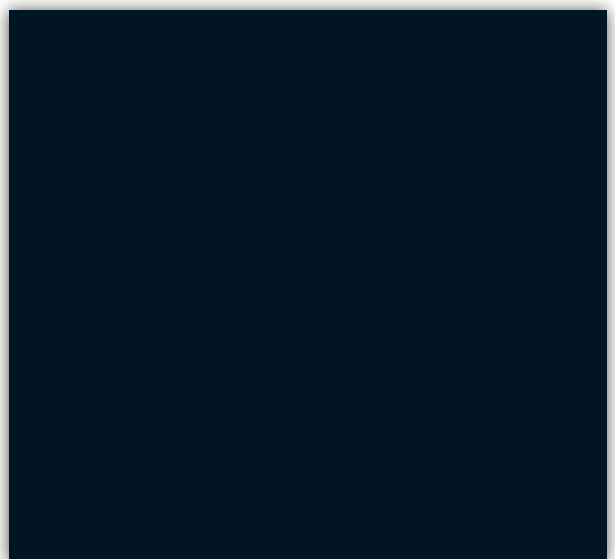
WiFi



LAN



#### No control in the power source



## Drive XQ

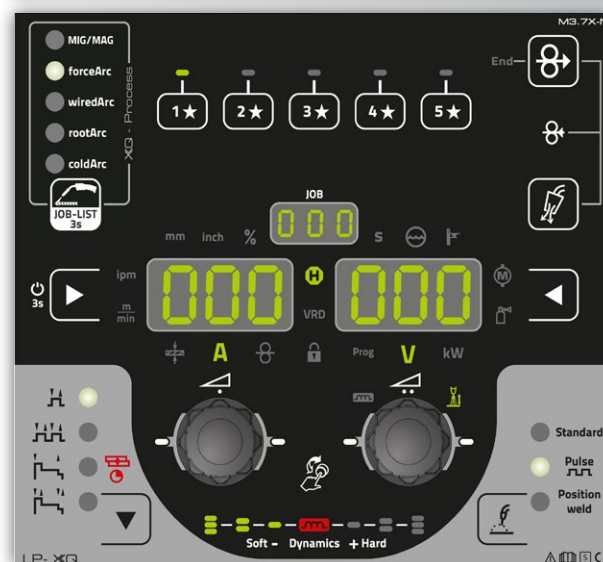
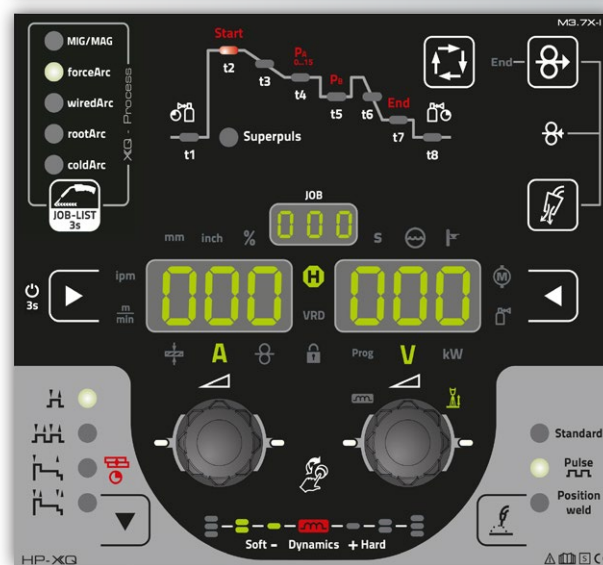


Expert XQ 2.0

HP-XQ

LP-XQ

### Drive XQ control variants



## For those who want more – everything Expert control with intuitive operation

The Expert XQ 2.0 control shows what the machine offers. The user only needs to make a selection using the 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 in more 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 screen for the display made of acrylic glass with hard coating
- Always clearly legible – no signs of wear, unlike touchscreens, for example
- 3 mm thick acrylic glass protective screen protects the LCD display against damage

### Control – logical because needs-oriented

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

### USB connection for new tasks

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

### Process change

- Quick switching between welding procedures:
  - forceArc XQ / forceArc puls XQ
  - wiredArc XQ / wiredArc puls XQ
  - rootArc XQ / rootArc puls XQ
  - coldArc XQ / coldArc puls XQ
  - Positionweld
  - Pulsed XQ and standard XQ arcs

### Xbutton – the key for welding

- Individual access privileges and menu customisation



### Click wheel operation – turn, press, finished

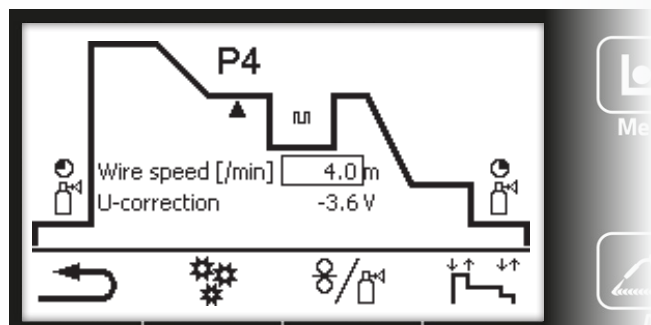
- Direct access to all important welding parameters through intuitive operating concept with click wheel functionality

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

### Language selection – more languages than some professors

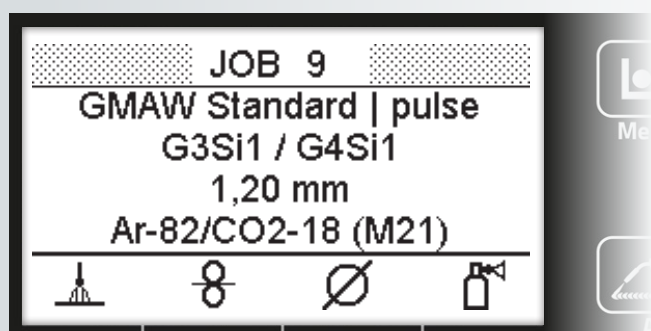
- Pre-configured languages for the user menu: German, English, French, Italian, Dutch, Polish, Danish, Latvian, Russian, Spanish, Czech, Swedish, Portuguese, Turkish, Hungarian, Romanian





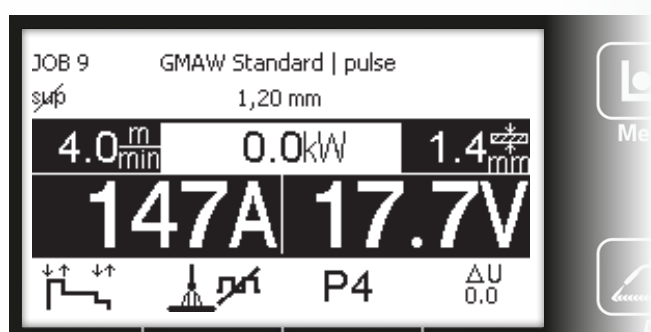
### Welding program sequence – lots of steps at a glance

- Simple adjustment of all welding parameters in the program sequence, such as starting current, end-crater current, for example



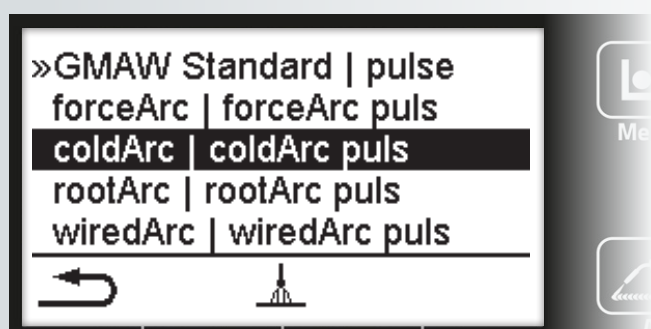
### JOB window – which welding task should it be?

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



### Welding parameter – everything has its value

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



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

- forceArc XQ / forceArc puls XQ – high-performance arc with deep penetration
- wiredArc XQ / wiredArc puls XQ – high-performance arc with penetration stabilisation through dynamic wire feeding
- rootArc XQ / rootArc puls XQ – for perfect root welding
- coldArc XQ / coldArc puls XQ – minimises heat for thin metal sheet welding
- Positionweld – for positional welding
- Pulsed XQ and standard XQ arc

WPQR welding data assistant			
	392 A	28.0 V	6.0 m/min
	11.0 kW		0:35 min
	35.0 cm		
	60.0 cm/min		
Thermal efficiency	85 %		
	18/5	E: 1.10 kJ/mm	Q: 0.93 kJ/mm

### WPQR welding data assistant – everything has its value

- The WPQR welding data assistant makes an exact calculation of the heat input and energy per unit length quick and easy

Heat input (Q)	0.96 kJ/mm	
Preheating temperature (T0)	150 °C	
Plate thickness (d)	20.0 mm	
Weld factor	2D 1.00 F2	3D 1.00 F3
Transitional thickness	16.1 mm	
Cooling time t8/5	4.9 s	7.5 s

### Calculation T8/5-time

- From the previously calculated heat input Q, the T8/5 cooling time is directly calculated taking the specified material thickness and seam factors into account

	389 A	✓
	6.6 m/min	✓
	29.4 V	✓
		✓
		✓
	WPQR	

### Welding monitoring – gives protection and information

- Permitted working area
- Welding voltage
- Welding current
- Wire feed speed
- Predefined parameters via WPS

Unit 1					
JOB:	10	12	13	14	15
JOB:	16	---	---	---	20

### Favourite list with up to ten JOBS – creates routine

- Increases efficiency and prevents incorrect operations
- Create and retrieve JOBS individually
- Direct, simplified selection of the welding process to be used (JOBS)
- Transfer to other welding machines via XQ remote control or directly to Expert XQ 2.0



### Easy data exchange using USB flash memory – including dreams of the future

- Always state-of-the-art welding technology: EWM's Titan XQ puls technology makes it possible to update the control as soon as new developments or welding tasks come out - simply by means of a USB stick
- EWM develops welding processes, material characteristics, power source characteristics, networking and individual operation on a continuous basis. Even existing EWM devices benefit from this through the simple data exchange
- Simple data transfer to LP-XQ and HP-XQ controls also possible with the Expert XQ 2.0 remote control



### Access rights via Xbutton – individual user rights

- Identification of the welder
- Xbutton allows mapping of the welder to the welding machine
- Administration of access rights for different control operating levels and welding parameters
- Precise final costing possible thanks to the ewm Xnet 2.0 Welding 4.0 welding management system with individual data recording for each machine, application and welder
- Extremely robust and considerably more durable than RFID chip cards, for example



### Quick data transfer for Industry 4.0

- Networking of any number of power sources – via LAN/WiFi
- Simple offline data transfer via USB port



# For perfectionists – individual setting options for any weld HP-XQ control – maximum variability down to the finest

The HP-XQ control offers the highest level of requirement-specific setting options for the relevant welding task. The user can individually determine every detail of the welding sequence from the ignition current to the

end crater program. It is the ideal control for professional users who leave nothing to chance for perfect results.

