

**WELDING MACHINE**

**PERUN 200 MIG MAN PFC**

**OPERATING MANUAL**

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# 1. INTRODUCTION

Congratulations on your new ALFA IN product. We are proud to have you as our customer and will strive to provide you with the best service and reliability in the industry.

This Operating Manual has been designed to instruct you on the correct use and operation of your ALFA IN product. Your satisfaction with this product and its safe operation is our ultimate concern. Therefore please take the time to read the entire manual, especially the Safety Precautions. They will help you to avoid potential hazards that may exist when working with this product.

Read and understand this entire Manual and your employer's safety practices before installing, operating, or servicing the equipment. While the information contained in this Manual represents the Manufacturer's best judgement, the Manufacturer assumes no liability for its use.

The model of PERUN 200 MIG MAN PFC is the multi-function inverter power generators welding by those methods

- a) MIG/MAG in 2T, 4T, wires SG2 or stainless steel 0,6 - 1,0 mm, Al wires 1,0 mm, flux cored wires shelf shielding or standard.
- b) E – (MMA) coated electrodes up to 4,0 mm
- c) TIG Lift Arc

PERUN 200 MIG MAN PFC is equipped by system of Power Factor Correction (PFC).

## What are the advantages of PFC solution?

1. Higher efficiency and less stress related to the circuit breaker (in other words, circuit breaker will switch off later than the devices without PFC)
2. The machine can be connected to the mains 110 V - 230 V + -15% Small influence of under voltage and overvoltage mains power
3. Smaller level of electromagnetic interference
4. Minimum net reactive current loading

We reserve the law of adjustments and changes in case of printing errors, change of technical paramaters, accessories etc. without previous notice. These changes may not be reflected in the manuals for use in paper or electronic form.



## 2. SAFETY PRECAUTIONS

### PERSONAL PRECAUTION

1. For safety reasons, it is necessary to use welding gloves during welding. These gloves will protect you before intervention of electric current (open circuit voltage). It protects you against thermal radiation and splashing drops of hot metal too. Wear sturdy isolated shoes. Do not wear open shoes, because drops of hot metal can cause burns.
2. Do not look into the welding arc without eye and face protection. Always use good quality welding helmet with intact protective filter.
3. Make sure that the torch insulation and the earthing cable are in good condition.
4. The persons appearing in the vicinity of the welding must be informed of the danger and must be equipped with protective equipment.
5. During welding, especially in small spaces, it is necessary to ensure an adequate supply of fresh air, because during welding, harmful fumes arise.
6. In tanks of gas, oil, fuel, etc., (even empty ones) do not make welding, because there is a chance of explosion.
7. In areas with chance of explosion special provisions are applied.
8. Welding machines that are subjected to great exertion must comply with specific security requirements. These include the rail pressure of the vessel etc. These connections may only be carried out by competently trained welders with the necessary permissions.

### SAFETY REGULATIONS

1. Before starting work with welding machine, it is necessary to get familiar with the provisions of the CSN 050601 and norm CSN 050630.
2. With a bottle of CO<sub>2</sub> or mixed gases should be handled according to the regulations for working with pressure vessels contained in CSN 07 83 05.
3. The welder must use protective equipment.
4. Before working on the electrical part, removing the cover or cleaning it is necessary to disconnect the device from the network.

### 3. OPERATING CONDITIONS

1. Putting the machine into operation can be performed only by trained personnel and only within the technical provisions. The manufacturer is not liable for damages resulting from improper use or handling. For maintenance and repair, use only original spare parts from ALFA IN.
2. Device complies with IEC 61000-3-12.
3. The welding machine is tested according to the degree of protection IP 23S, which provides protection against the intrusion of solid bodies with a diameter greater than 12 mm and protection against ingress of water, falling on the machine in a vertical direction or max degree of 60°.
4. Working ambient temperature between -10 and +40 °C.
5. Relative humidity below 90% at +20 °C.
6. Up to 3000 m altitude.
7. It is not permissible to connect multiple machines in parallel or in series.
8. The machine must be positioned so that cooling air can enter and leave through cooling vents with no problem. It is necessary to ensure that there are no mechanical equipment, especially metal particles (e.g. during grinding) drawn into the machine. Cooling is controlled by electronic temperature control.
9. It is necessary for welding machine to undergo a periodic inspection every 6/12 months by an authorized officer according to CSN 331500 and CSN 050630 – see Maintenance and service tests.
10. All interventions in the el. equipment as well as repair (removal of the plug, fuse replacement) should be performed by an authorized person.
11. The welding machine is set by the manufacturer to 230V with a tolerance range of 110 - 230 V  $\pm$  10%, which allows the device to operate in a ~ 230V and ~ 110V network.
12. With competent mains voltage and input must match the plug.
13. It is necessary to protect the machine against:
  - a. Moisture and rain
  - b. Chemically aggressive environments
  - c. Mechanical damage
  - d. Draft and possibly ventilation of neighboring machines
  - e. Excessive overloading – exceeding tech. parameters
  - f. Rough treatment

## ELECTROMAGNETIC COMPATIBILITY

The welding device is in terms of interference designed primarily for industrial areas. It meets the requirements of EN 60974-10 class A and it isn't designed for using in residential areas, where the electrical energy is supplied by public low-voltage power supply network. It can be here potential problems with ensuring of electromagnetic compatibility in this areas, due to interference caused by power lines as well as the radiated interference. During operation, the device may be the source of interference.

### Caution

We warn users, that they are responsible for possible interference from welding.

## 4. TECHNICAL DATA

Method		MIG/MAG	MMA	TIG	MIG/MAG	MMA	TIG
Mains voltage	V/Hz	1x110/50-60			1x230/50-60		
Welding current range	A	25 - 130	10 - 100	10 - 140	25 - 200	10 - 200	10 - 200
Open-circuit voltage $U_{20}$	V	67,0			67,0		
Mains protection	A	20 @			16 @		
Max. effective current $I_{1eff}$	A	22,0	17,5	18,0	14,5	16,0	12,0
Welding current (DC=100%) $I_2$	A	85	80	90	130	120	140
Welding current (DC=60%) $I_2$	A	110	100	110	150	140	160
Welding current (DC=x%) $I_2$	A	35% = 130	30%=100	40%=140	30%=200	25%=200	35%=200
Protection		IP 23S					
Standards		EN 60974-1, EN 60974-10 cl. A					
Dimensions (w x l x h)	mm	230 x 640 x 420					
Weight - compact	kg	18,4					
Wire speed	m/min	1,5 - 4,5	---	---	1,5 - 16,5	---	---
Spool diameter	mm	200	---	---	200	---	---
Spool weight	kg	5	---	---	5	---	---

ALFA IN continuously strives to produce the best product possible and therefore reserves the right to change, improve or revise the specifications or design of this or any product without prior notice. Such updates or changes do not entitle the buyer of equipment previously sold or shipped to the corresponding changes, updates, improvements or replacement of such items.

