

## COMMON PROBLEMS & SOLUTIONS

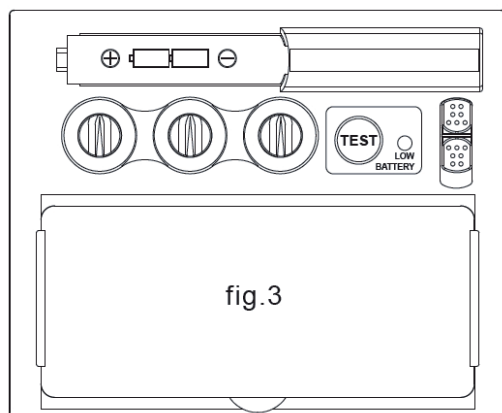
- **Auto-Darkening filter does not darken or flickers**
- Front cover is soiled or damaged – Change the cover lens
- Sensors are soiled – Clean the sensors surface
- Welding current is too low – Adjust the sensitivity level to higher
- Check battery and verify they are in good condition and installed properly
- Check battery surfaces and contacts and clean if necessary

- **Slow Response**
- Operating temperature is too low – Do not use at temperatures below -10°C (14°F)

- **Poor Vision**
- Front/Inside cover lens and/or the filter is soiled – Change lens
- There is insufficient ambient light
- Shade number is incorrectly set – Reset the shade number



- This filter is not suitable for laser welding and oxyacetylene welding/cutting processes
- Never place the Auto-Darkening filter on a hot surface
- Never open or tamper with the Auto-Darkening filter
- Don't make any modifications to either the filter or helmet, unless specified in this manual. Unauthorized modifications and replacement parts will void the warranty and expose the operator to the risk of personal injury
- Use only at temperatures: -10°C ~ +55°C (14°F ~ 131°F)
- Storing temperature: -20°C ~ +70°C (-4°F ~ 158°F) The filter should be stored in dry, cool and dark areas and remove the battery when not using the device for a prolonged period of time.
- Clean the filter surface regularly; don't use strong cleaning solutions. Always keep the sensors and solar cells clean using a clean lint-free tissue
- Regularly replace the cracked/scratched/pitted front cover lens
- Never try to open the filter cartridge
- Don't use any solvents on the filter screen or helmet components
- Protect filter from contact with liquid or dirt
- Install AAA Alkaline batteries (2 required) before using this product



## GENERAL INFORMATION

### EN 175: 1997 WELDING EYE AND FACE PROTECTION

#### MAINTENANCE AND STORAGE

When being transported this welding shield should be stored in a container that is out of direct sunlight, away from chemicals and abrasive substances and cannot be damaged by physical contact with hard surfaces/items. Do not store outside temperature range of 20°C to +50°C or with humidity above 90%RH. To maintain the welding shield in the best possible condition do not use solvents or abrasive materials to clean. Clean with a cloth moistened with mild detergent in tap water and dry with a soft cloth. Under normal circumstances the welding shield should offer protection for 2-3 years. Scratched or damaged lenses should be replaced. Replacement lenses are available.

#### ADDITIONAL INFORMATION

As required by European Health and Safety Requirements, the user is advised that when the shield is in contact with skin susceptible individuals may experience an allergic reaction. If this is the case, leave the hazard area, remove the shield and seek medical advice.

#### FITTING AND ADJUSTMENT

For adequate protection the welding shield must be fitted or be adjusted to the size of the users head. To alter fit, adjust the harness at the rear of the shield ensuring a comfortable fit is made around the crown of the head. When not in use or during transportation, the shield should be stored in a container such that it is out of direct sunlight, away from chemicals and abrasive substances and cannot be physically damaged with hard surfaces/items.

#### USE

The attention of users is also drawn to the dangers of modifying or removing any of the original component parts of the shield, other than as recommended by the shield manufacturer. Shields should not be adapted for the purpose of fitting attachments in any way not recommended by the shield manufacturer. Accessories and/or replacement harnesses, chinstraps, ear defenders, visors and shield-mounted lamps are available with fitting instructions from JSP. Do not apply paint, solvents, adhesives or self-adhesive labels, except in accordance with the instructions of the shield manufacturer.

