Swarm A-20

Auto Darkening 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 715 001
Revision Date: 2025-02-14
Revision Number: B
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

Swarm A10	0700102009
Swarm A20	0700102010

Brand name or trademark
ESAB

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

ESAB AB
Lindholmsallén 9, Box 8004, SE-402 77 Göteborg, Sweden
Phone: +46 31 50 90 00, Fax: +46 31 50 92 22

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:
CCQS Certification Services Limited
Block 1 Blanchardstown Corporate Park
Ballycoolin Road, Blanchardstown
Dublin 15, D15 AKK1
Ireland
Notified Body 2834
Certificate No: CE-PC-240712-316-01-9A, CE-PC-240712-316-02-9A, CE-PC-240712-316-03-9A, CE-PC-240712-316-04-9A, CE-PC-240712-316-05-9A, CE-PC-240712-316-06-9A
Certs Issued: 2025-02-11 Expires: 2030-02-10

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
2025-02-13	Peter Burchfield	General Manager / Equipment Solutions

CE 2025

1 SAFETY

WARNING!
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 judgment, the manufacturer assumes no liability for its use.

WARNING!
- **INGESTION HAZARD:** This product contains a button cell or coin battery.
- **Death** or serious injury can occur if ingested.
- A swallowed button cell or coin battery can cause **Internal Chemical Burns** in as little as **2 hours**.
- **KEEP** new and used batteries **OUT OF REACH OF CHILDREN**.
- **Seek immediate medical attention** if a battery is suspected to be swallowed or inserted inside any part of the body.

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

The **Swarm A-20** is an auto-darkening welding helmet intended for use in most welding processes.

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.

2.1 Auto-darkening filter marking explanation

ADF

3/11 GX 1/1/1/2/379

3	Light state
11	Dark state
GX	Manufacturer identification
1	Optical class
1	Diffusion of light class
1	Variation in luminous transmittance class
2	Angle dependence class
379	According to EN379 testing standard

GX Z87 W3/11

GX	Manufacturer identification
Z87	ANSI testing standard
W3/11	Light state/dark state

GX Z94.3 W3/11

GX	Manufacturer identification
Z94.3	CSA testing standard
W3/11	Light state/dark state

Helmet shell

GX EN175 F

GX	Manufacturer identification
EN175	Testing standard
F	Low energy impact level (45 m/s)

GX Z87

GX	Manufacturer identification
Z87	ANSI testing standard

GX Z94.3

GX	Manufacturer identification
Z94.3	CSA testing standard

Front cover lens

GX 1 B	
GX	Manufacturer identification
1	Optical class
B	Impact level (120 m/s) according to EN166 testing standard

Inside cover lens

GX 1 F	
GX	Manufacturer identification
1	Optical class
F	Low impact level (45 m/s) according to EN166 testing standard

Notice regarding markings
If the symbols of the marking are not common to different parts of the protection equipment, the lower protection level shall be assigned to the complete protection equipment.

3 TECHNICAL DATA

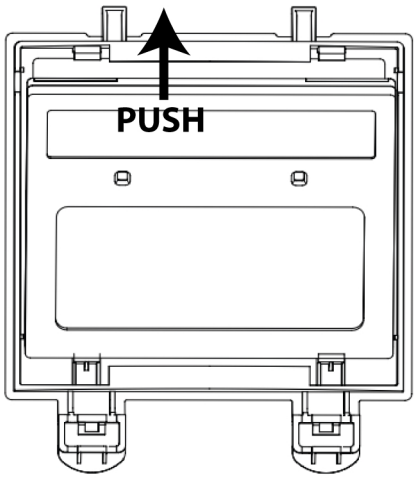
Viewing Area	93 × 43 mm
Cartridge size	110 × 90 mm
Arc sensor	2
UV/IR protection	DIN 13
Light state	4
Dark state	External, variable shade 9-13
Sensitivity control	Low — High, by indefinitely dial knob
Switching time	≤0.1 ms, from light to dark
Delay control	0.1-0.8 s, by indefinitely dial knob, from dark to light
Power supply	Solar cell and replaceable 1×CR2032 lithium battery
TIG AMP rating	DC≥10, AC≥10
Operating temperature	-5°C to +55°C
Storage temperature range	-20°C to +70°C
Grind functions	Yes
Low voltage indication	Yes