## 5. EQUIPMENT

### CONTENT OF DELIVERY

Item No.	Description	Picture
5.0292	PERUN 200 MIG MAN PFC	

### ACCESSORIES TO ORDER

Item No.	Description	Picture
SGB25-3	Torch PARKER SGB 250 3m (MIG/MAG)	
SGB25-4	Torch PARKER SGB 250 4m (MIG/MAG)	
SGB25-5	Torch PARKER SGB 250 5m (MIG/MAG)	
T24ST	Torch T2 4m 35-50 arc ST	
T28ST	Torch T2 8m 35-50 arc ST	
5847	Set Connectors ST 12 PIN	
VM0151-1	Hose Gas 3m G1/4-G1/4	

VM0253	Welding Cable Set 2x 3m 35-50 200A	
	Rolls – see chapter OVERVIEW OF ROLLS FOR WIRE FEED	
S777C	Welding Helmet Barracuda S777C Black	
S7SUN9B	Welding Helmet S9B Shooting Blue Shark	
4488	Wire 0.8 Coreshield 15 A D200 Self Shielding 4,5kg spool	
SGL2	Small Gas Lens Body Starter Kit 1.6mm-1/16"	
SGL4	Small Gas Lens Body Starter Kit 2.4mm-3/32"	
SGL5	Small Gas Lens Body Starter Kit 3.2mm-1/8"	
700.0306.10	Electrode wolf.1.6x175-Violet	
700.0308.10	Electrode wolf.2.4x175-Violet	
700.0310.10	Electrode wolfram E3 3.2x175 - violet	



## 6. OPERATOR CONTROLS

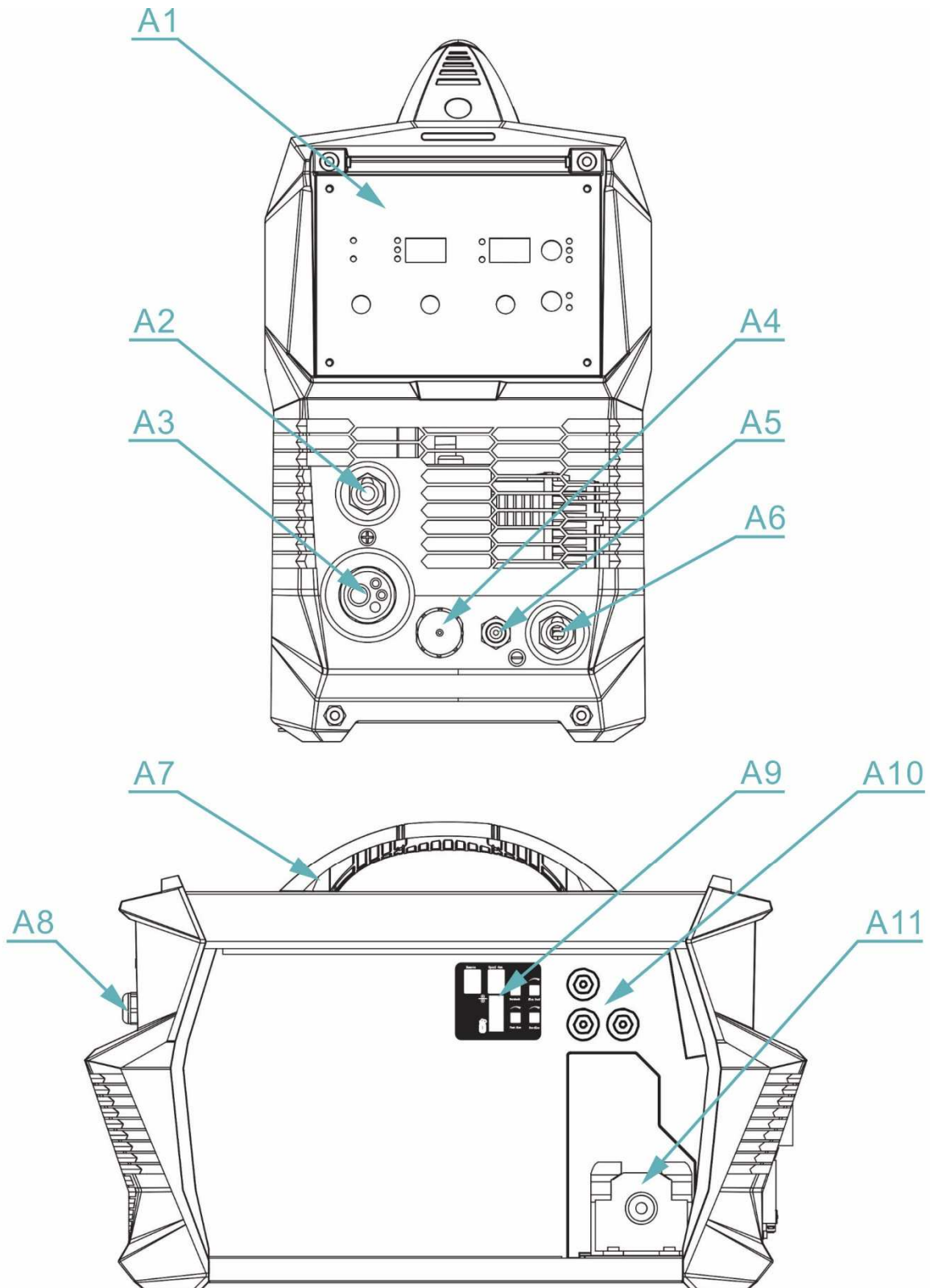


Fig. 1. PERUN 200 MIG MAN PFC

Pos.	Description
A1	Control panel
A2	Quick connector (+) of welding cables

A3	Central MIG/MAG torch connector
A4	TIG torch control connector
A5	Gas connector for TIG torch
A6	Quick connector (-) of welding cables or TIG torch connector
A7	Handle
A8	Mains cable
A9	Secondary control panel (see details below)
A10	Terminals of change polarity MIG/MAG torch
A11	Wire feeder

