

THE NEW STANDARD IN TIG WELDING
INVERTIG.PRO



Working at the highest level

TIG welding redefined

The new INVERTIG.PRO range revolutionises TIG welding from start to finish. Duration of use, welding seam quality and energy efficiency of this innovative design defines new standards world-wide. At the same time REHM and the INVERTIG.PRO offer a fully comprehensive range from 240 Amps DC to 450 Amps AC/DC. For unlimited flexibility in a variety of different welding applications. For the greatest of demands in performance and repeatable quality. For the greatest power to weight ratio available today.





Performance and Innovation!

100 %
INVERTIG.PRO

The new TIG feel from REHM

The INVERTIG.PRO combines the finest welding technology with the greatest degree of operating convenience. The unique partnership of the newly developed **Bi-Power-Inverter** and the precise, digital welding process regulation system offers as yet unattained welding properties.

Regardless of whether you are

- welding steel, stainless steel, nickel or nickel-based alloys, titanium, copper or aluminum (AC/DC),
- thick or thin materials,
- using standard or special gases,

the precise co-ordination of the high-quality performance components guarantees fantastic Arc Ignition and welding properties with consistent and repeatable quality at all times.

Designed for flexible use, the INVERTIG.PRO range covers a wide range of applications and is important when performance and durability affect economy.

- System, container and steel construction
- Machine and tool construction
- Chemical, pharmaceutical and food system construction
- Industrial systems and pipe construction
- Air and space industry
- Ship building and offshore work
- Vehicle and rail vehicle construction
- Repair and assembly

INVERTIG.PRO – The Revolution:

■ Unbelievably simple and amazingly easy to handle

Easy to read, clear and self-explanatory controls and operation, are typical for REHM – without doubt, easy and quick, even when wearing gloves!

■ Highest duty cycle and output at sensationally low weight

No limits – Weld for as long as you want!
100 % Duty Cycle for ALL units in the INVERTIG.PRO range

