


**HELMET: X Series, F Series  
"Myth" Series**

**FILTER: P5X Series, P2X Series  
P3X Series, P4X Series  
D3X Series, D4X Series**



Operating  
Manual

Revision Date:2024.03



# ! WARNING !

Auto-Darkening welding helmet is designed to protect the welders' eyes from harmful radiation including visible light, ultraviolet radiation (UV) and infra-red radiation (IR) resulting from certain arc and gas welding processes when used in accordance with user instructions.

Ensure that helmet comes properly assembled. However, before it can be used, it must be adjusted to your personal preferences. Set it up for delay time, sensitivity, and shade number for your application. (See the table with recommended shade levels)

## PRECAUTIONS

- Never place the helmet or the ADF on hot surface.
- Use only at temperature: -5°C to +55°C (23°F-131°F).
- Do not immerse the filter in water and protect it from contact with liquid and dirt.
- The material which may contact the wearer's skin can cause allergic reaction. Any welding helmet worn over standard ophthalmic spectacles may transmit impact, thus creating a hazard to the wearers in some circumstances.
- This product cannot be used for overhead welding or cutting. If this product is used for overhead welding or cutting operation, the molten metal drop may burn through helmet and welder will get injured.
- Eye protector shall only be used against high-speed particles at room temperature.
- Automatic welding filter shall always be used with a backing ocular.
- Unauthorized modifications and replacement parts will void the warranty and expose the operator to the risk of personal injury.
- If the auto-darkening filter does not darken when the arc ignites, stop welding immediately and inspect the ADF and its power supply. Change if necessary.
- Do not use any solvents or abrasive cleaning detergent on the filter screen or helmet components.
- We recommend a usage period of 4 years. The period depends on various factors such as way of use, cleaning, storage, and maintenance. Frequent inspections and replacement in case of damage are recommended.
- Always wear safety glasses or goggles under the welding helmet and protection clothing to protect your skin from radiation, burns and spatters.
- Not suitable for driving and road use
- Protectors that have been subject to impact shall not be used and shall be discarded and replaced.
- A visual inspection is necessary before every use.
- If the impact level symbols are not equal on both the lens/filter and the frame, then it is the lower level that shall be assigned to the complete protector.
- The protection marked in accordance with this standard is only provided when all lens and retention components are installed according to the list or other manufacturer's instructions.
- This device does not protect against physical or chemical hazards.
- If the helmet, or the filter or the cover plate is in any way damaged, they must be immediately replaced.
- Replace the device after a mechanical impact.

## STORAGE

When not in use helmet should be stored in a dry place within the temperature from -20°C to +70°C. Remove the battery or turn off the ADF before long-time storage.

It is recommended to keep the solar cells of the auto darkening welding filter in the dark or not exposed to light during storage to maintain power down mode.

Welding helmets should not be dropped and do not place any heavy items or tools on or inside the helmet, which may damage the electro-optical filter.

## MAINTENANCE & CLEANING & TRANSPORTING

Cleaning can be done with a soft tissue or cloth soaked in mild detergent (or alcohol). Never use aggressive solvents such as acetone.

The user must make daily regular checks to ensure no damage is evident. Outer and inner



visors are worn parts and must be replaced regularly with genuine certified universal spare parts.

Transport the equipment with original packing box and away from direct sunlight .

## OPERATING INSTRUCTION

### Before Using

- Make sure to remove any additional protection foil from both sides of the PC lens.
- Make sure there is no dust on any sensor.
- Set the exact mode that you need.

### Testing Function

- Hold press mode, ADF will self-test
- Hold press , ADF will self-test
- Insert battery, ADF will self-test

## POWER

If the battery icon is flashing, please change the battery, otherwise operation will not perform well.

## SET THE MODES

The ADF got 4 MODES, **CUT**; **WELD**; **GRIND**; **DARK**. Kindly check Fig. 12,13,14,15,16,17,18. Grind mode: Hold press 1.0 with external **GRIND** button on the helmet shell like Fig.8, it can switch to **GRIND** mode quickly.



