

LASER[®]

Part No. 7926
7927

Auto Darkening Welding Helmet and Respirator (7927 only)

Instructions



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Introduction

The Laser Tools 7926 is an auto-darkening welding helmet. The 7927 unit includes the 7926 helmet and additionally features a respirator that provides the user with a filtered air supply. The first section “Auto-darkening Welding Helmet” applies to both 7926 and 7927. The following section “Respiratory Protective System” applies only to 7927. The helmet is designed to protect your eyes and face from sparks, spatter and harmful IR and UV radiation.

Auto-Darkening Welding Helmet:

Each welding job is different and will require a different level of darkening of the viewing area. The helmet provides a stepless external adjustment to set the darkness of the filter. Similarly the sensitivity and the delay of the darkening of the filter can be adjusted. The lens filter is powered both by a solar cell at the external front of the helmet and a lithium battery mounted in the lens cartridge accessed from inside the helmet.

Instructions

Getting your welding helmet ready for use:

- 1. When the helmet is new, remove the protective film from both the outer lens cover and the inside lens cover.
- 2. From the inside, ensure that the filter frame is securely in place. Also check the outer replaceable lens cover to make sure it is clear and not scratched or damaged.
- 3. Refer to **Figure 1**: Adjust the headbands and helmet position to meet your individual requirements and provide a snug and secure fit. There are four areas of adjustment: First adjust the main **headband adjuster (A)** for a comfortable fit; then set the upper headband **(B)** to get the correct eye-level position to look through the lens; **helmet forwards-backwards** - loosen knob **(C)** to adjust; and finally helmet view angle - remove knob **(C)** to gain access, then adjust locking tabs **(D)** on both sides to one of five positions.

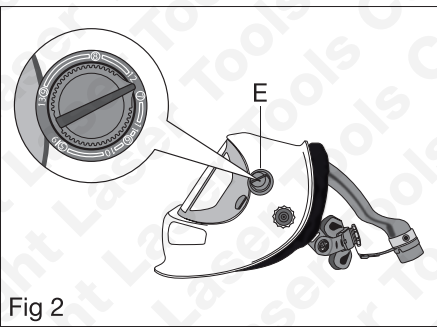
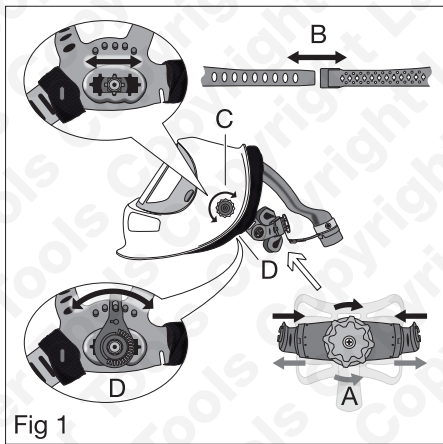


Fig 2

Instructions

Dark Shade Selection:

The auto-darkening welding helmet lens filter automatically changes from a light shade (DIN 4) to a dark shade across two scales, DIN 5 - DIN 9 (CUT function) and DIN 9 - DIN 13 (WELD function) when an arc is struck. The helmet filter returns to DIN 4 when the arc stops. In the GRIND function, the shade stays at DIN 4.

Refer to **Figure 2**: adjust the dark shade required by turning the shade control knob **(E)** - anticlockwise for darker. Shades are marked on the control knob: scale figures are circled for the CUT DIN 5 – DIN 9 range and figures not circled refer to the WELD DIN 9 – DIN 13 range.

For welding, select the correct shade after referring to recommended setting table **(Figure 3)**. These are advisory settings - select the optimum dark shade based on the actual working conditions.

| | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|-----|---|-----|---|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Current (A) | 0.5 | 1 | 2.5 | 5 | 10 | 15 | 20 | 30 | 40 | 60 | 80 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 275 | 300 | 350 | 400 | 500 |
| Working Type | | | | | | | | | | | | | | | | | | | | | | | |
| SMAW | | | | | | | | | 9 | 10 | | 11 | | 12 | | 13 | | | | | | | |
| 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 | | | | | |

