



User Manual for Inverter Rectifier

PONTE 201 PRO MOST



Before starting work every person using or responsible for maintenance work on this device should familiarize with the entire content of these operating manual. This will optimize the use of device potential.

Attention! Prior commencing work please familiarize yourself with the user manual.

Attention! A copy of this User Manual should be stored near the device and available for operator at all times.










Thank you for buying the Inverter Rectifier PONTE 201 PRO MOST. We do believe that this product will meet your requirements. In order to ensure the correct use, all the safety and operating instructions should be read before operating this device.
The PONTE 201 PRO is not subject to the Ecodesign Directive 2009/125/EU – see Regulation 2019/1794 (EU) art. 1 pt 3b and art. 2 pts 13A and C.

1. Health and Safety Manual



ATTENTION: The device can not be used for the purpose of pipe defrosting!
Information included on icons located on the device.

	Use and maintenance of welding equipment may be dangerous. The user must observe health and safety rules and regulations. Welding and cutting machines may be used only by qualified personnel. The national regulations for working with this device and accident prevention should be kept up to date.
	All flammable or combustible materials must be removed from the working area. Welding inside tanks previously used as flammable liquids storage is forbidden. Place all combustible materials away from welding spatter.
	Do not expose the device to rain or water vapour and do not spray water over it.
	Do not weld without proper eye protection. Pay attention to providing safety for bystanders against welding radiation.
	Use ventilation and filters in order to remove welding fumes from the work site. Use individual filters if the filtering/ventilation system does not operate properly or is not available.
	Stop your work immediately after finding damage to the power cords. Do not touch the damaged cords. Prior to repair or maintenance disconnect the device from power source. Never use the device with damaged power cords.
	Keep a fire extinguisher close to the welding location. After finishing welding operations always check the work station against fire hazards.



Electromagnetic interference.

The device may influence other devices sensitive to electromagnetic interference (robots, computers, etc.)

Make sure that the devices within the welding work station are resistant to interference.

The device is compliant with the currently applicable standards. In accordance with EN IEC 60974-10 is classified as class A and is intended for use in workshop and industrial conditions. The device application nearby to residential buildings, especially the power supply using a home domestic network, may interfere with the operation of other electrical or telecom devices.

In order to minimize interference it is recommended to use possibly shortest welding cables arranged in parallel. Always work in a distance at least 100m from other sensitive devices. Always make sure that the installation is grounded.

In case of interference with other devices, shield the cables or use appropriate filters.

INTRODUCTION

Commissioning and normal operation are possible only after carefully reading the following manual. Manual metal arc (MMA) welding requires compliance with the requirements for electric arc welding and fire regulations. Device operator should be equipped with appropriate personal protective equipment. It is necessary to use a set of compatible protective equipment with the provisions of the Regulation of the European Parliament 2016/425 (PPE). Personal protective equipment includes: welding mask, welding gloves, protective apron, leather shoes, non-flammable welding clothing.

Despite the high technical standard of the device, the personnel should demonstrate considerable discipline in terms of health and safety requirements that protect against harmful and health hazardous factors resulting from welding technology.

OPERATING CONDITIONS

In order to ensure adequate service life and trouble-free operation:

- do not place or use this device on an inclined surface (of more than 15°),
- do not use the device for pipe defrosting,
- the device needs to be located in a place with free air circulation (with no restrictions of the air flow to and from the fan). When connected to electrical network the device must not be covered (for example, with paper or cloth),
- minimize the amount of dirt and dust that can get into the device,
- device has an IP21S protection rating and may not be exposed to direct atmospheric precipitation,
- do not use the device for welding the tanks previously used for storing flammable substances.



GASES AND FUMES

During MMA welding harmful gases and fumes containing ozone and hydrogen as well as oxides or metal particles are produced. Therefore, the welding work station should be fitted with very good ventilation (dust and smoke extraction) or should be placed in airy location. Metal surfaces intended for welding should be free from chemical contamination, especially degreasers (solvents) that decompose during welding process and produce toxic gases. Welding of galvanized or cadmium-coated or chrome-plated parts is only permitted with the use of a mechanical ventilation and filtering device and on condition that the adequate supply of fresh air is provided to the welding station.

