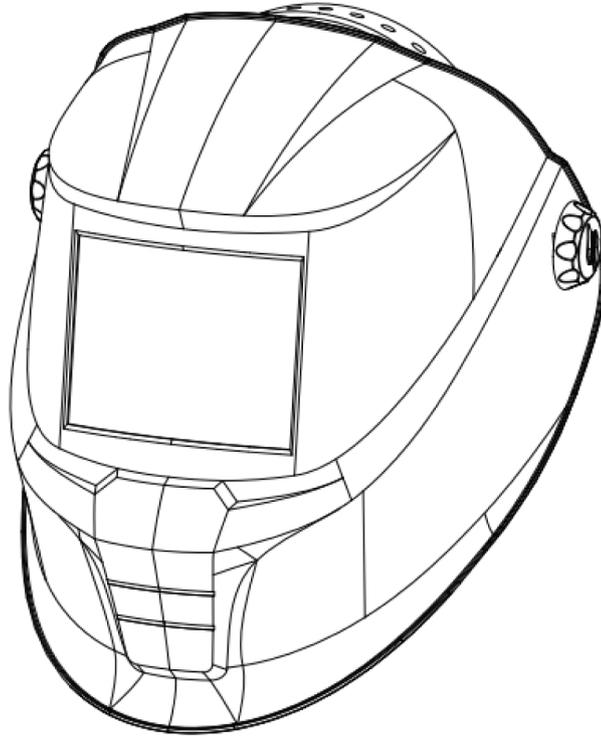




Savage A41



Welding helmet

Instruction manual and Spare parts list

PLEASE READ AND UNDERSTAND ALL INSTRUCTION BEFORE USE. RETAIN THIS MANUAL FOR FUTURE REFERENCE.

Complete User Manual at:

Manual Number: 0448 693 001
Revision Date: 2024-11-22
Revision Number: A
Language: English UK





EU DECLARATION OF CONFORMITY

According to the Council Directive (EU) 2016/425 entering into force 9 March 2016
This declaration of conformity is issued under the sole responsibility of the manufacturer.

Type of equipment

Welding Helmet

Type designation

Savage A41 Black	0700 504 100
Savage A41 Yellow	0700 504 101
Savage A41 Air	0700 504 102

Brand name or trademark

ESAB

Manufacturer or his authorized representative established within the EEA**Name, address, and telephone No:**

ESAB Group (UK) Ltd
322 High Holborn, London, WC1V 7PB
Great Britain
Phone: +44 1992 768515

The following harmonized standard in force within the EEA has been used in the design:

EN ISO 16321-1:2022 Eye and face protection for occupational use. Part 1: General requirements
EN ISO 16321-2:2021 Eye and face protection for occupational use. Part 2: Additional requirements for protectors used during welding and related techniques

EU Type Examination Certificate and Test Certificates issued by:

DIN CERTCO GmbH Gesellschaft für Konformitätsbewertung mbH
Alboinstrasse 56 12103
Berlin, Germany
Notified body: 0196
performed and issued the EU type-examination certificate

By signing this document, the undersigned declares as manufacturer, or the manufacturer's authorized representative, that the equipment in question complies with the safety requirements stated above.

Date

Signature

Position

A handwritten signature in black ink, appearing to be 'P. Burchfield', written over a horizontal line.

2024-10-22

Peter Burchfield

General Manager /
Equipment Solutions

CE 2024

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1 SAFETY

1.1 Meaning of symbols

As used throughout this manual: Means Attention! Be Alert!



DANGER!

Means immediate hazards which, if not avoided, will result in immediate, serious personal injury or loss of life.



WARNING!

Means potential hazards which could result in personal injury or loss of life.



CAUTION!

Means hazards which could result in minor personal injury.



WARNING!

Before use, read and understand the instruction manual and follow all labels, employer's safety practices and Safety Data Sheets (SDSs).



1.2 Safety instructions for auto-darkening welding helmet and filter

Before use

The auto-darkening welding helmet comes assembled, but before it can be used, perform the following:

- Adjust the helmet to fit the user properly.
- Check battery surfaces and contacts and clean them if necessary.
- Verify that the battery is in good condition and properly installed.
- Set up for delay time, sensitivity, and shade number for your application.

Usage

- The helmet is not suitable for laser welding.
- Never place the helmet and auto-darkening filter on a hot surface.
- The helmet will not protect against severe impact hazards.
- The helmet will not protect against explosive devices or corrosive liquids.
- Should the helmet not darken upon striking an arc, stop welding immediately and contact ESAB.
- Do not immerse the filter in water.
- The materials which may come into contact with the wearer's skin can cause allergic reactions in some circumstances.
- The filter shall only be used in conjunction with the inner cover lens.