4 INSTALLATION

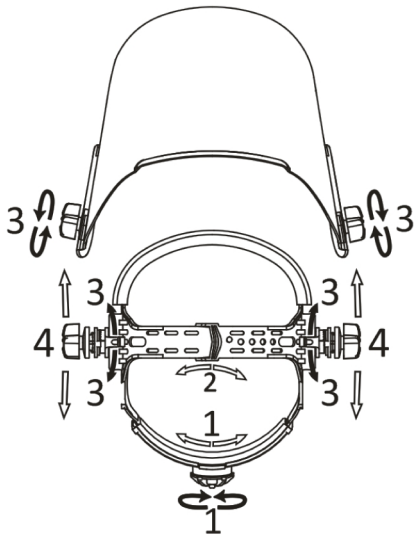
4.1 Installing and removing ADF

1) Remove the front cover lens.

2) Push the side of the ADF holder to remove the ADF from the bracket.



4.2 Adjusting the fit of the helmet



Adjusting the circumference of the headband

1) Adjust the headgear diameter with the ratcheting twist knob on the back. Push the knob in to unlock the mechanism and twist:
   a) clockwise to tighten.
   b) counterclockwise to loosen.

2) Adjust the height of the headgear by using the pinlock strap (2):
   a) Push the pin out.
   b) Slide the strap into position.
   c) Push the pin into the nearest pin hole location.

Adjusting view angle position

1) Loosen the knob (3) on both sides of the helmet.

2) Change angle locking mechanism to the desired tilt position.

   There are five available positions, with helmet set to the middle position by default.

3) Tighten the knobs until snug.

   The helmet should still swing up, but it should not drift downward when in place for welding.

Adjusting the distance between the ADF and face

1) Loosen the knobs (3) on both sides of the helmet until the headband can move back and forth freely.

2) Reposition the headband (4) at one of the three slots as desired (the headband is positioned in the middle by default).

   This should be done one side at a time and both sides should be located at the same position for proper auto-darkening filter operation.

4.3 Preparing the helmet before welding

1) Remove the protective film from **new** exterior and interior protective lenses.

2) Press the **TEST** button to ensure the battery is able to power the Auto-Darkening Filter (ADF).

3) Inspect the ADF for damage or discoloration.

4) Clean the outer and inner protective lenses and inspect for scratches or other damage. If scratches or other damage are evident, replace those parts before use.

5) Inspect all parts of the helmet for signs of excessive wear or damage. Do not use if there is any signs of damage and replace those parts immediately.

6) Ensure all moving parts and latches are tight and secure.

7) Always choose the appropriate shade for the type of welding in which you are engaged.

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 Shade control

The Swarm A-20 uses a variable shade 9 to 13, and is adjustable based upon the required welding. Refer to the following table to determine the correct shade setting for your application. The welding helmet can also be used as a face protector when grinding. The Grind Mode prevents filter lens from auto-darkening.

Welding Process	Arc Current (Amperes)																			
	1.5	6	10	15	30	40	60	70	100	125	150	175	200	225	250	300	350	400	450	500	600
SMAW	8							9	10		11		12			13			14		
MAG	8							9	10		11			12			13				14
TIG	8				9			10		11			12			13					
MIG (heavy)	9									10		11			12		13		14		
MIG (light)	10											11		12			13		14		
PAC	9										10	11		12			13				
PAW	4		5		6		7		8		9		10		11		12				
Note	• SMAW - Covered electrodes • MAG - Metal Arc Welding • TIG - Gas Tungsten Arc Welding • MIG (Heavy) - MIG with heavey metals												• MIG (light) - MIG with light alloys • PAC - Plasma jet cutting • PAW - Microplasma Arc Welding							

5.2 Sensitivity control

The sensitivity can be set to LOW, HIGH or any setting in between by using the adjustable **Sensitivity** dial located inside the Automatic-Darkening Filter (ADF) cartridge.

