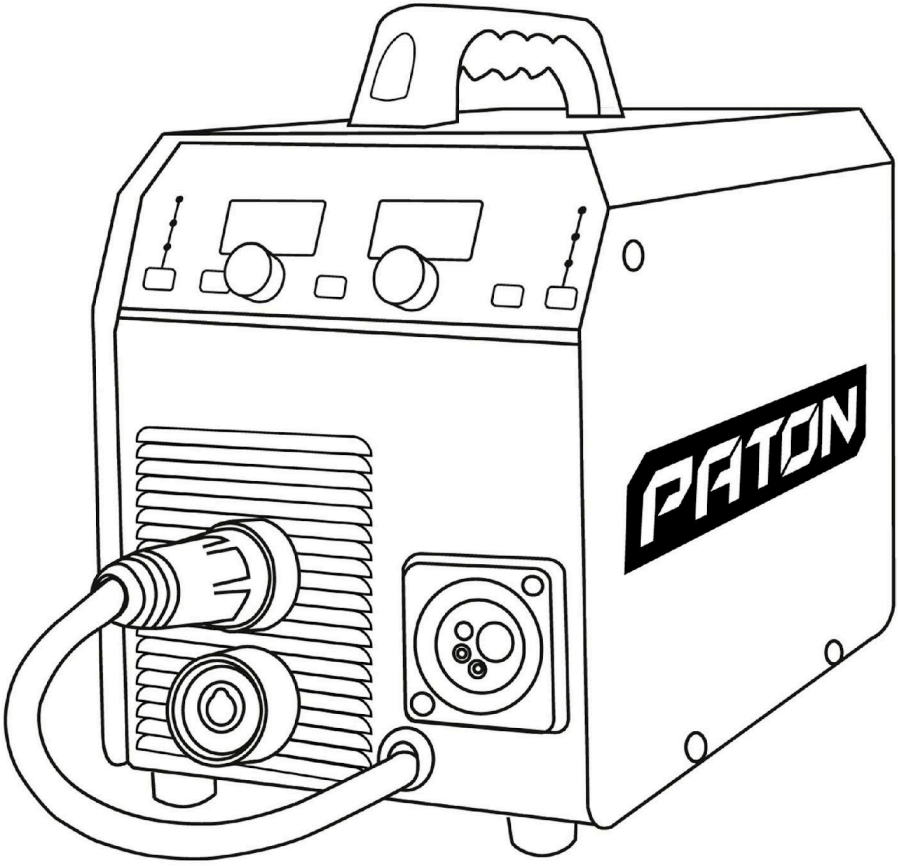
PATON

USER MANUAL
ПОСІБНИК КОРИСТУВАЧА
РУКОВОДСТВО ПОЛЬЗОВАТЕЛЯ

EuroMIG

S/N:_____S

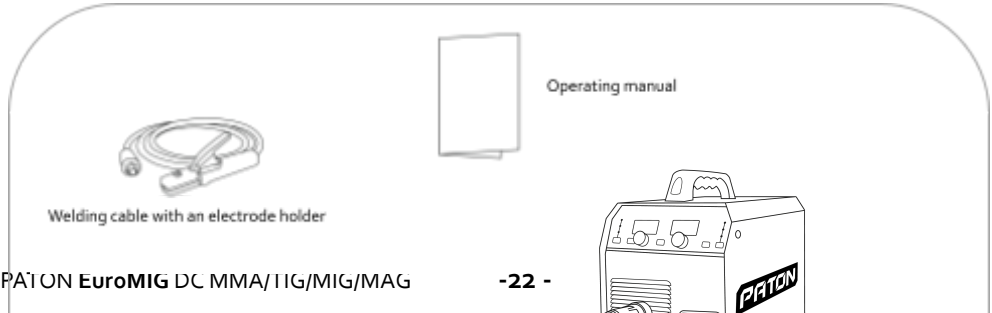


PATON INTERNATIONAL

	**DANGER OF MAINS AND ARC CURRENT** - electric shock can lead to death; - magnetic fields created by this machine can have adverse effect on operability of electrical appliances (such as cardiac pacemakers). People who use such appliances shall consult with a doctor before approaching the operating welding area; - welding cable must be robust, intact and insulated. Loose connections and damaged cables must be immediately replaced. Mains cables and cables of the welding machine must be checked for insulation integrity by an electrical engineer on a regular basis; - when using the machine, never remove its outer case.
	**DANGER OF WELDING ARC RADIATION** It is forbidden to observe the welding arc with the naked eye. The arc and splashing generated during operation can burn the skin or cause a flame, therefore a protective mask with a tinted filter should always be worn (goggles must be equipped with goggles with a DIN 9 10 filter). Unauthorized persons in the operating area of the device must protect their eyes with special goggles or use non-flammable, radiation-absorbing screens.
	**DANGER OF HAZARDOUS GASES AND VAPOURS** - if smoke and hazardous gases emerge in the operating zone, remove them with special means; - provide sufficient fresh air inflow; - arc radiation field must be free from solvent vapours.
	**DANGER OF MAGNETIC FIELD** Magnetic fields created by this machine can have adverse effect on operability of electrical appliances (such as cardiac pacemakers). People who use such appliances shall consult with a doctor before approaching the operating welding area.