■ Perfect arc stability

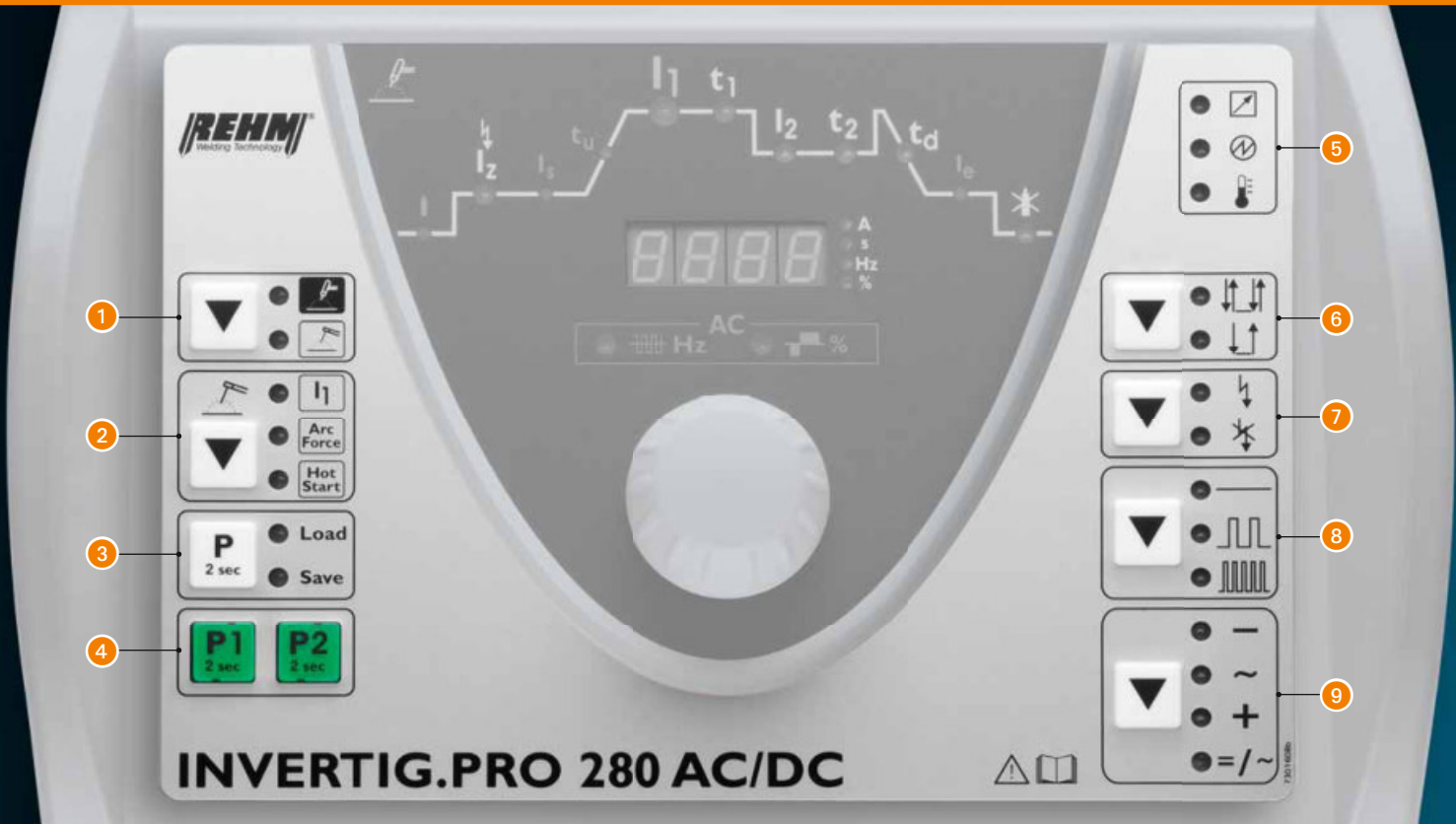
The rapid and precise welding process regulation keeps the arc stable in all situations. Perfectly safe and precise arc ignition thanks to the innovative ignition management system: Where other machines give up, the INVERTIG.PRO continues to operate perfectly.

■ *iSYSTEM*

The CAN-networked multiprocessor architecture, linked to intelligent expansion modules, opens up a wide range of uses. Simply Plug & Play.



Secure and simple operation



Child's play – The REHM operating concept

■ R-Pilot – wide range of functions and easy to operate

Pure ergonomics: Anyone can start using the INVERTIG.PRO immediately. All of the essential settings can be made precisely, and in mere seconds, using a single button.

■ Greatest operating convenience – even with gloves on!

The large and clear operating panel is self-explanatory. The centrally arranged R-Pilot can be used to quickly and safely access all sectors of the welding parameters important to the user.

■ Program Memory

The INVERTIG.PRO allows you to save up to 99 programs. This saves time and also enables you to work quickly whilst guaranteeing repeatable welding results at the same time.

■ QUICK CHOICE Buttons

More safety, convenience and time-saving. The QUICK CHOICE buttons P1 and P2 allow two current settings of a welding task to be saved quickly and easily. These welding programs can be called up by pressing the relevant button, or pressing the R-TIG Up/Down button on the welding torch.

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| <p>① Welding Processes</p> <ul style="list-style-type: none"> • TIG • Electrode welding (MMA) <p>② Settings for electrode welding</p> <ul style="list-style-type: none"> • Welding current • Arc Force • Hot Start <p>③ Programs</p> <ul style="list-style-type: none"> • Load • Save <p>④ QUICK CHOICE buttons</p> <ul style="list-style-type: none"> • P1 • P2 <p>⑤ LED System</p> <p>Monitoring lights</p> <ul style="list-style-type: none"> • Remote control active • Mode • Temperature <p>⑥ 4-step control</p> <ul style="list-style-type: none"> • 2-step control | <p>⑦ High frequency (HF) ignition</p> <ul style="list-style-type: none"> • HF on • HF off <p>⑧ Pulse Welding</p> <ul style="list-style-type: none"> • Conventional pulse (0.1 to 5.0 seconds) • High-frequency pulse (10 to 3000 Hz) <p>⑨ Polarity ¹⁾</p> <ul style="list-style-type: none"> • Direct current negative pole (DC -) • Alternating current (AC) • Direct current positive pole (DC +) • DUAL WAVE |
|--|--|
- ¹⁾ Functions available on all AC/DC welding units



