

CHAMP PULSE 505

REDEFINING DIGITAL EXPERIENCE





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CHAMP PULSE 505

Redefining Digital Experience



REDEFINING DIGITAL EXPERIENCE

The MIG/MAG and MIG/MAG Pulsed welding machine delivers exceptional performance across common and stainless steels, aluminum, and alloys.

Equipped with advanced Digital Control Technology, Multivoltage, PFC, and a Quick Setting interface, it ensures precise results in any condition. Additionally, MMA, TIG DC Lift, and Gouging processes are available.

With a 400A duty cycle at 100% (40°C), this machine supports continuous operation, even in high-demand applications.



Wire feeder unit Feedlite 405 equipped with a full control panel ensures availability of all functions from the work station

Rotary wire feeder

Torch holder

The sturdy and safe cable fixing prevents the signal cable and the power cable from getting damaged, thus prolonging the life of the extension lead

Water cooling unit - available in 2 versions up to 1600W cooling capacity/ large water tank/excellent torch cooling reduces costs for torch spare parts

Lockable castor wheels to improve safety in working environments

CHAMP PULSE 505



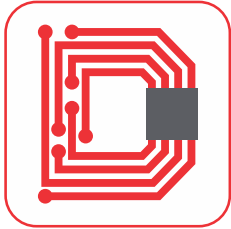


TECHNOLOGIES

Key Benefits



Key Benefits



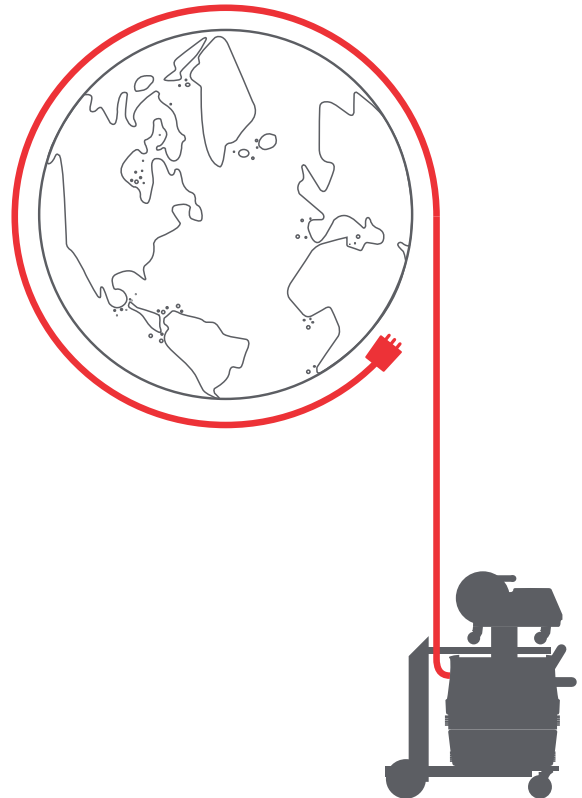
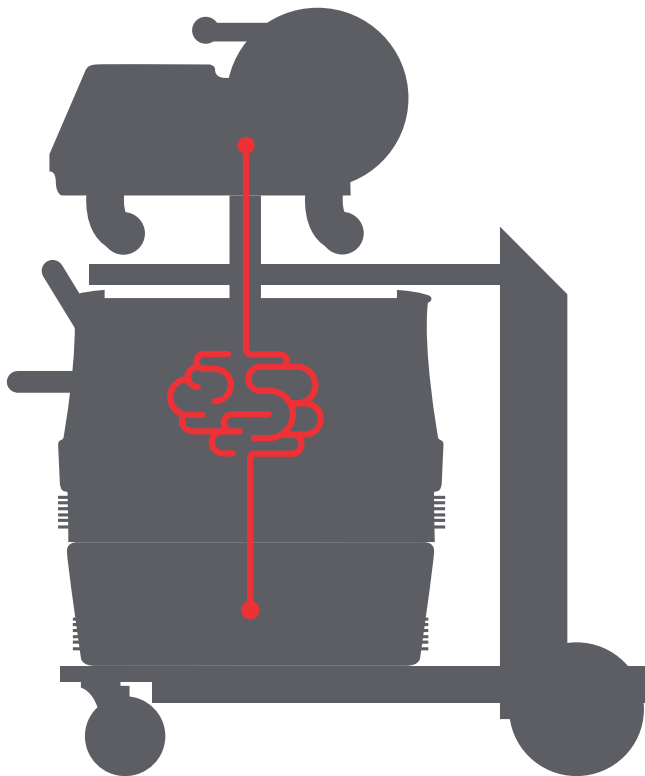
Digital Control Technology