	**DANGER OF SPARKING** - remove flammable objects from the operating zone; - it is not allowed to weld vessels where gases, fuel or oil products are stored or used to be stored. Residues of these products may explode; - when working in fire-dangerous or explosion-dangerous rooms, adhere to special rules in compliance with national and international regulations.
	**INDIVIDUAL PROTECTIVE EQUIPMENT** To ensure individual protection, adhere to the following rules: - wear robust footwear, which retains insulating properties in moist conditions as well; - protect the hands with insulating gloves; - protect the eyes with a headshield, with is equipped with a black-light filter complying with safety standards; - wear only proper low-flammable clothes.
	**DANGER OF INTENSE NOISE** The arc generated during welding can emit sounds above 85 dB during 8 hours of working time. Welders working with the equipment wear ear protection during work.

UNPACKAGING

The delivery set of the device includes:



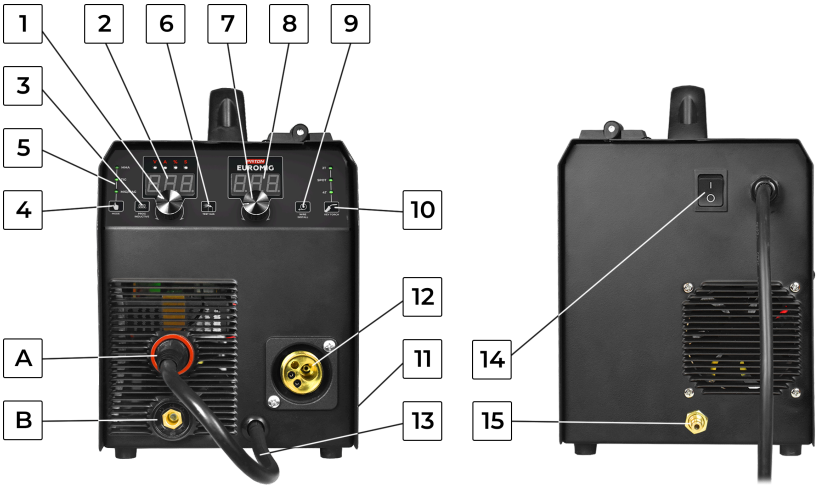
Welding cable with ABICOR BINZEL ground terminal

Welding arc power source with wire feeder

Semi-automatic torch

Quick-release pneumatic connector

CONTROL ELEMENTS AND INDICATION



1 – The regulator for selecting the functions (parameters) of the current mode and adjusting their values/Setting-up the welding voltage parameter in MIG/MAG mode. The selection of functions is done by turning the knob to the right and left. To move to editing the value of a selected parameter, you need to press the regulator knob. Values are set by turning the regulator knob. To return to the function/parameter selection menu, press the regulator knob again;

2 – Digital display;

3 – Welding program selection button (set of parameters previously set by the user) / additional function: Inductance level adjustment (when it is pressed down for more than 1 second);

4 – Welding mode selection button:

a) manual metal arc welding, MMA;

b) tungsten-arc inert-gas welding, TIG;

c) metal-arc inert-gas welding/metal active gas welding, MIG/MAG;