Maintenance

- The helmet should be stored in a cool, dry, and dark place. Remove the battery before long-time storage.
- Protect filter from contact with liquid and dirt.
 - Clean the filter surface regularly by using clean water and a lint-free or microfiber cloth; do not use strong cleaning solutions. Always keep the sensors and solar cells clean using a clean lint-free tissue or microfiber cloth.
 - Regularly replace the cracked/scratched/pitted front cover lens. Avoid setting the helmet down directly on the cover lens to avoid premature damage to the cover lens.

- Never open or tamper with the filter. There are no user-serviceable parts inside.
- Do not make any modifications to either the filter or helmet, unless specified in this manual.
- Only use replacement parts that are specified in this manual.
- Unauthorized modifications and replacement parts will void the warranty and expose the operator to personal injury.
- Do not use any solvents on the filter screen or helmet components.

1.3 Safety precautions



WARNING!

These Safety Precautions are for your protection. They summarise precautionary information from the references listed in Additional Safety Information section. Before performing any installation or operating procedures, be sure to read and follow the safety precautions listed below as well as all other manuals, material safety data sheets, labels, etc. Failure to observe Safety Precautions can result in injury or death.



PROTECT YOURSELF AND OTHERS

Some welding, cutting and gouging processes are noisy and require ear protection. The arc, like the sun, emits ultraviolet (UV) and other radiation and can injure skin and eyes. Hot metal can cause burns. Training in the proper use of the processes and equipment is essential to prevent accidents. Therefore:

1. Wear a welding helmet fitted with a proper shade of filter to protect your face and eyes when welding or watching.
2. Always wear safety glasses with side shields in any work area, even if welding helmets face shields and goggles are also required.
3. Use a face shield fitted with the correct filter and cover plates to protect your eyes, face, neck and ears from sparks and rays of the arc when operating or observing operations. Warn bystanders not to watch the arc and not to expose themselves to the rays of the electric-arc or hot metal.
4. Wear flameproof gauntlet type gloves, heavy long-sleeve shirt, cuff less trousers, high-topped shoes and a welding helmet or cap for protection, to protect against arc rays and hot sparks or hot metal. A flameproof apron may also be desirable as protection against radiated heat and sparks.
5. Hot sparks or metal can lodge in rolled up sleeves, trouser cuffs, or pockets. Sleeves and collars should be kept buttoned and open pockets eliminated from the front of clothing.
6. Protect other personnel from arc rays and hot sparks with a suitable non-flammable partition or curtains.
7. Use goggles over safety glasses when chipping slag or grinding. Chipped slag may be hot and can fly far. Bystanders should also wear goggles over safety glasses.



FIRES AND EXPLOSIONS

Heat from flames and arcs can start fires. Hot slag or sparks can also cause fires and explosions. Therefore:

1. Protect yourself and others from flying sparks and hot metal.
2. Remove all combustible materials well away from the work area or cover the materials with a protective non-flammable covering. Combustible materials include wood, cloth, sawdust, liquid and gas fuels, solvents, paints and coatings paper, etc.
3. Hot sparks or hot metal can fall through cracks or crevices in floors or wall openings and cause a hidden smoldering fire or fires on the floor below. Make certain that such openings are protected from hot sparks and metal.
4. Do not weld, cut or perform other hot work until the work piece has been completely cleaned so that there are no substances on the work piece which might produce flammable or toxic vapors. Do not do hot work on closed containers, they may explode.

5. Have fire extinguishing equipment handy for instant use, such as a garden hose, water pail, sand bucket, or portable fire extinguisher. Be sure you are trained in its use.
6. Do not use equipment beyond its ratings. For example, an overloaded welding cable can overheat and create a fire hazard.
7. After completing operations, inspect the work area to make certain there are no hot sparks or hot metal which could cause a later fire. Use fire watchers when necessary.



ELECTRICAL SHOCK

Contact with live electrical parts and ground can cause severe injury or death. DO NOT use AC welding current in damp areas, if movement is confined, or if there is danger of falling. Therefore:

1. Be sure the power source frame (chassis) is connected to the ground system of the input power.
2. Connect the workpiece to a good electrical ground.
3. Connect the work cable to the workpiece. A poor or missing connection can expose you or others to a fatal shock.
4. Use well-maintained equipment. Replace worn or damaged cables.
5. Keep everything dry, including clothing, work area, cables, torch/electrode holder and power source.
6. Make sure that all parts of your body are insulated from both the work piece and from the ground.
7. Do not stand directly on metal or the earth while working in tight quarters or a damp area; stand on dry boards or an insulating platform and wear rubber-soled shoes.
8. Put on dry, hole-free gloves before turning on the power.
9. Turn off the power before removing your gloves.
10. Refer to ANSI/ASC Standard Z49.1 for specific grounding recommendations. Do not mistake the work lead for a ground cable.



