

Jefferson®

PROFESSIONAL TOOLS & EQUIPMENT

AUTO-DARKENING WELDING HELMET

Optical Class: 1/2/1/2 • Variable Shade: 9~13
Light - Dark: 1/15000s • DIN 16 UV/IR Protection



JEFWELHT4G Series

User Manual

v.1.1




INTRODUCTION

- Slim, lightweight & well-balanced auto-darkening welding helmet
- Fully adjustable headgear for comfort and fatigue reduction
- Powered by 1x CR2045 lithium battery & solar cells
- Features auto-off circuitry at 15-20 min and low-battery indicator
- Two independent ARC Sensors for increased safety and protection
- Variable shade 9-13 with sensitivity and delay controls
- Available in a variety of shell designs
- Suitable for MMA, MIG, TIG, PAC, PAW, CAC-A processes



SPECIFICATIONS

Optical Class:	1/2/1/2
Viewing Area:	92×42mm
Cartridge Size:	110×90×9mm
Arc Sensors:	2
Light State:	DIN 4
Dark State:	Variable shade (9-13)
Shade Control:	External, Variable
Power On/Off:	Fully Automatic
Sensitivity Control:	Low / Medium / High
UV/IR Protection:	DIN 16
Power Supply:	1x CR2045 Lithium Battery (up to 5,000hrs) + Solar Cells
Switching Time:	1/15000S, from Light to Dark
Dark to Light:	0.25~0.30S (High Sensitivity) 0.35~0.6s (Medium Sensitivity) 0.65~0.85s (Slow Sensitivity)
Low Amperage TIG:	20A (DC, AC)
Grinding Function:	YES
Low Battery Indicator:	NO
ADF Filter Test:	Manual
Operating Temperature:	5°C to + 55°C
Storage Temperature:	-20°C to + 70°C
Weight:	480g
	This product is manufactured & tested to conform with DIN EN 379:2009-07 (1/2/1/2) and EN 175:B safety standards

SAFETY GUIDELINES



Please read and ensure that you understand all of the operating instructions, safety precautions and warnings in this Instruction Manual before operating or maintaining this equipment. An accident can often be avoided by recognizing a potentially hazardous situation before it occurs, and by observing appropriate safety procedures. Hazards that must be avoided to prevent bodily injury or machine damage are identified by warnings on the equipment and in this Instruction Manual. Never use this equipment or modify it in any way that has not been specifically recommended by the manufacturer. Contact Jefferson Tools for all information relating to the repair and maintenance of this equipment.

WARNING: if you encounter any problems with the helmet before or during use it is important that you do not continue with the welding process. If the filter fails to darken correctly, flashes or is unable to attain the appropriate shade to protect your eyes you should stop immediately and contact your Jefferson dealer or supplier for advice.

Equipment Safety:

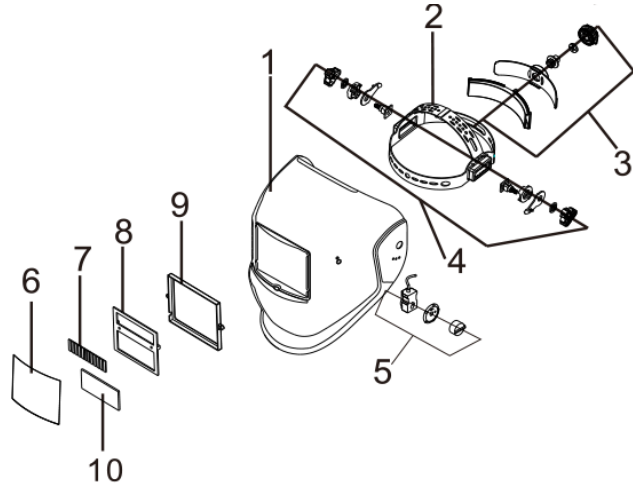
- This helmet is not suitable for laser welding or oxygen acetylene welding.
- Do not place the welding helmet or ADF Filter near a source of heat or damp.
- Do not remove the filter from the welding helmet or open the filter housing, doing so will invalidate the warranty and could damage the equipment resulting in malfunction and personal injury.
- Contact Jefferson Tools for advice on repair of this equipment.
- Do not attempt to modify or adjust the equipment for any other use other than that which has been designed for.
- Check that the operation mode is set to **Welding** or **Grinding** as required for the work you are carrying out.
- The protective plate must be kept in place to protect and house the filter - do not remove.
- Do not use the equipment if the filter fails in any way.
- Ensure that the ADF filter and solar cells are kept clean.
- Do not use alcohol, petrol, thinner, water or any other liquid to clean the filter or helmet.
- Ensure that the visor screen and protective films are kept clean and replaced if they are scratched or damaged.
- The helmet is manufactured to DIN BS EN175:1997 (Impact Level B) please ensure that the appropriate protective clothing is worn to protect any other parts of the body exposed during the welding process.
- This equipment cannot offer protection against heavy impact, explosive or corrosive liquid damage.