### CONTROL PANEL

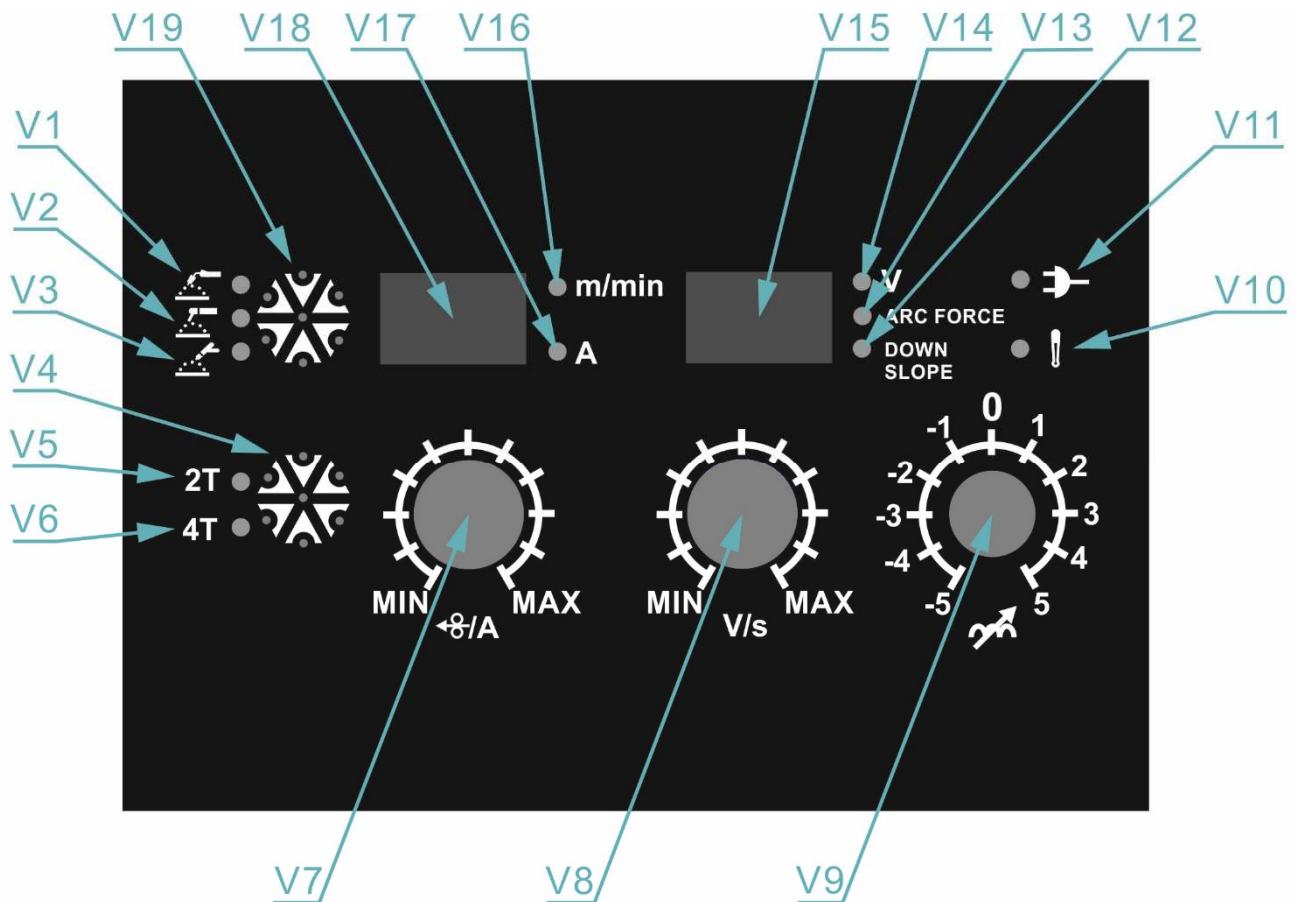


Fig. 2. Control panel

Pos.	Descriptions
V1	LED. If it lights the method MIG/MAG has been selected by the button <b>V19</b> .
V2	LED. If it lights the method MMA has been selected by the button <b>V19</b> .

V3	LED. If it lights the method TIG has been selected by the button <b>V19</b> .
V4	Button for selecting the 2T or 4T mode.
V5	LED. If it lights the mode 2T has been selected by the button <b>V4</b> .
V6	LED. If it lights the mode 4T has been selected by the button <b>V4</b> .
V7	Potentiometer: <ul style="list-style-type: none"> <li>• Wire speed feed for MIG/MAG</li> <li>• Current for MMA and TIG</li> </ul>
V8	Potentiometer: <ul style="list-style-type: none"> <li>• Voltage for MIG/MAG MAN</li> <li>• ARC FORCE for MMA</li> <li>• Down Slope for TIG</li> </ul>
V9	Choke potentiometer
V10	LED. If it lights the thermo-switch is disconnected. In such a case leave the machine on to cool down.
V11	LED. If it lights the machine is switched on by the main switch.
V12	LED. If it lights the display <b>V15</b> shows the time of down slope in s.
V13	LED. If it lights the display <b>V15</b> shows the value of ARC FORCE.
V14	LED. If it lights the display <b>V15</b> shows the voltage in V.
V15	Right display
V16	LED. If it lights the display <b>V18</b> shows the wire feed speed in m/min.
V17	LED. If it lights the display <b>V18</b> shows welding current in A.
V18	Left display
V19	Button for selecting the welding method.

