

CLOOS

Weld your way.

Operating instructions and spare parts list

Welding accessories

CLOOS Arc Flash 4 evo Air



Rev.0

Original instructions

CLOOS ArcFlash4air has been designed and manufactured to comply with EN12941: 1998 as a TH2P R SL device. 8S4275 (Guide to implementing an effective respiratory protective device program), which the user is advised to read, defines an EN12941 TH2P R SL device as offering an Assigned Protection Factor of 20.

CLOOS ArcFlash4air can only provide this level of protection when used with filters provided by the manufacturer marked "CLOOS ArcFlash4" and "EN12941:1998 TH2P R SL".

The CR-2B01/2013 is certified with the PL-2B01/2013 and GT-2B01/2013 helmets which are certified to EN 175 B.

CLOOS ArcFlash4air is manufactured under ISO 9001:2000 Quality System.

Certification EN 12941:1998+A1:2003+A2:2008 Certified by: DEKRA-EXAM GmbH

Important:

This manual must be read and fully understood before using the CLOOS ArcFlash4air unit.

The manual must be retained for future reference.

Compulsory Information for the use of a powered respirator with Hood type head unit

Please read these instructions carefully before unpacking your product. Failure to comply with the instructions in this leaflet may void your warranty and adversely affect your health. If you have any questions regarding the suitability of this product to your task, please contact an occupational hygienist or call the manufacturers technical help line.

Address and telephone number information is printed at the back off this leaflet.

Inhalt

1.	General information.....	4
1.1	Operating instructions.....	4
1.2	Explanation of symbols.....	4
1.3	Limitation of liability.....	5
1.4	Copyright.....	5
2.	Safety.....	6
2.1	Proper use.....	6
2.2	Reasonably foreseeable misuse.....	6
2.3	Personnel requirements.....	6
2.4	Hazards.....	6
2.5	Warranty clause.....	7
2.6	Warranty.....	8
3.	Technical Data.....	9
3.1	Storage and Transportation.....	9
4.	Unpacking / Assembly.....	10
4.1	Unpacking.....	10
4.2	Assembly.....	10
4.2.1	Waist-Belt Adjustment.....	10
4.2.2	Particulate Filter.....	10
4.2.3	Removing the Filter.....	11
4.2.4	Fitting a new Filter.....	11
4.2.5	Changing the Pre-Filter.....	11
4.2.6	Attaching the Hose to the Blower Unit.....	11
4.2.7	Donning the Welding Helmet.....	11
5.	Before use.....	12
5.1	Inspection before use.....	12
5.2	Air Flow Test.....	12
5.3	Batteries.....	12
5.3.1	Battery charging.....	13
5.3.2	Battery changing.....	13
6.	Usage.....	14
7.	Maintenance / Cleaning.....	15
8.	Fault finding.....	16
9.	List of parts.....	17

1. General information

1.1 Operating instructions

These operating instructions contain important information for the safe, efficient handling of the device. Compliance with all of the safety instructions and operating instructions contained herein is a pre-condition for safe working with the device.




Illustrations in these instructions are intended to provide a basic understanding, and may differ from the actual design of the device. Claims cannot be derived therefrom.

Information manual for the welder protective helmet complying with Paragraph 1.4 of Appendix II of the EC regulations. The welding helmet is a high quality product that contribute to the comfort and safety of the welder. The welding helmet may be used only in connection with arc welding.

1.2 Explanation of symbols

Warning and safety instructions in the manual are identified by means of pictograms and highlighted in a colour-coded block.

Warning and safety instructions which draw your attention to basic hazards are additionally marked with signal words which express the level of damage. These are categorised as follows:

	DANGER!	The signal word indicates a hazard with a high level of risk, which, if not avoided, leads to fatal or severe injury.
	WARNING!	The signal word indicates a hazard with a moderate level of risk, which, if not avoided, can lead to fatal or severe injury.
	CAUTION!	The signal word indicates a hazard with a low level of risk, which, if not avoided, leads to minor or moderate injury.
	ATTENTION!	The signal word indicates a hazard without risk of a physical impairment, which, if not avoided, can lead to property damage.
	NOTICE	Tips and recommendations as well as information for efficient and smooth operation.

