



WELD THE WORLD

# Power Pulse 322-402-502

## Cruiser 322-402-502

### Synergic



# The Power Source: Cruiser 322-402-502

MMA - Modular Multifunction



## MMA



The Cruiser 322-402-502 allows for the setting of different coated electrodes' types: CELLULOSIC - BASIC - RUTILE - CrNi- ALUMINIUM

## MMA/CELLULOSIC



MMA CELLULOSIC is a specific MMA function which allows to obtain the highest welding results with cellulosic electrodes.

## GOUGING/ARC AIR

(only 402 - 502)



The Arc Air process provides high quality gauging with up to 6mm (Cruiser 402) and 8mm (Cruiser 502) carbon electrodes.

# The Power Source: Cruiser 322-402-502

Technical Data

The **Cruiser 322 - 402 - 502** are heavy duty industrial 3 Phase inverter power sources for MMA Welding and TIG DC LIFT applications with excellent arc characteristics.

The **Cruiser 322 - 402 - 502** are specifically designed for tough working conditions such as steel fabrication, ship-building, offshore, shipyards, boat-maintenance, repair and heavy metal constructions.

	Cruiser 402		Cruiser 502					
	3x400Vac ± 15% @ 50-60Hz		3x400Vac ± 15% @ 50-60Hz					
	32A@		40A@					
	MMA	TIG - WIG	MMA			TIG - WIG		
$\%_{0,40^{\circ}\text{C}}$	100%	100%	50%	60%	100%	50%	60%	100%
$-I_2$	400A	400A	500A	450A	400A	500A	460A	400A
$I_2$	5A - 400A	5A - 400A	5A - 500A			5A - 500A		
$U_0$	9-81V		9-81V					
$P_{\text{MAX}}$	18,4kVA - 16,8kW		25,5kVA - 23,4kW					
IP	23		23					
	690 x 290 x 510mm		690 x 290 x 510mm					
	50,7Kg (Power Source)		50,7Kg (Power Source)					

	Cruiser 322					
	3x400Vac ± 15% @ 50-60Hz					
	25A@					
	TIG - WIG			MMA		
$\%_{0,40^{\circ}\text{C}}$	-	60%	100%	-	60%	100%
$-I_2$	-	320A	260A	-	300A	250A
$I_2$	5A - 320A			10A - 300A		
$U_0$	11/74V					
$P_{\text{MAX}}$	14,3kVA - 11,0kW					
IP	23					
	690 x 290 x 450mm					
	40,5Kg (Power Source)					



## Lateral ventilation

The advanced ventilation system allows an optimal Duty Cycle:

322: 250Ampere at 100% at 40°C.  
402-502: 400Ampere 100% at 40°C.

A better cooling of the inner components increase the generator's reliability. All of the electronic components are placed outside the airflow, this make the generator also suitable for working in particularly dusty conditions.