5 – Selected welding mode indicator;

6 – Shielded gas check button (no wire feed);

7 – The regulator for adjusting parameters of wire feeder to decrease and increase (default: wire feed speed);

8 – Digital display of the wire feeder;

9 – Wire-filling button (no gas supplied);

10 – Button for selecting functions of the wire feeder;

11 – Lifting protective cover for wire feeder and coil compartment;

12 – KZ-2 EURO type connector for semi-automatic torch connection;

13 – Power supply plug to the wire feeder;

14 – Source on/off button (decorative color and shape);
15 – Shielding gas connection;

A – Power socket "+" of bayonet type:
a) For MMA welding, the electrode cable is connected (in rarer cases, when special electrodes are used, the "ground" cable is connected);
b) For TIG welding, only the "ground" cable is connected;
c) In the case of semi-automatic MIG/MAG welding with **solid** wire, the cable to the feeder shall be connected;
d) In the case of semi-automatic MIG/MAG welding with **flux** wire, "ground" cable connected;

B – Power socket "-" of bayonet type:
a) For MMA welding, ground cable is connected (in rarer cases, when special electrodes are used, the electrode cable is connected);
b) For TIG welding, only the argon torch is connected;
c) In the case of semi-automatic MIG/MAG welding with **solid** wire, the "ground" cable is connected;
d) In the case of semi-automatic MIG/MAG welding with **flux** wire, the cable to the feeder shall be connected.

START-UP

The welding unit is designed exclusively for MMA welding, tungsten-arc inert-gas (TIG) welding, as well as metal-arc inert-gas welding/metal active gas welding (MIG/MAG). Other use of the machine is considered undue. The manufacturer is not responsible for damage cause by undue use of the machine. Intended use of the machine implies adherence to instructions of this operating manual.

INSTALLATION REQUIREMENTS

The machine must be placed so as to ensure free inlet and outlet of cooling air through vent holes on the front and the rear panels. Take care that metal dust (for example, during emery grinding) does drawn directly into the machine by the cooling fan.

POWER CONNECTION

The standard welding unit is rated for mains voltage is 220V (-27% +18%).

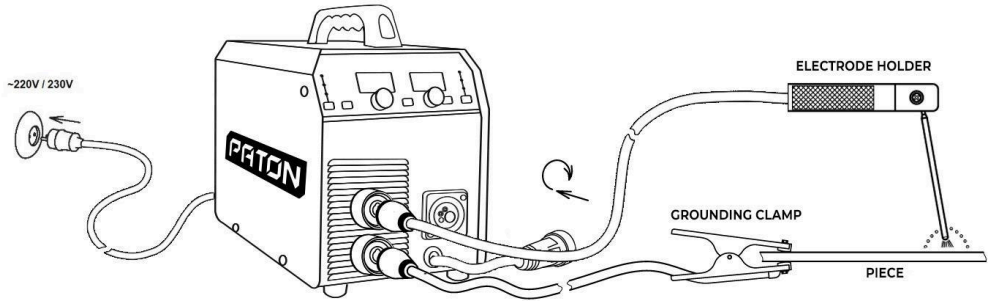
Caution! When the unit is connected to a mains voltage higher than 270V all manufacturer's warranty obligations become invalid! The manufacturer's warranty obligations also become invalid in case of an erroneous connection of the mains phase to the source ground.

The mains connector, the cross-sections of the mains cables, as well as the mains fuses need to be selected based on the unit technical data.

Electrode to be used in MMA mode	Set current value for MMA and TIG	Wire cross-section diameter at MIG/MAG	Cross-section of each core of the mains cable, mm²	Maximum cable length, m
1 x 220V/230V – StandardMIG-160, StandardMIG-200, StandardMIG-250				
Ø2 mm	Max. 80A	Max. Ø0.6 mm	1.0	75
			1.5	115
			2.0	155
			2.5	195
			4.0	310
Ø3 mm	Max. 120A	Max. Ø0.8 mm	1.5	75
			2.0	105
			2.5	130
			4.0	205
			6.0	310
Ø4 mm	Max. 160A	Up to Ø1.0 mm	2.0	80
			2.5	100
			4.0	165
			6.0	245

ATTENTION! Supply button on the rear panel of the machine is not a power button, so it does not provide complete de-energization of internal electronic parts, when the machine is switched off. Therefore, in accordance with safety rules, disconnect the plug from the mains after completion of welding.