Fig 3

Legend:

| | |
|--------------|--|
| SMAW: | Shielded Metal Arc Welding |
| MIG (heavy): | Metal Inert Gas (iron, steel, copper, etc) |
| MIG (light): | Metal Inert Gas (aluminium alloys) |
| TIG: | Tungsten Inert Gas |
| GTAW: | Gas Tungsten Arc Welding |
| MAG: | Metal Active Gas |
| SAW: | Submerged Arc Welding |
| PAC: | Plasma Arc Cutting |
| PAW: | Plasma Arc Welding |

| Ref | Description | Ref | Description |
|-----|----------------------------------|-----|------------------------------|
| E | Shade control knob | L | ADF lens protector |
| F | Test button (auto-darkening) | M | Solar cell |
| G | Low battery warning light | N | Sensors (for auto-darkening) |
| H | Mode selector (weld, cut, grind) | O | ADF (auto-darkening filter) |
| I | Lens sensitivity adjuster | P | Battery compartment lid |
| J | Lens delay adjuster | Q | Battery CR2450 |
| K | Battery compartment | | |

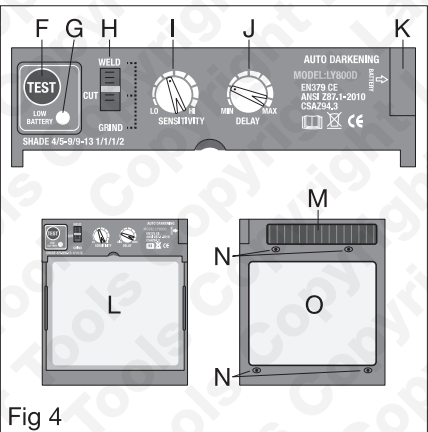


Fig 4

CAUTION: Test the auto-darkening function of the helmet before welding: Refer to **Figure 4**: Press the TEST button **(F)** - the lens filter **(O)** should instantly darken. If it does not, do not use the helmet and investigate the fault.



The following instructions are for guidance only. The use of this product is purely down to the user’s discretion and The Tool Connection Ltd. cannot be held responsible for any damage caused what so ever.

Instructions

Weld, Cut, Grind control:

Refer to **Figure 4**: the mode selector (WELD, CUT, GRIND) (**H**) is located on the upper section of the lens filter cartridge and accessed from inside the helmet.

The WELD setting (DIN 9 – DIN 13 range) is the standard setting for the auto-darkening helmet, with the helmet dark shade being set as described above and recommended in **Figure 3**.

The CUT setting covers the DIN 5 – DIN 9 range, thus the shade is not as dark as the WELD setting.

The GRIND setting means that the auto-darkening function of the ADF (auto-darkening filter) is turned off and stays at DIN 4, letting the user grind the work, whether for weld preparation or to clean up the weld bead (the grinding sparks do not activate the auto-darkening).

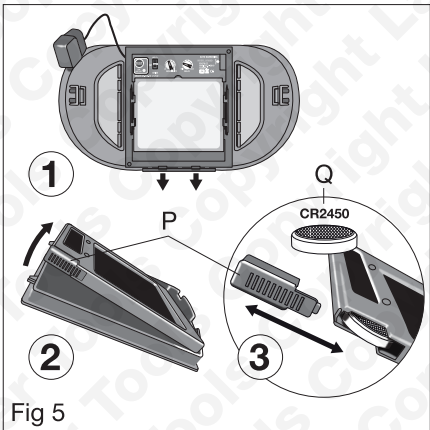
Lens sensitivity adjuster:

Refer to **Figure 4**: the lens sensitivity adjuster (**I**) is located on the upper section of the lens filter cartridge and accessed from inside the helmet. This control allows the auto-darkening function of the lens to be more responsive to the various light levels in different welding situations. The lower positions (control turned anticlockwise) are more suitable for higher amperage welding; the higher positions (turn control clockwise) are more suitable for low amperage welding (this will detect a weaker arc).

Lens delay adjuster:

Refer to **Figure 4**: the lens delay adjuster (**J**) is located on the upper section of the lens filter cartridge and accessed from inside the helmet. This control allows the user to set the delay time from dark to light. The adjuster operates (short delay to longer delay) over the range 0.1 – 0.8 seconds. As an example, when the arc light is very strong it takes more time to go off. In this case, a longer delay time is necessary so that the user can stay protected until the arc has subsided. A shorter delay time would be used for spot welding, to improve the work efficiency and speed of moving onto the next spot weld.