## Welding sequence parameter – control down to the last detail

- Quick and easy setting of all parameters via coherent flow chart with LED user guidance, e.g. ignition and end crater current

## Wire reserve display – warns of 10% residual quantity (optional)

- Eliminates unpleasant surprises and weld defects as a result of the wire suddenly running out

## Wire return

- Makes reverse inching of the wire easier

## Process change

- Quick switching between welding procedures

## kW display – effective arc power

- For energy per unit length calculation

## Selection

- Standard
- Pulse
- Positionweld

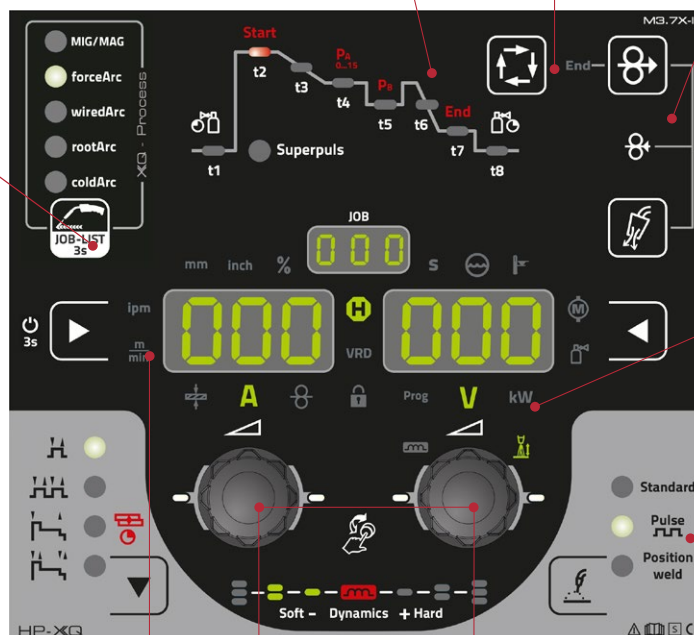
## Unit change – always the right measure

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

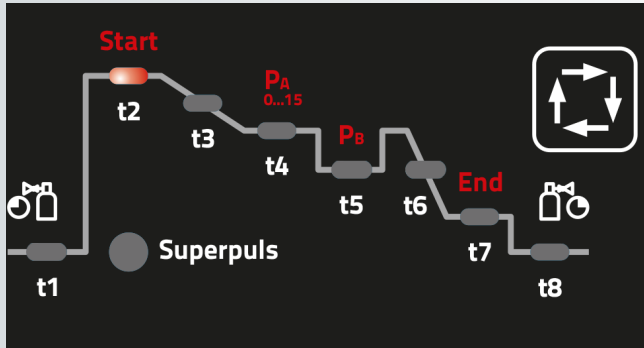
## Click wheel operation – turn, press, finished

- Left click wheel for setting Synergic operating point (power, wire feed, material thickness)

- Right click wheel for setting arc length correction and arc dynamics

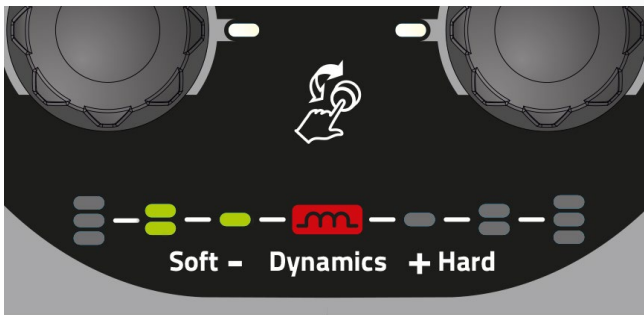


# welding task detail



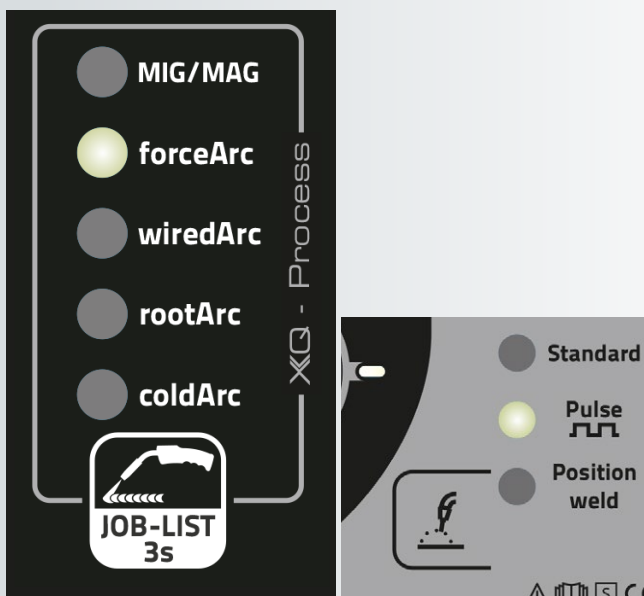
## Welding sequence parameter – control down to the last detail

- Quick and easy setting of all parameters via coherent flow chart with LED user guidance
- Always appropriate welding power with adjustable start program and welding program (16 programs per JOB)
- Impeccable welding results thanks to
  - Reduced welding program for heat control during the welding
  - End crater program with specific slope time to prevent end crater cracks
- Gas pre- and post-flow time can be set at the beginning and end to counter seam errors



## Arc dynamics – from soft to hard

- Allows excellent welding results by precise dosage of the arc from "soft" (wide seam, low penetration) to "hard" (hard arc, deeper penetration)
- Displays the selected dynamic level via LED bar



## Quick switching between the MIG/MAG welding procedures – the right one for any welding task

- forceArc XQ / forceArc puls XQ – high-performance arc with deep penetration
- wiredArc XQ / wiredArc puls XQ – high-performance arc with penetration stabilisation through dynamic wire feeding
- rootArc XQ / rootArc puls XQ – for perfect root welding
- coldArc XQ / coldArc puls XQ – minimises heat for thin metal sheet welding
- Positionweld – for positional welding
- Pulsed XQ and standard XQ arc

# Intelligent simplicity – switch on and start welding

## LP-XQ control – self-explanatory operation

The LP-XQ control has set the best parameter for the required welding process from the ignition current to the end crater program ex works. This saves training time. The welder can start his work straightaway – simply set

the operating point via the click-wheel and off he goes. The control is recommended when changing welding personnel, e.g. on assembly jobs and construction sites.

### Favourites list directly selectable

- Easy storage of parameters by holding the desired favourites button
- Easy access of stored parameters by pressing the respective favourites button again

### Wire reserve display – warns of 10% residual quantity (optional)

- Eliminates unpleasant surprises and weld defects as a result of the wire suddenly running out

### Wire return

- Makes reverse inching of the wire easier

### Process change

- Quick switching between welding procedures

### kW display – effective arc power

- For energy per unit length calculation

### Selection

- Standard
- Pulse
- Positionweld

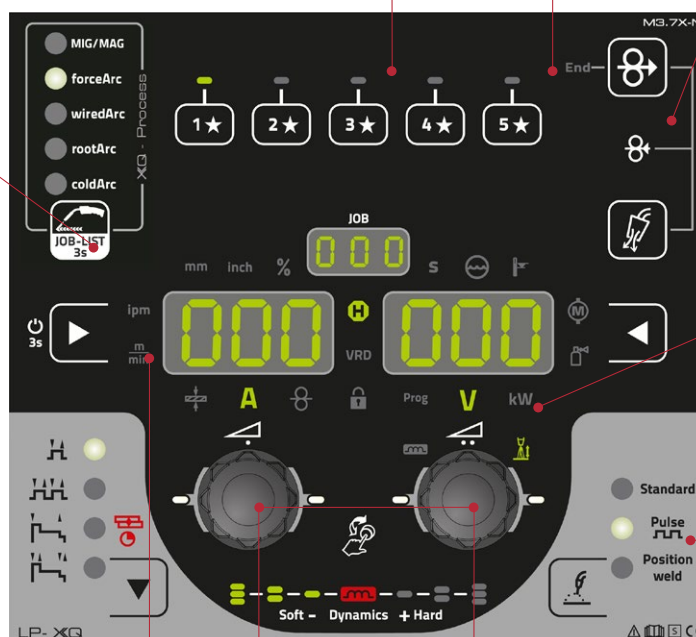
### Unit change – always the right measure

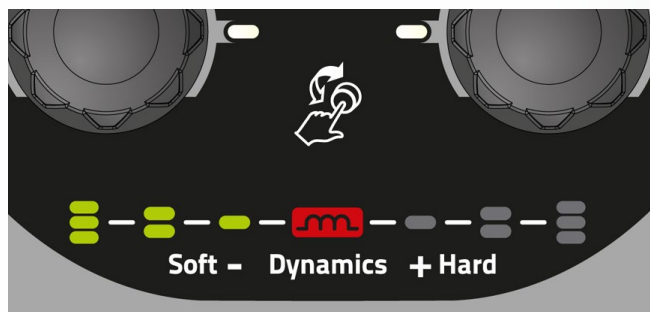
- Optional display of values in national or international units (mm/inch)

### Click wheel operation – turn, press, finished

- Left click wheel for setting Synergic operating point (power, wire feed, material thickness)

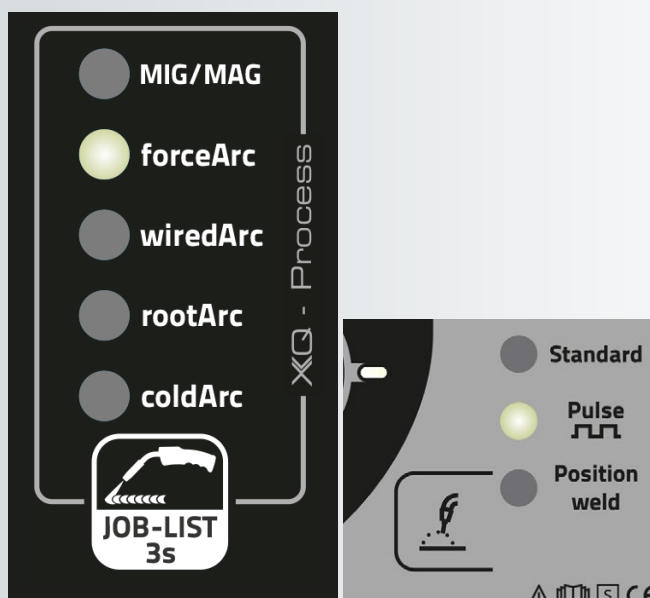
- Right click wheel for setting arc length correction and arc dynamics





### Arc dynamics – from soft to hard

- Allows excellent welding results by precise dosage of the arc from “soft” (wide seam, low penetration) to “hard” (hard arc, deeper penetration)
- Displays the selected dynamic level via LED bar



### Quick switching between the MIG/MAG welding procedures – the right one for any welding task

- **forceArc XQ / forceArc puls XQ** – high-performance arc with deep penetration
- **wiredArc XQ / wiredArc puls XQ** – high-performance arc with penetration stabilisation through dynamic wire feeding
- **rootArc XQ / rootArc puls XQ** – for perfect root welding
- **coldArc XQ / coldArc puls XQ** – minimises heat for thin metal sheet welding
- **Positionweld** – for positional welding
- **Pulsed XQ and standard XQ arc**



### Expert XQ 2.0 remote control – if more functions are needed

- Permits the use of all additional functions of the Expert XQ 2.0, if needed
- For all Expert XQ 2.0, LP-XQ and HP-XQ controls



# Welding procedures – overview

	Page
<b>Welding of non-alloy and low-alloy steel</b>	
Root welding	▪ rootArc® XQ 36–37
Welding filler passes and cover passes	▪ forceArc puls® XQ 38–39
Welding fillet welds with deep penetration	▪ forceArc puls® XQ 40–41
Welding using 100% CO <sub>2</sub>	▪ coldArc® XQ/ rootArc® XQ 43
<b>Welding non-alloy, low-alloy and high-alloy steel</b>	
Welding full penetration fillet welds	▪ forceArc puls® XQ 44–45
Positional welding without using the "Christmas tree" technique	▪ Positionweld 46–47
Welding with consistent penetration and consistent power	▪ wiredArc XQ/ wiredArc puls XQ 42
<b>Welding and brazing of non-alloy, low-alloy and high-alloy steel and galvanised sheet metal</b>	
Welding and brazing thin sheet metal	▪ coldArc® XQ / coldArc® puls XQ 48–49
<b>Welding of high-alloy steel</b>	
Welding filler passes and cover passes	▪ forceArc puls® XQ 50–51
<b>Welding of aluminium and aluminium alloys</b>	
Welding of aluminium and aluminium alloys	▪ Pulsed arc XQ 52
Positional welding without using the "Christmas tree" technique	▪ Positionweld 53
<b>Surfacing</b>	
Cladding, hardfacing	54–55

# Root welding of non-alloy and low-alloy steel

## Your requirements

## Our solution – rootArc® XQ

Inconsistent, changing air gap

- Perfect gap bridging

X-ray proof results

- Good root formation and secure sidewall fusion

Welding in various positions

- High arc force for root welding in all positions

Increased productivity

- Good welding speed and melt rate compared to TIG or MMA welding
- Low-spatter process

Straightforward handling

- Rapid digital control of the process, easy to guide and to control
- Uses standard welding torches without additional wire movement
- Welding even with long hose packages without additional voltage measuring leads thanks to RCC power module (Rapid Current Control)
- For manual and mechanised applications

No grinding of intermediate passes

- Flat, smooth weld surface and virtually spatter-free process for reduced finishing work

Flexibility in production

- EWM allin – one machine for welding all material thicknesses and using all processes

**all in**

### All Root welding in PC position with an air gap and without weld pool backing

1



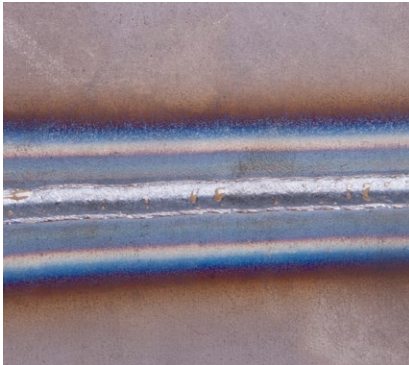
Weld preparation of root welds on pipes, 60° included angle with 3 mm air gap

2

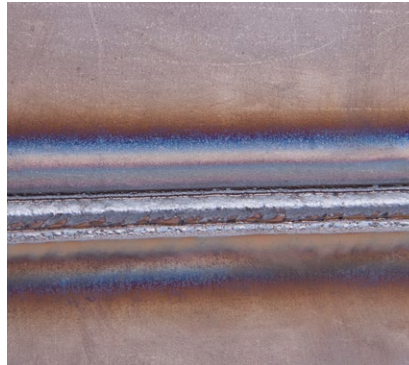


Front view

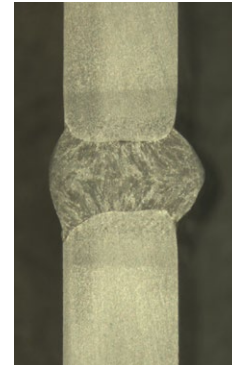
**PC** Root welding in PC position with an air gap and without weld pool backing



