

PI RANGE



TIG AND MMA WELDING - THE EASY WAY



MIGATRONIC
WELDING VALUE



MIGATRONIC PI 200 | 250 | 350 | 500



ADVANCED TIG AND MMA THE EASY WAY

Migatronik Pi are user-friendly welding machines, which meet every need for TIG and MMA welding. High-performance inverter machines for precision welding in mild steel, stainless steel, aluminium and other high-alloy materials.

There is a Migatronik Pi machine for any type of welding operation: repair, assembly, construction, industry and robot. Processes include TIG HP (high-frequency with pulse), TIG H (without pulse), TIG AC/DC, and MMA welding with covered electrodes.

ROBUST AND RELIABLE WELDING QUALITY

All Pi machines are delivered with coated PCB's and carry Eurocodes calibration certificate.



MMA in a V-joint



Migatronik Pi – also suitable for automation



Advanced TIG - very easy

VERSATILE RANGE OF MACHINES: FOURTEEN DIFFERENT POSSIBILITIES

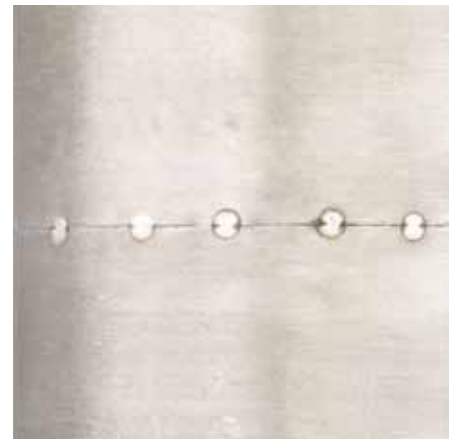
POWER SOURCE	AC/DC	DC HP	DC H	MMA	CELL
Pi 200	●	●			
Pi 250	●	●		●	
Pi 350	●	●	●	●	●
Pi 500	●	●	●	●	

MORE AUTOMATION AND SUPER DESIGN – FOR BOTH MANUAL AND AUTOMATIC/ROBOT WELDING



Migatronik's Pi range covers the entire spectrum from portable on-location versions to dedicated special and heavy duty machines with up to 500 A for automatic/robot welding.

ADVANCED FUNCTIONS AT HAND



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

NEW PULSE SOUND WITH SYNERGY PLUS™

In addition to traditional pulse and quick pulse for TIG DC, Pi offers the Migatronic invention Synergy PLUS™; A special pulse function where the machine automatically and dynamically sets all primary pulse parameters when welding in synergy mode.

The traditional sound of pulse welding has therefore been replaced by clean metallic tones thanks to Synergy PLUS™.

WELDING WITH UP TO 200 A USING JUST A 16 A FUSE

Both the mono-phase Pi 200 TIG machines feature PFC – Power Factor Correction: an electronic circuit which makes it possible to weld using up to 200 A using just a 16 A fuse.

UP TO 4 X 64 PROGRAM SETTINGS

All Pi 350-500 TIG versions contain 64 program settings per welding process: TIG DC, TIG AC, MMA DC and MMA AC, so that the welder can quickly and safely call up customised settings for repetitive welding jobs. Pi 200-250 contain 10 program settings per welding process.

TIG LIFTIG® IS STANDARD ON ALL MACHINES

All Pi TIG and MMA machines are supplied as standard with TIG LIFTIG® function (ignition without HF) for TIG welding in electrically sensitive environments.

TRIGGER MODES IN THE SUB-MENU

The user-friendly control panels of the Pi machines feature many short-cuts that make welding much easier. In the sub-menu there are various possibilities for individual setting of the welding progress.

TIG-A-TACK™ - ULTIMATE TACK-WELDING

TIG-A-Tack™ is a feature that makes quick and extremely small and precise tacks. This reduces the risk of distortion and damage to the material.

FAN REDUCED NOISE AND ENERGY CONSUMPTION

Migatronic Pi was developed with respect for both environment and work environment. The infinitely variable fan operates precisely and adapts automatically to the actual load/cooling requirement of the machine. The results are reduced noise level, energy consumption and dust intake and longer life of the machine.

GOUGING FOR THICK WALL MATERIAL

Pi 500 features gouging function for gouging root passes or locating lack of fusion.

