

**PLASMA CUTTING MACHINE**

**PEGAS 160 PLASMA**

**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.

Machine PEGAS 160 PLASMA is designed for cutting metal on the basis of modern technology cutting material through a thin beam plasma gas.

PEGAS 160 PLASMA is designed for high-quality cutting of materials up to 40 mm thick carbon steel (for more information, see instructions below). Productive cutting of carbon steel can be to a thickness of 35 mm. At lower demands on the quality of the cut can be cut through (separate) the material thickness to 50 mm.



## **2. SAFETY INSTRUCTIONS AND WARNINGS**

1. OPERATION AND MAINTENANCE OF PLASMA ARC EQUIPMENT CAN BE DANGEROUS AND HAZARDOUS TO YOUR HEALTH.
2. Plasma arc cutting produces intense electric and magnetic emissions that may interfere with the proper function of cardiac pacemakers, hearing aids, or other electronic health equipment. Persons who work near plasma arc cutting applications should consult their medical health professional and the manufacturer of the health equipment to determine whether a hazard exists.
3. Once the packing has been opened, make sure that the machine is not damaged. If in any doubt, call the service centre.
4. This equipment must only be used by qualified personnel.
5. During installation, any electric work must only be carried out by trained personnel.
6. The machine must be used in a dry place with good ventilation.
7. Make sure that no metal dust can be drawn in by the fan inside the machine, as this could cause damage to the electronic circuits.
8. It is prohibited to connect more than one INVERTER generator in series or in parallel.
9. When installing the machine, follow the local regulations on safety.
10. The position of the machine must allow easy access by the operator to the controls and connectors.
11. When the cutting machine is operating, all its covers and doors must be closed and well fixed.
12. Do not expose the cutting machine to direct sunlight or to heavy rain. This equipment conforms to protection rating IP23S.
13. The operator must wear gloves, clothes, shoes, and a helmet or a welder's helmet, which protect and are fire-resistant in order to protect him against electric shock, flashes and sparks from cutting.
14. The operator must protect his eyes with safety visor or mask designed for welding, fitted with standard safety filters. He should also be aware that during plasma cutting ULTRAVIOLET RADIATION is emitted. Therefore it is vital that his face is also protected from radiation. Ultraviolet rays produce the same harmful effect as sun burning on unprotected skin.
15. The operator is obliged to warn anyone near the cutting area of the risks that cutting involves and to arrange to provide adequate protection equipment.
16. Keep all fumes and gases from the breathing area.
17. Keep your head out of the fume plume.
18. Use an air-supplied respirator if ventilation is not adequate to remove all fumes and gases.
19. The kinds of fumes and gases from the plasma arc depend on the kind of metal being used, coatings on the metal, and the different processes. You must be very careful when cutting or welding any metals which may contain

one or more of the following:

Antimony	Chromium	Mercury
Nickel	Cobalt	Arsenic
Barium	Copper	Selenium
Beryllium	Lead	Silver
Cadmium	Manganese	Vanadium

20. Always read the Material Safety Data Sheets (MSDS) that should be supplied with the material you are using. These MSDSs will give you the information regarding the kind and amount of fumes and gases that may be dangerous to your health.
21. It is very important to arrange for sufficient ventilation, especially when cutting in enclosed spaces. We suggest using suitable fume extractors to prevent the risk of intoxication by fumes or gas generated by the cutting process.
22. Noise can cause permanent hearing loss. Plasma arc processes can cause noise levels to exceed safe limits. You must protect your ears from loud noise to prevent permanent loss of hearing.
23. To protect your hearing from loud noise, wear protective ear plugs and/or ear muffs. Protect others in the workplace.
24. Noise levels should be measured to be sure the decibels (sound) do not exceed safe levels.
25. The operator must ensure all flammable materials are removed from the work area to avoid any risk of fire.
26. The operator must NEVER cut containers that have previously contained petrol, lubricants, gas or similar flammable materials, even if the container has been empty for a considerable time. THERE IS A VERY HIGH RISK OF EXPLOSION.
27. The operator must be aware of all the special regulations which he needs to conform to when cutting in enclosed spaces with a high risk of explosion.
28. To prevent electric shock, we strongly suggest the following rules:
  - a) Do not work in a damp or humid environment.
  - b) Do not use the machine if its cables are damaged in any way.
  - c) Make sure that the earthing system of the electric equipment is correctly connected and operational.
  - d) The operator must be insulated from the metal components connected to the return wire.
  - e) The earthing of the piece being worked could increase the risk of injury to the operator.
29. EN 60974-1 Standard: Open-circuit voltage. During the operation of the machine, the highest voltage, with which it is possible to come into contact, is the open-circuit voltage between the clamps. In our generator this voltage is 350V.
30. The maximum open-circuit voltage of the plasma machines is established by national and international standards (EN 60974-1) depending on the type

