

# BENCHMARK™

## AUTO-DARKENING WELDING HELMET 1151-001



5 Year Limited Warranty

**READ ALL INSTRUCTIONS BEFORE FIRST USE.  
KEEP THIS MANUAL FOR FUTURE REFERENCE.  
KEEP AWAY FROM CHILDREN.**



**WEAR CSA APPROVED  
EYE PROTECTION**



**WEAR EAR  
PROTECTION**



**WEAR A  
FACE  
MASK**

## PRODUCT SPECIFICATIONS

| AUTO DARKENING WELDING HELMET |   |
|-------------------------------|---|
| Viewing Area                  | 3.9" X 1.7" (98 x 43mm)                                 |
| Cartridge Size                | 4.3" x 3.5" x 3.9" (110 x 90mm x 100mm)                 |
| Arc Sensor                    | 4   |
| UV/IR Protection              | UP to shade DIN 16 at all times                         |
| Light State                   | DIN 4 (Grind)   |
| Dark State                    | External, Double range shade, weld (9-13) and cut (5-8) |
| Sensitivity Control           | Infinitely adjust from low to high                      |
| Switch Time                   | 1/30,000S, from Light to Dark                           |
| Delay Control                 | 0.1 – 1 second, low to high                             |
| Power Supply                  | Solar cell and replaceable 1xCR2032 lithium battery     |
| TIG AMP Rating                | >5amps (DC & AC)  |
| Operating Temperature         | -5°C to +55°C   |
| Storing Temperature           | -20°C to +70°C  |
| Other Functions               | Low battery indicator                                   |
| Weight                        | 1.1lbs. (0.49kg)  |

### NEED ASSISTANCE?

Call us on our toll-free customer support line:  
1-866-349-8665 (Monday through Friday 9am – 5pm Eastern Standard Time)

- Technical questions
- Replacement parts
- Parts missing from package



**NOTE:** these instructions pertain to the welding helmet only. Please refer to your welder's operator manual and follow the manufacturer's instructions and warnings.

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## GENERAL SAFETY WARNINGS

### READ BEFORE USING

Protect yourself and others from injury — read, follow, and save these important safety precautions and operating instructions.

**Auto-Darkening Welding Helmets** are 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 it returns to the light state when welding stops.

**⚠️ DANGER: It is vital to test your auto-darkening welding helmet BEFORE use. Use test button (if helmet equipped) or expose the lens to full sunlight (check sensitivity setting to ensure it is not too low to trigger lens change), or expose lens to the spark from a lighter, or bright florescent lights.**

**DO NOT USE THE HELMET IF IT DOES NOT SWITCH TO A DARK STATE WHEN PERFORMING THE TEST ABOVE.**

## SYMBOLS

### **⚠️ WARNING:**

This manual contains information that relates to **PROTECTING PERSONAL SAFETY and PREVENTING EQUIPMENT PROBLEMS**. It is very important to read this manual carefully and understand it thoroughly before using the product. The symbols listed below are used to indicate this information.



### **DANGER!**

Potential hazard that will result in serious injury or loss of life.



### **WARNING!**

Potential hazard that could result in serious injury or loss of life.



### **CAUTION!**

Potential hazard that may result in moderate injury or damage to equipment.

**Note** - The word "**Note AND/OR Caution**" is used to inform the reader of something he / she needs to know about the tool.

