

THE NEW STEPLESS MIG/MAG GENERATION
MEGA.ARC²



Steplessly regulated – flexibility for professionals

The quick and reliable route to greater quality and efficiency

With the MEGA.ARC² you can operate beyond the usual limits of a MIG-MAG arc.

Your work becomes simpler and easier than ever before. Without having to sacrifice your priorities. Welding as you've never experienced it before.





Pioneering FOCUS.ARC Now! Exclusive to **MEGA.ARC²**

Faster welding with precise heat input

FOCUS.ARC und SDI®-Plus – with these two new developments, MEGA.ARC² redefines arc properties. MEGA.ARC² means a faster, more reliable and easier way to work more efficiently. Regardless of the application, in so many ways MEGA.ARC² brings you better alternatives than you have ever had before.

FOCUS.ARC

The new feature increases the arc pressure and focussing at the same time. Due to the enormous pressure on the arc, there are new time-and material-saving techniques.

SDI®-Plus

Works throughout the entire arc zone - and in spray arcs too. Experience a new dimension in arc adjustment.

The new MEGA.ARC² is the most complete machine for high-grade qualified MIG/MAG welding:

AS STANDARD!

FOCUS.ARC – a more pressured and focused arc.

SDI®-Plus – pure dynamics in a new dimension.

Integrated Job Manager – available via the Up-Down torch or by hand.

Guaranteed – the best and most reliable welding results

MEGA.ARC² – your benefits:

- Easy to use**
Focus on welding – SMC® does the rest
- FOCUS.ARC**
Safe and simple = faster and more efficient
- Revolutionary SMC® control technology**
For greater efficiency and quality
- Innovative SDI®-Plus technology**
For better weld seam quality and precision
- Highest possible duty cycle**
Ideal for industrial applications
- Endless power**
Performance for the most demanding applications
- Job memory**
For absolute reproducibility
- A wide range of remote control options**
The right solution for every application
- Standard automation interface**
For semi-automated and automated production
- Large range of types**
For the widest range of applications, e.g. shipbuilding

All in one – for perfect welding results



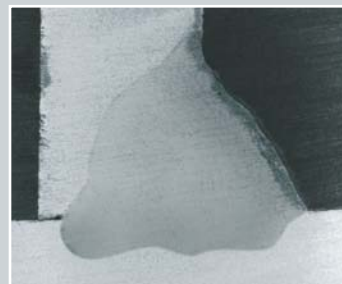
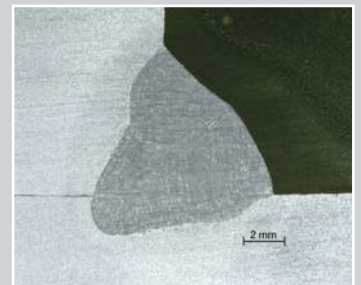
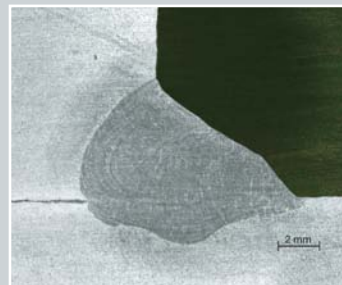
FOCUS.ARC – Welding in a new dimension

FOCUS.ARC once again substantially extends the area of applications for the welder:

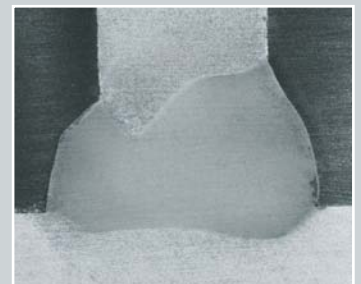
- **Reliable root formation**
- **Exceptionally deep penetration**
- **Reduced heat transfer**
- **Reliable edge formation**
- **Reduced undercutting**
- **Less weld preparation**
- **Welding in confined spaces with a short, powerful arc**

The highly focused arc alters penetration substantially, decreasing the seam opening angle and enabling the production of new seam geometries.

FOCUS.ARC is ideal for applications that depend on deep penetration and reliable root formation.