1.3 Limitation of liability

All information and notes in this manual were compiled taking into consideration the applicable standards and regulations and the state of the art, as well as our many years of knowledge and experience .

The manufacturer assumes no liability for damages caused by:

- **Non-observance of the manual**
- **Improper use**
- **Use of untrained and non-instructed personnel**
- **Unauthorised alterations**
- **Technical changes**
- **Use of unauthorised spare parts**

1.4 Copyright

This document is protected by copyright.

The unauthorised transfer of these instructions to third parties, reproduction of any kind and in any form, even in excerpts, as well as the recovery and/or notification of the content is prohibited without the written permission of the publisher.

Infringements of this trademark will be subject to compensation for damages. All rights to further claims reserved.

2. Safety

2.1 Proper use

The device is only to be used for the following purpose:

The device affords reliable protection against particulates and aerosols



WARNING!

Risk from improper use!

Any use of the device other than the intended purpose can lead to hazardous situations.

- **The device should normally only be used in accordance with the information in this document, in particular with respect to compliance with the application limit values given in the technical specifications.**
- **Refrain from any use of the device which differs or extends beyond these limits.**
- **Do not convert, retrofit or otherwise alter the structure or individual fitted components with the aim of altering the scope of application or usability of the device.**

Claims of any kind for damages caused by improper use are excluded.

2.2 Reasonably foreseeable misuse

The unit must not be used in an atmosphere that is immediately hazardous to user hygiene or health and or has oxygen content of less than 17 % or contains unknown substances.

- in confined spaces or unventilated areas such as tanks, pipes, canals etc.,
- near to flames and or sparks,
- in areas with danger of explosion,
- in an area where there are high winds

2.3 Personnel requirements

Work may only be performed by a trained specialist. All personnel involved must be instructed with regard to the safety requirements, safety regulations and operational instructions which must be applied in their work.

2.4 Hazards

The warning and safety notices listed here and in the operations chapters of these instructions must be observed in order to prevent potential harm to health and hazardous situations.



WARNING!

Hazard by lack of oxygen (<17 %)

When the blower unit is switched off a rapid buildup of carbon dioxide and depletion of oxygen within the head unit may occur

- **It is essential not to use the blower unit when it is switched off.**



WARNING!

Choking hazard

The user is advised to leave the contaminated area immediately if:

- **The Manufacturer's Minimum Design Flow (MMDF) warning Alarm sounds.**
- **breathing becomes difficult,**
- **dizziness or distress occurs,**
- **any part of the system becomes damaged,**
- **airflow into the Head-Unit decreases or stops,**
- **contaminant can be smelt or tasted inside the Head-Unit,**
- **Materials that may come into contact with the users skin are not known to cause allergic reactions to the majority of individuals but in the unlikely event of a reaction, the user should immediately leave the contaminated area, remove the unit and seek medical advice.**

2.5 Warranty clause

If any of these conditions are not kept or followed, the warranty is automatically invalid.

Nothing is allowed to touch the moving parts.

There is no attempt to modify or alter the unit or filter in any way. No water or other liquids enter the unit in any way - in particular the motor and fan, the filter or the battery.

Make sure that the headpiece fits the user's face perfectly. Only then the efficiency of the system is sufficient. The protective factor of the complete system is reduced if the seal of the headpiece is not fitted properly, for e.g. due to beards or long hair intervening into the seal line.

There is a possibility that the hose to the head unit may become caught up in use. The blower unit should be positioned on the person in such a way as to reduce this possibility.

Filters cannot be fitted directly to the head units and should not be adapted to do so. Correct respiratory protection will not be provided if any parts of the equipment are modified. At very high work rates the pressure in the device may become negative at peak inhalation flow. Blower unit systems are for use only by competent, trained personnel.

Filters should not be modified to fit different blower units.

2.6 Warranty

The blower unit is guaranteed for a period of 12 months from date of purchase against mechanical or electrical defects.

The battery is guaranteed for a period of 6 months from the date of purchase.

This guarantee is subject to:

- The blower unit has been used solely for the purpose for which it is intended.
- The blower unit has not been subject to misuse, accident, modification or repair.