Selections between LOW and HIGH are suitable for most indoor and outdoor welding operations.

- The LOW setting suits excess ambient light or with another welding machine close by.
- The HIGH setting suits low amperage welding and welding in areas with low light conditions, especially low amperage argon arc welding.

5.3 Delay control

When welding ceases, the viewing window automatically changes from dark back to light but with a preset delay to compensate. The delay time can be set to MIN (0.1 sec), MAX (0.8 sec), or any setting in between by using the adjustable **DELAY** dial located inside the ADF cartridge.

Selections between MIN and MAX are suitable for most indoor and outdoor welding operations.

- The MIN delay suits spot or short welds.
- The MAX delay suits heavy current welding and reduces eye fatigue from the arc.

6 MAINTENANCE

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

CAUTION!
Do not use corrosive solvent or gasoline to dilute detergent.

NOTE!
Regular maintenance is important for safe and reliable operation.

- Clean the filter using tissues, lens wiping paper or clean cotton cloth and detergent.
- Clean out shell of weld cap and sweatband using neutral detergent.
- Replace outside and inside protector and sweatband regularly.

6.1 Cleaning and disinfecting the helmet

1) Clean the welding filter with a clean lintfree tissue or cloth.

NOTE!
Do not immerse the helmet into water and do not use solvents.

2) Keep the sensors, solar cell and filter lens clean.

3) Clean filter cartridge and helmet shell by using a soapy water solution and soft cloth.

NOTE!
Do not use solvents or abrasive cleaning detergent.

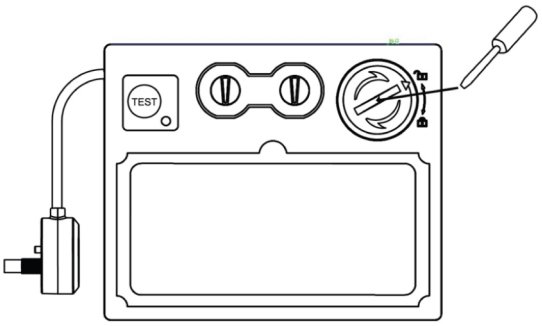
4) Switch the product to Grind Mode and put it in a clean, dry location for storage.

6.2 Replacing the battery

The ADF uses the CR2032 battery and generally lasts for around 2000 hours of welding use.

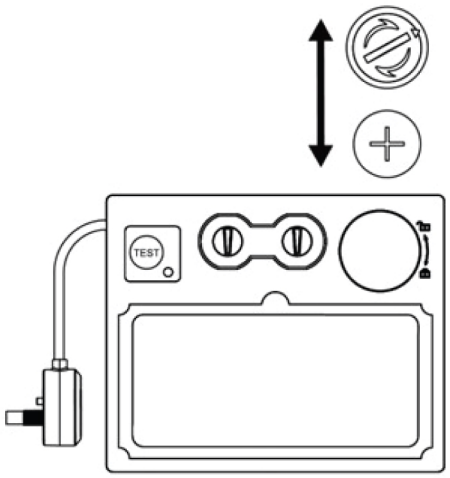
If the ADF LED indicator light is red, replace the battery before use according to the following instructions.

1) Insert a small tool or coin into the slot of the battery cover, and rotate the battery cover counterclockwise to the unlocking mark position.



2) Remove the battery cover and replace the battery.

   The positive(+) side of the battery faces up (toward inside of helmet).



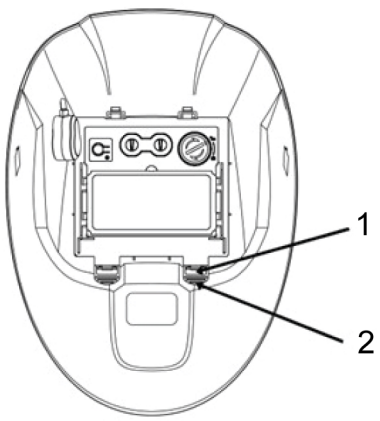
Dispose of used cells in accordance to the law and regulations of your local government. The ADF must also be disposed of in accordance with electronic waste regulations in your area.