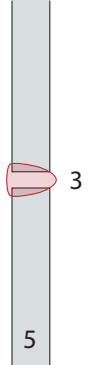
Front view



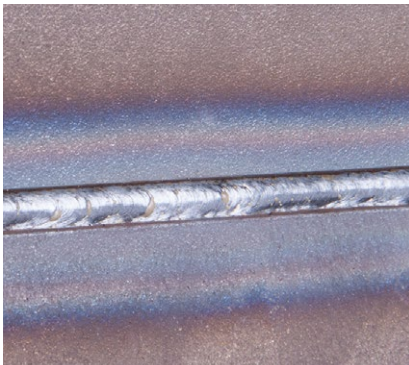
Root



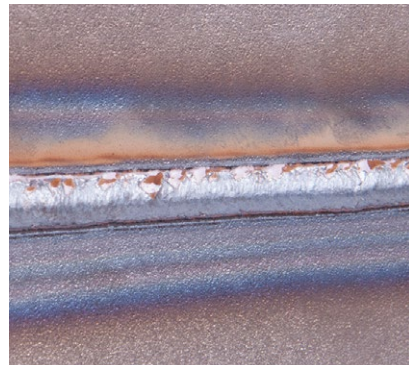
Material thickness 5 mm  
Air gap 3 mm



**PC** Root welding in PC position with an air gap and without weld pool backing



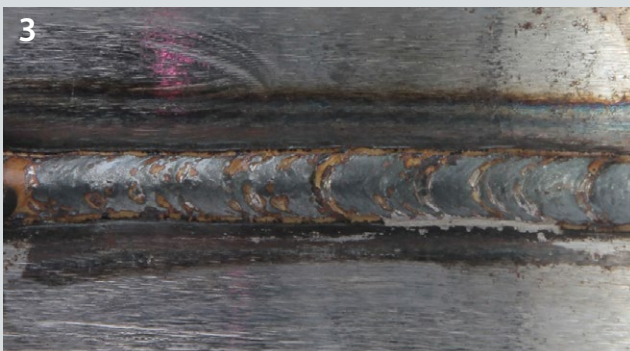
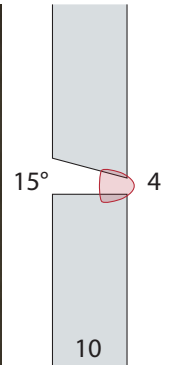
Front view



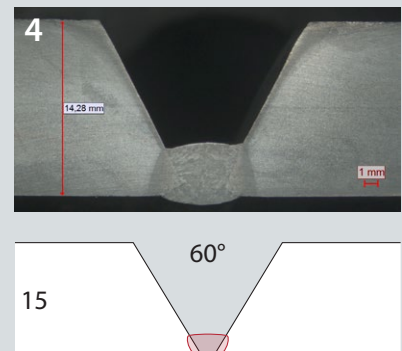
Root



Material thickness 10 mm, one-sided bevel 15 degrees, air gap 4 mm



Root



Pipe welding, wall thickness 15 mm, included angle 60 °

# Welding of filler passes and cover passes in non-alloy and low-alloy steel

## Your requirements

## Our solution – forceArc puls® XQ

### Straightforward handling

- Easy to learn, even for inexperienced welders, thanks to rapid digital control of the process, virtually spatter free, reduced undercuts

### Secure penetration

- Deep penetration for excellent root and sidewall fusion

### Minimised distortion of the components

- Modified, heat-reduced, directionally stable pulsed arc

### Improved economy

- Enables weld seam volumes to be reduced, potential for over 50% reduction of welding times in production, manual and automated

### Reliable welding in poorly accessible areas

- Perfect welding even with very long stick-outs

### Changeable, inconsistent air gap

- Excellent gap bridging even in high power ranges

### Undercuts, seam appearance

- Excellent wetting of the material surface, smooth weld surface even on heavily oxidised or dirty sheet metal

### Welding procedure qualification

- Qualified by welding procedure test (process no. 135) in accordance with DIN EN ISO 15614-1

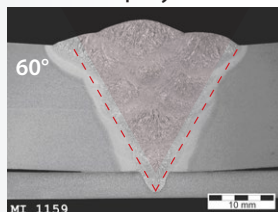
### Straightforward handling

- EWM allin – one machine for welding all material thicknesses and using all processes

**all in**

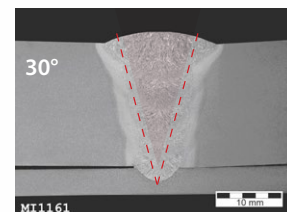
Welding with reduced seam volumes has been tested and confirmed multiple times by independent institutes. EWM's forceArc® XQ and forceArc puls® XQ welding processes allow welding times to be reduced by up to 50% compared to standard spray arc processes. The reduced included angle saves resources without changing the mechanical and technological properties.

Standard spray arc



11 runs

forceArc® XQ



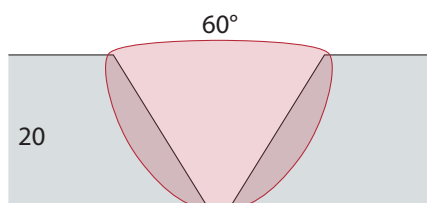
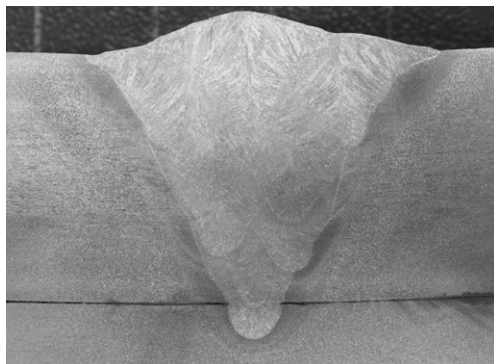
**5 runs**  
**50% shorter welding time**

Unchanged mechanical/technological properties

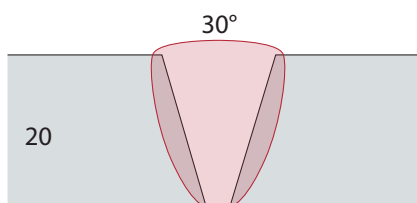
A complete technical report documenting all the advantages can be found online at the following link:  
[www.ewm-group.com/sl/professionalreport](http://www.ewm-group.com/sl/professionalreport)



**PA Root welding with a reduced included angle**

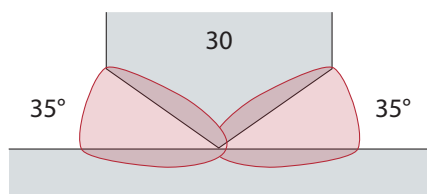
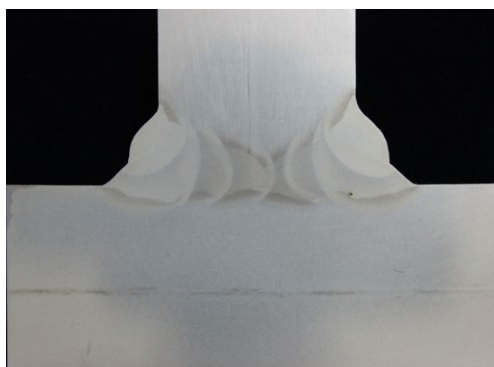


S355, 20 mm, included angle 60 °  
8 runs, standard spray arc



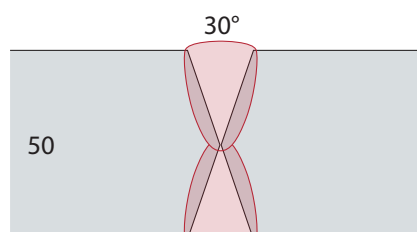
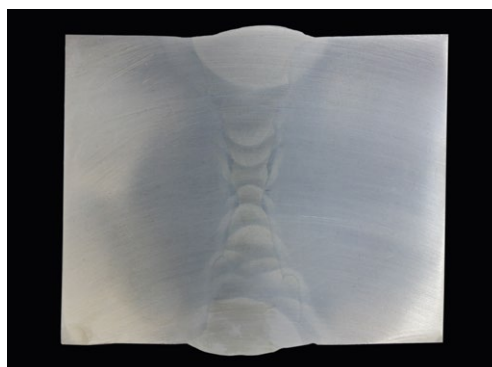
S355, 20 mm, included angle 30 °  
4 runs, forceArc puls®

**PB Full penetration, T-joint welded on both sides**



S235, 30 mm, included angle 35 °  
8 runs

**PA Full penetration, butt joint welded on both sides**



S355, 50 mm, included angle 30 °  
15 runs

## Welding fillet welds with deep penetration on non-alloy and low-alloy steel

### Your requirements

### Our solution – forceArc puls® XQ

#### Improved economy

- Reduced number of welding passes for fillet welds

#### Secure penetration

- Deep penetration for excellent root and sidewall fusion

#### Minimised distortion of the components

- Modified, heat-reduced, directionally stable spray arc

#### Reliable welding in poorly accessible areas

- Perfect welding in narrow joints, even with very long stick-outs
- Rapid correction of alterations to stick-out lengths, reliable processing of stick-out lengths up to 40 mm

#### Reduced voltage in the fillet weld area

- Forces transferred to the interior of the component by deep penetration, seam volume reduced by large effective seam thickness in line with DIN EN ISO 17659:2005-09, reduced heat input into the component

#### Welding procedure qualification

- Qualified by welding procedure test (process no. 135), in line with DIN EN ISO 15614-1

#### Simple, safe handling

- Rapid digital control of the process, easy to learn and directly applicable regardless of torch angle

#### Flexibility in production

- EWM allin – one machine for welding all material thicknesses and using all processes

all in



Energy savings



Reduced production time  
(welding, finishing work)



Reduced  
material costs



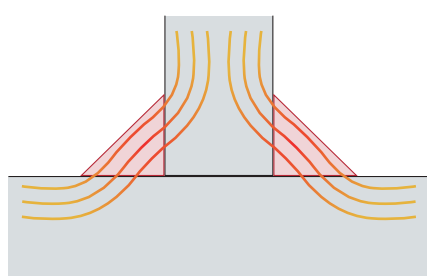
Reduced  
welding fume emissions

### Welding with deep penetration as per DIN EN 1090

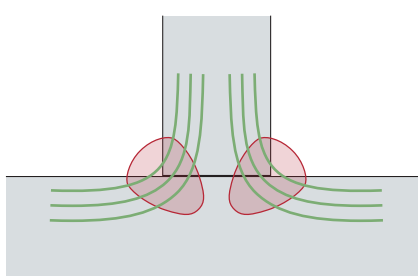
Use the full potential of your weld seam. By taking the effective seam thickness of fillet welds into account, the forceArc puls® process enables single-pass welds up to throat = 8 mm to be created as opposed to throat = 5 mm in processes without deep penetration.