RADIATION

Ultraviolet radiation emitted during welding is harmful to eyesight and skin. Therefore a welding mask with protective filters is required. Welding work station should meet certain requirements, including:

- adequate lighting system,
- fixed or movable protection screens, governing bystanders against radiation effects (depending on requirements),
- placed in a room with appropriate wall colour (absorption of UV radiation)

FIRE PROTECTION

Welding work station should be located at a safe distance from flammable materials placed especially on the floor or walls. All flammable materials need fire protection against hot metal drops. It is recommended to fit the work station with fire blankets and fire extinguishers.

PROTECTION AGAINST ELECTRIC SHOCK

It is unacceptable to connect the device to an improper installation or to an installation with unverified zeroing efficiency. Removal of external shields while the device is connected to the electric network, as well as the use of the device with shields removed is prohibited. It is not allowed to work on a suspended device (e.g. using a crane or a gantry). Maintenance and repair works should be carried out by authorized personnel in compliance with the applicable safety conditions.

2. Maintenance



ATTENTION: In order to carry out any repair or maintenance activity, it is recommended to contact your nearest technical support of RYWAL-RHC (a list of authorized service shops is available on the last page of the manual).

In the event of noticing any damage, the welder should stop working, disconnect the device from power supply and report it to direct supervisor or appropriate service - RYWAL-RHC technical support.

General maintenance (daily)

- check the condition of cables and connections, replace if necessary,
- check condition of welding torch and connection with welding cable, replace if necessary,
- check condition and operation of the cooling fan; keep the cooling air inlet and outlet openings clean,
- keep the device clean.

Periodic maintenance (every 3 months at least)

Periodic maintenance frequency can be increased depending on working conditions and the intensity of use. Maintenance:

- using a stream of dry air (at low pressure) remove the dust from the outer parts of the casing and from inside of the welding device,

- check and tighten all the screws,
- check the state of all electrical contacts and repair if necessary.



ATTENTION: Power supply must be disconnected from the device before any maintenance and service work. After each repair, perform a proper check to ensure safe use.

Mandatory device checks

According to the Labour Code provisions: „All responsibility for the safe use of machinery and equipment shall be borne by the owner.”

This results in the obligation to perform periodic and post-repair checks and inspections of equipment.

Periodic tests are carried out at least once a year (legal basis EN ISO 17662 clause 4.2), and post-repair tests after each repair that restored welding functionality (legal basis: EN 60974-4 clause 4.6).

All above services are performed by the technical support of RYWAL-RHC.

3. Technical description and operating conditions

PONTE 201 PRO are cutting edge inverter rectifier for MMA coated electrode welding. The device can use for welding the majority of electrodes with a rutile, alkaline or acid coating, except for cellulose electrodes that require a high idling voltage U_0 .

The device is powered from a single-phase 230 V.

The control panel on the front of the device has a digital welding current display and a knob to set it. The edges of the housing are secured with rubber shock absorbers. The device has large 35/50 Dinse sockets.

The device is protected against overheating by a thermal sensor and cooling fan. Made in accordance with EN 60974-1

standard. Range of air temperatures:

- operating temperature from -10°C to +40°C,
- transport and storage temperature from -25°C to + 55°C.

Relative air humidity up to 50% at +40°C and up to 90% at +20°C.

According to the Ecodesign Directive 2009/125/EU and Regulation 2019/1794 (EU)

PONTE 201 PRO is classified as arc welding equipment with a limited load and is not intended for industrial or professional use.