6.3 Replacing the front cover lens

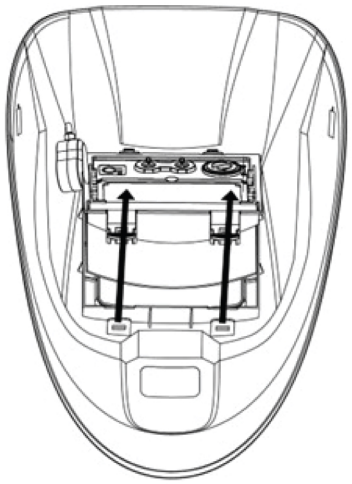
Replace the front cover lens if it is damaged (cracked, scratched, pitted or dirty). Remove the old front cover lens by pressing the locking tab. Take the old front cover lens out and remove any protective film before installing the new one.

1) Push the locking tab (1) out of the ADF holder.

2) Press the ADF holder (2).



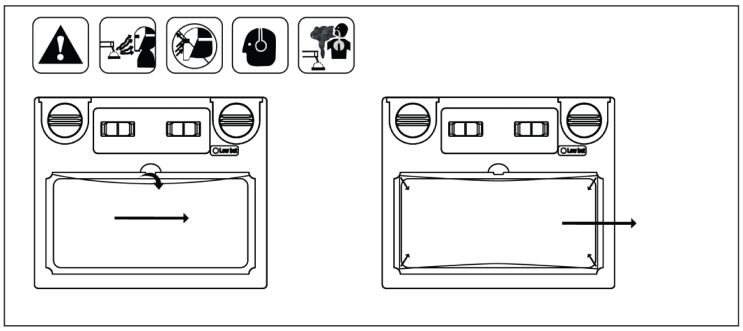
3) Take the ADF holder and front cover lens out of the helmet, and replace the cover lens.



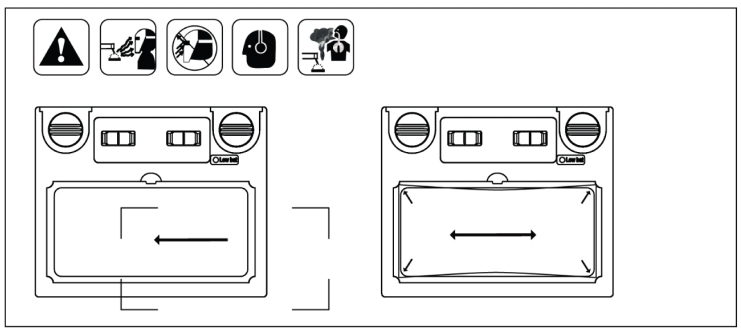
6.4 Replacing the inner cover lens

Replace the inner cover lens if it is damaged (cracked, scratched, pitted or dirty). Place your finger or thumb into the recess and flex the inner cover lens upwards until it releases from one edge. Remove any protective film before installing the new one.

1) Lift up one edge of the inner cover lens and pull the cover lens away from the filter.



2) Remove the protective film on the new inner lens cover, feed one side of the lens cover.



7 TROUBLESHOOTING

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

Type of fault	Possible cause	Corrective action
Difficult to see through the autodarkening filter (ADF)	The protective film is on the front or inside cover lens	Remove protective film.
	The front or inside protective cover lens is dirty or damaged	Clean or replace front/inside cover lens.
	The ADF is dirty	Clean filter lens.
The ADF does not darken when arc is struck	Sensors or solar panel are blocked	Make sure sensors or solar panel are exposed to weld arc without blocking
	Sensitivity is set to LOW	Adjust sensitivity to required level.
The ADF darkens without arc	Sensitivity is set to HIGH	Adjust sensitivity to required level.
The ADF remains dark after welding	Delay is set to MAX	Adjust delay to required level.