ELECTRIC AND MAGNETIC FIELDS

May be dangerous. Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding and cutting current creates EMF around welding cables and welding machines. Therefore:

1. Welders having pacemakers should consult their physician before welding. EMF may interfere with some pacemakers.
2. Exposure to EMF may have other health effects which are unknown.
3. Welders should use the following procedures to minimise exposure to EMF:
 - a) Route the electrode and work cables together. Secure them with tape when possible.
 - b) Never coil the torch or work cable around your body.
 - c) Do not place your body between the torch and work cables. Route cables on the same side of your body.
 - d) Connect the work cable to the workpiece as close as possible to the area being welded.
 - e) Keep welding power source and cables as far away from your body as possible.



FUMES AND GASES

Fumes and gases, can cause discomfort or harm, particularly in confined spaces. Shielding gases can cause asphyxiation. Therefore:

1. Keep your head out of the fumes. Do not breathe the fumes and gases.
2. Always provide adequate ventilation in the work area by natural or mechanical means. Do not weld, cut or gouge on materials such as galvanized steel, stainless steel, copper, zinc, lead beryllium or cadmium unless positive mechanical ventilation is provided. Do not breathe fumes from these materials.
3. Do not operate near degreasing and spraying operations. The heat or arc can react with chlorinated hydrocarbon vapors to form phosgene, a highly toxic gas and other irritant gases.

4. If you develop momentary eye, nose or throat irritation while operating, this is an indication that ventilation is not adequate. Stop work and take necessary steps to improve ventilation in the work area. Do not continue to operate if physical discomfort persists.
5. Refer to ANSI/ASC Standard Z49.1 for specific ventilation recommendations.
6. **WARNING:** This product when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and in some cases cancer (California Health & Safety Code §25249.5 et seq.)



CYLINDER HANDLING

Cylinders, if mishandled, can rupture and violently release gas. A sudden rupture of cylinder valve or relief device can injure or kill. Therefore:

1. Locate cylinders away from heat, sparks and flames. Never strike an arc on a cylinder.
2. Use the proper gas for the process and use the proper pressure reducing regulator designed to operate from the compressed gas cylinder. Do not use adaptors. Maintain hoses and fittings in good condition. Follow manufacturer's operating instructions for mounting regulator to a compressed gas cylinder.
3. Always secure cylinders in an upright position by chain or strap to suitable hand trucks, undercarriages, benches, wall, post or racks. Never secure cylinders to work tables or fixtures where they may become part of an electrical circuit.
4. When not in use, keep cylinder valves closed. Have valve protection cap in place if regulator is not connected. Secure and move cylinders by using suitable hand trucks.



MOVING PARTS

Moving parts, such as fans, rotors and belts can cause injury. Therefore:

1. Keep all doors, panels, guards and covers closed and securely in place.
2. Stop engine or drive systems before installing or connecting unit.
3. Have only qualified people remove covers for maintenance and troubleshooting as necessary.
4. To prevent accidental starting of equipment during service, disconnect negative (-) battery cable from battery.
5. Keep hands, hair, loose clothing and tools away from moving parts.
6. Reinstall panels or covers and close doors when service is finished and before starting engine.



WARNING! **FALLING EQUIPMENT CAN INJURE**

- Only use lifting eye to lift unit. Do NOT use running gear, gas cylinders or any other accessories.
- Use equipment of adequate capacity to lift and support unit.
- If using lift forks to move unit, be sure forks are long enough to extend beyond opposite side of unit.
- Keep cables and cords away from moving vehicles when working from an aerial location.



**WARNING!
EQUIPMENT MAINTENANCE**

Faulty or improperly maintained equipment can cause injury or death. Therefore:

1. Always have qualified personnel perform the installation, troubleshooting and maintenance work. Do not perform any electrical work unless you are qualified to perform such work.
2. Before performing any maintenance work inside a power source, disconnect the power source from the incoming electrical power.
3. Maintain cables, earthing wire, connections, power cord and power supply in safe working order. Do not operate any equipment in faulty condition.
4. Do not abuse any equipment or accessories. Keep equipment away from heat sources such as furnaces, wet conditions such as water puddles, oil or grease, corrosive atmospheres and inclement weather.
5. Keep all safety devices and cabinet covers in position and in good repair.
6. Use equipment only for its intended purpose. Do not modify it in any manner.



**WARNING!
WELDING HELMET CRITERIA**

1. The protection according to Z87.1 is only given if it is ensured that the product is assembled according to the manufacturer's instructions.
2. The eye-protectors against high-speed particles worn over standard ophthalmic spectacles may transmit impacts, thus creating a hazard to the wearer.
3. If the impact letter followed by letter "T", you can use it for protection against high-speed particles at extremes of temperature. If the impact letter does not follow by letter "T", you should only use the eye protector for protection against high-speed particles at room temperature.
4. A visual inspection of the complete protector is necessary before each use.
5. This protector is appropriate for the headform 1-M.
6. Protector can affect the recognition of colours and/or signal light detection.
7. Protectors that have been subject to impact shall not be used and shall be discarded and replaced.
8. If the impact level symbols are not equal on both the lens/filter and the frame, then it is the lower level that shall be assigned to the complete protector.
9. The protections corresponding to the code numbers/letter 7, 9, CH are provided by the complete protector only if the respective symbols are equal on both the lens and the frame.
10. Not suitable for driving and road use.



