



# Supplied Air Welding Helmets

3M™ Speedglas™ Welding Helmets  
with integrated supplied breathing air filtration.

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## NEW Welding Fume Workplace Exposure Standard!

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In September 2023, SafeWork Australia voted to lower the Workplace Exposure Standard for Welding Fume from 5mg/m<sup>3</sup> to 1mg/m<sup>3</sup>.

In January 2024, Work Health and Safety Ministers endorsed the decision to change legislation in Australia. All Australian workplaces must now comply with the new lower limit by law.

The exposure standards in Australia and New Zealand do not identify a dividing line between a healthy or unhealthy working environment. They simply establish a legal maximum upper limit. Therefore, as per their legal responsibility, employers must reduce welding fume exposure to as low as reasonably practicable.

The 2017 reclassification of welding fume as carcinogenic prompted many to rethink and challenge what was historically considered 'normal'.

The 2019 statistical analysis concluding that welders have up to a '43% increased risk of lung cancer'<sup>1</sup> regardless of the type of steel welded, the welding process or time-period is of serious public health relevance.

### Simple Takeaway

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**Welding fume is serious,  
action is required.**

Now, the new welding fume workplace exposure limit in Australia should act as the trigger at your workplace to introduce effective welding fume controls to ensure you are fulfilling your legal responsibility.

For a step-by-step summary on how to get started, contact AWS.



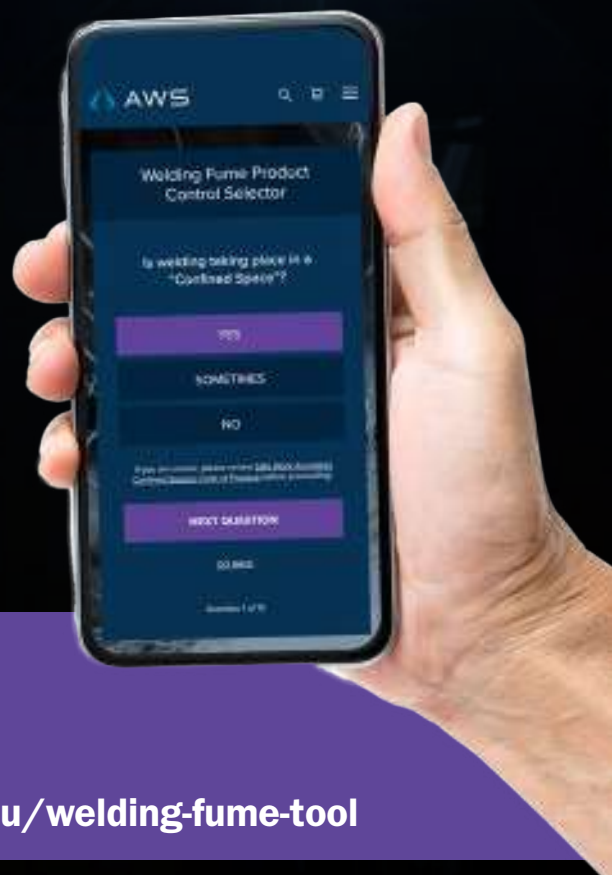
**Watch a video  
on Welding Fume  
and Exposure  
Limits here!**



# Welding Fume Product Control Selector

If you are looking for guidance on welding fume product controls for a specific environment or you would like to know which specific products can be introduced to control welding fume at your workplace – please try the Welding Fume Product Control Selector using the QR code below.

The solutions generated in this selector are based on the results of the Australian independent scientific study that was conducted to compare the effectiveness of welding fume product controls.



Scan to use the  
Welding Fume Product Control  
Selector Tool

[www.apexweldingsafety.com.au/welding-fume-tool](http://www.apexweldingsafety.com.au/welding-fume-tool)



# 3M™ Versaflo™ Supplied Air Respiratory Protection

The range of 3M™ Speedglas™ Respiratory Welding Helmets are available with a Supplied Air Regulator.