# Power Pulse 322-402-502

MIG/MAG PULSE/DOUBLE PULSE/SYNERGIC - TIG DC LIFT - MMA - MMA CELL. - ARC AIR

# Power Pulse 322-402-502

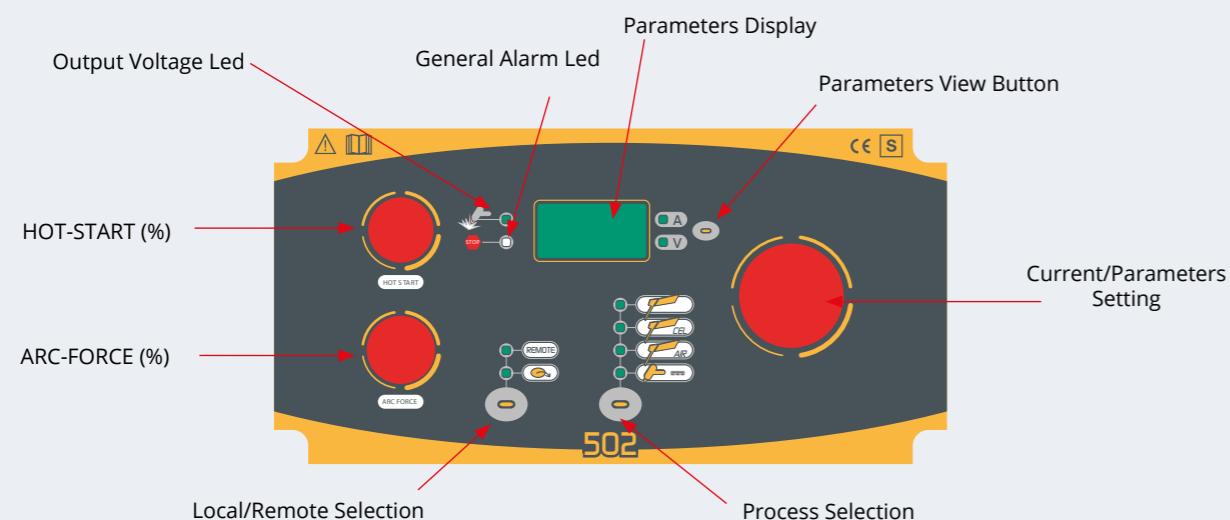
Technical Data



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## Front Panel Power Source



The **Power Pulse 322 - 402 - 502** are industrial 3 Phase Inverter Power Sources with extremely high duty cycle, fitted with separated wire feeders for MIG MAG SYN and MIG MAG PULSE and DOUBLE PULSE. A wide range of MIG-MAG synergic programs facilitate the selection of precise welding parameters using any welding wires. High performances are guaranteed by MIG MAG functions, HSL, Power Focus and Power Root. MMA, MMA cellulosic, Lift Tig DC, and ARC AIR (only 402 - 502) processes are also available.

	Power Pulse 322						Power Pulse 402			Power Pulse 502								
$3\phi$	3x400Vac ± 15% @ 50-60Hz						3x400Vac ± 15% @ 50-60Hz			3x400Vac ± 15% @ 50-60Hz								
$I_{max}$	25A @						32A@			40A@								
$I_{min}$	MIG-MAG	TIG-WIG	MMA		MIG-MAG	TIG-WIG	MMA	MIG-MAG	TIG-WIG	MMA		MIG-MAG	TIG-WIG	MMA				
$\%_{40^\circ C}$	60%	100%	60%	100%	60%	100%	100%			50%	60%	100%	50%	60%	100%	50%	60%	100%
$I_{max}$	320A	260A	320A	260A	300A	250A	400A			500A	450A	400A	500A	460A	400A	500A	450A	400A
$I_{min}$	20A - 320A		5A - 320A		10A - 300A		20A - 400A		5A - 400A		5A - 400A		20A - 500A		5A - 500A		5A - 500A	
$U_o$	10/73V						9/81V			9/81V								
$P_{max}$	15,2kVA - 11,6kW						18,4kVA - 16,8kW			25,5kVA - 23,4kW								
IP	23						23			23								
$L$	1160 x 670 x 1530mm (H <sub>2</sub> O)						1160 x 670 x 1530mm (H <sub>2</sub> O)			1160 x 670 x 1530mm (H <sub>2</sub> O)								
$\Sigma$	144Kg (H <sub>2</sub> O)						150Kg (H <sub>2</sub> O)			150Kg (H <sub>2</sub> O)								

TECHNOLOGY	PROCESSES				
SPECIAL FUNCTIONS					
MATERIALS					
Aluminium	Mild steel	Stainless steel			
INDUSTRY					
Industry	Shipyard	Pipe welding	Heavy Industry		

# WF104 - WF108

Wire Feeder for Power Pulse 322 - 402 - 502

# WF104 - WF108

Technical Data



	WF104
	42VDC
$P_{MAX}$	120W
r.p.m.	270
	1,5 - 24,0m/min
	n°4 (ø37mm - ø19mm) Fe 0,6 - 1,6mm Al 0,8 - 3,2mm FCW 1,0 - 3,2mm
	200mm (5Kg) - 300mm (15 Kg)
IP	23
	670x 245 x 470mm
	23,8Kg

