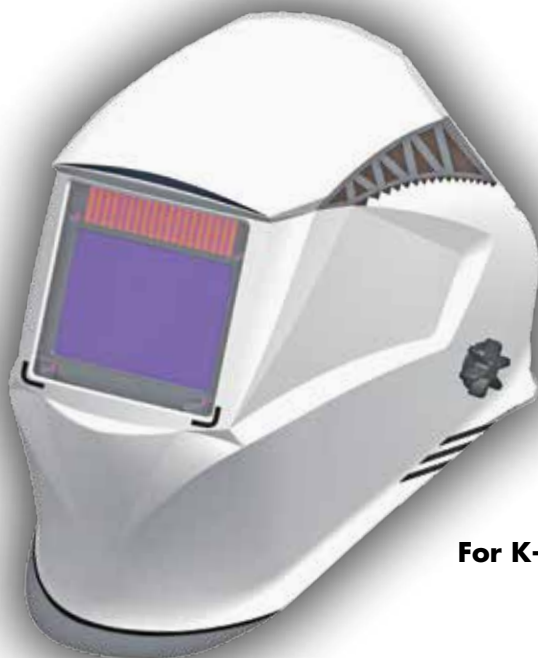


USER'S MANUAL



K-T ELITE SERIES Auto-Darkening Welding Helmet User's Manual



**For K-T ELITE SERIES
4-1077
4-1078
4-1079**

The new features of the K-T Elite Series Welding Helmet uses unique optical technology so as to make the filter have the best vision color, meeting physiological needs and high definition.

Warning: Read and understand all instructions before using! Severe personal injury could occur if the user fails to follow the aforementioned warnings, and /or fails to follow the operating instructions.

Auto-Darkening Welding Helmet

WARNING

Read and Understand All Instructions Before Using!

This Auto-Darkening Welding Helmet is designed to protect the eyes and face from sparks, spatter, and harmful radiation under normal welding conditions. The Auto-darkening filter automatically changes from a light state to a dark state when an arc is struck, and returns to the light state when welding stops.

BEFORE WELDING

The Auto-Darkening filter Welding Helmet comes ready for use. The only thing you need to do before your welding is to adjust the position of the headband and select the correct shade number for your application.

1. Check the front cover lens to make sure it is clean, and that no dirt is covering the four sensors on the front of the filter cartridge. Also, check the front/inside cover lens and the front lens retaining frame to make sure that they are secure.
2. Inspect all operating parts before use for signs of wear or damage. Any scratched, cracked, or pitted parts should be replaced immediately before using again to avoid severe personal injury.
3. Ensure the headgear is properly fitted and fastened to your head.
4. Select the shade number required by turning the shade knob (see the Shade Guide Table No. 1). Finally, be sure that the shade number is the correct setting for your application.
5. Adjust headband so the helmet is seated as low as possible on your head and close to your face. Adjust helmet's angle when in the lowered position by turning the adjustable limitation washer.
6. Choose the shade mode or grind, position correctly before welding.

TECHNICAL SPECIFICATIONS

Viewing Field: 100 X 65mm / 3.94" x 2.56"

UV/IR Protection: Up to Shade DIN16 all time

Function: Mode function 9-13/4-8 or GRIND" can be selected.

Light State: Shade 3 and 3.5

Variable Shade: from "shade 4 to Shade 8" "Shade 9 to shade 13" can be internal selected. Please first choose the position of "MODE" switch on filter (three position for choosing), so as to correspond with internal shade adjustment knob's area.

Reaction Time: 0.000033 sec (1/30,000's)

Delay Time: Short - Long (it can vary at 0.3s ~ + 0.9s)

Sensitivity: Can be adjusted inside.

Sensors: Four infrared detectors.

Power Supply: Solar Cell + Lithium Battery (replace battery when needed)

Power On/Off: Fully Automatic

Operating Temperature: -5°C to + 55°C (23°F to 131°F)

Storing Temperature: -20°C ~ + 70°C (-4°F to 158°F)

Helmet Material: High-impact resistant Polyimide (Nylon)

DIN EN 175 B CE

Total Weight: 480 g

• This product is in full conformity with related DIN EN 379, DIN EN 175 safety standards and ANSI/ISEA Z 87.1-2015 safety standards.

• Before welding, please keep clean on filter, front cover lens, inside cover lens and four optical sensors. If front cover lens and inside cover lens are blurry and can not be clean, please replace them immediately.