 **WARNING**

- Do not use the welding helmet if the lens is cracked, if the lens or sensors are dirty, or if the lens or front frame is loose.
- Use breathing and hearing protection. Wear a NIOSH/CSA -approved respirator and hearing protection when welding.
- Never place this helmet and Auto-Darkening filter on a hot surface
- Never open or tamper with the Auto-Darkening filter.
- This Auto-Darkening Welding Helmet will not protect against severe impact hazards, including grinding discs.
- 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 your dealer.
- Don't immerse the filter in water
- Don't use any solvents on the filter screen or helmet components.
- Use only at temperatures: - 5-55°C (23-131°F.)
- Storing temperature: -20-70°C (-4-158°F).
- The helmet should be stored in a dry, cool, and dark area.
- Prevent filter from contacting liquids and dirt.
- Clean the filter surface regularly. Don't use strong cleaning solutions.
- Always keep the sensors and solar cells clean using a clean lint-free tissue.
- Regularly replace the cracked/scratched/pitted front cover lens.
- Never try to open the filter cartridge.
- The materials that may come into contact with the wearer's skin can cause allergic reactions in some circumstances.

## SPECIFIC SAFETY WARNINGS

This Auto-Darkening Welding Helmet is not suitable for laser welding and oxyacetylene welding/cutting processes.


### **WARNING**

**ARC Rays** can injure eyes and burn skin

Arc rays from the welding process produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin. Sparks fly off from the weld.



- Wear a welding helmet fitted with a proper shade of filter to protect your face and eyes When welding or watching (see ANSI Z49.1 and Z87.1 listed in Safety Standards). Refer to Lens Shade Selection table.
- Always wear approved safety glasses with side shields or goggles under the welding helmet.
- Use protective screens or barriers to protect others from flash, glare, and sparks; warn others not to watch the arc.
- Wear body protection made from durable, flame-resistant material (leather, heavy cotton, wool). Body protection includes oil-free clothing such as leather gloves, heavy shirt, cuffless trousers, high shoes, and a cap.
- Before welding, always inspect helmet and auto-darkening filter (ADF) to be sure they are fitted properly and in good condition.
- Keep the sensors, solar cell, and filter lens clean. Clean the filter cartridge using a soapy water solution and soft cloth. Do not use solvents or abrasive cleaning detergent.
- Do not weld in the overhead position while using this helmet.
- Inspect the filter lens frequently and immediately replace any scratched, cracked, or pitted filter lens or cover lenses.
- Before welding, adjust the auto-darkening lens sensitivity setting to meet the application.
- Stop welding immediately if the auto-darkening lens does not darken when the arc is struck

 **WARNING! NOISE** can damage hearing. Noise from some processes or equipment can damage hearing. Wear approved ear protection if noise level is high.

 **WARNING! WELDING HELMETS do not provide unlimited eye, ear, and face protection.**

- Arc rays from the welding process produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin. Sparks fly off from the weld.
- Use helmet for welding/cutting applications only. Do not use helmet for laser welding/cutting.
- Always use impact resistant safety spectacles or goggles and ear protection when using this welding helmet.

- Do not use this helmet while working with or around explosives or corrosive liquids.
- This helmet is not rated for overhead welding. Do not weld in the direct overhead position while using this helmet unless additional precautions are taken to protect yourself from arc rays, spatter, and other hazards.
- Inspect the auto-lens frequently. Immediately replace any scratched, cracked, or pitted cover lenses or auto-lenses.
- Lens and retention components must be installed as instructed in this manual to ensure compliance with ANSI Z87.1 protection standards.

**DANGER! FUMES AND GASES can be hazardous.**

- Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.
- Keep your head out of the fumes. Do not breathe the fumes.
- Ventilate the work area and/or use local forced ventilation at the arc to remove welding fumes and gases. The recommended way to determine adequate ventilation is to sample for the composition and quantity of fumes and gases to which personnel are exposed.
- If ventilation is poor, wear an approved air-supplied respirator. Read and understand the Safety Data Sheets (SDSs) and the manufacturer's instructions for adhesives, coatings, cleaners, consumables, coolants, degreasers, fluxes, and metals.
- Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Always have a trained watchperson nearby. Welding fumes and gases can displace air and lower the oxygen level causing injury or death. Be sure the breathing air is safe.
- Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapors to form highly toxic and irritating gases.
- Do not weld on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and while wearing an air supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded

**WARNING**

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

## OPERATION

This Solar-Powered Auto-Darkening Welding Helmet is suitable for most welding applications. This helmet's 1/30,000-second switch time automatically darkens the lens the moment you start welding. Overriding whatever shade, the filter is set to, ensuring that the UV/IR protection is always present.