Instantly assured stability and optimal arc balance, from arc ignition to completing the welding operation. Through the previous generation of **DSP** (Digital Signal Processor) the inverter digital management permits the welding characteristic to regulate quickly and accurately. The welding parameters are dynamically controlled and changed in real time.



Multi-voltage

The power supply will never be an issue, even in unstable conditions (such as motor-generators). The machine can be connected to any three-phase power supply, as it automatically adapts to the voltage available on site in order to ensure perfect performance at all times. The range of three-phase power supplies starts from 230V ($\pm 15\%$), to 400V ($\pm 15\%$), up to 440V ($\pm 15\%$).





Key Benefits



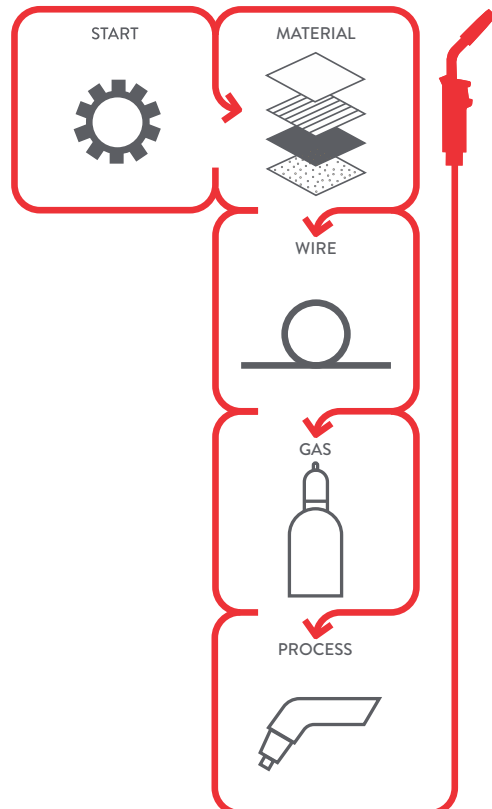
PFC (Power Factor Corrector)

The power supply will never be an issue, even in unstable conditions (such as motor generators). The machine can be connected to any three-phase power supply, as it automatically adapts to the voltage available on site in order to ensure perfect performance at all times. The range of three-phase power supplies starts from 230V ($\pm 15\%$), to 400V ($\pm 15\%$), up to 440V ($\pm 15\%$).



Quick Setting

Very intuitive and user-friendly interface, even for the less experienced welders. The large 5" high resolution display allows the parameters to be easily read even in poor lighting conditions. In addition, 7 segments have been added to the display, in order to allow welders to view the main parameters even when they wear a welding mask. The Quick Setting system makes it easier to correctly set up the welding parameters, greatly reducing the machine set-up times.





SPECIAL FUNCTIONS

Evolving Welding Functions



All the continually evolving welding functions you need.



High Control (HC)

The new Pulsed HC (High Control) boasts a very quick arc control in order to optimize drop detachment with greatly reduced power.

HC Features

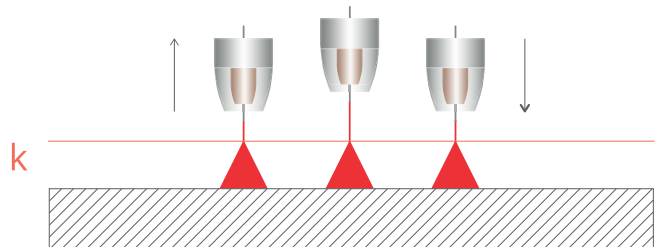
- More stable welding arc, with almost no spatter or micro-projections.
- Very reactive arc to the torch movement.
- Reduced energy transmitted to the welded workpiece.
- Very linear transfer with optimal edge wetting at a very high speed of execution.