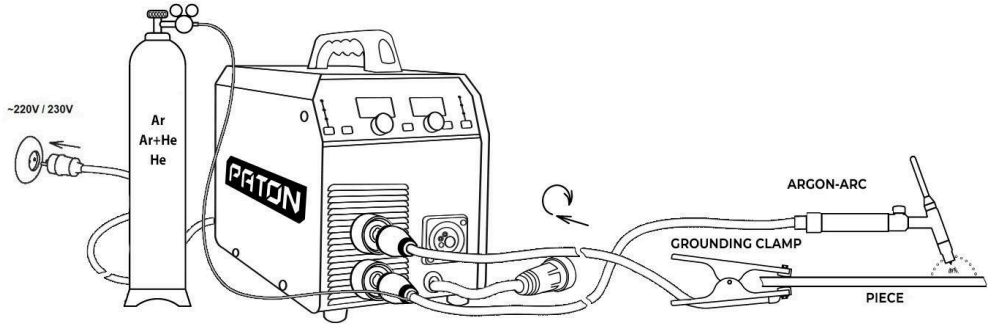
MACHINE CONNECTION DIAGRAM FOR WELDING WITH STICK ELECTRODES (MMA)



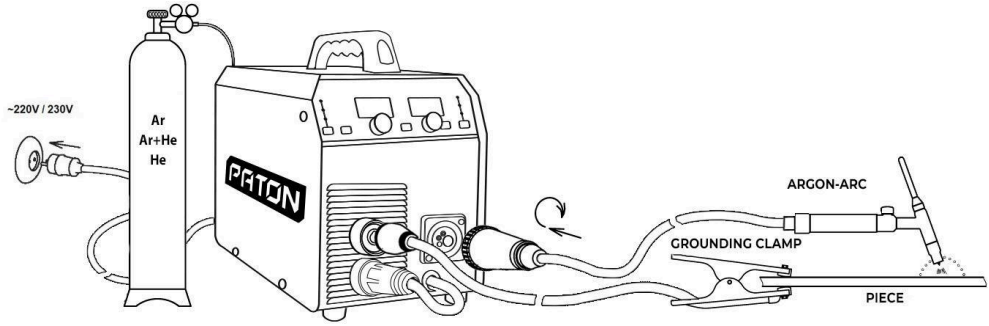
RECOMMENDED LENGTH OF POWER WELDING CABLES DURING WELDING:

Maximum current	Cable length (one way)	Cross-sectional area	Cable brand
Max. 100A	2 ... 7 m	10 mm²	KG 1x10
Up to 150A	3 ... 10 m	16 mm²	KG 1x16

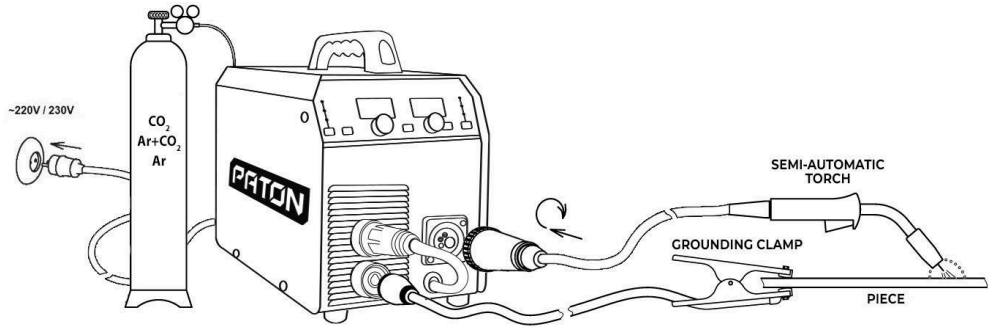
MACHINE CONNECTION DIAGRAM FOR TUNGSTEN-ARC INERT-GAS (TIG) WELDING – using the 35-50 TIG torch



