

Weldclass®



OPERATING MANUAL FOR Promax 600 Welding Helmet Promax 650 Welding Helmet Promax 680 Welding Helmet Promax 680R Welding Helmet Promax 850R Welding Helmet Promax R50 Powered Respirator



WARNING



THIS PRODUCT CONTAINS A BUTTON BATTERY

A lithium button battery can cause severe or fatal injuries in 2 hours or less if it is swallowed or placed inside any part of the body.

Keep batteries out of reach of children.

If you think batteries may have been swallowed or placed inside any part of the body, seek immediate medical attention.

Video/Web Manual



[Weldclass.com.au/guide600](https://weldclass.com.au/guide600)

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1. HELMET IMPORTANT INFORMATION

WARNING: Incorrect use of this product may cause serious injury.

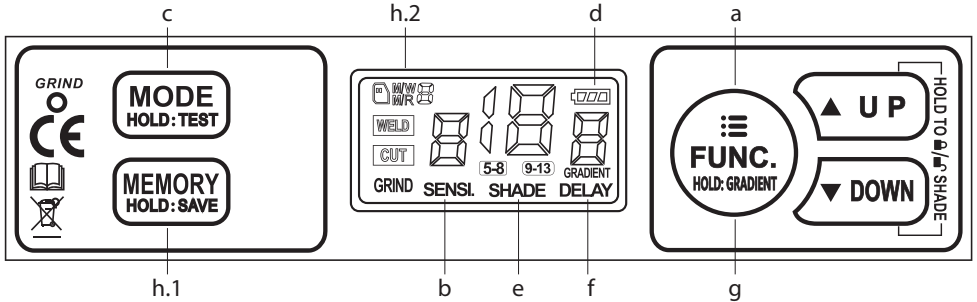
- a. All users of this helmet should read & understand this manual before using the product
- b. Use this helmet only for the intended application as described in this manual
- c. Each time the helmet is used, it should be checked for correct operation: Use test function (press & hold MODE button) to check that the lens is activating correctly.
- d. Stop welding immediately if the helmet filter/lens fails to darken when the arc is struck. Do not continue use until the malfunction has been rectified. Read this manual for further information and if in doubt, return the helmet to your Weldclass distributor for further inspection.
- e. This welding helmet does NOT provide unlimited protection. All appropriate PPE and safety-wear must be worn, and safe work practices must be followed at all times, in accordance with applicable industry OH&S regulations. Arc rays can burn eyes and skin. Fumes and Gases can be hazardous. Noise can damage hearing. Flying particles can cause impact injury or death.
- f. Never use the helmet without the outer & inner cover lenses correctly installed. Failure to do so will damage the Auto-darkening filter & void warranty.**
Always keep clear cover lenses clean and replace them regularly. Dirty or scratched cover lenses may cause the auto-darkening filter to malfunction.

2. HELMET SPECIFICATIONS

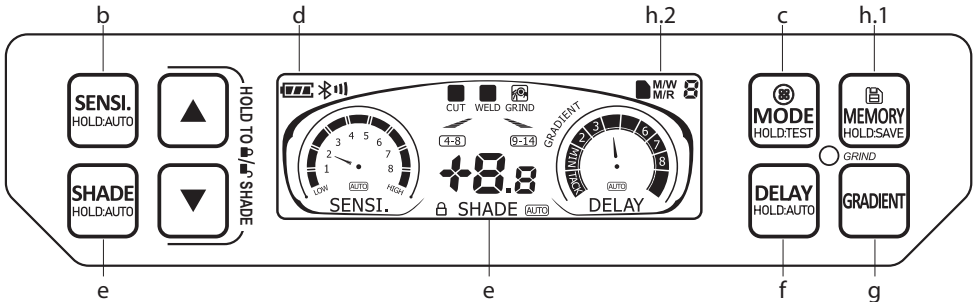
Helmet Model	600	650	680	680R	850R
Suitable Applications	MIG, MMA (stick), TIG, Plasma Cutting, Oxy Cutting (Brazing, Arc Gouging)				
TIG Suitability	5 Amps or more				
Optical Class	V2 (1/1/1/2)	V1 (1/1/1/1)			
Switching Speed	Conforms to & exceeds the requirements of AS/NZS1338.1 & ISO16321-2				
Sensors	4		4 + 1 Intensity		
Power Supply	2 x CR2450 replaceable battery (assisted by Solar panels)				
On / Off	Ready to weld at any time – no switching required				
Low Battery Indicator	Battery level indicator on Digital Screen				
Inactive Shade Level (Grind/Off)	3				
Active Shade Level (Weld)	4-8 / 9-13		4-8 / 9-14		
Sensitivity Adjustment	Low - High (9 levels)				
Delay Adjustment	Min 0.04 sec – Max 2.0 sec with Gradient function				
Grinding Mode	Yes, internal	Yes, internal and external push button			
Operating Temperature	-10°C to +60°C				
Storage Temperature	-25°C to +65°C				
Weight	562 g	568 g	620 g	860 g	940 g
Viewing Area	108x74 mm	108x82 mm	116x82 mm		
Outer Cover Lens Dimensions	178x130mm				230x135mm
Inner Cover Lens Dimensions	114x90 mm		112x86 mm		
Magnification Lens Holder	Internal – takes standard 108x51mm magnifications lenses				
Standards Compliance - Shell	AS/NZS1337.1 High Impact				
Standards Compliance – Auto Darkening Filter/Lens	AS 1338.1, ISO 16321-2, ANSI Z87.1, CSA Z94.3				