4. Technical data

Paramete	Unit	Value
Electrical power supply	V/Hz	1x230/50-60
Welding current range	A	10-200
Open circuit (MMA) U_0	V	63
Overload protection	A	16 (fuse delayed)
Current I_{eff}	A	14
Current I_{1max}	A	44
Work cycle MMA	A/%	200/10 82/60 63/100
Maximum power consumption	kW	6,6
Insulation class		F
Protection class		IP 21S
Noise emmision	dB(A)	<70
EMC noise level according to EN IEC 60974-10		Class A
Dimensions	mm	375x140x290
Weight	kg	5,9
Catalogue no.		53 00 030685

Table 1: Technical data PONTE 201 PRO MOST.

The device is delivered in a plastic case containing user manual booklet and an earth cable with a clamp and a cable with electrode holder. Both cables are 3 meters long.

5. Device construction

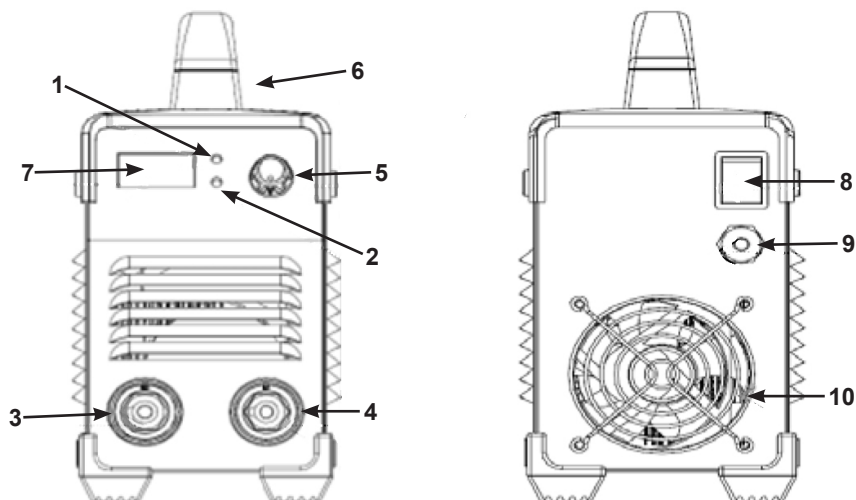


Figure 1: PONTÉ 201 PRO MOST construction

1. Power indicator LED lights up when the device is ON (by switch no. 8).
2. Overheat indicator LED is on if the device is overheated due to exceeding the welding work cycle. Wait for the fan to cool down the device.
3. Socket (+) to connect the electrode cable (see polarity recommendations on the electrode pack).
4. Socket (-) To connect earth cable with a clamp (see polarity recommendations on the electrode pack).
5. Current control knob for setting the welding current in amperes
6. Handle
7. Welding current display.
8. Main power switch for switching ON/OFF the device.
9. Power connection: power cable with a plug.
10. Fan cover.

6. MMA coated electrode welding

1. Connect the electrode lead cable and ground cable to the **3 (+)** and **4 (-)** sockets following the guidance in user manual for each electrode type (Figure 1)
2. Turn on the device **8** (switch to ON position)
3. Welding current is set using the knob **5** depending on the diameter of the electrode.
 - see electrode manufacturer's recommendations.
4. During welding, the display shows the measured values of the welding current.
5. The measured value (HOLD) stays visible on the display for a few seconds after welding.

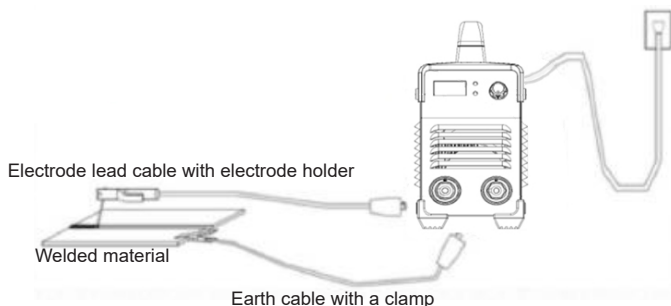


Figure 2: Ignition of the welding arc during MMA welding

After connecting to the mains and starting the device with the ON / OFF switch, set the proper welding current for the given diameter of the electrode with the knob (see instructions on the electrode pack). The approximate welding current is assumed to be 30-40 [A] per 1 mm thickness of the welded workpiece.