### CHARGING YOUR HELMET:

**Solar-powered helmets use photovoltaic cells that are placed on top of the welding helmet to capture sunlight and/or the UV light given off by the welding arc that they then transform into a power source. If your helmet also has batteries within, the batteries will provide back-up power.**

**For initial use, place your helmet in the sunlight for a few hours but do not keep it in direct sunlight. When you are not using the helmet, keep it in a sunny location, but never keep it in direct sunlight.**

**WARNING: Ensure you test your helmet before using to ensure adequate charge to power helmet**

**BEFORE USE: Remove the protective film from the lens** (if not already removed), adjust the position of the headband and select the correct shade number appropriate for the welding job. Inspect helmet for dirt, scratches, or cracks.

**Note: the power ON/OFF is fully automatic on this helmet.**

**HEAD GEAR ADJUSTMENT-** Adjust the headband so that the helmet fits securely on your head as low and close as possible to your face.

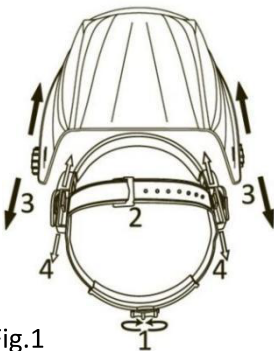


Fig.1

a). Adjust the headband diameter with the adjustment knob (1) Fig.1 on the back of the helmet while the helmet is on your head. Push the knob in and turn clockwise to tighten or counterclockwise to loosen. Adjust as necessary to ensure front lens cover is aligned with your eyes and then tighten.

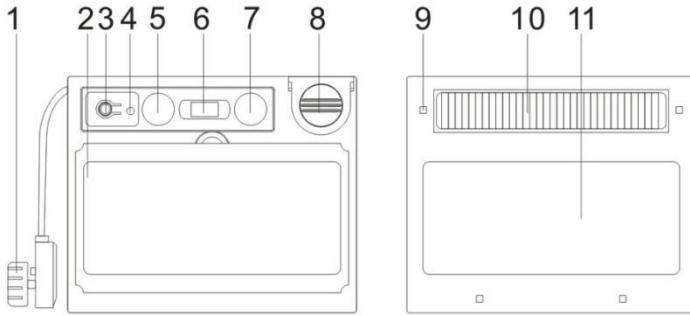
b). Adjust the headband height by first un-snapping the pin in the hole of the band (2) Fig.1 and then tightening or loosening the strap until the helmet fits snug on your head. Push pin back into hole on band to lock the strap securely in place.

c). To adjust the viewing angle and distance to the filter, lower the helmet over your head, turn the tension adjustment knobs (3) Fig. 1 on either side of the helmet and adjust the helmet until the desired angle and distance are found. Remove the helmet and then, one side at a time, lock into one of the three slots located on the inside of the helmet at the desired position. Each side must be locked in the same position for proper auto darkening filter operation. Gently turn knobs to lock the position into place. Please note, the helmet should still swing up, but it should not drift downward when in place for welding.

## WELDING HELMET CONTROLS

All settings/options indicated below, may be selected on the welding helmet controls as shown in Fig. 2. These controls are located on the inside front of the welding helmet.