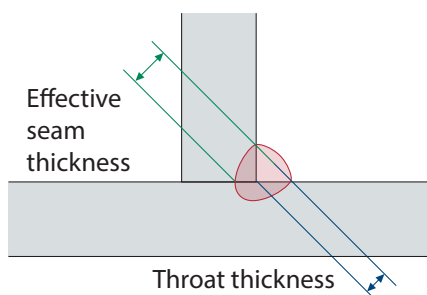
Additional information  
[www.ewm-group.com/sl/titanforcearc](http://www.ewm-group.com/sl/titanforcearc)



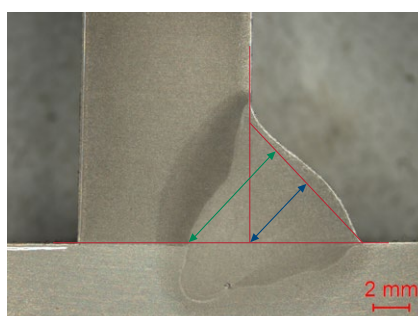
Flow of force in standard fillet welds



Improved flow of force thanks to deep penetration

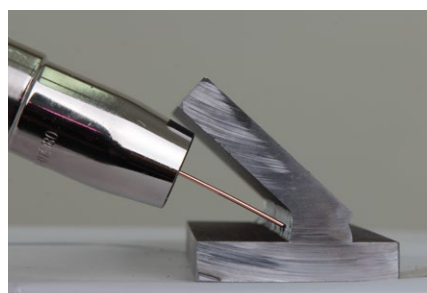


Definition of effective seam thickness as per DIN EN ISO 17659:2005-09

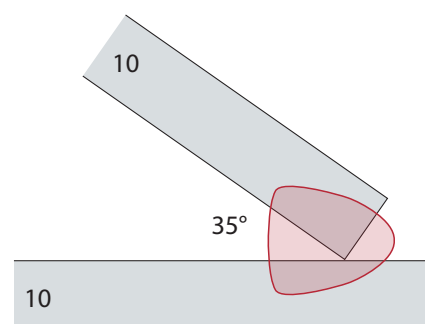


S355, 10 mm, effective seam thickness of 8 mm as per DIN EN ISO 17659:2005-09

### All Welding with deep penetration and long stick-out



Web plate material thickness 10 mm, included angle 35°



# Welding with consistent penetration and consistent power on non-alloy, low-alloy and high-alloy steel

## wiredArc XQ / wiredArc puls XQ

### Your requirements

### Our solution – wiredArc XQ/wiredArc puls XQ

Secure penetration, root and sidewall fusion

- Welding process with consistently high penetration depth regardless of alterations to the stick-out

Reduced or no weld spatter

- Virtually spatter-free welding results thanks to rapid digital control of the welding process

Controlled heat input

- Digital process control supplies a consistent welding current
- The energy per unit length and heat input remain virtually consistent despite changes to the stick-out

Increased productivity

- Ability to reduce the seam's included angle and therefore the weld seam volume

Visually pleasing weld surface

- Flat, even weld surface and virtually spatter-free process for reduced finishing work

Straightforward handling

- Easy to learn and to control

Flexibility in production

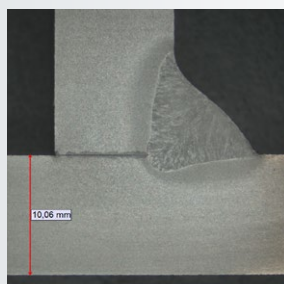
- EWM allin – one machine for welding all material thicknesses and using all processes

all in

12 mm stick-out

30 mm stick-out

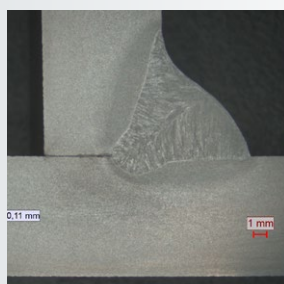
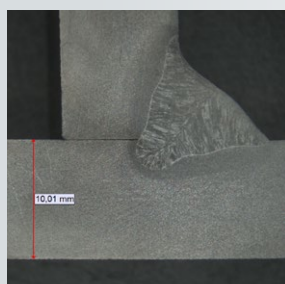
Standard



### Standard

Alteration of the stick-out causes the penetration depth to change in standard welding processes. In particular, welding with an increasing stick-out length can cause the weld root to be insufficiently fused (lack of fusion).

wiredArc XQ



### wiredArc XQ

With EWM wiredArc XQ, the penetration remains consistent when the stick-out is altered. The innovative control keeps the welding current and the heat input virtually consistent.

# Welding using 100% CO<sub>2</sub> on non-alloy and low-alloy steel

100% CO<sub>2</sub>

## Your requirements

## Our solution – coldArc® XQ/rootArc® XQ/Standard

Minimised spatter similar to mixed gas

- Digital process control for low-spatter droplet transfer thanks to the RCC power module (Rapid Current Control)

Process stability

- Rapid process control thanks to the use of the latest microelectronics

Increased productivity

- Minimised weld spatter similar to mixed gas
- Welding even with long hose packages without additional voltage measuring leads thanks to RCC power module (Rapid Current Control)

Straightforward handling

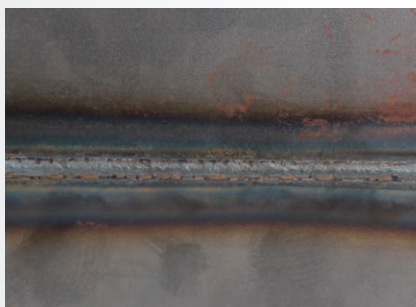
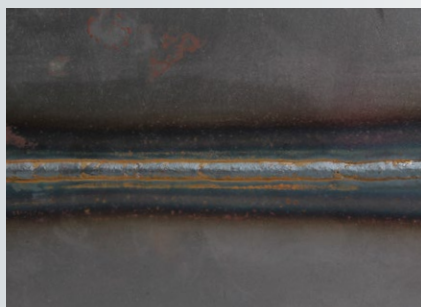
- Easy to guide and control

Flexibility in production

- EWM allin – one machine for welding all material thicknesses and using all processes

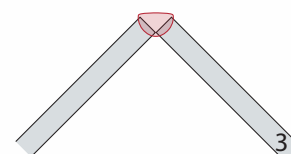
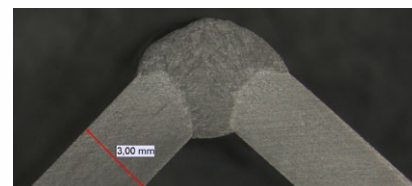
**all in**

### PC Root welding in PC position with an air gap and without weld pool backing



S355, material thickness 3 mm, using G3Si1 1.2 mm diameter at 100% CO<sub>2</sub>

### PA Root welding in PC position with an air gap and without weld pool backing



S355, material thickness 3 mm, using G3Si1 1.2 mm diameter at 100% CO<sub>2</sub>

# Welding full penetration fillet welds on non-alloy, low-alloy and high-alloy steel

## Your requirements

## Our solution – forceArc puls® XQ

Simple, safe handling

- Good gap bridging even in high power ranges, easy to learn and directly applicable
- Considerably reduced welding fume emissions compared to pulsed arc welding

Improved economy

- Secure full penetration even without an air gap, therefore good for fitting work
- Enables included angles to be reduced thereby reducing weld seam volumes, lowering the number of runs and significantly lowering costs

No gouging or grinding of the transverse root side

- Double-sided full penetration welds on butt joints or T-joints without grinding or gouging the transverse root side

Secure penetration

- Deep penetration for excellent root and sidewall fusion

Stable arc

- Good process stability when welding on the weld pool even at small included angles

Reliable welding in poorly accessible areas

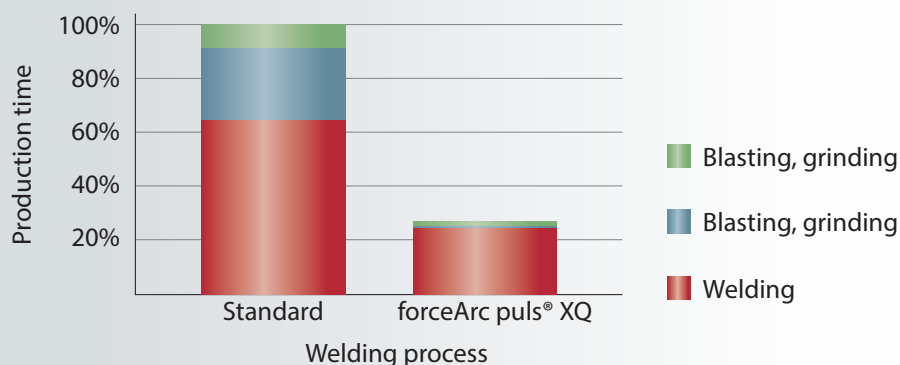
- Perfect welding, even with very long stick-outs
- Even in tight and narrow gaps with very long stick-outs
- Rapid correction of alterations to stick-out lengths, reliable processing of stick-out lengths up to 40 mm

Flexibility in production

- EWM allin – one machine for welding all material thicknesses and using all processes

**all in**

Time saved by using forceArc puls® XQ in production



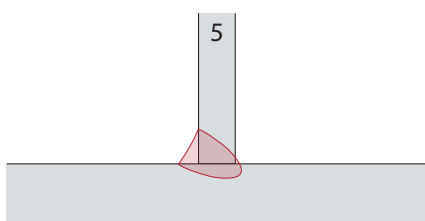
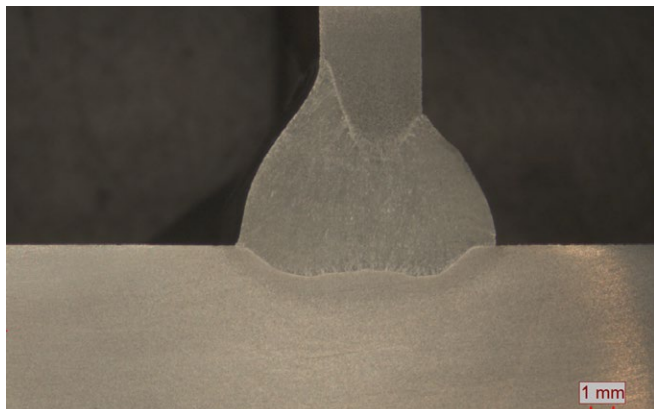
Additional information



[www.ewm-group.com/sl/savings](http://www.ewm-group.com/sl/savings)

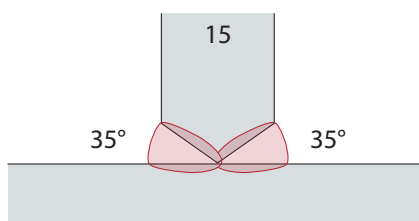
**forceArc puls® XQ**

**PB** Fillet weld welded on one side



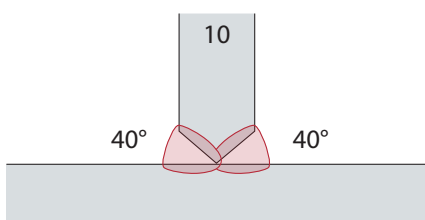
S355, 5 mm on 10 mm

**PB** Full penetration, welded on both sides



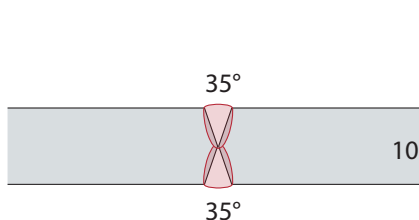
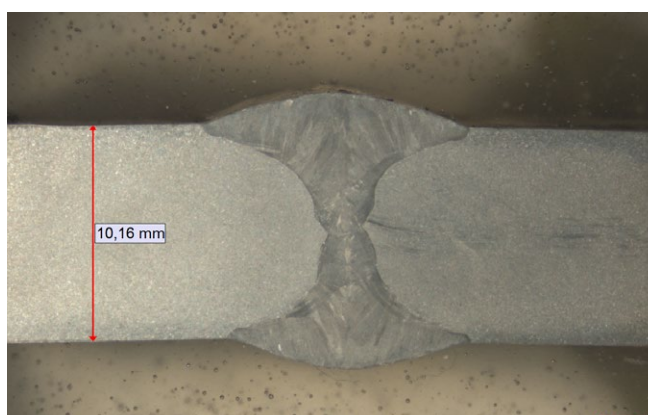
S355, 15 mm, included angle 35°

**PB** Full penetration, welded on both sides



1.4301, 10 mm, included angle 40°

**PA** Full penetration, welded on both sides



1.4301, 10 mm, double-sided full penetration on a butt joint with an included angle of 35°

# Positional welding without using the “Christmas tree” technique on non-alloy, low-alloy and high-alloy steel

## Your requirements

## Our solution – Positionweld

### Increased productivity

- High welding speeds compared to the traditional "Christmas tree" technique

### Secure penetration, root and sidewall fusion

- Concentrated, digitally modified pulsed arc

### Reduced or no weld spatter

- Virtually spatter-free welding results thanks to rapid digital control of the welding process

### Controlled heat input

- Optimum, factory-configured switching between low and high welding power
- Heat-reduced process with low arc power and energy per unit length

### Visually pleasing weld surface

- Flat, evenly spaced bead ripples and virtually spatter-free process for reduced finishing work

### Straightforward handling

- Easy to set and easy to guide

### Flexibility in production

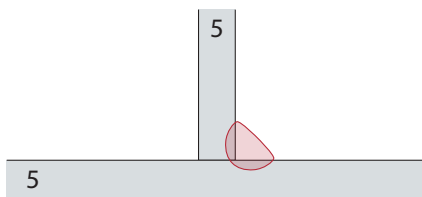
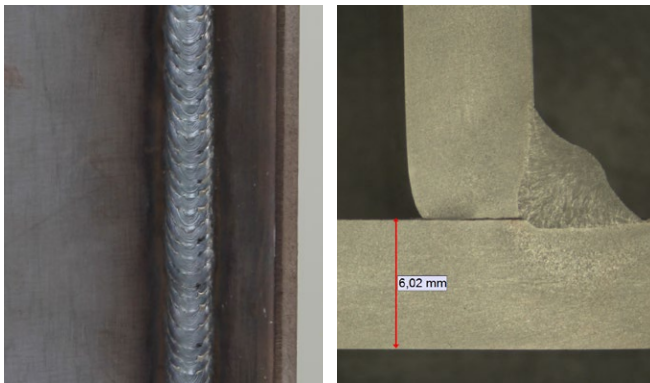
- EWM allin – one machine for welding all material thicknesses and using all processes

all in



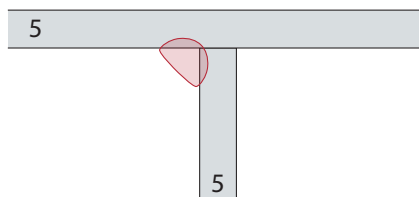
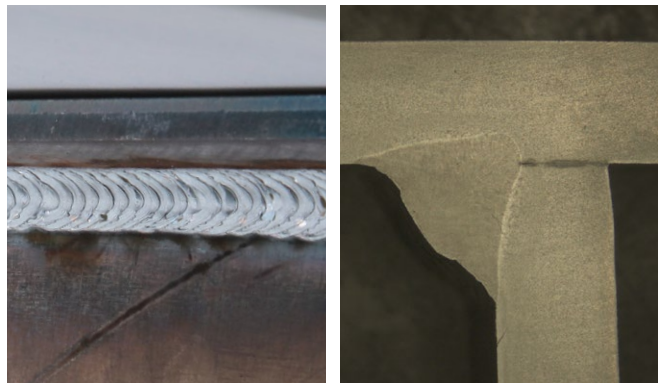
## Positionweld