PB - Fillet Welding

S355 - THK 8mm

A more stable welding arc, with almost no spatter or micro projections.

Very reactive and always balanced arc in relation to the torch movement.

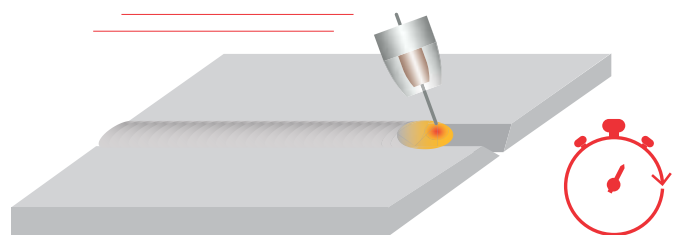


PB - Fillet Welding

SS304 - THK 2mm

Less energy transmitted to the welded workpiece.

Very linear transfer with an optimal edge wetting at a very high speed of execution.





SPECIAL FUNCTIONS / POWER ROOT



Power Root

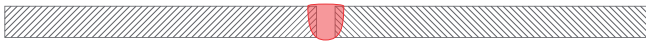
The special Power Root function is a short arc transfer, controlled with a cold drop which ensures a very high quality during the root passes.

Power Root Features

- Optimal first pass.
- Quality of descending vertical welding.
- Excellent operability.
- Cold transfer of welding drop.
- Perfectly jointed thin metal sheets.
- Ideal for welding joints with large gaps.

PG - Butt Weld

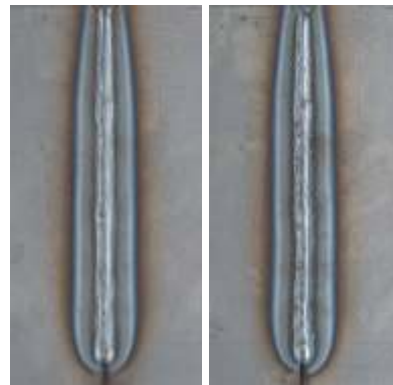
S355 - THK 3mm - GAP 1.5mm.



Front

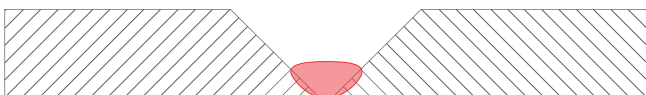
Back

Application on materials with gaps



PG - Butt Weld

S355 - THK 10mm thick - GAP 4mm - Angle 30°.



Macrography of the weldment.





Power Focus

The special Power Focus function has been designed to reduce total welding costs, reducing the total number of joints to be welded.

Power Focus Features

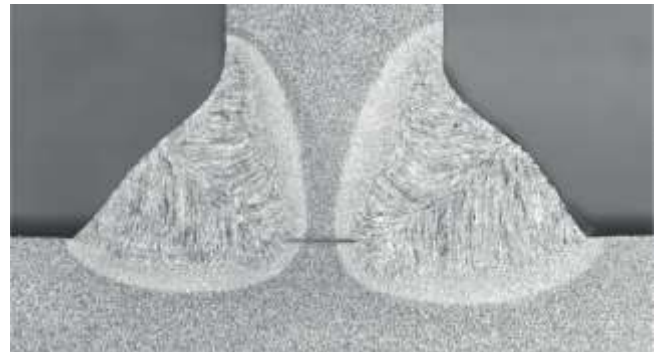
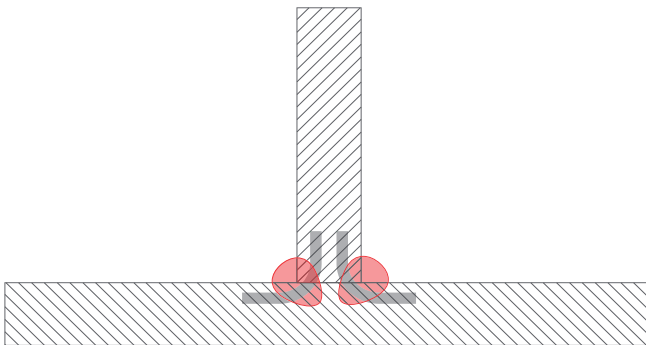
- Higher penetration and lower risk of sticking.
- Increased welding speed.
- Higher arc stability even with long stick-outs.
- Lower costs of joint preparation.
- Reduced volumes of bevels to be filled.