**Note: the power ON/OFF is fully automatic on this helmet. There is no ON/OFF control.**



Inside helmet controls

Fig.2

Outside front helmet

| Part # | Description                         |
|--------|-------------------------------------|
| 1      | External fine adjustment shade knob |
| 2      | Internal lens cover                 |
| 3      | Self-test button                    |
| 4      | Low battery indicator               |
| 5      | Delay Control Knob                  |
| 6      | 5-8/9-13 Shade range switch         |
| 7      | Sensitivity Control Knob            |
| 8      | CR 2032 Lithium battery cover       |
| 9      | Arc sensor                          |
| 10     | Solar Panel                         |
| 11     | ADF -Auto darkening filter          |

### SELF-TEST BUTTON

Push the self-test button (3) Fig. 2 to check that the lens automatically switches to dark state. Release the test button and the lens should return to clear state. **DO NOT** use the helmet if it does not darken and then return to clear.

## LENS SHADE SELECTION AND SHADE SELECTION TABLE

Select the shade DIN 9 to 13 based upon the welding process you will use by consulting the “Shade Selection Table” below.

Select the shade DIN 9 to 13 based upon the welding process you will use by consulting the “Shade Selection Table” below. The welding helmet can also be used to protect the face when cutting, from shade DIN 5 to 8. Set shade selected range in helmet with the shade select range switch (6) Fig.2.

**NOTE:** The external fine shade control knob (1) Fig.2 and shown in Fig.3 below, is for its fine adjustment and setting welding helmet to “grind” mode.



**LENS SHADE SELECTION TABLE**

| 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 |    |  |  |    |  |
| ① SMAW          |   |   |    | 8  |    |    | 9  |    |     | 10  |     |     | 11  |     |     | 12  |     |     | 13  |     |     | 14 |  |  |    |  |
| ② MAG           |   |   |    |    |    |    | 8  |    |     | 9   |     |     | 10  |     |     | 11  |     |     | 12  |     |     | 13 |  |  | 14 |  |
| ③ TIG           |   |   |    | 8  |    |    | 9  |    |     | 10  |     |     | 11  |     |     | 12  |     |     | 13  |     |     | 14 |  |  |    |  |
| ④ MIG(heavy)    |   |   |    |    |    |    | 9  |    |     | 10  |     |     | 11  |     |     | 12  |     |     | 13  |     |     | 14 |  |  |    |  |
| ⑤ MIG(light)    |   |   |    |    |    |    |    |    |     | 10  |     |     | 11  |     |     | 12  |     |     | 13  |     |     | 14 |  |  |    |  |
| ⑥ PAC           |   |   |    |    |    |    |    |    |     | 9   |     |     | 10  |     |     | 11  |     |     | 12  |     |     | 13 |  |  |    |  |
| ⑦ PAW           | 4   |   | 5  |    | 6  |    | 7  |    | 8   |     | 9   |     | 10  |     | 11  |     | 12  |     |     |     |     |    |  |  |    |  |
| Note            | <ul style="list-style-type: none"> <li>★ SMAW-Covered electrodes</li> <li>★ MAG-Metal arc Welding</li> <li>★ TIG-Gas Tungsten Arc Welding</li> <li>★ MIG(Heavy)-MIG with heavy metals</li> <li>★ MIG(light)-MIG with light alloys</li> <li>★ PAC-Plasma jet cutting</li> <li>★ PAW-Microplasma arc welding</li> </ul> |   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |    |  |  |    |  |

Grind mode DIN 4 prevents the filter lens from auto-darkening for grinding use. Set to grind mode on external fine adjustment shade control knob (1) Fig. 2.

**CAUTION!** Set the helmet to the proper shade setting before welding again.

**SENSITIVITY CONTROL KNOB**

The sensitivity control knob determines the amount of light required to darken the welding filter. The user may manually select how sensitive to light the welding helmet is by adjusting this setting. The sensitivity can be set from **LOW** to **HIGH** by using the Sensitivity Control Knob (7) Fig. 2. The **LOW** setting is suitable for use with excess ambient light or with another welder in use close by. The **HIGH** setting is suitable for low amperage welding and welding in areas with low light conditions, especially low amperage argon arc welding. Selections between **LOW** and **HIGH**, are suitable for most indoor and outdoor welding operations.