Breathing air is supplied to the welder via a compressor through a multi-stage filtration system.

Unlike a Powered Air Purifying Respirator that filters air from the surrounding environment, a Supplied Air system delivers clean air from an external source, making it a perfect option for environments without good ventilation\*.

They have a Required Minimum Protection Factor (RMPF) of 100+, meaning that they supply breathing air a minimum 100 times cleaner than the welder would otherwise be breathing unprotected.

The 3M V-500E Supplied Air Regulator (SAR) is suitable for use with the complete Speedglas Respiratory Welding Helmet Range.

## Welding Helmets with Supplied Air

Supplied air respiratory protection offers a Required Minimum Protection Factor of 100+, supplying a minimum 100 times cleaner air than the welder would otherwise be breathing unprotected.



Explore the range of Speedglas supplied air respiratory systems!

\*Not defined as a confined space as per Safe Work Australia's Confined Spaces Code of Practice.



## 3M™ Speedglas™ G5-01 Welding Helmet

# Built for Heavy-Duty Welders

Extra-large 73 x 109mm viewing area with Speedglas™ True-View optics and Auto-On technology.

Adjust the amount and direction of the airflow inside your helmet with Climate Control.

Smooth flip-up function reveals largest ever Speedglas clear grinding visor (170x104 mm).

Compliant with Australian and New Zealand Standard AS/NZS1337.1 for high impact eye and face protection.



Configurable extra protection options to suit your specific needs.

Lens reacts down to an industry-leading 1 amp.

Bluetooth® connectivity enables control of your welding lens settings directly from your smart phone.

Removable flip-up component reduces overall helmet weight by 35% for extended non-welding applications.



Optional helmet-mounted task light provides hours of powerful lighting for work in poorly lit spaces.

## CHOOSE YOUR SPEEDGLAS G5-01 WELDING LENS

### Speedglas G5-01VC Welding Lens (73 x 109mm)

- **Variable Colour Technology**  
Choose between natural, cool, or warm colour tones.
- **Extra Dark Shade 14**  
For high amperage welding (shades 3/5, 8-14).



### Speedglas G5-01TW Welding Lens (73 x 109mm)

- **Ultra Bright Light State 2.5**  
Enhances benefits of True-View (shades 2.5/5, 8-13).
- **Tack Welding Mode (Intermediate Shade 5)**  
Minimises eye strain during dark-light transition.



#### Part Number

618830

618820

#### Description

3M™ Speedglas™ G5-01VC Welding Helmet with V-500E Supplied Air Regulator

3M™ Speedglas™ G5-01TW Welding Helmet with V-500E Supplied Air Regulator

3M™ Speedglas™ G5-03 Pro Air Welding Helmet

# Upgrade your performance



TAP function.



Variable Dark State Colors.



True-View Technology

Extra-large 73 x 109mm viewing area with Speedglas™ True-View optics and Auto-On technology.

SideWindows: Shade 5 windows enhance your peripheral vision to widen your overall field of view.

Adjust the amount and direction of the airflow inside your helmet with Climate Control.

Compliant with Australian and New Zealand Standard AS/NZS1337.1 for high impact eye and face protection.

Configurable head and neck protection to suit your specific needs.



**NEW TAP function** enables easy switching between grind, cut, and weld modes by simply tapping the side of your welding helmet.

Lens reacts down to an industry-leading 1 amp.

Bluetooth® connectivity enables control of your welding lens settings directly from your smart phone.



Optional helmet-mounted task light provides hours of powerful lighting for work in poorly lit spaces.

## CHOOSE YOUR SPEEDGLAS G5-03 WELDING LENS

### Speedglas G5-03VC Welding Lens (73 x 109mm)

- **Variable Colour Technology**  
Choose between natural, cool, or warm colour tones.
- **Extra Dark Shade 14**  
For high amperage welding (shades 3/5, 8-14).



