CLOOS

Weld your way.

Operating instructions and spare parts list

Welding helmet

CLOOS Arc Flash 4 evo

Rev. 1.2

Original instructions

The CLOOS welding filters are tested for eye protection by the following notified body: ECS GmbH, Obere Bahnstrasse 74, 73431 Aalen, Germany, notified body 1883, that provides approval and continual quality system under the control of the European Commission, the German Ministry for Work and the Central Office of the Provinces.

CE

European Conformity mark.

This confirms that the product fulfills the requirements of the Directive 89/686/EWG

EN 175 B

Z94.3

ANSI Z87.1

Notified Body ECS GmbH
Registration Number 1883
Obere Bahnstrasse 74
73431 Aalen
GERMANY

Filter Marking Explanation

CE 4/9-13 WT 1/1/1/2/379

4 - light state scale number
9- lightest dark state scale number
13 darkest state scale number
WT - Manufacturer identification
1 - Optical class
1 - Diffusion of light class
1 - variation in luminous transmittance class
2 – Angle of Dependence classification
379 - Number of the standard

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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 ll 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

2. Safety

2.1 Proper use

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

The device affords reliable protection for the eyes whilst electric arc welding. It offers permanent protection against UV/IR rays, heat & sparks in any state from the clear to dark.

The welding helmet can be used for the following applications:

- Electrode
- MIG
- Mag
- Tig

The welding filters operate well under extreme low lighting and very strong sunlight.

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 device is intended exclusively as protection for the eyes against UV/IR rays, heat & sparks in any state from the clear to dark whilst arc welding.

They are not suitable for use with laser systems and oxy-acetylene (gas welding) applications. The welding filter must not be used for any other purpose other than welding. They should never be used as sunglasses when driving as this could lead to incorrect identification of the colour of traffic light.

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.

DANGER!

Radiation

Ultraviolet and infrared radiation are released during welding. This can cause a painful inflammation of the cornea and irreparable damage to the lens of the eye leading to cataracts.

- **Protect skin and particularly the eyes. Keep eye drops and skin cream with a high sun protection factor available.**
- **Do not look directly at welding rays with unprotected eyes when the arc strikes.**
- **Always use safety glasses according to DIN EN 166 and DIN EN 379 in your welder's protective shield or helmet.**
- **Protect other persons in the vicinity of the welding area from UV rays and spatter by suitable, non-flammable partition walls.**
- **Always wear safety glasses with side protection when you are in an area where welding takes place or where slag is removed.**

WARNING!

Allergic reaction

Materials that may get in contact with the wearers skin could cause Allergic reactions to susceptible individuals.

- **If the contact can´t be avoided, a talk to a doctor about using creams is recommended to keep the skin safe.**

3. Technical data

3.1 Environmental condition

3.1.1 Ambient temperature

Welding helmets and filters only resist a certain amount of heat. Please do not place them near naked flames or hot work areas etc.

Operating temperature of electronic filter -5°C...55°C.

3.1.2 Humidity

The auto-darkening filters fitted in the helmets are not waterproof and will not work properly if they have been in contact with water.

4. Function and use

Welding helmets afford reliable protection for the eyes whilst electric arc welding. They offer permanent protection against UV/IR rays, heat & sparks in any state from the clear to dark. The protection shades of the welding helmets have been chosen to avoid eye damage caused by the welding arc.

Welding helmets allow the welder to see the point of arc strike more precisely. This leads to a real time saving. The helmet does not have to be flipped up and down during welding, both hands are kept free and because of the helmets lightweight fatigue is reduced.

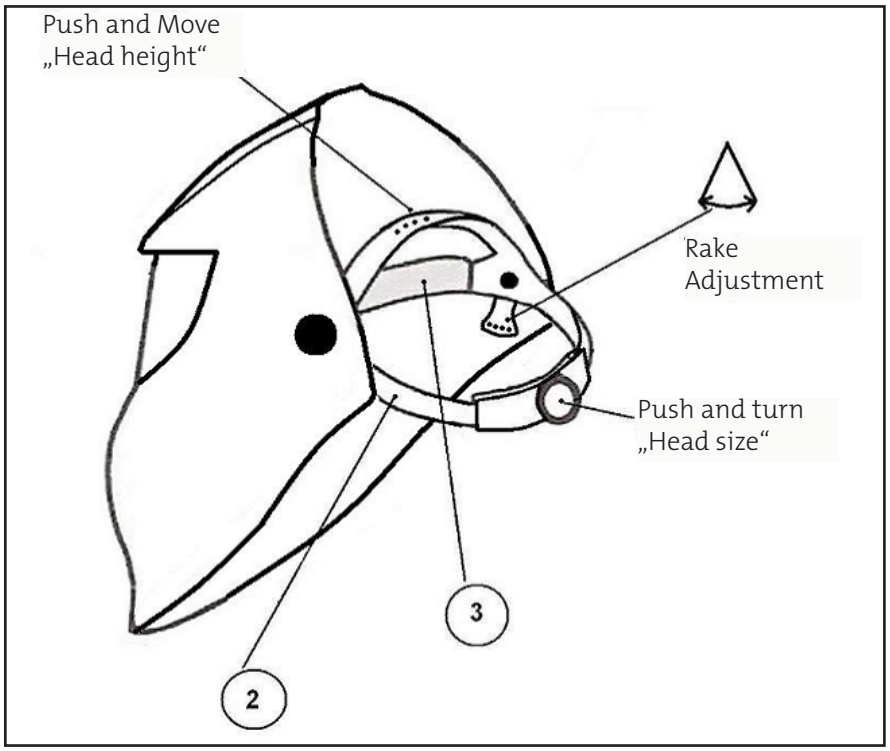
The helmet is available in 2 options. The helmet can be supplied with or without UVIR shade 5 side windows – the side windows giving the user a degree of side vision whilst still giving protection from the welding rays.

