# AUTODARKENING WELDING HELMET K2953-1-CE

OPERATOR'S MANUAL

GRAPHICS MAY VARY

LINCOLN ELECTRIC

Declaration of conformity CE 13

**Lincoln Electric Europe**
Declares that the welding helmet K2953-1-CE conforms to the directive **89/686 EWG**
and has been designed in compliance with standards **EN 379, EN 166, EN 175**

3st January 2013
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Notified bodies:
ECS GmbH - European Certification Service - Huettfeldstrasse 50, 73430 Aalen, Germany. Notify body number: 1883 (ADF)
DIN CERTCO Gesellschaft fuer Konformitaetsbewertung mbH, Alboinstrasse 56, 12103 Berlin, Germany - Notified body number 0196 (Shield)

ADF marking explanation: CE 4/9-13 LE 1/2/1/2/379

| | |
|---|---|
| 4 : light state scale number | 1 : optical class |
| 9 : lightest dark state scale number | 2 : diffusion of light class |
| 13 : darkest state scale number | 1 : variations in luminous transmittance class |
| LE : filter manufacturer identification | 2 : angle dependence of luminous transmittance |
| | 379 : number of the standard |

Marking on shield: "LE EN 175 B". LE : manufacturer's identification. EN 175: number of this standard. B: resistance to medium energy impact
Marking on front cover lens: "TECMEN 1 B CE". TECMEN : lens manufacturer's identification. B: resistance to medium energy impact
Marking on Inside cover lens: "TECMEN 1 S CE". TECMEN : lens manufacturer's identification. 1 : optical class. S: increased robustness

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# WARNING

This equipment must be used by qualified personnel. Be sure that all installation, operation, maintenance and repair procedures are performed only by qualified person. Read and understand this manual before operating this equipment. Failure to follow the instructions in this manual could cause serious personal injury, loss of life, or damage to this equipment. Read and understand the following explanations of the warning symbols. Lincoln Electric is not responsible for damages caused by improper installation, improper care or abnormal operation.

| | |
|---|---|
|  | WARNING: This symbol indicates that instructions must be followed to avoid serious personal injury, loss of life, or damage to this equipment. Protect yourself and others from possible serious injury or death. |
|  | READ AND UNDERSTAND INSTRUCTIONS: Read and understand this manual before operating this equipment. Arc welding can be hazardous. Failure to follow the instructions in this manual could cause serious personal injury, loss of life, or damage to this equipment. |
|  | ELECTRIC SHOCK CAN KILL: Welding equipment generates high voltages. Do not touch the electrode, work clamp, or connected work pieces when this equipment is on. Insulate yourself from the electrode, work clamp, and connected work pieces. |
|  | ELECTRICALLY POWERED EQUIPMENT: Turn off input power using the disconnect switch at the fuse box before working on this equipment. Ground this equipment in accordance with local electrical regulations. |
|  | ELECTRICALLY POWERED EQUIPMENT: Regularly inspect the input, electrode, and work clamp cables. If any insulation damage exists replace the cable immediately. Do not place the electrode holder directly on the welding table or any other surface in contact with the work clamp to avoid the risk of accidental arc ignition. |
|  | ELECTRIC AND MAGNETIC FIELDS MAY BE DANGEROUS: Electric current flowing through any conductor creates electric and magnetic fields (EMF). EMF fields may interfere with some pacemakers, and welders having a pacemaker shall consult their physician before operating this equipment. |
|  | CE COMPLIANCE: This equipment complies with the European Community Directives. |
|  | ARTIFICIAL OPTICAL RADIATION: According with the requirements in 2006/25/EC Directive and EN 12198 Standard, the equipment is a category 2. It makes mandatory the adoption of Personal Protective Equipments (PPE) having filter with a protection degree up to a maximum of 15, as required by EN169 Standard. |
|  | FUMES AND GASES CAN BE DANGEROUS: Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. To avoid these dangers the operator must use enough ventilation or exhaust to keep fumes and gases away from the breathing zone. |
|  | ARC RAYS CAN BURN: Use a shield with the proper filter and cover plates to protect your eyes from sparks and the rays of the arc when welding or observing. Use suitable clothing made from durable flame-resistant material to protect you skin and that of your helpers. Protect other nearby personnel with suitable, non-flammable screening and warn them not to watch the arc nor expose themselves to the arc. |
|  | WELDING SPARKS CAN CAUSE FIRE OR EXPLOSION: Remove fire hazards from the welding area and have a fire extinguisher readily available. Welding sparks and hot materials from the welding process can easily go through small cracks and openings to adjacent areas. Do not weld on any tanks, drums, containers, or material until the proper steps have been taken to insure that no flammable or toxic vapors will be present. Never operate this equipment when flammable gases, vapors or liquid combustibles are present. |
|  | WELDED MATERIALS CAN BURN: Welding generates a large amount of heat. Hot surfaces and materials in work area can cause serious burns. Use gloves and pliers when touching or moving materials in the work area. |
|  | SAFETY MARK: This equipment is suitable for supplying power for welding operations carried out in an environment with increased hazard of electric shock. |
|  | Materials which may come into contact with the wearer's skin could cause allergic reactions to susceptible individuals. |
|  | This is not a safety helmet ! This helmet has been designed only to protect against the risks of welding processes. |