	WF108
	42VDC
$P_{MAX}$	120W
r.p.m.	270
	1,5 - 24,0m/min
	n°4 (ø37mm - ø19mm) Fe 0,6 - 1,6mm Al 0,8 - 3,2mm FCW 1,0 - 3,2mm
	200mm (5Kg) - 300mm (15 Kg)
IP	23
	680 x 380 x 280mm
	15,8Kg

## Power Pulse 322-402-502

Plus and Accessories

### PLUS



**STRUCTURAL STRENGTH**

The structural strength of the Power Pulse 322 - 402 - 502 is very robust in any working environment.



**ROBUST WHEELS**

The robust wheels of the Power Pulse 322 - 402 - 502 allows smooth movement of the power source.

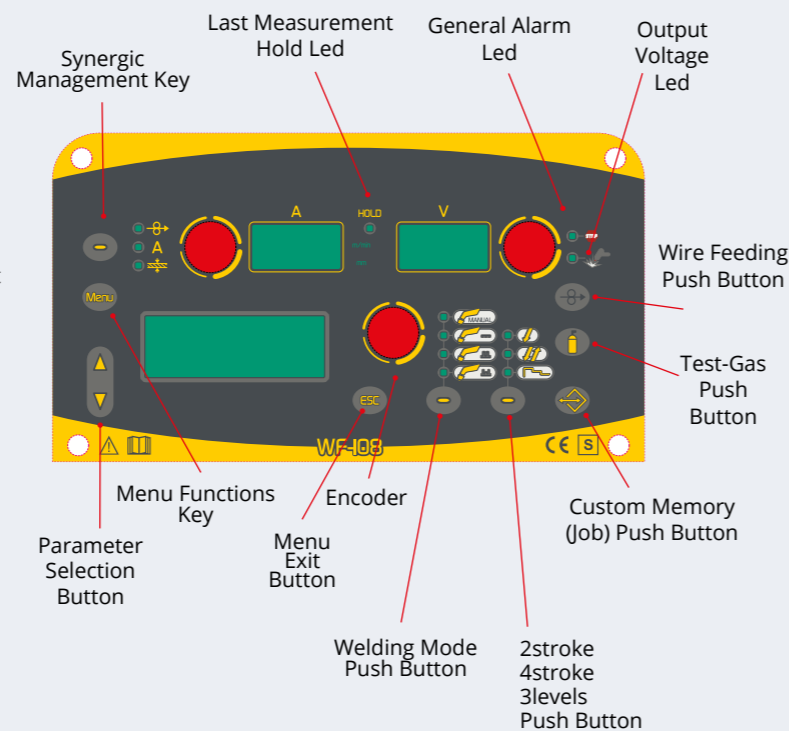
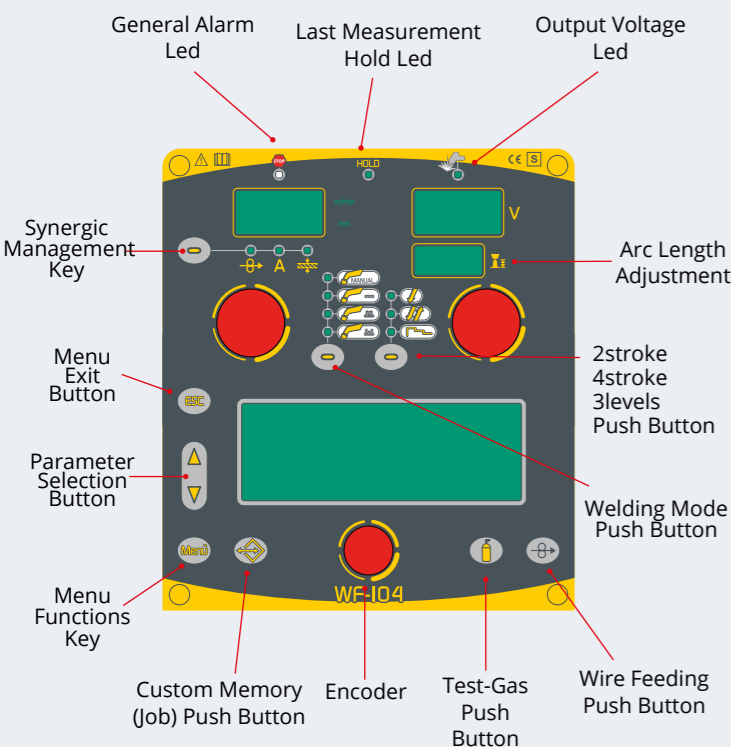


