7. TROUBLESHOOTING

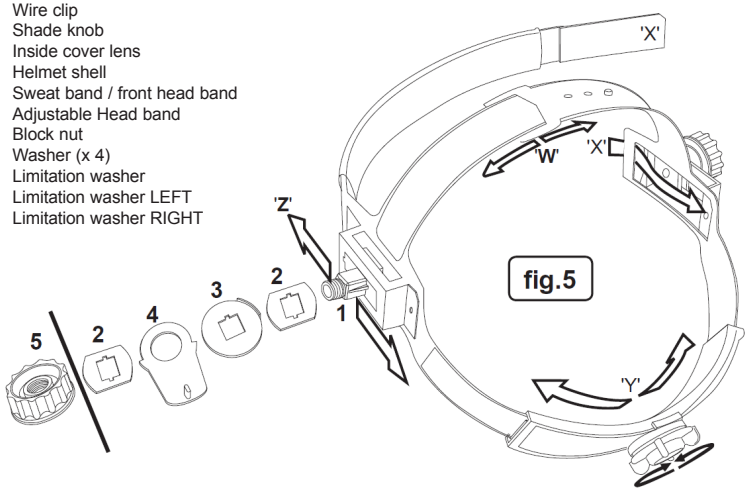
▲ **DANGER!** If, at any time, the face plate in the cartridge **FAILS** to darken when exposed to a welding spark, **DO NOT USE**. Remove cartridge and return to your dealer for checking. Continued use of the product with auto darkening feature **NOT FUNCTIONING** may **DAMAGE YOUR EYES** and **CAUSE BLINDNESS**. Use of malfunctioning product will invalidate the warranty, and any right of claim on any insurance policy.

IRREGULAR DARKENING OR DIMMING	The headband may be unevenly set on the two sides of the helmet (unequal distances from the eyes to the shade cartridge).	Readjust the distance of the shade cartridge.
SHADE CARTRIDGE DOES NOT DARKEN OR FLICKERS	The sensors are soiled or obstructed.	Clean.
	Front cover lens oiled or damaged.	Clean or replace.
	Welding current too low.	Adjust weld amps.
POOR VISION	Operative lenses and/or shade cartridge soiled.	Check, clean or replace.
	Insufficient ambient light.	Adjust light.
	Shade level incorrectly set.	Refer to Shade Guide for setting.
SLOW RESPONSE	Operating temperature too low.	Do not use at temperatures below -5°C (23°F).
WELDING HELMET SLIPS	Headband adjustments incorrect.	Refer to section 4.

8. SPARE PARTS

Issue date	13/05/08
Issue No,	2

REF.	PART NO.	DESCRIPTION
(fig.3d)	168.445504.	Front cover lens 106x89mm
(fig.3a)	168.445501	Front cover lens frame
(fig.4a/b)	168/445511	Auto darkening filter cartridge
(fig.4b/b)	168/445580	Wire clip
	168/445525	Shade knob
	168/445530	Inside cover lens
	168/445535	Helmet shell
(fig.5-X)	168/445540	Sweat band / front head band
(fig.5)	168/445545	Adjustable Head band
(fig.5-5)	168/445550	Block nut
(fig.5-2)	168/445555	Washer (x 4)
(fig.5-4)	168/445560	Limitation washer
(fig.5-3)	168/445565	Limitation washer LEFT
(fig.5-3)	168/445575	Limitation washer RIGHT



NOTE: *It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.*
IMPORTANT: No liability is accepted for incorrect use of this product.
WARRANTY: Guarantee is 12 months from purchase date, proof of which will be required for any claim.
INFORMATION: For a copy of our latest catalogue and promotions call us on 01284 757525 and leave your full name and address, including postcode.

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SEALEY POWER WELDERS

INSTRUCTIONS FOR: AUTOMATIC WELDING HELMET MODEL NO: PWH599 Version 2

Thank you for purchasing a Sealey Power Product. Manufactured to a high standard this product will, if used according to these instructions and properly maintained, give you years of trouble free performance.