4.1 Operation

Before using the helmet for the first time the protective films must be removed from the front spatter lens. The films cannot be removed from the front spatter lens with the lens in place. Please follow the instructions below to remove the spatter lens, see chapter „5.1 Replacing the outer spatter lens“ on page 13

4.1.1 Adjustment of headgear

Welding helmets are equipped with a comfortable headgear that can be adjusted in three different ways.



4.1.2 Setting the shade

On the welding helmet, the welding shade is selected by pushing the "Weld/Grind" button.

2 ranges of welding shades are available:

- From DIN 5 to DIN 8, and
- From DIN 9 to DIN 13,

Select the welding shade by pushing the arrows on the Range button, up and down to clear or darken the welding shade.

The welding helmet also offers a Grinding Mode with the "Weld/Grind" button. The shade is then blocked in a shade DIN 4.

4.1.3 Recommended shadelevels

The most suitable shadelevel settings can be found on this chart or choose using your experience. This setting can also be made manually during the welding process.

Welding process or related techniques	Current internally in amperes 0,5 1 2,5 5 10 15 20 30 40 60 80 100 125 150 175 200 225 250 275 300 350 400 450 500
Flux core electrodes Fluxed stick electrodes	9 10 11 12 13 14
MIG Steels, alloyed steels, copper and its alloys etc.	10 11 12 13 14
MIG Aluminium, copper, nickel and other alloys	10 11 12 13 14 15
TIG	9 10 11 12 13
MAG Constructions steel, hardened and tempered steels, Cr-Ni-steel, Cr-steel and other alloyed steels	10 11 12 13 14 15
Electric arc compressed air joining	10 11 12 13 14 15
Plasma cutting	11 12 13
Micro-plasma welding	2,5 4 5 6 7 8 9 10 11 12 13 14 15

4.1.4 Setting the filter

To allow the filter to switch, the sensors on the front of the filter must not be covered. The filter then switches to the dark state when the arc strikes and to the clear state when it stops. The filter switches to the light state when the welding arc stops.

Once you have selected the Sensitivity MODE, push the UP arrow to the maximum setting. Depending upon the surrounding light the filter will switch to the dark state or will flicker (if the surrounding light is very low, the filter may not switch to the dark state). Push the DOWN arrow until the filter switches to the clear state.

The filter is now set to its optimum sensitivity (According to the surrounding light conditions).

4.1.5 Setting the delay

The clearing delay can be adjusted manually by selecting the Delay MODE and then by pushing the arrows on the "Ranges" button, up and down, to select a delay between a fast clear (0.1 s) up to a slow clear (1.9 s).

4.1.6 Testing settings

Before use of the welding helmet the auto darkening filter (ADF) and helmet needs to be checked according to the following procedure:

- Check outer protection lens is clean and can be seen through.
- Ensure the the sensors are covered in any way and are clean.
- Once these checks have been carried out you can now test the ADF.

Select the darkest setting (shade 13) and set the sensitivity to the highest setting. Now point the sensor towards a light source such as an overhead light, lamp etc. The ADF should now switch to the dark state (please note if the ADF is stored in a dark area away from light it may need to be left out in strong light for 20 minutes to absorb power, if after 20 minutes if the ADF does still not react then there is an issue with the sensor). Once the filter is in the dark state you can check the shade variation is functioning correctly, simply adjust the shade. By doing this, the shade should get lighter. If the shade does not appear to alter then you have an issue with the shade variation.

To test the delay function set the delay to the maximum setting. Now move the filter sensor away from the light source it should take 1 second to return to the light state, now alter the delay setting to the minimum and repeat the process, the time taken to return to the clear state should be 0.1 second. If the ADF does not react in this way then there is an issue with the delay function.

