PAULSON
"Quality Products To Protect People" ™

Product Code	Part Number
ARC-E1 SK1 PCT	2189000
ARC-E1 SK2	2189001
ARC-E1 SK4	2189002
ARC-E1 SK7	2189003
ARC-E1 S2K5C	2189004
ARC-E1 S2K5H	2189005

For permitted spare parts please go to:

https://www.paulson-international.com/products/arc-flash-ppe/european-class-1-arc-shields/

User Information & User Manual

PAULSON Arc Shield Series ARC-E1

Face Shield for Arc Flash Protection

ANSI Z87.1; EN-166; EN 170; GS-ET-29

1. Introduction

This document provides all necessary information to use and maintain PAULSON Arc Shield Series Products ARC-E1. To be properly protected you must carefully study this manual before use! Failure to follow these instructions can result in a permanent impairment of sight or other serious personal injury. For the Declaration of Conformity (DoC) enter the article number as shown above to the search field at https://www.paulson-international.com.

2. General Warnings

- Use by skilled persons as per your Hazard and Risk Analysis only (see Chapter 16)
- Do not over expose the product to sunlight and do not use it for welding
- Do not expose to open fire
- Surface may get hot when exposed to electromagnetic radiation
- Only use as a kit
- Only use original replacement parts
- Make sure that your work place is sufficiently illuminated
- Free head movement and personal view may be affected

Insufficient packing may decrease the level of protection. Thus, follow the instructions as per Chapter 9.

The following warnings are standard warnings as per EN 166:

- Material which may come into contact with the wearer's skin could cause allergic reactions to susceptible individuals. (REMARK: PAULSON carefully selects the materials and is not aware of reported allergic reaction.)
- The PAULSON Arc Shield protects against high speed particles. When worn over standard ophthalmic spectacles, they may transmit impacts, thus creating a hazard to the wearer.

3. Field of Application

The PAULSON Arc Shield, together with additional PPE appropriate for the determined level of protection, protects the qualified user during live electrical work / live working or when staying in the vicinity of live electrical parts. The PAULSON Arc Shield provides safety to eyes and face only, if used as intended. They are not intended for electric arc welding and shall not be used and or stored close to arc welding work. They are also not intended to be used for protection against laser radiation.

4. Description

The PAULSON Arc Shield kits ARC-E1 consist of a face shield with a bracket for slotted caps (Kit 1) or a face shield with a cap bracket for slotted and un-slotted caps (Kit 2), or a face shield with a head gear (Kit 3 and Kit 4) or a face shield with attached chin protector and a head gear (Kit 5 and Kit 6).

The PAULSON Arc Shield only provides protection for eyes and face against the thermal and mechanical hazards of an arc flash when completely assembled with all components and worn together with additional PPE appropriate to the determined level of protection.

5. Assembly Instructions

General:

Mount the PAULSON Arc Shield of Kit 1 and Kit 2 only to a helmet that is approved for arc flash protection at the maximum expected level. In case of any doubt, contact your helmet manufacturer. Tighten the pivot screws, so that the Arc Shield easily can be raised or lowered and securely rests in any position.

Installation for Kit 1 (Slotted Caps)

Insert the black adapters (snap-in blades) of the PAULSON Arc Shield cap bracket into the accessory slots at the sides of the helmet. There will be an audible click when the black adapter is fully seated into the slot of the helmet.

Installation for Kit 2 (Slotted or Un-slotted Caps)

Center the PAULSON Arc Shield on the front of the helmet placing the front brim into the groove of the cap bracket; pull the elastomeric band over the top of the shell. Assure cap bracket is centered and has captured the helmet brim for a secure fit.

Installation for Kit 3 and Kit 4 (Visor combined with Headgear without chin protector)

Release the headband by turning the ratchet wheel at the back of the headgear. Put the headgear on your head and center it. Shorten or expand the upper band to adjust it to the best fitting wearing height. Tighten the ratchet to fit it to your head size. Please note, that the head circumference changes in the course of the day, readjust the headband accordingly.

Installation for Kit 5 and Kit 6 (Visor combined with Headgear with chin protector)

Release the headband by turning the ratchet wheel at the back of the headgear. Put the headgear on your head and center it. Shorten or expand the upper band to adjust it to the best fitting wearing height. Tighten the ratchet to fit it to your head size. Please note, that the head circumference changes in the course of the day, readjust the headband accordingly. Make sure that the chin protector is securely fastened to the visor. NOTE: Kit 5 and Kit 6 can provide the intended protection only, when the visor is used together with the chin protector.

6. Fitting Instructions for Arc Shield Assembly

Position the helmet or the headgear with the PAULSON Arc Shield on the head and pull the Arc Shield in the deployed, vertical position.

