



Supplied Breathing Air Filtration

Our modular range of Supplied Breathing Air Filtration Systems are designed to provide flexibility and reliability across a wide range of applications.



ABN 21 060 672 979

TOOWOOMBA WELDING SUPPLIES



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We deliver on time ... EVERYTIME

We are an Australian locally owned family business



What are the Dangers of Welding Fume?

Early 2017 saw the reclassification of welding fume from Group 2B (possibly carcinogenic to humans) to Group 1 (carcinogenic to humans). Relevant to welding fume exposures, this change was primarily associated with lung cancer and limited evidence for kidney cancer.

Welding fume can contain a mixture of airborne gases that may include oxides of nitrogen (NO_x), carbon monoxide (CO), carbon dioxide (CO₂), ozone (O₃) and shield gases eg argon, helium. The visible part of the fume cloud is mainly particles of metal, metal oxides and flux (if used). The exact level of

risk from the fume will depend on what metals are involved in the work eg iron, aluminium, copper, lead, manganese, chromium, nickel and others. Each of these can have a different toxic effect on the body so exposure needs to be effectively controlled.

The airborne concentrations and total exposure time to these fumes are also significant factors in determining the overall exposure to the welder. Using appropriate respiratory protection while welding, including supplied air regulators, can significantly minimise exposure.

Known Potential Health Effects from Exposure to Certain Welding Fumes

Potential short-term health effects

- Eye, nose and throat irritation.
- Dizziness.
- Nausea and headaches.
- Metal fume fever. Notably, it is more likely to occur after time away from the job (weekends, holidays, etc.).

Potential long-term health effects

- Lung function abnormalities including bronchial asthma, chronic obstructive pulmonary disease (COPD), pneumoconiosis and other pulmonary fibrosis (chronic beryllium disease, cobalt lung) and lung cancer.
- Larynx and urinary tract cancers.
- Certain fumes can lead to stomach ulcers, kidney damage and nervous system damage.

11 grams of Welding Particles...

Working within the Australian workplace exposure standards for general welding fume (5 mg/m³), a full-time welder may inhale up to 11 grams of welding fume, a classified carcinogen, every year*.

The tube to the right contains 11 grams of welding fume particles.



Supplied Air

The 3M Versaflo supplied air regulator has a Required Minimum Protection Factor of 100+, meaning that the wearer's exposure should be reduced to at least 1/100th.

*) The example is based on a typical respiratory rate of 20 litres of air per minute or 2300 m³ of air per year. The reference used here is the workplace exposure limit for Australia for welding fume when no specific chemical is identified with a workplace exposure limit lower than the general guideline (5mg/m³).

Supplied Breathing Air Filtration Systems with 3M™ Speedglas™ Welding Helmets

The latest in filtration & drying technology

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/m³ (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 assess the operator's requirement and current quality of compressed air. See page 6 for more detailed information on stage selection.

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 Systems

Product Selection Chart

New Alpha Systems

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 6)
3. Portable or wall mountable?



Part Number	Description
WBA12WMA	Wall mount, 1 user, 2 stage, oil/water/particle removal (WBADXA) and carbon filter (WBADAC)
WBA12PA	Portable, 1 user, 2 stage, oil/water/particle removal (WBADXA) and carbon filter (WBADAC)
WBA32WMA	Wall mount, 3 users*, 2 stage, oil/water/particle removal (WBADXA) and carbon filter (WBADAC)
WBA32PA	Portable, 3 users*, 2 stage, oil/water/particle removal (WBADXA) and carbon filter (WBADAC)
WBA34WMA	Wall mount, 3 users*, 4 stage, water spinner (WBASK3A), pre-filter (WBAX1), oil/water/particle removal (WBADXA) and carbon filter (WBADAC)
WBA34PA	Portable, 3 users*, 4 stage, water spinner (WBASK3A), pre-filter (WBAX1), oil/water/particle removal (WBADXA) and carbon filter (WBADAC)
WBA52WMA	Wall mount, 5 users*, 2 stage, oil/water/particle removal (WBADXA), and carbon filter (WBADAC)
WBA52PA	Portable, 5 users*, 2 stage, oil/water/particle removal (WBADXA) and carbon filter (WBADAC)
WBA54WMA	Wall mount, 5 users*, 4 stage, water spinner (WBASK3A), pre-filter (WBAX1), oil/water/particle removal (WBADXA) and carbon filter (WBADAC)
WBA54PA	Portable, 5 users*, 4 stage, water spinner (WBASK3A), pre-filter (WBAX1), oil/water/particle removal (WBADXA) and carbon filter (WBADAC)