Without FOCUS.ARC



With FOCUS.ARC



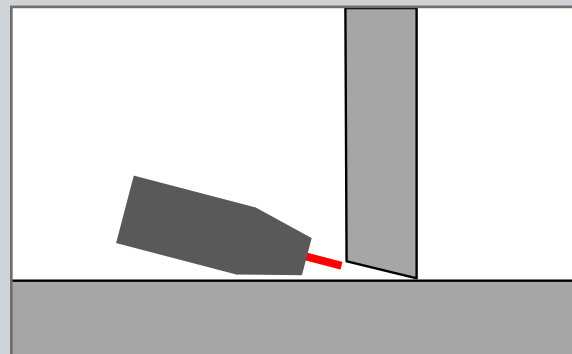
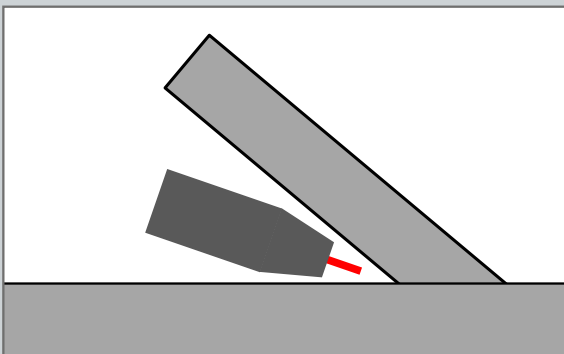
FOCUS.ARC – pressured and focused arc

FOCUS.ARC brings you benefits: faster welding, reduced seam opening angle with fewer layers and less heat input by using a "short" arc with less distortion.

When you press the FOCUS.ARC button, a "shorter" arc is selected with extreme arc stability. These conditions means you can achieve a deep penetration.

Even with a long stickout, where the distance between the contact tip and the arc is over 30 mm, FOCUS.ARC technology gives precise, high quality welds.

Moreover, when the FOCUS.ARC function is active, there is less spatter despite the short setting of the spray arc. If the stickout has to be extended, FOCUS.ARC technology welds for longer with a spray arc than conventional MIG/MAG machines. This avoids the spatter-prone transition arc for longer. The results are exceptionally low-spatter welded seams that pay for themselves in form of an excellent seam appearance and reduced rework.



All in one – for perfect welding results



SMC® by REHM is based on the intelligent connection of

- Stepless electronic choke SDI®-Plus
- RSC® digital feed control
- CCM welding database
- RMI user interface

This completely new and higher-level machine control concept guarantees excellent welding results and makes it easy and totally safe to operate.

SDI®-Plus

STEPLESS DYNAMIC INDUCTION



Stepless Dynamic Induction

The stepless, electronic welding choke with ultrafast control ensures excellent ignition properties and an extremely stable arc.

- Best possible arc stability in the ignition and welding phase
- Minimizes the spatter build up in mixed arc use
- Significantly less rework
- Optimal adjustment of welding properties to the welding conditions, e.g. in confined spaces

RSC®



Realtime Speed Control

RSC® uses realtime monitoring and precision control of wire feed speed with a digital signal generator to guarantee a constant wire feed.

- Faster and more efficient compensation for arc length changes
- Constant wire feed speeds

CCM



Characteristic Curve Memory

CCM is the integrated welding parameter database with the concentrated knowledge of experienced practical experts.

- Automatic setting of optimum welding parameters according to the thickness of the material, wire diameter and shielding gas
- Continuous comparison of actual values with process requirements during welding

RMI



REHM Machine Interface

The consistent logical structure of the user interface shows the choices at a glance.

- Child's play
- Fast and safe setting of the correct welding parameter
- Guarantees no operating errors

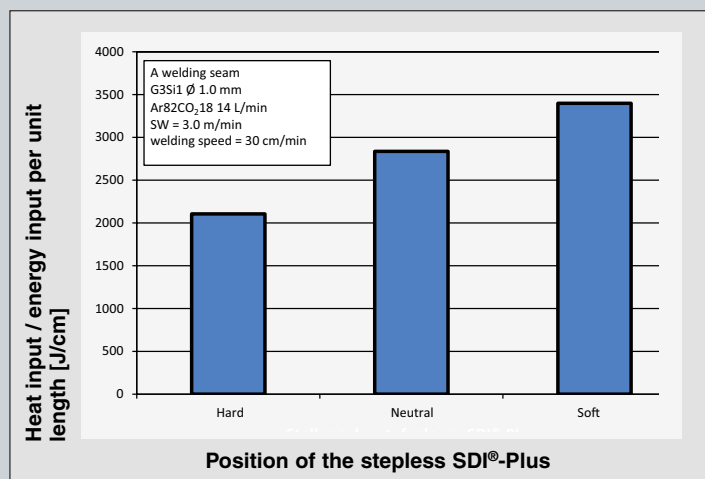


SDI®-Plus – Pure dynamics in a new dimension

SDI®-Plus creates new ways to precisely adjust the arc to different situations.