■ High-Frequency Pulses up to 3000 Hz

When using high-frequency pulses in frequency ranges over 2000 Hz, a precise and focused arc is achieved with a high performance density. This ensures safe, even penetration along with a reduced heat affected zone. The increased arc pressure also enables faster welding speeds. The almost unavoidable changes in arc gap (distance between the electrode in the welding torch and welding pool) that occur during hand welding, has no negative influence on the welding results at these high frequencies.

■ ICS – Ignition Command System

The highly-developed processor control system is used to create the optimum setting for ignition energy in both high-frequency and lift arc ignition. This leads, regardless of the Tungsten electrode type used – to quickly establish a perfectly stable arc which puts less pressure on the work piece and the electrode.

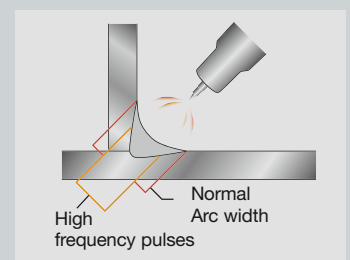
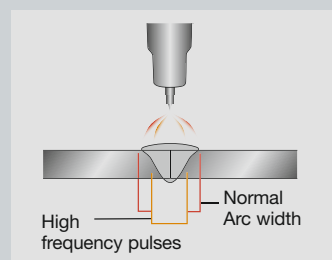
Where required, it is also possible to individually adjust the Ignition Energy separately from the start current. This allows the ignition energy to be reduced, for example, when igniting on thin materials or sheet edges. This can also be increased when using longer torch leads to improve performance.

AC/DC units also have the REHM power ignition function which ensures exceptionally reliable arc ignition even under the toughest conditions.

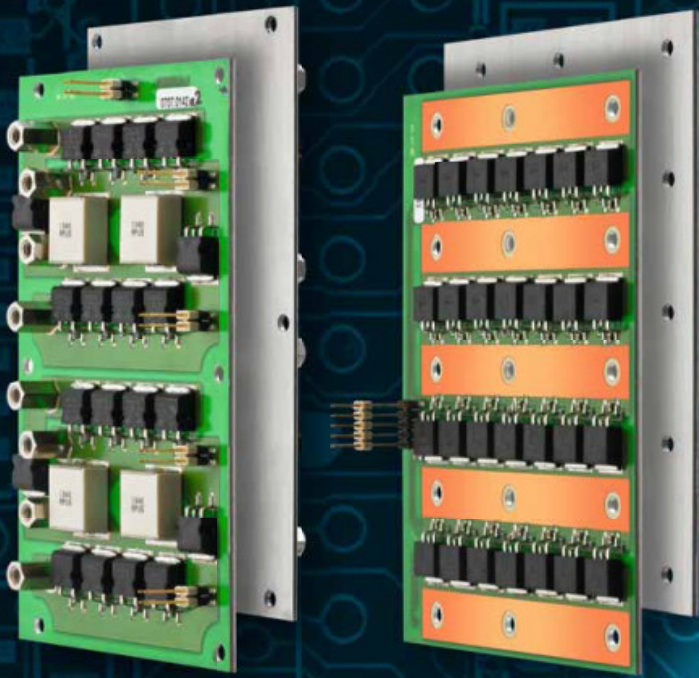
- 10** Display LEDs for
- Ampere (A)
 - Seconds (S)
 - Frequency (Hz)
 - Balance (%)
- 11** Digital Display