**EASY CARRIAGE**

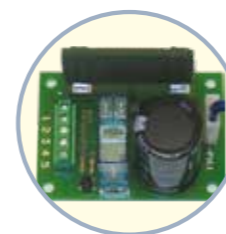
The Power Pulse 322 - 402 - 502 can be easily moved around any workplace thanks to our robust trolley.

### Front Panel WF104

### Front Panel WF108



### ACCESSORI



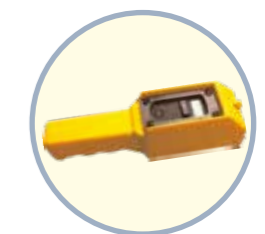
**KIT PUSH PULL**



**UPGRADING SOFTWARE**



**DIGIMANAGER TORCH**



**RC 08 REMOTE CONTROL**

# Power Pulse 322-402-502

Special Functions



## W.ECO Technology Inside

Lower harmonic current emissions

W.ECO technology according to EN-60974-10, reduces harmonic current emissions.



## HAC Hybrid Arc Control

Soft Arc, Low Spattering  
Better welds, Money Savings

WECO unique HAC (Hybrid Arc Control) supplies a soft and very stable MIG-MAG welding arc with excellent weld bead quality and minimal spatter in any working conditions.



Digital control and excellent welding with cellulosic electrodes is an optimized combination also for piping and Oil & Gas industry applications.



## 1 - Higher execution speed

The high dynamics applied to the pulsation of HS Pulse arc gives an extremely and focused arc that increases the fluidity and pressure of transfer as well as the wettability of joints.

This allows the operator (or automatism) to proceed much faster with the torch offering up to 35% in time saving.

## 2 - Higher deposition rate

The high dynamics applied to the pulse of Pulse HS arc allows for an increase in wire's speed whilst keeping same current value when welding in Standard Pulse. The increase in the quantity of wire in to the pool increases consequently the weight of deposit in the unit of time (Kg/h).

## 3 - Lower heat input and less plastic deformation

In Pulse HS mode the heat input is much lower (35%) than with Standard Pulse.

## 4 - Better mechanical properties

From our tests carried out we established that tensile strengths values in the Pure Deposit and Heat Affected Zone (HAZ) are much higher in Standard Pulse. This means that the higher heat input increased considerably the tensile strengths. In HS Pulse, hardness and tensile strengths are in line with the class which the base metal belongs to, therefore the heat input has no influence in the welded material.

## 5 - Higher penetration, offers lower risk of lack of fusion

Penetration obtained in HS Pulse (P2) is considerably higher compared to that of Standard Pulse (P1).

Moreover the weld face is smoother thanks to the excellent joints' wettability.

## 6 - Lower production costs and depreciation

The higher execution speed combined with the higher deposition rates reduces remarkably both times and working costs. Less defects on the material and almost no need of reworking allow a always better amortization.

# Power Pulse 322-402-502

Special Functions



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The **Power Root function** has been developed for improving and simplifying the root pass welding on seams. The Power Root Arc is perfectly suited for the joining of weld seams which have significant gap and irregular preparation. The arc remains highly stable on several different applications and allows optimal control of the welding puddle, especially in the vertical down position.

Power Root results are extremely easy to adjust, therefore making it easy for welders without the a great deal of experience on these types of seams.