AWARD-WINNING USER-FRIENDLY DESIGN WITH FUNCTIONAL DETAILS

AC WELDING: ONE BUTTON – FOUR PARAMETERS

The art of simplification: On the Pi AC/DC versions, the welder can adjust four primary AC parameters using just one button:

- 1 Time balance**
- overall control of cleaning effect
- 2 AC frequency**
- arc control and control of weld pool
- 3 Electrode preheating**
- perfect ignition and reduced electrode wear - ready for new gas types
- 4 Current balance**
- maintains a DC-like tungsten tip - ensures arc focus

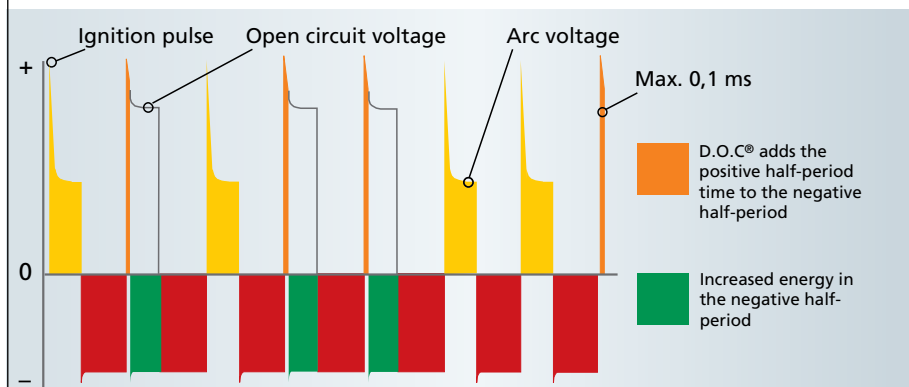


D.O.C.® - QUICKER AC WELDING





All Pi AC machines are equipped with D.O.C.® function (Dynamic Oxide Control): a Migatronik patent that ensures a controlled, narrow cleaning zone. 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.





SYNCHRONISED AC WELDING




Pi 350/500 can be used for synchronised AC welding by means of a synchronising kit; an efficient welding method using two arcs in the weld pool. The method is used for butt welding of large aluminium structures in wall thicknesses from approx. 3 mm and gives metallurgically pure joints.



FOUR DIFFERENT CONTROL PANELS WITH OPTIMIZED OPERATIONAL COMFORT

-  4-AC balance parameters
-  TIG-A-Tack function
-  4 x 64 program settings*
-  D.O.C.®-function

-  Traditional pulse with time adjustment
-  Quick pulse with frequency adjustment
-  Synergi PLUS™.
All important parameters in one button
-  4 x 64 program settings*

-  LIFTIG® - simple
TIG ignition of the arc
-  Hot start
- safe ignition
-  ArcPower™ - prevents the
electrode from sticking to
the weld pool

* PI 200-250: 4 x 10 program settings

Technique is for the sake of man, not the other way round. That is why the design of the control panel was an ambitious development project in itself with focus on welding value...! The result is a logical and icon-based control panel. The software in the control panel meets future demands. The machines are easily adjustable according to new user-defined applications.



Pi AC/DC with D.O.C.®
TIG AC/DC control panel with all relevant parameters for professional welding results in all materials



Pi DC H
TIG H special version for high frequency ignition without pulse. This option is only available in combination with Pi 350/500



Pi DC HP with Synergi Plus™
TIG HP control panel in all its simplicity with Synergi Plus™ as standard



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

Pi MMA CELL
The same facilities as for Pi MMA plus special program for vertical downwards welding position using cellulose electrodes

MIGATRONIC PI – IT'S QUITE SIMPLE

QUICK CHANGE-OVER BETWEEN JOBS



Press one button and change over between up to 64 different fixed settings in the welding process chosen.



Activate Synergy PLUS™ and Pi automatically sets all primary pulse parameters (synergy mode).



TIG-A-Tack™: a quick and extremely precise function with ultra-small tacks.



IGC® Intelligent Gas Control (option) reduces the gas consumption by up to 50%. Gas consumption read-out on the display.



The patented D.O.C.® system is always active and ensures a controlled narrow cleaning zone along the TIG weld. Welding speed is increased by up to 30%.



PI 350 MMA CELL

Pi 350 MMA CELL is designed specifically for tube/pipeline welding and vertical downwards welding position using cellulose electrodes. This means considerably increased welding speed, increased melting performance and higher efficiency. Pi 350 MMA CELL can be used with an asynchronous generator.