#### INSPECTION AND CARE

The shield is a complete system consisting of shell and harness. The shield's useful life is affected by many factors including the cold, heat, chemicals, sunlight and misuse. The shield should be examined daily for obvious signs of cracking, brittleness or damage to either shield or harness. The date of manufacture is moulded into the inside of the shield, underneath the filter. While the shield is free from defects it is suitable for its intended purpose. Under normal circumstances the shield should offer adequate protection for 2-3 years. Under no circumstances must a component other than a JSP component be used on a shield. To maintain the shield in the best possible condition, do not use solvents or abrasive materials to clean. Rinse in 1% solution of 'Tego' or other similar mild detergent in tap water and dry with a soft cloth.

## MARKINGS ON THE SHIELD

	Manufacturer's Trademarks
	Conformity to European legislation 2016/425
	Recycle Logo and Nylon Material Identification
EN175: 1997	The European Standard number for Welding Eye and Face Protection
B	Medium Energy High Speed Particles Impact
9	Molten Metal Protection

### EN 175: 1997 WELDING EYE AND FACE PROTECTION

#### MARKINGS ON THE OCULARS

EN166: 2002	The European Standard for Personal Eye Protection
B	Medium Energy High Speed Particles Impact
9	Molten Metal Protection

### EN 379: 2003 AUTOMATIC WELDING FILTERS

#### FURTHER INSTRUCTIONS

The lens should be fitted in according to instructions on page 4 of this leaflet. Replace the lens if it becomes damaged, cracked or pitted.

#### MARKINGS ON THE WELDING FILTER

EN379	The European Standard number for Automatic Welding Filters.
ANSI Z87.1	The American National Standard for Occupational and Educational Eye and Face Protection Devices.
Variable Shade x/y-z	The shade the filter lens covers; x = non-welding shade; y-z = shade range when welding.



## COBRA™ USER INSTRUCTIONS



A copy of this manual and the Declaration of Conformity for the product can be found on the product page: [documents.jspsafety.com](http://documents.jspsafety.com)

#### IMPORTANT WARNING:

The Cobra Welding Shield has been designed for use with standard (90mm x 110mm) filters, either fixed or variable shade auto darkening, or fixed shade. The correct filter for the welding operation should be fitted.

#### USE:

- Read the instructions before operating the Cobra Welding Visor.
- This Visor is not designed for laser or laser cutting or gas welding.
- This Visor is designed to protect your eyes and face from sparks, spatter and harmful IR and UV radiation. This shield will not protect you from explosive devices or corrosive liquids.
- Never operate this shield without lens cover properly installed.
- Keep front lens cover and light sensors clean for proper operation.
- Replace auto-darkening lens if it is cracked, scratched or pitted to avoid serious personal injury.
- Use only replacement parts specified in this manual.
- Maximum range of use is 80cm (2.6ft).
- Ensure that both the front and inner lens protector plates are in position. Without these the EN 175 requirements will not be met.

#### WELDING WITH THE COBRA™

- The Cobra Welding Visor will automatically change from a light state (#3 / #4) to a dark state (#9, #10, #11, #12, 13) when the arc welding starts, dependant on Lens type and Shade selected.
- The lens automatically returns to a light state when the arc stops.
- Match your welding application to the shade indicated on the shade chart.
- This shield is good for MIG, TIG, SMAW, Plasma Arc and Air Carbon Arc work.
- Increased welding productivity and quality because hands are always free.
- Protection from harmful UV and IR radiation at all times, in darkness or clear state.
- The lens contains two sensors to detect light from the welding Arc and darken the lens.
- The solar panel extends the life.

#### WELDING WITH THE COBRA™

- Set function to suitable shade number, according to sort, environment of weld work.
- Operating temperature: -10°C~55°C (14°F~131°F). Do not use or open the shade. cartridge if it has become damaged by shock, vibrations or pressure. Keep the sensors and solar cell clean.
- Clean the cartridge using a neutral soap and soft cloth, which should be damp and not saturated.
- Do not use solvents or abrasive cleaning detergent.
- If the cover lens is spattered with dirt, it should be replaced immediately.
- Do not use the Cobra Welding Visor without Anti-Spatter Screen. This may cause a malfunction.