## Gap bridging

The cold droplet transfer provides process stable welding even with wide gaps. The modelability is significantly improved. The weld puddle is smooth, combined with a high viscosity.



## V-groove / pipe welds

The optimized short arc cycle guarantees a high arc pressure – even in constrained positions.

No matter if vertical down or overhead welding, the root pass quality will be assured. Root pass welding with up to 4 times higher welding speed compared to vertical up.

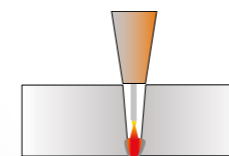


## The difference between Standard Mig Mag welding and Power Focus

The difference between Standard Mig Mag welding and Power Focus is to be found on the concentration and precision of the arc.

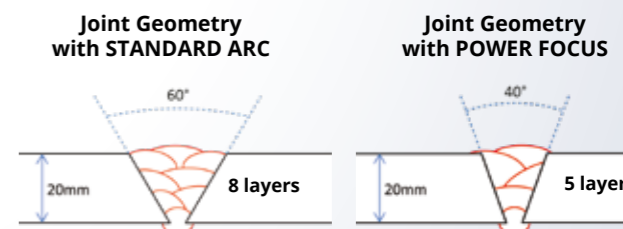
The concentration on the Power Focus mode allows to focalize the high arc temperature precisely on the middle of the deposition, avoiding overheating on the weld edges.

## Power Focus Arc Specifications



On the butt welding applications the Power Focus Arc stays concentrated in the exact middle of the weld seam, so that full penetration is achieved. In this way, it is possible to work on very narrow weld seams, which demands less mechanical preparation and of course, also less filling passes.

## Difference joint geometry



Until 40% less volume to fill!

Power Focus provides a stable arc even with stick-out very long (50mm)

# Cruiser 322-402-502 Synergic

MIG/MAG Synergic - TIG DC LIFT - MMA - MMA CELLULOSIC - ARC AIR

# Cruiser 322-402-502 Synergic

Technical Data



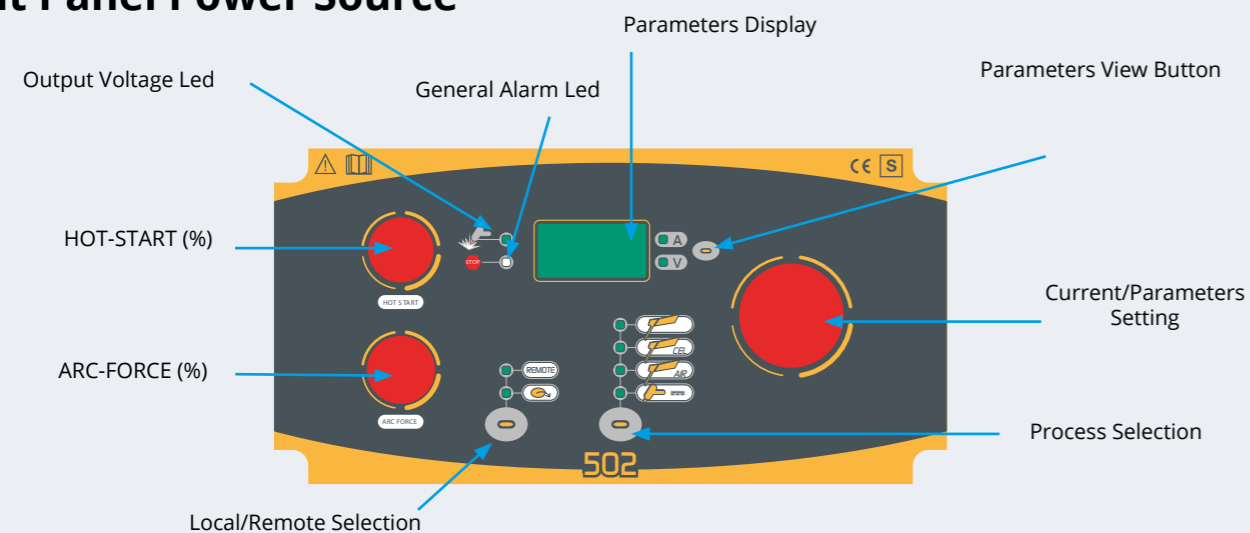
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TWIN FEEDER version

