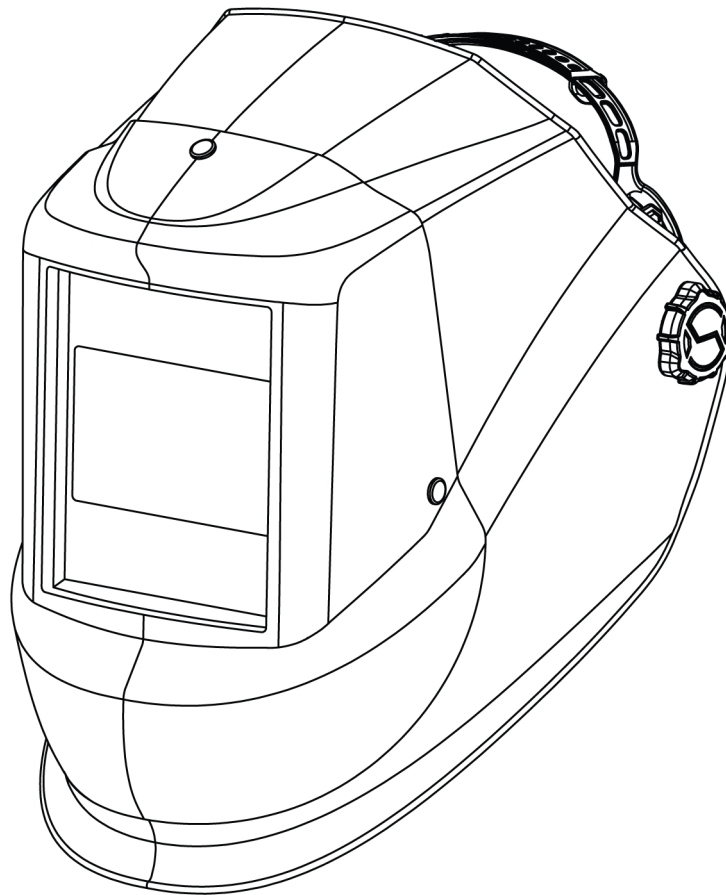




L30



Laser 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 730 001
Revision Date: 2025-11-07
Revision Number: C
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

L30 Laser Welding Helmet

0700 700 100

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
402 77 Gothenburg, Sweden

Phone: +46 (0) 31 50 90 00

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:

ECS GmbH – European Certification Service

Hüttfeldstrasse 50
73430 Aalen, Germany

Notified body number 1883

Performed and issued the EU type-examination certificate C4236.1ESAB

Expiry 2029/12/25

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

2025-07-10

Peter Burchfield

General Manager /
Equipment Solutions

CE 2025

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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 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:

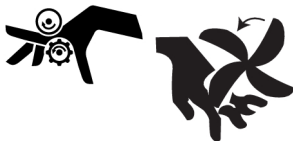
1. Keep your head out of the fumes. Do not breathe the fumes and gases.
2. Always provide adequate ventilation in the work area by natural or mechanical means. Do not weld, cut or gouge on materials such as galvanized steel, stainless steel, copper, zinc, lead beryllium or cadmium unless positive mechanical 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"

1.3 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 **L30** is a laser 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 Markings and standards applied

Adjustable darkening filter with laser protection

16321 ESAB W2.5/3/3.5/4/5 V2 900-1080 D LB7 IR LB8 CE

ESAB W2.5/3/3.5/4/5 S 900-1080 OD7 C5 PS3 ISO 19818-1 ESAB

Protection shield (Carbon)

16321 ESAB W15 900-1100nm D LB7 IR LB8 CE

ESAB AS/NZS 1337.1 B 1000-1100 OD7 C5 PS3 ISO 19818-1 ESAB E

according to EN 207:2017 with:

900-1100 nm	Applicable laser wave length range
ESAB	Manufacturer
D LB7	Laser protection rating of LB7 for mode “D” (CW mode) according to EN 207:2017, clauses 3.3, Table 1 and 6.1
IR LB8	Laser protection rating of LB8 for mode “I” (HPP mode) “R” (Q mode) according to EN 207:2017, clauses 3.3, Table 1 and 6.1
CE	CE as per PPE Regulation (EU) 2016/425, Article 17 required for Cat. II products.