PB - Fillet Weld

S355 - THK 8mm

Welded from both sides.

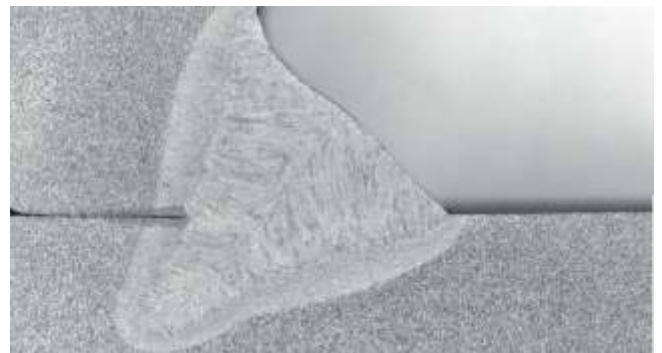
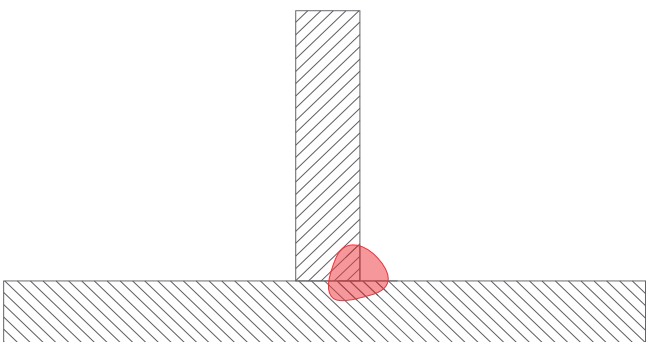
The higher number of field lines increases the resistant section.



PB - Fillet Weld

S355 - THK 10 mm.

Section of weld bead 8mm.





SPECIAL FUNCTIONS / K DEEP



K Deep

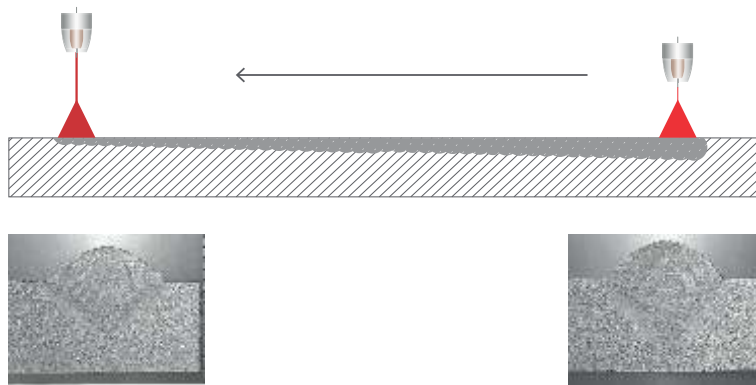
This procedure ensures an even penetration, even if the torch stickout changes during the welding operation.

Without K Deep

PA

S355 - THK 3mm

Pulsed welding without K Deep, showing stick-out linear variation during the 10mm welding operation. The result is an uneven penetration.