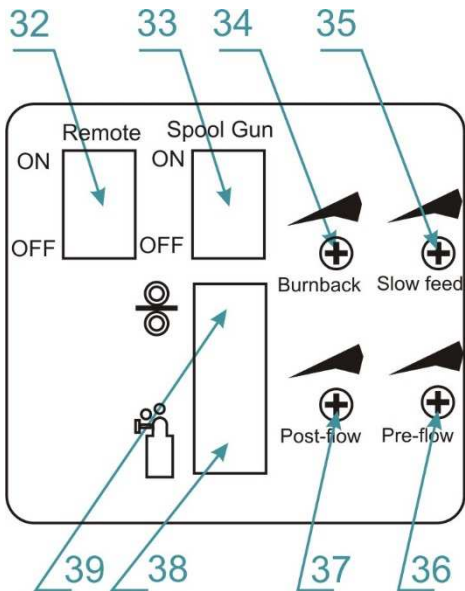


Fig. 3. Secondary control panel – panel in the space of the wire feeder

Pos.	Descriptions
32	Switch Remote. ON – on the remote control OFF – of the remote control
33	Switch Spool Gun. In the ON position one can weld with the Spool Gun
34	Potentiometer for the Burnback time setting
35	Potentiometer for the initial wire speed setting
36	Potentiometer for the Pre Gas time setting
37	Potentiometer for the Post Gas time setting
38	Gas setting button
39	Wire feeding button

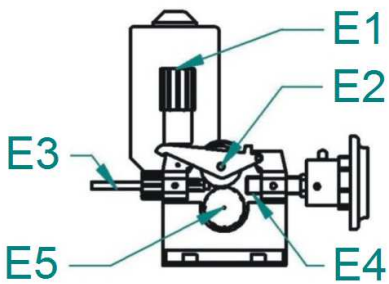
**WIRE FEEDER**

Fig. 4. Wire feeder

Pos.	Description
E1	Nut of pressure arm
E2	Pressure arm
E3	Inlet liner
E4	EURO connector
E5	Roll

**OVERVIEW OF ROLLS FOR WIRE FEED**

		a = 22 mm
		b = 30 mm
Groove type	Wire diameter	Item No
<b>Steel</b> 	0,6-0,8	2187
	0,8-1,0	2188
<b>Aluminum</b> 	0,8-1,0	2270
<b>Flux core</b> 	0,8-1,0	2318
	1,0-1,2	2319

## 7. GETTING STARTED MIG/MAG

Getting started must be consistent with technical data and conditions of use.

### CHOOSING THE FEEDING ROLL

In all machines (ALFA IN MIG / MAG) rolls with two grooves are used. These grooves are intended for two different wire diameters (e.g. 0,8 and 1,0 mm).

Rolls for wire feed must comply with the diameter and material of the welding wire. Only this way a smooth wire feed can be achieved. Irregularities of the wire feed leads to a poor quality of welding and deformation of the wire.

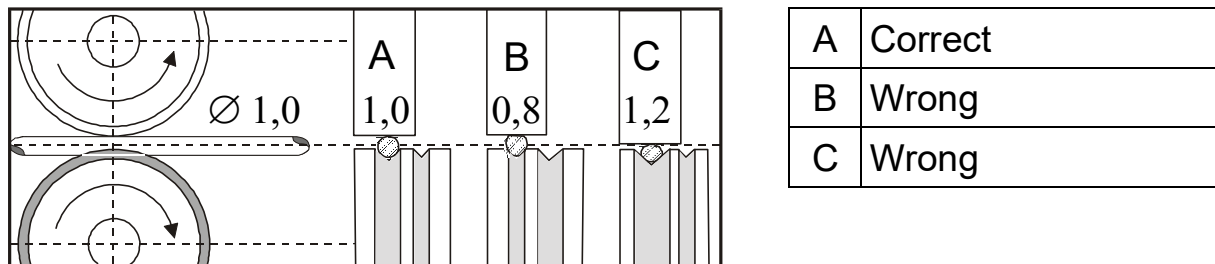
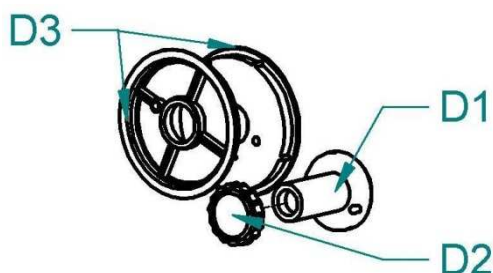


Fig. 5. The influence of the roll groove on the welding wire

### INSERTING THE WIRE

1. Open the side cover of the wire feeder space
2. Put the wire spool on the wire spool holder **D1** and fix it with the fixing nut **D2**.
3. Cut off the curved or damaged end of welding wire and lead it through the inlet liner **E3**, and the roll into the liner inside the EURO torch connector (about 5 cm). Make sure, that you use the suitable groove.
4. Put the pressure arm **E2** down in that way, that the teeth or the gear fit and fix it by setting the lever **E1** into vertical position.
5. Adjust the pressure nut that way that it provides constant movement of wire but it does not deform wire. The adjusting screw is located under the plastic screw **E1**.
6. The spool brake is set by the manufacturer. If necessary, the brake can be adjusted by a screw **D1** so that while stopping the feed, spool will be stopped on time (it will avoid excessive release of wire). However, too tight brake needlessly strains the feeding mechanism and thus slippage may occur in the wire rolls.



Pos.	Description
D1	Spool Holder
D2	Nut Spool Holder
D3	It is not for this welder