CAUTION!
ADDITIONAL SAFETY INFORMATION

For more information on safe practices for electric arc welding and cutting equipment, ask your supplier for a copy of “Precautions and Safe Practices for Arc Welding, Cutting and Gouging”, Form 52-529.

The following publications are recommended:

- ANSI/ASC Z49.1 - “Safety in Welding and Cutting”
- AWS C5.5 - “Recommended Practices for Gas Tungsten Arc Welding”
- AWS C5.6 - “Recommended Practices for Gas Metal Arc welding”
- AWS SP - “Safe practices” - Reprint, Welding Handbook
- ANSI/AWS F4.1 - “Recommended Safe Practices for Welding and Cutting of Containers That Have Held Hazardous Substances”
- OSHA 29 CFR 1910 - "Safety and health standards"
- CSA W117.2 - "Code for safety in welding and cutting"
- NFPA Standard 51B, “Fire Prevention During Welding, Cutting, and Other Hot Work”
- CGA Standard P-1, “Precautions for Safe Handling of Compressed Gases in Cylinders”
- ANSI Z87.1, "Occupational and Educational Personal Eye and Face Protection Devices"

1.4 California proposition 65 warning



WARNING!

Welding or cutting equipment produces fumes or gases which contain chemicals known in the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)



WARNING!

This product can expose you to chemicals including lead, which are known to the state of California to cause cancer and birth defects or other reproductive harm. Wash hands after use.

For more information, go to www.P65Warnings.ca.gov.

2 INTRODUCTION

2.1 Introduction

Savage A41 is a light weight welding helmet intended for use in electric arc welding to protect against UV/IR rays, heat and sparks in any state from clear to dark. The protection shades of the welding helmets have been chosen to avoid eye damage caused by the welding arc. The helmet does not have to be flipped up and down during welding so both hands are kept free.

ESAB has an assortment of welding accessories and personal protection equipment for purchase. For ordering information contact your local ESAB dealer or visit us on our website.

2.2 Range of application

The Savage A41 welding helmets can be used for the following applications:

- Electrode
- MIG
- Mag
- TIG (>=5A)

The Savage A41 welding helmets are **not** suitable for use with laser systems and oxyacetylene (gas welding) applications. The welding filter must not be used for any other purpose other than arc welding. The helmet should never be used as sunglasses when driving as this could lead to incorrect identification of the color of traffic light.

The automatic welding filter operates well under extreme low light conditions and very strong sunlight.

2.3 Shade levels

Savage A41 welding helmets may be used only in connection with arc welding. The following table shows how to choose the most suitable shade level:

Welding process Orrelated techniques	Current internally in amperes													
	0.5	2.5	10	20	40	80	125	175	225	275	350	450		
	1	5	15	30	60	100	150	200	250	300	400	500		
E manual Flux cœ electrodes Flæed stick electrodes					9	10	11			12		13		14
MIG / Metal-Inert-Gas Argon (Ar/He) Steels, alloyed steels, Copper & its alloys etc.							10	11	12			13		14
MIG / Metal-Inert-Gas Argon (Ar/He) Aluminium, copper, nickel And other alloys.							10	11	12	13		14	15	
TIG / Tungsten-Inert Gas Argon (Ar/H2) (Ar/He) All weldable metals such as steels, aluminium, Copper, nickel and their alloys.					9	10	11		12	13				
MAG / Metal-active Gas (Ar/Co2O2) (Ar/Co2/He/H2) Construction Steel, hardened & tempered steels Cr-Ni-steel, Cr-steel & other alloyed steels.							10	11	12	13		14	15	
Electric arc compressed air joining (Melt joining) carbon electrodes (O2) Flame grooving compressed air (O2)									10	11	12	13	14	15
Plasma cutting (fusion cutting) All weldable metals see WIG Center and outer gas: Argon (Ar/H2) (Ar/He)							11		12		13			
Plasma cutting (Fusion cutting) Micro-plasma welding Center and outer gas: Agon (Ar/H2) (Ar/He)	2.5	5	6	7	8	9	10	11	12		13		14	15
	4													
	1	5	15	30	60	100	150	200	250	300	400	500		
	0.5	2.5	10	20	40	80	125	175	225	275	350	450		

Depending on the application conditions, the next highest or next lowest protection level can be used. The darker fields correspond to those areas in which the corresponding welding process cannot be used.