Replacing the battery:



Refer to **Figure 4**: The low battery warning light (**G**) is located on the upper left-hand section of the lens filter cartridge. If the warning light illuminates, do not use the helmet.

Refer to **Figure 5**: To replace the lithium CR2450 battery:

1. Release the lens filter cartridge by pushing down on the retaining clips.
2. Turn the cartridge around so that the outer (solar cell) side is facing upwards. To access the battery compartment, unclip the cartridge from the retaining frame. Take care not to stretch the wiring from the cartridge to the external shade control knob.
3. Slide the battery compartment lid (**P**) upwards to access the battery.

Instructions

Battery Preservation:

To preserve the battery, it is recommended to keep the helmet in grind mode when not in use.

Front Lens Cover:

If the front lens cover is excessively spattered, scratched or damaged, it must be replaced immediately as this could compromise the action of the auto-darkening sensors (**N** in **Figure 4**). Access the securing clips from inside the helmet. Replace with a new cover (**Laser Tools part number 61488**). DO NOT attempt to clean the front lens cover with solvents or abrasive cleaning products.

| Specifications (Auto Darkening Welding Helmet) | |
|--|--|
| Lens filter cartridge size: | 133mm x 114mm x 10mm |
| Active viewing area: | 100mm x 83mm |
| Light shade: | DIN 4 |
| Dark shade scales | DIN 5 – DIN 9 (CUT); DIN 9 – DIN 13 (WELD) |
| Shade adjustment method: | External stepless control |
| Switching time: | ≤ 1/10,000 sec. |
| Sensitivity adjustment method: | Stepless control |
| Delay time (adjustable): | 0.1 sec. – 0.8 sec. |
| Power supply: | Lithium (replaceable) + solar cell |
| Capacity of lithium battery: | CR2450 600mAh |
| Operating temperature: | -5°C - +55°C |
| Number of weld arc sensors: | 4 |
| Protection Grade against UVB | DIN 16 |
| Low battery warning: | Yes |

Safety Warnings (Auto Darkening Welding Helmet) - please read

- Warning: severe personal injury could occur if the user fails to read and understand these instructions and/or fails to follow these precautions.
- Before first using the auto-darkening welding helmet remove the protective film from both the outer lens cover and the inside lens cover.
- Ensure that you have adjusted the headbands and helmet position to meet your individual requirements and provide a snug and secure fit (**Figure 1**).
- Always test the auto-darkening function of the helmet before welding. Refer to Figure 4: Press the TEST button (**F**) — the lens filter (**O**) should instantly darken. If it does not, do not use the helmet.
- During welding, if the lens filter does not darken upon striking an arc, stop using the helmet immediately.
- Ensure the darkness shade number is correct for your welding application (refer to **Figure 2**).
- If the low battery warning light illuminates, do not use the helmet. The low battery warning light (**G**) is located on the upper left-hand section of the lens filter cartridge.
- Do not place the helmet on any hot metal after welding.
- The auto-darkening welding helmet is not a safety helmet (hard hat).
- The helmet will not protect against explosions, severe impact or corrosive liquids.
- Do not clean helmet or lens cover with solvents or abrasive cleaning products.
- To ensure the auto-darkening system is working correctly, ensure the auto-darkening sensors (**N** in **Figure 4**) are clear and unobstructed.
- Do not immerse the lens filter in water, or use in very damp conditions.
- Keep the helmet clean and dry.
- If the front lens cover is excessively spattered, scratched or damaged, it must be replaced immediately as this could compromise the action of the auto-darkening sensors (replacement: Laser part number 61488).
- Do not use the helmet without the front lens cover fitted. This will damage the lens filter and sensors, and invalidate the warranty.
- Spatter damage is not covered under the warranty.
- Do not use replacement parts other than specified in these instructions.
- For 7927 respirator precautions, refer to the following section.

Respiratory Protective System (7927 only)

The Laser 7927 is an auto-darkening welding helmet that is also equipped with a Powered Air Purifying Respirator (PAPR). The belt-mounted blower unit delivers air through a filter and via an air hose to the rear of the auto-darkening helmet unit. The supply of filtered air creates positive pressure inside the welding helmet, which prevents the contaminated external air from entering the user's air breathing zone. The blower unit's filter is replaceable (**Laser Tools part number 7928**).