of current to be used, on its waveform and on the hazards arising from the work place. These values are not applicable to the strike currents and those for stabilisation of the arc that could be above it.

31. The open-circuit voltage, for as many adjustments as possible, must never exceed the values relating to the various cases shown in the following table:

Case	Working conditions	Open-circuit voltage	
1	Places with increased risk of electric shock	DC current: 113V peak value	AC current: 68V peak value and 48V effective
2	Places without increased risk of electric shock	DC current: 113V peak value	AC current: 113V peak value and 80V effective
3	Torches held mechanically with increased protection for the operator	DC current: 141V peak value	AC current: 141V peak value and 100V effective
4	Plasma cutting	DC current: 500V peak value	

32. In case 1, the dc machines with rectifier must be built in such a way that, in case of a fault developing in the rectifier (for example open circuit, short circuit or lack of power), the permitted values cannot be exceeded. The

plasma cutting machines of this type can be marked with the symbol: 

33. Before opening the machine switch off the machine and disconnect it from the power socket.
34. Only personnel authorised by this company can carry out maintenance on the machine.

## 2.1 ELECTROMAGNETIC COMPATIBILITY (EMC)

- This machine conforms to EN 60974-10 standard. However, the electromagnetic emissions generated could prove not be compatible with the maximum permitted levels for some classes of electrical equipment, such as the following:
  - Domestic electronic appliances (radios, TVs, videos, telephones, burglar alarms, etc.).
  - Computers, robots, electro-medical instruments and life-support systems.
  - Radio-television transmitters and receivers.
  - Pacemakers and hearing aids.
  - All very sensitive electrical equipment.
- The operator is responsible for the installation and use of the cutting machine. If there should be any fault in operations of other systems located in the immediate vicinity of the generator, we recommend suspending

operations and consulting the manufacturers.

## 2.2 PROTECTIVE UTILITIES

1. Welding helmet with filter shade at least 10
2. Welding gloves
3. Welding apron and cloth
4. Welding boots

## 2.3 RISK OVERVIEW

1. Risk of electric shock.
2. Ultraviolet light and light radiation
3. Risk of inhaling gas fumes and dust particles
4. Burns
5. Noise



### NOTE

1. It is forbidden to operate a machine with damaged insulation of the cutting torch or supply cable.
2. Never operate the machine taken down or damaged covers.
3. It is forbidden to operate the machine in wet environments and outdoors in rain or snow.
4. Ensure proper grounding clamping pliers, which also reduces the risk of electric shock.
5. Use prescribed protective utilities, keep them dry.
6. Plasma arc cutting produces intense electric and magnetic emissions that may interfere with the proper function of cardiac pacemakers, hearing aids, or other electronic health equipment. Persons who work near plasma arc cutting applications should consult their medical health professional and the manufacturer of the health equipment to determine whether a hazard exists.
7. Never aim the torch against the eyes, body or other person.

## 3. CONDITIONS OF USE

1. This equipment must only be used by qualified personnel.
2. During installation, any electric work must only be carried out by trained personnel.
3. Do not expose the plasma machine to direct sunlight or to rain or snow. This equipment conforms to protection rating IP23S.
4. Place the machine the way that the cooling air can enter the vents without restriction to. It is necessary to ensure that no impurities, especially metal particles, are not drawn into the machine.
5. Cutting machine in terms of interference suppression is intended primarily for industrial premises. In the case of use of other areas may be need for

special measures (see EN 60974-10).