The letter “D” denotes a CW laser having a pulse length of >0.25 s.

The letter “I” denotes a pulsed laser, having a pulse length between 1 µs and 0.25 s.

The LB rating specifies the damage threshold of the filter material at maximum power or energy density.

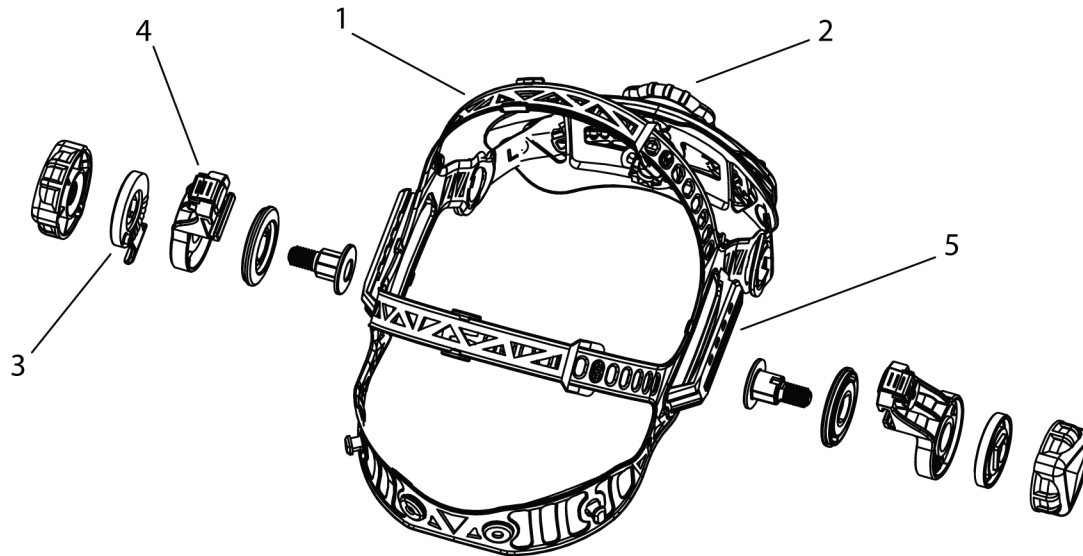
The Helmet does not only absorb (filter) laser light of a given wavelength, but is also able to withstand a direct hit from the laser without breaking or melting, for the specified time period of >5 s in CW mode or for 50 pulses (s. Annex: Test Report).

3 TECHNICAL DATA

Helmet shell	Nylon
Filter dimension	114 × 133 × 9 mm (4.5" × 5.25" × 0.35")
Viewing area	100 × 60 mm (3.94" × 2.36")
Shell front plate	Carbon Fiber
Filter	LCD with laser filter
Shade number	W2.5~5
Low battery indicator	YES
Visible light transmission	25% (W2.5)
	15% (W3)
	10% (W3.5)
	5% (W4)
	2% (W5)
Red light (650 nm) transmittance	>15%
Wavelength 900-1000 nm	OD6+
Wavelength 1000-1080 nm	OD7+
Wavelength @1064 nm	OD10+
Adjustable darkening filter (XA-1005LP) 900-1080 nm	D LB7 IR LB8 CE
Protection shield (carbon) 900-1100 nm	D LB7 IR LB8 CE
Outer protection lens Inner protection lens	114 × 133 × 1 mm (4.49" × 5.24" × 0.04") 105.8 × 65.8 × 1 mm (4.16" × 2.59" × 0.04")
Operating temperature	-10 °C to 65 °C (14 °F to 149 °F)
Storage temperature	-20 °C to 85°C (-4 °F to 185 °F)
Warranty	1 year
Certifications	EN 207:2017 EN ISO 16321-1:2022 EN ISO 16321-2:2021 AS/NZS 1337.1:2010 AS/NZS 1338.1:2010 AS/NZS ISO 19818.1:2023

4 INSTALLATION

4.1 Adjusting the headgear



There are four headgear adjustments: depth, crown/circumference, helmet angle, and helmet-to-face distance.