MACHINE CONNECTION DIAGRAM FOR TUNGSTEN-ARC INERT-GAS (TIG) WELDING – using the GZ-2 TIG torch



MACHINE CONNECTION DIAGRAM FOR METAL-ARC INERT-GAS WELDING/METAL ACTIVE GAS WELDING (MIG/MAG)



TECHNICAL PARAMETERS

PARAMETERS	EuroMIG
Rated supply mains voltage 50Hz, V	220 230
Rated input current from mains, A	17 ... 20
Rated welding current, A	150
Maximum operating current, A	200
Duty cycle (DC)	80%/at 150A 100%/at 134A
Voltage variation limits of mains voltage, V	160 – 260
Rated supply mains voltage 50Hz, V	8 – 150
Rated input current from mains, A	12 – 23
Wire feed speed control limits, m/min	1,0 – 10,0
Button on the torch modes	2T, 4T, SPOT
Solid welding wire diameter, mm	0,6 – 1,0
Wire feeder mechanism	2 roller
Maximum weight of the coil, kg	5
Pulsed welding modes	MMA: 0,2...500 Hz; TIG: 0,2...500 Hz;
Stick electrode diameter, mm	1,6 – 4,0
Hot-Start in MMA mode	Adjustable
Arc-Force in MMA mode	Adjustable
Anti-Stick in MMA mode	Automatic
No-load voltage reduction unit in MMA mode	on/off
No-load voltage in MMA mode, V	12 / 75
Arc ignition voltage, V	110
Rated input power, kVA	3,8 ... 4,4
Maximum input power, kVA	5,5
Efficiency, %	90
Cooling	Adaptive
Operating temperature range	–25 ... +45°C
Dimensions, mm (length, width, height)	390 x 194 x 295
Weight without coil and accessories, kg	9.2
Protection class	IP33

SELECTING AND SETTING THE FUNCTIONS OF THE MACHINE

If you do not touch the regulators on the front panel, the unit displays the value of the main parameter of the current welding mode on the digital indicator on the left:

1) in the MMA mode – welding current;
2) in the TIG mode – welding current;
3) in the MIG/MAG mode – welding voltage.

On the digital display in the MIG/MAG welding mode, the actual welding current value is shown during the welding process. It is worth noting that the actual welding current value is influenced by several factors, including the wire diameter used, the set welding voltage on the power source, the wire feed speed set on the feeder mechanism, the shielding gas used, the material and thickness of the welded workpiece, among others. After the welding process is completed, the actual welding current value remains displayed on the machine's screen for 8 seconds, allowing the welder to view the current value.

In the MIG/MAG mode, the digital indicator on the right side shows the value of the wire feed speed in "m/min".

Regulator **1** on the front panel is multifunctional and is responsible for:

1) selecting any function in the current welding mode (turning left and right);
2) setting the value of the selected parameter (press the regulator and turning left or right);
3) reset all functions to factory settings of the current program of the current welding mode (press the regulator and hold for more than 12 sec.).

Button **3** on the front panel of the unit is responsible for selecting the welding mode.

The regulator **1** on the front panel of the source is responsible for changing the current value on the left digital indicator.

The regulator **7** on the front panel of the feeder is responsible for changing the current value on the right digital indicator **8**.

SWITCHING TO THE REQUIRED FUNCTION

If the device is equipped with a system for protecting against unauthorized access to the function menu, turning the control knob **1** adjusts the value of the main parameter of the current welding mode, while the function menu of the device remains locked. To unlock the menu, you need to press and hold the regulator knob **1** for more than 3.5 seconds. During the unlocking process, horizontal lines are displayed on indicator **2**, which gradually disappear, indicating the unlocking process of the function menu. After successful unlocking, turning knob **1** to the right or left will display the graphical representation of the function and its current value on the digital display.

SWITCHING TO THE REQUIRED WELDING MODE

Pressing button **4** leads to switching to the next welding mode in a circle, this can be seen on the indicators **5** on the front panel.