SHADE GUIDE TABLE (No. 1)

| Welding Process | Arc Current (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 | | | |
| SMAW | | | | 9 | 10 | 11 | | 12 | | 13 | | 14 | | | |
| MIG (heavy) | | | | | | 10 | 11 | 12 | | 13 | | 14 | | | |
| MIG (light) | | | | | | 10 | 11 | 12 | 13 | 14 | 15 | | | | |
| TIG, GTAW | | | 9 | 10 | 11 | 12 | | 13 | | 14 | | | | | |
| MAG/CO₂ | | | | | 10 | 11 | 12 | 13 | | 14 | | 15 | | | |
| SAW | | | | | | 10 | 11 | 12 | 13 | 14 | 15 | | | | |
| PAC | | | | | | 11 | 12 | | 13 | | | | | | |
| PAW | | 8 | 9 | 10 | 11 | 12 | 13 | | 14 | | 15 | | | | |

NOTE: *SMAW-Shielded Metal Arc Welding.

*MIG (heavy)-MIG on heavy metals.

*MIG (light)-MIG on light alloys.

*TIG, GTAW-Gas Tungsten Arc Welding.

*SAW Shielded Semi-Automatic Arc Welding.

*PAC-Plasma Arc Cutting.

*PAW-Plasma Arc Welding.

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CONTROL PANEL

1) Welding/Grinding Switch: When grinding, please choose grinding switch. For other body parts, helmet can not protect, please wear other safety products for protection.

When welding, the MODE switch has two position. When the switch is turned into the position of 9-13, the shade knob adjustment area is during shade 9 - shade 13. When the switch is turned into position of 4-8, the shade knob adjustment area is during shade 4 - shade 8.

2) Shade Knob: Before welding, please adjust the shade knob to correspond to the shade mode switch, so as to choose a proper shade number (shade 4-13) based on welding process and welding amperage. If the shade of filter is too dark or too light, please adjust the Shade Knob slightly to correct position till the eyes can see the welding spot which is not glaring and can see welding molten pool.

Please kindly note that it will damage the eyes if using welding helmet under incorrect shade number (too darkening or too light) for a long time.

3) Sensitivity Knob: Before welding, adjust the sensitivity to high position, if encountering the interference of lighting lamp (the filter is darkening while not welding). Adjust the sensitivity towards low position slightly until the filter returns to light state. (please don't subject the helmet towards two light lamp sources during the process, make adjustments towards welding work-piece). During welding, the sensitivity knob should be adjusted as high as possible, or it will affect the darkening speed of the filter. **Attention:** Operator must stop using the helmet immediately and contact the dealer in time if the filter does not darken or the darkening speed is slow or the filter is flashing.

Attention: If the filter can not be darkened or the darkening shade is not enough, darkening speed is slow or filter is flashing, please determine reason immediately. If operator can not solve the problem, the use of the helmet must stop immediately and contact dealer.

4) Delay Time Knob: Knob can adjust the switching time of the filter from a dark state to a light state, avoid the damage to eyes from the residual arc of welding molten pool due to too fast switching time to light state when welding is ended (Break Arc). The delay time is 0.3s - 0.5s (at short position); 0.6s - 0.9s (at long position). The switching time may vary due to different welding types and different sensitivity settings even when delay time handle is at the same position. If the filter is flashing under low current welding, please adjust the delay time handle to long position, this can help to solve this problem.

5) Test Button: Pushing the test button tells if the if the Lithium Battery has power and if the filter is working normally. If the battery indicator is lighting (red) and the filter is darkening while pressing the test button, it means the filter is working normally. If the battery indicator is not lighting or the light is very weak, please replace the lithium battery. The type of battery is CR2450, takes one battery. If the battery indicator is lighting but the filter is not darkening, it means there is some problem with the filter, please don't use the filter anymore.

ADJUSTING HEADGEAR



- 1) Top Headband:** Move the headband in the direction of arrow (as pictured) to adjust the depth of the headband, according to user's head shape adjust to a suitable position.
- 2) Distance of Harness from Filter Lens:** To adjust the distance from the welder's eyes to filter lens (left - right Symmetrical adjustment).
- 3) Back of Headband:** To adjust the size of headband (loosen or tighten).
- 4) Incline Angle Adjustment:** To adjust the incline angle of helmet relative to the welder's face, and adjust the height of welder's eye relative to filter lens.