Depth adjustment

- 1) If the headband is riding too high or too low on your head, adjust the straps (1) which passes over the top of your head.
 - a) Release the end of the band by pushing the locking pin out of the band's hole.
 - b) Slide the two portions of the band to a greater or lesser width as required.
 - c) Push the locking pin through the nearest hole.

Crown/circumference adjustment

- 1) Rotate the knob (2) on the back of the headband to make the overall circumference of the headband larger or smaller.

This can be done while wearing the helmet and allows easy micro-level tension adjustment to keep the helmet firmly on the head without it being too tight.

Helmet angle adjustment

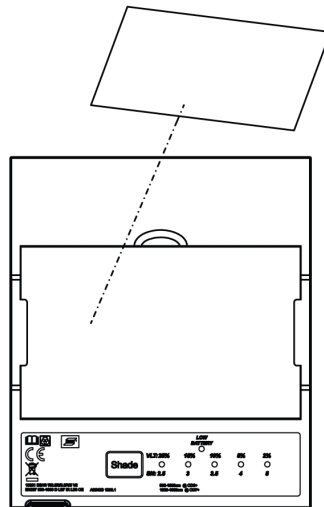
- 1) The tilt adjustment is located on the right side of the helmet. Loosen the right headgear tension knob (3) and adjust the lever (4) forward or back to the desired position.
- 2) Retighten the right headgear tension knob.

Distance adjustment

- 1) Press and hold the slider (5) on both sides, to slide the headgear back and forth within the helmet.
- 2) Ensure the slider is locked back into position and make certain the distance between the lens to both eyes is equal to allow proper vision.

4.2 Installing optional magnifying lens

- 1) Slide the magnifying lens into the helmet retaining brackets with the flat side of the magnifier facing the filter.
- 2) Align the magnifying lens with the filter assembly.



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!

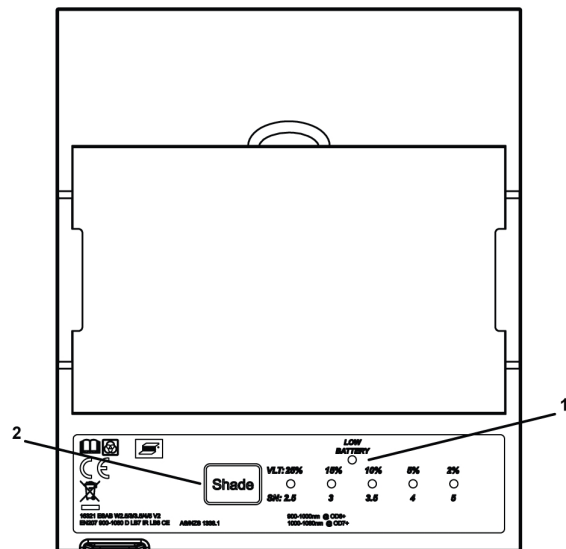
5.1 Helmet controls


NOTE!

In accordance with EN207, the filter is NOT removeable or replaceable.

Understanding the information panel

- 1 Low battery indicator
The indicator illuminates red when the battery power is low. REPLACE the single CR2032 battery as soon as the LED illuminates.
- 2 Variable shade control



5.2 Variable shade control


NOTE!

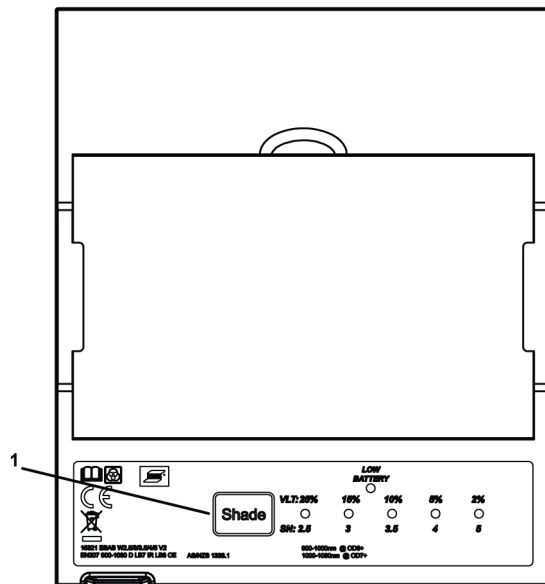
In accordance with EN207, the filter is NOT removeable or replaceable.