Fig. 6. Spool holder

## INSERTING THE WIRE TO THE TORCH AND CONNECTION OF GROUND CABLE

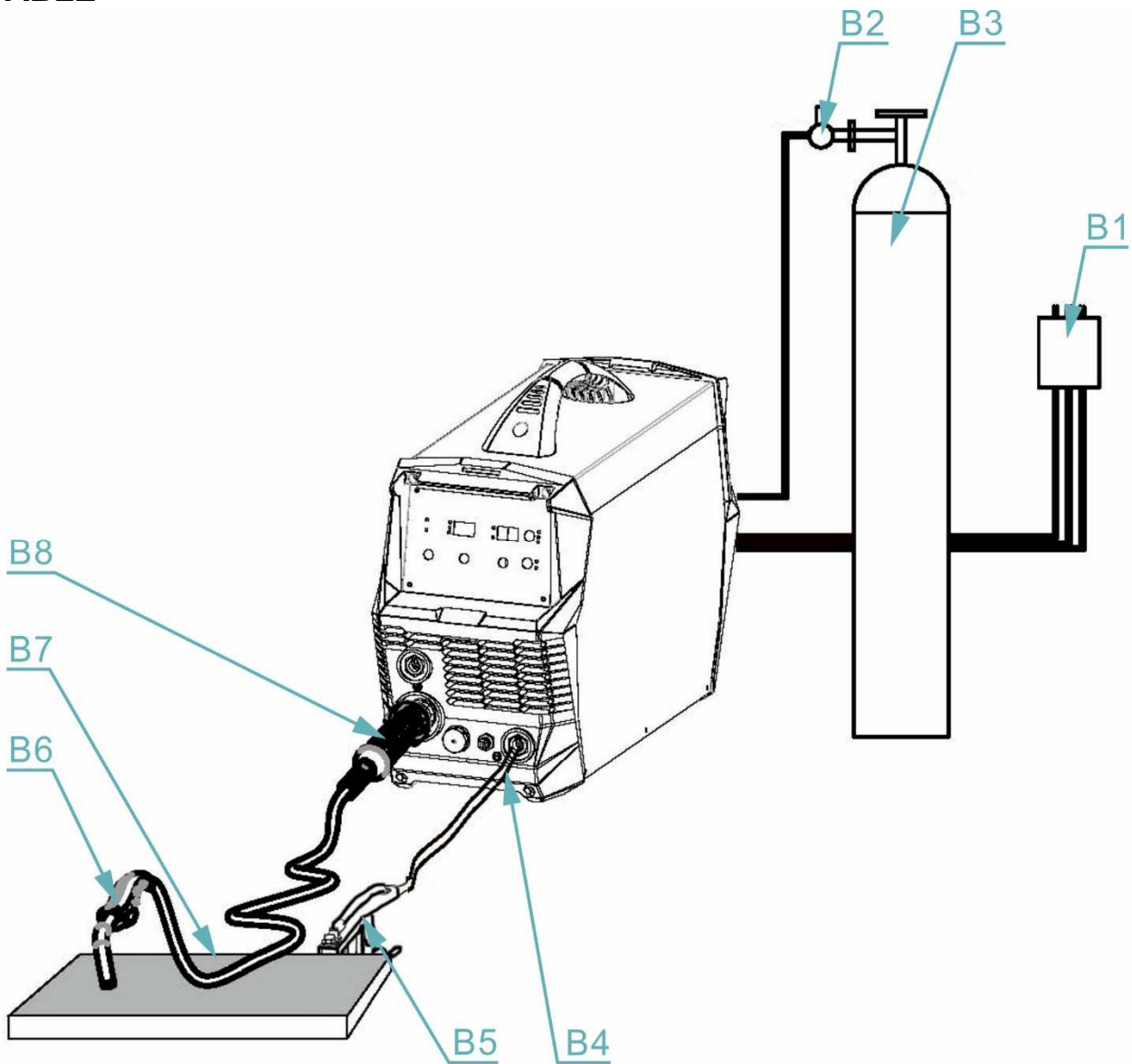



Fig. 7. Connection of the main MIG/MAG components

1. Connect the torch **B6** to connector **A3** on the machine while the machine is turned off.
2. Connect the ground cable **B4** to the quick connector of welding cables (-) **A6**.
3. Connect the ground clamps **B5** to the welder **B7** or to the welding table.

👉 Notice 👉 When inserting the wire do not point with torch to the eyes!

4. Remove the gas nozzle from the torch.
5. Unscrew the current nozzle.
6. Connect the machine to power supply.
7. Turn the main switch on the back panel to ON.
8. Press the button **V19** to select the mode MIG/MAG . LED **V1** lights up.
9. Press the button **V4** to select 2T or 4T. The corresponding LED **V5** or **V6**

lights up.

10. Press the button **39** in the space of the wire feeder. The welding wire is fed into the torch. After coming off from the torch tube, screw the current nozzle and gas nozzle on.
11. Before welding, spray the area in a gas hose and current nozzle with a separation spray, to prevent damage.

## ADJUSTMENT OF GAS FLOW

The electric arc and the weld must be perfectly shielded by gas. Too small amount of gas does not perform the protective atmosphere and on the other hand to big amount of the gas brings air into the electric arc.

**Notice** Gas bottle must be well secured against fall. This manual does not solve the safe securing of gas bottle. Information can be obtained from a supplier of industrial gases.

1. Connect the gas hose to gas outlet **F8** on the valve and the gas inlet to the gas connector on the rear panel of the machine.
2. Press the button **38** in the space of the wire feeder.
3. Turn the adjusting screw **F7** at the bottom side pressure reducing valve, until the meter **F6** shows the required flow, then release the button. The optimum flow is 10-15l/min.
4. After long-term shutdown of the machine or replacement of the torch it is suitable to blow the pipes with protective gas before welding.

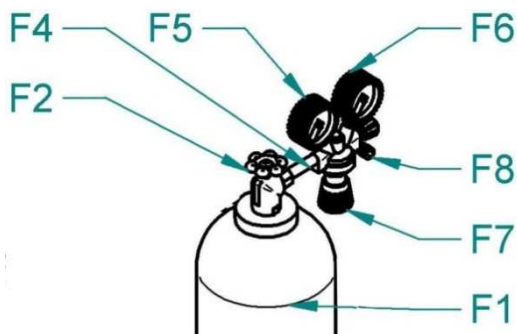


Fig. 8. Gas flow setting

Pos.	Description
F1	Gas bottle
F2	Cylinder Valve
F4	Pressure Reducer
F5	High Pressure Manometer
F6	Low Pressure Manometer
F7	Adjusting Screw
F8	Gas outlet



## ADJUSTING WELDING PARAMETERS FOR MIG MAN

1. Approximate setting for the MIG / MAG welding current and voltage corresponds the empirical relationship  $U_2 = 14 + 0.05 I_2$ . According to this relationship, we can determine the required voltage. When setting the voltage, we expect the decline in voltage during load. The voltage drop is approximately 4,8 V at 100 A.
2. By means of the potentiometer **V8** select voltage.
3. Then by means of the potentiometer **V7** select the appropriate wire speed.
4. By means of the potentiometer **V9** tune the arc by changing the levels of the choke.

Wire diameter (mm)	Welding current (A)	Material thickness (mm)
0,6	25 - 110	1,0 - 1,6
0,8	35 - 160	1,0 - 2,3
0,9	45 - 160	1,0 - 2,3
1,0	45 - 200	1,2 - 7,0

Table of approximate parameter settings

## ADJUSTING THE MACHINE FOR ANOTHER WIRE DIAMETER

In all machines ALFA IN MIG / MAG are used rolls with two grooves. These grooves are intended for two different wire diameters (e.g. 0,8 a 1,0 mm). Groove can be replaced by removing the rolls and rotating them, or use a different roll grooves with required dimensions.