**PF** Vertical-up weld, straight torch guidance without using the "Christmas tree" technique



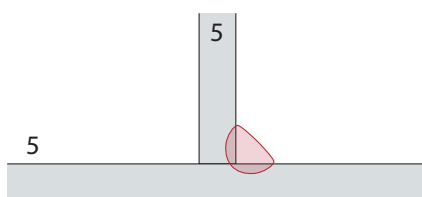
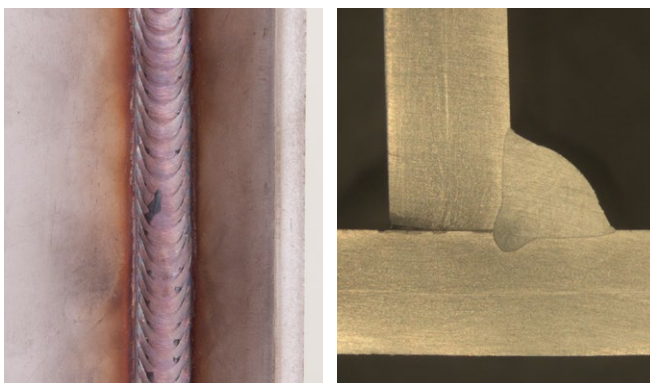
S355, material thickness 5 mm

**PD** Overhead welding, easy handling



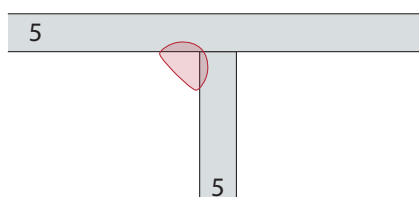
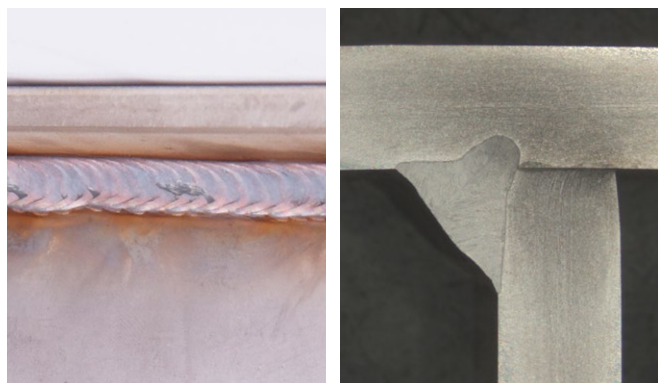
S355, material thickness 5 mm

**PF** Vertical-up weld, straight torch guidance without using the "Christmas tree" technique



1.4301 material thickness 5 mm

**PD** Overhead welding, easy handling



1.4301 material thickness 5 mm

# Welding and brazing of thin sheet metal made from non-alloy, low-alloy, high-alloy steel and galvanised sheet metal

## Your requirements

## Our solution – coldArc® XQ/coldArc® puls XQ

Less distortion, minimal discolouration

- Lower heat input due to digital control of droplet transfer in short-circuit welding thanks to RCC power module (Rapid Current Control)

Visually pleasing, smooth weld surface, less or no weld spatter

- Flat, smooth weld surface and virtually spatter-free process, less discolouration and distortion reduces finishing work, excellent wetting of surfaces when brazing

Changeable, inconsistent air gap

- No sagging of the molten metal, secure sidewall fusion even with misaligned edges

Secure penetration

- Optimum process performance configuration, steady and stable welding process

Straightforward handling

- Rapid digital control of the process, easy to guide and control
- Welding even with long hose packages without additional voltage measuring leads thanks to RCC power module

Welding and brazing of coated (galvanised) sheet metal

- Minimal spatter formation, minimal impact on corrosion resistance

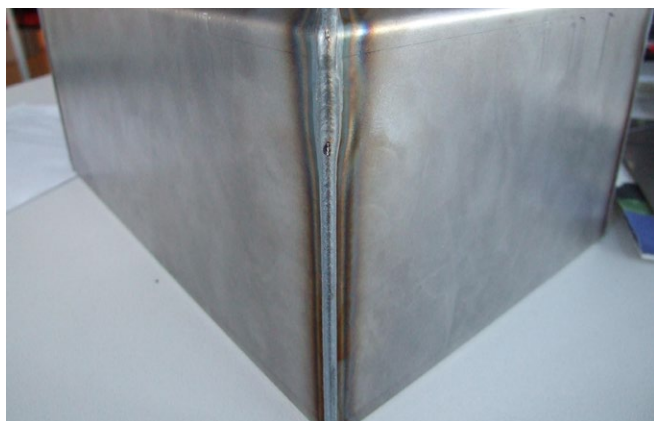
Flexibility in production

- EWM allin – one machine for welding all material thicknesses and using all processes

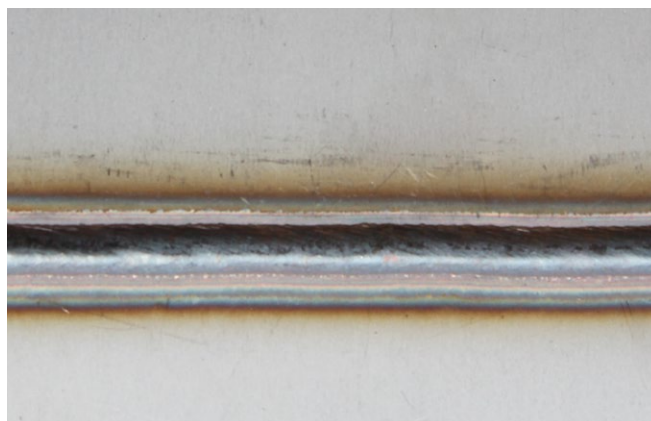
all in



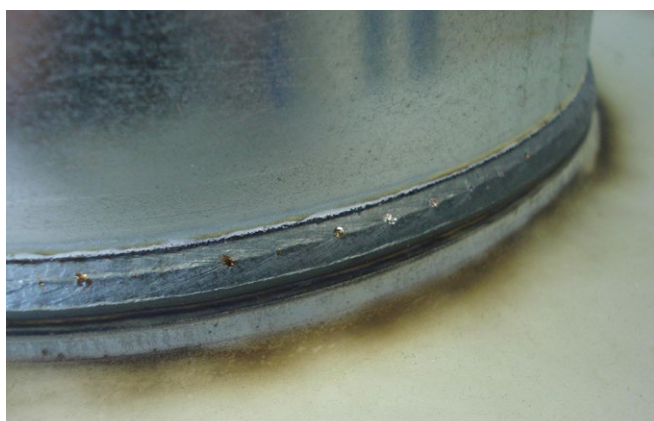
**coldArc<sup>®</sup> XQ / coldArc<sup>®</sup> puls XQ**



Welding unalloyed sheet metal



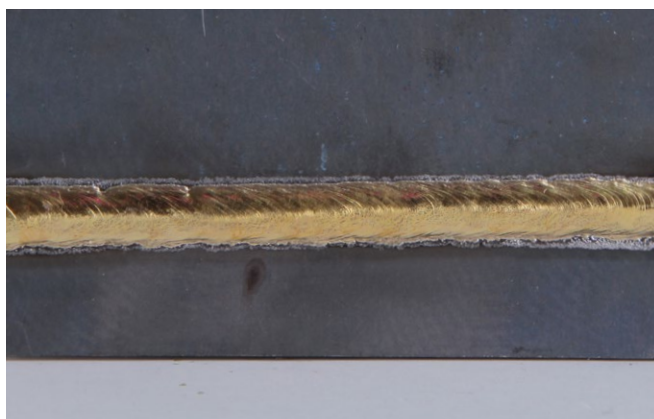
Welding high-alloy sheet metal



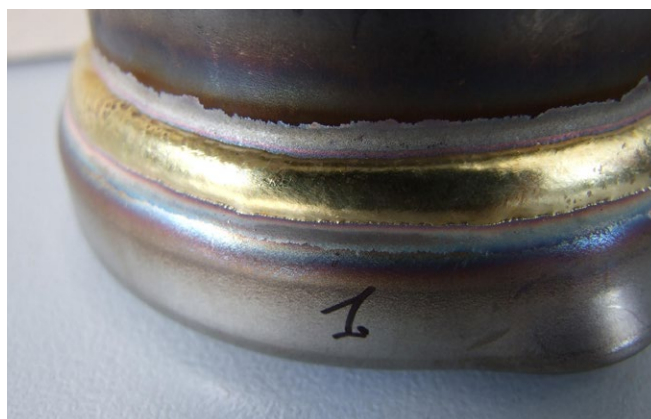
Welding galvanised sheet metal



Brazing galvanised sheet metal



Brazing high tensile sheet metal, e.g. Usibor<sup>®</sup>



Brazing high-alloy (CrNi) sheet metal

# Filler pass and cover pass welding of high-alloy steel

## Your requirements

## Our solution – forceArc puls® XQ

### Secure deep penetration

- Concentrated, digitally modified pulsed arc

### Reduced or no weld spatter

- Virtually spatter-free welding results thanks to rapid digital control of the welding process
- Lower welding fume emissions compared to pulse arc welding

### Minimal distortion

- Heat-reduced process with low arc power and energy per unit length reduced by up to 20% compared to pulsed arc

### Increased productivity

- Ability to reduce the seam volume thanks to the smaller included angle in multipass welding
- Symmetrical fillet welds with maximum attainable seam thickness (throat thickness)
- Low interpass temperature/reduced non-productive time

### Visually pleasing, smooth weld surface

- Flat, smooth weld surface and virtually spatter-free process for reduced finishing work, minimal discolouration

### Straightforward handling

- Rapid digital control of the process, easy to guide and control
- Consistent weld surface from various torch positions

### Flexibility in production

- EWM allin – one machine for welding all material thicknesses and using all processes



## Your benefits

### Up to 30% total cost savings

- Reduced costs for wages, welding consumables, shielding gas and power
- Reduced production time

### Up to 15% lower heat input

- Less finishing work (straightening, sanding, cleaning) due to reduced distortion, discolouration and stress
- Minimised non-productive time due to shorter waiting times in multipass welding

### Up to 20% greater throat thickness\*\*

- Symmetrical seams due to deep, concentrated penetration with reliable root fusion

### Virtually spatter free

- Minimised finishing work, even on panels with scaling or very dirty surfaces

## forceArc puls<sup>®</sup> XQ



**Front view:** Lower heat input using forceArc puls<sup>®</sup> XQ, less surface oxidation resulting in a better finish

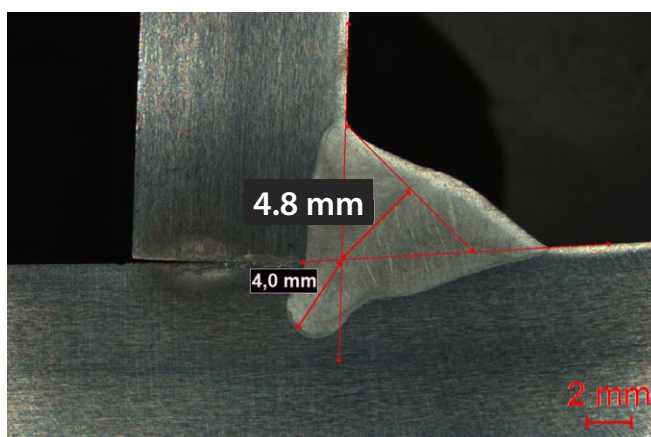
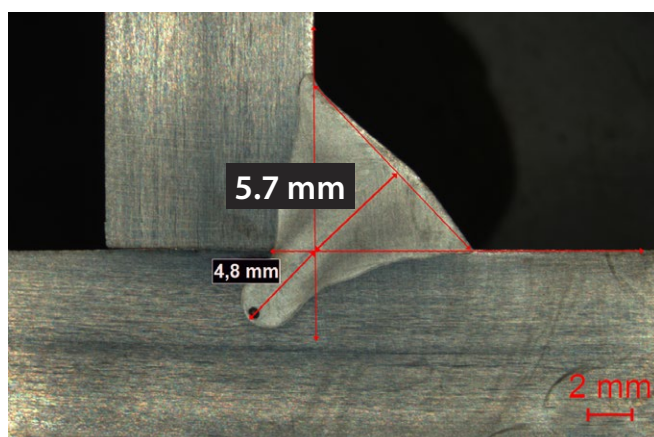


**Back view:** Low heat input using forceArc puls<sup>®</sup> XQ, less surface oxidation

Compared to pulsed arc welding, forceArc puls<sup>®</sup> XQ inputs up to 15% less heat in the upper power ranges. This results in less discolouration and less distortion in the component.