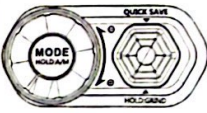
**X2&X8** offering side-windows with shade 5.(See Fig.6)

**F Series** offering a big grinding view. (See Fig.10)

**"Myth" Series** offering panorama viewing

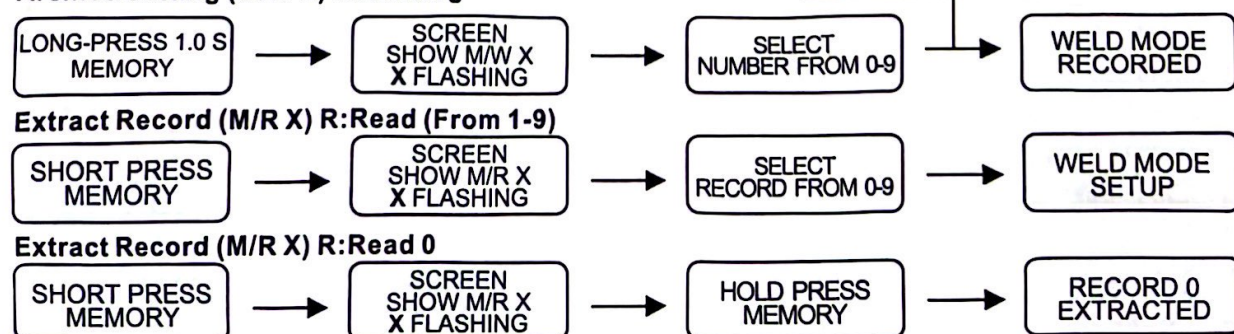
**Warning: Do not weld in GRIND mode.**

## EXTERNAL CONTROL BUTTON

 = +	Short press	Welding mode will be saved in record 0 quickly.
	Hold press with 1.0s	Switching to Grind mode
 = S +	Short press	Easy selecting the mode from WELD, CUT, DARK.
	Hold press with 1.0s	Switching to Grind mode
	Twist the knob	ADF's shade will be adjusted, $\pm 0.5$
	Short press MODE	Easy selecting the mode from WELD, CUT, DARK.
 II AMS+	Hold press MODE	Automatic shade function is on
	Short press silicon button	Welding mode will be saved in record 0 quickly.
	Hold press silicon button	Switching to Grind mode
	Twist the knob	Manual mode, shade will be adjust by $\pm 0.5$ Auto Shade mode, shade deviation $\pm 0.1$

## MEMORY MODE

Checking the operating panel,using MEMORY and  $\blacktriangle/\blacktriangledown$  buttons.(See Fig. 14,15,16,17,18,19)  
Archive Setting (M/W X) W:Writing





Function	ADF	Operating-UI Pannel	Usage
<b>Sensitivity (SENSI.)</b>	<b>P5X Series</b>	Press <b>SENSI.</b> , go cycle.	High for most applications
	<b>Without auto Function</b>	Press <b>≡ FUNC.</b> and <b>▲&amp;▼</b>	Level 9: For special welding which needs super sensitivity. Level 8: For most applications but especially for low current welding work. Level 0: Only in some specific surrounding lighting conditions in order to avoid unwanted triggering
	<b>With auto Function</b>	Press <b>SENSI. HOLD:AUTO</b> and <b>▲&amp;▼</b>	
		Hold Press <b>SENSI. HOLD:AUTO</b>	Recommend a set accord to environment light
<b>Delay</b>	<b>P5X Series</b>	Press <b>DELAY HOLD:TRS</b> , go cycle.	Max for most applications Min for spot welding
	<b>Without auto Function</b>	Press <b>≡ FUNC.</b> and <b>▲&amp;▼</b>	Level 9: 2.0s is suitable for most applications, especially for high amps current application and longer welding interval Level 1&2, suitable for spot welding Level 0: <b>Tack mode</b>
	<b>With auto Function</b>	Press <b>DELAY HOLD:AUTO</b> and <b>▲&amp;▼</b>	
		Hold Press <b>DELAY HOLD:AUTO</b>	Delay is automatically adjusted with deviation $\pm 9(0.04-2.0S)$
<b>Shade</b>	<b>P5X Series</b>	Press <b>SHADE HOLD:▲/▼</b> or <b>MODE</b> and <b>SHADE HOLD:▲/▼</b> go cycle	Adjusting the shade by your experience or according to chart recommended
	<b>Without auto Function</b>	Press <b>≡ FUNC.</b> and <b>▲&amp;▼</b>	
	<b>With auto Function</b>	Press <b>SHADE HOLD:AUTO</b> and <b>▲&amp;▼</b>	
		Hold Press <b>SHADE HOLD:AUTO</b>	Shade is automatically adjusted with deviation $\pm 2$
	<b>All Series</b>	Hold Press <b>SHADE HOLD:▲/▼</b>	Shade locked, you can lock the shade in any level that you need
		Press <b>⊗ MODE</b> and select <b>DARK</b> mode	
		Press <b>▲&amp;▼</b> at one time, main window locked	
		Hold press <b>TRS HOLD:SIDE</b> , side window locked	
<b>TRS</b>	<b>P5X Series</b>	Hold press <b>DELAY HOLD:TRS</b>	Offering a comfortable recovery from dark to light (Not suitable for tack mode and spot mode)
	<b>Without auto Function</b>	Hold press <b>≡ FUNC. HOLD:TRS</b>	
	<b>With auto Function</b>	Press <b>TRS HOLD:SIDE</b> or <b>TRS</b>	