Before Welding:

- If using the helmet for the first time ensure that any protective film is removed from the internal and external screens.
- Ensure that the filter, front cover lens, inside cover lens and four optical sensors are clean and secure.
- Ensure that the battery has been charged with sufficient power for the work required.
- Check that the filter is working and displaying correctly.
- Ensure that the solar cells and ARC sensor are clean and functioning correctly.
- Inspect all operating parts before use for signs of wear or damage. Any scratched, cracked or pitted parts should be replaced immediately before use to avoid severe personal injury.
- Ensure that the position of the headband is adjusted to fit comfortably and safely.
- The helmet should be seated as low as possible on the head and close to the face.
- Select the correct DIN Shade setting for your application (see table on page 5).
- Ensure that the helmet is not used in conditions where welding spatter is more than 43g and exceeding 120m/s.

PARTS LIST & EQUIPMENT IDENTIFICATION

1	Helmet Body / Shell
2	Headgear Assembly
3	Headgear Adjustment Knob
4	Headgear Angle Adjustment Knobs
5	DIN Shade Control
6	Protective Plate
7	Solar Panel
8	Fixed Plate
9	Press Card
10	UV/IR Filter
11	Protection Plate Buckle



OPERATION GUIDE

DIN Shade Settings

The shade number can be set manually between 9-13. Check the Shade Guide Table below to determine the proper shade number for your application. Select a shade number by turning the shade knob until the arrow points to the required setting:

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		

Delay Settings

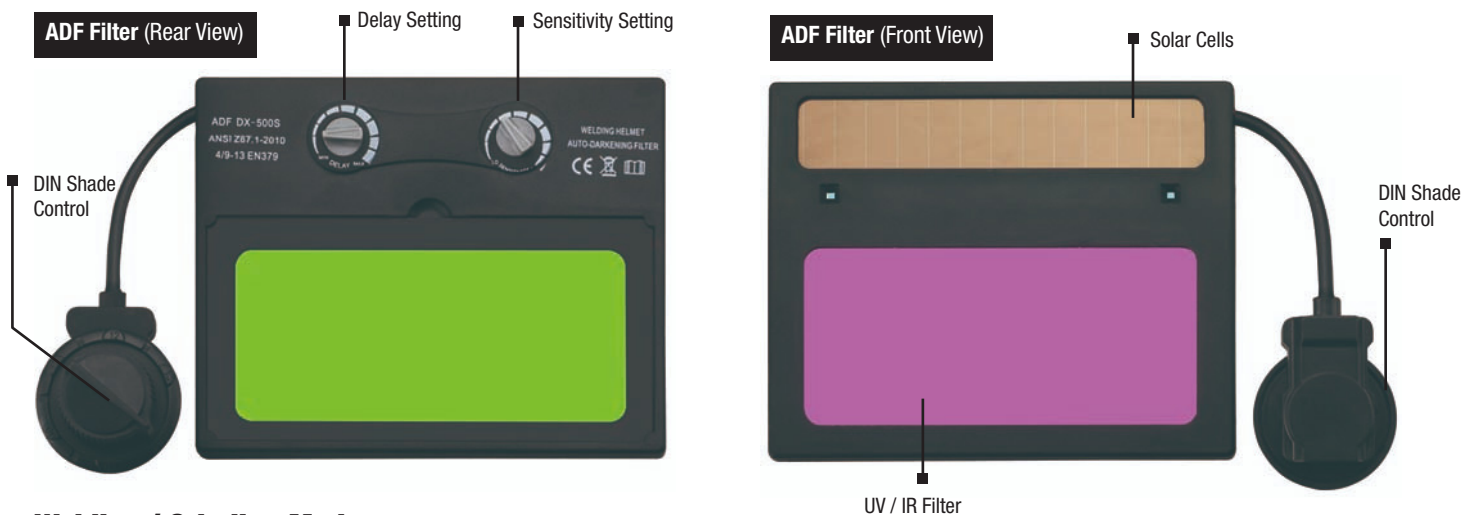
It is important that the correct delay setting is used for your welding process to avoid any sudden flaring when you finish the welding process and the welding arc is broken. When the welding arc is broken it is possible for residual arc to flare from the molten welding pool which can be hazardous if the helmet has already automatically adjusted the DIN shade to a lighter setting. To accommodate for this, the helmet is equipped with a **Sensitivity Control** which can be set as required for the welding process:

- 1) **Long** = 0.85 to 1.0 second delay (suitable for high current welding and ARC protection)
- 2) **Medium** = 0.25 to 0.85 second delay (standard delay setting for most indoor and outdoor welding tasks)
- 3) **Short** = 0.1 to 0.25 second delay

Sensitivity Settings

Adjust the sensitivity setting as required for the welding process and ambient light available.

- 1) **Low / Minimum** = Suitable for high current welding or in bright lighting conditions
- 2) **Medium** = Standard delay setting for most indoor and outdoor welding tasks
- 3) **High / Maximum** = Low current welding / dim lighting conditions.



Welding / Grinding Mode

Adjust the mode as required using the control knob.

Equipment Testing

Ensure the equipment is fully inspected for damage and tested for functionality before each use. Follow the procedure below to test the filter@

Set the shading number at a setting between 9-13 and bring the ARC Sensor on the filter toward a light bulb or lighting source of more than 40W check whether the LCD shade becomes darker before returning to the brighter shade when removed from the light source.

The helmet is powered by 1x CR2045 lithium battery with supplementary filter charging from solar cells. The battery supports up to 5000hrs of power before a replacement is required.

Headband Adjustment

The headband can be manually adjusted to fit according to size. You can use the knob at the back of the headband to adjust the tightness until the fit is comfortable and secure. Be careful not to over tighten or force the knob. The rotating gear has a self-locking mechanism to keep the headband in the required position. There are also positioning holes and knobs located on the sides of the helmet that can be used to adjust the angle of the helmet to enable a clear and comfortable view as required.

MAINTENANCE

- Clean this equipment (helmet visor and filter etc) regularly (before and after use) using tissue paper, lens paper or clean soft cotton.
- Use PH neutral detergent to clean the welding helmet shell and headband.
- Replace the external and external protection plates as required (when damaged chipped or scratched).
- Do not use alcohol, petrol, thinner, water or any other liquid to clean the filter or helmet.

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Filter does not darken in response to light or flickers intermittently.	1. Protector / visor is polluted or damaged.	1. Clean or replace the protector / visor.
	2. Arc sensor is dirty, damaged or obstructed.	2a. Clean the arc sensor. 2b. If ARC sensor is damaged contact Jefferson Tools for advice.
	3. Welding current is too small.	3. Increase Sensitivity until filter reacts to welding current.
	4. Battery is low.	4. Replace the battery.
Slow or delayed filter reaction.	1. Ambient temperature is too low for safe operation.	1. Equipment can only be used in temperatures between 5°C and + 55°C.
	2. Sensitivity setting is too low.	2. Increase sensitivity.
Filter is dirty or obscured.	1. Stained or scratched visor / protector.	1. Clean or replace the visor / protector.
	2. Protective transport film has not been removed.	2. Remove the protective film.
	3. Dirty filter lens.	3. Clean the filter lens.
	4. Insufficient ambient light.	4. Increase the amount of ambient light in the working environment.
	5. Incorrect shade setting.	5. Adjust / correct the shade setting as required.
Welding helmet slips or viewing angle is obstructed.	1. Helmet has not been fitted correctly.	1. Adjust headband tightness and angle using the fitting knobs on the sides and rear of the helmet.

Jefferson[®]
PROFESSIONAL TOOLS & EQUIPMENT

Parts & Servicing

For Jefferson approved replacement parts contact your nearest dealer or contact Jefferson tools

Telephone: +44 (0)1244 646 048

Fax: +44 (0)1244 241 191

Email: warranty@jeffersonstools.com

ENVIRONMENTAL PROTECTION



Recycle any packaging and unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment.

When the product becomes completely unserviceable, reaches the end of its working life and requires disposal, drain off any fluids (if applicable) into approved containers and dispose of the product and the fluids according to local regulations.

WEEE WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT STATEMENT



Information on Disposal for Users of Waste Electrical & Electronic Equipment

This symbol on the product(s) and / or accompanying documents means that used electrical and electronic products should not be mixed with general household waste. For proper treatment, recovery and recycling, please take this product(s) to designated collection points where it will be accepted free of charge.