6. The machine must be protected against

- a) moisture and rain and snow
- b) mechanical damage
- c) draft and any ventilation of neighbouring machine
- d) excessive overloading - crossing technical parameters
- e) rough handling

#### 4. TECHNICAL DATA

Method			Plasma cutting
Mains voltage		V/Hz	3 x 400/50-60
Mains protection		A	40 @
Max. input power $I_1$		A	50,5
Max. effective current $I_{1eff}$		A	36,0
Cutting current range		A/V	30/92,0 – 160/144,0
Open-circuit voltage $U_{20}$		V	345
Cutting current (DC=100%) $I_2$		A	125
Cutting current (DC=60%) $I_2$		A	140
Cutting current (DC=x%) $I_2$		A	40%=160
Max. productive cut. thickness - carbon steel		mm	35
Max. cutting thickness - carbon steel (separate mat.)		mm	50
Quality cutting thickness	Carbon steel	mm	40
	Stainless steel	mm	32
	Aluminium	mm	25
	Copper	mm	20
Working pressure		bar	6,0
Max. Input pressure		bar	8,5
Air consumption		l/min	220
Arc ignition			HF
Current regulation			continuous
Insulation class			F
Protection			IP 21 S
Standards			EN 60974-1
Dimensions (w x l (with and without Pressure regulator) x h)		mm	345 x 780 (795) x 632
Weight		kg	56,5