The unit's integral battery offers approximately 4.5 hours of operation at the maximum airflow of 400 l/min (litres per minute). The battery is recharged via a USB cable (supplied) plugged into a PC or USB mains adaptor. There are two charging ports on the blower unit: one at the side of the unit (**RJ** in **Figure 6**) and one at the rear on the battery cover (**RQ** in **Figure 8**). Recharge time approximately 6 hours. The battery is removable. **Make sure the battery is fully charged before first use.** A USB socket is also included so that the respirator battery may also be used as a power bank.

| Ref | Description |
|-----|----------------------------|
| RA | ON / OFF button |
| RB | Blower speed control |
| RC | Battery level indicator |
| RD | Blower speed indicator |
| RE | Blocked filter indicator |
| RF | Air flow indicator |
| RG | Low battery warning light |
| RH | Air outlet (to helmet) |
| RI | USB socket |
| RJ | Charging Socket |
| RK | Removable filter cover |
| RL | Filter cover securing clip |
| RM | Filter |

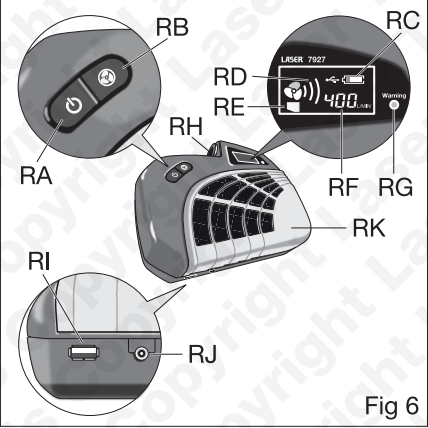


Fig 6

Operation:

1. Mount the respirator blower unit onto the belt. Feed the blower mounting strap through the slots on the blower unit (**RP** in **Figure 8**) and secure the strap on the adjacent belt clip.
2. Adjust the belt to get a comfortable fit; the blower unit can be mounted to the left or right hand side of the belt, to the preference of the user.
3. Connect the air supply hose (**RR** in **Figure 8**) to the rear port of the welding helmet and to the air outlet on the blower unit (**RH** in **Figure 8**). These are turn and click bayonet-type fittings. Position the air supply hose so that it will not interfere with the welding process.
4. Refer to **Figure 6**: Switch unit on by pressing and holding down the ON / OFF button (**RA**) for approximately 2 seconds. Press again for 2 seconds to switch off.
5. Start the blower motor by pressing the blower speed control button (**RB**). Blower will start with initial airflow of 340L/m (litres per minute). Note: blower motor starts slowly then builds up to the set airflow speed.
6. Press the blower speed control button again to select 370L/m, then press again to select 400L/m (max). If battery is low (check battery condition indicator RC), airflow speed may drop to 200L/m.

Instructions

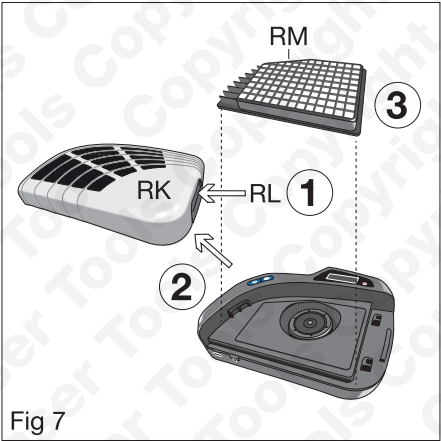


Fig 7

Blower unit filter replacement:

The replaceable filter is single use and cannot be cleaned.

Refer to **Figure 6**: If the blocked filter indicator (**RE**) lights up (plus audible signal), then it is time to replace the filter. Do not use the blower unit if the blocked filter indicator is displayed.

Refer to **Figure 7**: To replace the filter:

1. Press the top of the filter cover securing clip (**RL**) to release the removable filter cover (**RK**).
2. Lift off the cover.
3. Lift out the filter (**RM**).
4. Clean the blower unit, the filter cover and the mesh and foam pre-filter with the careful application of compressed air.
5. Fit the new filter (Laser Tools part number 7928) and secure.