## SHADE CHART AND TECHNICAL SPECIFICATIONS

### SHADE CHART FOR WELDING

Applications	Arc current in Amperes	Protective Shade No
Stick Electrodes	Less than 40	9
	40-80	10
	80-175	11
	175-300	12
	300-500	13
MIG	Less than 100	10
	100-175	11
	175-300	12
	300-500	13
	Gas Tungsten Arc Welding (TIG)	Less than 50
50-100		11
100-200		12
Air Carbon	200-300	13
	Less than 500	12
	500-700	13
Plasma Arc Cutting	60-150	11
	150-250	12
	250-400	13
Plasma Arc Welding	Less than 50	9
	50-200	10
	200-400	12

### TECHNICAL SPECIFICATIONS FOR AUTO-DARKENING FILTERS

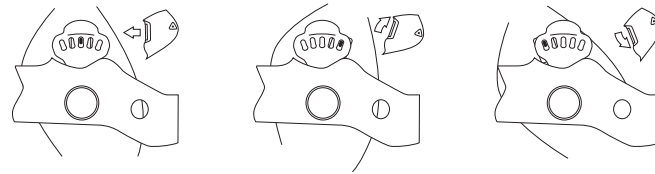
Power on/off	Fully Automatic
Cassette dimension	110mm x 90mm (thickness: 10mm) / 4.33" x 3.54" (0,394")
Viewing field	98mm x 44mm / 3.86" x 1.73"
Cartridge size	110 x 90 x 9mm / 4.33" x 3.54" x 0.35"
Optical class	1/1/1/2
Reaction time	0.05 millisecond (light to dark)
Power supply	Solar-cell, battery change required (2 x AAA Alkaline batteries)
Low battery warning	Red light
Light state	DIN 3.5
Shade	DIN 9 ~ 13
Shade control	Internal, Variable shade
Sensors	Two Sensors
Storage temperature	-20°C ~ +70°C (-4°F ~ 158°F)
Operating temperature	-10°C ~ +55°C (14°F ~ 131°F)
Clearing time (adjustable)	Min 0.01sec (for Spot-Welding) ~ Max 0.5 sec (from dark to light)
Transmission	Darkened state: #9 - #13 process Clear (light) state: #4
Switching time	1/16,000 s. from light to dark
Delay (dark to light)	0.1 ~ 1.0s by dial control knob
Low amperage TIG rated	5 amps / DC; 5 amps / AC;
UV/IR Protection	Up to Shade DIN16 at all times
Sensitivity control	Adjustable by dial knob
Total weight	440g
Standards	EN379

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## ADJUSTMENTS

### ADJUSTMENT OF THE COBRA WELDING VISOR FOR COMFORT

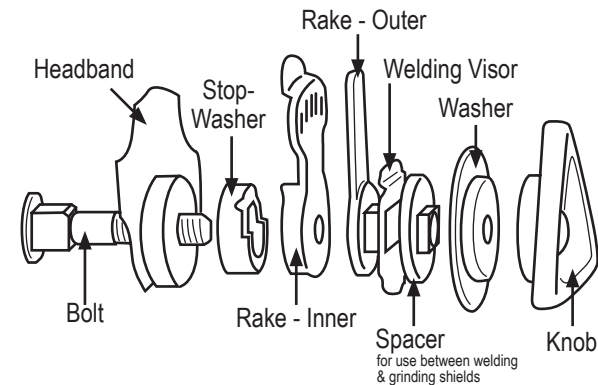
- Before using, properly adjust your visor for maximum comfort and protection. The tension of the knobs on either side can be adjusted to set and maintain the correct force to hold the Cobra Welding Visor out of your line of sight, when in the raised position. To properly adjust this mechanism for your personal preference:
- Place the Visor on your head with the headband properly set for depth above the head and wheel ratchet tension behind it.
- The knobs on either side should be loosened until the Visor lifts freely. Lift the Visor into the raised position and then tighten both the knobs until you feel resistance. You should now be able to raise and lower the Visor, feeling it lock positively in both positions. If you feel the Visor is still too loose, repeat until the correct setting is achieved.
- The Visor can be adjusted to stop the lens in five different positions, check the tab arrangement on the inside of the Visor, above the knob that holds the headband to the visor.
- This will control the position of the lens in relation to your line-of-sight when the Visor is in the lowered position.
- The correct setting will depend on the Welding Task being undertaken. See illustration below:



**Note: both sides need to be adjusted equally for proper field of vision. Only proper adjustment will provide full protection against UV and IR rays at all times.**

### Headgear Assembly Diagram:

### THE USER SHOULD NOT DISMANTLE THE HARNESS

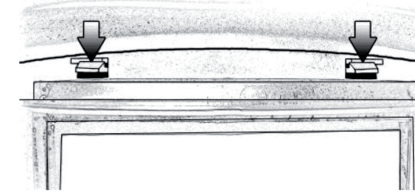


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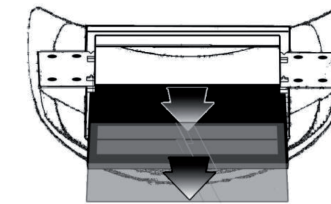
## REPLACEMENT OF AUTO-DARKENING LENS

### CHANGING THE AUTO-DARKENING LENS

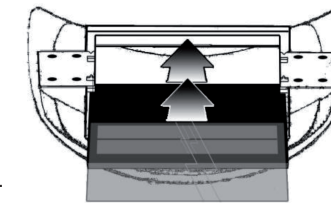
- a) Remove Outer Screen Holder by pushing the two Top-Clips (see diagram below) and then Pulling the Screen Holder Clear from the front.



- b) Gently push the bottom of the lens out from the Lens Recess, which is located inside the Visor.



- c) Lift the old filter and slide towards you to remove.



- d) Replace the lens by first putting the lens and then the inner screen underneath the spring clips inside the lens recess in the visor. Gently push the lens and screen into place, locking over the bottom of the lens recess.



- e) The filter will click into place once you have pushed it into a locking position over the bottom of the lens recess.



- f) Replace the Outer Screen Holder, by hooking the tabs into the holes at the bottom of the Screen-Holder Recess, then pushing the Side-Clips and the Top-Clips into position.

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## FUNCTIONS OF SWITCHES

### SELECTING THE OPERATING MODE

- Use the switch button on the back of shade cartridge to select the mode appropriate for the work activity.
- Weld mode - Used for most welding applications. In this mode the shade function is turned on when it optically senses a welding arc. Select shade level, delay time and sensitivity as require.
- Grind Mode - Used for metal grinding applications. In this mode, the shade function is turned off. The shade is fixed shade DIN 3.5 that allowing a clear view to grind a weld with the helmet providing face protection

### TEST

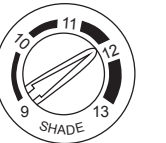
- Press and hold test to preview shade selection before welding. When released then viewing window will automatically return to the light state (3.5 Shade).



### ADJUSTABLE DIAL KNOBS

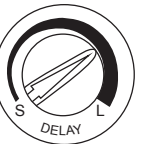
#### SELECTING SHADE LEVEL

- Select the shade level you require according to the welding process you will use by referring to the "Shade Guide Table" below for settings. Turn the shade control dial on the lens to the shade number required.



#### 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 "S" (short: 0.1 sec.) or "L" (long: 1.0 sec.). As you require using the infinitely dial knob on the back of the shade cartridge.
- It is recommended to use a shorter delay with spot welding applications and a longer delay with applications using higher currents. Longer delays can also be used for low current TIG welding in order to avoid the filter opening when the light path to the sensors is temporarily obstructed by a hand, torch, etc.



#### SENSITIVITY

- The sensitivity can be set to "H" (high) or "L" (low) by using the infinitely dial knob on the back of the shade cartridge. The "Mid-High" setting is the normal setting for everyday use. The maximum sensitivity level is appropriate for low welding current work, TIG or special applications. Where the operation of the helmet is disturbed by excess ambient light, or another welding machine close by, use the "low" setting.
- As a simple rule, for optimum performance, it is recommended to set sensitivity to the maximum at the beginning and then gradually reduce it, until the filter reacts only to the welding light flash and without annoying spurious triggering due to ambient light conditions (direct sun, intensive artificial light, neighbouring welder's arcs etc.).



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