## 5. OPERATOR CONTROLS

### 5.1 FRONT AND REAR PANELS

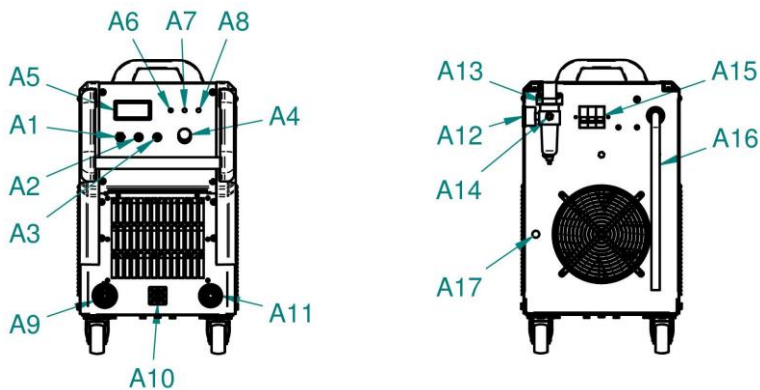


Fig. 1 PEGAS 160 PLASMA without the cooling unit

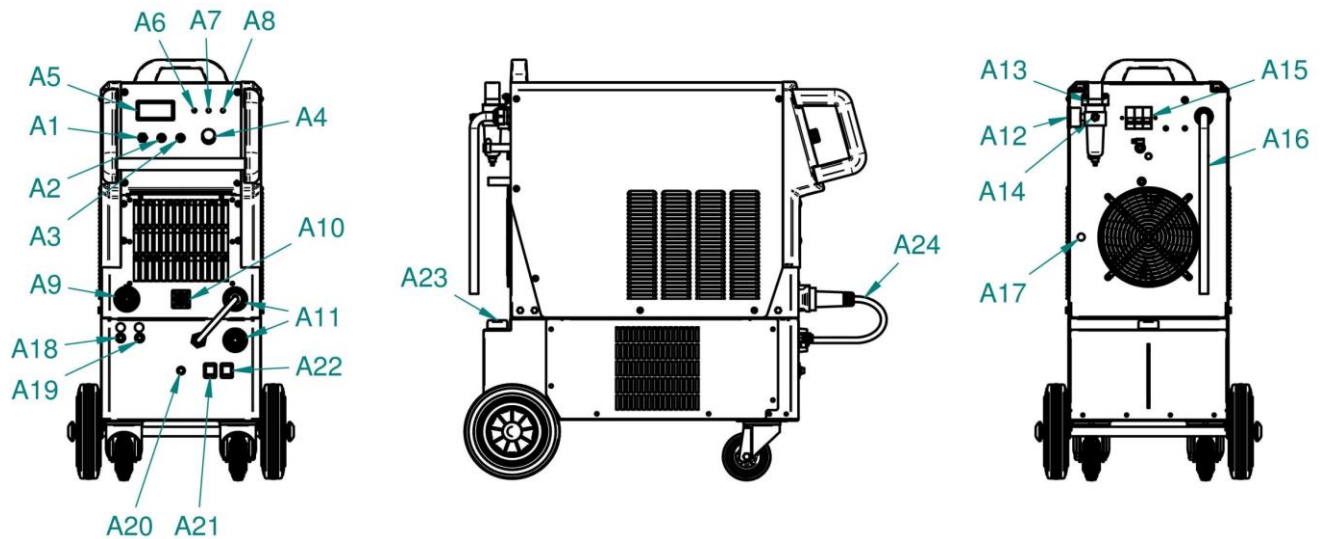









Fig. 2 PEGAS 160 PLASMA with the cooling unit

A1	<p>Switch for setting the pneumatic system.</p> <p><b>CUT</b> Middle position – machine is in the cutting mode.</p> <p><b>AIR SET CUTTING</b> Setting the working pressure. Set the Pressure regulator A13 to working pressure 6,0 bar.</p> <p><b>AIR SET START</b> Setting the optimal air flow for the pilot arc. That is set by the manufacturer. In case the pilot arc cannot be ignited or turns down, amend the air flow by means of the regulator <b>A17</b>.</p>
A2	<p> 2 stroke mode – the torch trigger must be kept pressed during cutting.</p> <p> 4 stroke mode – the cutting process starts when you press the torch trigger. When you release the trigger the cutting process</p>

	continues. To finish the cutting process press and release the trigger of the torch.
A3	 Panel controls – you can set the cutting current by means of the potentiometer <b>A3</b> .  Remote control. In the standard version is not working – only per demand.
A4	Cutting current potentiometer
A5	Display – displays set parameters (A)
A6	 LED indicator – machine is ON.
A7	 LED – machine is over heated or there is fault on the generator. If lights leave the machine cool down. In case the LED does not go off in 10 minutes, call the service.
A8	 LED – low air pressure. If the pressure is less than 3,5 bar the appliance is blocked.
A9	Torch central connector
A10	Remote control connector (only per order)
A11	Quick connector for the work leads
A12	Manometer
A13	Pressure regulator
A14	Air quick connector
A15	ON/OFF switch
A16	Mains supply cable
A17	Flow regulator
A18	Water quick connector (red)
A19	Water quick connector (blue)
A20	Fuse holder
A21	Main switch - Cooling
A22	Cooling switch - AUTO / MANUAL
A23	Cooling liquid tank cup
A24	Work leads with the plugs

## 6. ACCESSORIES

### 6.1 PART OF DELIVERY

Code	Description
5.0256	PEGAS 160 PLASMA
5365	Torch LT-150 6m Hand

VM0303	Earthing cable with clamp 3m 35-50 200A
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## 6.2 ON REQUEST

Code	Description
5481	Circle Cutting Attachment
5482	Cutting Guide
5302	Air filter AT 1000
5303	Air Filter cartridge AT 1000
5304	Set for filter AT 1000 to P 100-160 Plasma
S777a	Welding Helmet ALFA IN S777a Black