7. Usage

7.1. General

Always check the PAULSON Arc Shield assembly components before use. Make sure the PAULSON Arc Shield is securely fastened to the cap bracket or headgear with the cam locks. Adjust the bracket to the cap, if necessary. With the kits 5 and 6 also check the connection between the chin protector and the visor (by the cam locks).

NOTE: A headgear never can fully substitute a safety helmet. Due to national safety rules and company policies in some countries or companies, the usage of a helmet is mandatory. For the same reason safety glasses may need to be worn underneath the visor.

NOTE: An arc flash / electrical fault arc of high incident energies may cause permanent impairment of sight or other serious personal injury. PPE - Personal Protective Equipment should be considered as the last barrier if everything else fails. Consider higher protective equipment to gain extra safety buffers in case an accident generates more energy than originality calculated in the hazard and risk assessment. However, there should be no live working under conditions, which cannot be protected by Arc Protection

Class 2 products. The PAULSON Arc Shield ARC-E1 models, described in this document, are Class 1 products.

Despite of the fact that the PAULSON Arc Shield can be fixed in any position, while working at live parts or in the vicinity of live parts (live working), the intended protection can be provided only, when the visor is securely fixed and in the deployed position.

The best protection is achieved with helmets allowing a very close position of the shield to the face. Nevertheless, make sure that your nose or other parts of your head and face are kept clear from the inner shield surface.

For 360° protection add a hood or balaclava.

The operating temperature shall be between -10°C and 45°C.

7.2. ARC-E1 SK1 PCT, ARC-E1 SK2, ARC-E1 SK4, ARC-E1 SK7, ARC-E1 S2K5C, ARC-E1 S2K5H

The PAULSON Arc Shields ARC-E1 SK1 PCT, ARC-E1 SK2, ARC-E1 SK4, ARC-E1 SK7, ARC-E1 S2K5C and ARC-E1 S2K5H are Arc Protection Class 1 and VLT Class 0 products as per GS-ET-29 (see also 12. CE Marking). They provide the maximum light transmittance and 'improved color recognition' as per EN 170. At regular working conditions additional lighting may not be required. Check your color recognition before using this product under your specific working condition.

NOTE: Due to diverse workplace conditions check necessity for additional lighting when wearing the Arc Shield. Artificial illumination, especially illumination coming from fluorescent or LED lamps may affect your color recognition capabilities. In order to make sure that you are able to sufficiently recognize colors we recommend to carry out the following procedure at your workplace under the local illumination conditions:

1. *Collect pieces of cables with the same cable colors and codings used at your workplace;*
2. *Make sure, that you are in a safe area with an illumination (type and intensity) as at your workplace;*
3. *Clean your eye protector and inspect it for damages (don't hesitate to replace the eye protector, if necessary - read the user instructions);*
4. *Put the eye protector on as per user instructions;*
5. *Determine that you can identify each cable color and coding.*

In case you are encountering some coding differentiation problems, or a check of the sorting result shows sorting failures the illumination is inadequate. In this case the work may cause an accident, such as an arc flash.

NOTE: The PAULSON Arc Shield is designed to protect eyes and face against the mechanical and thermal hazards of an arc flash. However, it does not substitute prescription glasses, other eye & face PPE, respirator masks or further PPE required for sufficient protection as per the hazard and risk analysis and work safety regulations at a specific workplace. Ensure that the PPE is compatible with each other.

8. Cleaning

Clean and inspect the PAULSON Arc Shield after and prior to each use. Clean the PAULSON Arc Shield with a damp cloth unless heavily soiled. Should further cleaning be required, clean with mild soap and water and pat dry. If contaminated, sanitize with 91% Isopropyl Alcohol. Other disinfectants may impact the optical and/or protection properties of the material. If necessary, for cleaning and inspection, disassemble the PAULSON Arc Shield from the helmet bracket or headgear and, depending on the product model, from the chin protector. Assure that before usage, all components are correctly re-assembled!

9. Storing

For best results store the PAULSON Arc Shield in a protective bag as used by PAULSON. (*NOTE*: Various other packing materials may include solvents which may decrease the level of protection.) Store the PAULSON Arc Shield out of sunlight in a clean, dry environment. The storage temperature shall be between 0°C and 35°C.

Do not expose the PAULSON Arc Shield to arc welding operations.

10. Maintenance, Repair and Replacement

If the visor will not remain in the stowed position, re-tighten the pivot screws at the sides.

The PAULSON Arc Shield (incl. chin protector) must be replaced if:

- it is scratched or damaged,
- it has been exposed to an arc flash,
- it has been exposed to chemicals, oils or lubes *,
- it is damaged by mechanical impact *,
- it has reached its normal life span (see also Chapter 11),
- it has been exposed to high heat or over exposed to sun light *,
- it has been exposed to fire *.

* Damage caused by the aforementioned incidents may not be visible to the end user.