The Pi 350 is available with five different control panels. DC HP, DC H, AC/DC, MMA, and MMA CELL

INTELLIGENT GAS CONTROL IGC®

SYNERGIC GAS FLOW WITH LARGE-SCALE REDUCTION OF GAS CONSUMPTION



IGC® OFFERS MORE ADVANTAGES FOR THE INDUSTRIAL MACHINES

Intelligent gas post flow, a special feature for use with IGC®, is dedicated to the large Pi machines (350 and 500). It automatically provides the required gas post flow time, and oxidized tungsten electrodes and welds are eliminated at finalizing welds.

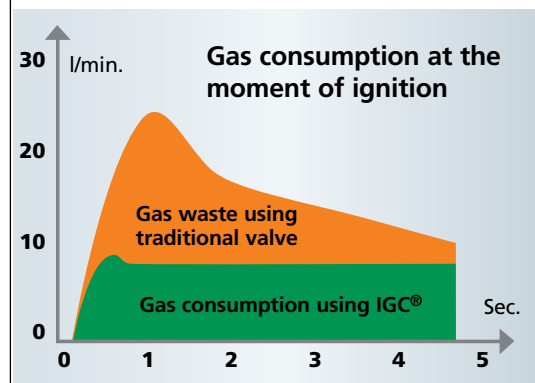
INTELLIGENT GAS CONTROL

Intelligent Gas Control IGC® is a configurable option for Pi 350 and Pi 500 for TIG. An efficient gas-saver kit combined with dynamic gas control that monitors consumption and optimises gas protection in both DC and AC welding. Often, the IGC® function may give gas savings in excess of 50% with proportionally fewer replacements of gas cylinder to the benefit of economy, environment and efficiency.

BETTER WELDING, BETTER FINISH

At the start of the welding process, Migatronics IGC® prevents over-consumption of gas and gives a good start performance.

IGC® takes control once the weld pool is established and ensures extensive savings thanks to the controlled gas consumption which is always optimized to current needs.



The more ignitions - the greater the gas savings

“GAS MONITORING” – ANOTHER IGC® FEATURE

IGC® also functions as an efficient “gas monitor” that automatically stops the process in case of insufficient gas protection.

LARGE-SCALE REDUCTION OF GAS CONSUMPTION

Savings depend on the company's welding profile, arc time and number of welding machines. Calculate your savings and see what you can save on the bottom line.

Visit www.intelligentgascontrol.com



THE PI CAN BE CUSTOMISED TO ANY WELDING SITUATION - INCLUDING AUTOMATED DEVICES AND ROBOTS

AUTOMATED TIG WELDING

The two largest TIG inverters, the Pi 350 and 500, are obvious power sources for automatic devices/robots and prepared for communication with a robot or automatic device in a setup with the CWF Multi.



Extra identical control panel



RWF - Robot Wire Feeder.



Robotinterface.

INTERFACES FOR ALL TYPES OF ROBOTS

The RCI (Robot Communication Interface) integrates the large Pi machines with most types of robots and controllers. RCI is also used for "Retrofit" - upgrade to state-of-the-art technology of old types of robots. All RCI's are supplied to order by Migatron in the required configuration.

THE OPERATING COMFORT FOLLOWS THE OPERATOR

All Pi machines for automated welding processes can be equipped with an extra identical control panel at the robot cell where the robot operator gets the same functions and facilities for setting the welding parameters.



Pi 350 and 500 are suitable power sources for automated welding processes.

CWF MULTI ENSURES UNIFORM QUALITY AND HIGH WELDING SPEED

TIG WELDING NON-STOP

CWF Multi (Cold Wire Feeder) is a separate wire feed unit designed specifically for setups with automatic devices and for optimization of manual TIG welding.

The CWF Multi control panel allows the welder to switch between programs and features automatic wire-feeding synchronously with the machine's pulse function (Pi 350-500). The CWF Multi is also semi-compatible with Pi 200 and 250 or other makes of TIG machines (special solution) where start/stop signals start wire-feeding along with the other wire parameters which are controlled separately from the CWF Multi.

AUTOMATIC WIRE-FEEDING

For optimization of welding quality and speed, the TIG torches can be fitted with special equipment for automatic wire feeding.