¹⁾ Functions available on all AC/DC welding units

- 12** R-PILOT for setting
- Gas pre-flow time
 - Ignition energy I_z
 - Start current I_s
 - Current slope-up time t_U
 - Welding current I_1
 - I_1 pulse time t_1
 - Welding current I_2
 - I_2 pulse time t_2
 - Current down-slope time t_d
 - End crater current I_e
 - Gas post-flow time
 - AC frequency Hz ¹⁾
 - AC balance % ¹⁾



For Aluminium Welding



■ TIG AC Welding

The REHM technology ensures an extremely stable alternating current arc which also remains quiet and stable even with critical or heavily oxidized material surfaces. The low and pleasant arc noise is considerably lower than the legal requirements.

■ DUAL WAVE – aluminium welding made easy

DUAL WAVE reduces the superfluous AC proportion in the arc to the absolute minimum. The reduced application of heat means that the control of the welding pool – particularly in positional welding, and when welding on sheet edges – is perceptibly improved. DUAL WAVE also reduces the electrode charge.

■ REHM AC Balance Regulation

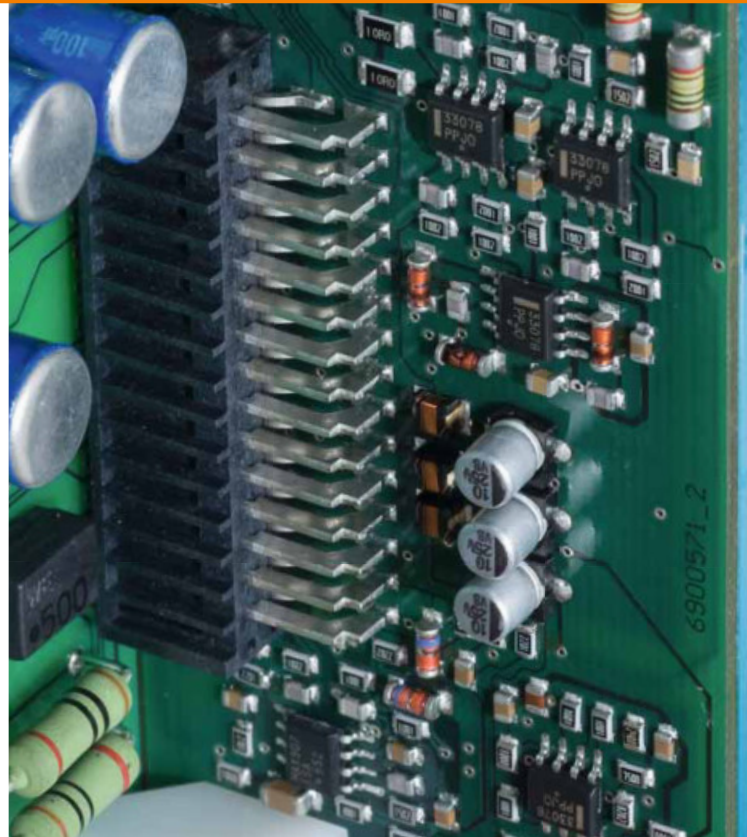
The AC balance regulation controls the heat in the Tungsten electrode. The energy entry allows you to focus the arc, for example, for welding thin sheet or edges. Reducing the application of heat, reduces the electrode charge.

■ REHM Automatic Frequency Control

The frequency is automatically adjusted to the current strength when welding with alternating current (AC). When using low welding currents, the AC arc is focused. This ensures a safe root penetration, for example, when welding thin sheet in fillet seam welding. With higher currents, the Tungsten electrode charge is reduced. This results in longer Tungsten life and optimum economy. The Automatic Frequency Control offers considerable advantages, particularly when using the remote Foot-Control P1 *iSYSTEM*. This system has been patented by REHM (patent number 4006203).

The AC frequency can also be set manually in the 30 - 300 Hz range.

INVERTIG.PRO



■ REHM ELSA.PRO system

The tried and tested ELSA (Electronic Stabilized Arc) technology used in the TIGER/BOOSTER series has been further developed for the INVERTIG.PRO. The highly dynamic, digital welding process regulator with its unique precise and exact repeatability ensure, even with a large weld pool, excellent welding characteristics.