Testing the sensitivity. Set the sensitivity to minimum setting and point the ADF at the light source you used to test the other functions. If filter switches to dark state, move away until the filter returns to clear state. Slowly reduce the sensitivity until the filter switches to dark state (if it does not, then move closer to the light until it reacts). If the ADF does not react, then there is an issue with the light sensors.

If any of the functions fail during test or in use then please do not use the ADF and contact your local distributor.

5. Servicing and maintenance

If used properly the welding filter requires no further maintenance during its lifetime. The filter should be cleaned when changing the protection lenses.

This can be done by any of the following ways:

- Wipe with a clean, dry piece of cloth.
- Clean with a piece of smooth cloth moistened with pure alcohol.
- Clean with a commercial disinfectant

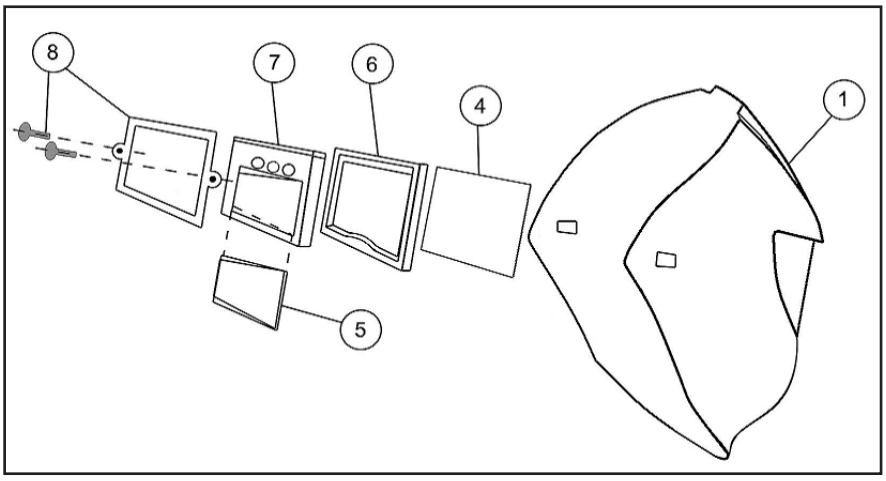
If a filter should be replaced on a welding helmet, use exclusively certified products. (DIN-CE marks). We recommend the use of CLOOS welding filters in all CLOOS Arc Flash helmets.

The filter itself contains no special or toxic products and can be disposed of in the same way as other electronic devices.

Always make sure that the helmet is equipped with an outside and inner lens (in front of the filter on the outside and on the inside behind the filter). These protection lenses must be replaced if damaged in any way (see overleaf). They are consumables and should checked and replaced regularly.

5.1 Replacing the outer spatter lens

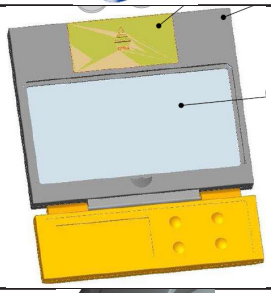
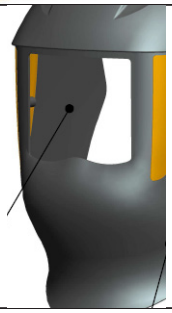
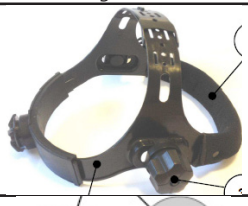
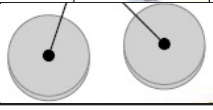
Ensure that the helmet is always equipped with an Outside Lens (before the filter, on the outside of the helmet) and an Inner Lens (behind the filter, inside the helmet). These protection lenses must be replaced if broken, damaged or covered with welding spatter to such an extent that vision is impaired. Inner and Outer Lenses are consumables and must be replaced regularly with certified CLOOS spare parts (CE marked).



To insert the new outer protection 4 lens the filter must be removed by unscrewing the two retaining screws 8 from the inside of the helmet 1.

The old protection lens can then be removed and the new lens inserted followed by the light seal cradle 6, ADF 7, inner protection lens 5 and then the ADF retaining frame 8 and finally replace the two retaining screws (see drawing).

6. Spare parts

Item	Designation	Part No.
	Welding helmet Cloos ArcFlash 4 evo	875006200
	CLOOS Arc Flash 4 evo automatic filter cpl	875006201
	CLOOS Arc Flash 4 evo protect glass out (10pc)	875006202
	CLOOS Arc Flash 4 evo protect glass in (10pc)	875006203
  orange = black	CLOOS Arc Flash 4 evo sideglass DIN S5 l+r CLOOS Arc Flash 4 evo sideglass black l+r	875006204 875006205
	CLOOS Arc Flash 4 evo headgear cpl.	875006206
	CLOOS Arc Flash 4 evo battery (2pc)	875006207

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