| **WEEE** | |
|---|---|
|  | Do not dispose of electrical equipment together with normal waste!<br>In observance of European Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE) and its implementation in accordance with national law, electrical equipment that has reached the end of its life must be collected separately and returned to an environmentally compatible recycling facility. As the owner of the equipment, you should get information on approved collection systems from our local representative.<br>By applying this European Directive you will protect the environment and human health! |

## HELMET INFORMATION

This Auto-Darkening Welding Helmet will automatically change from a light state (shade 4) to a dark state (Shade 9-13) when arc welding starts.

The filter automatically returns to a light state when the arc stops. Shade control adjustments can be made while welding. Match your welding application to the shade indicated on the shade chart. (See Page 4)

Do not use or open the auto-darkening filter if damaged by shock, vibration or pressure.

Keep the sensors and solar cell clean. Clean the filter cartridge using a soapy water solution and soft cloth which should be damp but not saturated.

This Auto-Darkening Welding Helmet is designed for use with GMAW, GTAW, MMAW, SMAW, FCAW welding, or Plasma Arc and air carbon arc cutting.

The cartridge provides protection from harmful UV and IR radiation, in both dark and light states.

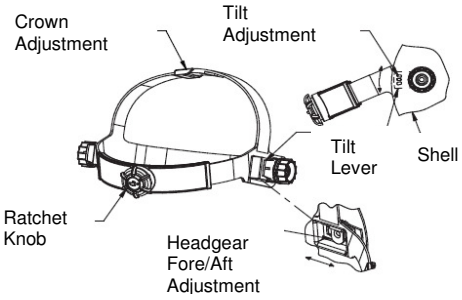
The cartridge contains two sensors to detect the light from the welding arc, resulting in the lens darkening to a selected welding shade.

Do not use solvents or abrasive cleaning detergent. . If cover lens is spattered or covered with dirt, it should be replaced immediately. Do not use the helmet without inside and outside cover lenses properly installed.

## SPECIFICATIONS

| | |
|---|---|
| LCD Viewing Area | 97 x 44 (3.82 x 1.73in) |
| Cartridge size | 110 x 90mm (4.33 x 3.54in) |
| UV/IR Protection | Up to Shade DIN 16 at all times |
| Arc Sensors | 2 |
| Light State Shade | DIN 4 |
| Variable Welding Shades | DIN 9 to 13 |
| Shade Control | External knob -full adjustment |
| Power Supply | Solar cells -no battery required |
| Power On/Off | Fully automatic |
| Light to Dark Switching Time | 0.0001 sec (1/10,000 sec) |
| TIG Rating | 10 amps |
| Operating Temperature | 23°F ~ 131°F (-5°C ~ 55°C) |
| Storage Temperature | -4 ~ 158°F (-20°C ~ 70°C) |
| Total Weight | 496g (17.5 Oz.) |
| Compliance | CE EN379 EN175 EN166 |

## HEADGEAR ADJUSTMENT




## CARTRIDGE OPERATIONS / FEATURES

**Variable Shade Control**

The shade can be adjusted from shade 9 to 13 based upon welding process or application (refer to Shade selection chart). The variable shade control knob is mounted to shell for external adjustment.

**Solar Power**

This helmet is powered by solar energy. As such, there is no battery that requires replacement.

**ALWAYS TEST TO BE SURE THE ADF CARTRIDGE IS CHARGED BEFORE WELDING**

The helmet can be placed in sunlight to charge. Do not store the helmet in a dark cabinet or other storage area for long periods. While welding, the arc also charges the ADF cartridge.