■ Electrode Welding (MMA)

The INVERTIG.PRO is also a fully professional MMA electrode welding unit. Alongside the welding current, the hot start and arc force functions can be freely adjusted. The polarity of the electrode can be selected on the unit (no need to change over welding or work piece cables).

Of course, the INVERTIG.PRO has the familiar anti-stick function which prevents the sticking and burning of the stick electrodes.

■ Generator Compatibility

The Invertig.Pro is generator friendly offering more flexibility in mobile use, for example, on building sites.

■ Bi-Power-Inverter

The newly developed 200 kHz-**Bi-Power-Inverter** for the INVERTIG.PRO offers higher duty cycle performance and exceptionally low weight, along with optimum energy efficiency.

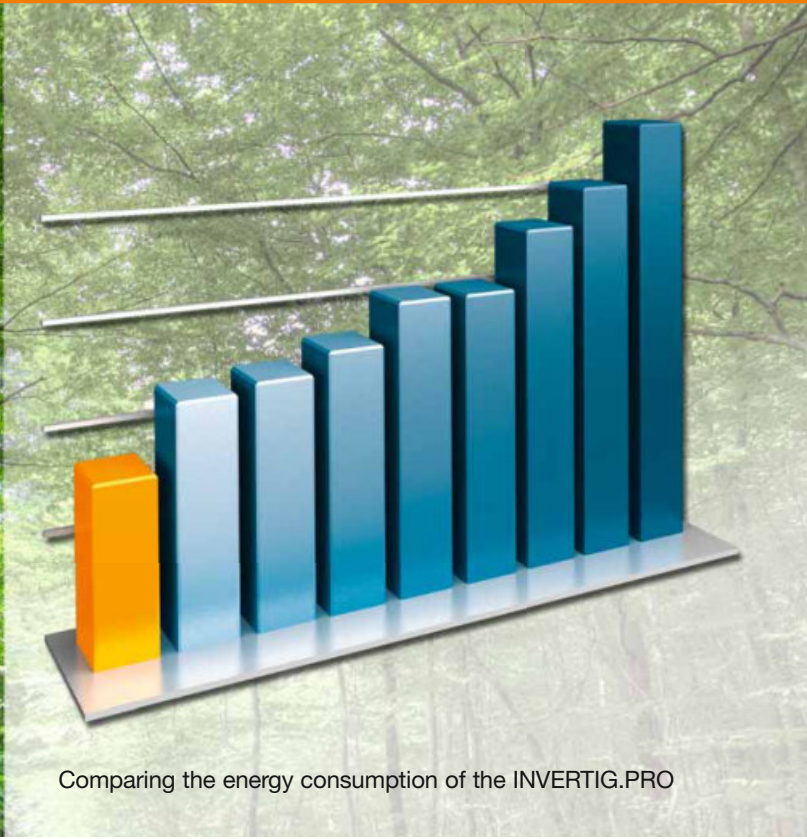
■ Power under control – made by professionals for professionals

Welding currents of 240 A, 280 A, 350 A and 450 A with a 100 % duty cycle thanks to the **Bi-Power-Inverter-Technology** specially designed for the INVERTIG.PRO. The result is a unique power to weight ratio – in a small package.

■ Optimum and clean cooling

The closed circuit fan cooled system is designed as a highly efficient Cooling system for all performance components and sensitive electronic Parts. The cooling air is always kept away from electronic and sensitive components.

Green Technology with Unique Solutions



Comparing the energy consumption of the INVERTIG.PRO

Quality, environment and safety at work

Quality and environmental awareness are brought together as part of the concept of the INVERTIG.PRO range. This use of innovative technology does not only help to save resources, but also creates a positive influence on safety at work.