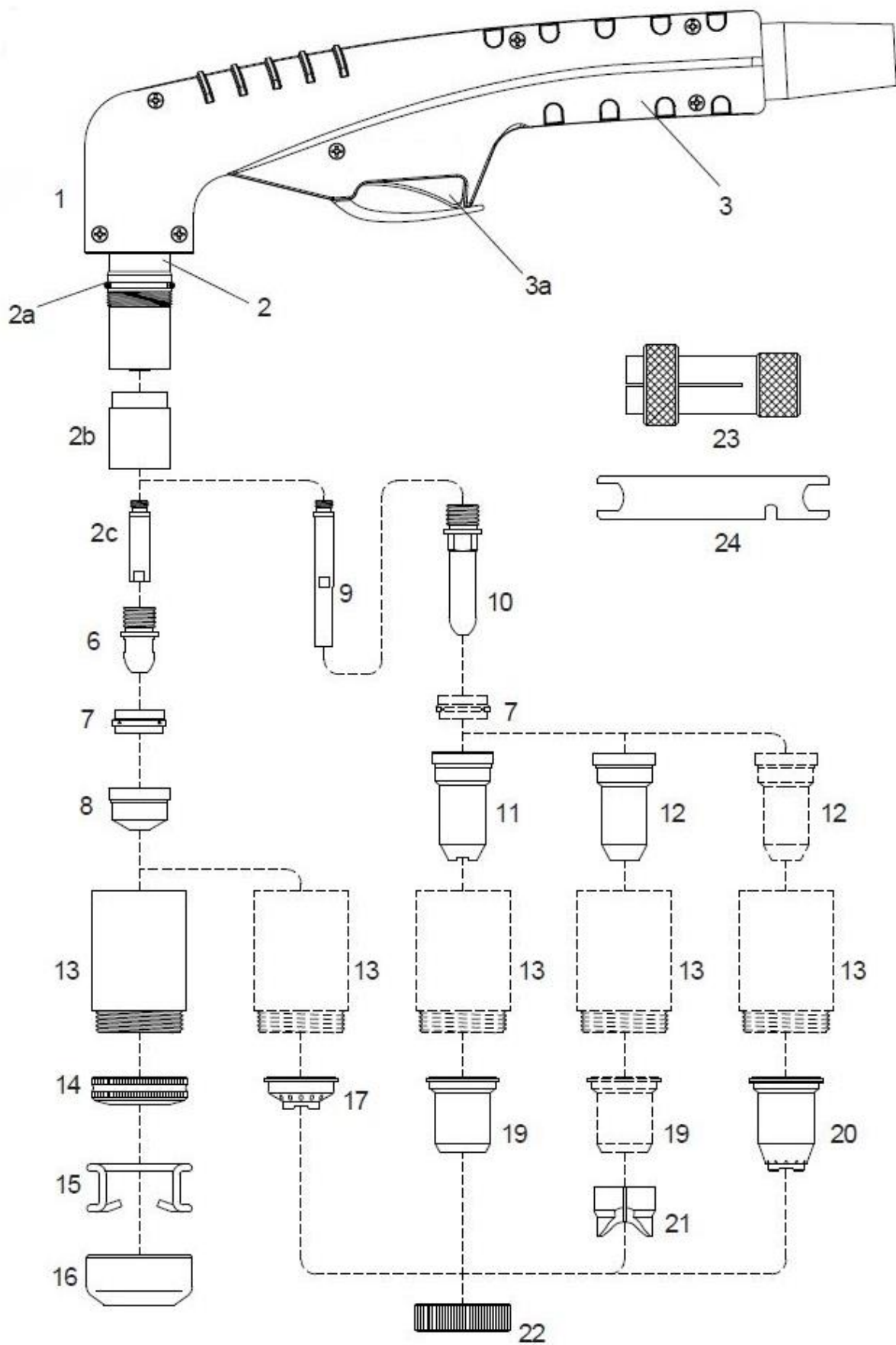


Fig. 3 Torch LT-150 6m Hand

Pos.	Item No	Description
1	5366	Torch Head LT-150 with handle
2	5367	Torch Head LT-150
2a	5370	O-ring LT-150
2b	5371	Front Insulator LT-150
2c	5374	Diffusor LT-150
3	5368	Handle with Switch LT-150
3a	5011	Switch PT-100
6	5375	Electrode LT-150
7	5376	Swirl Ring LT-150
8	5377	Tip long life 1.1 LT-150
8	5378	Tip long life 1.35 LT-150
8	5379	Tip long life 1.6 LT-150
8	5380	Tip long life 1.8 LT-150
8	5381	Tip gouging 3.0 LT-150
9	5382	Extended Diffusor LT-150
10	5383	Extended Electrode LT-150
11	5384	Contact Extended Tip (Max 50A) LT-150
12	5385	Contact Extended Tip 1.35 - 90A LT-150
12	5386	Contact Extended Tip 1.6 - 120A LT-150
12	5387	Contact Extended Tip 1.8 - 150A LT-150
13	5388	Contact nozzle retaining cup LT-150
13	5389	Contact nozzle retaining cup Max.Life LT-150
14	5390	Spring Holder protection Nut LT-150
15	5391	Spacer spring LT-150
16	5392	Spacer gouging LT-150
17	5393	Spacer for contact cutting, Hand LT-150
19	5395	Shield cup Hand (Max 50A) LT-150
20	5396	Spacer for contact cutting Hand LT-150
21	5397	Spacer for extended Tips High amperage LT-150
22	5398	Locking Nut LT-150
23	5399	Extractor for Swirl Ring LT-150
24	5025	Wrench for Electrode PT-60, 100