**DELAY CONTROL KNOB**

The delay control knob (5) Fig. 2 enables the user to manually adjust how long the lens remains dark after the welding arc stops and overrides the pre-set delay. The delay time on this helmet can be set for a MIN of 0.1 second to a MAX of 1 second. It's useful when tack welding a large project and you need a short delay to reposition for the next weld. Also, a longer delay can be helpful when welding at high amperages when the metal can still emit harmful rays until it cools. Selections between **MIN** and **MAX** are suitable for most of indoor and outdoor welding operations.

## MAINTENANCE

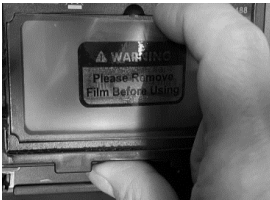
### INTERNAL LENS COVER

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

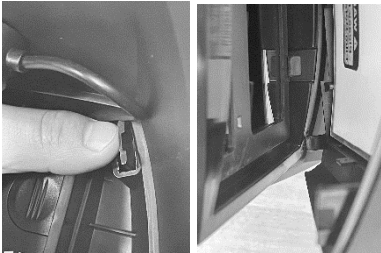
### FRONT COVER LENS AND REPLACEMENT

From inside the helmet:

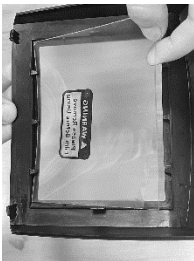
1. Remove the internal lens cover as instructed above.
2. Pull the retaining clips (located on each side, at the top of the helmet controls panel) outward so that the clips slip out from beneath the retaining tabs.
3. Pull the assembly up so that it's out of the way.
4. Lift the ADF and remove it.
5. Take the old front cover lens out and remove any protective film before installing the new one.



Remove the internal lens cover



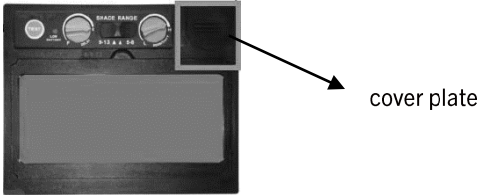
Pull the retaining clips outward



Pull assembly out of the way

**LOW BATTERY INDICATOR AND BATTERY REPLACEMENT**

When the low battery indicator (4) Fig. 2 turns red, you must replace the battery, located behind 8 (Fig.2). Remove cover plates on ADF, twist counterclockwise to loosen and replace the old battery with CR2032 lithium battery. Return the cover plate and twist clockwise to tighten.



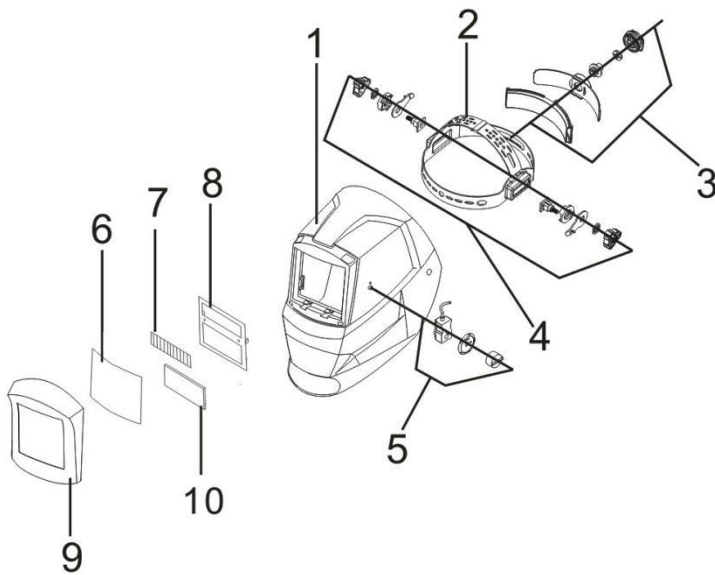
**CLEANING AND STORAGE**

Keep the sensors, solar cell and lens covers clean. Clean ADF and helmet shell by using a soapy water solution and soft cloth. Do not use solvents or abrasive cleaning detergent. Switch the product to Grind Mode and put it in a clean, dry location for storage.