This helmet features adjustable shade control, allowing the user to set the darkness of the filter according to their comfort and based on the laser welding activity.


NOTE!

This is NOT an "Automatic Darkening Filter, as the filter remains in the chosen dark state.

- 1) Press the “SHADE” button to illuminate the desired setting on the LED scale. The filter will darken to that shade.



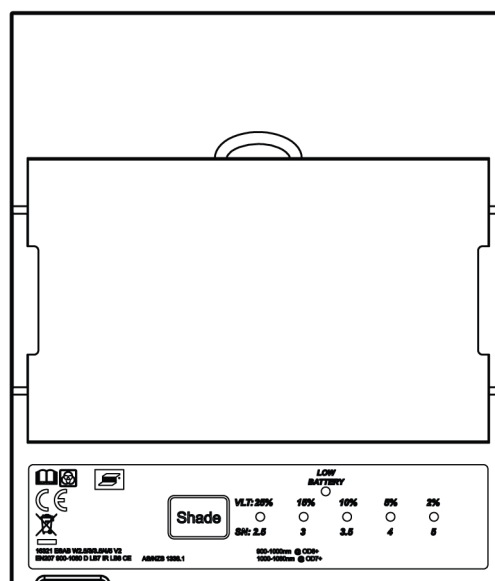
5.3 Power modes

The filter has three power modes: sleep (off), standby, and on. The lens goes to sleep automatically when ambient light is low (less than 3 lux).

When ambient light exceeds 10 lux (similar to standard office lighting), the lens automatically changes to the standby mode and is ready for welding. The lens relies on the solar cell for power when in standby mode.

The filter returns to standby mode immediately after laser welding stops, and then enters sleep mode if ambient lighting is low (less than 3 lux).

Please store the helmet in the included cloth bag to maximize battery life.



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.

The helmet requires little maintenance. However, for best performance clean helmet after each use.

6.1 Cleaning the equipment

**NOTE!**

Never use solvents or abrasive cleaning detergents.

**NOTE!**

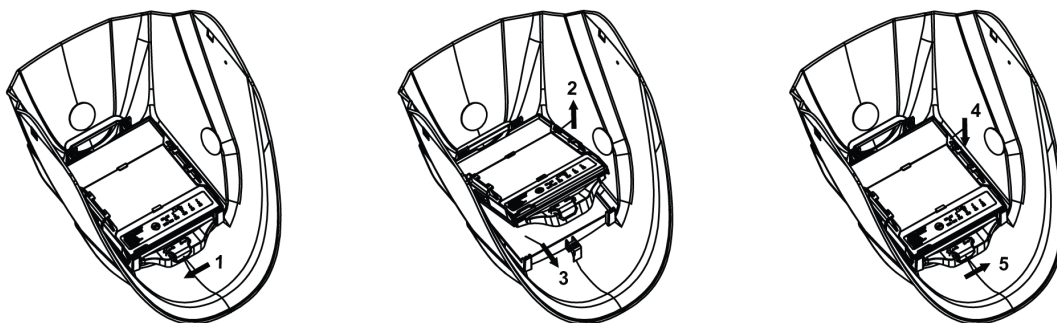
Do not immerse the lens assembly in water.

- 1) Clean helmet by wiping with a soft, dry cloth.
 - a) Wipe the cover lenses clean using a soft cloth dampened with a mild soap and water solution. Allow to air dry.
- 2) Occasionally, the protection lens should be cleaned by gently wiping with a soft, dry cloth.