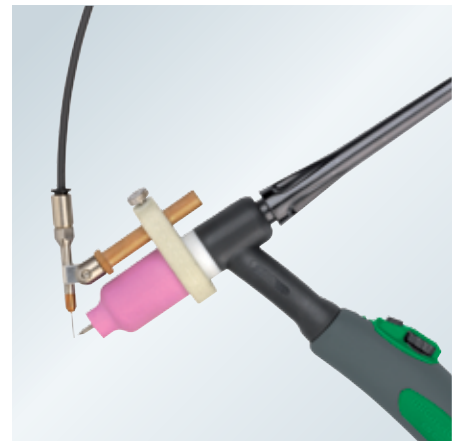
All Pi machines can via CWF Multi feed the correct quantity of wire into the weld pool; with or without pulse on the wire.

The result is a considerable increase of welding speed and there is no risk of non-uniform welds and undesirable contact with the tungsten electrode.

The CWF Multi can be used as a special solution for old MigatroniC TIG machines and other makes of TIG machines.



Cold wire guide with pen. Supplied with start/stop and wire speed adjustment at the handle.



Cold wire guide mounted on torch



CWF Multi features infinitely variable adjustment of wire feed speed from 0.2 to 5.0 m/min.

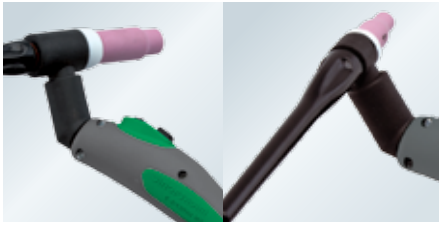
We reserve the right to make changes.

COLD WIRE FEEDER	CWF MULTI
Wire feed speed m/min.	0.20 - 5.0
Wire diameter mm	0.6 - 2.4
Dimensions (HxWxL), mm	276x211x276
Weight, kg	9.6

FLEXIBLE RANGE OF ACCESSORIES AND WELDING HOSES OFFERING NEW ADVANTAGES

TIG TORCHES FOR QUALITY WELDING

The torch is the welder's auxiliary arm and quite decisive for the welding result. That is why Migatronic develops and designs its own comprehensive range of ergonomically correct welding torches; The TIG Adjust, for example, can be turned in any direction and TIG Flex is flexible and can be shaped to a welding angle of choice.



THREE CONTROL UNITS IMPROVE THE EFFICIENCY

The Migatronic TIG Ergo torches can be equipped with three optional control units for adjustment of the welding current from the torch handle. The units are easily replaceable without using any tools.

TIG ADJUST PROVIDES FULL 360 DEGREES-OF-FREEDOM

TIG Adjust is designed for welding operations where repeated adjustments of the torch body are an everyday occurrence and use of standard torches is physically impossible. TIG Adjust is designed as a custom-built solution for Migatronic's TIG Ergo torches and matches all TIG Ergo wear parts and control units.

EXAMPLES OF ACCESSORIES FOR MIGATRONIC PI:

- IGC® Intelligent Gas Control
- 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 unit
- Welding torches/cables in various lengths

PI	200 HP DC	200 AC/DC	250 E/HP DC	250 AC/ DC
Mains voltage +/- 15 %,V	1x230	1x230	3x400	3x400
Fuse, A	16	16	10	10
Mains current, effective, A	17.5	18.6	7.1	7.3
Max mains current, A	24.3	26.0	13.0	10.3
Open circuit voltage, V	95	95	95	95
Current range, A	5-200	5-200	5-250	5-250
Efficiency	0.85	0.80	0.87	0.81
Application class	S/CE	S/CE	S/CE	S/CE/CCC
Protection class	IP 23	IP 23	IP 23	IP 23
Norm	EN/IEC60974-1. EN/IEC60974-3. EN/IEC60974-10	EN/IEC60974-1. EN/IEC60974-3. EN/IEC60974-10	EN/IEC60974-1. EN/IEC60974-3. EN/IEC60974-10	EN/IEC60974-1. EN/IEC60974-3. EN/IEC60974-10
Dimensions (HxWxL), mm	360x220x520	360x220x520	360x220x520	360x220x520
Weight, kg	22	24	20 / 23	25



Foot control unit, 7 pole aircooled (78815016)
Foot control unit, 7 pole watercooled (78815015)
Foot control unit, 8 pole (78815010)