For private households:

Dispose of this product at the end of its working life and in compliance with the EU Directive on Waste Electrical and Electronic Equipment (WEEE). Contact your local solid waste authority for recycling information for this equipment.

Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling.

Please contact your local authority for further details of your nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with your national legislation.

For business users in the European Union:

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

Information on Disposal in other Countries outside the European Union:

This symbol is only valid in the European Union. If you wish to discard this product please contact your local authorities or dealer and ask for the correct method of disposal.

ROHS DIRECTIVE 2011/65/EU

We hereby declare that this equipment has been tested and found to be compliant to RoHS Directive 2011/65/EU of the European Parliament and the Council from 08/06/2011 on restriction of the use of certain hazardous substances in electrical and electronic appliances.

Determination of levels of regulated substances in electrotechnical products, elements of Cadmium (Cd), Lead (Pb), Mercury (Hg), Chromium (Cr) and Bromine (Br) contents were measured by XRF Spectroscopy and chemical confirmation test for RoHS restricted substances.

EC DECLARATION OF CONFORMITY

We, Jefferson Tools as the authorised European Community representative of the manufacturer, declare that the following equipment conforms to the requirements of the following directives and / or standards:

Directive / Standard:	Description:	Notified Body:
EN 379:2003 (as amended)	Personal eye-protection - Automatic welding filters Essential requirements according to Annex II of the PPE-Directive 89/686/EEC	DIN CERTCO GESELLSCHAFT FÜR KON- FORMITÄTSMITBEWERTUNG MBH Alboinstraße 56 12103 BERLIN Country : Germany Phone : +49 (30) 75621131 Fax : +49 (30) 75621141 Email : info@dincertco.de Website : http://www.dincertco.de Notified Body Number 0196
EN 175:1997 (as amended)	Equipment for eye and face protection during welding and allied processes Essential requirements according to Annex II of the PPE-Directive 89/686/EEC	
Regulation (EC) No 1907/2006	Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)	TÜV Rheinland /CCIC (Ningbo) Co., Ltd. Office Ningbo
N/A	Polycyclic Aromatic Hydrocarbons (PAHs)	3F, Building C13, R&D Park, No. 32, Lane 299 Guanghua Road, National Hi-Tech Zone, Ningbo, 315048
2011/65/EU	The restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)	

Equipment Category: Personal Protective Equipment: Auto Darkening Welding Helmet

Model Number • Description: JEFWELHT4G Series

Protection Ratings:

ADF Filter:

- Optical Class: 1
- Diffusion of Light Class: 2
- Variations in Luminous Transmittance Class: 1
- Angle Dependence of Luminous Transmittance: 2

Face Shield:

- Protection against high-speed particles, medium energy impact [B] 120m/s

Signed by:

Stephen McIntyre



Position in the company:

Operations Director

Date:

29 March 2019

**Name and address of manufacturer
or authorised representative:**

Jefferson Tools, Herons Way,
Chester Business Park, Chester, United Kingdom, CH4 9QR
Telephone: +44 (0)1244 646 048
Fax: +44 (0)1244 241 191
Email: enquiries@jeffersonstools.com

LIMITED WARRANTY STATEMENT

Jefferson Professional Tools & Equipment, or hereafter "Jefferson" warrants its customers that its products will be free of defects in workmanship or material. Jefferson shall, upon suitable notification, correct any defects, by repair or replacement, of any parts or components of this product that are determined by Jefferson to be faulty or defective.

This warranty is void if the equipment has been subjected to improper installation, storage, alteration, abnormal operations, improper care, service or repair.

Warranty Period

Jefferson will assume both the parts and labour expense of correcting defects during the stated warranty periods below.

All warranty periods start from the date of purchase from an authorised Jefferson dealer. If proof of purchase is unavailable from the end user, then the date of purchase will be deemed to be 3 months after the initial sale to the distributor.

1 Year:

JEFWELHT4G Series - AUTO-DARKENING WELDING HELMET

90 Days

- All replacement parts purchased **outside** of the warranty period

Important: All parts used in the repair or replacement of warranty covered equipment will be subject to a minimum of 90 days cover or the remaining duration of the warranty period from the original date of purchase.

Warranty Registration / Activation

You can register and activate your warranty by visiting the Jefferson Tools website using the following address:

www.jeffersontools.com/warranty and completing the online form. Online warranty registration is recommended as it eliminates the need to provide proof of purchase should a warranty claim be necessary.