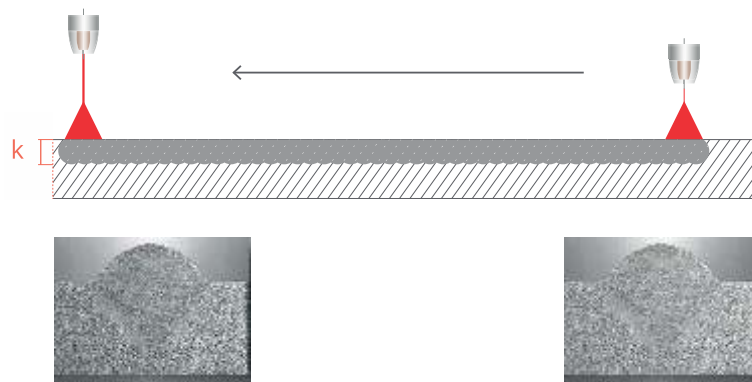


With K Deep

PA

S355 - THK 3mm

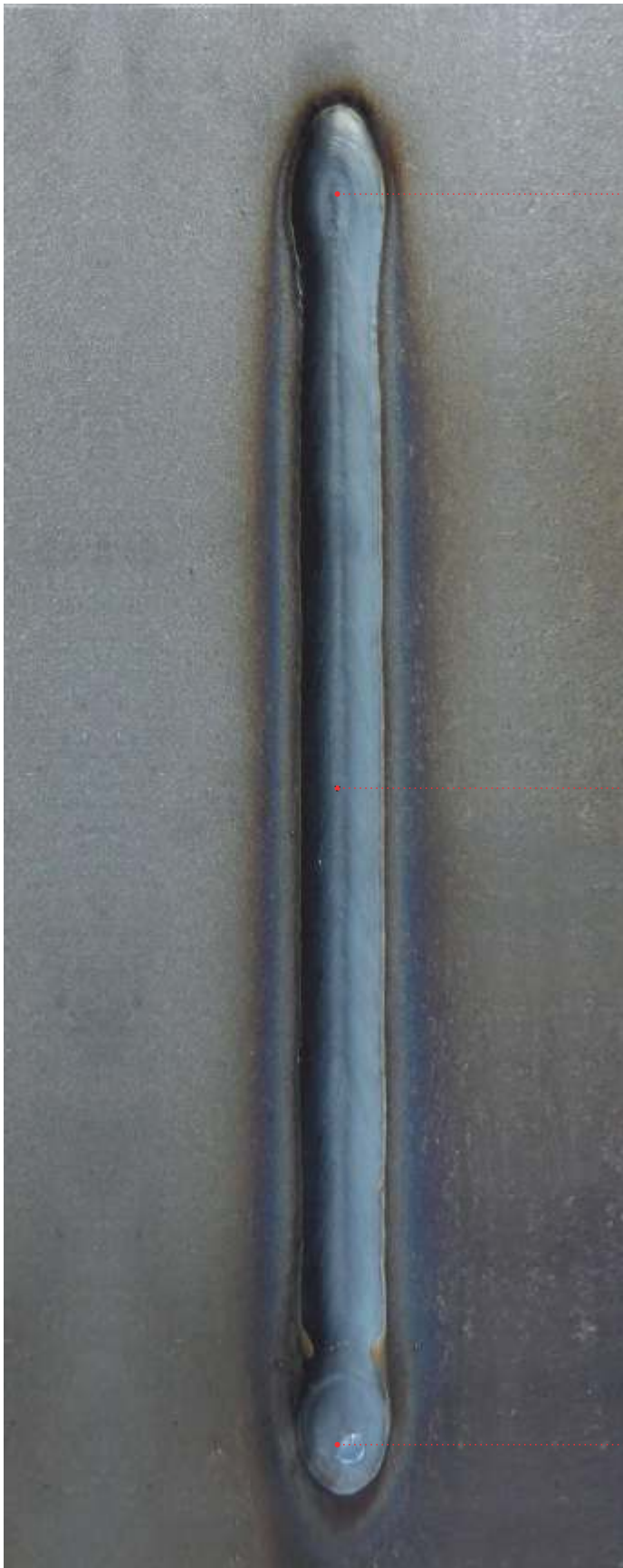
Pulsed welding with K Deep on, showing stick-out linear variation during the 10mm welding operation. The result is an even penetration.