**NOTE:** Once there are two different colors on one button, it got two function, and hold press with 1.0s, the second function is on.

**TACK MODE:** ADF will learn welder's work habits and offering comfortable recovery for tack weld.

## TROUBLE SHOOTING

FAULT	CAUSE	REMEDY
Irregular Darkening Dimming	Headgear has been set unevenly so there is an uneven distance from the eyes to the filter lens.	Reset the headband to reduce the difference to the filter



FAULT	CAUSE	REMEDY
The Filter not Darken or Flicthers	Front cover lens is soiled or damaged	Please change the cover lens
	Sensors are soiled/blocked or solar panel is blocked	Clean the sensors surface to make sure you are not blocking the sensors or solar panel with your arm or other obstacle while welding
	Sensitivity is set too low or delay time is set too short	Adjust to required level
	Make sure proper shade is selected	Not Grind mode
The Filter Darkening Without Arc Being Struck	Sensitivity is set too high	Adjust Sensitivity to a required level
The Filter Remains Dark After Completing A Weld	Delay time is set too long	Adjust Delay time to a required level
Slow Response	Operating temperature is too low	Do not use at temperatures below -10°C or 14°F
Welding Helmet Slips	Headgear is not properly adjusted.	Re-adjust the headgear.

## SPECIFICATION DATA

Filters Model	P5X Series	P2X Series	P3X Series	P4X Series	D3X Series	D4X Series
CE Classification	V2 / V1					
Viewing Area	108*74mm(12.4in²)/108*82mm(13.72in²)MAX Series/116*81mm(14.6in²)MAXI Series					
ADF Light State	Shade 3					
Variable Shade	4-8/9-13/4-8/9-14					
Sensitivity	low to high	0-9 Levels				
Delay	0.04-1.0s 0.04-1.5s(MAXI Series)	0-9 Levels(0.04-2.0S)				
Memory Mode	NA	10 Records				
Sensor	4		4 + 1(Ambient Light)			
Power Supply	Solar Cell * 2* lithium Batteries					
External Fine Tuning	Optional					
Smart LED Light	Optional					
Auto Shade	NA		Shade 7<13 or Shade 7<14			
Auto Sensitivity	NA		Yes			
Auto Delay	NA		Yes			
Auto Shade Deviation	NA		±2			

\* For Shade Range, when X=0 or 1, the shade is 4-8/9-13; X=3, the shade is 4-8/9-14.

\* For Optical Classification, when X=0, it's V2 (1/1/1/2), X=1 or 3, it's V1 (1/1/1/1).

## HELMET ADJUSTMENTS

### HEADGEAR ASSEMBLY

Insert the headgear into helmet shell, as the installation order is in Fig1.

Adjust the headgear to make it more comfortable and put shield in the correct position according to individual preference(See Fig.2-Fig.5).

**NOTE:** Make sure both sides are equally positioned for proper operation.

**NOTE:** The distance from the eye to the filter, closer is better.

### REPLACING AUTO DARKENING WELDING FILTER

1.Remove the front protection plate and put the helmet face down, and press both taps in the top of the filter and push the ADF out(See Fig.9).