The targeted modelling of the arc means that characteristics such as heat input, bridging gaps and penetration can be easily adjusted. Whether in a conventional or a FOCUS.ARC process. A single control dial is enough to open up a whole new dimension.

- Optimise penetration and root formation with **SDI®-Plus**
- Reduce heat input where the job requires it
- Welding in confined spaces is safer and easier **SDI®-Plus**



Changing the heat input with SDI®-Plus:
Simply adjust the heat input without using any special procedures, just as it suits you.

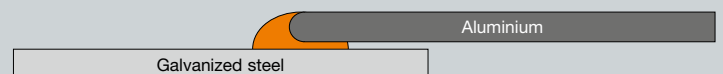


SDI®-Plus +5.0 –
low heat input

SDI®-Plus -5.0 –
high heat input

Heat input at a welding speed of 0.5 m/min,
corner weld 3.0 mm thick steel.
Inert gas Ar/CO₂ 82/18, filler G3Si1 1.0 mm,
Wire feed speed 3.5 m/min.

Welding dissimilar materials



By optimising the **SDI®-Plus**, the resulting lower heat input allows even dissimilar materials such as galvanized steel and aluminium to be joined with the help of AlSi5 filler.

Feed case for a broad range of applications



RMI operating panel (REHM Machine Interface)

1 Selection of operating modes

- 2-stroke
- 2-stroke with down-slope
- 4-stroke
- 4-stroke with down-slope
- Spot welding
- Interval

2 Segment display energy / spot welding time

- Welding current [A] with hold function
- Feed speed [m/min]
- Plate thickness [mm]
- Special parameter value

3 Segment Display welding voltage / SDI®-Plus/VD

- Welding voltage [V] with hold function
- SDI®-Plus value at change
- VD-correction value at change
- Point welding time [sec]
- Special parameter number

4 SDI®-Plus controller

Setting the arc on hardness via the stepless welding choke (SDI®-Plus). The penetration behaviour can also be influenced by the user via SDI-Plus® in both the standard and the FOCUS.ARC arc.

5 selection of synergy programs

- Wire diameter 0.8 mm, 1.0 mm, 1.2 mm
- Manual operation (without synergy)
- Material / gas combination

6 Rotary knob (incremental encoder)

Adjustment of the welding energy via

- Welding current
- Wire feed speed
- Material thickness

7 Wire feed correction (VD)

- Arc length correction

8 FOCUS.ARC

By touch of a button the FOCUS.ARC is directly activated. The complex loading of special characteristics is eliminated.



The MEGA.ARC² series units are particularly robust and well thought through, and are therefore specially designed for tough industrial use welding thin or thick plates of steel, stainless steel or aluminium.

Job memory

The new MEGA.ARC² is equipped with an integrated job memory. Per characteristic curve, it can save 4 machine settings. Calling up a low-cost up / down torch is conveniently done with the backlit keys.

Integrated automation interface

An interface with start-stop and power-flowing signals and with analogue inputs for energy and wire correction for implementing mechanisation is available via the standard 17-pin remote socket.

Even wire feed

The electronically controlled 4-roll wire feeder always feeds the wire evenly and accurately. An automatic free burning system prevents the wire burning onto the work piece or to the contact tip.

Interval welding

Interval welding is defined as spot welding with defined intervals. There are significant benefits, especially in tool and manufacture and similar applications, such as the application of very thin additives. Unwanted heat input into the base material is also reduced.

For the MEGA.ARC² series, two different feed unit variants are available: the MEGA.ARC² feed unit used in the entire series as well as the CONSTRUCTION mobile feed unit for the MEGA.ARC² 350-4 WS and MEGA.ARC² 450-4 WS.

MEGA.ARC²

The feed unit features a generously dimensioned wire spool holder housing for 300 mm wire spools. All controls are integrated into the feed unit.

MEGA.ARC² CONSTRUCTION

Specially designed for assembly work with a robust, reinforced metal housing. The plastic wire reel take-up provides space for a 300 mm wire spool. The feed unit contains the controls for welding energy, either VD correction or SDI®, gas test and threading.