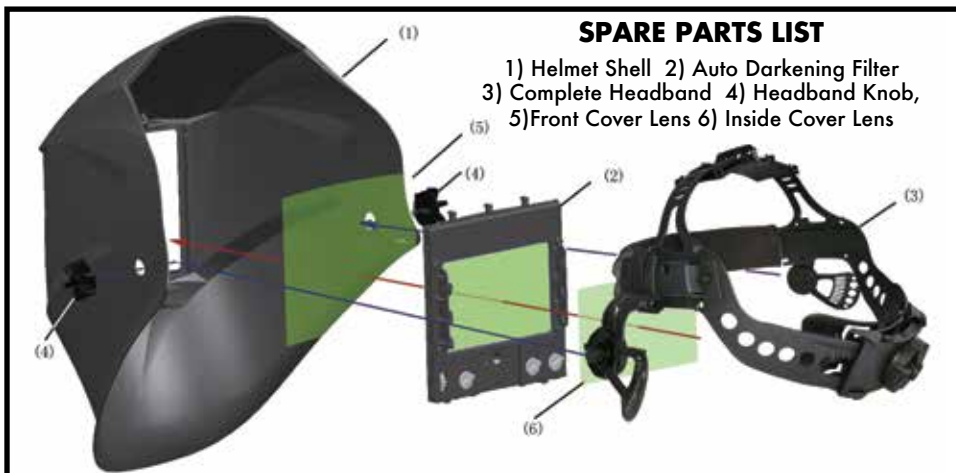
HEADGEAR PARTS

- 7) Sweatband (Cloth), 8) Headband Top Pad, 9) Front Headband, 10) Headband Back Pad, 11) Headband Regulator Assembly (Release - tighten), 12) Left Band and Right Band, 13) Angle Adjusting Shim (Left) and Angle Adjusting Shim (Right), 14) Headband Fixing Screw x2, 15) Headband Rack (Left) and Headband Rack (Right).

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- This model is designed and equipped with a special turnover (up and down) headband mechanism. When the helmet is placed on top of welder's head, the headband mechanism makes the helmet gravity center to be more lower, and be coincided with the center of welder's head and neck, making welder feel more comfortable than before while at work.
- Headband has been set unevenly and there is an uneven distance from the eyes to the filter's lens. Reset headband to reduce the difference to filter.



SPARE PARTS LIST

- 1) Helmet Shell 2) Auto Darkening Filter
3) Complete Headband 4) Headband Knob,
5) Front Cover Lens 6) Inside Cover Lens

| Model # | Item Description | Fits Model # |
|---------|-----------------------------------|-----------------------------|
| 4-1177 | K-T ELITE SERIES Front Cover Lens | 4-1077-4-1079 |
| 4-1178 | K-T ELITE SERIES Inner Cover Lens | 4-1077-4-1079 |
| 4-1204 | K-T ELITE SERIES Ratchet Headgear | 4-1077-4-1079 |
| 4-1169 | 1.50 diop. Magnifier Lens | K-T ELITE SERIES and Gen. 2 |
| 4-1170 | 2.00 diop. Magnifier Lens | K-T ELITE SERIES and Gen 2 |

LENS AND HELMET MAINTENANCE

- Replace the front cover lens if it is damaged (cracked, scratched, soiled or pitted).
- Replace the inside cover lens if it is damaged (cracked, scratched, soiled or pitted).
- Clean the filter's lens with a clean, lint-free tissue or cotton cloth.
- Do not immerse the lens in water or any other liquid. Never use abrasives, solvents or oil-based cleaners.
- Never try to open the filter.

Magnifying lens

The filter can be assembled with magnifying lens conveniently, please purchase magnifying lens if need it.



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DOS AND DON'T

- NEVER place this helmet and auto-darkening filter on a hot surface.
- NEVER open or tamper with the auto-darkening filter.
- Before operating, make sure the function-setting switch is set at the suitable location; "WELDING"/"GRINDING". The auto-darkening welding helmet will NOT PROTECT against severe impact hazards.
- This helmet will not protect against explosive devices or corrosive liquids.
- Don't make any modifications to either the filter or helmet, unless specified in this manual. Don't use replacement parts other than those specified in this manual. Unauthorized modifications and replacement parts will void the warranty and expose the operator to the risk of personal injury.
- Should this helmet not darken upon striking an arc, stop welding immediately and contact your supervisor or K-T Industries.
- Don't immerse the filter in water.
- Don't use any solvents on filter screen or helmet components.
- Use only at temperatures: 23 °F ~ 131 °F (-5C ~ +55 °C).
- Storing temperature: -4 °F ~ 158 °F (-20C ~ +70 °C).
- Protect filter from coming in contact with liquid and dirt.
- Clean filter surfaces regularly; do not use strong cleaning solutions. Always keep sensors and solar cells clean, using a clean, lint-free tissue or cloth.
- Replace cracked/scratched/pitted front cover lens regularly.
- Warning: This auto darkening welding helmet is not suitable for laser welding or oxyacetylene welding.