ATTENTION: The protection for the eyes and face against the thermal and mechanical hazards of an arc flash can only be provided by using original PAULSON components and replacement parts.

Disassembling the PAULSON Arc Shield and its chin protector

1. Unlock the cam locks at the cap bracket or head gear
2. Remove the PAULSON Arc Shield from the cap bracket or head gear
3. Depending on the Arc Shield model unlock the cam locks at the chin protector and remove the chin protector from the PAULSON Arc Shield

Assembling the PAULSON Arc Shield

1. To assemble a new PAULSON Arc Shield onto the PAULSON bracket or head gear, fit the upper slots in the shield over the cam locks and turn the cam locks into a vertical position for a secure fit.
2. For Arc Shield models designed to be worn with a chin protector assemble a new chin protector onto the PAULSON Arc Shield by fitting the lower slots in the shield over the cam locks and turn the cam locks into a vertical position for a secure fit.

11. Inspection Criteria and Determination of End of Useful Life

Inspect and replace any damaged or worn components. Never re-use the PAULSON Arc Shield, if it has been in an arc flash incident or if any replacement criteria delineated above is fulfilled.

The PAULSON Arc Shield is made from high quality materials by leading manufacturing processes and designed for long term use (5 years). Nevertheless, like any other product made from plastic or plastic alloys it suffers from typical combinations of daily work factors, such as UV radiation, contact with oil and lubes, scratches and mechanical impacts like all plastic products. Therefore, PAULSON recommends to replace the shield in case one of the replacement criteria listed in Chapter 10 is fulfilled. For reasons of safety the user is requested to track the time of use and to consider a safe time for replacement. This is a general safety recommendation and independent to the PAULSON arc protective technology.

12. Standards

All Arc Shield Kits are certified to DIN EN 166:2001 & 170: 2002, GS-ET-29: 2011-05 (Class 1 Open-Box test at 135 kJ/m^2, ~ 3,2 cal/cm^2) and comply with Annex II of PPE Regulation 2016/425. They are designed to meet ANSI Z87.1.

13. CE Marking

All ARC-E1 Models: **2C-1.2 PMC 1 B 8-1-0 3 CE 1883**

2	UV filter
C	Improved color recognition
1.2	Shade number (> = 74,4% VLT)
PMC	Manufacturer code (PAULSON Manufacturing Corporation)
1	Optical class
B	Medium energy impact (high speed test; 6 mm steel ball at 120 m/s at room temperature)

8-1-0	Resistance to short circuit electrical arc, Arc Protection Class 1 (Open-Box Test), Light Transmittance Class 0 (VLT > = 75 %) as per GS-ET-29
3	Protection against splashes of liquids
CE 1883	CE Mark with ID number of Notified Body as per PPE Regulation (EU) 2016/425, Article 17 required for Cat. III products.

14. Manufacturing Month and Lot Number

Underneath the pad printed label you find a sticker with work order number of your Arc Shield kit. It comprises the manufacturing date and the lot number within this month, e.g. '1808-4356', where the first two digits represent the manufacturing year (here 2018), the next two digits show the manufacturing month (here August), followed by a dash and a consecutive four digit lot number (here 4356).

15. Important Addresses

Manufacturer	**European Contact**	**Notified Body**
Paulson Manufacturing Corporation 46752 Rainbow Canyon Road CA 92592 Temecula United States of America Phone: +1 951 676-2451 Email: info@paulsonmfg.com Web: www.paulsonmfg.com	PAULSON INTERNATIONAL LTD. Max-Holder-Str. 23 60437 Frankfurt/Main Germany Phone: +49 (0) 69 90 50 585-0 Fax: +49 (0) 69 90 50 585-20 Email: info@paulson-international.com Web: www.paulson-international.com	ECS GmbH Hüttfeldstr. 50 73430 Aalen Germany Phone +49 7361 9757396 Fax. +49 7361 5562434 Email: info@ecs-eyesafe.de Web: www.ecs-eyesafe.de

16. Hazards Assessment

In order to select appropriate eye and face protecting devices, a hazard and risk analysis shall be carried out by trained professionals. The eye, face and/or head protector never shall be used in environments with a higher risk rating than the protection rating indicated on the marking. According to this Hazard Risk Assessment, the PAULSON Arc Shield shall be combined with further arc flash protective PPE such as helmets, garments, gloves, etc.

Inappropriate usage, e.g. at higher arc exposures, may cause severe damage to the life and health of the user.

17. REACH Declaration

The manufacturer ensures that the products described here, and their packaging contain no substances to be included in accordance with Article 57 of the REACH Regulation (EC) 1907/2006 with a concentration of more than 0.1 mass percent (w/w), pursuant to Article 33 of this Regulation.

18. Disposal

This product may be disposed as trash or recycled as “Mixed Plastics” as per the national and or regional waste disposal regulations.