

PI 200 | 250 | 400 | 500



micatronik

Never have so many functions for TIG welding been so easily accessible

Migatronik's Pi welding machines are user-friendly and advanced welding machines, which meet virtually every need for TIG and MMA welding under all possible conditions. The Migatronik Pi range consists of mono- and three-phase high performance inverters for precision welding in stainless steel, aluminium and other high alloy materials. They are equally well suited to manufacturing, repair and assembly jobs ranging from TIG HP (high frequency with pulse) and TIG AC/DC to MMA tasks.

Four power sources plus three control concepts

Pi 200 is the designation for two mono-phase welding machines: the TIG HP and TIG AC/DC, together with a three-phase MMA machine.

The **Pi 250** machines are all three-phase. They can also be freely combined with all three control panels: the TIG HP, TIG AC/DC and MMA.

The **Pi 400** is a new three-phase industrial machine, which is ideal for both manual and robot welding. It is available as TIG HP and TIG AC/DC.

The **Pi 500** has precisely the same qualities and functions as the Pi 400, but with even more power.

Up to 4 x 10 program settings

All Pi TIG welding machines contain 10 program settings per welding process (TIG DC and TIG



TIG DC with Synergy PLUS™



MMA in a V-joint.

AC, together with MMA DC and AC), so that the welder can quickly call up customised settings for repetitive jobs or applications.

The Pi 400 and Pi 500 are supplied as water-cooled. A cooling unit is available as extra equipment for the Pi 200 and Pi 250.

Mobility and ergonomics

The compact design and light weight increase mobility. The multifunctional trolley with cylinder-holder underlines the integrated approach and user-friendliness, which are the

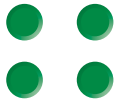
driving forces behind Migatronik's new design.

Even at a distance, the Pi machines send out a clear signal that the combination of welding technology, user-friendliness and design innovation meets the demands of the future for professional welding equipment.

The shock-absorbing corners made from hardwearing plastic protect the most exposed parts of the machine and ensure that neither welder nor welding hoses are injured or damaged. The circular embossed patterns on the side panels increase rigidity and strength.

The control panel, with its international pictograms, can be read at a distance and is so simple that even the most advanced Pi welding machines have a clear control panel.

More automation and super design – for both manual and robot welding



Migatronik's Pi machine range covers the entire spectrum from portable on-location versions to heavy duty machines up to 500 A for use with a robot.



Switch on, press and weld - advanced functions at hand



Migatronic's Pi machines combine proven inverter technology with new control and communication options. Combined, these features optimise welding performance and make even the most advanced functions child's play to use.

Both the mono-phase Pi 200 machines are supplied with PFC (Power Factor Correction): an electronic circuit which makes it possible to weld using up to 200 A using just a 16 A fuse.

The three-phase MMA machines are supplied as standard with a simple TIG LIFTIG® function and a number of in-built auxiliary functions for stabilising the arc.



Synergy PLUS™

The Migatronic Pi range offers three pulse options for TIG DC welding: traditional pulse, quick pulse and the recently developed Synergy PLUS™, where the machine automatically and dynamically sets all general pulse parameters when welding in "synergy" mode.

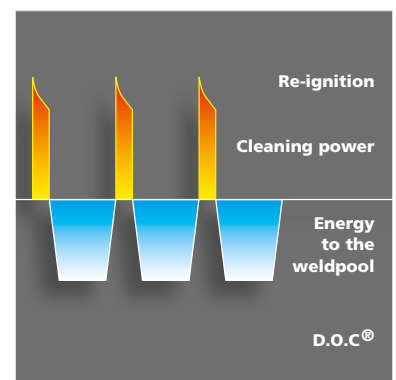
On the Pi AC/DC versions, the welder can adjust four general parameters using the balance button on the control panel:

- Electrode preheating (perfect ignition – reduced electrode wear – ready for new gas types)
- Current balance (effectively removes oxide on aluminium and maintains a sharp tungsten electrode)
- Time balance (ensures overall control of the cleaning effect)
- AC frequency (arc control and control of weld pool)

Pi is innovation down to the minutest detail. The traditional sound of pulse welding has therefore been replaced by clean metallic tones thanks to Synergy PLUS™.