1. Open the nut **E1** to the right, pressure roll **E2** will be opened upward.
2. Unscrew the plastic locking element **E5** and remove the roll.
3. If there is a suitable groove on the roll, rotate the roll and place it back on the shaft and secure it by screwing the element **E5**.

## FLUX CORE WIRE – SETTING THE POLARITY FOR MIG/MAG TORCH

1. It is desirable to have positive polarity on the MIG/MAG torch while welding with solid wire in majority of cases. The welder is supplied from the production with positive polarity on the MIG/MAG torch.
2. For welding with flux cored wires, it may be necessary to have negative polarity on the MIG/MAG torch.
3. The middle terminal **K3** is connected to the central euro connector of the MIG/MAG torch. We supply the welder with **K3** connected by means the bridge **K2** to (+) **K1**.
4. In case of welding with flux core wire with (-) polarity, connect **K3** by means the bridge **K2** with **K4** (+) terminal. Use Phillips screwdriver.
5. Make sure you fasten the terminals properly.
6. Connect the ground cable **B4** to the (+) quick connector **A2**.

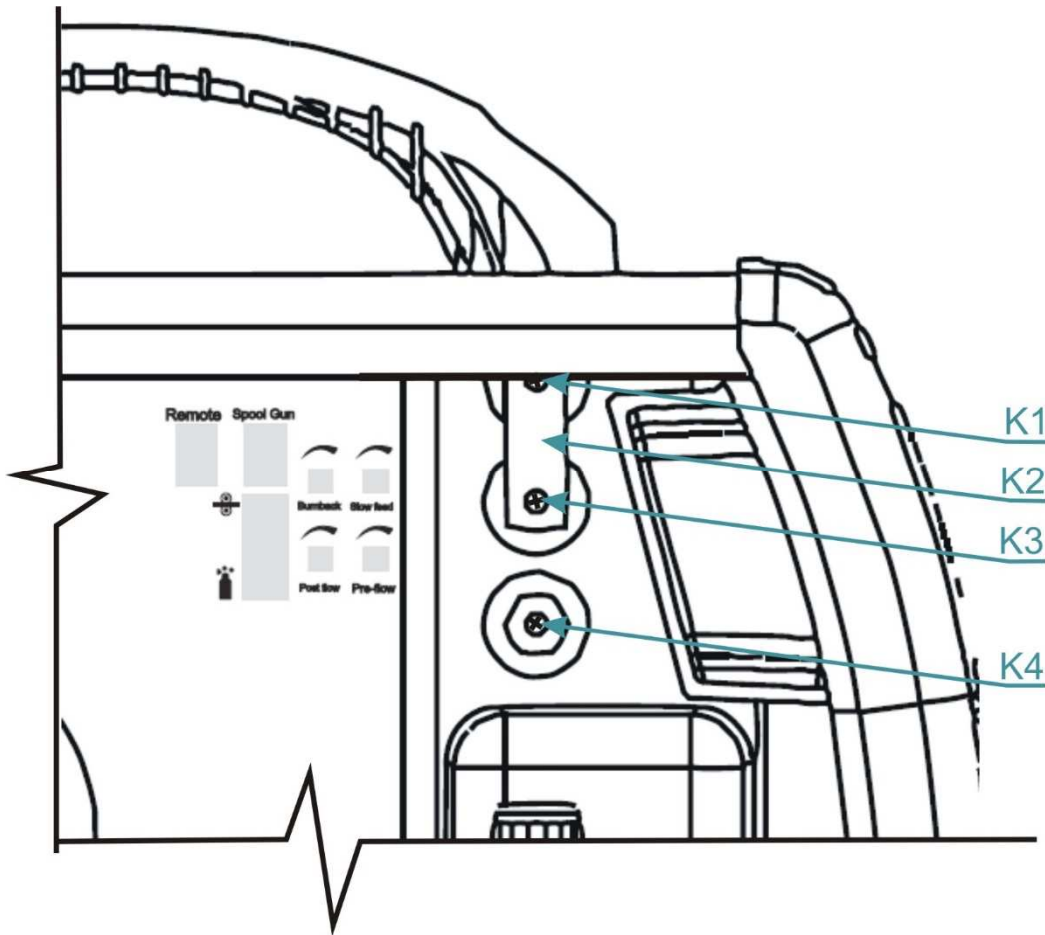


Fig. 9. Terminals for changing the polarity of the MIG/MAG torch

Pos.	Description
K1	Upper terminal (+)
K2	Bridge
K3	Middle terminal
K4	Lower terminal (-)

**CAUTION**

In case that you want to weld with a flux core wire, it is necessary to remove the gas nozzle from the torch before you start welding. During the welding process, you must not touch the weldment with the contact tip. There would be a risk of wire baking.

## ADJUSTING THE MACHINE FOR WELDING OF ALUMINIUM

For feeding the AL wire it is necessary to use roll with the “U” profile - see paragraph OVERVIEW ROLLS WIRE FEED. To prevent problems with feeding use wires with diameter. 1.0 mm of AlMg3 or AlMg. Wire of alloy Al99, 5 or AlSi5 are too soft and easily will cause problems with movement.

For the aluminum welding it is also necessary to provide the torch tefl. liner and special current nipple. We do not recommend you to use the torch longer than 3 m. Great attention must be paid to adjust the contact power of rolls – it must not be too high, otherwise there is a deformation of the wire.

As a protective atmosphere is necessary to use argon.

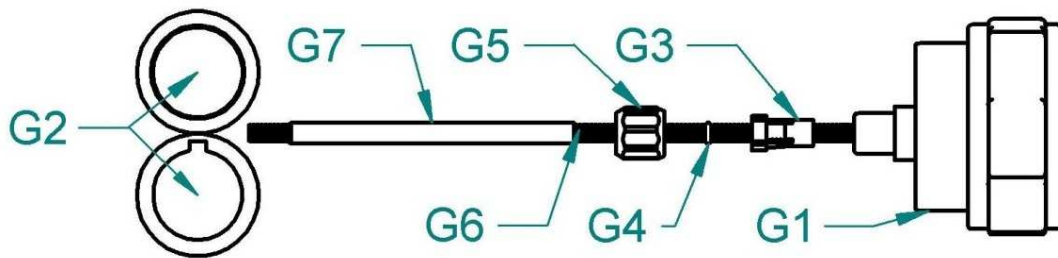


Fig. 10. Customization of the feed for the aluminium wire

Pos.	Description
G1	EURO connector
G2	Rolls
G3	Liner terminal for 4,0mm, 4,7mm outer diameter
G4	O-ring 3,5 x1, 5mm to prevent escape of gas
G5	Nut
G6	Liner tefl.
G7	Sustain pipe for teflon and plastic liner