2.4 Certification and control labels



European conformity mark.

This confirms that the product fulfils the requirements of the PPE Regulation 2016/425.

2.5 Certification markings explanation

Welding helmet

EN ISO 16321: 16321 ESAB W15 E 1-M CE

16321 = Number of the standard

ESAB = Manufacturer code

W15 = Maximum shade number of welding filter

E = Impact level (120 m/s)

1-M = Head-form size

CE = European Conformity

Front/inside cover lens

EN ISO 16321: ESAB 1 E CE

ESAB = Manufacturer code

1 = Enhanced optical performance

E = Impact level (120 m/s)

CE = European Conformity

Auto-darkening filter

EN ISO 16321: 16321 ESAB W4/8-13 V2 CE

16321 = Number of the standard

ESAB = Manufacturer code

W = Welding filter

4 = Light state scale number

EN ISO 16321: 16321 ESAB W4/8-13 V2 CE

8-13 = Dark state scale numbers

V2 = Angle dependence of luminous transmittance class

CE = European Conformity

This helmet was tested and certified by:

DIN CERTCO Gesellschaft für Konformitätsbewertung mbH Alboinstrasse, 56 12103 Berlin, Germany,
Notified body number 0196

3 TECHNICAL DATA

Helmet dimensions l × w × h	240 × 210 × 294 mm
Weight	500 g
Angle dependence of luminous transmittance class	V2
ADF dimensions l × w × h	110 × 90 × 7.8 mm
Viewing area w × h	100 × 50 mm
Arc sensor	4
Light state	DIN 4
Grind state	DIN 4
Welding mode	Shade no. from 8-13
Shade control	Internal variable shade digital button control
Power on/off	Automatic on/off
Sensitivity control	Low — High Digital button control
UV/IR protection	Shade 13
Power supply	Solar cell. Replaceable battery; 1 × CR2450 lithium
Switching time	0.07 ms from light to dark
Grinding	Yes – external push button
Delay (dark to light)	0.1 ~ 0.9 s digital button control
Low amperage TIG rated	≥ 3 amps
Operating temperature range	-5 °C to +55 °C (14 °F to 131 °F)
Storage temperature range	-20 °C to +65 °C (-64 °F to 149 °F)
Approvals	CE (EN ISO 16321-1:2022 and EN ISO 16321-2:2021); ANSI Z87.1; CSA Z94.3

3.1 Shade guide

Shade numbers

Operation	Electrode size 1/32 in. (mm)	Arc current (A)	Minimum protective shade	Suggested ⁽¹⁾ shade no. (comfort)
Shielded metal arc welding	Less than 3 (2.5)	Less than 60	7	—
	3-5 (2.5-4)	60-160	8	10
	5-8 (4-6.4)	160-250	10	12
	More than 8 (6.4)	250-550	11	14
Gas metal arc welding and flux Cored arc welding		Less than 60	7	—
		60-160	10	11
		160-250	10	12
		250-500	10	14

Operation	Electrode size 1/32 in. (mm)	Arc current (A)	Minimum protective shade	Suggested ⁽¹⁾ shade no. (comfort)
Gas tungsten arc welding		Less than 50	8	10
		50-150	8	12
		150-500	10	14
Air carbon Arc cutting	(Light)	Less than 500	10	12
	(Heavy)		11	14
Plasma arc welding		Less than 20	6	6 to 8
		20-100	8	10
		100-400	10	12
		400-800	11	14
Plasma arc cutting	(Light) ⁽²⁾	Less than 300	8	8
	(Medium) ⁽²⁾	300-400	9	12
	(Heavy) ⁽²⁾		10	14
Torch brazing		–	–	3 to 4
Torch soldering		–	–	2
Carbon arc welding		–	–	14

Plate thickness

Operation	in.	mm	Suggested ⁽¹⁾ shade no. (comfort)
Gas welding	Under 1/8	Under 3.2	4 or 5
	Light 1/8 to 1/2	3.2 to 12.7	5 or 6
	Medium Over 1/2	Over 12.7	6 or 8
	Heavy		
Oxygen cutting	Under 1	Under 25	3 or 4
	Light 1 to 6	25 to 150	4 or 5
	Medium Over 6	Over 150	5 or 6
	Heavy		

⁽¹⁾ As a rule of thumb, start with a shade that is too dark, then go to a lighter shade which gives a sufficient view of the weld zone without going below the minimum. In oxyfuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line the visible light of the (spectrum) operation.

⁽²⁾ These values apply where the actual arc is seen. Experience has shown that lighter filters may be used when the arc is hidden by the workpiece.