Recommended starting kit for the Torch:

Pos.	Item No	Description	Quantity
	<b>5538</b>	<b>Starting Kit for LT-150 PEGAS</b>	
2c	5374	Diffusor LT-150	1
6	5375	Electrode LT-150	4
7	5376	Swirl Ring LT-150	1
8	5377	Tip long life 1.1 LT-150	2
8	5378	Tip long life 1.35 LT-150	2

8	5379	Tip long life 1.6 LT-150	2
8	5380	Tip long life 1.8 LT-150	2
13	5388	Contact nozzle retaining cup LT-150	1
14	5390	Spring Holder protection Nut LT-150	1
15	5391	Spacer spring LT-150	1
9	5382	Extended Diffusor LT-150	1
10	5383	Extended Electrode LT-150	1
12	5385	Contact Extended 1.35 - 90A LT-150	1
12	5386	Contact Extended 1.6 - 120A LT-150	1
12	5385	Contact Extended 1.35 - 90A LT-150	1
20	5396	Spacer for contact cutting Hand LT-150	2
22	5398	Locking Nut LT-150	1

## 7. GETTING STARTED

### 7.1 FIRST STEPS






**NOTE** This equipment must only be used by qualified personnel.

1. Before beginning work is necessary to connect the machine to the mains.
2. Check completeness of the mounted cutting torch.
3. See the picture below. Connect the torch to the connector. By means of the thorn (part of the delivery) press the safety pin. Turn the nut of the connector clock wise and tight it properly.



4. Connect the compressed air on connector **A14** on the rear wall of the machine.
5. Connect the mains plug to the mains socket.
6. After turning on the ON/OFF switch **A15** the display **A4** will illuminate.
7. Keep the switch **A1** pressed in the position **AIR SET CUTTING** and set the air pressure by means of regulator **A13** and manometer **A12** to 6 bars.
8. Connect the work lead cable to the material being cut and to the connector **A11**.
9. Check up the input air pressure (min 5 bar, max 8,5 bar) and make a

regulation if necessary.

10. Set potentiometer **A3** to the cutting power you need.
11. Fit the torch with appropriate type of cutting tip electrode and shield cup according to the selected cutting current.
12. Press the trigger on the cutting torch, the pre gas will flow for 1 s.
13. The pilot arc will start.
14. Shift the torch with the pilot arc close to the material, the pilot arc will change to cutting arc automatically. If you do not start cutting within 2 s, the arc will snuff off. When you move the torch away from the material the cutting arc would change into the pilot arc. In case the cutting process would not start within 2 s, the arc would extinguish. It is possible to release the torch trigger in the 4 stroke mode .
15. To finish the cutting the 2 stroke mode  release the torch trigger. In the 4 stroke mode  press the torch trigger

## 7.2 REQUIREMENTS FOR SOURCE OF COMPRESSED AIR

1. Delivered air pressure must be max. 8,5 bar and min. 5 bar.
2. Air consumption minimal 220 l/min
3. Compressed air for the plasma must be clean and dry.
4. Pressure dew point +3 ° C
5. Maximum oil content 0.1 mg/m<sup>3</sup>
6. Maximal size of solid particles 15 microns
7. The minimal size of an air tank is 50 l
8. No additional oiling if the pressure air is permitted. That could damage the plasma machine and the cutting torch.

## 7.3 CONNECTION TO THE CENTRAL AIR DISTRIBUTION

1. Before connection find out the working pressure in the system and range of its fluctuation.
2. Check out the model and technical state of the filter system and condensate trap.
3. Make sure the piping is not oiled.
4. Install an additional filter and moisture trap as close to the cutting machines as possible.