AIR COOLED version

## Front Panel Power Source



**Cruiser 322 - 402 - 502 Synergic** are industrial synergic 3 Phase Inverter Power Sources (400A 100% at 40° C) fitted with separated wire feeders for MIG-MAG welding. MMA, MMA cellulosic, Lift TIG DC and ARC AIR processes are also available (only 402-502). A wide range of MIG-MAG synergic programs facilitate the selection of precise welding parameters using any welding wires. High performances are guaranteed even with long cable bundle (50m).

	Cruiser 322 Synergic						Cruiser 402 Synergic			Cruiser 502 Synergic								
$U_i$	3x400Vac ± 15% @ 50-60Hz						3x400Vac ± 15% @ 50-60Hz			3x400Vac ± 15% @ 50-60Hz								
$I_{25}$	25A@						32A@			40A@								
$I_{25}$	MIG-MAG	TIG-WIG	MMA	MIG-MAG	TIG-WIG	MMA	MIG-MAG	TIG-WIG	MMA	MIG-MAG	TIG-WIG	MMA	MIG-MAG	TIG-WIG	MMA			
% <sub>40°C</sub>	60%	100%	60%	100%	60%	100%	100%			50%	60%	100%	50%	60%	100%	50%	60%	100%
$I_2$	320A	260A	320A	260A	300A	250A	400A			500A	450A	400A	500A	460A	400A	500A	450A	400A
$I_2$	20A - 320A		5A - 320A		10A - 300A		20A - 400A		5A - 400A		5A - 400A		20A - 500A		5A - 500A		10A - 500A	
$U_0$	11/73V						9-81V			9/81V								
$P_{MAX}$	15,2kVA - 11,6kW						18,4kVA - 16,8kW			25,5kVA - 23,4kW								
IP	23						23			23								
$L$	1160 x 670 x 1530mm (H <sub>2</sub> O)						1160 x 670 x 1530mm (H <sub>2</sub> O)			1160 x 670 x 1530mm (H <sub>2</sub> O)								
$m$	132,5Kg (H <sub>2</sub> O)						154,5Kg (H <sub>2</sub> O)			154,5Kg (H <sub>2</sub> O)								