D.O.C® – also available in the mono-phase AC models

While Migatronic's patented D.O.C® has previously only been used in three-phase machines, dynamic oxide control is now incorporated in all Pi AC welding machines, including the mono-phase versions. During TIG welding in aluminium, DOC® ensures a controlled, narrow cleaning zone along the weld seam. The result is an increase in welding speed of up to 30% and a corresponding reduction in the consumption of both energy and tungsten electrodes.



Award-winning user-friendly design with functional details



Unique new tack-welding function

For the Pi range, Migatronic has developed an entirely new tack-welding function with a quick response time on the torch from pressing the key to the completion of tack-welding without time-consuming slopes from the customised program.

Every TIG welder knows the situation: when switching filler/ electrode or melting the tack weld, it would be good to have an extra welding current level which can be activated directly from the torch handle. The Pi machines have this option, both when the level needs to be higher or lower than the set welding current. The effect is a reduced

risk of error compared with traditional start/stop welding and therefore a reduced need for subsequent grinding.

iF Product Design Award 2006

During the development of the new design, Migatronic worked closely with experienced welders and followed them during their work. This approach has resulted in the rounded, ergonomic handles and the shock-absorbing corners made from hardwearing plastic.

The design of the corners also means that the side panels of the machine with their reinforcing circular embossed patterns can be easily removed to allow

servicing. The corners can also be used for suspension and as collecting elements.

The control panel has an integrated cover as standard, which protects against dirt and knocks. The Migatronic Pi won the much sought-after "iF Product Design Award 2006".



The multifunctional spine gives flexible configuration options.

Three different panels offering precise and comfortable control and clear displays

Migatronic's new design does not just cover the internal technology used in the machines and the external, rounded shape and the many practical functions. The design of the control panels was a project in itself. The aims of this project were: to simplify control using the fewest possible elements, to use pictograms that match the European welding standard and to create a clear, large display with the option of reading the welding data at a distance, even when the protective cover is down.

TIG AC/DC control panel with all relevant parameters for professional welding results in all materials.

TIG HP control panel in all its simplicity with Synergy PLUS™ as standard.

MMA control panel with the option of TIG process with simple LIFTIG® ignition.



Pi AC/DC with D.O.C.®



4-AC balance parameters



Tack-welding function



4 x 10 program settings



D.O.C.® function



Pi DC HP with Synergy PLUS™



Traditional pulse with time adjustment



Quick pulse with frequency adjustment



Synergy PLUS™. All important parameters in one keypad



2 x 10 program settings



Pi MMA



LIFTIG® – simple TIG ignition of the arc



Hot start – perfect ignition



Arc Power – prevents the electrode from sticking to the weld pool

Manual or robot – the Pi can be customised to any situation

Automation with a digital robot interface

The two large TIG inverters, the Pi 400 and the Pi 500, can be used not only for manual welding but also as power sources for TIG welding robots and automatic devices. These two heavy duty machines are therefore prepared for direct communication with a robot or automatic device via a recently developed digital robot interface.

Optimised options for selecting the perfect ergonomic torch

All known types of welding hoses can be used with the Migatronik Pi machines. For all TIG versions, Migatronik's recently developed TIG ERGO can therefore be used: There are a total of 50 ergonomic versions, which differ from each other in current strength, flexibility, flexible torch body, cable length, 6- or 7-pole plug and options



of integrated control unit in the handle. Even the most discerning TIG welder will be able to find a welding hose that is perfect for his hand and task.