IMPORTANT: **PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS AND CAUTIONS. USE THIS PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. PLEASE KEEP INSTRUCTIONS SAFE FOR FUTURE USE.**

1. SAFETY INSTRUCTIONS

❒ **WARNING!** ***THIS HELMET IS NOT SUITABLE FOR USE WITH LASER OR GAS-WELDING.***
Ensure all workshop safety rules, regulations, and conditions are complied with when using welding equipment. The helmet will not offer protection against mis-use of workshop tools, equipment, or accessories.
Maintain the helmet in good condition and protect cartridge from liquid and dirt contact.
Regularly replace the protective lens and replace any damaged or worn parts. *Use genuine parts only. Non authorised parts may be dangerous and will invalidate the warranty.*
NEVER open or tamper with the shade cartridge.
Select the shade level before use.
Ensure the front cover lens is securely in place before use.
Fit the helmet and adjust the head band so the helmet will sit as low and near to your face as possible.
Use helmet only in temperatures ranging from -5°C to 55°C (23°F to 131°F).
The eye protective plate in helmet is ***NOT*** unbreakable. Helmet will not protect you against severe impact hazards ***(such as, but not limited to)*** fragmenting abrasive discs/grinding wheels, stones and other grinding tools, explosive devices or corrosive fluids. The helmet will only protect the eyes and face from radiation and sparks.
Remove ill fitting clothing, remove ties, watches, rings, and other loose jewellery.
Maintain correct balance and footing. Ensure the floor is not slippery and wear non slip shoes.
Keep children and unauthorised persons away from the working area.

❒ **WARNING! DO NOT** use the helmet if damaged or you suspect it may be faulty. (Contact Service Agent).
DO NOT use helmet unless you have been instructed in its use by a qualified person.
DO NOT get the helmet wet or use in damp or wet locations.
DO NOT leave work place with helmet in lowered position, as bright light source may darken cartridge unexpectedly.
DO NOT place the helmet on a hot surface.
DO NOT use helmet without front cover lens and frame fitted. To do so will invalidate your warranty.
Clean helmet (see section 5.9) and store the helmet in a safe, dry, childproof location.
The materials of the helmet may, when coming into contact with the wearers skin, cause an allergic reaction to susceptible individuals.
Before welding always inspect the cartridge filter to ensure that it is not damaged. To test the filter prior to welding, direct the front of the cartridge filter to a bright light source which will cause the lens to darken. Then using your hand rapidly cover and uncover the sensor. The filter should lighten momentarily then return to a dark state.
▲ **DANGER!** If, at any time, the face plate in the cartridge **FAILS** to darken when exposed to a welding spark, **DO NOT USE**. Remove cartridge and return to your dealer for checking. Continued use of the product knowing that the auto darkening feature is **NOT FUNCTIONING** may **DAMAGE YOUR EYES** and **CAUSE BLINDNESS**. Continued use of the helmet which is not functioning will invalidate the warranty and could prohibit a successful claim on any insurance company.

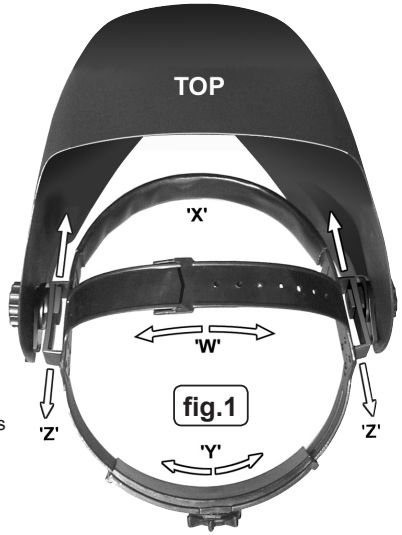
2. INTRODUCTION

High quality variable shade 9-13 lens which does not deteriorate with age or usage, manufactured and tested to EN379:2003 . Fully automatic, switches from light to dark on striking arc. Fitted with solar power panel, no batteries required. Features sensitivity switch and delay speed switch control for switching dark to light, preventing arc eye when welding at high power, whilst still providing fast switching for tack welding. Deluxe contoured helmet design approved to EN175:1997 gives full neck protection and protects lens from scratching when helmet is laid down. Comfortable headband and non slip quick release ratchet mechanism. Suitable for MIG and arc welding. (Not suitable for use with laser or gas-welding).