### Your benefits

- Lower heat input
- Minimised energy per unit length
- Reduces distortion, discolouration and stress in the workpiece
- Less finishing work (straightening, sanding, cleaning)
- Less melting loss of alloy elements resulting in greater corrosion resistance



Process	forceArc puls <sup>®</sup> XQ	Pulse
Wire feed in m/min	13	13
Energy per unit length in kJ/mm	1.21 (-15%)	1.44
Weld speed in m/min	0.45	0.45
Throat thickness	5.7 (+15%)	4.8

## For welding aluminium and aluminium alloys

### Pulsed arc XQ

#### Your requirements

Secure penetration, root and sidewall fusion

Visually pleasing weld surface

Minimised spatter

For welding any material thickness

Straightforward handling

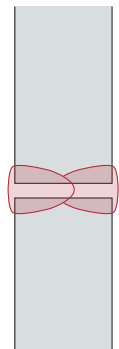
Flexibility in production

#### Our solution – pulsed arc XQ

- Rapid and stable process control thanks to the use of the latest microprocessor technology
- Steady, stable droplet transfer, less smoke residue on surface
- Individual weld appearance thanks to freely adjustable superPuls function
- Wire feed reverse for spatter-free ignition
- Reliable process starting from 1 mm
- Rapid digital control of the process, easy to guide and control
- EWM allin – one machine for welding all material thicknesses and using all processes

all in

#### PC Welding on both sides of aluminium in shipbuilding



# Welding of aluminium and aluminium alloys in positional welding without using the “Christmas tree” technique

## Positionweld

### Your requirements

Secure penetration, root and sidewall fusion

Controlled heat input

Increased productivity

Visually pleasing weld surface

Straightforward handling

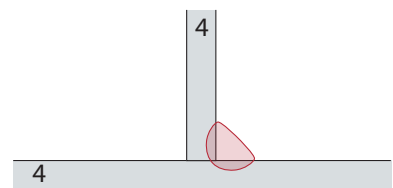
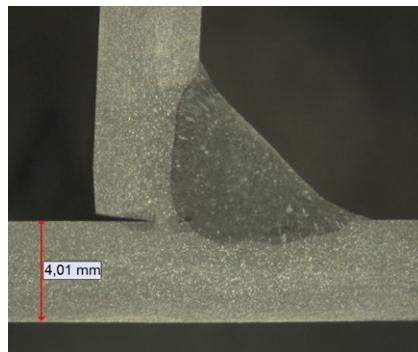
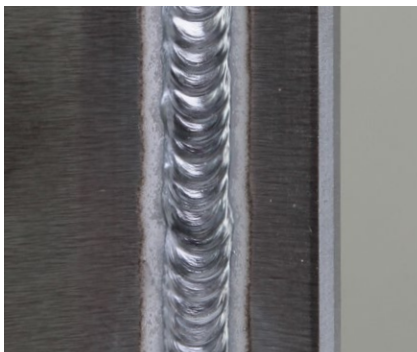
Flexibility in production

### Our solution – Positionweld

- Concentrated, digitally controlled pulsed arc
- Optimum, factory configured switching between low and high welding power
- High welding speeds compared to the traditional weaving techniques
- Flat, evenly spaced bead ripples and virtually spatter-free process for reduced finishing work
- Rapid digital control of the process, easy to guide and to control
- EWM allin – one machine for welding all material thicknesses and using all processes

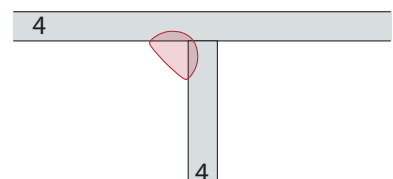
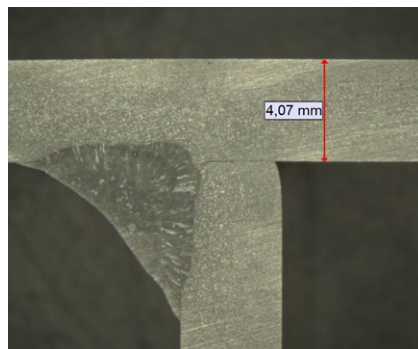
**all in**

#### PF Vertical-up welding, easy handling



AlMg5, material thickness 4 mm

#### PD Overhead welding, easy handling



AlMg5, material thickness 4 mm

## Surfacing, cladding/hardfacing

### Your requirements

Deposit with good corrosion resistance

Little material removal after welding

Stable arc

Straightforward handling

Flexibility in production

### Our solution – cladding/hardfacing

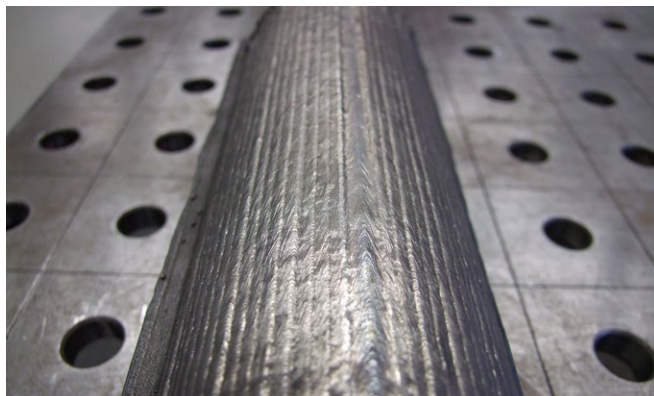
- Low dilution due to optimum process configuration for surfacing
- Even deposit structure, minimal machining work
- High process stability thanks to digitally controlled arc, minimised spatter formation
- Easy to operate and set
- EWM allin – one machine for welding all material thicknesses and using all processes
- Surfacing processes at no extra cost for Co-based and Ni-based alloys and high-alloy CrNi alloys

all in

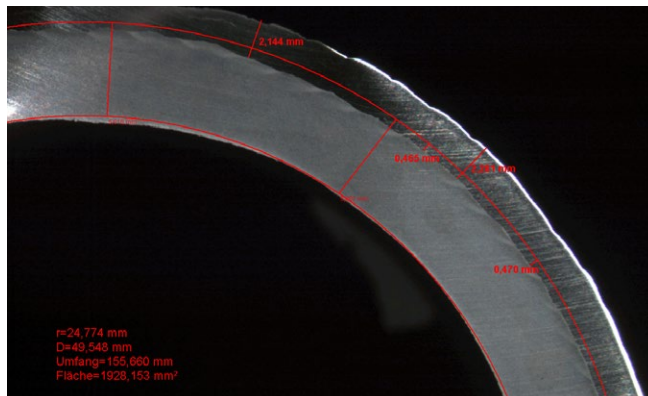


## Cladding/hardfacing

### PA Surfacing of finned tube walls



Corrosion-resistant surfacing of Alloy 625 Ni-based materials



### PA MAG + hot wire surfacing for increased deposition rate



New process variant combines a MAG welding process supplemented with an additional hot wire.

- Up to 13.8 kg deposition rate for significantly increased productivity
- Minimal dilution
- Further improved properties of deposited layers
- Process easy to set up and configure
- Suitable for cladding and hardfacing



Additional information



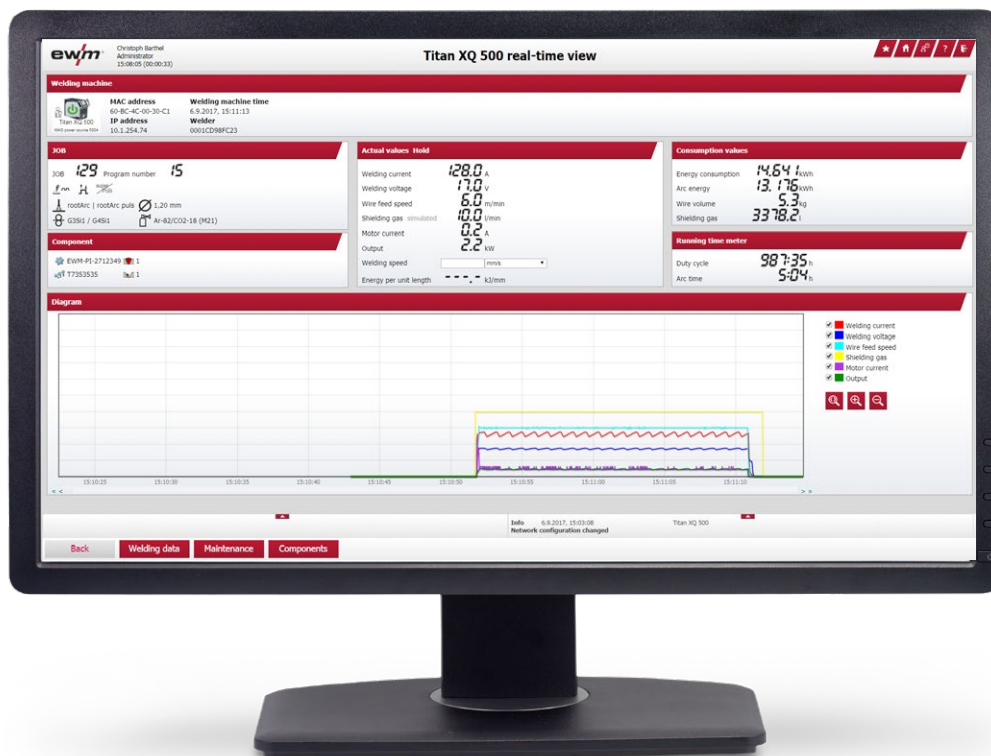
[www.ewm-group.com/sl/cladding](http://www.ewm-group.com/sl/cladding)

# Welding 4.0 – ewm Xnet 2.0 welding management system

## The step towards more efficient and resource-saving

Intelligent and productivity-boosting networking of man and machine for an automatic flow of data in the production chain: Industry 4.0 is now becoming established in welding production thanks to the new and innovative ewm Xnet 2.0 Welding 4.0 welding management system. Future concepts such as the smart factory and digital transformation become reality with minimal effort. The advantages are obvious: improved networking of prod-

ucts and people increases efficiency and quality, reduces costs and at the same time saves resources. Intelligent monitoring and transparent processes from planning and production through to the final costing of weld seams ensure that you are always kept informed. ewm Xnet 2.0 provides welding companies of all sizes and types with the benefits of Industry 4.0. Bring the future into your company now – get in touch with us.



### Network solutions

#### The compact solution

- Occasional recording, reviewing and analysing of welding data as well as monitoring of networked machines
- Ideal for smaller single-shift operations and small to medium-sized companies with up to approx. 15 networked machines

#### The standard solution

- Continuous recording, reviewing and analysing of welding data as well as monitoring of networked machines
- The standard solution for medium-sized and large companies with up to approx. 60 networked machines

# welding technology

## ewm Xnet 2.0 Your benefits

- Recording of welding data
- Save, review and analyse at a central point
- Online monitoring – control and monitor the welding process for any number of welding machines from any number of PC workstations
- Online analysis, evaluation, reporting and documentation of logged welding parameters for each networked welding machine using different documentation and analysis tools
- Option of transferring to all welding machines in the network
- Convenient, easy-to-create graphic display layout showing equipment in the network, based on work facility floor plan; can be enlarged by zooming, navigation window and much more

## ewm Xnet 2.0 The modules and components

- Basic Set – record, manage and transmit consumption values of welding data in real time
- Upgrade 1 – WPQX 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 of complex welding tasks
- Xbutton – access rights and WPS allocation for the welder via the robust hardware key



## OPC UA interface

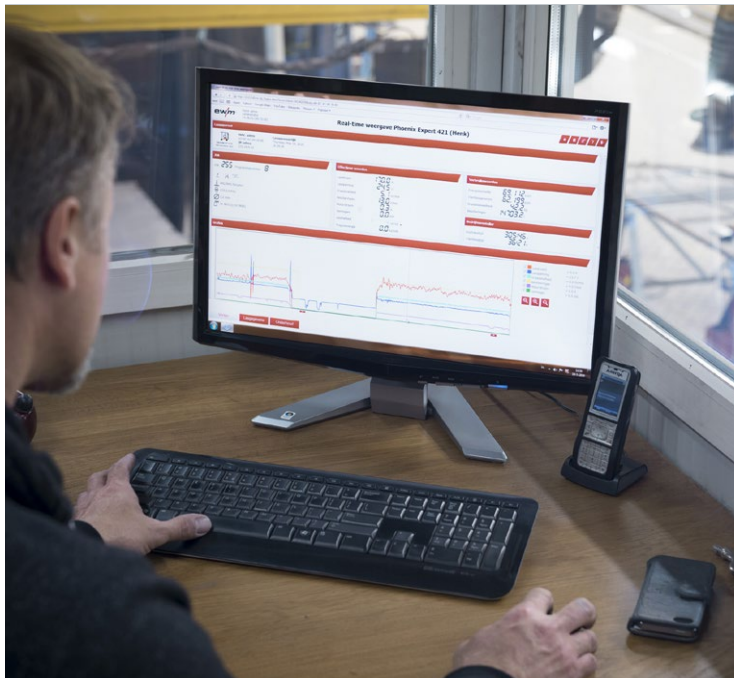
Standardised interfaces such as OPC UA enable users to export data from the EWM system to a standard format so that these data can be integrated into higher-level production management systems.