The electric arc is initiated by rubbing the end of the electrode with the base material (connected with the device by earth cable), and after the arc occurs, it is necessary to quickly move the tip to a certain distance. (see Figure 2) If the end of the electrode is removed too quickly, the arc will be torn off and alternatively, moving too slow can result in creating short circuit and sticking the end of the electrode to the material.

Additional functions HOTStart (support of arc ignition) and ArcForce (adaptation of the arc by pipe welding) are active. The values of settings for HotStart and ArcForce are not adjustable.

7. Spare parts and device construction

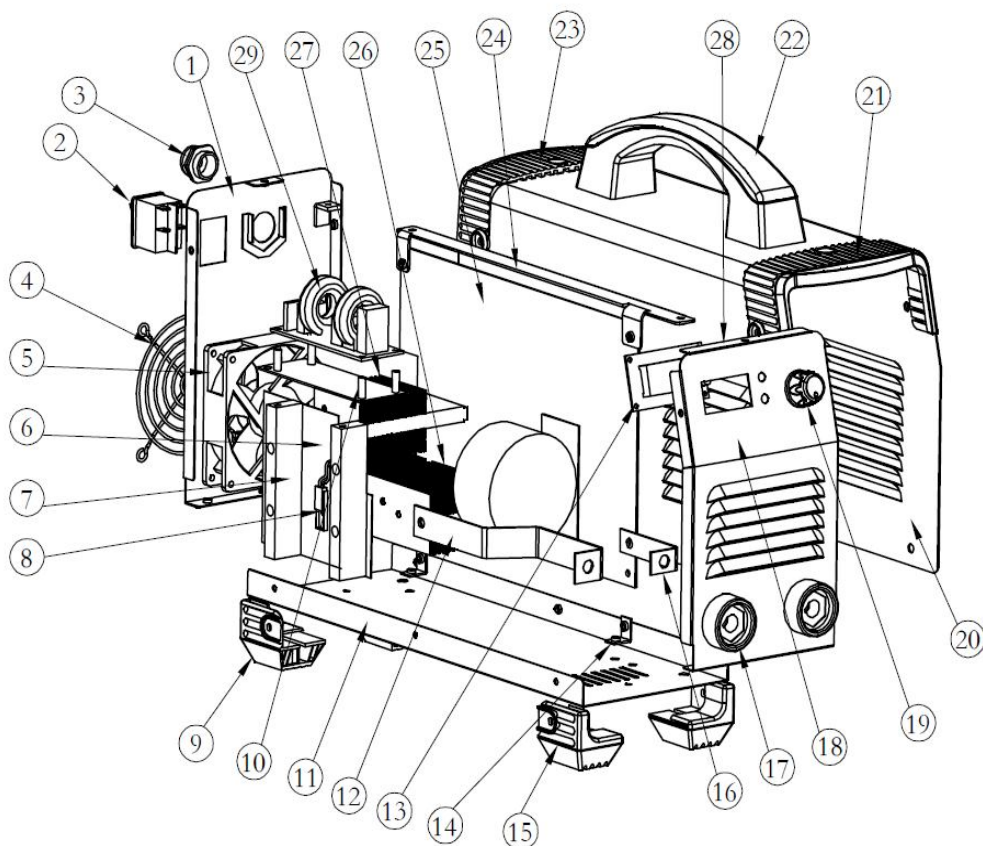


Figure 3: PONTE 201 PRO MOST spare part list

Pos.	Part code	Name	Quantity
1	10062158	Rear panel	1
2	10056467	ON/OFF switch	1
3	10021912	Cable fitting	1
4	10007333	Fan cover panel	1
5	10056858	Fan	1
6	10060830	Air inlet cover	1
7	10069138	Column	2
8	10057939	Thermal resistor	1
9	10046932	Left rubber foot	2
10	10065123	Bridge EMC	1
11	10060825	Bottom frame	1
12	10070089	Aluminium rail	1
13	10046712	Display	1
14	10037028	Bracket	2
15	10046933	Right rubber foot	2
16	10070088	Copper buzzbar	1
17	10021855	Dinse socket	2
18	10070136	Front label Ponte 201	1
19	10047127 + 10059709	Knob + potentiometer	1
20	10070084	Upper cover	1+1
21	10047106	Front plastic cover	1
22	10050074	Handle	1
23	10047109	Rear plastic cover	1
24	10060827	Beam	1
25	10070233	PCB mainboard	2
26	10060850	Radiator/heat sink	1
27	10054622	Radiator/heat sink	2
28	10070113	Front panel	2