Severe personal injury could occur if the user fails to follow the aforementioned warnings, and/or fails to follow the operating instructions.

COMMON PROBLEMS AND REMEDIES

- Irregular Darkening/Dimming
 - Headband has been set unevenly and there is an uneven distance from the eyes to the filter's lens (reset headband to reduce the difference to filter).
- Auto-Darkening Filter Does Not Darken or Flickers
 - Front cover lens is soiled or damaged (change lens cover).
 - Sensors are soiled (clean the sensor's surface).
 - Welding current is too low (turns the switch to the "Long" position).
- Slow Response
 - Operating temperature is too low (do not use at temperatures below 23 °F (-5 °C)).
- Poor Vision
 - Front/inside cover lens and/or filter lens are soiled (change lens).
 - There is insufficient ambient light.
 - Shade number is incorrectly set (reset the shade number).
- Welding Helmet Slips
 - Headband is not adjusted properly (readjust headband).

WARNING:

**Operator must stop using the auto-darkening welding helmet immediately if the Above-mentioned problems cannot be corrected.
CONTACT K-T INDUSTRIES.**

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PRODUCT FEATURES

- This product is in full conformity with related DIN EN 379, DIN EN 175 safety standards and ANSI/ISEA Z87.1.2015 safety standards. Filter CE class: 1/1/1/1.
- This model is designed and equipped with a special up & down headband mechanism. When welder turns the helmet over to welder's head top, the headband mechanism makes helmet's gravity centre to be lower, and coincide with the centre of welder's head. The design of this welding helmet greatly lowers the fatigue of the head and neck, making the welder feel more comfortable while at work.
- The moment welding begins, the filter screen automatically changes from clear to dark in only 1/30,000 (0.000033 sec./-5°C: 0.0008 sec.) of a second. Light to Dark:
- Dark to Clear Delay Adjustment: Operator can vary the time for the filter to return to clear state.
- Outside sensitivity adjustment is more convenient for the operator while at work.
- At the moment of welding stops, the filter screen automatically changes from dark to light state according to your pre-set delay time. (Turning the time-setting switch to the "short" position - it can vary at 0.25s ~ 0.35s; turning the time-setting switch to the "middle" position - it can vary at 0.35s ~ 0.5s; turning the time-setting switch to the "long" position - it can vary at 0.5s ~ 0.8s).
- "WELDING"/"GRINDING" can be selective. Be sure that the mode switch is on WELDING position before welding.
- The helmet utilizes high performance solar cells as its power supply, and has two built-in 3V lithium batteries as power back-up. No change of battery is required. The battery life is raised to a new limit. Under normal welding conditions, users can expect battery lifetime of more than 6 years.
- Variable shade from "shade 4 to shade 8" and from "shade 9 to shade 13" is adjusted at the turn of a knob(shade variable)
- The product is in full conformity with related DIN, ISO, EN safety standards and ANSI Z87.1-2003 standards.
- The ultra high performance of UV/IR auto-darkening filters provide full protection for the user's eyes & face against UV/IR radiation during the entire welding process, even in the light state. The UV/IR protection level is up to Shade 16 (DIN) at all times.

Materials may come into contact with the wearers skin which may cause allergic reactions in some instances.

PRODUCT WARRANTY

The manufacturer's sole obligation under this warranty is limited to making replacement or repairs within 90 days of purchase.

This warranty does not cover product malfunctions or damages resulting from product tampering, misuse or abuse. Please follow the operating instructions carefully to maintain this warranty. Failure to do so will void the warranty. The manufacturer shall also not be held liable for any indirect or consequential damages arising out of the use of this product.

A copy of the original receipt and serial number (located on filter cartridge's surface) are required as proof of purchase. Please carefully maintain this warranty. This warranty is non-transferable and extends only to the original buyer purchasing the products directly from the manufacturer or through its authorized distributors, dealers, or agents.

K-T Industries, Inc.

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