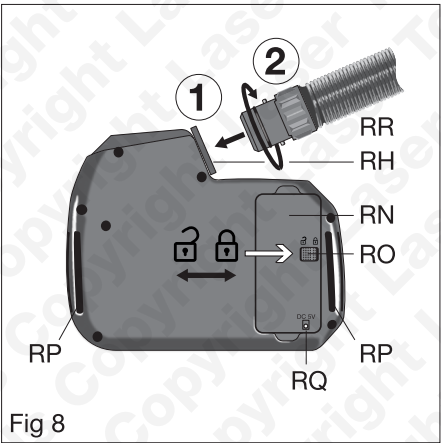


Fig 8

Removing the respirator blower unit battery:

Refer to **Figure 8**: Press the battery compartment cover locking tab (**RO**) to the unlock position, then lift off the battery compartment cover (**RN**). The battery can then be lifted out.

| Ref | Description |
|-----------|----------------------------|
| RH | Air outlet (to helmet) |
| RN | Battery compartment cover |
| RO | Cover locking tab |
| RP | Mounting strap slots |
| RQ | Additional charging socket |
| RR | Air supply hose |

Specifications (Respirator)

| | |
|-------------------------------------|---------------------------------------|
| Weight | 1.1 kg |
| Air flow: | 340L/m 370L/m 400L/m (switchable) |
| Motor power: | 16W |
| Motor noise: | <54dB |
| Motor lifespan: | 50,000 hrs |
| Filter part number: | 7928 |
| Filtration precision: | 0.3µm |
| Filtration efficiency: | >99.97% |
| Visual, audible alarm for: | Low battery, filter replacement |
| Air pipe length: | 0.8m |
| Air pipe material: | PU |
| Capacity of lithium battery: | 6000mAh |
| Battery voltage: | DC 8.4V |
| Battery operation time: | 5 hrs (approx.) |
| Battery charge time: | 4 hrs (approx.) |
| Method of charge: | USB (lead supplied) |

Spare Parts Available:

| | |
|-----------------------------|-------|
| Front lens cover: | 61488 |
| Respirator foam pre-filter: | 61521 |
| Respirator main filter: | 7928 |

Laser Tools part number:

Recommended:

| | |
|------------|------|
| Ear plugs: | 6141 |
|------------|------|

Manufactured by:

Jiangsu Meixin Optoelectronics Technology Co., Ltd.
Hugang Industrial Park, Xindian Town Rudong, Jiangsu, China.

Safety Warnings (Respirator) - please read

- Warning: severe personal injury could occur if the user fails to read and understand these instructions and/or fails to follow these precautions.
- Prior to each use, the user should inspect all components and check that they are free from defects, such as cracks, damaged filter housing, damaged air supply hose, or cracked or scratched lens cover on the helmet.
- **Make sure the battery is fully charged before each work cycle.** If battery is low (check battery condition indicator), airflow speed may drop to 200 l/m.
- The replaceable filter is single use and cannot be cleaned.
- If the blocked filter indicator lights up, then it is time to replace the filter. **Do not use the blower unit if the blocked filter indicator is displayed.**
- Do not use the blower if no filter is installed.
- Regularly clean the mesh and foam pre-filter with careful use of compressed air. Change the pre-filter (Laser part number 61521), when it becomes clogged.
- Do not use in an atmosphere that is immediately hazardous to health and/or has an oxygen content less than 17%.
- Do not use in confined spaces or unventilated areas such as tanks, pipes, etc.
- If the blower unit stops working for any reason, **stop welding immediately**, leave the area and remove the helmet.
- Do not clean helmet or lens cover with solvents or abrasive cleaning products.
- Keep the respirator unit clean and dry; do not let water or other liquids enter any part of the unit.
- The user must **stop welding immediately**, leave the area and remove the helmet, if any of the following occur: the warning audible low battery signal sounds; breathing becomes difficult; dizziness or distress occurs; airflow into the helmet decreases or stops or fumes can be smelled or tasted inside the helmet.
- The blower unit, filter housing, air supply hose and welding helmet must all be regularly cleaned to keep them in good working order.
- For single users, the components can be cleaned with a cloth moistened with luke warm, weak, detergent solution. For multiple users the welding helmet should be disinfected before passing from one user to another.

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Safety First. Be Protected.



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