3. SPECIFICATION

Viewing area: . . . . . 98 x 44mm (3.86” x 1.74”).
Size of cartridge: . . . . . 110x90x9mm (4.33”x3.54”x0.35”)
Power supply:. . . . . Solar cells
Power On/Off:. . . . . Fully Automatic
UV/IR protection: . . . . . Up to shade Din.16 at all times
Adjustable shade:. . . . . From 9 - 13
Clear shade:. . . . . Shade 4.
Response (light to dark):1/20,000 sec
Response (dark to light) ● Position ‘slow’ = 0.6 - 0.8sec
. . . . . ● Position ‘fast’ = 0.25 - 0.35sec
Sensitivity: . . . . . Adjustable high/low
Helmet material:. . . . . Hi-impact Polyamide Nylon/Polyprop.
Weight of helmet: 374g
Weight of filter cartridge:133g
Operating temperature: -5°C to 55°C (23°F to 131°F).
Storing temperature:. . . -20°C to 70°C (-4°F to 158°F).

4. INSTRUCTIONS FOR USE



❒ *WARNING! Before using the helmet for welding ensure you have read and understood the safety instructions in Section 1.*

4.1. The helmet comes ready assembled but before it can be used it must be adjusted to fit the user properly and set up for response time, sensitivity and shade level.

4.2. **ADJUSTING THE FIT OF THE HELMET.** The overall circumference of the headband can be made larger or smaller by rotating the knob on the back of the headband. (See adjustment 'Y' in fig.1) This can be done whilst wearing the helmet and allows just the right tension to be set to keep the helmet firmly on the head without it being too tight.

4.3. If the headband is riding too high or too low on your head adjust the strap which passes over the top of your head. To do this release the end of the band by pushing the locking pip out of the hole in the band. Slide the two portions of the band to a greater or lesser width as required and push the locking pip through the nearest hole (See adjustment 'W' in fig.1)

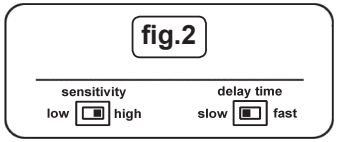
4.4. Test the fit of the headband by lifting up and closing down the helmet a few times whilst wearing it. If the headband moves whilst tilting, re-adjust it until it is stable.

4.5. **ADJUSTING DISTANCE BETWEEN HELMET AND FACE.** To adjust the distance between the helmet and your face in the down position loosen the tilt knobs on either side of the helmet and slide it nearer to or further from your face (see adjustment 'Z' in fig.1) It is important that your eyes are each the same distance from the lens otherwise the darkening effect may appear uneven. Re-tighten the tilt knobs when adjustment is complete.

4.6. **SELECTING SHADE LEVEL.** Select the shade level you require according to the welding process you will use by referring to the "Shade Guide" below for settings. Turn the shade control knob on the side of the helmet to the shade number required.

SHADE GUIDE / WELDING PROCESS	ARC CURRENT (AMPS) 0.5 1 2.5 5 10 15 20 30 40 60 80 100 125 150 175 200 225 250 275 300 350 400 450 500
SMAW shielded metal arc welding	9 10 11 12 13 14
MIG on heavy metals	10 11 12 13 14
MIG on light alloys	10 11 12 13 14 15
TIG,GTAW gas tungsten arc welding	9 10 11 12 13 14
MAG/C0$_2$ metal active gas	10 11 12 13 14 15
SAW shielded semi-automatic arc welding	10 11 12 13 14 15
PAC plasma arc cutting	11 12 13
PAW plasma arc welding	8 9 10 11 12 13 14 15