INNOVATION

Digital Control Technology



Arc Strike

The new starting system controlled by Digital Control technology ensures optimal strikes to be achieved at all time, avoiding initial blows and minimizing the likelihood of spatters. All this in any operating conditions.



Stable Arc

The very fast control provided by Digital Control technology allows metal melting to be immediately balanced. This almost entirely removes any splashes in the initial welding stage and the weld bead is even from beginning to end.



Wire Cutter

The neat wire cut at the end of the welding operation prevents a weld pool from forming, ensuring an optimal next strike.





Spool Storage

Inspection window used to check the remaining amount of wire in the spool.

Ergonomic Handle

Transport is also made easier by the practical top handle, which ensures a balanced grip.



The sturdy and safe cable fixing prevents the signal cable and the power cable from getting damaged, thus prolonging the life of the extension lead. Communication with the power source is ensured up to 50 meters.

MMA grip connection for welding with coated electrode directly from the wire feeder.

USB

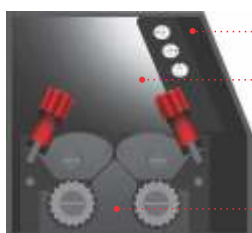
- Full update of the Power Source.
- JOBS are saved and transferred from one power source to another.

Four Roll Drive Wire feeder motor with optical Encoder to ensure a more effective and accurate wire feed.

Plexiglass shield, which protects the digital display from welding spatter and grinding sparks preventing damage to the front panel.

Connector for the application of remote controls.

Shock-proof cooling circuit quick couplings.



Wire holder.

LED lights in the wire feeder drive unit housing make it easier to insert and change the rollers even in poorly lit locations.

Four drive roller system (optional) ensuring a smooth wire unwinding operation, particularly with special wires (Aluminium, Stainless Steel, CuSi, ...).

USER INTERFACE



A simple and user-friendly interface ensures quick access to all parameters. The large, very bright 5" display ensures a clear and easy to understand view by using the touch screen mode or the dedicated mechanical key.





USER INTERFACE

The new Quick Setting set-up procedure allows any welders, including less experienced welders, to quickly set up the machine.

Quick Setting

The Quick Setting menu is displayed with a vertical list of options on the left: MATERIAL, DIAMETER, GAS, and PROCESS. The PROCESS option is selected and highlighted in red. Below the PROCESS option, two sub-options are listed: MIG/MAG PULSED (highlighted in red) and MIG/MAG SHORT/SPRAY. The right side of the screen features navigation buttons: EXIT, NEXT, and PREC.

Welding Circuit Calibration

The Welding Circuit Calibration screen displays the title "WELDING CALIBRATION" and an illustration of a welding torch touching a workpiece. Below the illustration, the instruction reads: "Touch workpiece with torch and press torch button". The left side of the screen has navigation buttons: PROGRAM, PROCESS, and MODE. The right side has navigation buttons: EXIT, PREC, and NEXT.

Job Management

The Job Management screen displays the title "JOB LIST" and a list of job steps: 1: First pass (highlighted in red), 2: Filling pass, 3: Cup layer, and 4: Fillet 8mm. The left side of the screen has navigation buttons: DELETE JOB, RENAME JOB, and NEW JOB. The right side has navigation buttons: EXIT, MENU, and LOAD JOB.

Process Management

The Process Management screen displays the title "PROCESS PARAMETER" and a schematic diagram of a welding circuit. Below the diagram, the parameter "Pre Gas" is set to "0.1 s". The left side of the screen has navigation buttons: PROGRAM, PROCESS, and MODE. The right side has navigation buttons: EXIT, PREC, and a blank button.

Hours Counter System

The Hours Counter System screen displays a table with the following data:

S/N° Gen.	00000001
Hours on	0:08:00
Hours Welding	0:01:32
Board 100 Ver 1.6	OK

The left side of the screen has navigation buttons: PROGRAM, PROCESS, and MODE. The right side has navigation buttons: EXIT, PREC, and a blank button.