Data from ANSI Z49.1-2005

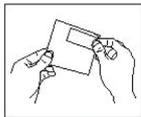
4 INSTALLATION

4.1 Replacing the outer spatter lens

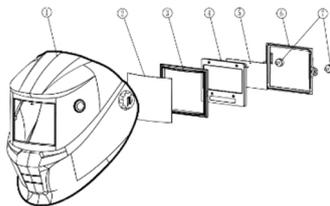
Ensure that the helmet is always equipped with an outside lens (before the filter, on the outside of the helmet) and an inner lens (behind the filter, inside the helmet). These protection lenses must be replaced if broken, damaged or covered with welding spatter to such an extent that vision is impaired.

Inner and outer lenses are consumables and must be replaced regularly with certified ESAB spare parts (CE marked).

Before using the Savage A41 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. See the following instructions for how to remove the spatter lens.



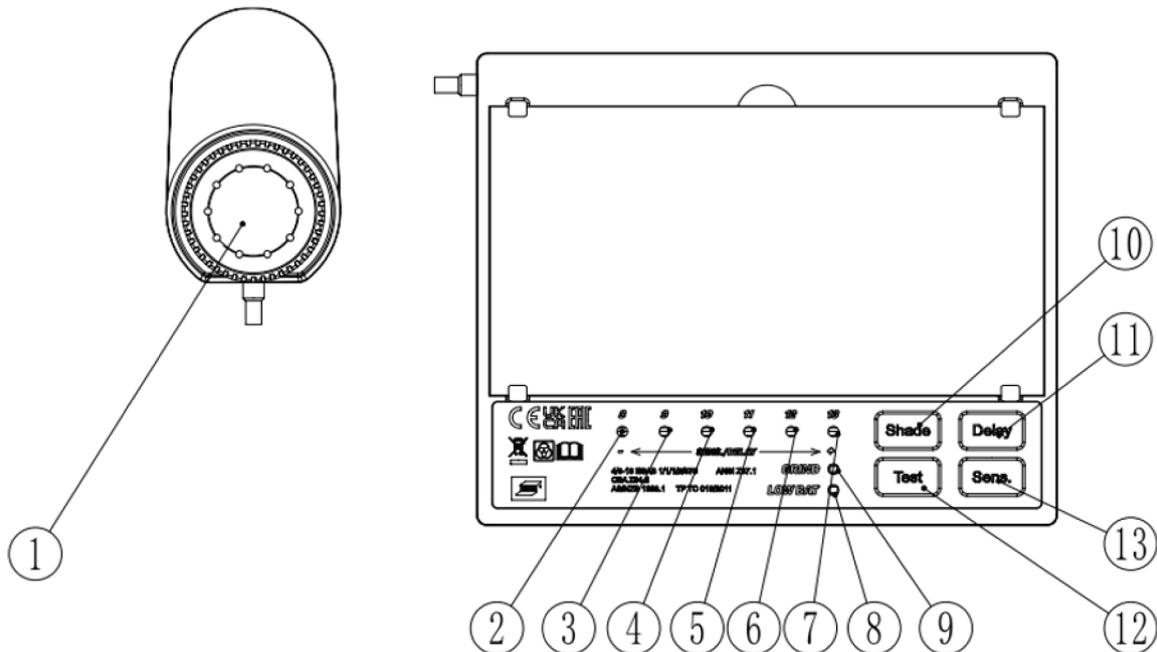
Removing the spatter lens

- 1) Unscrew the two retaining screws (8) from the inside of the helmet (1).
- 2) Remove the old protection lens and insert the new lens followed by the seal cradle (6), ADF (7), inner protection lens (5) and then the ADF retaining frame (8).
- 3) Replace the two retaining screws.

5 OPERATION

General safety regulations for handling the equipment can be found in the "SAFETY" chapter of this manual. Read it through before you start using the equipment!

5.1 Controls and indicators



5.2 Setting the shade

- 1) Press the *SHADE* button on the ADF (10).

The LED light will illuminate amber, corresponding with the selected shade setting (2) through (8).

5.3 Switching between grind/welding mode

- 1) Press the *GRIND* button located on the outside of the helmet.
 - To switch to GRIND mode from WELDING mode, press and hold the external button (1) for two seconds until the green grind LED flashes (9).
 - To switch to WELDING mode from GRIND mode, press and hold the external button (1) for two seconds until the green grind LED stops flashing (9).

5.4 Setting delay and sensitivity

- 1) To adjust the delay setting (the time it takes for the ADF to revert back to the passive state from active state), press the *DELAY* button (11) between a short delay (0.1 sec) at low level and a long delay (1.0 sec) at high level.

The LED lights will illuminate green, corresponding with the selected delay setting (2) through (9).

- 2) To adjust the sensitivity setting (the ADF sensor's ability to detect light), press the *SENS.* button (13) between low sensitivity (for high amperage applications and / or bright working environment) and high sensitivity (for low amperage and / or dim working environment).