### Speedglas G5-03TW Welding Lens (73 x 109mm)

- **Ultra Bright Light State 2.5**  
Enhances benefits of True-View (shades 2.5/5, 8-13).
- **Tack Welding Mode (Intermediate Shade 5)**  
Minimises eye strain during dark-light transition.



**Part Number**

638830  
638820

**Description**

3M™ Speedglas™ G5-03VC Pro Air Welding Helmet with V-500E Supplied Air Regulator  
3M™ Speedglas™ G5-03TW Pro Air Welding Helmet with V-500E Supplied Air Regulator

3M™ Speedglas™ 9100 MP Air Welding & Safety Helmet



# Five levels of welding protection

Compliant with Australian and New Zealand Standard AS/NZS1337.1 for high impact eye and face protection.

Safety helmet is made from heat-resistant polycarbonate and conforms to Australian and New Zealand Standard AS/NZS1801 for head protection.

Lens reacts down to an industry-leading 1 amp.

Extra-large 73 x 107mm viewing area with Speedglas™ True-View and Auto-On technology.

Smooth flip-up function with curved 170x100 mm clear protective visor, increasing your peripheral vision to 180°.



Designed from inception to accept 3M™ Peltor™ H31 Earmuffs (Class 4).

SideWindows: Shade 5 windows enhance your peripheral vision to widen your overall field of view.

An innovative quick-release attachment enables one-handed breathing tube connection and release.



## Weld with confidence

Combining eye, head, face, hearing and respiratory protection, this highly integrated welding and safety helmet will enable you to carry out your welding with absolute comfort and confidence!

Part Number	Description
578826	3M™ Speedglas™ Welding Helmet 9100 MP Air with V-500E Supplied Air Regulator

3M™ Versaflo™ Supplied Air Regulator V-500E

# Light on your belt and heavy on protection

A constant flow of clean, filtered air makes the 3M™ Versaflo™ Supplied Air Regulator V-500E ideal for working in hot and humid conditions when used in combination with the 3M™ Speedglas™ Respiratory Welding Helmet range:



Lightweight belt-mounted regulator (514g).

NEW Quick-Release mechanism smoothly connects to a breathing air filtration system.