2. For FLIP-UP model, remove the front cover plate like Fig.10 and put helmet shell face down, then press both taps and push. ADF can be separated from the helmet shell.

## REPLACING PROTECTION PLATES

1. If protection plates are in any way damaged, they must be immediately replaced (See Fig.7 & Fig.11).

2. For FLIP-UP welding helmet model, check the Fig.10 & Fig.11.

Flip up the cover shell, twist two buckles, and change the inner grind cover plate. (See Fig.10).

## BATTERY REPLACEMENT

Remove the ADF cassette. Pull out the battery tray, and correct battery operation as indicated on the battery tray (See Fig.11).

## MARKING EXPLANATION

### Auto Darkening Filter Marking

**16321 YXE W3/4-8/9-13 V2** **CE**  
 3=Light State Scale Number  
 4-8/9-13=Protection Shade Numbers in Dark State  
 YXE= Manufacture Identification  
 V2=Angle of Dependence Classification  
 V1=Angle of Dependence Classification

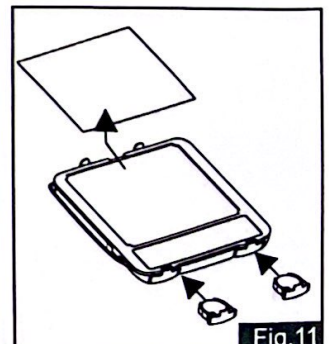
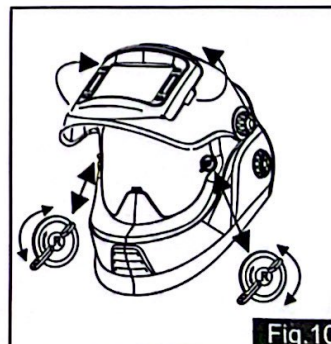
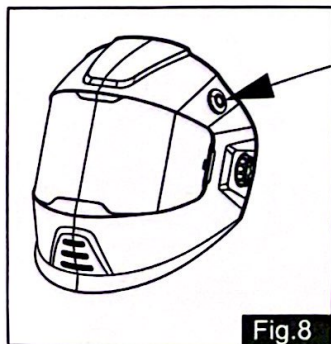
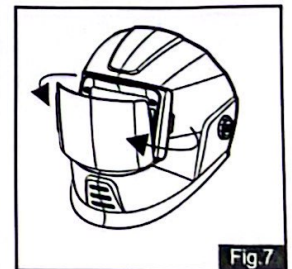
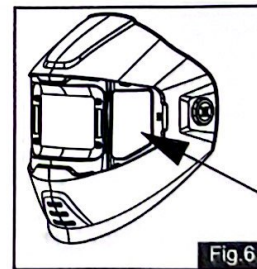
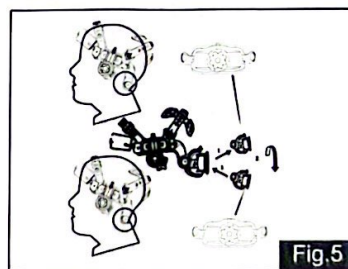
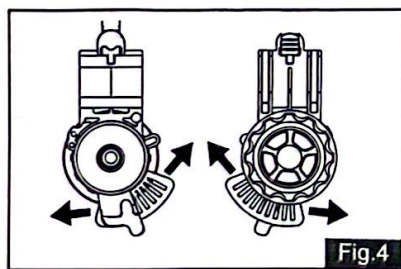
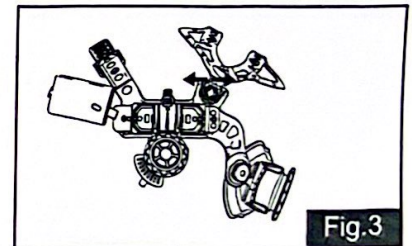
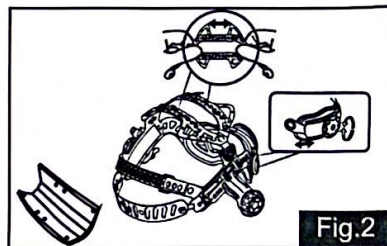
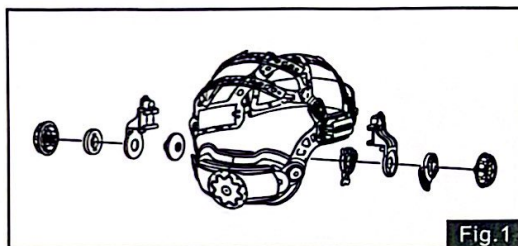
**W3/7<14 M YXE V1**  
 M=Manual offset(optional)  
 16321 = EN ISO Standard

