

 **Speedglas™**

Welding Safety

Products designed for life



SAFETY • TECHNOLOGY • ERGONOMICS • DESIGN • COMFORT • INNOVATION

Welding's future – the healthy generation

Our society is becoming ever more health-conscious, as science becomes better able to explain the cause-and-effect of diseases and ailments. Conditions that used to be considered as “acceptable” (metal fume fever, arc eye, etc.) are now being questioned by many welders.

This new class of welders greatly appreciates the complete eye and face protection of ADL (auto-darkening lens) shields. And they also know that personal respiratory protection is designed to provide breathable quality air.

So less energy is expended on simply breathing, and more energy can go into their welding. Even hours after work they feel much more invigorated.

The level of air pollution is determined by the welding method, amperage and ventilation in the workplace. Comprehensive information about regulations, legislation, limits, etc. is often specific to each country. The choice of protective equipment is often made after consultation between employers and users.



Immediate symptoms from exposure to welding fumes

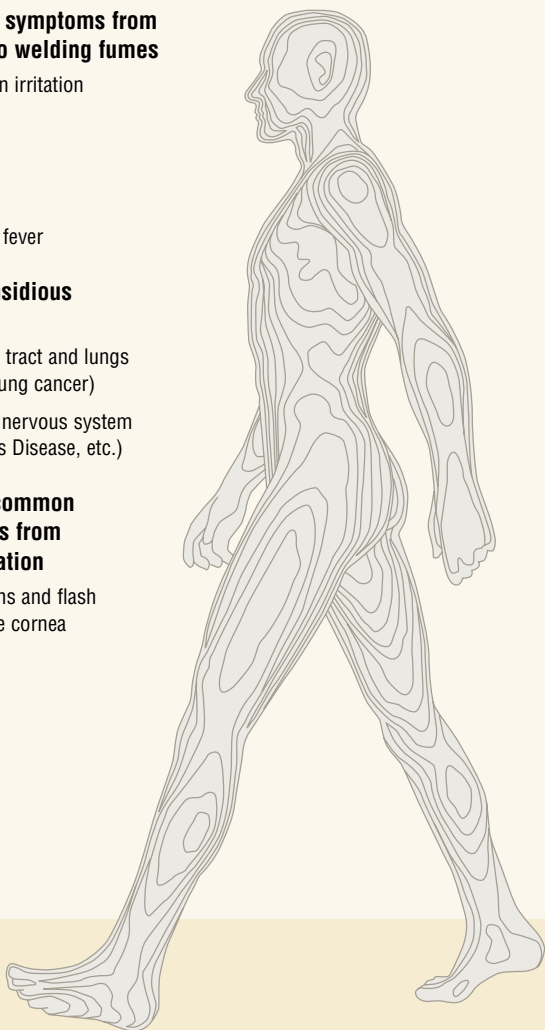
- Eye and skin irritation
- Nausea
- Headache
- Dizziness
- Metal fume fever

Chronic, insidious injuries to

- Respiratory tract and lungs (including lung cancer)
- The central nervous system (Parkinson's Disease, etc.)

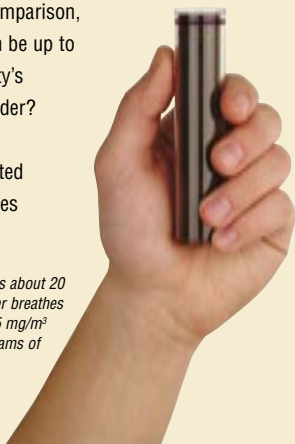
The most common eye injuries from UV/IR radiation

- Retinal burns and flash burns to the cornea



In some municipalities, authorities have set their own air quality standards for the city at large. By comparison, the standards for welding environments can be up to 100 times lower (that is, worse than) the city's standards. What does this mean for the welder? Even if the environment is within the OEL (Occupational Exposure Limit), an unprotected welder may inhale up to 11 grams of particles every year*.

** Under normal working conditions the respiratory rate is about 20 litres of air/minute. Over a working year (100%), a welder breathes in about 2300 m³ of air. Under working conditions with 5 mg/m³ of welding particles in the air, a welder breathes in 11 grams of particles/year.*



3M™ Adflo™ Powered Air Respiratory Systems

We've reinvented the powered air respirator for welders. Speedglas™ welding shield with Adflo™ respirator is a light, compact, all-in-one system. Its exclusive "stackable" configuration of the Adflo™ turbo unit means that the gas filter can be stacked onto the particle filter for additional protection from specific vapours.



- A. Filter cover: holds user-replaceable spark arrester to reduce risk of filter fires.
- B. Pre-filter: increases the service life of the particle filter.
- C. Particle filter: high efficiency particulate filtration.
- D. Gas filter: (A1B1E1 or A1+) filters out vapours.
- E. Odour filter: removes unpleasant smells (not needed when the gas filter is installed).
- F. NiMH battery: fully charges in four hours. Operating time 8 hrs with particle filter.
- G. Brushless motor: with a service life three times longer than conventional motors.
- H. Ergonomic leather belt: designed for maximum comfort.
- I. Filter indicator: indicates the status of the particle filter.
- J. Airflow Plus: for hot, humid jobs, the user can increase the airflow from 170 l/m to 200 l/m with the push of a button.
- K. Breathing tube: fits all Speedglas™ models.
- L. Exclusive airflow pattern: evenly distributes filtered air throughout the entire breathing zone of the helmet. The intelligent turbo unit keeps the airflow rate at a constant, preset level.
- M. Soft, flexible face seal: creates a positive pressure environment within the helmet, keeping the surrounding pollutants at bay.