Elements & Couplings

To suit Alpha Systems

Part Number	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

To suit Pre 2018 Systems

Part Number	Description
WBA3AC	BA Element Carbon Filter (Upper) 1 & 3 Person
WBA3XA	BA Element 0.01 Micron (Lower) 1 & 3 Person
WBA3X1	BA Element 1 Micron Pre-filter 3 Person
WBA5AC	BA Element Carbon Filter (Upper) 5 Person
WBA5XA	BA Element 0.01 Micron (Lower) 5 Person
WBA5X1	BA Element 1 Micron Pre-filter 5 Person
WBA058	BA Water Spinner Filter 3 & 5 Person

*Please Note:

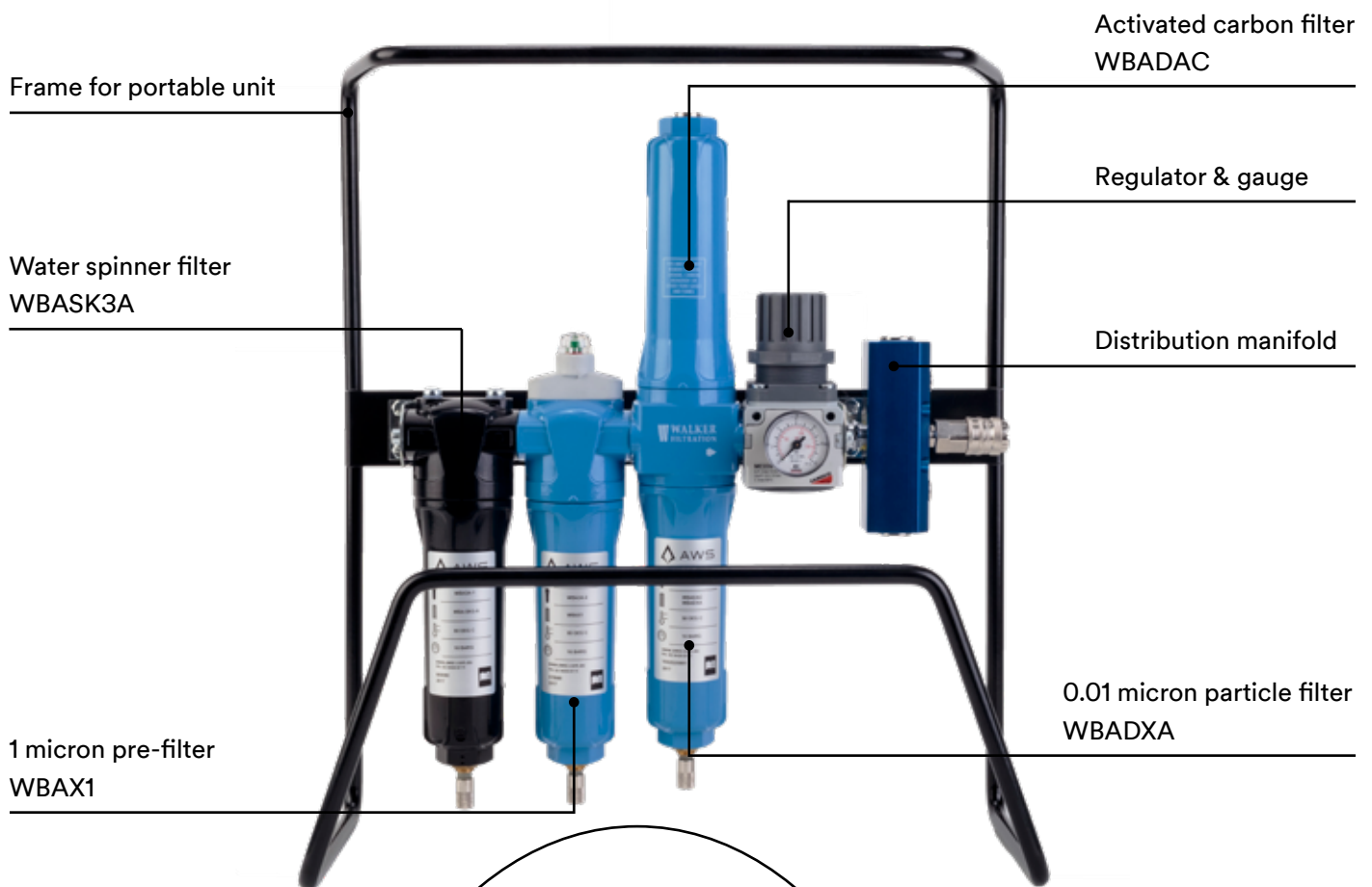
All 3 person systems come with one coupling part no. C103441152

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.