### TECHNOLOGY

### PROCESSES

### SPECIAL FUNCTIONS

### MATERIALS

### INDUSTRIES

# WF103 - WF105

Wire Feeder for Cruiser 402-502 Synergic

# WF103 - WF105

Technical Data

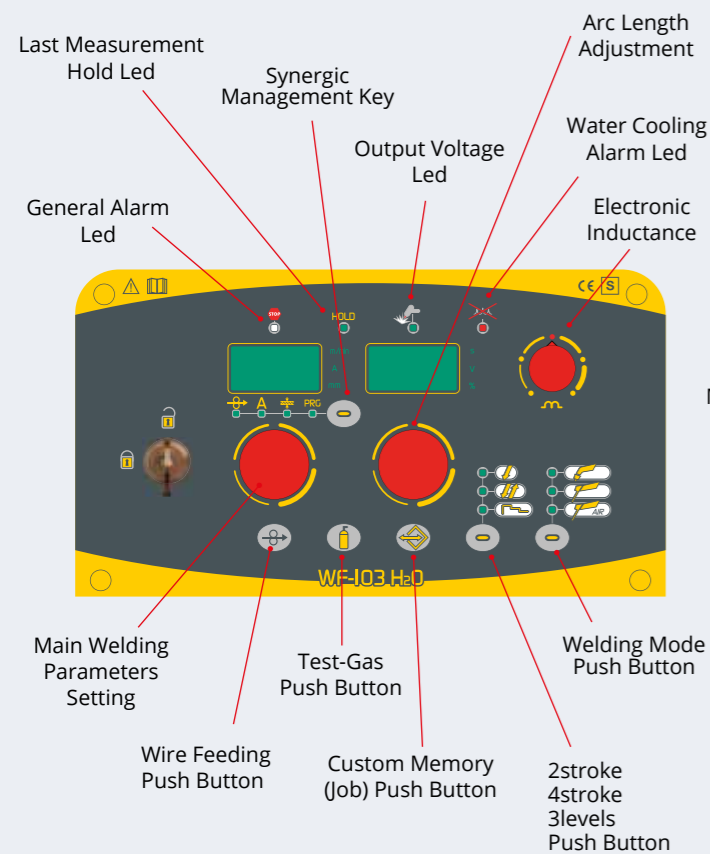


DIX connector for MMA

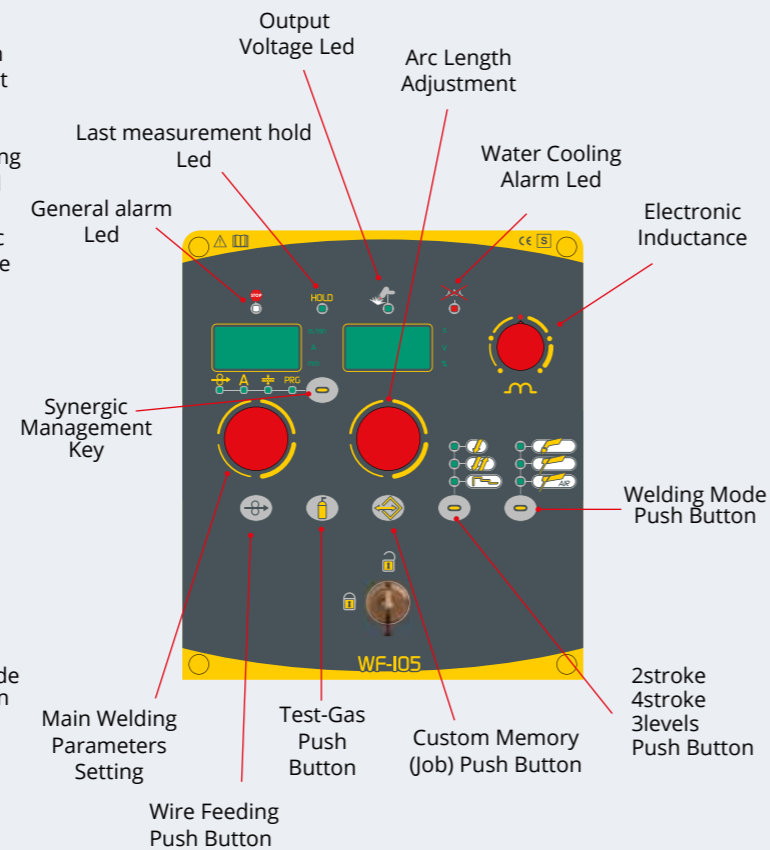
	WF103
	42VDC
$P_{MAX}$	120W
r.p.m.	270
	1,5 - 22,0m/min
	n°4 (ø30mm - ø22mm) Fe 0,8 - 1,6mm Al 0,8 - 1,6mm FCW 0,8 - 1,6mm
	200mm (5Kg) - 300mm (15 Kg)
IP	23S
	680 x 280 x 380mm
	15,6Kg

	WF105
	42VDC
$P_{MAX}$	120W
r.p.m.	270
	1,5 - 22,0m/min
	n°4 (ø37mm - ø19mm) Fe 0,6 - 1,6mm Al 0,8 - 3,2mm FCW 1,0 - 3,2mm
	200mm (5Kg) - 300mm (15 Kg)
IP	23
	670x 245 x 470mm
	24,0Kg

## Front Panel WF103



## Front Panel WF105



## Cruiser 322-402-502 Synergic

Plus and Accessories

### PLUS



**STRUCTURAL STRENGTH**

The structural strenght of the Cruiser 322 - 402 - 502 Syn is very robust in any working environment.