Duty cycle	200 HP DC	200 AC/DC	250 E DC	250 HP DC	250 AC/ DC
100% at/20°C MMA, A 100% at/20°C TIG, A	170	160	170	170	170
60% at/20°C MMA, A 60% at/20°C TIG, A	200	200	210	210	200
100% at/40°C MMA, A/V 100% at/40°C TIG, A/V	130/25.2 150/16.0	130/25.2 140/15.6	150/26.0	150/26.0 150/16.0	150/26.0 150/16.0
60% at/40°C MMA, A/V 60% at/40°C TIG, A/V	150/26.0 170/16.8	150/26.0 170/16.8	190/27.6	190/27.6 190/27.6	170/26.8 180/17.2
Max at/40°C MMA, A/%V Max at/40°C TIG, A/%V	170/40/26.8 200/40/18.0	170/40/26.8 200/40/18.0	250/35/30.0	250/35/30.0 250/35/20.0	250/35/28.0 250/30/20.0

We reserve the right to make changes.

MIGATRONIC Pi DATA

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PI	350 E CELL DC	350 E DC	350 DC/HP DC	350 AC/DC	500 E DC	500 HP DC-AC/DC
Mains voltage +/- 15 %,V	3x400	3x400	3x400	3x400	3x400	3x400
Fuse, A	16	16	25	25	32	32
Mains current, effective, A	15.4	17.1	18.0	17.3	22.5	26.1 / 27.2
Max mains current, A	19.1	23.1	23.1	22.7	33.7	33.7 35.1
Open circuit voltage, V	95	95	95	95	95	95
Current range, A	5-300		5-350	5-350	5-500	5-500
Efficiency	0.79	0.79	0.80	0.88	0.90	0.91 / 0.87
Application class	S/CE	S/CE/CCC	S/CE/CCC	S/CE/CCC	S/CE	S/CE/CCC
Protection class	IP 23	IP 23	IP 23	IP 23	IP 23	IP 23
Norm	EN/IEC60974-1. EN/IEC60974-10	EN/IEC60974-1. EN/IEC60974-2. EN/IEC60974-3. EN/IEC60974-10	EN/IEC60974-1. EN/IEC60974-2. EN/IEC60974-3. EN/IEC60974-10	EN/IEC60974-1. EN/IEC60974-2. EN/IEC60974-3. EN/IEC60974-10	EN/IEC60974-1. EN/IEC60974-10	EN/IEC60974-1. EN/IEC60974-2. EN/IEC60974-3. EN/IEC60974-10
Dimensions (HxWxL), mm	550x250x640	550x250x640	550x250x640	980x545x1090	550x250x640	980x545x1090
Weight, kg	31	31	31	72	33	68 / 77
Duty cycle	350 E CELL DC	350 E DC	350 DC/HP DC	350 AC/DC	500 E DC	500 HP DC-AC/DC
100% at/20°C MMA, A 100% at/20°C TIG, A	300	340	330 340	330 340	400	475 475
60% at/20°C MMA, A 60% at/20°C TIG, A			350	350	500	500
Max at/20°C MMA, A/% Max at/20°C TIG, A/%			350/90 350/95	350/90 350/95		500/65 500/80
100% at/40°C MMA, A/V 100% at/40°C TIG, A/V	250/30.0 250/20.0	280/31.2 300/22.0	290/31.6 300/22.0	290/31.6 290/21.6	330/33.2 330/23.2	420/36.8 420/26.8
60% at/40°C MMA, A/V 60% at/40°C TIG, A/V	275/31.0 275/21.0	325/33.0 350/24.0	340/33.6 350/24.0	350/34.0 350/60/24.0	400/36.0 410/26.0	450/38.0 500/30.0
Max at/40°C MMA, A/%/V Max at/40°C TIG, A/%/V	300/35/32.0 300/22.0	350/40/34.0 350/60/24.0	350/50/34.0/ 350/60/24.0	350/60/34.0 350/60/24.0	500/35/40.0 500/35/30.0	500/55/40.0 500/60/30.0



COOLING UNIT	MCU 1000*	MCU 1100**	MCU***
Cooling output 1 l/min., W	900	1200	1200
Tank capacity, liter	2	3.5	3.5
Max pressure, bar	3	3	3
Flow bar °C, l/min.	1.2 - 60 - 1.75	1.2 - 60 - 1.75	1.2 - 60 - 1.75
Dimensions (HxWxL), mm	270x220x520	270x240x560	-
Weight incl. fluid, kg	15	17	-

*) Separate cooling unit for Pi 200I/250. **) Separate cooling unit for Pi 350.

****) Integrated cooling unit in Pi 350 AC/DC / Pi 500 DC-AC/DC.

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MIGATRONIC
WELDING VALUE