3. HELMET CONTROLS

PROMAX 600 & 650 CONTROLS:



PROMAX 680 & 850 CONTROLS:



PROMAX 680 EXTERNAL CONTROLS:

	MODE	Short press	Switch between WELD, CUT, SHADE LOCK
		Long press	Switch between AUTO or MANUAL Shade
	BUTTON	Short press	Current settings will save to memory record 0
		Long press	Grind Mode on/off
	DIAL	Twist to adjust Shade	Manual Shade Mode: Adjust shade by ± 0.5
			Auto Shade Mode: Adjust shade deviation by ± 0.5

For full details/instructions on the use of these controls, see weldclass.com.au/guide600 or scan QR Code on page 2 of this manual.

Note: ADF = Auto-Darkening Filter/Lens Cassette

a. FUNCTION BUTTON (FUNC.) (Promax 600 & Promax 650 only)

This scroll through Sensitivity, Shade and Delay settings. Press the Up and Down buttons to adjust the Function that is flashing. Once adjusted, wait for the setting to stop flashing to store the new value.

3. HELMET CONTROLS - Cont'd

b. SENSITIVITY CONTROL (SENSI)

This adjusts the sensitivity of the arc sensors to best suit the welding task & surrounding environment. Low sensitivity helps prevent the ADF from reacting to other nearby light sources. High sensitivity may be required if welding on low current &/or when TIG welding. Low to mid sensitivity is recommended for most welding applications. *Press and Hold for Auto Sensitivity (Promax 680 only).*

c. MODE BUTTON

This changes between WELD 9-13, WELD 4-8, CUT, and GRIND modes. Also, press and hold this button to test/check ADF is operating correctly.

d. BATTERY LEVEL INDICATOR

e. SHADE ADJUSTMENT (SHADE)

The following chart shows recommended shade levels for different welding applications. *Press and Hold for Auto Shade (Promax 680/850 only).*

Process	Amps	Shade No.
Stick (MMA)	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
TIG	Less than 50	8-10
	50-100	11
	100-200	12
	200-400	13

Process	Amps	Shade No.
Arc Gouging	Less than 500	12
	500-700	13
Plasma Cutting	Less than 80	8-9
	80-150	10-11
	150-350	12-13
Gas Welding & Cutting	-	4-6

f. TIME DELAY ADJUSTMENT (DELAY)

This adjusts the time the ADF switches from dark back to light when welding stops. A short delay time is best for tack welding and short welds. A longer delay may be required if welding heavier materials, where the welding pool emits bright light for a brief period *Press and Hold for Auto Delay (Promax 680/850 only).*

g. GRADIENT FUNCTION

Promax 600/650: Activate by pressing the FUNC. Button for 2 seconds

Promax 680/850: Activate by pressing the GRADIENT Button.

When this is active the shade will 'slope down' from your set welding shade setting to shade 3. This mirrors the cooling of the weld pool, to reduce eye strain.

h. MEMORY SAVE

You can save up to 10 of your favourite settings.

M/R = Memory Recall, this will display when you are trying to Recall a saved Memory setting. M/W = Memory Write, this will display when you are Saving a Memory Setting. The Number represents the Memory number slot you are saving to or recalling. Use the Up and Down buttons to scroll through the memory Slots. Wait for

5 seconds after selecting the desired memory slot to save or recall these settings.