RESET ALL FUNCTIONS OF THE WELDING MODE USED

Situations may occur when the unit's settings have somewhat confused the user. In order to reset their values to the factory default it is enough to press and hold down regulator **1** for more than 10 seconds (ignore the animation of lines). The scoreboard will start counting down 333...222...111 and when "000" is reached, all settings of the current welding mode will be updated to factory settings. Resetting parameters for each welding mode is performed separately! This is provided for convenience, so as not to accidentally reset individual settings in the other two modes.

Similarly, you can reset the parameters on the wire feeder using the regulator **7**.

MACHINE OVERHEATING INDICATION

In the machine, all key elements that are subject to heating during operation have an electronic overheating protection system. When this protection is triggered, the image **-t°** is displayed and starts flashing on the left indicator of the current source **2**. In such case, the device should be stopped operating, have to wait until the device will cool down on its own, **non-turning it off**. After the machine will return to its normal operating temperature, then the indicator will stop displaying the **-t°** image and will return to display the main parameter of the selected welding mode. Thereafter device operation can be continued.

GENERAL LIST AND SEQUENCE OF FUNCTIONS

MMA welding mode

0) Main displayable parameter – welding CURRENT= 90A (default) / or it is the basic CURRENT in the pulse mode
   a) 8 ... 150A (unit increment 1A)
1) [H.St] Hot Start power = 50% (default)
   a) 0[OFF] ... 100% (unit increment 5%)
2) [t.HS] Hot Start time = 0.3 sec (default)
   a) 0.1 ... 1.0 sec (unit increment 0.1 sec)
3) [Ar.F] Arc Force power = 50% (default)
   a) 0[OFF] ... 100% (unit increment 5%)
4) [u.AF] Arc Force triggering level = 12V (default)
   a) 9 ... 18V (unit increment 1V)
5) [BAH] Voltage response slope = 1.4V/A (default)
   a) 0.2 ... 1.8V/A (unit increment 0.4V/A)
6) [Sh.A] Short arc welding = OFF (default)
   a) 0[OFF] ... 3 stages (unit increment 1 stage)
7) [VrD] Voltage reduction unit = OFF (default)
   a) ON – enabled
   b) OFF – disabled

8) [Po.P] current pulsation mode = OFF (by default)
   a) ON – enabled
   b) OFF – disabled
9) [_A._] pause current = 25A (by default)
   a) 8 ... 150A (change step 1A)
10) [Fr.P] current pulsation frequency = 5.0 Hz (by default)
   a) 0.2 ... 500 Hz (dynamic change step 0.1 Hz...1 Hz)
11) [dut] pulse/pause ratio (balance) = 50% (by default)
   a) 20 ... 80% (change step 2%)

TIG welding mode

0) Main displayable parameter – CURRENT = 60A (default) / or it is the basic CURRENT in the pulse mode
   a) 8 ... 150A (unit increment 1A)
1) [But] Torch button mode = [LIFT] (default)
   a) [LFt] – No button mode TIG-LIFT (for valve-type torch)
   b) [LF2] – Button mode TIG-LIFT2T (welding current stops when the torch button is released)
   c) [LF4] – Button mode TIG-LIFT4T (pressing the torch button again reduces the current to the "Final Current" value, followed by welding current shutdown when the button is released)
2) [t.uP] current ramp up time = 0.2 sec (default)
   a) 0 ... 15.0 sec (unit increment 0.1 sec)
3) [t.dn] Current ramp-down time = 0.2 sec (default)
   a) 0 ... 15.0 sec (adjustment step 0.1 sec)
4) [Po.A] Final current = 20A (default)
   a) 8 ... 50A (adjustment step 1A)
5) [t.Po] Post-gas time = 4.0 sec (default)
   a) 1.0 ... 35.0 sec (unit increment 0.1 sec)
6) [Po.P] current pulsation mode = OFF (by default)
   a) ON – enabled
   b) OFF – disabled
7) [_A._] pause current = 25A (by default)
   a) 8 ... 150A (change step 1A)
8) [Fr.P] current pulsation frequency = 10.0 Hz (by default)
   a) 0.2 ... 500 Hz (dynamic change step 0.1 Hz...1 Hz)
9) [dut] pulse/pause ratio (balance) = 50% (by default)
   a) 4 ... 80% (change step 2%)

