



## Warning:

Do not use this equipment if it is anyway damaged or defected. Contact your nearest stockist for advice. This equipment should only ever be used by trained and qualified personnel.

## Guarantee

This product is covered by a 2 year manufacturers guarantee which covers free repair or replacement for any damage or faults to parts as a result of the manufacturing process.

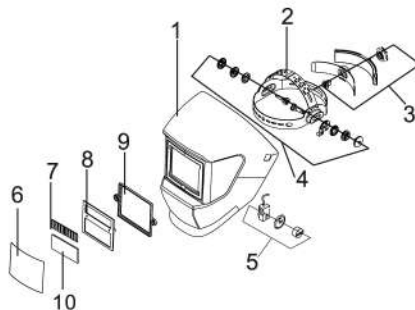
**Note:** This warranty does not cover any damage caused by improper, overuse, or inappropriate storage of this equipment.

This guarantee is non-transferable and is only valid if the product has been issued by authorised distributors or agents.

## Specifications

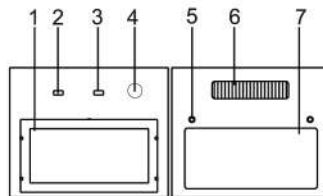
<b>Model:</b>	JEFWELHT4G
<b>Viewing Area:</b>	92 x 42mm
<b>Cartridge Size:</b>	110 x 90mm x 9mm
<b>Light State:</b>	DIN 4
<b>Dark State:</b>	Variable Shade 9-13
<b>Switching Time(s):</b>	1/15,000 - From light to dark
<b>Dark to Light:</b>	0.25-0.30s at fast position 0.65-0.85s at slow position
<b>Shade Control:</b>	External, variable
<b>Sensitivity Control:</b>	Low-high
<b>Power (On/Off):</b>	Fully - automatic
<b>Power Supply:</b>	Solar Cell (self-charging). 2x Back Up Batteries.
<b>UV/IR Protection:</b>	DIN.16
<b>Arc Sensor:</b>	2
<b>Low Amperage TIG</b>	≥ 20Amp
<b>Grinding Function:</b>	Yes
<b>Low Voltage Alarm:</b>	No
<b>ADF Self Check:</b>	No
<b>Operating Temperature:</b>	-5°C ~+ 55°C
<b>Storage Temperature:</b>	-20°C ~+ 70°C
<b>Weight:</b>	480g
<b>Welding Processes:</b>	MMA, MIG, MAG / C02 TIG & Plasma Welding Arc Gouging & Plasma Cutting

## Helmet Components



1. Helmet Body
2. Headgear
3. Headgear adjustment
4. Headgear (angle) adjustment
5. Shade selection
6. Protective Plate
7. Solar Panel
8. Fixed Plate
9. Press Card
10. UV IR Filter

## Visor Components



1. LCD
2. Sensitivity Control
3. Delay Control
4. Shade Adjustment Control
5. Sensor
6. Solar Cell
7. UV/IR Filter

## Declaration Of Conformity

We declare that the items listed below conform with the following directives and standards:

### JEFWELHT4G Welding Helmet

DIN EN 175:1997-08

Essential requirements according to Annex II of Directive 89/686/EEC

(Edition: 1989-12) Test Report(s): 11091-PZA-11 Identification: DB EN 175 F CE

### Automatic Welding Filters with Variable Shade

DIN EN 379:2009-07

Essential requirements according to Annex II of Directive 89/686/EEC

(Edition: 1989-12) Test Report(s): 12722-PZA-11, 11021-PZA-13

Identification: 4/9-13 DB 1/2/1/2/379 CE

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**Jefferson**  
PROFESSIONAL TOOLS & EQUIPMENT

**Auto-Darkening**  
**Welding Helmet**



JEFWELHT4G

**User**  
**Manual**



# Introduction

This welding helmet is fitted with an auto-darkening filter (ADF) which works on the photoelectric induction principle whereby liquid crystals change from a light to dark state depending on the level of arc light received through the visor. This technology helps to protect the user's eyes and skin from the arc, splash and infrared / ultraviolet radiation generated by the welding process.

# Features

## 1. Long-lasting, environmentally-friendly power supply:

- Solar cell powered - rechargeable lithium/alkaline battery delivering up to 5000 hours working life

- 15-20minutes with automatic closing function and low voltage indication

## 2. External and internal Shade, Sensitivity, Delay Time & Grinding Mode controls:

- Allowing flexible control during the welding process.

## 3. Photoelectric sensor technology with high-quality dual LCD and filter:

- provide the welder with a clear field of view and effective protection with ultraviolet ray protection grade of up to DIN16.

## 4. Reliable & Safe Arc Protection:

- Two arc sensing probes to constantly monitor the arc induction enables the filter to switch from light to dark state in 1/15000s.

- Switching back to DIN4 (light state) in 0.1-1.0s at the end of the arc.

## 5. Operating temperatures ranging from -5°C and 55°C:

- Allowing a broad scope of applications including: manual arc welding; gas shielded arc welding, argon arc welding & plasma cutting.