**TROUBLE SHOOTING**

| <b>PROBLEM(S)</b>                         | <b>POSSIBLE CAUSE(S)</b>         | <b>SUGGESTED SOLUTION(S)</b>  |
|---|----------------------------------|---|
| Difficult to see through filter           | Cover lens dirty                 | Clean or replace cover lens   |
|   | Filter lens dirty                | Clean filter lens   |
| Filter does not darken when arc is struck | Grind Mode Selected              | Adjust Shade from 9 to 13   |
|   | Sensors or Solar Panel blocked   | Make sure sensors or solar panel are exposed to weld arc without blocking |
|   | Set Sensitivity to LOW           | Adjust Sensitivity to required level                                      |
|   | Low voltage of lithium batteries | Replace with new lithium batteries if indicator turns red                 |
| Filter darkens without arc                | Set Sensitivity to HIGH          | Adjust Sensitivity to required level                                      |
| Filter remains dark after welding         | Set Delay to MAX                 | Adjust Delay to required level  |

## EXPLODED VIEW



## PARTS LIST

**⚠ WARNING:** When servicing, use only original equipment replacement parts. The use of any other parts may create a safety hazard or cause damage to the tool. Any attempt to repair or replace electrical parts on this tool may create a safety hazard unless repairs are performed by a qualified technician. For more information, call the Toll-free Helpline, at 1-866-349-8665.

**Always order by PART NUMBER, not by key number.**

| Key# | Part #        | Part Name                                 |
|------|---------------|---|
| 1    | 1151-001-001  | Helmet Shell                              |
| 2    | 1151-001-002  | Headgear Height Adjusting Pin             |
| 3    | 1151-001-003  | Headgear Diameter Adjusting Knob          |
| 4    | 1151-001-004  | Headgear Angle & Distance Adjusting Knobs |
| 5    | 1151-001-005  | External fine adjustment shade knob       |
| 6    | 1151-001-006  | Front Lens cover                          |
| 7    | 1151-001-007  | Solar Panel                               |
| 8a   | 1151-001-008a | Internal lens cover and frame             |
| 8b   | 1151-001-008b | Helmet controls panel                     |
| 9    | 1151-001-009  | Frame                                     |
| 10   | 1151-001-010  | ADF (Auto darkening filter cartridge)     |

## **WARRANTY**

### **BENCHMARK WARRANTY**

If this Benchmark tool fails due to a defect in material or workmanship within five years from the date of purchase, return it to any Home Hardware store with the original bill of sale for exchange. 3-year warranty for the battery and charger. This warranty does not include expendable parts including but not limited to blades, brushes, belts, light bulbs. This warranty covers defects in material or workmanship only. It does not cover normal wear and tear, failure due to abuse/misuse, or defects caused by careless or accidental mishandling. If this Benchmark product is used for commercial or rental purposes, this warranty does not apply

# AUTO-DARKENING WELDING HELMET 1151-001



5 Year Limited Warranty

**BENCHMARK™**

**BENCHMARK TOOLS CANADA**  
ST. JACOBS, ONTARIO N0B 2N0  
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**CUSTOMER SERVICE/TECH SUPPORT**  
1-866-349-8665

**1151-001**

Made in China



\*This Benchmark™ product carries a five (5) year LIMITED warranty against defects in workmanship and materials. See Owner's Manual for full details.

**READ ALL INSTRUCTIONS BEFORE FIRST USE.  
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KEEP AWAY FROM CHILDREN.**



**WEAR CSA APPROVED  
EYE PROTECTION**



**WEAR EAR  
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**WEAR A  
FACE MASK**