MIG/MAG welding mode

On the left source display:
0) [-3-] Main displayable parameter VOLTAGE = 19.0 V (default)
   a) 12.0 ... 23,0V (unit increment 0,1V)
1) [Ind] Inductance = 0 (default)
   a) -5 ... 0 ... 5 stage (adjustment step 1 stage)
2) [tYP] Wire material type = StL (default)
   a) StL – Steel wire
   b) ALu – Aluminum wire
3) [t.Pr] Pre-purge time with safety gas = 0.1 sec (default)
   a) 0.1 ... 25.0 sec (unit increment 0.1 sec)
4) [t.Po] Post-purge time with safety gas = 1.5 sec (default)
   a) 0.5 ... 25.0 sec (unit increment 0.1 sec)
5) [t.up] Voltage ramp up time = 0.1 sec (default)
   a) 0 [OFF] ... 5.0 sec (unit increment 0.1 sec)
6) [t.dn] Voltage decay time = 0.1 sec (default)
   a) 0 [OFF] ... 5.0 sec (unit increment 0.1 sec)

On the right wire feeder display:
0) [SPD] Second main displayable parameter WIRE FEED SPEED = 4.5 m/min (default)
   a) 1.0 ... 10.0 m/min (unit increment 0.1 m/min)

WARRANTY

Dear customer!

PATON INTERNATIONAL thanks you for choosing PATON™ products and guarantees high quality and flawless functioning of this product, subject to the rules of its operation.

ATTENTION!!! Before using the equipment, we recommend that you read the operating instructions, and also check the correctness of filling out the warranty card: the model name of the product you purchased, as well as the serial number must be identical to the entry in the warranty card. It is not allowed to make any changes and corrections to the coupon.

WARRANTY POLICY

PATON INTERNATIONAL guarantees the correct operation of the power source provided that the consumer observes the conditions of operation, storage and transportation.

ATTENTION! There is no free warranty service in case of mechanical damage to the welding machine!

The main warranty period for welding equipment is:

Machine model	Warranty period
EuroMIG	**3 years**

The main warranty period starts from the date the inverter equipment is sold to the end customer.

During the main warranty period, the seller undertakes, free of charge for the owner of PATON™ inverter equipment:
- make diagnostics and identify the cause of the breakdown;
- to provide units and elements necessary for the repair;
- to carry out work to replace the failed elements and assemblies;
- to test the repaired equipment.

The main warranty obligations do not apply to the equipment:
- with mechanical damage that affected the performance of the device (deformation of the case and parts as a result of falling from a height or falling on the equipment of heavy objects, falling out of buttons and connectors);
- with traces of corrosion, which caused a malfunction;
- out of order due to exposure to its power and electronic elements of abundant moisture;
- failed due to the accumulation of conductive dust inside (coal dust, metal shavings, etc.);
- in case of an attempt to independently repair its components and / or replace electronic elements;
- this equipment, depending on the operating conditions, is recommended once every six months, in order to avoid the breakdown of the device, to clean the internal elements and assemblies with compressed air, remove the protective cover. Cleaning should be done carefully, keeping the compressor hose at a sufficient distance to avoid damage to the soldering of the electronic components and mechanical parts.

Also, the main warranty obligations do not apply to out-of-order external elements of equipment subject to physical contact, and related / consumables, claims for which are accepted no later than two weeks after the sale:
- on and off button;
- knobs for adjusting welding parameters;
- connectors for connecting cables and sleeves;
- control connectors;
- mains cable and mains cable plug;
- carrying handle, shoulder strap, case, box;
- electrode holder, ground terminal, torch, welding cables and sleeves.

The seller reserves the right to refuse to provide warranty repairs, or to set the month and year of manufacture of the device as the start date for the fulfillment of warranty obligations (established by the serial number):
- if the owner loses the warranty card;
- in the absence of correct or even any kind of filling in the passport by the seller when selling the device.

The warranty period is extended for the period of warranty service of the device in the service center.

You can find out information about the nearest service center at the place of purchase.

Дата прийому на ремонт / Дата приёма на ремонт / Date of receipt for repair _____ "_____", 20____

_____
(підпис / подпись / signature)

Ознаки несправності / Признаки неработоспособности / Symptoms of non-operability:

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Причина / Cause:
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