## 6. Portable and balanced design:

- Fully adjustable headgear provides comfort, safety and reduces fatigue

## 7. Fully compliant with current safety and technical standards.

# Operating Guide

## 1. Before welding

- Check that the protective film has been removed from the internal and external screen

- Check that the helmet has enough power to operate before use

- Ensure that the filter display is normal

- Check that the helmet, solar cell and arc sensor and other operating parts are clean, free from dust and damage prior to use.

- Replace any damaged or scratched parts immediately to avoid injury

- Adjust light and shade to the appropriate settings for the welding process and working environment

## 2. Shade Selection

- The shade number can be manually set from 9-13 using the adjustment knobs located on the inside and outside of the helmet.

Adjust the helmet to the correct setting as shown in the table on the next page:

## Shade Selection Guidelines:

Welding Process	Arc Current (Amperes)															
	6.5	2.5	10	15	20	30	40	60	80	100	125	175	225	275	350	450
SMAW							9	10		11		12		13		
MIG (Heavy)									10	11		12		13		
MIG (Light)									10	11		12		13		
TIG / GTAW			9	10	11					12		13				
PAC									11		12		13			
PAW			9	10	11					12		13				

## 3. Delay Time

- The delay setting can be adjusted to determine the speed that the helmet switches between dark and light. You can set this between **Max** and **Minumum** depending on your requirements.

- The **Max** delay setting is between 0.85-1.0s and is suitable for high current welding work.

The **Medium** delay setting is suitable for the majority of indoor and outdoor welding applications.

- The **Min** delay setting is between 0.1-0.25s and is suitable for spot welding, short welding or seam welding work.

## 4. Sensitivity

You can adjust the sensitivity of the filter to suit the welding process and ambient lighting conditions using the adjustment knobs on the inside and outside of the helmet. **The default sensitivity setting is at its lowest state.**

- The **Min** setting is suitable for high current welding or for working in well-lit environments and conditions where other sources of light interference are present.

- The **Max** setting is suitable for low-current welding or for working in low-light conditions (especially low-current argon welding.)

- The **Mid** setting is ideal for most indoor and outdoor welding.

## 5. Testing the LCD and Filter settings

- You can test the LCD settings by switching the shade to any place between 9-13 and then pressing the **TEST** button and check that the LCD has changed from light to dark and back to the light shade.

- You can set the shade to any place between 9-13 and use any incandescent light source that is brighter than 40W near to the arc sensor on the filter and check that the LCD has darkened and then returns to normal when the light source is removed.

## 6. Helmet fitting adjustments

The headband size can be manually adjusted to create a comfortable fit using the rotary knob. The knob has a self-locking function and should only be adjusted gently and not forced to prevent damage. Positioning holes on the side of the helmet can be used to adjust the angle of the helmet. The face mask can also be adjusted using the screw to allow the mask to be set to the best angle for the user (usually the best setting is to have eye-line perpendicular with the filter).

## 7. Changing the Batteries

- This equipment uses 2 x 3V Lithium batteries, or 2 x AAA alkaline batteries as a backup power supply - should be changed as required.

- The main solar-powered battery can be used continuously for up to 5000hrs in normal conditions. Replace as required.

# Maintenance

- Use tissues, lens paper or clean, soft cotton to clean the filter regularly.
- Use neutral detergents to clean the welding helmet shell and headbands.
- Clean and replace the external and internal protection plates and sweatbands regularly
- Do not use corrosive solvents, alcohol or petrol to clean this equipment.

# Troubleshooting

## 1. Filter does not darken or flickers during operation

- (i) Protector or arc sensor is dirty or damaged (clean or replace)
- (ii) The welding current is too low to create a reaction (adjust the sensitivity)
- (iii) Battery is low (replace the battery)

## 2. Slow Reaction Time

- (i) Ambient temperature is too low (do not use below -5°C)
- (ii) Sensitivity setting is too low (adjust the sensitivity as required)

## 3. Filter is not clear

- (i) Protector / filter lens is stained (clean / replace)
- (ii) Protective film is still in place (remove the protective film)
- (iii) Insufficient light (work in a brighter environment / adjust shade setting)

## 4. Welding mask slips

- (i) Adjust the headband to ensure comfort and safety

# Safety Guidelines

- **This equipment is not suitable for laser welding or oxygen-acetylene welding.**
- **This equipment does not provide protection against impact, explosion or corrosive materials.**
- Keep this equipment away from heat and damp environments.
- Only trained personnel should remove the filter or make any repairs to this equipment
- Always check that the correct Welding/Grinding function is selected before use.
- Ensure that the protective plate is installed on the filter before use.
- Stop using the equipment immediately if it fails to switch between light and dark during testing or the welding process.
- The optimum operating temperature is between -5°C and 55°C (23°F and 131°F). **Note:** The reaction time for the ADF will be reduced in lower ambient temperatures.
- Replace any parts immediately if broken or scratched.
- Clean the filter surface, solar cells and sensors regularly to ensure the best performance and protection