▶ **Speedglas™ 9000 Welding Shield with Adflo™**

Award-winning, ergonomic welder protection with optimal mobility and ease-of-use. Also available with an optional safety helmet.

Part No

- 46 66 70** Complete system with Speedglas™ 9002V welding lens and SideWindows.
 - 46 66 80** Complete system with Speedglas™ 9002X welding lens and SideWindows.
 - 46 61 70** Complete system with Speedglas™ 9002V welding lens.
 - 46 61 80** Complete system with Speedglas™ 9002X welding lens.
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▶ **Speedglas™ 9000 FlexView Welding Shield with Adflo™**

Includes a welding lens with a clear protective visor underneath for continuous eye, face and respiratory protection. Also available with an optional safety helmet.

Part No

- 44 66 70** Complete system with Speedglas™ 9002V welding lens and SideWindows.
 - 44 66 80** Complete system with Speedglas™ 9002X welding lens and SideWindows.
 - 44 61 70** Complete system with Speedglas™ 9002V welding lens.
 - 44 61 80** Complete system with Speedglas™ 9002X welding lens.
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▶ **Protective Visors with Adflo™**

For non-welding manufacturing processes requiring eye, face and respiratory protection the Adflo™ respirator is also available as a system with a clear or shaded protective visor.

Part No

- 89 90 20** With clear visor in polycarbonate.
- 89 90 21** With clear visor in acetate (solvent resistant).
- 89 90 25** With shade 5 visor in acetate (solvent resistant).

3M™ Speedglas™ with Fresh-air Compressed Air Respirator

For highly-contaminated welding environments you need the Fresh-air C (Compressed air) system with a protection factor over 100. The lightweight, belt-mounted regulator allows the user to adjust the airflow from 160 to 300 litres per minute, making Fresh-air C ideal for hot and strenuous work.

▼ In environments where there is a risk of being exposed to isocyanates, which are difficult to detect and very dangerous to inhale, it is recommended that a compressed air respirator is used.





Speedglas™

▶ **Speedglas™ 9000 Welding Shield with Fresh-air C**

Ergonomic welder protection for highly contaminated environments. User-adjustable airflow from 160 to 300 l/min. Also available with an optional safety helmet.

Part No

- 46 88 70** Complete system with Speedglas™ 9002V welding lens and SideWindows.
 - 46 88 80** Complete system with Speedglas™ 9002X welding lens and SideWindows.
 - 46 81 70** Complete system with Speedglas™ 9002V welding lens.
 - 46 81 80** Complete system with Speedglas™ 9002X welding lens.
-



▶ **Speedglas™ FlexView Welding Shield with Fresh-air C**

Includes a welding lens with a clear protective visor underneath for continuous eye, face and respiratory protection. Also available with an optional safety helmet.

Part No

- 44 88 70** Complete system with Speedglas™ 9002V welding lens and SideWindows.
 - 44 88 80** Complete system with Speedglas™ 9002X welding lens and SideWindows.
 - 44 81 70** Complete system with Speedglas™ 9002V welding lens.
 - 44 81 80** Complete system with Speedglas™ 9002X welding lens.
-



▶ **Protective Visors with Fresh-air C**

For highly-contaminated manufacturing processes requiring eye, face and respiratory protection. The Fresh-air C respirator is also available as a system with a clear or shaded protective visor.

Part No

- 89 91 00** With clear visor in polycarbonate.
- 89 91 01** With clear visor in acetate (solvent resistant).
- 89 91 05** With clear visor in acetate, shade 5 (solvent resistant).

Eye protection that increases your performance

Speedglas™ welding lenses eliminate the neck-strain of “shield flipping” while greatly increasing the accuracy of electrode placement. This, in turn, reduces the need for grinding and rework. In addition, welders can get into tight, cramped spaces with their eye and face protection already in place. Their constant, clear view makes even extremely awkward welds a lot easier.

How ADLs work



Before:

With the shield in the safe down position, the welder has a clear view through the lens. Both hands are free and the electrode can be precisely positioned.



During:

Within 0,1 milliseconds of the arc strike, the lens has switched to the dark state.



After:

The lens automatically returns to the clear state after welding is complete, allowing for immediate and safe inspection of the weld pool, as well as preparation for the next weld.

▼ The UV/IR lens continually blocks harmful radiation, whether the lens cassette is ON, OFF, clear or dark. It is equivalent to a shade 13 traditional (non-auto-darkening) welding lens.





A quick guide to 3M™ Speedglas™ Welding Lenses

There are five different Speedglas™ auto-darkening welding lenses to choose from, depending, most of all, on the type of welding you do, but also on personal preferences for fixed or variable shades, normal or large viewing areas, and additional options such as sensitivity and delay adjustments.