4. HELMET ADJUSTMENTS & PARTS REPLACEMENT

a. REPLACING BATTERIES

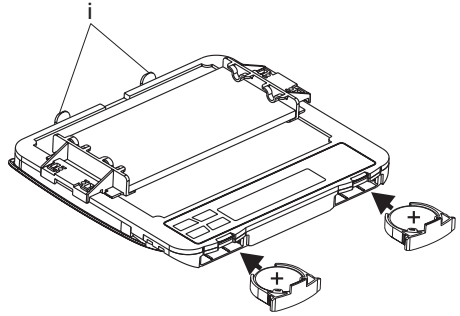
When the batteries have become discharged. You can view the battery level status on the Digital Display (h).

Remove the Front cover lens before removing the ADF. For the Promax 650 also remove the Grind Switch by unscrewing the button retainer ring and pushing the button into the inside of the helmet.

Remove the ADF by pressing down on the 2 tabs (i) at the top of the ADF while simultaneously pressing the ADF forwards out of the front of the helmet.

Remove the screws holding the battery holders in place and remove the holders.

Reverse these steps to re-assemble the helmet once new batteries are installed.



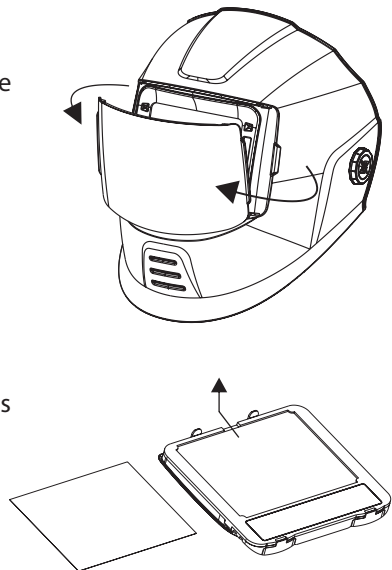
b. REPLACING COVER LENSES

Replacing Front Cover Lens: Firmly pull 1 side of the Cover lens forwards. Once 1 side is released the other side will come free.

Replacing Inner Cover Lens: Using the access point at the top of the ADF, pull the lens backwards so the lens bends and the corners release from their holders.

NOTE: If you have the mag lens holders installed, you may need to remove the whole cassette first. (see above instructions for Replacing Batteries)

IMPORTANT: Use only original Weldclass cover lenses to ensure correct fit and conformance to safety standards.



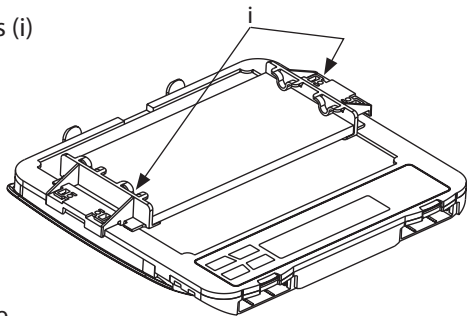
4. HELMET ADJUSTMENTS & PARTS REPLACEMENT - Cont'd

c. INSTALLING A MAGNIFICATION LENS

Install the 2 Magnification Lens holder clips (i) (supplied as separate parts with helmet) to the mounting positions on either side of the viewing window. These will click firmly into place.

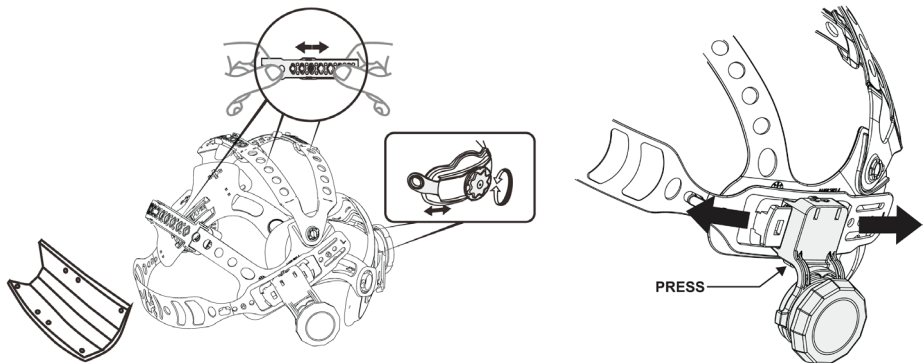
Any standard 108x51mm magnification lens can be fitted to these clips.