**Shade Selection Chart**

Recommended shade numbers according to EN 379:2003

If your helmet does not include any one of the shades referenced above, it is recommended you use the next darker shade.

| PROCESS | CURRENT IN AMPERE | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 6 | 10 | 15 | 30 | 40 | 60 | 70 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | | |
| MMAW (STICK ELECTRODES) | 8 | | | | | | | 9 | | 10 | | 11 | | 12 | | | 13 | | | 14 | | | |
| MAG | 8 | | | | | | | | 9 | | 10 | | 11 | | | 12 | | | 13 | | | 14 | |
| TIG | 8 | | | | | 9 | | | | 10 | | | 11 | | | 12 | | 13 | | | | | |
| MIG | 9 | | | | | | | | | | 10 | | | 11 | | | 12 | | 13 | | 14 | | |
| MIG WITH LIGHT ALLOYS | 10 | | | | | | | | | | | | 11 | | | 12 | | 13 | | 14 | | |
| AIR-ARC GOUGING | 10 | | | | | | | | | | | | 11 | | 12 | | | 13 | | 14 | | 15 | |
| PLASMA JET CUTTING | 9 | | | | | | | | | | 10 | 11 | | 12 | | | | 13 | | | | | |
| MICROPLASMA ARC WELDING | 4 | | 5 | | | 6 | | 7 | | 8 | | 9 | 10 | | | 11 | | 12 | | | | | |
| | 2 | 6 | 10 | 15 | 30 | 40 | 60 | 70 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | | |

***** THIS HELMET IS NOT SUITABLE FOR LASER WELDING PROCESS *****

## HELMET MAINTENANCE AND CARE

**Replacing Front Cover Lens** : Replace the front cover lens if it is damaged (cracked, soiled or pitted). Place your finger or thumb into recess (C) at the bottom edge of the cover lens and flex the lens upwards until it releases from the edges marked A and B. (Refer to figure 1).

**Replace the Inside Cover Lens**: if it is damaged (cracked, soiled or pitted). Place your fingernail in recess above cartridge view window and flex lens upwards until it releases from edges of cartridge view window.

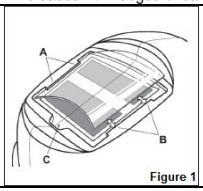


Figure 1

**Fitting New Cartridge**: Take the new shade cartridge and pass the potentiometer cable under the wire loop before placing the cartridge into its retaining frame inside the helmet. Hinge down the wire loop and ensure the front edge of the loop (D) is properly retained under the retaining lugs (E) as shown in figure 2.
Position the shade potentiometer to the inside of the helmet with the shaft protruding through the hole.
Secure potentiometer to shell. On the outside of the helmet, push the shade control knob onto the shaft.

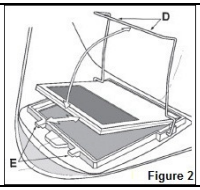
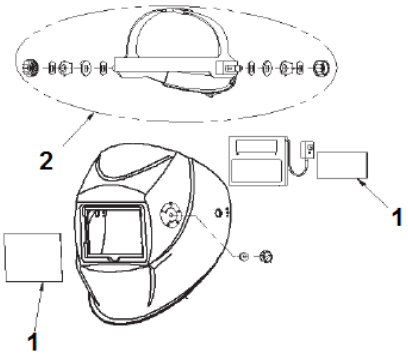


Figure 2

**Cleaning**: Clean helmet by wiping with a soft cloth. Clean cartridge surfaces regularly. Do not use strong cleaning solutions. Clean sensors and solar cells with soapy water solution and a clean cloth and wipe dry with a lint-free cloth. Do NOT submerge shade cartridge in water or other solution.

**Storage:** Store in a clean, dry location.

## PART LIST




| POS. | ITEM N. | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | KP3323-1-CE | Cover Lens Replacement Kit (2 outside 2 inside) | 1 |
| 2 | KP3324-1-CE | Headgear Replacement Kit | 1 |
| ----- | KP3324-1-SB | Sweatband for Lincoln helmet K2953-1-CE (2pcs) | 1 |

## WARRANTY INFORMATION

**WARRANTY INFORMATION :** These helmets are warranted for a period of one year.
Please contact your Lincoln Representative for any service or warranty questions.

**SPATTER DAMAGE IS NOT COVERED BY WARRANTY :** Do not use this product without the correct protective clear cover lenses installed properly on both sides of the Auto-Darkening Filter cartridge (ADF). The cover lenses supplied with this helmet are properly sized to work with this product and substitutions from other suppliers should be avoided.

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