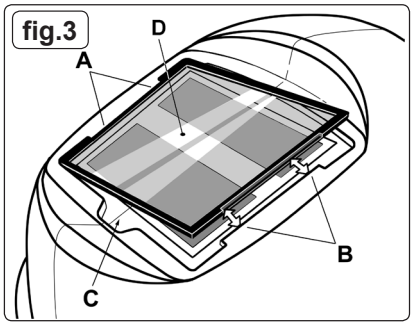
4.7. **SELECTING DELAY TIME.** When welding ceases the viewing window automatically changes from dark back to light but with a pre-set delay to compensate for any bright afterglow on the workpiece. The delay time/response can be set to 'fast' (0.25secs to 0.35) or 'slow' (0.5secs to 0.8) as required using the micro switch on the back of the shade cartridge. (See fig.2)



4.8. **SENSITIVITY.** The sensitivity can be set to 'high' or 'low' using the micro switch on the back of the shade cartridge. The 'high' setting is the normal setting for everyday use. Where the operation of the mask is disturbed by excess light or another welding machine close by, use the 'low' setting (See fig.2).

4.9. You are now ready to use the helmet. The shading may be adjusted during use by re-setting potentiometer control.

5. MAINTENANCE



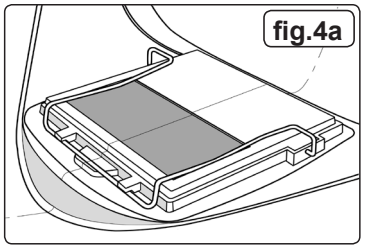
5.1. **REPLACING FRONT COVER LENS**. Place your finger or thumb into the recess at the bottom edge of the cover lens frame and flex the frame upwards until it releases from one edge. (See fig.3-C). Remove the protective film from the new lens and press it into the lens frame. Hook the frame under the side retaining lip shown at 'A' in fig.3 making sure that it is the right way up. Press on the other side of the frame to snap it under the edge shown at 'B' in fig.3.

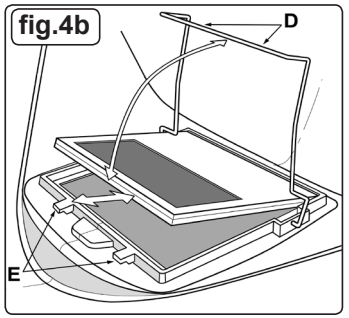
5.2. **CHANGING THE SHADE CARTRIDGE.** (See figs.4a & 4b) Pull off the shade control knob leaving the shaft protruding through the helmet side. Unfasten the nut on the shaft and leave the potentiometer loose on its cable. The cartridge is retained by a wire loop clip as shown in fig.4a. Release the front edge of the clip (fig.4b-D) from its retaining lugs (fig.4b-E) and hinge it upwards and out of the way. Lift the shade cartridge out of its frame complete with the shade control potentiometer on its lead.

5.3. **FITTING NEW CARTRIDGE.** Take the new shade cartridge and pass the potentiometer cable under the wire loop before dropping the cartridge into its retaining frame inside the helmet. Hinge down the wire loop clip and ensure that the front edge of the loop is properly retained under the retaining lugs as shown in fig.4a

5.4. Fasten the nut on the shaft protruding through the hole. Push the shade control knob onto the shaft.

5.5. **CLEANING.** Clean helmet by wiping with a soft cloth. Clean cartridge surfaces regularly. Do not use strong cleaning solutions. Clean sensors and solar cells with methylated spirit and a clean cloth and wipe dry with a lint-free cloth.





6. MEANING OF MARKINGS

Meaning of the markings on the filter:

4 / 9 - 13 Jack Sealey Ltd. 1 / 2 / 1 / 2 / 379

- 4 — Light state scale no.
- 9 — Lightest dark state scale no.
- 13 — Darkest state scale no.
- Jack Sealey Ltd. — Manufacturer's identification.
- 1 — Optical class.
- 2 — Diffusion of light class.
- 1 — Variation in luminence transmittance class.
- 2 — Angle dependence of luminous transmittance class.
- 379 — Number of the applied standard.

Meaning of the markings on the helmet:

Jack Sealey Ltd.	= manufacturer's identification
EN 175	= number of the applied standard
S	= symbol of the robustness (Increased robustness)