In the event of a claim, contact the retailer from which the blower unit was purchased. This guarantee does not cover normal wear and tear. This guarantee does not affect your legal rights.

3. Technical Data

Air flow	180...220 Litres/min Minimum 170 Litres/min
Weight with filter	920 g
Head size	535...600 mm
Type of filter	P R S L
Type of battery	Replaceable and rechargeable Li-Ion 7.4 V/5200 mAh Charging cycles >350
Visual, audible alarm for low battery voltage	
Visual, audible alarms for insufficient flow rate (below 170Umin)	
Actual Protection Factor (APF) 20	
Noise level	65 dBA
Operating time	On minimum flow rate with a new filter and fully charged battery in a clean environment: <ul style="list-style-type: none"> • greater than 8 hours • 5 hours on maximum flow rate Operating time can be shortened in case of clogged filter under charged battery.

Filter Symbols:

R = means the filter is reusable for more than one shift.

S = means the filter protects against solid particles.

L = means the filter protects against liquid particles.

3.1 Storage and Transportation

When not in use or during transportation the blower and head units should be stored in the container in which they were provided, or other similar container, such that it is out of direct sunlight, not in contact with solvents and cannot be damaged by physical contact with hard surfaces/ items.

Do not store:

- outside the temperature range of +0°C to +40°C or
- humidity above 75%RH

4. Unpacking / Assembly

4.1 Unpacking

Check that the package is complete and that no part is damaged due to the transport or for other reasons.

A package with the complete system including accessories contains:

1. Blower unit incl. Battery and P R SL Filter and Pre Filter
2. Belt
3. Air hose
4. Air flow indicator
5. Battery charger
6. User Instructions

4.2 Assembly

Attach the respiratory unit onto the belt: Pass the inner strap through the back of the blower loops. The pass through the 2 belt loops and then through the buckle. Fit the battery to the Blower unit.

4.2.1 Waist-Belt Adjustment

Put the belt around your waist with the blower unit to the back and fasten the two ends together. If the belt is too loose, slide the male adjuster down the belt, towards the female half. If the belt is too tight, slide the male adjuster away from the female half.

Repeat the above processes until a comfortable and secure fit is achieved. Once the belt fits correctly, secure any excess belt material using the velcro sections.

4.2.2 Particulate Filter

Use only filters and Pre-Filters as supplied by CLOOS. It should first be ascertained by consulting an occupational hygienist or by calling the manufacturers technical help line as to whether or not the CLOOS Filter will offer suitable protection from the hazard.

The respiratory power unit is equipped with a high efficiency particle filter class PRSL and a Pre-Filter. As soon as the warning alarm sounds, the Pre-Filter should be exchanged or checked. In very dusty areas this can be necessary on a frequent basis.

The filters must be regularly checked (see „Air Flow Test“) and replaced. Make sure that the new filters are within their expiry date, unused and not evidently damaged. From the hygienic point of view the maximum working time of a main filter is 180 hours and should not be exceeded. It is prohibited to clean the filters by any procedure!



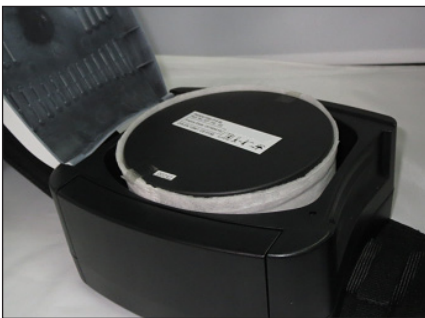


4.2.3 Removing the Filter

Opening the filter cover:

Grip the blower and pull up the cover from the right side to the blower.

ATTENTION ! It is strictly forbidden to use any tools to open the filter cover. To remove the filter, pull it off the filter seal while rotating it. Clean the unit from dust.



4.2.4 Fitting a new Filter

Inserting a new filter:

Put the filter back into position using the same rotating motion and gently push until it fits well on the body of the unit.

Closing the filter Cover:

Simply snap the cover into place. Pay special attention to snap the cover properly into the blower. Do not attempt to use the blower unit without the cover fitted correctly.