29	10069815	EMC board	1

Table 2: PONTE 201 PRO MOST spare part list

8. Troubleshooting during MMA welding



ATTENTION:

The device can be repaired only by authorized personnel!

Problem	Potential cause
Excessive splatter	1. Arc too long 2. Too high welding current
Crater	1. Too quick detachment of the electrode from workpiece
Inclusions - slagging	1. Low material purity or densely placed welds 2. Incorrect electrode leading
Lack penetration, no sticking	1. Too high welding speed 2. To low welding current 3. Too small bevel angle 4. Incorrect edge cleaning
Electrode sticking to the workpiece being welded	1. Arc too short 2. To low welding current
Bobbles in weld	1. Moistened electrode coating 2. Arc too long
Cracks in weld	1. Too high welding current 2. Welded workpiece dirty 3. Hydrogen in weld (from electrode coating)
LED 2 switches on to signal overheating	1. Exceeded device operation cycle - see the data plate on the equipment. Do not turn the device off until the fan cools down and the LED 2 turns off. 2. Internal damage - contact RYWAL-RHC service

Table 3: Faults during MMA welding.

9. Electrical scheme

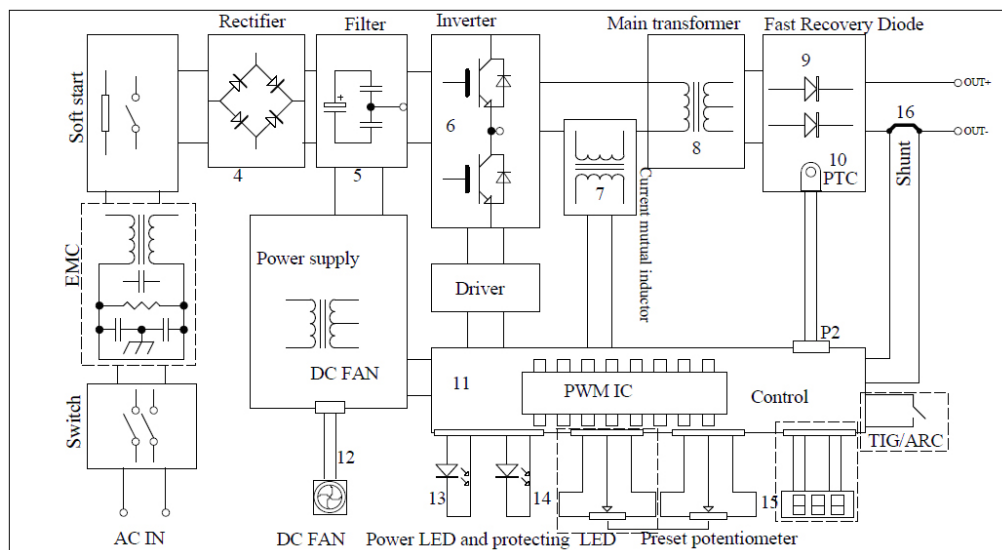


Figure 4: PONTE 201 PRO MOST wiring diagram

10. EU Declaration Of Conformity

1. **Product:** Inverter Rectifier PONTE 201 PRO MOST
2. **Name and address of the producer:**
RYWAL-RHC sp. z o.o. Warszawa
Chełmżyńska 180 04-464 Warszawa,
3. **This declaration of conformity is issued under the sole responsibility of the manufacturer.**
4. **Object of the declaration:** Inverter Rectifier PONTE 201 PRO MOST