**TABLE OF WIRE CONSUMPTION DURING WELDING**

Wire diameter [mm]	Range of wire feed speed [m/min]	Maximal wire feed speed [m/min]	Weight of 1 m wire [g]	Wire consumption per 1 minute of welding [g/min]	Wire consumption per 1 hour of welding [g/hour]
<b>Steel wire</b>					
0,6	2 - 5	5	2,3	11,5	690
0,8	3 - 6	6	4	24	1440
1,0	3 - 12	12	6	72	4320
1,2	4 -18	18	9	162	9720
<b>Stainless steel wire</b>					
0,6	2 - 5	5	2,3	11,5	690
0,8	3 - 6	6	4	24	1440
1,0	3 - 12	12	6	72	4320
1,2	4 -18	18	9	162	9720
<b>Aluminum wire</b>					
0,6	2 - 5	5	0,8	4	240
0,8	3 - 6	6	1,3	7,8	468
1,0	3 - 12	12	2	24	1440
1,2	4 -18	18	3	54	3240

**TABLE OF GAS CONSUMPTION DURING WELDING**

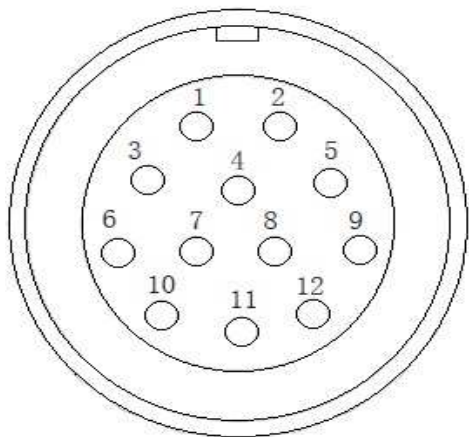
Wire diameter [mm]	Gas flow [l/min]	Gas consumption per 1 hour of welding [l/hour]
0,6	6	$6 * 60 = 360$
0,8	8	$8 * 60 = 480$
1,0	10	$10 * 60 = 600$
1,2	12	$12 * 60 = 720$
1,6	16	$16 * 60 = 960$
2,0	20	$20 * 60 = 1200$

## 8. GETTING STARTED TIG

Getting started must be consistent with technical data and conditions of use.

### TORCH CONNECTION SCHEMA

5737 CONNECTOR ST 12 PIN MALE					
PIN NO.	MMA	FOOT PEDAL	SPOOL GUN	TIG TORCH	MIG TORCH
1	/	/	(-) SPOOL GUN	/	(-) SPOOL GUN
2	/	/	/	/	(+) SPOOL GUN
3	/	/	/	/	(+) POTENTIOMETER
4	/	/	(+) SPOOL GUN	/	POTENTIOMETER CENTER TAP
5	/	/	/	(+) POTENTIOMETER	(-) POTENTIOMETER
6	/	/	/	(-) POTENTIOMETER	/
7	/	/	/	SIGNAL POTENTIOMETER TIG	/
8	/	/	/	START/STOP	START/STOP
9	/	/	/	START/STOP (GND)	START/STOP (GND)
10	/	/	/	/	/
11	/	/	/	/	/
12	/	/	/	/	SPARE LINE