4.2.5 Changing the Pre-Filter

The Pre-Filter is a sleeve which is fitted over the main filter. To remove / replace simply pull off the old filter and stretch the new one into position. It's important to ensure that the filter media of the main filter is completely covered by the Pre-Filter.

4.2.6 Attaching the Hose to the Blower Unit

Align the pins of the Hose Bayonet connector with the slots in the air outlet of the blower. Push the bayonet connector into the blower until it reaches the bottom of the hole and then twist in a clockwise direction until the locating pins clips into place.

Fitting the hose to the hoods is the same procedure.

4.2.7 Donning the Welding Helmet

First set the Welding helmets rake and adjust the welding filter to suit personal comfort (See the helmet's user instructions). Lift the helmet to its upper position. Place over the head and adjust the headgear ratchet wheel by pushing it in and twisting until a satisfactory tightness is achieved. Pull the elasticated chin guard downwards and at the same time pull the helmet down. Ensure the elasticated chin guard fits comfortably under the chin. The Welding helmet is now ready for use.

5. Before use

5.1 Inspection before use

Each time before starting work check that:

- All components are in good condition with no visible damage (like holes, tears etc.). Replace any damaged or worn parts. Carefully examine the air hose, seals and the face piece.
- There is a good connection between the air hose and the headpiece as well as the blower unit.
- There is sufficient air flow (see 5.2).
- The air is supplied through the whole respiratory system from the blower to the hood.
- Check the battery before the first use (see 5.3).



5.2 Air Flow Test

1. Disconnect the air hose from the Blower unit.
2. Insert the Airflow indicator into the air hose connector and keep the hose in vertical position at about the eye level.
3. Switch the power unit on. The airflow is sufficient only if the ball indicator reaches the minimum flow rate level. If the indicator is below the minimum flow rate level, it is necessary to charge the battery or change the filter. If the problem still persists, see chapter 8 for additional suggestions.

5.3 Batteries

The removable rechargeable battery used is a Lithium Ion cell. When supplied the battery may hold a small charge, the unit should be run flat and then charged for sixteen hours before the first use.

NOTE! Batteries are delivered only partially charged. All batteries must be charged before they are used for the first time. The battery can be charged separately or on the blower unit.

The charger must not be used for any other purpose than that for which it was manufactured. Do not charge the battery in a potentially explosive atmosphere. The battery charger is intended for indoor use. It must be protected against damp. The charger controls the charging automatically.

After the battery has been charged, the charger switches to the trickle charging regime and keeps the battery fully charged. The charging time is 6 to 8 hours.



5.3.1 Battery charging

1. Check that the voltage of the electrical power supply is correct.
2. Plug the charger into the socket.
3. Connect the battery to the charger. The socket of the battery is positioned on the back side.
4. The charging state is indicated by a red LED diode light.
5. After charging has been completed, the trickle charging regime is activated: -red LED Diode goes out, the green LED diode comes on at the moment of trickle charging.



5.3.2 Battery changing

Removing the battery:

1. Locate the battery catch.
2. Pull back the battery catch and at the same time the battery can be removed by lifting upwards.

Fitting the battery:

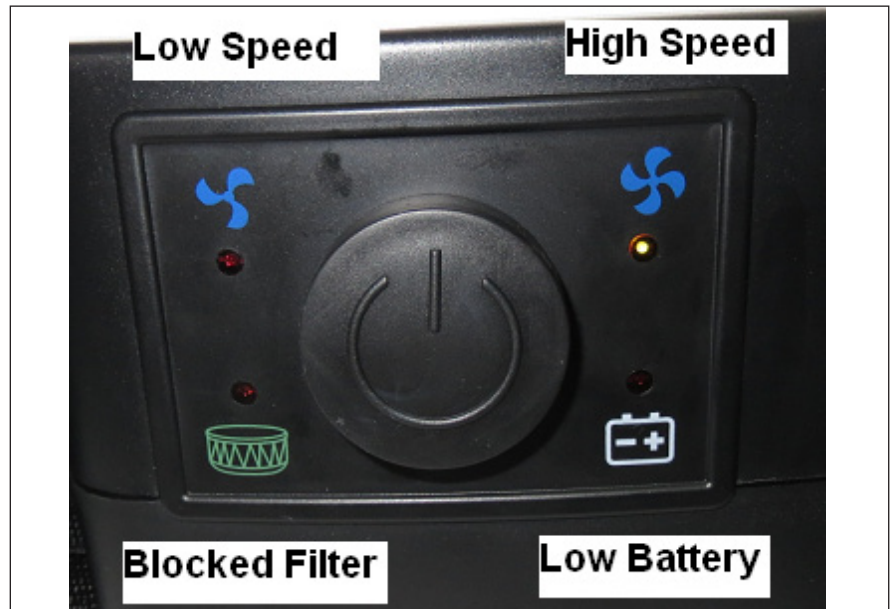
Make sure the battery is the correct way up and then slide into the blower until the battery catch engages.

