PI 350 PLASMA

MIGATRONIC

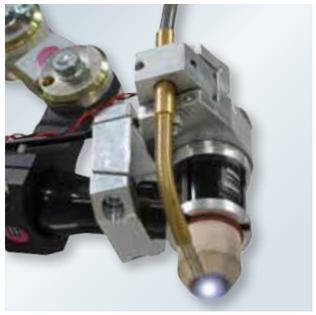
Pi 350 Plasma – welding automation with or without pulse

New Pi 350 Plasma increases productivity

The Pi 350 Plasma is a high-performance water-cooled welding inverter dedicated to plasma welding in automated welding processes in the current range 5-350 A.
The Pi 350 Plasma welds sheet metals in up to 8 mm mild steel and 10 mm stainless steel. The machine welds with three optional pulse functions: traditional pulse, quick pulse, Synergy PLUS™ – or without pulse - using all plasma processes: plasma-melt, plasma-press and plasma-keyhole welding. In TIG welding, the output is up to 500 A.

Features of the digital Pi 350 plasma inverter:

- Electronic control of gas flow and water flow in the torch
- Built-in gas-saver kit
- CAN-BUS communication
- 100% duty cycle in plasma welding
- Remote control kit
- Diffusion-safe gas hose
- Pilot arc – safe ignition



Protected tungsten electrodes – longer life

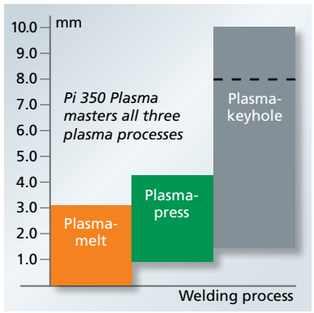
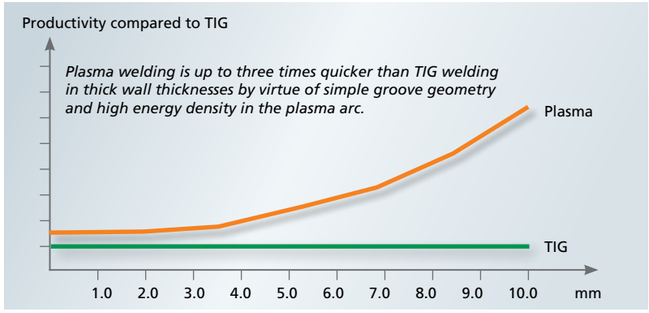


Plate thickness decides which process to use



Plasma welding is superior to TIG welding in all plate thicknesses

Protected tungsten electrodes – longer life

The plasma torch protects the tungsten electrode against weld spatter and prevents it from sticking to the weld pool. Interruption of operations for grinding the electrodes is minimized and life is considerably longer than in TIG welding.

Facts about plasma welding

Full penetration:
Mild steel up to 8 mm
Stainless steel up to 10 mm

Protected tungsten electrodes:
Longer life, fewer interruptions of operations

Low heat input:
Minimal deformation of work piece/material

Safe ignition with Pilot arc
- always ready for next welding cycle

Welding consumables:
No waste – wire from spool via CWF Multi

Efficient welding with full penetration in steel and stainless

Increased welding speed – less post-treatment

Pi 350 Plasma in automated setup is the optimal solution to rationalisation of welding processes in modern production.

- Reduced tact time per work piece
- Longer life and reduced tungsten consumption
- Simple groove geometry and less preprocessing
- Lower welding current – less deformation and post-treatment – better finish
- Lower current consumption and CO2-emission
- Shielding during welding: better personal safety
- A minimum of welding fumes: better working environment:

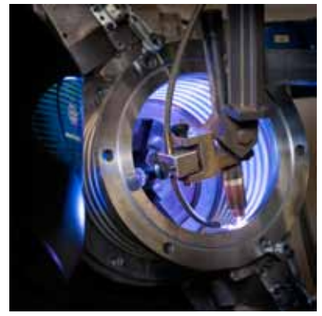
Synchronised pulsating wire; Pi 350 Plasma can support up to eight CWF Multi units

Plasma welding of stainless material in a long-seam automated device

Simple operation of even advanced functions

Simple operation of advanced welding processes

The control panel is logical and easy to use with direct choice of processes. Up to 64 programs can be stored in Plasma and TIG. The machine has a port for remote control and Arc Detect, and a special solution it can be equipped with an extra control panel with identical functions and facilities for the welder at the automatic device.



Welding of stainless steel - vibration damper for exhaust gas system

Complete setup

CWF Multi is a separate wire feed unit designed specifically for setups with automatic devices. As a curiosity, CWF Multi can also be used for manual TIG/plasma welding using handheld torches.

CWF Multi and Pi 350 Plasma can be operated separately or synchronously with interaction between welding current and wire-feeding. Yet another example of Migatronic's idea of user-friendliness, just switch on, press and weld.

PI 350 PLASMA

MACHINE TYPE	PI 350 PLASMA
Mains voltage +/- 15%	3 x 400 V
Fuse	32 A
Eff. mains current	26.1 A
Output, 100%	18.1 kVA
Max. output	23.3 kVA
Open circuit power	40 W
Current range	5-350 A
Current range TIG/MMA	5-500 A
Open circuit voltage	95 V
Application class	S
Protection class	IP 23
Norm	EN60974-1, 2, 3,10
Dimensions H x W x L, cm	98 x 54.5 x 109
Weight, kg	85

DUTY CYCLE	PI 350 PLASMA
100% at 20° TIG	475 A
100% at 20° Plasma	350 A
100% at 40° TIG	420 A
100% at 40° Plasma	350 A
60% at 40° TIG	500 A

COLD WIRE FEEDER	CWF Multi
Wire feed speed m/min.	0.2-5
Wire diameter, mm	0.6-1.6
Dimensions, H x W x L, cm	27.6 x 21.1 x 27.6
Weight, kg	9.6

Please note that the plasma process requires increased cooling capacity to avoid thermal breakdown of the plasma torch. The capacity of the standard cooling unit is adequate for TIG welding.

Optional feature: for plasma welding using constant amperages over 80 A, Migatronic offers an external cooling unit to ensure sufficient cooling of the plasma torch.

Please contact Migatronic for more information.

Accessories for Pi 350 Plasma:

- CWF Multi Cold Wire Feeder
- Frame for mounting in rack system
- Remote control kit – extra control panel
- Foot control unit/pocket control unit
- Autotransformer
- Welding hoses/cables in various lengths

Facts about the plasma process

Basically, the plasma welding process can be described as a further development of the TIG welding process.

Plasma is a condition in which the gas becomes electrically conductive (ionised) at extreme temperatures. The plasma arc is thereby an active part of the fusion process with an energy density that is up to ten times larger than the TIG arc.

These extreme energies, up to 30,000°C, result in the concentrated heat zone and quick heating of the parent material – and faster establishment of the weld pool than in TIG welding.

In plasma welding, virtually no welding fumes are generated.

Galvanized mild steel – Plasma-melt in 0.5 mm wall thickness

Stainless steel – Plasma-keyhole welding in 6 mm wall thickness

Copper – plasma-melt in 0.6 mm wall thickness

Conical pipe TIG welded onto plate. Note the thin throat thickness.

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