### Helmet Marking

**16321 YXE W14 E 1-M CE UKCA**  
 W = Welding protector  
 14 = Maximum filter shade number  
 E= Impact Resistance Level 120m/s  
 C= Impact Resistance Level 45m/s  
 1-M applicable head size

### Cover Plate Marking

**YXE 1 E CE YXE 1 E CE UKCA**  
 1 =Enhanced Optical Performance  
 E= Impact Level 120m/s





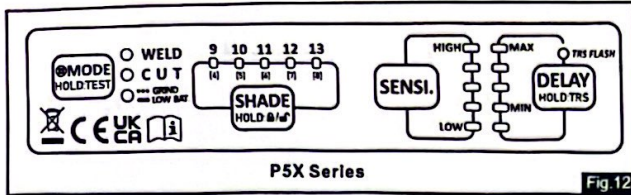


Fig.12

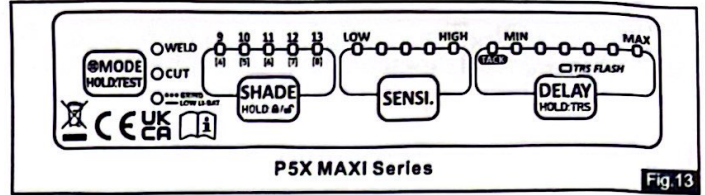


Fig.13

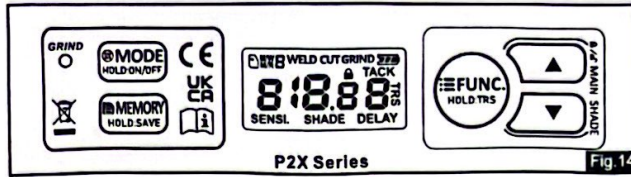


Fig.14

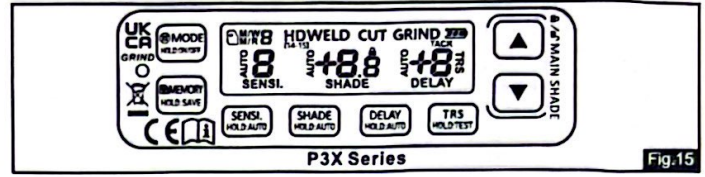


Fig.15

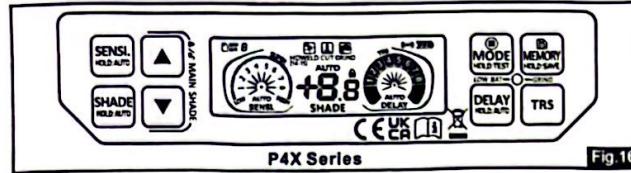


Fig.16

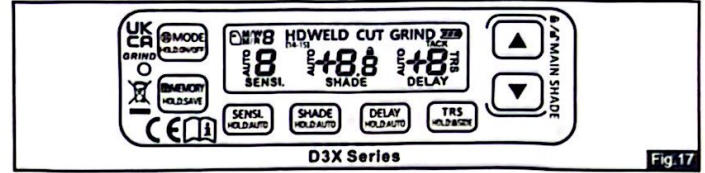


Fig.17

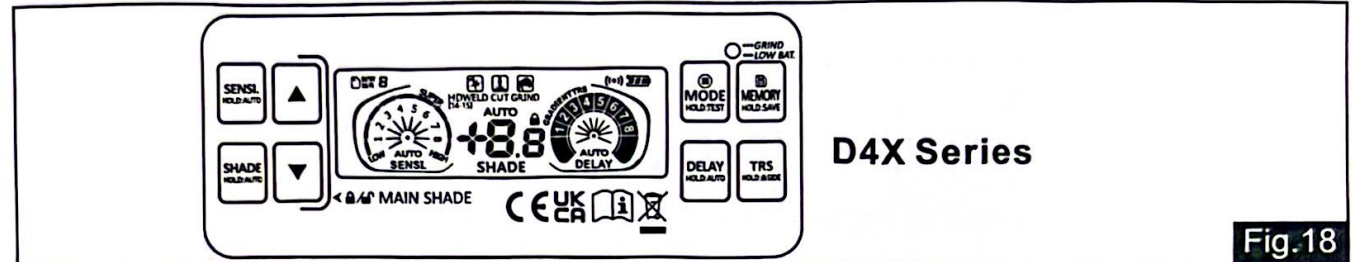


Fig.18

## INSTALLATION SAMPLE

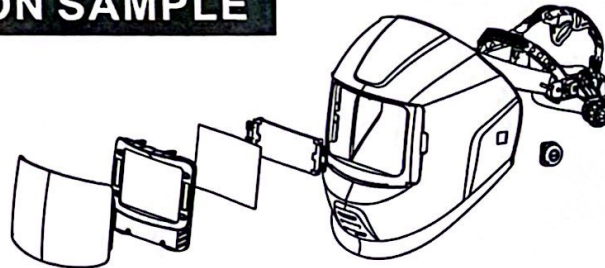


Fig.19

## INSTALLATION SAMPLE

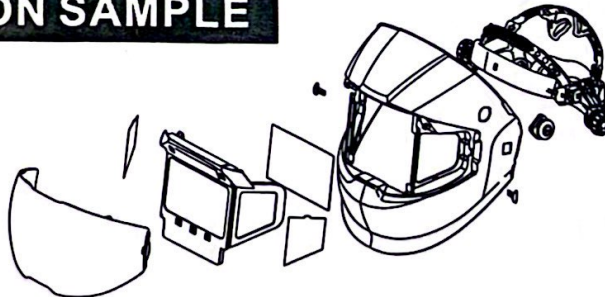


Fig.20

## INSTALLATION SAMPLE

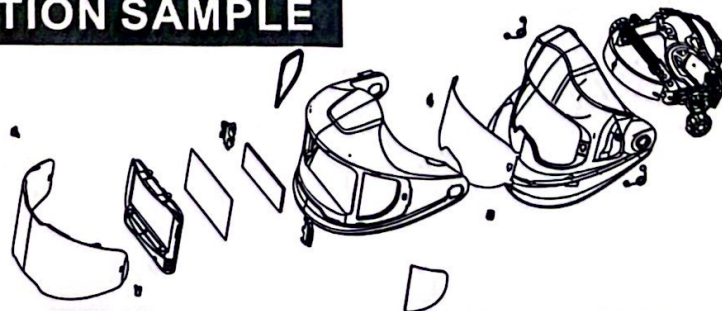


Fig.21

# SHADE SELECTING CHART

Process	Current A																							
	1.5	6	10	15	30	40	60	70	100	125	150	175	200	225	250	300	350	400	450	500	600			
Covered electrodes	8						9		10		11		12			13			14					
MAG	8						9	10		11			12			13			14					
TIG	8				9			10		11			12		13									