Note: To prevent fogging, place the flat side of the magnification lens towards the ADF (auto-darkening filter/lens).

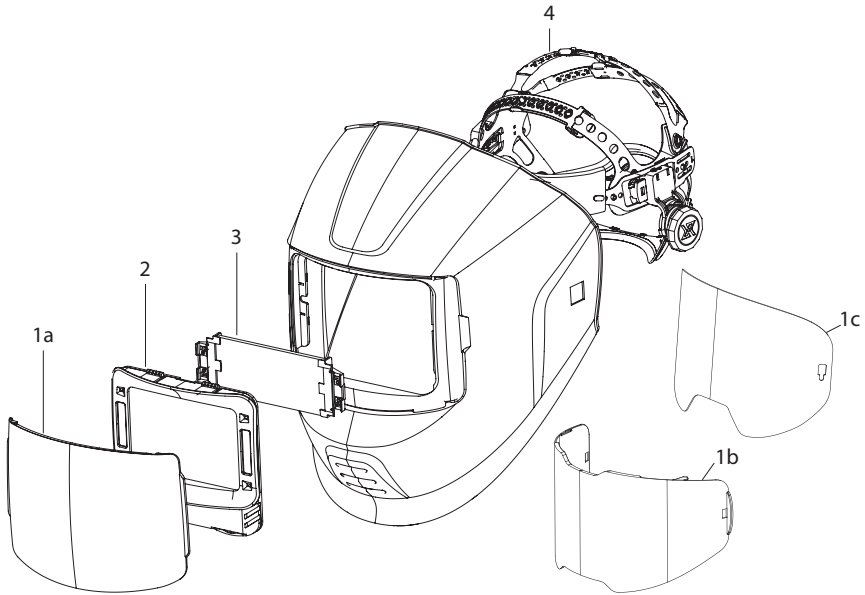


d. HEADGEAR ADJUSTMENT

For full details on headgear adjustments, see web manual at weldclass.com.au/guide600 or scan the QR code on page 2 of this manual.



5. HELMET PARTS & ACCESSORIES



REF	DESCRIPTION	SUIT MODEL/S	PART NO
1a	Outer Clear Cover Lens (each)	600, 650, 680, 680R	WC-05352
-	Cover Lens Kit 2 Outer + 1 Inner		WC-05351
1b	Outer Clear Cover Lens Pk5	850R	WC-06707
1c	Grinding Visor Pk5		WC-06709
2	Auto-Darkening Filter Cassette (ADF)	600	WC-05346
	Auto-Darkening Filter Cassette (ADF)	650	WC-05349
	Auto-Darkening Filter Cassette (ADF)	680, 680R	WC-05354
	Auto-Darkening Filter Cassette (ADF)	850R	WC-06698
-	Inner Clear Cover Lens 114 x 90mm Pk5	600, 650	WC-05350
-	Inner Cover Lens 121 x 86mm Pk5 Promax	680, 680R, 850R	WC-05357
-	Sweat Band Pkt 5	All	WC-01630
4	Headgear Assembly	600, 650, 680	WC-05353
	Headgear Assembly	680R, 850R	WC-06694
-	Battery (CR2450) (Not pictured)	All	*
3	Magnification Lens 1.5x	All	P7-ML15
	Magnification Lens 2.0x		P7-ML20
	Magnification Lens 2.5x		P7-ML25

*Commonly available from most battery retailers.

6. HELMET MAINTENANCE

The helmet and ADF must be checked regularly. Defective equipment should not be used. Parts that are broken, missing, worn, distorted or contaminated, should be replaced immediately.

- a. Inspect lenses frequently. Immediately replace any scratched, cracked, or pitted lenses as they may impair visibility and reduce protection.
- b. Inspect Helmet Shell and Harness Assembly frequently. Replace any damaged or worn components immediately.
- c. Keep the Sensors and the Solar Panel clean at all times. When cleaning the Welding Helmet or Filter Lens do not use solvents or abrasive cleaning agents. Clean with a soft cloth after use.