Warranty Repair

Should Jefferson confirm the existence of any defect covered by this warranty the defect will be corrected by repair or replacement at an authorized Jefferson dealer or repair centre.

Packaging & Freight Costs

The customer is responsible for the packaging of the equipment and making it ready for collection. Jefferson will arrange collection and transportation of any equipment returned under warranty. Upon inspection of the equipment, if no defect can be found or the equipment is not covered under the terms of the Jefferson warranty, the customer will be liable for any labour and return transportation costs incurred.

These costs will be agreed with the customer before the machine is returned.

** Jefferson reserve the right to void any warranty for damages identified as being caused through misuse*

Warranty Limitations

Jefferson will not accept responsibility or liability for repairs made by unauthorised technicians or engineers. Jefferson's liability under this warranty will not exceed the cost of correcting the defect of the Jefferson products.

Jefferson will not be liable for incidental or consequential damages (such as loss of business or hire of substitute equipment etc.) caused by the defect or the time involved to correct the defect. This written warranty is the only express warranty provided by Jefferson with respect to its products.

Any warranties of merchantability are limited to the duration of this limited warranty for the equipment involved.

Jefferson is not responsible for cable wear due to flexing and abrasion. The end user is responsible for routine inspection of cables for possible wear and to correct any issues prior to cable failure.

Claiming Warranty Coverage

The end user must contact Jefferson Professional Tools & Equipment (Tel: +44 (0) 1244 646 048) or their nearest authorised Jefferson dealer where final determination of the warranty coverage can be ascertained.

Step 1 - Reporting the Defect

Online Method:

- Visit our website www.jeffersonstools.com/warranty and complete the Warranty Returns form. You can complete the form online and submit it to us directly or download the form to print out and return by post.

Telephone Method:

Contact your Jefferson dealer or sales representative with the following information:

- Model number
- Serial number (usually located on the specification plate)
- Date of purchase

A Warranty Returns form will be sent to you for completion and return by post or fax, together with details of your nearest authorised Jefferson repair centre. On receipt of this form Jefferson will arrange to collect the equipment from you at the earliest convenience.

Step 2 - Returning the Equipment

It is the customer's responsibility to ensure that the equipment is appropriately and securely packaged for collection, **together with a copy of the original proof of purchase**. Please note that Jefferson cannot assume any responsibility for any damage incurred to equipment during transit. Any claims against a third party courier will be dealt with under the terms & conditions of their road haulage association directives.

Please note: Jefferson will be unable to collect or process any warranty requests without a copy of the original proof of purchase.

Step 3 - Assessment and Repair

On receipt, the equipment will be assessed by an authorised Jefferson engineer and it will be determined if the equipment is defective and in need of repair and any repairs needed are covered by the warranty policy. In order to qualify for warranty cover all equipment presented must have been used, serviced and maintained as instructed in the user manual.

Where repair is not covered by the warranty a quotation for repair, labour costs and return delivery will be sent to the customer (normally within 7 working days).

Note: If the repair quotation is not accepted Jefferson Professional Tools & Equipment will invoice **1 hour labour time at £30 per hour plus return carriage costs (plus VAT)**.

In cases where no fault can be found with the equipment, or, if incorrect operation of the equipment is identified as the cause of the problem, a minimum of 1 hour labour at **£30 per hour plus carriage costs** will be required before the equipment will be despatched back to the customer.

Any equipment repaired or replaced under warranty will normally be ready for shipment back to the customer within 7 working days upon receipt of the equipment at an authorised Jefferson Repair centre (subject to part availability). Where parts are not immediately available Jefferson will contact you with a revised date for completion of the repair.

General Warranty Enquiries

For any further information relating to Jefferson warranty cover please call **+44 (0) 1244 646 048** or send your enquiry via email to warranty@jeffersonstools.com

Disclaimer:

The information in this document is to the best of our knowledge true and accurate, but all recommendations or suggestions are made without guarantee. Since the conditions of use are beyond their control, Jefferson Tools® disclaim any liability for loss or damage suffered from the use of this data or suggestions. Furthermore, no liability is accepted if use of any product in accordance with this data or suggestions infringes any patent. Jefferson Tools® reserve the right to change product specifications and warranty statements without further notification. All images are for illustration purposes only.



IMPORTANT! SAFETY FIRST!

Before attempting to use this product please read all the safety precautions and operating instructions outlined in this manual to reduce the risk of fire, electric shock or personal injury.



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