■ Greatest energy efficiency

Why use more power than necessary? The REHM **Bi-Power-Inverter** is particularly effective at work. The intelligent energy management, in conjunction with the use of innovative components, means that almost all of the input power is converted into the arc. With the ever increasing energy costs, the INVERTIG.PRO also contributes considerably, in terms of reduced energy consumption, which means that the machine is highly cost effective to use.

+ 30 kg
+ 450 A AC/DC
+ 100 % duty cycle

= Greatest energy efficiency

■ Time saved reduces the energy requirements

The use of the Hot-start function means that a welding pool is created in the shortest possible time. The time saved as a result has an effect on the overall energy used.

■ Ergonomics

The unbelievably small size and weight of the INVERTIG.PRO enable mobile use in even the most extreme conditions.

■ Reduced noise emissions

The noise emissions are well under the legal limits.

■ EMC - Electromagnetic Compatibility

The electromagnetic radiation of the INVERTIG.PRO already fulfils the future requirements of the EN 60974-10 directive.

■ Premium quality

All parts of the unit have been tested in mature long-term tests designed for tough use situations. The works guarantee of 3 years supports our quality promises and our expectations. (The guarantee period outside Germany may vary from country to country, please check with your local or international distributor)

INVERTIG.PRO



iSYSTEM – Intelligent System

All *iSYSTEM* components are optimally designed for use with the INVERTIG.PRO and represent the greatest degree of economy and performance. They are automatically recognized and configured by the INVERTIG.PRO – simply "plug and play" to start work!

iSYSTEM components include:

- TIG-COOL 2000
- TIG-COOL CART 2000
- Remote Foot-Control P1
- R-TIG torch with Up/Down control
- Automation interfaces

Multi-processor architecture with CAN networking

The micro-processors used in the INVERTIG.PRO and accessory units are linked via an advanced, uninterrupted CAN network to form a highly effective working system. This ensures that the various *iSYSTEM* components are recognized as soon as they are connected and no additional settings or adjustments need to be made.

The *iSYSTEM* torch can be used to remotely control the INVERTIG.PRO. This allows the currents I1 and I2 to be modified from the torch. Alternatively, an *iSystem* torch can be used to call up previously saved QUICK CHOICE programs.

The *iSYSTEM* water cooling units TIG-COOL 2000 and/or TIG-COOL CART 2000 can communicate with the INVERTIG.PRO. Thus, the cooling unit is only activated when required. As soon as the torch is cooled sufficiently, the *iSYSTEM* water cooling unit switches to standby mode. This reduces the energy consumption and the noise emissions.

iSYSTEM increases the efficiency of your work and reduces long term cost of ownership.



Wide range of performance from a single source



Technical Equipment

■ TIG-COOL 1400 / TIG-COOL CART 1400

- Cooling performance 1100 W
 - Centrifugal pump
- Ideal for stationary use

■ TIG-COOL 2000 / TIG-COOL CART 2000 iSYSTEM

- Cooling performance 1500 W
- Communication between the water cooling unit and the INVERTIG.PRO (Plug & Play)
- Centrifugal pump and appropriate pump controller with standby function
- Temperature monitoring
- CAN-BUS connection
- Crane eyes
- Flow sensor

Product names

- Cart complete with water cooling unit
TIG-COOL CART 2000 iSYSTEM
TIG-COOL CART 1400
- Water cooling unit on rollers
TIG-COOL 2000 iSYSTEM
TIG-COOL 1400
- Cart only
TIG-CART



The robust cart with the large, easy-running wheels means that the unit can easily be maneuvered and transported both in the workshop and on the building site. They are also suitable for crane and fork lift transportation. The cart can accommodate a 50 l gas bottle.

The quick and easy assembly of the INVERTIG.PRO on the cart or the cooling unit is ensured by the REHM EASY-LOCK connection which can be released and fixed into place within seconds.