7. HELMET TROUBLESHOOTING

FAULT	POSSIBLE CAUSES	POSSIBLE REMEDY
The Filter Lens does not activate at all (fails to darken)	Batteries are discharged	Replace Batteries
	Batteries are not fitted correctly	Check batteries (see section 4)
	Battery or terminals are dirty	Inspect & clean battery/terminals
The Filter Lens flickers or intermittently fails to darken	Front Cover Lens is dirty or scratched & is obstructing the sensors	Replace cover lens
	Sensors are dirty	Clean the Sensors with a soft cloth
	Sensitivity too low	Increase sensitivity level
	Momentary disruption to sensing of the arc	Increase delay time adjustment (will help compensate for momentary disruptions)
Filter lens is dark when no arc is present or stays dark after the weld is extinguished	The ambient light level is too bright	Reduce the ambient light level in the area
	Sensitivity too high	Reduce sensitivity level

Find more troubleshooting tips
Weldclass.com.au/htsg



The following sections 8-14 apply to the Promax R50 Respirator System, as supplied with Promax 680R & 850R PAPR Helmets.



8. RESPIRATOR IMPORTANT INFORMATION

WARNING

- Designed only for use in combination with Weldclass Promax 680R or 850R welding helmets
- Provides protection against non-toxic hazardous particles, and solid and liquid aerosols
- TH3P class filters do NOT provide protection against gaseous substances
- Must only be used in accordance with this manual, and by competent and trained personnel
- Incorrect use may compromise safety and cause damage to health
- Do not use helmet if respirator is switched off, or not supplying the minimum level of air flow
- Use of helmet with respirator off will compromise respiratory protection and cause harmful build up of CO₂ and depletion of oxygen
- Do not use in environments: where oxygen content is less than 19.5%, and/or there is immediate health or hygiene hazard, and/or that are oxygen-rich, and/or that contain unknown airborne substances, and/or where there is danger of explosion
- Do not use inside confined or unventilated spaces such as tanks, pipes, etc
- Do not expose any components to direct flames or sparks

TO ENSURE SAFE & CORRECT OPERATION

- Do not modify or alter any part of the respirator or helmet
- Protect the unit from ingress of water or liquids
- Ensure the face seal is always sealed tightly around the face when in use - if integrity of the seal is impacted, for example by long facial hair, this will compromise protection
- Position blower unit so that hose does not become caught or pinched
- Refer to AS/NZS 1715 and EN12941 and this manual for instructions on proper use and suitable applications
- Do not attempt to clean filters, clogged/used filters should always be replaced
- Never use respirator without spark arrestor mesh filter fitted, this will increase risk of fire

8. RESPIRATOR IMPORTANT INFORMATION - Cont'd

BATTERY SAFETY

- Do not use a damaged battery or charger, this may cause explosion and injury or death
- Keep battery away from fire or heat
- Use only the specified, original Weldclass battery charger
- Charge in an open, well-ventilated location
- Do not use battery or charger outdoors, or expose to moisture or liquids
- Do not attempt to disassemble, repair, or modify the battery or charger

LEAVE THE WORK AREA IMMEDIATELY AND REMOVE UNIT IN A SAFE ENVIRONMENT, IF:

- Blower unit malfunctions and/or airflow decreases or stops
- Audible / vibration warning alarm is activated
- Breathing becomes difficult, or user experiences dizziness or distress
- Any component on the respirator or helmet becomes damaged
- Contaminant can be smelled or tasted inside the helmet