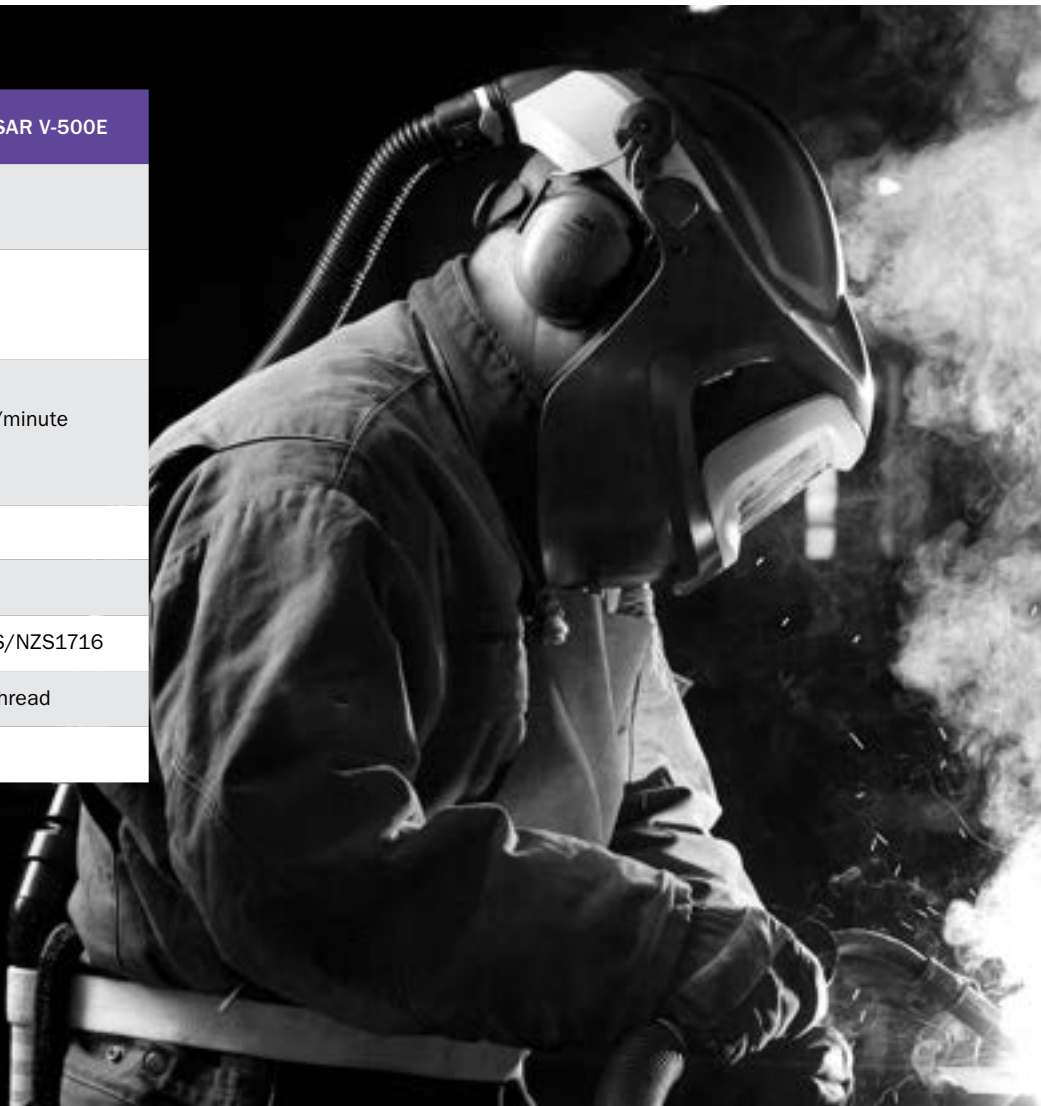
Compliant with Australian and New Zealand Standard AS/NZS1716 for respiratory protection.

Adjustable air flow settings of 170/305 litres per minute.

Maximum noise level of 65dB, the equivalent of a typical conversation.

Required Minimum Protection Factor (RMPF) of 100+.

Technical Data	3M™ Versaflo™ SAR V-500E
Approvals Respiratory Protection	Conforms to AS/NZS1716
Required Minimum Protection Factor (RMPF)	100+
Airflow Nominal Pressure Range Maximum Pressure	170-305 litres/minute 3.5-8 bar 10 bar
Weight	514 grams
Noise Level dB	Max 65 dB
Feeder Hose	Conforms to AS/NZS1716
Inlet & Auxiliary Port	1/4 inch BSP thread
Carbon filter available to remove odours.	





# The latest in filtration and drying technology



Pictured: A 3 Person, 4 Stage Alpha Series Portable Breathing Air Filtration System (part no. WBA34PA)

AWS now offers a comprehensive range of the new Alpha Series wall-mounted and portable breathable air systems. These are suitable for use with 3M™ Speedglas™ Welding Helmets with the 3M™ Versaflo™ V-500E supplied air regulator.

Carefully researched and tested to ensure high levels of performance, these breathable air filtration products can be installed where pure breathable compressed air is required.

The filter packages offer filtration and oil removal efficiencies down to 0.01 micron particulate size and maximum oil carryover efficiencies to 0.003 mg/m<sup>3</sup> (0.003 ppm).

The operator is supplied particle and liquid oil free air with the added benefit of taste and odour removal for improved user comfort and performance which exceeds the requirements of AS/NZS1716.

Knowing that each user requires 6cfm/170lpm/2.88lps of breathable air, we have made the following systems in either wall mountable or portable:



**1 Person System**

Provides 25 cfm\*

**3 Person System**

Provides 25 cfm\*

**5 Person System**

Provides 35 cfm\*

The systems are available in 2 stage and 4 stage filtration varieties. When deciding how many stages are required, you need to access the operator's requirement and current quality of compressed air. For more detailed information on stage selection, see page 10.