TECHNICAL DATA TIG-COOL CART / TIG COOL

Type		TIG-COOL CART 1400	TIG-COOL CART 2000
Mains voltage	[V~]	2 x 400	2 x 400
Power consumption	[A]	1.0	1.5
Cooling performance with R-TIG torch at 25 °C / 1,3 l/min	[kW]	1.1	1.5
Flow rate max.	[l/min]	2.3	2.3
Tank volume	[l]	5.0	5.0
Weight when empty (without coolant)	[kg]	62	62
Dimensions L x W x H	[mm]	1050 x 600 x 880	1050 x 600 x 880
Item number	TIG-COOL CART TIG-COOL	7532005 7532015	7532000 7532010



Equipment options and accessories

Our wide range of accessories offer complete flexibility when building your system.

- Cart with water cooling unit and cylinder carrier
TIG-COOL CART 1400 and
TIG-COOL CART 2000 *iSYSTEM*
- Water cooling unit on rollers TIG-COOL 1400
and TIG-COOL 2000 *iSYSTEM*
- R-TIG welding torch Up/Down *iSYSTEM*
- Remote Foot-Control P1 *iSYSTEM*
- Automation interface

Premium sets

**(R-TIG torch *iSYSTEM* 8 m,
pressure regulator, earth cable 4 m)**

- R-TIG 200/35 item number 1485200
- R-TIG 200/50 item number 1485205
- R-TIG 260W/35 item number 1485210
- R-TIG 260W/50 item number 1485215
- R-TIG 450W/70 item number 1485220
- R-TIG 450 WSC/95 item number 1485225

A wide range of welding accessories can be found in the REHM catalog.

TECHNICAL DATA INVERTIG.PRO

			INVERTIG.PRO 240 DC 240 AC/DC	INVERTIG.PRO 280 DC 280 AC/DC	INVERTIG.PRO 350 DC 350 AC/DC	INVERTIG.PRO 450 DC 450 AC/DC
Welding current at 100 % (DC)	TIG Electrode	[A]	240 240	280 260	350 350	450 360
Duty Cycle (DC) at I max. (10 min/40 °C) TIG	TIG Electrode	[%]	100 100	100 60	100 100	100 60
Mains voltage		[V]	3 x 400 V	3 x 400 V	3 x 400 V	3 x 400 V
Fuse		[A]	16	16	32	32
Torch cooling			Gas (Water)	Gas (Water)	Gas (Water)	Gas (Water)
Weight	DC AC/DC	[kg]	24.5 27.0	24.5 27.0	28.0 29.5	28.0 29.5
Dimensions L x W x H		[mm]	520 x 360 x 460	520 x 360 x 460	520 x 360 x 460	520 x 360 x 460
Item number	DC AC/DC		1422400 1422405	1422800 1422805	1423500 1423505	1424500 1424505

We reserve the right to make technical changes without notice. All units have the CE and S mark and meet the EN 60 974 and EN 50199 standards.

REHM – Setting the pace in welding and cutting

The REHM range

- **REHM MIG/MAG inert gas welding units**
SYNERGIC.PRO² gas- and water-cooled to 450 A
SYNERGIC.PRO² water-cooled 500 A to 600 A
MEGA.ARC stepless regulation to 450 A
RP REHM Professional to 560 A
PANTHER 200 PULS pulse welding unit with 200 A
MEGAPULS pulse welding units to 500 A
- **REHM TIG inert gas welding units**
TIGER, portable 100 KHz inverter
INVERTIG.PRO TIG welding unit
- **REHM MMA inverter technology**
TIGER and BOOSTER.PRO 100 KHz electrode inverter
- **REHM plasma cutting units**
- **Welding accessories and additional materials**
- **Welding smoke extraction fans**
- **Welding rotary tables and positioners**
- **Technical welding consultation**
- **Torch repair**
- **Machine Service**

REHM WELDING TECHNOLOGY – German Engineering and Production at its best

Development, construction and production – all under one roof – in our factory in Uhingen. Thanks to this central organisation and our forward-thinking policies, new discoveries can be rapidly incorporated into our production. The wishes and requirements of our customers form the basis for our innovative product development. A multitude of patents and awards represent the precision and quality of our products. Customer proximity and competence are the principles which take highest priority in our consultation, training and service.

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