Alarm Register

The Alarm Register screen displays a table with the following data:

Date/Time	Alarms
07/11/18 08:14:25	E022 - Boost voltage hole
30/09/18 10:00:06	E020 - Boost low voltage
15/08/18 06:14:25	E020 - Cooling unit alarm

The left side of the screen has navigation buttons: PROGRAM, PROCESS, and MODE. The right side has navigation buttons: EXIT, PREC, and a blank button.



TESTS

Dust Test

An initial, very strict test, to ensure safety of all electronic parts of the generator. Champ Pulse 505 is fully insulated from the ingress of dust due to grinding operations or to other reasons, which could cause the electronic components to fail.

Vibration Test

To ensure the structural stability of the inverter and to allow the welding machine to be used in any environment, including those subjected to vibrations, such as on board of lorries, ships or other unstable structures. Each internal component of Champ Pulse 505 is securely fixed and free from vibrations.

Unstable Power Supply Test

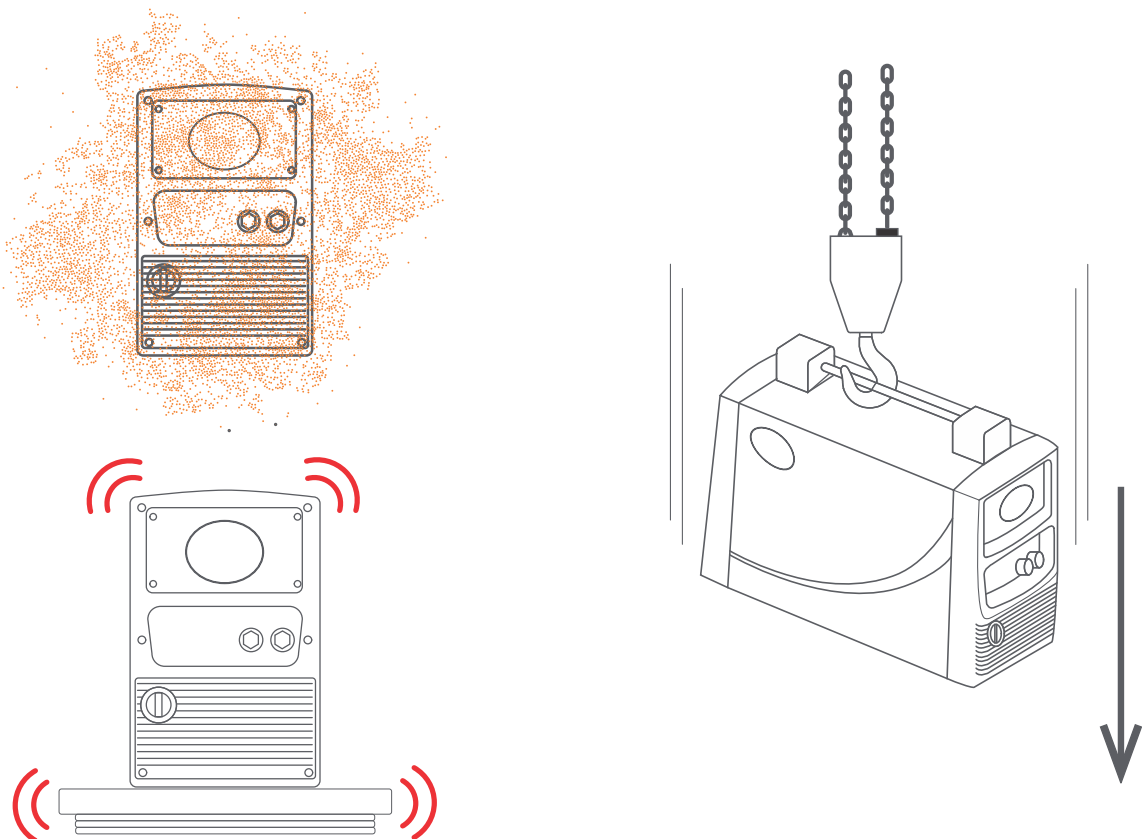
Another very strict test carried out to make sure performance is maintained even when the power input changes. Passed with flying colours! Champ Pulse 505, by using the MultiVoltage and PFC technologies, ensures consistent performance even when motor-generators or unstable power sources are used.