The LED lights will illuminate green, corresponding with the selected delay setting (2) through (9).

5.5 Before use

Setting the filter to optimum sensitivity (according to the surrounding light conditions)

- 1) Set sensitivity (13) to the maximum setting (9).

Depending on the work lighting conditions, the filter will switch to the dark state or will flicker (if the work lighting conditions are very low, the filter may not switch to the dark state).

- 2) Press the sensitivity button (13) until the filter switches to the clear state.

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

Testing the ADF filter

- 1) Check that the outer protection lens is clean, undamaged, and clear.
- 2) Make sure the sensors located at the bottom front of the ADF are not covered in any way and are clean.
- 3) Press the *TEST* button to make sure that the ADF turns dark.

Once the basic ADF test function is complete, additional testing can be carried out:

- 4) Test the shade settings.
 - a) Set the shade to the darkest setting (shade 13) and set the sensitivity to the highest setting.
 - b) Point the ADF towards a light source such as an overhead light, lamp etc. The ADF should now switch to the dark state.
 - c) Check the shade variation by changing the shade button to cycle through the shade settings. If the shade does not appear to alter then the ADF is not functioning properly, and the helmet should not be used.
- 5) Test the delay function.
 - a) Set the delay to the maximum setting.
 - b) Move the filter sensor away from the light source. It should take 1 second to return to the light state.
 - c) Set the delay to the minimum setting and repeat the process, the time taken to return to the clear state should be 0.1 second. If the ADF does not react correctly, then the delay setting is not functioning properly.
- 6) Test the sensitivity function.
 - a) Set the sensitivity to minimum setting.
 - b) Point the ADF at the light source you used to test the other functions. If the ADF switches to dark state, move away until the filter returns to clear state.
 - c) Slowly set the sensitivity until the filter switches to dark state (if it does not darken, then move closer to the light until it reacts). If the ADF does not react then there is an issue with the light sensors and the helmet should not be used.

If any of the functions fail during test or in use, stop using the helmet and contact your local distributor.



WARNING!

The auto-darkening filters fitted in the Savage A41 helmets are not waterproof and will not work properly if they have been in contact with water.

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

Operating temperature of electronic filter -5° to $+55^{\circ}$ C.

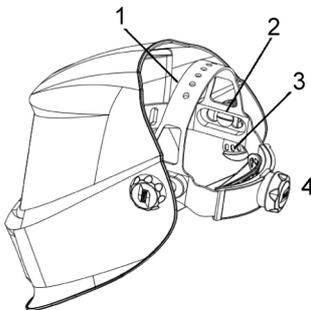
Materials that may get in contact with the wearers skin could cause allergic reactions to susceptible individuals.

5.6 Filter performance

To allow the ADF to function properly, the two arc-detecting sensors must remain unobstructed. These sensors are located on the bottom front of the ADF.

5.7 Adjusting the headgear

Savage A41 welding helmets can be adjusted in four different ways.



- 1) Push and move head height.
- 2) Longitudinal adjustment.
- 3) Rake adjustment.
- 4) Push and turn head size.

6 MAINTENANCE



CAUTION!

Repair and electrical work should be performed by an authorised ESAB service technician. Use only ESAB original spare and wear parts.



NOTE!

Regular maintenance is important for safe and reliable operation.

Savage A41 welding helmets should not be dropped. Do not place heavy objects or tools (hammers etc.) on or inside the helmet so as not to damage the electro-optical filter. 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. They are consumables and should be checked and replaced regularly.

The filter should be cleaned when changing the protection lenses. This can be done by any of the following ways:

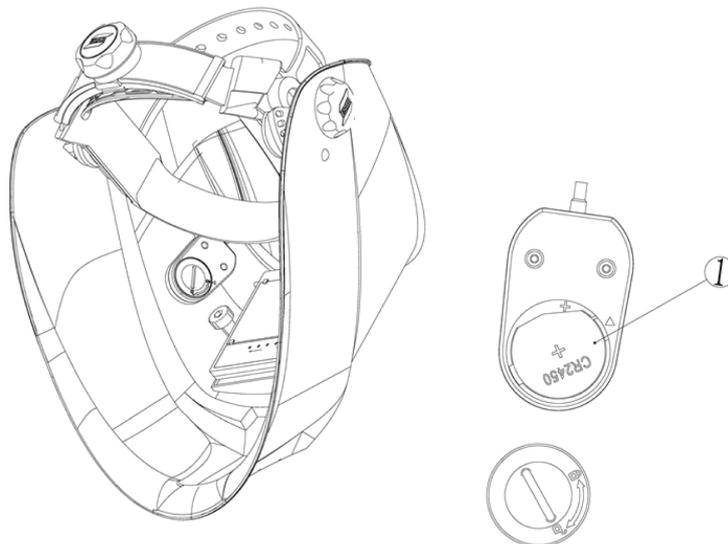
- Wipe with a clean, dry piece of cloth.
- Clean with a piece of smooth cloth moistened with pure alcohol.
- Clean with a commercial disinfectant.
- If used properly, the welding filter requires no further maintenance during its lifetime.