## 7.4 OPTIONAL AIR FILTERS

To achieve high quality cutting and to avoid serious disturbances to the torch it is highly advised to include the air filter.

Pos.	Item No	Description
B2	5302	Air filter AT 1000
B1	5304	Set for filter AT 1000 to P 100-160 Plasma

👉 **NOTE** 👉 Max. allowable pressure of filter AT 1000 is 8,5 bar



Fig. 4 Filter AT 1000

## 7.5 CUTTING

1. Press the torch trigger. The pilot arc will ignite. Then you have to immediately attach the torch to the cut material. At this point begins to burn the main arc between the torch and the material.
2. Move the torch with a constant speed. Cutting speeds vary according to torch output amperage, the type of material being cut, and operator skill.
3. Output current setting or cutting speeds may be reduced to allow slower cutting when following a line, or using a template or cutting guide while still producing cuts of excellent quality
4. To achieve a good cutting quality make sure the distance between the tip and the material is about 3,5 mm. The Spacer Spring **5391** located at the end of the plasma torch guarantees the distance (or Spacer for contact cutting **5396**). At a greater distance decreases cutting power and the arc may go off. With too small distance the torch parts will be worn off faster.
5. Plasma cutting may be done in all possible positions (vertically, horizontally, overhead, vertical ascending and descending), but as far as possible choose primarily horizontal cut. In other positions the operator is increasingly threatened by flying drops of molten material.

6. We recommend starting cutting at the edge of the material. If needed to start from the centre of the material, or to cut hole into the material, slightly tilt the torch head and gradually it straighten into a vertical position so the spraying material would not damage the cutting tip (see Figure 5). This workflow must always be followed, if the thickness of material is above 3 mm.
7. In case of cutting in the corner or around the corner (see Figure 6), use the long electrode and cutting tip. The cutting power while using the Long cutting tip is decreased.

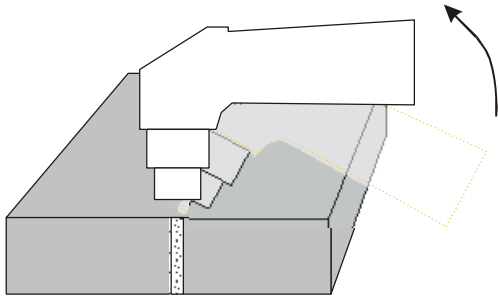


Fig. 5

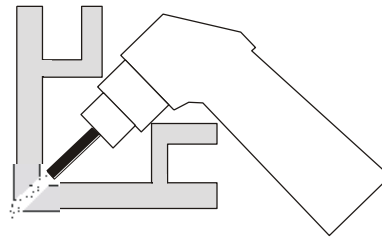


Fig. 6

## 7.6 IMPORTANT RULES

1. The pilot arc burning time should be limited only to the time necessary. It lowers the wear of the cutting tips and electrodes.
2. Never turn off the main switch immediately after finishing cutting but always leave time to run cooling cycle to cool down the torch. Immediate turn-off only in case of emergency.
3. The biggest influence on the cut quality, durability of the nozzles, electrodes and the whole torch has compressed air. Ensure correct setting of pressure: The pressure during cutting must not fall below 3.5 bar. The air must not contain mechanical impurities, oil and water condensate. These contaminants reduce the quality of the cut, causing instability and extinguishing the arc, and can damage the torch. A source of pressurized air must therefore be provided with an effective and reliable filtration, oil separator and water condensate trap. Using filters and separators built on PEGAS 160 PLASMA as the sole treatment stage air is totally inadequate. In cases where the compressor sucks air of high humidity, resulting in the need for frequent draining of the pressure tank, it is necessary to include in the inlet one more effective as a dirt separator third stage. The captured condensate must be discharged every day, and all tailing and pressure vessels compressor. Ensure a good el. contact of the work lead clamps and cutting material.
4. Check and timely exchange cutting tips and the electrodes. Lifetime of these parts is only a few hours of cutting time and is highly dependent on compliance with the principles of good cutting.