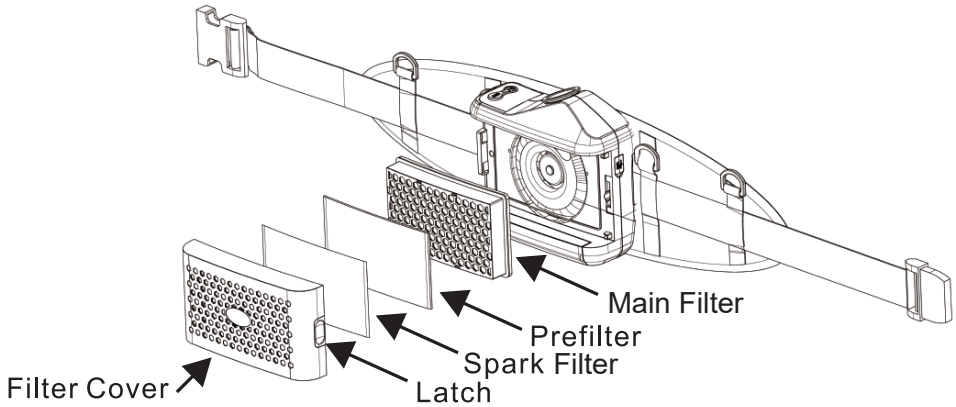
9. RESPIRATOR SPECIFICATIONS

Model	Promax R50
Filter Type	Particle P3 P R SL
Filter Class	TH3 (99.8% air particle purity / ≤0.2% inward leakage)
Air Flow Rates / Speeds	170 / 200 / 230L/min
Battery Specifications	Li-Ion 14.8V 2.6Ah 38.48Wh
Battery Operating Time*	>10hr @ 170L/min, >6hr @ 230L/min *With a new filter and fully charged battery in a clean environment
Battery Charging Time	2 Hours
Battery Charging Cycles	>500 over lifetime of battery
Unit Weight	1050g incl. filter & battery
Operating Temperature	-5°C to +55°C
Standards Compliance	AS/NZS 1716, EN 12941, ANSI Z87.1

10. RESPIRATOR ASSEMBLY

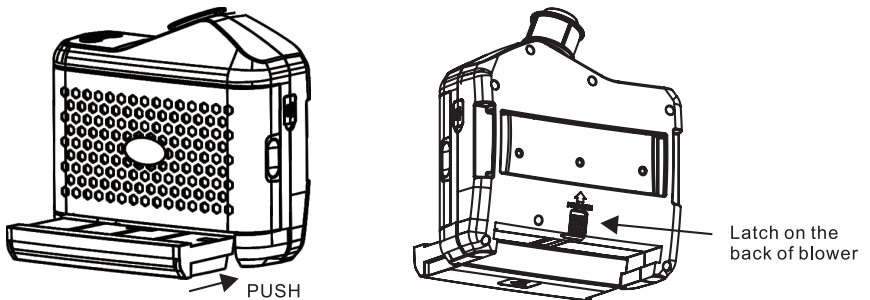
a. FILTER ASSEMBLY

1. Assemble filter components as shown in diagram below
2. Ensure filter cover is firmly latched into blower unit on both sides
3. To replace filter, turn unit off & unlatch filter cover



b. BATTERY

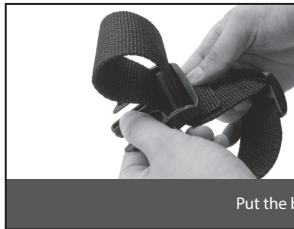
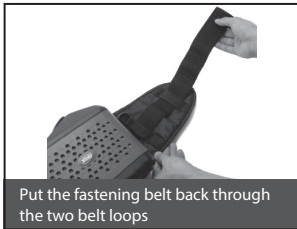
- Slide battery into blower unit as shown, and ensure it latches firmly.
To remove, push down on latch on back of blower unit and slide battery out.



10. RESPIRATOR ASSEMBLY

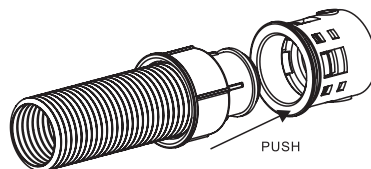
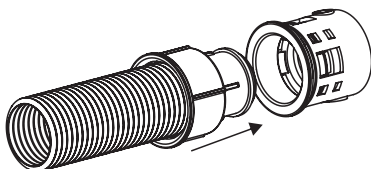
c. WAIST & SHOULDER BELT

1. Assemble filter components as shown in diagram below
2. Ensure filter cover is firmly latched into blower unit on both sides
3. To replace filter, turn unit off & unlatch filter cover



d. AIR HOSE

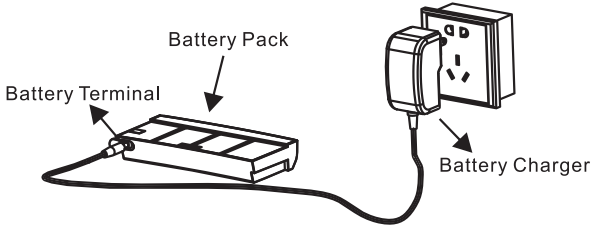
Push hose into quick-release connection on blower unit and/or helmet to connect. Pull on hose to check connection is secure. To disconnect, push against blue colour ring and pull back on hose.