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

6.1 Replacing the battery

When the ADF LED turns red, the battery needs replacement. If the battery is not replaced when needed, the ADF won't work correctly and can cause harm to the operator.

- 1) Remove the battery from its cover from battery case using a coin or similar tool, turning in the direction of the arrow on the battery cover.
- 2) Take battery out and fit a new battery inside battery case. Note: "+" faces out.



- 3) Assemble battery cover onto battery case.

7 TROUBLESHOOTING

Keep the surface of the sensor clean.

Perform these checks and inspections before sending for an authorised service technician.

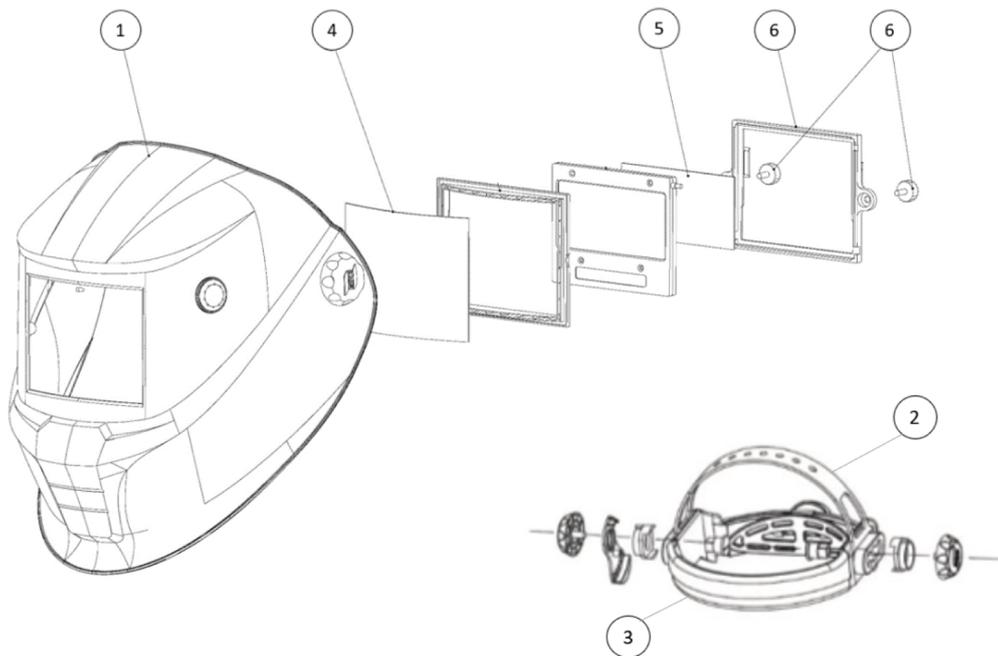
Type of fault	Possible cause	Corrective action
Irregular darkening or dimming	Wrong position of the headgear	Make sure the fore/aft adjustment to the headgear is set to the same position on both sides of the headgear. This ensures the correct and equal distance of the Auto-Darkeing Filter (ADF) to the user's eyes.
The ADF does not darken or flicker	The front cover lens is soiled or damaged	Change the cover lens.
	Sensors are soiled	Clean the surface of the sensor.
	Welding current is too low	Increase the sensitivity level.
	Problem with battery	Verify that the battery is in good condition and installed properly. Also, check battery surfaces and contacts and clean if necessary.
Slow response	The operating temperature is too low	Do not use at temperatures below -5 °C or 23 °F.
Poor vision	Front / inside cover lens and/or the filter is soiled	Change lens.
	Insufficient ambient light	Increase ambient light.
	Shade number is incorrectly set	Reset the shade number.
	The protective film is still on the outer cover lens	Ensure the protective film has been removed from the outer cover lens before first use.
Welding helmet slips	Headgear is not properly adjusted	Readjust the headgear.
	Headgear is damaged	Replace the headgear.

We recommend a use for a period of 5 years. The duration of use depends on various factors such as use, cleaning storage and maintenance. Frequently inspections and replacement if it is damaged are recommended.

UI: Product conforms to the standards EN ISO 16321-1:2022, EN ISO 16321-2:2021

APPENDIX

SPARE PARTS



Item	Ordering no.	Denomination
1	0700504100	Savage A41 8-13 black
1	0700504101	Savage A41 8-13 yellow
2	0700000483	ESAB head gear
3	0700000414	Sweat band
4	0700000010	Front cover lens 1.2 mm thick polycarbonate
5	0700000482	Inside cover lens
6	0700000419	Lens retainer with screws



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