8 ORDERING SPARE PARTS

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

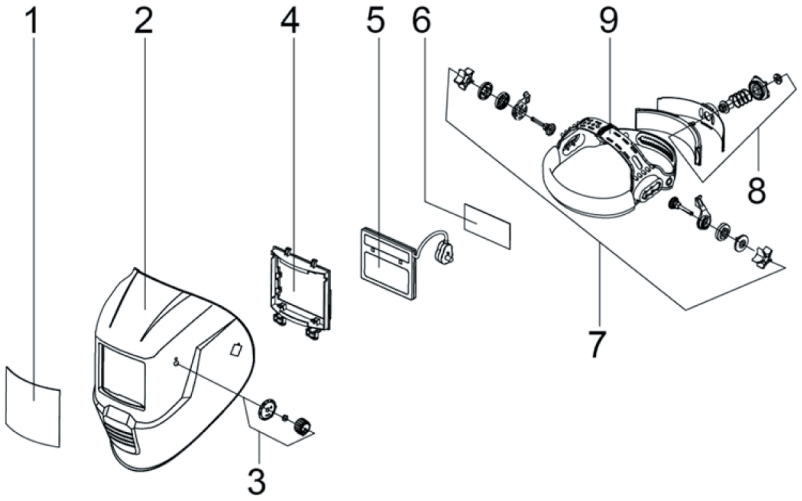
According to PPE Regulation 2016/425/EU
The described PPE satisfies the requirements of European Directives 2001/95/EC and will continue to comply with the requirements of (EU) Regulation 2016/425 from 21/04/2018.

The Swarm A-20 is designed and tested in accordance with the standards **ANSI Z87.1-2020**, **CSA Z94.3-2020**, **EN 379:2003+A1:2009**, **EN175:1997-08** and **EN166:2001**. On completion of service or repair work, it is the responsibility of the person(s) performing the work to ensure that the product still complies with the requirements of the above standards.

Spare parts and wear parts can be ordered through your nearest ESAB dealer, see **esab.com**. When ordering, please state product type, serial number, designation and spare part number in accordance with the spare parts list. This facilitates dispatch and ensures correct delivery.

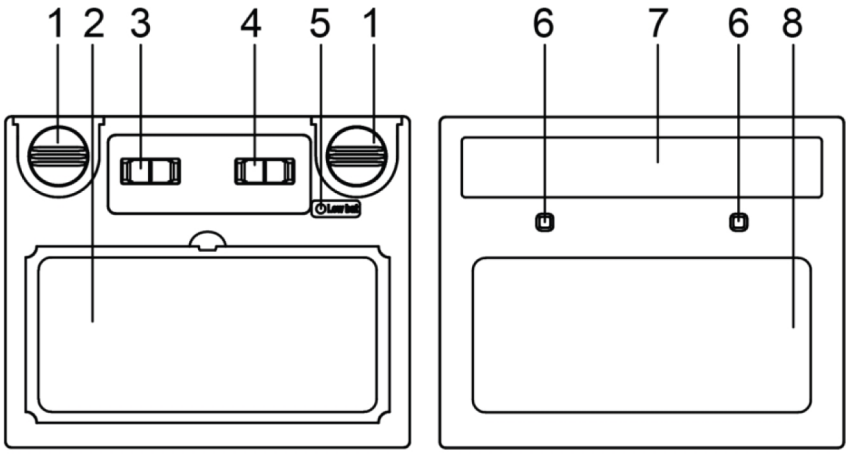
APPENDIX

SPARE PARTS



Item	Denomination
1	Front cover lens
2	Helmet shell
3	Shade control
4	ADF holder
5	ADF
6	Inside cover lens
7	Headband angle adjusting knob
8	Headband diameter adjusting knob
9	Headband height adjusting pin

SPARE PARTS - ADF



Item	Denomination
1	Shade control
2	Self-test button
3	Low voltage indicator
4	Delay control knob
5	Sensitivity control knob
6	LCD
7	Lithium battery
8	Arc sensor
9	Solar panel
10	UV/IR filter

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