5. **The subject matter of this declaration mentioned above is in conformity with the relevant requirements of EU harmonization legislation:**
 - The Low Voltage Directive LVD 2014/35/EC,
 - The Electromagnetic Compatibility EMC Directive 2014/30/EU,
 - The directive on the restriction of the use of certain hazardous substances used in electrical and electronic equipment RoHS 2011/65/EU
6. **References to the relevant harmonized standards in relation to which conformity is declared:**
EN 60974-1:2012; EN 60974-10:2014 / +A1:2015.
7. **Additional information:** difference between PONTE 201 and PONTE 201 PRO only in accessories.

According to the Ecodesign Directive 2009/125/EU and Regulation 2019/1794 (EU) PONTE 201 PRO is classified as arc welding equipment with a limited load and is not intended for industrial or professional use.

Toruń, 23.04.2020

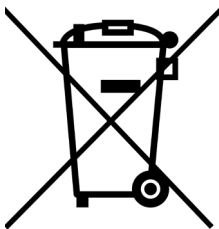
Signed on behalf of:

Product Manager
Dyrektor Produktu


mgr inż. Wojciech Wierzba

The devices are subject to constant changes and improvements.
We reserve the right to make changes.

11. Recycling



In accordance with Directive 2012/19 / EU WEEE II (WEEE - Waste Electrical and Electronic Equipment), after decommissioning, the device must be recycled by a specialized company. Do not dispose of worn-out welding equipment with domestic waste!

The End.

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This image shows a single page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page, leaving small margins at the top and bottom. There is no handwriting or other markings on the paper.

Manufacturer:

RYWAL-RHC Sp. z o.o. w Warszawie
ul. Chełmżyńska 180
04-464 Warszawa

Sales and Service network:



RYWAL-RHC Sp. z o.o.

87-100 **Toruń**, ul. Polna 140 B
tel. 56 66 93 801, -802

15-516 **Białystok**, ul. K. Ciołkowskiego 165
tel. 85 74 10 492, -491

85-825 **Bydgoszcz**, ul. Fordońska 112 A
tel. 52 345 38 73, 52 345 38 79

42-200 **Częstochowa**, ul. Warszawska 285/287
tel. 34 324 39 98, 324 60 61

80-298 **Gdańsk**, ul. Budowlanych 19
tel. 58 768 20 00

58-500 **Jelenia Góra**, ul. K. Miarki 42
tel. 669 605 408

75-100 **Koszalin**, ul. Powstańców Wlkp. 2
tel. 94 342 05 31

31-752 **Kraków**, ul. K. Makuszyńskiego 4
tel. 12 686 37 36, 686 37 35

20-328 **Lublin**, ul. A. Walentynowicz 18
tel. 81 445 01 50 do 52, 81 445 01 55

93-490 **Łódź**, ul. Pabianicka 119/131
tel. 42 682 64 36, 42 682 64 37

10-409 **Olsztyn**, ul. Lubelska 44 D
tel. 89 535 10 00, 89 535 10 01

09-400 **Płock**, ul. Przemysłowa 7
tel. 24 269 22 24

61-371 **Poznań**, ul. R. Maya 1/12
tel. 61 862 61 51

41-703 **Ruda Śląska**, ul. Stara 45
tel. 32 342 70 00

35-211 **Rzeszów**, ul. M. Reja 10
tel. 17 85 90 141, -142

37-450 **Stalowa Wola**, ul. Energetyków 49
tel. 15 844 02 63, 15 844 55 16

72-006 **Mierzyn k. Szczecina**, ul. Welecka 22 E
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