MEGA.ARC² – The program



Gas-cooled systems

- **MEGA.ARC² 250-4**
Gas-cooled unit with 4-roll drive, feed rollers 0.8 mm
- **MEGA.ARC² 300-4**
Gas-cooled unit with 4-roll drive, feed rollers 1.0 mm
- **MEGA.ARC² 350-4 S**
Gas-cooled unit with 4-roll drive, feed rollers 1.2 mm
- **MEGA.ARC² 350-4 S CONSTRUCTION**
Gas-cooled system with 4-roll drive and CONSTRUCTION feed unit, feed rollers 1.2 mm

Water-cooled systems

- **MEGA.ARC² 350-4 WS**
Water cooled unit with 4-roll drive, feed rollers 1.2 mm
- **MEGA.ARC² 450-4 WS**
Water cooled unit with 4-roll drive, feed rollers 1.2 mm
- **MEGA.ARC² 350-4 WS CONSTRUCTION**
Water cooled unit with 4-roll drive and CONSTRUCTION feed unit, feed rollers 1.2 mm
- **MEGA.ARC² 450-4 WS CONSTRUCTION**
Water cooled unit with 4-roll drive and feed unit

For all CONSTRUCTION devices a second operating unit in the feed case is standard.

Dimensioned to suit the application



Torch Systems

- Standard torch
- Up / Down torch
- Torch with potentiometer
- Push pull torch

Our optional equipment

Our range of accessories leave nothing to be desired.

- Air pre-filter
- Tool set
- Hose pack holder
- Crane eyes
- Cart for wire feeder unit
- CONSTRUCTION feed unit

TECHNICAL DATA MEGA.ARC²

Type		MEGA.ARC² 250-4	MEGA.ARC² 300-4	MEGA.ARC² 350-4 S	MEGA.ARC² 350-4 WS	MEGA.ARC² 450-4 WS
Setting range	[A]	25 – 250	25 – 300	25 – 350	25 – 350	25 – 450
Duty cycle at 40 °C and I_{max} ambient temperature	[%]	50	50	50	50	50
Welding current at 100% duty cycle (40 °C)	[A]	180	220	250	250	320
Open circuit voltage	[V]	68	68	68	68	68
Power supply	[V]	3 x 400	3 x 400	3 x 400	3 x 400	3 x 400
Continuous power at 100% duty	[kVA]	5,8	7,6	9,2	9,2	13,4
Fuse (slow)	[A]	16	32	32	32	32
Power factor	[cos phi]	0,98	0,98	0,98	0,98	0,98
Insulation class		H	H	H	H	H
Cooling type		AF	AF	AF	AF	AF
Torch cooling		gas	gas	gas	water	water
Protection Rating		IP 23	IP 23	IP 23	IP 23	IP 23
Weight (with case)	[kg]	120	124	170	173	176
Dimensions L x W x H (with case)	[mm]	1030 x 605 x 845		1030 x 605 x 845 (1030 x 605 x 1410)		
Article number		1330260	1330310	1330361	1330360	1330460

S = with separate wire feed unit, W = water cooled

Subject to technical changes. Additional equipment for the units shown is available at extra cost. All units carry the CE and S marks and meet the EN 60 974 and EN -1 standards.

REHM welding technology - about us!

The REHM performance program

- **REHM MIC/MAG protective gas welding units**
SYNERGIC.PRO²® gas and water cooled up to 450 A
SYNERGIC.PRO²® water cooled from 500 A to 600 A
MEGA.ARC²® steplessly regulated up to 450 AA
PANTHER 202 PULS impulse welding unit with 200 A
MEGAPULS[®] pulse welding unit up to 500 A
- **REHM TIG protective gas welding units**
TIGER[®], single phase, 170 and 210 A
INVERTIG.PRO[®], three phase, 240 to 450 A
INVERTIG.PRO[®] *digital*, three phase, 240 to 450 A
INVERTIG.PRO[®] COMPACT, three phase, 240 to 450 A
- **REHM manual arc welding unit**
BOOSTER.PRO 170 and 210, single phase
BOOSTER.PRO 250 and 320, three phase
- **REHM AUTOMATION.SYSTEMS**
- **REHM plasma cutters**
- **Welding accessories and materials**
- **Welding fume extractors**
- **Technical advice on welding**
- **Torch repair**
- **Service**

Development, design and production - all under one roof - in our factory in Uhingen. This central organisation and our commitment to the future, the latest inventions are able to flow into production quickly. The wishes and needs of our customers are the basis of our advanced product development. Numerous patents and awards for the accuracy and quality of our products. Customer focus and expertise are the founding principles of our consulting, training and service.

WEEE-Reg.-Nr. DE 42214869

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