## NOTE

5. At low air pressure (below 3,5 bar) LED **A8** lights on the control panel and hang further action.
6. If the machine gets overheated during cutting, the LED on the control panel **A7** lights and hangs other activities of the machine.
7. Disconnect the machine from the mains before replacing the torch consumable parts.
8. Unplug the machine from the mains before any intervention inside the machine.
9. PEGAS 160 PLASMA may not be directly connected to the pressure of higher than 8.5 Mpa or to pressurized cylinders! Connection to such resources is only possible through a suitable pressure reducing valve, which is tested on the corresponding input pressure and flow.
10. Imperfect capture of condensate would cause its elimination in the area of the cutting tip and it would prevent ignition of the pilot arc.

## 7.7 SOURCES OF POOR QUALITY CUTS

### 7.7.1 Shallow penetration of the cut

1. The cutting speed is too high. Make sure the slope of the cutting arc does not exceed about 15 ° (see Figure 7).
2. High wear of the cutting tip or electrode (see Figure 8)
3. Too large thickness of material and not adequately chosen value of current and diameter of the cutting tip.
4. Bad contact between the work lead clamps and material.

### 7.7.2 Cutting arc is unstable, goes off and "shoots"

1. Worn out cutting tip or electrode
2. High pressure
3. Impurities in the pressure air
4. Not captured water condensate

### 7.7.3 Conical cut

1. If there is a false cut (see Figure 9) turn off the machine, release the shield cup and rotate the cutting tip about 1/4 and again try to cut.
2. Damaged cutting tip and electrode
3. The position of the torch is not perpendicular to the material
4. Too large distance from the cutting tip to the material.

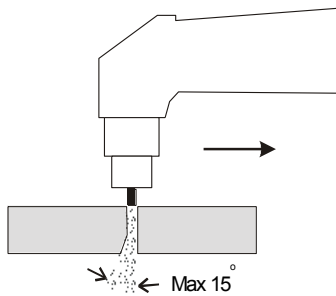


Fig. 7

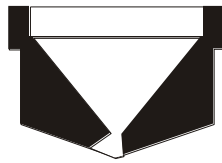


Fig. 8



Fig. 9

## 8. MAINTENANCE

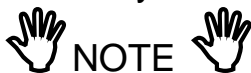
1. A great care should be taken to the cutting torch. The molten material sprays while cutting. This sputter contaminates the interior space of the torch. The worn parts (consumables) of a plasma torch should be regularly maintained and timely exchanged. Regularly check the condition of diffuser channels (see diagram of the torch). If contaminated, you must clean it with a pressure air or to replace the diffuser. Poor state of the diffuser has a negative impact on the quality of cutting and causes very strong interference that may cause the collapse of the machine control electronics or influence the surrounding devices. If the cable bundle of the torch is worn out it must be replaced immediately - danger of electrical shock.
2. Disconnect the PEGAS from the mains supply voltage before disassembling.
3. Maintaining the pneumatic system consists of regular draining of the condensate traps, at least once a day. Furthermore, visually check the level of pollution of the air filter and if necessary, disassemble and cleaned the filter.
4. Setting the operating pressure - while cutting the pressure must not fall below 0.35 MPa. Setpoint is carried out by the control head on the pressure regulator. Head must first be unlocked by pulling upward, to set the desired pressure and pushing again downwards to secure. If the machine does not consume any air, a slight increase in pressure (about 0,05MPa) appears. It is therefore necessary to check the pressure during cutting.
5. The power generator must be periodically cleaned by compressed air (according to the degree of dust inside the generator).  
NOTE: Beware of the risk of damage to the electronic components by direct action of compressed air from a small distance.
6. Troubleshooting and repairing of PEGAS equipment should only be carried out only by suitably qualified or competent person.
7. 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.

8. The person carrying out the servicing needs and repairs must know what to look at, what to look for and what to do.

## 9. 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 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:
  - a) 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.
  - b) Equipment that has been used beyond the specifications established in the operating manual.
  - c) Installation not in accordance with the installation/operating manual.
  - d) Any product that has been subjected to abuse, misuse, negligence or accident.
  - e) Failure to clean and maintain (including lack of lubrication, maintenance and protection), the machine as set forth in the operating, installation or service manual.
6. Within this operating manual are details regarding the maintenance necessary to ensure trouble free operation.



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.

## 10. 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

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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.