6.2 Replacing the inner lens

Replace the inside cover lens if it is damaged.

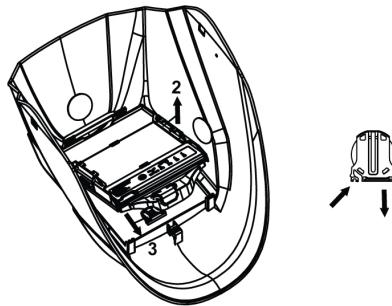
- 1) From the inside of the helmet shell, slide the filter frame lock to the left to unlock the filter assembly. The filter frame is NOT removeable.
- 2) Lift the bottom of the frame assembly.
- 3) Remove protective lens and install new one.
- 4) Replace the frame assembly into the lowered/closed position.
- 5) Slide the frame lock to the right to lock the filter assembly in place.



6.3 Replacing the battery

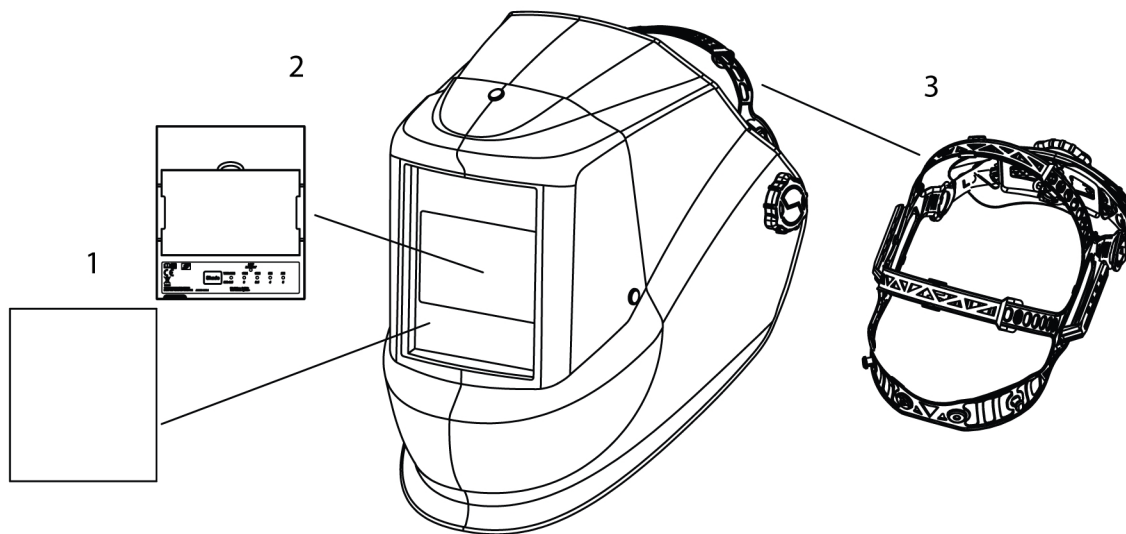
The helmet is powered by one 2032 lithium battery, and the low battery indicator illuminates when there are 2–3 days of battery life remaining. If battery power is low, install one new CR2032 lithium battery.

- 1) From the inside of the helmet shell, slide the filter frame lock to the left to unlock the filter assembly. The filter frame is NOT removeable.
- 2) Lift the bottom of the frame assembly and pivot it outward to access the battery case.
- 3) Pinch one end of the battery case and pull the battery holder out.
- 4) Replace the battery with the “+” side facing the user interface of the filter, and reinsert the battery holder.
- 5) Lower the frame assembly and slide the frame lock to the right to lock the filter assembly in place.



APPENDIX

SPARE PARTS



Item	Ordering no.	Denomination
1	0700 700 102	Outer protection lens
2	0700 700 103	Inner protection lens
3	0700 700 101	Headgear
	0700 000 084	Magnifying lens +1.0 Diopter
	0700 000 085	Magnifying lens +1.5 Diopter
	0700 000 086	Magnifying lens +2.0 Diopter
	0700 000 087	Magnifying lens +2.5 Diopter



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