The breathing air systems should not be used when using air pressure in excess of 10 bar.

\*Please note all flow rates quoted in this document are in scfm at 7 barg

# Breathable Air System Stages Explained

## 4 Stage Breathable Air System

Where no other filtration is in place or high levels of liquid can be seen at the point where the system is to be used.



- 1 Comes standard with a water spinner filter that removes any bulk condensate.
- 2 1 micron pre-filter which removes dirt, rust and particulate matter down to 1 micron in size, whilst coalescing liquids and gives a maximum oil carryover of 0.1 ppm (does not include vapour).
- 3 0.01 micron particle filter which removes dirt, rust and particulate matter down to 0.01 micron in size, whilst coalescing liquids and gives a maximum oil carryover of 0.01 ppm (does not include vapour).
- 4 An activated carbon filter which adsorbs all smells and odours from the air and gives a maximum oil carryover of 0.003 ppm.

## 2 Stage Breathable Air System

Where the system is being used at a point of use where filtration (generally two filters and refrigeration dryers in many cases) is installed for general plant air.

- 1 0.01 micron particle filter which removes dirt, rust and particulate matter down to 0.01 micron in size, whilst coalescing liquids and gives a maximum oil carryover of 0.01 ppm (does not include vapour).
- 2 An activated carbon filter which adsorbs all smells and odours from the air, and gives a maximum oil carryover of 0.003 ppm.

Systems available as portable with a frame or wall mountable



# Breathable Air Systems Selection Chart



When selecting a suitable system, it is important to determine:

1. How many people will run off the system?
2. Filtration stages required? (See page 10)
3. Portable or wall mountable?

Part No.	Description
WBA12WMA	1 Person, 2 Stage, Wall Mounted
WBA12PA	1 Person, 2 Stage, Portable
WBA32WMA	3 Person, 2 Stage, Wall Mounted
WBA32PA	3 Person, 2 Stage, Portable
WBA34WMA	3 Person, 4 Stage, Wall Mounted
WBA34PA	3 Person, 4 Stage, Portable
WBA52WMA	5 Person, 2 Stage, Wall Mounted
WBA52PA	5 Person, 2 Stage, Portable
WBA54WMA	5 Person, 4 Stage, Wall Mounted
WBA54PA	5 Person, 4 Stage, Portable

## Elements & Couplings (to suit Alpha Systems:)

Part No.	Description
WBADAC	BA Element Carbon Filter (Upper) Alpha
WBADXA	BA Element 0.01 Micron (Lower) Alpha
WBAX1	BA Element 1 Micron Pre-filter Alpha
WBASK3A	BA Element Water Spinner

## Breathing Air Hoses (with CEJN fittings:)

Part No.	Description
BAHOSE05M	5 Metre Breathing Air Hose
BAHOSE10M	10 Metre Breathing Air Hose
BAHOSE15M	15 Metre Breathing Air Hose
BAHOSE20M	20 Metre Breathing Air Hose
BAHOSE30M	30 Metre Breathing Air Hose
BAHOSE40M	40 Metre Breathing Air Hose

## Please Note

All 3 person systems come with one coupling part no. C103441152

For a 2 person system order another coupling and for a 3 person system order another 2 couplings.

All 5 person systems come with two couplings part no. C103441152

For a 3 person system order another coupling, for a 4 person system order another 2 couplings and for a 5 person system order another 3 couplings.

# Care & Maintenance

## Maintenance

Good maintenance and routine checks should be carried out to ensure correct operation and to maintain long-term system reliability.

Note: The Water Separator does not have a serviceable part. However, in the unlikely event that the centrifugal module (spinner) assembly requires replacement, please see part number WBASK3A.