Safety Tests

Champ Pulse 505 has brilliantly passed all safety tests: IP tests, drop tests and stability tests on an inclined plane. Total safety is ensured in any working conditions.

Welding Test

Champ Pulse 505 is totally reliable, having been subjected to welding tests for over 3000 hours. Its performance is ensured in any working location and in any part of the world, in environments with different temperatures and ambient conditions.





CONFIGURATIONS

Champ Pulse 505 / Feedlite 405



Setting Panel on Wire Feeder

Welding Power Source with separate Wire Feeder. The control panel display is located directly on the Feedlite 405. This system is suitable for any application where the Wire Feeder needs to be carried away from the power source.

This configuration is a practical solution for ship building, large constructions, welding at a height, inside tanks and vessels, civil engineering, site work.

Champ Pulse 505 / Feedlite 405



Air cooled version when the water cooler unit is replaced by a practical tool box. The Air Cooled version is suitable for sheet metal and light fabrications using very light-weight welding torches.

ACCESSORIES



All available accessories have been designed to provide the welder with the best possible working conditions.

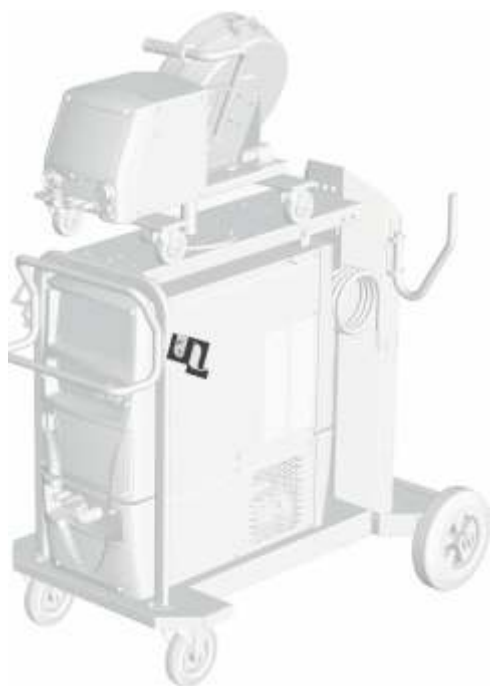
Cylinder holder / Dual cylinder



Cable Winder



Left torch holder



Wheel kit Feedlite 405





WCU-320



Remote Control / UpDown-Brenner / Digimanager





Inox HC



Inox double pulse



Aluminum Mg HC



Aluminum Mg double pulse



Steel HC








Steel double pulse



TECHNICAL DATA



HIGH THERMAL CYCLE	
DUTY CYCLE	400A 100% (400C)

CHAMP PULSE 505			
	3x415Vac \pm 15% @ 50-60Hz		
	T 30A		
	MIG/MAG		
% _{40°C}	50%	60%	100%
$\cdot I_2$	500A	450A	400A
I_2	10A - 500A		
U_0	70V		
P_{MAX}	23.1kVA - 22.0kW		
IP	23		
	1160 x 670 x 1420 mm		
	128.8Kg		



TECHNICAL DATA



FEEDLITE 405	
	42 VDC
P_{MAX}	50 W
r.p.m	210
	1.5-24 m/min
	n°4 (Ø37 mm - Ø19 mm) Fe 0.6 - 1.6 mm Al 0.8 - 3.2 mm FCW 1.0 - 3.2 mm
	200 mm (5 Kg) - 300 mm (15 Kg)
IP	23
	665 x 265 x 360 mm
	11.5 Kgs No wheels



WCU-320		
	1 x 400 Vac ± 15 % / 50-60 Hz	1 X 230 Vac ± 15 % / 50-60 Hz
I_{MAX}	0.7 A (50 Hz)	1.2 A (50 Hz)
$P_{1/LAM}$	1650 W	
P_{MAX}	0.37 MPA (50 Hz) - 0.47 MPA (60 Hz)	
	4.5L	
IP	23	
	720 X 290 X 235 mm	
	27.4 Kg - with liquid	



NOTES



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