Examples of the wide range of accessories available for the Migatronik Pi

- Digital robot interface
- Gas saver kit – to regulate the gas flow
- Trolley with integrated cylinder console and torch holder
- Frame for mounting in rack system
- Autotransformer 230 – 500 V
- Cooling unit
- Foot control unit/pocket control unit
- Water control kit
- Welding hoses/cables in various lengths



PI 200 | 250 | 400 | 500

MACHINE TYPE	200 E	200 HP	200 AC/DC	250 E	250 HP	250 AC/DC	400 DC	400 AC/DC	500 DC	500 AC/DC
Mains voltage $\pm 15\%$	3x400 V	1x230 V	1x230 V	3x400 V	3x400 V	3x400 V	3x400 V	3x400 V	3x400 V	3x400 V
Fuse	10 A	26 A	26 A	10 A	10 A	10 A	25 A	25 A	32 A	32 A
Fuse PFC		16 A	16 A							
Eff. mains current	6.7 A	24 A	25 A	7.1 A	7.1 A	7.3 A	17.3 A	17.3 A	25.8 A	25.8 A
Eff. mains current PFC		17.5 A	18.6 A							
Output, 100%	4.6 kVA	5.5 kVA	5.8 kVA	4.9 kVA	4.9 kVA	5.0 kVA	12.0 kVA	12.0 kVA	17.9 kVA	17.9 kVA
Output, 100% PFC		4.0 kVA	4.3 kVA							
Output, max.	6.7 kVA	9.4 kVA	9.7 kVA	9.0 kVA	9.0 kVA	7.1 kVA	19.3 kVA	19.3 kVA	31.0 kVA	31.0 kVA
Output, max. PFC		5.6 kVA	6.0 kVA							
Open circuit output	35 W	35 W	35 W	35 W	35 W	35 W	40 W	40 W	40 W	40 W
Current range	7-200 A	7-200 A	7-200 A	7-250 A	7-250 A	7-250 A	5-400 A	5-400 A	5-500 A	5-500 A
Open circuit voltage	95 V	95 V	95 V	95 V	95 V	95 V	95 V	95 V	95 V	95 V
Application class	S	S	S	S	S	S	S	S	S	S
Protection class	IP 23	IP 23	IP 23	IP 23	IP 23	IP 23	IP 23	IP 23	IP 23	IP 23
EN60974-1, 2, 3, 10	x	x	x	x	x	x	x	x	x	x
HxWxL, cm	36x22x57						98x54.5x109			
Weight, kg	20	18	19	20	20	20	63	72	68	77

DUTY CYCLE	200 E	200 HP	200 AC/DC	250 E	250 HP	250 AC/DC	400 DC	400 AC/DC	500 DC	500 AC/DC
100% at/20°C TIG		170 A	160 A		170 A	170 A	330 A	330 A	475 A	475 A
100% at/20°C MMA	170 A	150 A	150 A	170 A	170 A	170 A	330 A	330 A	475 A	475 A
Max at/20°C TIG		200/40%	200/40%		250/40%	250/40%	400/70%	400/70%	500/80%	500/80%
Max at/20°C MMA	200/60%	170/40%	170/40%	250/40%	250/40%	200/60%	400/50%	400/50%	500/65%	500/65%
100% at/40°C TIG		150 A	140 A		150 A	150 A	290 A	290 A	420 A	420 A
100% at/40°C MMA	140 A	130 A	130 A	150 A	150 A	150 A	290 A	290 A	420 A	420 A
60% at/40°C TIG		170 A	170 A		190 A	180 A	350 A	350 A	500 A	500 A
60% at/40°C MMA	180 A	150 A	150 A	190 A	190 A	170 A	350 A	350 A	450 A	450 A
Max v/40°C TIG		200/40%	200/40%		250/35%	250/35%	400/40%	400/40%	500/60%	500/60%
Max v/40°C MMA	200/40%	170/40%	170/40%	250/35%	250/35%	200/35%	400/20%	400/20%	500/55%	500/55%

COOLING UNIT	MCU 1000	MCU 1250
Cooling output 1 l/min.	0.9 kW	1.2 kW
Tank capacity	2.0 l	3.5 l
Pressure, max.	3 bar	3 bar
Flow 1.2 bar - 60°C	1.75 l/min.	1.75 l/min.
Dimensions, HxWxL, cm	29x22x57	*
Weight, kg	15	*

*) The MCU 1250 integrated cooling unit is only used for the Pi 400/500.
We reserve the right to make changes.

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