## ewm Xnet 2.0 component management (module 3)

### Step 1 –

#### Work preparation in ewm Xnet 2.0

- Create the component to be produced in ewm Xnet 2.0 during work preparation on PC in the office
- Create the component to be produced in the office on PC
- Create drawing file or import from CAD
- Determine seam sequence plan
- Assign WPS
- Print barcode, add the work order or attach directly to the component as a sticker
- Send component data to welding machine via LAN/WiFi
- The data is available offline in the machine e.g. for use on construction sites



### Step 2 –

#### Scan the barcode on the component

- Welder scans the barcode on the component using a barcode scanner
- Component data is called up on the control:
  - Order numbers
  - Component numbers
  - Component group
  - Series numbers
  - Batch numbers
  - Welding sequence plan (e.g. seam 1, run 1, seam 1, run 2 etc.)
  - WPS (welding data for every run/seam)
  - Required welding qualification



### Step 3 – Xbutton

- Welder identifies themselves for welding approval using the Xbutton on the welding machine



### Step 4 –

Call up the beads and seams corresponding to the welding sequence plan using the PM welding torch and graphic display

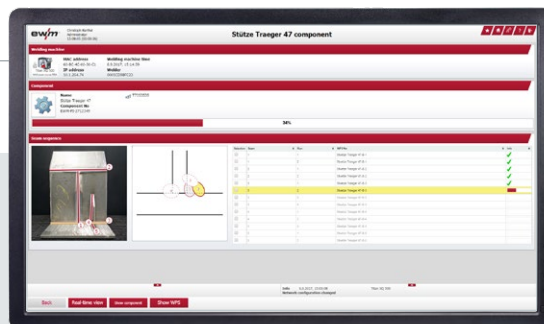
- Welder begins working in line with the displayed seam sequence
- All welding parameters are set automatically for every individual run/seam by the machine
- After each run/seam, the welder confirms its completion by pressing a button on the PM welding torch with graphic display
- Two-part exit e.g. for tack-welding tasks using a button on the PM welding torch with graphic display
- Display with seams/runs



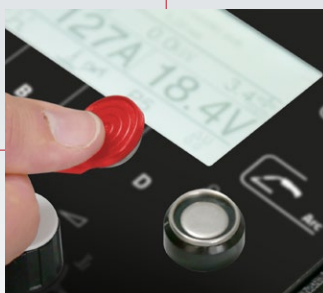
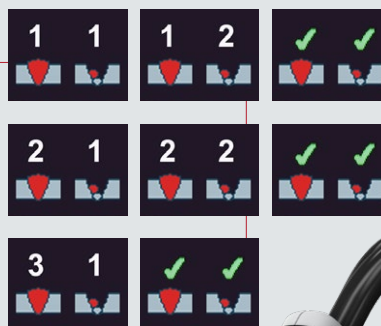


Optional screen directly at welding site shows welding sequence plan amongst other things

Barcode scanner  
Scanning the component IDs – Step 2



Welding sequence – Step 4



Xbutton  
component/welder  
assignment – Step 3



PM welding torch  
with graphic  
display



QR code

Login from any mobile end device,  
smartphone or tablet etc. using  
Expert XQ 2.0



## Overview of options



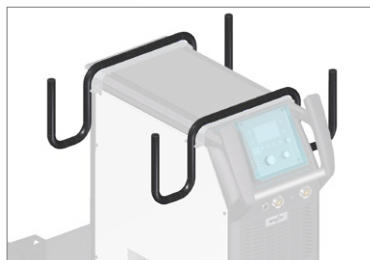
Wire feeder, rotatable



Turning mandrel extension nozzle



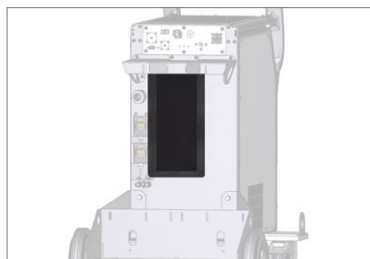
Holder for two wire feeders



Hose package holder



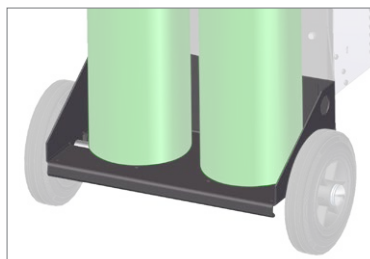
Ram protection



Dust filter for power source  
and cooling unit

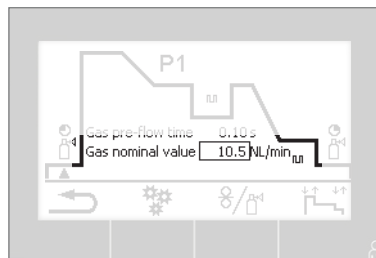


Torch holder



Double cylinder holder





**DGC – electronic gas flow control**



**WHS – wire spool heater**



**WRS – wire reserve sensor**



**Torch holder**



**Wheel kit**



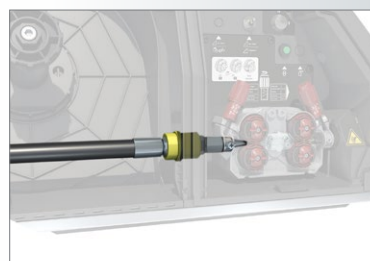
**Rubber feet**



**Crane suspension**



**Heavy-duty kit (protective plate plus crane suspension)**



**Connection for drum feed**

## Meets the wishes of the welder

### Titan XQ options



#### **Rotatable wire feeder – a rounded affair**

- Space for a Drive XQ wire feeder
- Increased working radius thanks to rotatability
- Wire feeder can be mounted and removed without tools



#### **Turning mandrel extension nozzle – creates space for wheels**

- Allows Drive XQ wire feeder with mounted wheel kit to be mounted onto the rotatable wire feeder option
- A few swift adjustments – the extension is simply inserted onto the mandrel of the rotatable wire feeder option and secured



#### **Holder for two wire feeders – change welding tasks without set-up time**

- Effortless switch between two different welding applications by means of two Drive XQ wire feeders on the machine
- Easier wire spool exchange – machines can be pulled apart



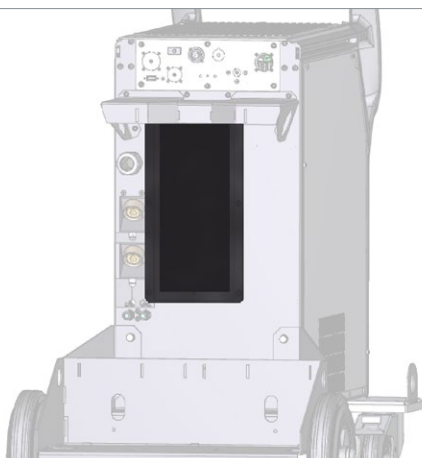
#### **Hose package holder – also for long cables**

- Holder for holding long hose packages (up to 40 m), accessories and welding torch
- To be used together with the retrofit option rotatable wire feeder



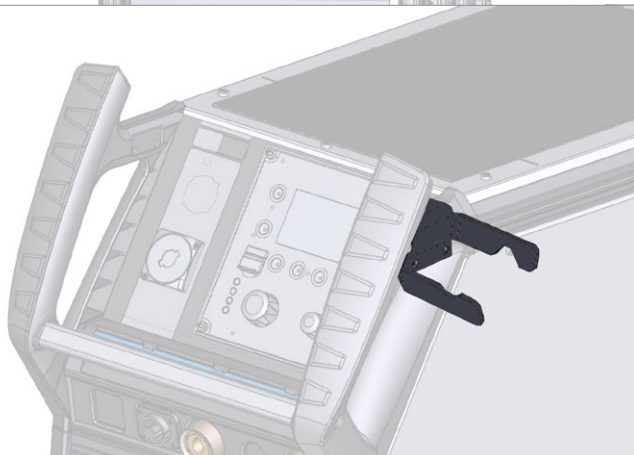
**Ram protection –  
for daily workshop transportation**

- Protection system and connected plug to prevent damage from the front



**Dust filter welding machine and cooling unit –  
dirt stays outside**

- Protects welding machine from external contamination
- Can be assembled and disassembled without tools for cleaning
- Captive fasteners
- Easy to clean



**Torch holder –  
organisation is half the welding**

- Secure place protects against damage
- For MIG/MAG and TIG welding torches
- Can be simply screwed to the handle of the system
- Individual versions for right- and left-handed users



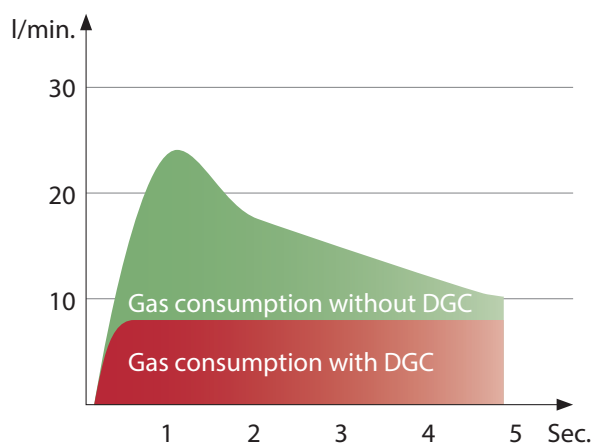
**Double cylinder holder**

- For operating with two wire feeders
- Welding with different shielding gases without long set-up times

## Everything fits – because it's customisable Drive XQ wire feeder options



### DGC – Gas savings during ignition



### DGC – electronic gas flow control – save gas with ease and accuracy

- Prevents welding errors caused by too much or too little gas
- Efficiency through gas savings thanks to accurate settings
- Fully reproducible thanks to digital configuration and saving to the respective JOB (welding task)
- Constant gas flow rate thanks to electronic adjustment
- Digital nominal and actual value display of gas flow rate in l/min
- Extremely advantageous with long hose packages, e.g. for shipbuilding and steel construction
- No gas blast with turbulence when igniting the arc as electrical valve opens and closes gently



### WHS – wire spool heater – warm up to seam quality

- Prevents moisture penetration into the weld pool by drying the welding wire by means of preheating
- Controlled temperature to 40 °C (adjustable)
- Ensures perfect welding results, especially with aluminium
- Reduced risk of hydrogen pores



### WRS – wire reserve sensor – no surprises during welding

- Warns at 10% residual quantity of the wire spool
- Prevents seam error because wire is about to run out
- Reduces downtime thanks to early planning of the spool change



**Torch holder –  
lets nothing get burned**

- For greater safety when working
- Extends torch service life
- Keeps work area organised



**Wheel kit –  
for mobility**

- Maximum flexibility for Drive XQ
- Comfortable because mobile
- Large rolls (Ø125 mm) overcomes obstacles



**Rubber feet –  
so that nothing starts to slip**

- To replace standard sliding rails



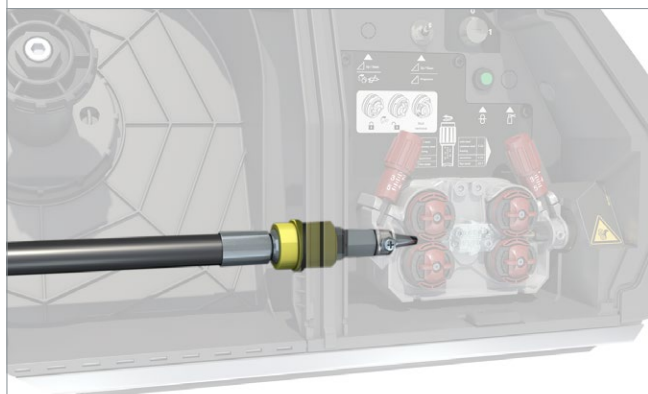
**Crane suspension –  
floating made easy**