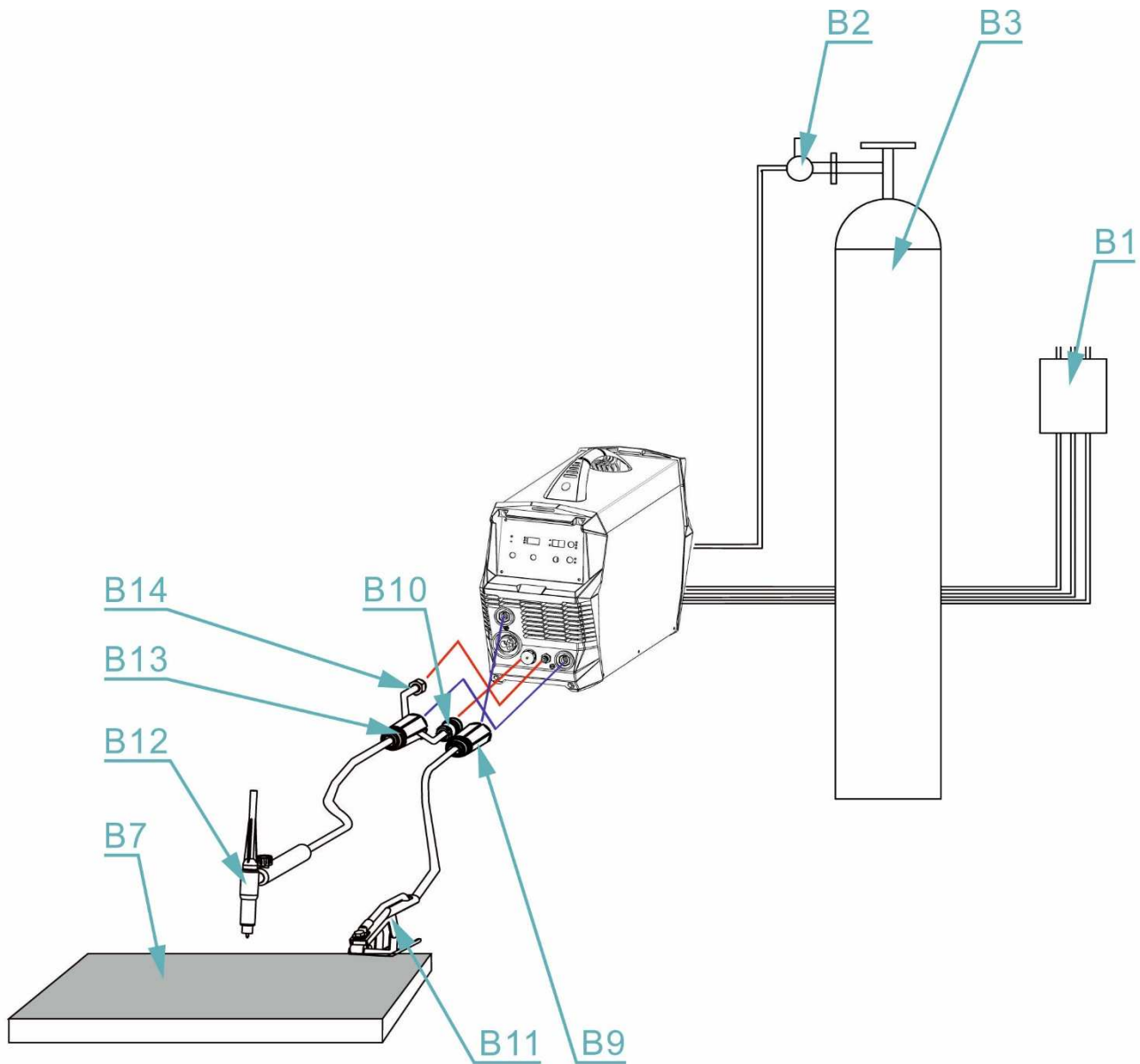



Fig. 11. Connection of the main TIG components

1. Connect the TIG torch **B12** to the quick connector of welding cables (-) **A6**, to the gas connector **B14** and connector **B10**.
2. Connect the ground cable **B9** to the quick connector of welding cables (+) **A2** and the ground clamps **B11** to the welder **B7** or to the welding table.
3. Connect the machine to power supply and turn the main switch on the rear panel to ON.
4. Connect the gas hose and gas flow adjustment described in ADJUSTMENT OF GAS FLOW.
5. Press the button **V19** to select the mode TIG . LED **V3** lights up.
6. By means of the potentiometer **V7** adjust the welding current.
7. By means of the potentiometer **V8** adjust the time of Down Slope.
8. By means of the potentiometer **36** you can change the time of Pre Gas.

9. By means of the potentiometer **37** you can change the time of Post Gas.

## TABLE OF CONSUMPTION DURING TIG WELDING

Wolfram electrode diameter [mm]	Argon flow [l/min]
	Steel / stainless steel
0,5	3 – 4
1,0	3 – 5
1,6	4 – 6
2,4	5 – 7
3,2	5 – 9


## 9. GETTING STARTED MMA

Getting started must be consistent with technical data and conditions of use.

1. Connect the electrode holder and the work lead to quick connectors **A2** and **A6** according the instructions on the electrode package.



**NOTE** Prevent touching the electrode any metal material for in this mode the quick connectors **A2** and **A6** are under current.



2. Press the button **V19** to select the MMA mode . LED **V2** lights up.
3. By means of the potentiometer **V7** adjust the welding current.
4. It is possible to change the level of ARC FORCE by means of the potentiometer **V8**.

## TABLE OF ELECTRODE CONSUMPTION DURING WELDING



Electrode diameter [mm]	Range of welding current [A]	Total electrode length [mm]	Weight of boiled electrode without slag [g]	Boiled electrode time [s]	Weight of boiled electrode without slag per 1 second [g/s]
1,6	30 - 55	300	4	35	0,11
2,5	70 - 110	350	11	49	0,22
3,2	90 - 140	350	19	60	0,32
4,0	120 - 190	450	39	88	0,44

## 10. ROUTINE MAINTENANCE & INSPECTION

1. The only routine maintenance required for the PERUN range of machines is a thorough cleaning and inspection, with the frequency depending on the usage and the operating environment.

2.  **WARNING**  Disconnect the PERUN from the mains supply voltage before disassembling.

Special maintenance is not necessary for the control unit parts in the Welder. If these parts are damaged for any reason, replacement is recommended.



3.  **CAUTION**  Do not blow air into the welder during cleaning. Blowing air into the welder can cause metal particles to interfere with sensitive electronic components and cause damage to the welder.
4. To clean the welder, disconnect it from the mains supply voltage then open the enclosure and use a vacuum cleaner to remove any accumulated dirt and dust. The welder should also be wiped clean. If necessary, solvents that are recommended for cleaning electrical apparatus may be used.
5. Troubleshooting and repairing of PERUN welding equipment should only be carried out only by suitably qualified or competent person.
6. A 'competent person' must be a person who has acquired through training, qualification or experience, or a combination of them, the knowledge and skills enabling that person to safely carry out a risk assessment and repairs to the electrical equipment in question.
7. The person carrying out the servicing needs and repairs must know what to look at, what to look for and what to do.

## 11. STATEMENT OF WARRANTY

1. In accordance with the warranty periods stated below, ALFA IN guarantees the proposed product to be free from defects in material or workmanship when operated in accordance with the written instructions as defined in this operating manual.
2. ALFA IN welding products are manufactured for use by commercial and industrial users and trained personnel with experience in the use and maintenance of electrical welding and cutting equipment.
3. ALFA IN will repair or replace, at its discretion, any warranted parts or components that fail due to defects in material or workmanship within the warranty period. The warranty period begins on the date of sale to the end user.
4. If warranty is being sought, please contact your ALFA IN product supplier for the warranty repair procedure.
5. ALFA IN warranty will not apply to:
6. Equipment that has been modified by any other party other than ALFA IN's own service personnel or with prior written consent obtained from ALFA IN Service Department.
7. Equipment that has been used beyond the specifications established in the



operating manual.

8. Installation not in accordance with the installation/operating manual.
9. Any product that has been subjected to abuse, misuse, negligence or accident.
10. Failure to clean and maintain (including lack of lubrication, maintenance and protection), the machine as set forth in the operating, installation or service manual.
11. Within this operating manual are details regarding the maintenance necessary to ensure trouble free operation.
12.  NOTE  Warranty repairs must be performed by either an ALFA IN Service Centre, an ALFA IN distributor or an Authorised Service Agent approved by the company ALFA IN.
13. As a warranty list serves proof of purchase (invoice) on which is the serial number of the machine, eventually a warranty list on the last page of this manual.

## 12. DISPOSAL



Only for EU countries. Do not dispose of electric tools together with household waste material.

In accordance with European Council Directive 2002/96/EC on electrical and electronic equipment waste and its implementation in accordance with national law, electric tools that have reached the end of their service life must be collected separately and returned to an environmentally compatible

recycling facility.

## 13. WARRANTY LIST

As a warranty list serves proof of purchase (invoice) on which is the serial number of the machine, eventually a warranty list below, which is filled in by an authorized dealer.

Serial number:	
Day, month (written in words) and year of sale:	
Stamp and dealer signature:	