It is essential that the battery catch is fully locked.



6. Usage

Switch on the unit by pressing the ON/OFF button on the control panel. The airflow can be adjusted by two arrow-buttons from 180 l/min up to 220 l/min.



The unit ensures a constant supply of air. The microprocessor inside the unit automatically regulates the motor speed to compensate the filter clogging and the battery state. If the microprocessor cannot keep the adjusted airflow, the unit will sound a 'beeping' alarm (an acoustic signal can be heard). At which point the user must check the blower unit. If possible, the microprocessor automatically reduces the airflow to the next lower level, if it fails to meet the lower level, the alarm will still sound. When the airflow falls below the minimum safe operating level, a second audible alarm joins the first and the unit will vibrate. At this point, the user must stop working at once, leave the working environment and reach an area nominated to be safe and change the filter or recharge/change the battery.

To check the battery:

When first starting the unit, the battery LED must show red - this shows a fully charged battery. It is recommended that only a fully charged battery should be used when starting a work shift.

With a fully charged battery in place, the unit should function normally, but if the audible alarm still sounds, the user must change the filter. If the problem still persists, see chapter 8 for additional suggestions.

7. Maintenance / Cleaning

The Blower unit, filter housing and head units must all be regularly cleaned to keep them in good working order.

For single users, the units can all be cleaned with a cloth moistened with lukewarm water and soap.

For multiple users, the units should be disinfected when passed from one user to another.

The Manufacturer recommends that ‚Incidur‘ from Ecolab GmbH & Co. OHG is used for disinfecting.

Liquids must not be allowed to enter the workings of the blower unit or get on to the element of the filter.

Parts should be allowed to air dry. Under no circumstances should any solvents or abrasive cleaning agents be used. The unit must not be dried using hot air or radiant heat.

The unit should continue to provide protection to the designed specification for 2 to 3 years, when maintained in accordance with these instructions. Prior to each use the user should check that the unit is free from defects, such as cracks, split filters and hoses, cracked visors and helmet components as appropriate




8. Fault finding

If there is a sudden change in air supply while using the blower unit, it is necessary to check the following:

- that all parts of the air-supply system are assembled properly,
- the battery and its connector,
- whether the charger is not faulty or malfunctioning (if so, diodes do not work),
- Filters and their clogging,
- That there is not a hole in the air hose,
- whether the hood seal is not damaged,
- whether the working time after a full recharging of the battery has not decreased (if so, it is necessary to replace the battery).

9. List of parts

	Welding Helmet Arc Flash 4 air	0875006250
	Arc Flash 4 air helmet only	0875006251
	Arc Flash 4 air Headgear cpl.	0875006252
	Arc Flash 4 air face seal	0875006253
	Arc Flash 4 air filter complete	0875006254
	Arc Flash 4 air hose cover	0875006255
	Arc Flash 4 air hose	0875006256
	Arc Flash 4 air particle filter	0875006257
	Arc Flash 4 air prefilter (10 pc)	0875006258
	Arc Flash 4 air Li-Ion battery standard	0875006259
	Arc Flash 4 air Li-Ion battery HD	0875006260
	Arc Flash 4 air charger EU/AUS/UK/US	0875006261

	<p>Arc Flash 4 air belt with lumbar support</p>	<p>0875006262</p>
	<p>Arc Flash 4 air ventilation grill</p>	<p>0875006263</p>
	<p>Arc Flash 4 air storage bag</p>	<p>0875006264</p>



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