- For safe, easy transportation
- Maximum mobility even during suspension operations



### Heavy-duty set (protective plate plus crane suspension) – when it comes to the crunch

- For optimal protection under tough deployment conditions
- For standing, vertical and suspension operation
- Temperature- and impact-resistant sliding protective plate
- Crane suspension for maximum mobility and easy, safe transport



### Connection for drum feed – endless welding

- Drum-based feed boosts effectiveness
- Less need to change wire spools saves time



### Connection socket on the wire feeder

- Connection capability for gouging torch and electrode holder for MMA welding
- Improved flexibility on the job



### Flow meter for manual shielding gas flow setting

- Precise adjustment and examination directly on site
- Extremely advantageous with long hose packages, e.g. for shipbuilding and steel construction

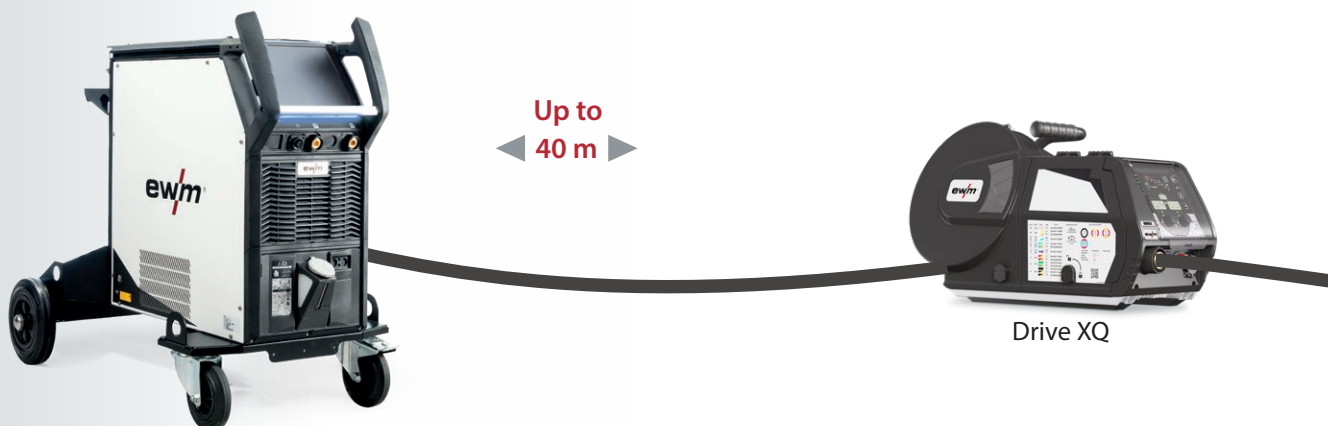
## Titan accessories – User-oriented and useful.

### R10 19-pin remote control

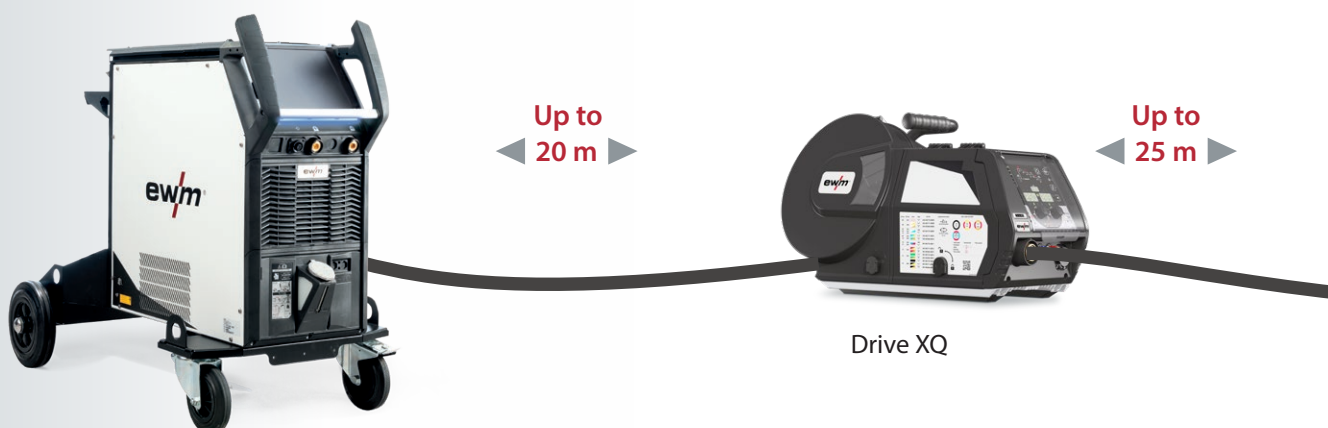
- Setting wire feed speed, voltage correction
- Robust metal casing with rubber feet, mounting bracket and mounting magnet, 19-pin connection socket
- Separate connection cable either 5 m, 10 m or 20 m



### Push/pull welding torches – System overview



### Intermediate drive –System overview



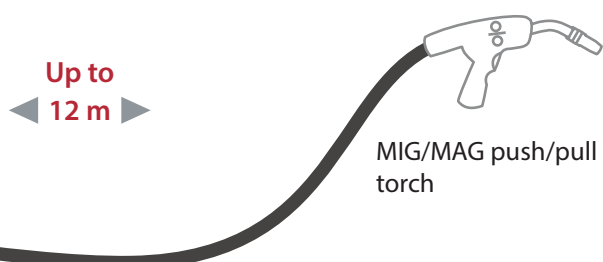


### RC Expert XQ 2.0 remote control

- Setting and displaying all Titan XQ welding parameters
- Robust metal casing with mounting bracket and 3 mounting magnets
- Plastic cover
- 7-pin connector plug
- Optional connection cable 2 m, 5 m, 10 m or 20 m

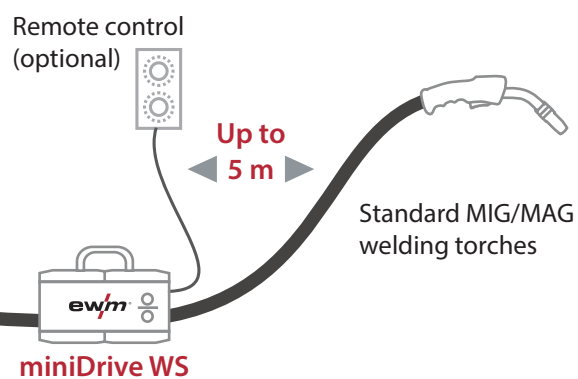
### Push/pull torch

- Reliable and consistent wire feeding for thin, soft wires such as aluminium, even with longer hose packages
- Set wire feed roll contact pressure precisely
- Ergonomic grip for fatigue-free work



### miniDrive intermediate drive – Go where you want to

- Is your welding site confined and far away from the power source and is weight an impediment? Then the miniDrive is the solution.
- Robust and lightweight: Only 7.5 kg
- Rounded edges and plastic protectors for optimum protection
- Reliable wire feeding even over long distances



For further accessories visit  
[www.ewm-sales.com](http://www.ewm-sales.com)

## Titan XQ puls – Multi-process MIG/MAG welding machine, Technical data



Technical data	Titan XQ 350 puls	Titan XQ 400 puls	Titan XQ 500 puls	Titan XQ 600 puls
Setting range for welding current	5 A–350 A	5 A–400 A	5 A–500 A	5 A–600 A
Setting range for welding voltage	10.2 V–34 V	10.2 V–36 V	10.2 V–40 V	10.2 V–44 V
Duty cycle welding current at ambient temperature 40 °C				
100%	350 A	370 A	470 A	470 A
80%	–	400 A	500 A	500 A
60%	–	–	–	550 A
40%	–	–	–	600 A
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 20 A	3 x 25 A	3 x 32 A	3 x 32 A
Efficiency	88%			
cos φ	0.99			
Open circuit voltage at 3 x 400 V mains voltage	82 V			
Max. connected load	15.4 KVA	18.6 KVA	25.8 KVA	34.1 KVA
Recommended generator rating	20 KVA	25 KVA	35 KVA	45 KVA
Protection classification	IP 23			
EMC class	A			
Ambient temperature	–25 °C to 40 °C			
Machine cooling	Fan			
Torch cooling	Gas or water			
Coolant water tank	8 L			
Safety identification	S / CE			
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, gas-cooled	114 kg/251.32 lb			
Machine weight, water-cooled	128 kg/282.19 lb			

80% DC\*

\* Titan XQ 400/500 puls



### Technical data



### Drive XQ

Duty cycle welding current at ambient temperature 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	Drive rolls Uni 1.0 to 1.2 mm (for steel wire)
Drive	4 rolls (37 mm)
Torch connector	Euro torch connector (ETC)
Readiness for use in manholes	Complete, 42 cm and larger (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



## Titan XQ puls – Multi-process MIG/MAG welding machine compact with integrated wire feed drive eFeed, Technical data



Technical data	Titan XQ 350 puls	Titan XQ 400 puls
Setting range for welding current	5 A - 350 A	5 A - 400 A
Setting range for welding voltage	14.3 V - 31.5 V	14.3 V - 34 V
Duty cycle welding current at ambient temperature 40 °C		
100%	350 A	320 A
80%	350 A	350 A
60%	–	400 A
40%	–	–
Mains voltage 50 Hz/60 Hz	3 x 400 V (-25 % to +20 %) 3 x 460 V (-25 % to +15 %) 3 x 500 V (-25 % to +10 %)	
Mains fuse (slow-blow)	3 x 20 A	
Efficiency	88 %	
cos φ	0,99	
Open circuit voltage at 3 x 400 V mains voltage	82 V	
Max. connected load	17.6 KVA	18.6 KVA
Recommended generator rating	25 KVA	
Protection classification	IP 23	
EMC class	A	
Ambient temperature	-25 °C to 40 °C	
Machine cooling	Fan	
Torch cooling	Gas or 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, gas-cooled	117 kg / 257.94 lb	
Machine weight, water-cooled	131 kg / 288.8 lb	
Wire feed speed	0,5 m/min to 25 m/min	
Factory-installed roll equipment	Drive rolls Uni 1.0 to 1.2 mm (for steel wire)	
Drive	4 rolls (37 mm)	
Torch connector	Euro torch connector	
Wire spool diameter	standardised wire spools of 200 to 300 mm	

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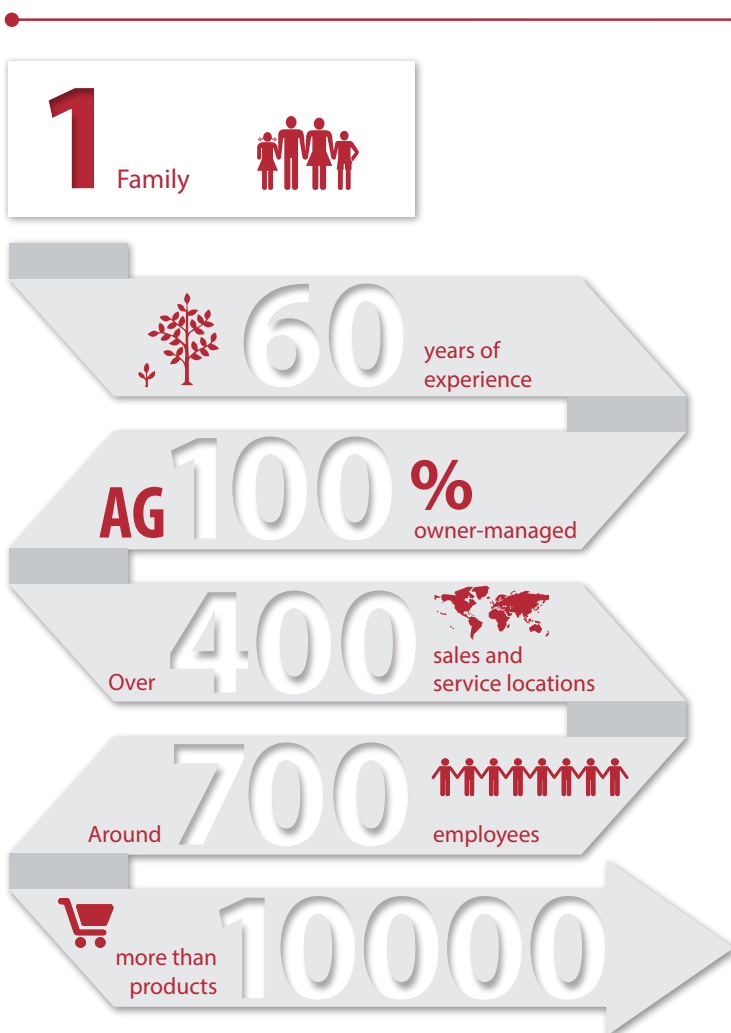
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