MIG with heavy metals	9								10		11			12		13		14						
MIG with light alloys	10								11		12		13		14									
Air-arc gouging	10								11	12		13		14		15								
Plasma jet cutting	9								10	11	12			13										
Microplasma arc welding	4	5		6		7	8	9	10		11		12											
	1.5	6	10	15	30	40	60	70	100	125	150	175	200	225	250	300	350	400	450	500	600			

**Note:** The term "heavy metals" applies to steels copper and its alloys. etc.

Start with shade that is too dark to see the weld zone, then go to a lighter shade that offers a sufficient vision and never go below the minimum.



ISO 16321-2:2021  
ISO 16321-1:2021  
CSA Z94.3  
ANSI Z87.1  
AS/NZS 1338.1  
AS/NZS 1337.1  
EN 175:1997  
EN 166:2002  
EN 379:2003

PPE Regulation(EU)2016/425  
Directive 2001/95/EC

The welding helmets are tested by the following notified body:

**ECS GmbH**

Notified Body 1883

Obere Bahnstrasse 74

73431 Aalen

Germany

**DINCERTCO**

Notified Body:0196

Alboinstrasse 56

12103 Berlin Germany

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Friars Gate (Third Floor),

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Shirley, Solihull, B90 4BN,

United Kingdom

Approved body number 2571