11. RESPIRATOR USE & CONTROLS

a. CHARGING BATTERY

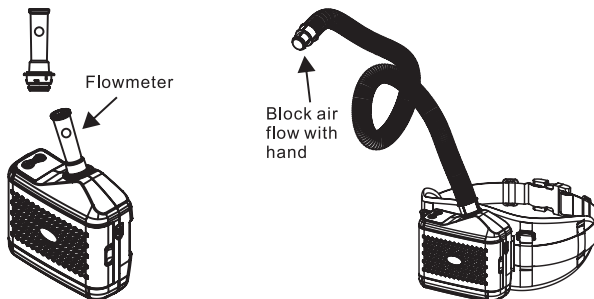
- Always remove battery from blower unit to charge
- Charge battery to 100% for first use, and if battery has not been used for >1 week
- Avoid allowing battery to become completely discharged
- Batteries not in use should be charged at least once every 6 months



b. PRE-USE CHECKS

Always complete the following tests & checks in a safe environment, prior to using respirator.

1. Ensure the battery is fully charged
2. Disconnect air hose from the blower unit
3. Insert flowmeter into the blower unit and switch it on
4. Does ball indicator reach the minimum flow level marking?
Yes = unit is suitable for use
No = replace filters and test again*
5. Attached air hose to the blower unit & switch it on
6. Block end/outlet of hose by hand until alarm sounds, and blower vibrates*
7. Check that all components - including helmet, face seal, hose, blower unit, filters, battery – are in good condition and assembled correctly



*If minimum flow is not reached and/or the blower unit alarms do not function, the unit may have a malfunction and/or need to be replaced. Re-test with a new and fully charged battery with new filters. If malfunctions continue, contact your Weldclass distributor and/or replace the blower with a new unit.

11. RESPIRATOR USE & CONTROLS

c. FITTING RESPIRATOR & HELMET

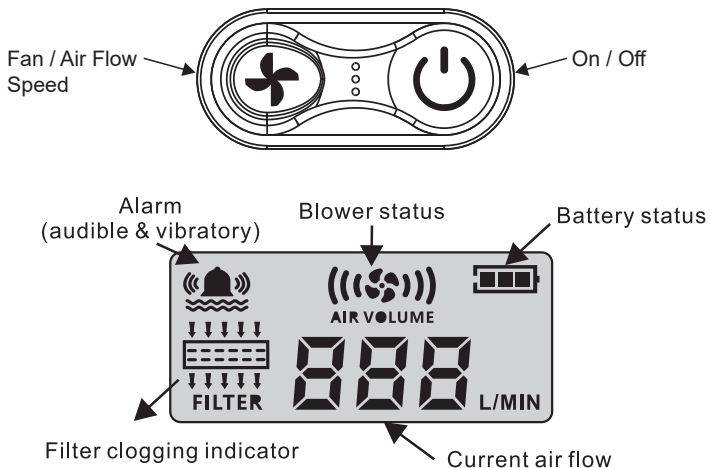
1. Disconnect hose & helmet from blower unit
2. Position blower unit against lower back with hose extending upwards, while fitting arms into shoulder straps.
3. Adjust shoulder straps & waist belt for firm & comfortable fit
4. Turn on blower unit
5. Connect hose to blower unit & fit helmet to head
6. Tighten draw string on face seal to establish a seal around the face/head

d. REMOVING RESPIRATOR & HELMET

1. Remove helmet and disconnect hose from blower unit
2. Turn blower unit off
3. Release belt & remove shoulder straps & blower unit
4. Place battery on charge if required and check all components are clean and ready for next use

e. BLOWER UNIT CONTROLS & ALARMS

- To turn On, hold I/O button for ~2 seconds, audible sound will be heard & LCD display will light up
- Press Fan button to adjust speed between 170, 200 & 230L/min
- To turn Off, hold I/O button for ~2 seconds, audible sound will be heard & LCD display will switch off
- Refer to diagram below for LCD display functions
- If air flow alarm is activated, filter/s may need to be replaced and/or air hose may be blocked



12. RESPIRATOR PARTS & ACCESSORIES



	Item	Part No.
1	Spark Filter Mesh Pk2	WC-06706
2	Pre-Filter (Carbon) Pk5	WC-06705
3	Main Filter	WC-06704
4	Battery	WC-06695
5	Blower Unit	WC-06697
6	Air Hose with Cover	WC-06696
7	Belt	
8	Air Flow Meter / Tester	
-	Face Seal for Promax 680R Helmet	WC-06711
-	Face Seal for Promax 850R Helmet	WC-06699

13. RESPIRATOR MAINTENANCE

a. MAINTENANCE SCHEDULE

Following schedule applies to respirator/blower unit, hose, and welding helmet.