**ROBUST WHEELS**

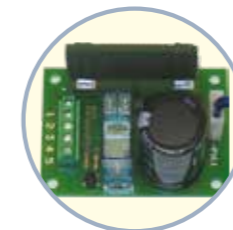
The robust wheels of the Cruiser 322 - 402 - 502 Syn allows smooth movement of the power source.



**EASY CARRIAGE**

The Cruiser 322 - 402 - 502 Syn can be easily moved around any workplace thanks to our robust trolley.

### ACCESSORIES



KIT PUSH PULL



TORCH UP & DOWN



REMOTE CONTROL

# Cruiser 322 - 402 - 502 Synergic

Special Functions



### W.ECO Technology Inside

Lower harmonic current emissions

W.ECO technology according to EN-60974-10, reduces harmonic current emissions.



### HAC Hybrid Arc Control

Soft Arc, Low Spattering  
Better welds, Money Savings

WECO unique HAC (Hybrid Arc Control) supplies a soft and very stable MIGMAG welding arc with excellent weld bead quality and minimal spattering in any working conditions.



Digital control and excellent welding with cellulosic electrodes is an optimized combination also for piping and Oil & Gas industry applications.

## HAC (Hybrid Arc Control)



### SPRAY ARC:

HAC allows you to have a short spray arc with better penetration of the root, lower heat input and higher welding speed with no edge cutting and spattering.



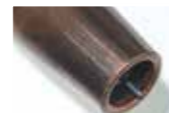
### THIN PLATES:

HAC gives smooth and controlled short arc at lower parameters too. Low spattering, good edge wetting, low heating and small deformation are achieved in thin plate welding.



### WELDING POSITION:

HAC gives an optimal fusion of the bead's edges in short arc welding and to make overhead and vertical up position welding easier.



### BURN BACK:

An optimal wire cutting at the end of welding helps perfect starts.



### PG POSITION:

HAC allows thin plates welding in vertical down position with gap up to 5mm wide.



### SPOT WELDING:

Dedicated controls, low spattering and high execution-speed allow you to get perfect welding spots.



### SOFT START:

Approaching speed of wire and welding dynamics are totally synergic giving low spattering at start, in any type of material.



**3T SPECIAL:** allows you to set and recall 3 different current levels by pushing the trigger switch in order to achieve top quality weld beads: Highly recommended for Aluminum welding.



**LEVEL 3:** A low current ends the welding optimally by filling the crater on weld beads.



**LEVEL 2:** The welding current is optimized with the plate thickness and the requested weld.



**LEVEL 1:** A correct initial current gives optimal penetration from welding start.

# Power Pulse 322 - 402 - 502 Cruiser 322 - 402 - 502 Synergic

Modular composition

From a MMA power source

to a Multifunction MIG MAG Synergic  
or MIG/MAG Pulse / Double Pulse



**CRUISER  
322 - 402 - 502**



## WF108

WIRE FEEDER

4 rolls 120W

## WF104

WIRE FEEDER

4 rolls, 120W

## WF105

WIRE FEEDER

4 rolls, 120W

## WF103

WIRE FEEDER

4 rolls, 120W

+ KIT  
POWER PULSE



+ TROLLEY M  
+ C.U.09  
+ CABLE

+ TROLLEY M  
+ C.U.09  
+ CABLE



**Power Pulse 322 - 402 - 502**

**Cruiser 322 - 402 - 502 Synergic**



**A solid industrial activity, where the production is based on substantial investments for the supporting of research, projection and continuous testing.**

Since 1997 Weco has been producing and selling welding machines

Both registered office and production plant are based on the north east of Italy. Our offices, technical/project department, production and warehouse are able to serve both our national and international sales net. A wide range of welding machines together with a huge stock, allow us to encounter and fully satisfy our customers' requests in short time.

A dynamic management supported by solid experience on the main sales' arguments and a deep knowledge on the application issues, allow this company to be ahead in the welding sector.

WECO means better solution for improving the production, optimizing the intervention time, minimizing the processes' costs, with the highest perform-standards granted.



**WELD THE WORLD**

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Dealer