Supplied Breathing Air Process & Components



BAHOSE05M - 5 metre
BAHOSE10M - 10 metre
BAHOSE15M - 15 metre
BAHOSE20M - 20 metre
BAHOSE30M - 30 metre
BAHOSE40M - 40 metre



Compressor



3M™ Speedglas™ 9100 FX Air Welding Helmet
with 3M™ Versaflo™ Supplied Air Regulator

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 absorbs 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

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

Your Welding Environment

The balanced, belt-mounted V-500E supplied air regulator allows you to adjust the airflow between 170 litres per minute to 305 litres per minute.

A constant flow of clean, filtered air makes the V-500E regulator ideal for working in hot and humid conditions when used in combination with the 3M™ Speedglas™ welding helmet 9100 Air, 3M™ Speedglas™ welding helmet 9100 FX Air and 3M™ Speedglas™ welding helmet 9100 MP Air.



Connects to Breathable Air Hoses

The V-500E regulator connects to an approved breathable air hose with a new quick-release connection. The supplied air must be of breathable quality meeting the performance standards of AS/NZS1716. Oil mist, water vapour or non-toxic, unpleasant odours can be removed with a breathing air filtration system.

Innovative & Quiet

The Versaflo regulator V-500E features a low flow warning whistle and a silencer that reduces the regulator's noise level to less than 65 dBA - the equivalent of a typical conversation. The V-500E unit can be positioned on the belt to suit both left and right handed users and a swivelling bayonet connector allows the breathing hose to move freely to the most comfortable position.

Respiratory Standards

The Versaflo regulator V-500E complies with Australian and New Zealand standards AS/NZS1716 for supplied air respirators and delivers a 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	Conforming to AS/NZS1716
Inlet and Auxiliary Port	1/4 inch BSP thread
Carbon filter available to remove odours.	



Part Numbers - Welding Helmets



3M™ Speedglas™ Welding Helmet 9100XXi Air with Respiratory Protection

Eye Protection - AS/NZS1338.1,
Face Protection - AS/NZS1337.1 (High Impact),
Respiratory Protection - AS/NZS1716



PREMIUM SPEEDGLAS
BAG INCLUDED!

Part Number	Description
50 88 26	with 3M™ Versaflo™ supplied air regulator V-500E



3M™ Speedglas™ Flip-Up Welding Helmet 9100XXi FX Air with Respiratory Protection

Eye Protection - AS/NZS1338.1,
Face Protection - AS/NZS1337.1 (High Impact),
Respiratory Protection - AS/NZS1716,



PREMIUM SPEEDGLAS
BAG INCLUDED!

Part Number	Description
54 88 26	with 3M™ Versaflo™ supplied air regulator V-500E



3M™ Speedglas™ Flip-Up Welding & Safety Helmet 9100XXi MP Air with Respiratory Protection

Eye Protection - AS/NZS1338.1, Head Protection AS/NZS1801,
Face Protection - AS/NZS1337.1 (High Impact),
Respiratory Protection - AS/NZS1716,
Optional Hearing Protection - AS/NZS1270



PREMIUM SPEEDGLAS
BAG INCLUDED!

Part Number	Description
57 88 26	with 3M™ Versaflo™ supplied air regulator V-500E



3M™ Versaflo™ High Impact Headtops, M-Series with Respiratory Protection

Face Protection - AS/NZS1337.1 (High Impact), Respiratory Protection - AS/NZS1716,
Optional Head Protection AS/NZS1801, Optional Hearing Protection - AS/NZS1270

Part Number	Description
89 11 07	M-107 face shield with 3M™ Versaflo™ supplied air regulator V-500E
89 13 07	M-307 shield & safety helmet with 3M™ Versaflo™ supplied air regulator V-500E
89 14 07	M-407 flip-up shield & safety helmet with 3M™ Versaflo™ supplied air regulator V-500E

Personal Air Conditioner

Cool Down the Hottest Jobs

The 3M™ Supplied Air Cooling Vortex uses filtered compressed air to keep workers comfortable in extremely hot conditions.

When used with a 3M™ Speedglas™ welding helmet suitable for supplied air, the 3M™ Vortex personal air conditioner provides continuous cooling air to minimize heat stress and increase worker productivity in hot surroundings.

The Vortex cooler (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 6 to determine your stage requirements.

The 3M™ Supplied Air Cooling Vortex simply replaces your regulator. Attach the supplied air cooling vortex to your Speedglas Respiratory Welding Helmet for a refreshing, steady stream of cool air.

Features

- Airflow range between 170 - 425 l/min (6-15 cfm)
- 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
- Meets performance requirements of AS/NZS1716
- Compact and lightweight, 575gms including belt and hose
- Easy temperature adjustment even with gloves

Part Number	Description
AWS4590	Vortex Cooler including muffler & belt, excluding hose



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 (CO₂), carbon monoxide (CO) or other toxic gases and fumes.





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