Frequency	Action	
Daily	Visual Inspection	Check for any visible damage or wear Ensure all components are free from obstruction & debris
	Filter Check	Inspect condition of main filter and pre-filter. Replace if visibly clogged.
	Function Check	Complete pre-use checks as per section 11b of this manual
	Cover Lenses	Ensure all clear cover lenses are clean. Replace if scratched or damaged. Note: For correct & safe operation of helmet, front cover lens must not have any blemish / marks that obstruct the 'view' of the arc sensors on front of auto-darkening lens.
	Battery	Ensure battery is fully charged prior to work shift.
Weekly	Clean Exterior	Wipe with cloth to remove dust and debris
	Clean Internals	Check helmet headgear, air vent and face seal & clean if required.
	Inspect Hose	If inside of hose is dirty, or there are leaks or creases, replace hose.
	Inspect Face Seal	Replace face seal if excessively dirty
	Inspect for Damage	Check all components for damage, cracks, wear, air leaks, etc. Replace parts as required
Annual	Replace Parts	Replace all filters, helmet face seal, hose, and hose cover. Replacing battery is recommended if estimated charge cycles exceed 500.
	Update Records	Ensure maintenance tasks are logged. Review records to ensure compliance with this schedule.

b. CLEANING

Clean with mild detergent and damp cloth. Do not use solvents or alcohol based cleaning agents. Do not immerse in water or spray directly with liquids.

c. STORAGE & DISPOSAL

Store in a dry and clean area, with ambient temperature range -10 to 55°C, and relatively humidity less than 90% RH.

If stored at temperatures below 0°C, the battery must be allowed to warm up before charging or use, to achieve full capacity.

If respirator will not be used for a long time, the battery should be removed, fully charged, and stored separately.

At the end of the useful working life of the unit and/or battery, local / state / national regulations must be followed regarding disposal.

14. RESPIRATOR TROUBLESHOOTING

Fault	Possible Causes	Recommended Action
No airflow to helmet from blower	<ol style="list-style-type: none"> 1. Blower not turned on 2. Battery not charged 3. Battery not firmly attached 4. Air hose blocked 	<ol style="list-style-type: none"> 1. Hold I/O button to turn on 2. Charge battery 3. Remove battery, check there is no dirt or obstructions on terminals, and re-attach 4. Clear obstruction from blower outlet and/or hose
Low Airflow Alarm And/or Air flow is not sufficient	<ol style="list-style-type: none"> 1. Hose not properly connected 2. Filter is clogged 3. Filter inlet obstructed 	<ol style="list-style-type: none"> 1. Check hose connections to blower & helmet 2. Replace filters 3. Remove obstruction from filter air inlet
Battery Alarm	Low battery	Charge or replace battery
User detects odour or taste of contaminants or feels eye or throat irritation	<ol style="list-style-type: none"> 1. Incorrect respirator for application 2. Hose connections loose, or hose damaged & allowing air to enter 3. Face seal is not sealing correctly 4. Filter is worn or damaged 	<ol style="list-style-type: none"> 1. Consult AS/NZS 1715 to confirm correct filter required for your application 2. Check hose condition & connections to blower & helmet, replace if required 3. Check face seal condition and replace if required 4. Replace filters
Battery life is too short And/Or motor runs faster/ louder than normal	<ol style="list-style-type: none"> 1. Inadequate charging 2. Clogged filter 3. Faulty battery 4. Faulty battery charger 	<ol style="list-style-type: none"> 1. Fully charge battery 2. Replace filters 3. Replace battery 4. Replace charger

15. WARRANTY

See www.weldclass.com.au/warrantyinfo for warranty information, warranty periods, and terms and conditions.

Weldclass®

 **WARNING** 

THIS PRODUCT CONTAINS A BUTTON BATTERY
A lithium button battery can cause severe or fatal injuries in 2 hours or less if it is swallowed or placed inside any part of the body.
Keep batteries out of reach of children.
If you think batteries may have been swallowed or placed inside any part of the body, seek immediate medical attention.

weldclass.com.au