## Filter Element Replacement

Coalescing filter elements (WBAX1 & WBADXA) will operate indefinitely if they only remove oil.

The pressure differential across the element will increase slowly as the elements remove solid and particulate matter.

This should be monitored on the 'pop-up' indicator on top of the filter and is indicated by the green section becoming red (WBAX1 filter only). To ensure system reliability these filter elements should be changed every 8000 hours or 12 months, whichever occurs first.

Activated carbon filter elements (WBADAC) will purify compressed air by removing oil vapour and odours. They must be changed to suit specific applications at least every 6 months.

**Warning:**  
DAC elements do not remove carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO) or other toxic gases and fumes.



# Working in extreme heat?

## Cool down the hottest jobs

For especially hot conditions, welders can select a 3M™ Supplied Air Cooling Vortex in place of the 3M Versaflo V-500E Supplied Air Regulator.

The Vortex Cooler simply replaces your standard issue regulator as the mediator between your Welding Helmet and your Breathing Air Filtration System.

From there, this personal air conditioner supplies a continuous flow of refreshing, filtered air to keep workers comfortable in high-heat environments.

The Supplied Air Cooling Vortex (part no. AWS4590) requires 20cfm and can be run using the 1 person 2 stage filtration system or the 3 person 4 stage filtration system depending on your filtration requirements.

Please note that either way, only one user can run a cooler using these systems.

See page 10 to determine your stage requirements.

## Key Features

- Airflow range 170-425 l/min (6-15cfm)
- Optimised for use with the 3M™ Speedglas™ Respiratory Welding Helmets
- Provides comfort and high protection levels
- Reduces worker fatigue
- Reduces air temperature by up to 25°C
- Compliant with AS/NZS1716
- Compact and lightweight (575g inc. belt and hose)
- Easy temperature adjustment even with gloves

For extremely hot and humid conditions, welders have the option to substitute their V-500E regulator for a Supplied Air Vortex Cooler:



Part No.	Product Name
AWS4590	Vortex cooler incl. muffler & belt

# Selecting your Supplied Breathing Air Components

1

Select your preferred Welding Helmet with SAR (fixed/flip-up/hard hat)



See Pages 5 - 8

2

Select Breathing Air Filtration System (stages & no. of people)



See Pages 9 - 11

3

Select TWO Breathing Air Hoses (5/10/15/20/30/40m)



See Page 11

## Flow of Air



Compressor



Breathing Air Hose



Breathing Air Filtration System

4

Select Air Compressor



Not Available through AWS

5

Optional: Substitute your SAR for a Vortex Cooler in hot conditions



See Page 13



Breathing Air Hose



3M™ Speedglas™ Respiratory Welding Helmet with 3M™ Versaflo™ V-500E Supplied Air Regulator

## About AWS

AWS was established in 1994 and has played a key role in the welding industry ever since.

As an advocate for welders' safety in Australia and New Zealand, AWS has published numerous Welding Safety White Papers, Welding Industry Reports, and Welding Fume Control Frameworks. AWS is a company that specialises in welding safety equipment, and it is our goal to raise awareness on the important issues that welders face.


As the sole agent for the 3M™ Speedglas™ range of welding helmets with integrated respiratory protection, the Plymovent, Bomaksan, and Nederman range of portable local exhaust ventilation fume protection systems, the Translas on-gun welding fume extraction range, the range of Guide welding gloves, and a 3M personal protective equipment wholesaler, AWS are extremely well placed to help businesses understand the different types of product controls that can be introduced into the workplace to better protect welders and those who work in close proximity to welders.


For more information on welding fume monitoring, welding PPE, or welding fume LEV extraction options, please contact AWS.

[www.apexweldingsafety.com.au/welding-safety-white-papers](http://www.apexweldingsafety.com.au/welding-safety-white-papers)



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 [youtube.com/awsspeedglas](https://youtube.com/awsspeedglas)

### References

1. 2019 Honaryar MK, Lunn RM, Luce D, et al. Occup Environ Med