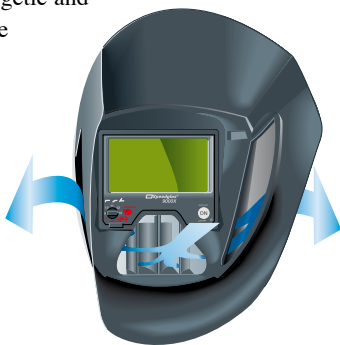
The table below is a quick guide to the various models due to the detector function based solely on welding applications.

<div style="display: flex; flex-direction: column; gap: 5px;"> <div> Optimised</div> <div> Suitable</div> <div> Not Recommended</div> </div>					
	9002X	9002V	9000XF	9002D	Utility
Recommendation for production welding:					
MMAW (Electrode)					
MIG/MAG					
TIG (>20A)					
TIG (1A-20A)					
Plasma (welding and cutting)					
Risk for hidden arc					
Grinding with FlexView					

3M™ Speedglas™ Welding Shield features

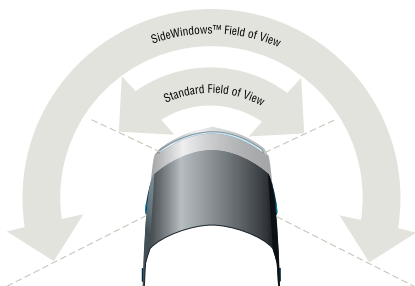
The revolutionary Speedglas™ 9000 welding shield series features four aerodynamic exhaust vents to remove exhaled air without letting in welding fumes. For welders who keep their shield in the down position for prolonged periods of time, the build-up of carbon dioxide (CO₂) behind the shield is greatly reduced compared to traditional shield designs. Users feel more energetic and clear-headed all day long. The 9000's breathability allowed the shield to be designed for a close-to-the face-fit, for optimum vision and reduced neck strain.

And the shield's narrow width makes it ideal for welding in tight spots.



More windows on the world: Speedglas™ SideWindows

The first time a welder puts on a Speedglas™ 9000 welding shield with SideWindows you can see his startled reaction. The welder suddenly realizes he can still see around himself. Previously hidden peripheral hazards (beams, obstacles, other workers) are now visible through the two, shade 5 side filters. Welders can now move more quickly and safely around their work areas. Shields stay in the safe, down position more often, providing that much more protection from harmful UV/IR radiation.





winner

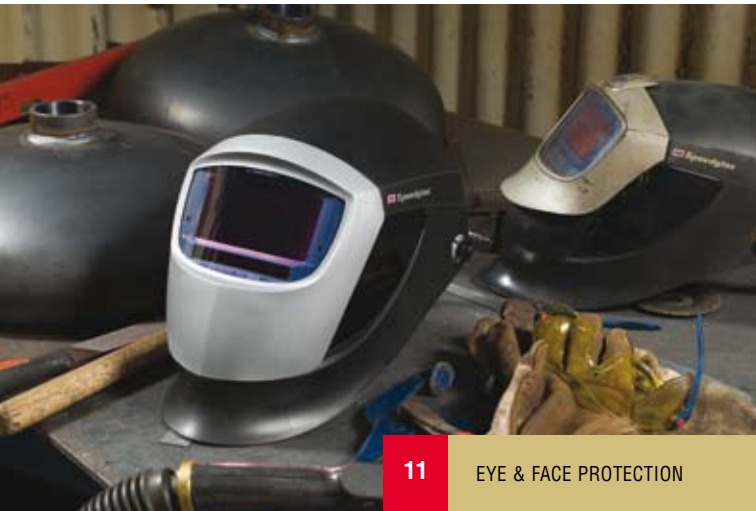
**European
Design Prize 97**



Design awards ...

Characteristics like outstanding user comfort, the simplest possible operation and maintenance, unprecedented ergonomics and optimum safety have brought us many design awards.

- European Design Prize (Speedglas™ 9000 Welding Shield)
- iF Industrie Forum Design Hannover
(Speedglas™ 9000 Welding Shield and Adflo™ Powered Air Respirator)
- Plant Engineering's Product of the Year in North America
(Speedglas™ 9000 and Speedglas™ ProTop Welding Shields)
- Excellent Swedish Design
(Speedglas™ 9000 Welding Shields and Adflo™ Powered Air Respirators)





▶ **Speedglas™ 9002X**

Top of the line welding shield optimised for all welding applications.

- Extra large viewing area (55x107mm).
- Five variable dark shade levels 9–13.
- Four adjustable sensitivity levels.
- Unsurpassed in intelligent switching during low-amp steady TIG welding.
- Three adjustable delay settings.
- Switching time light to dark 0.1 ms.
- Light state 3.
- LED display.

Part No

- 40 11 80** Complete welding shield.
- 40 18 80** Complete welding shield with SideWindows.

▶ **Speedglas™ 9002V**

Tradesman's welding shield optimised for all welding applications.

- Five variable dark shade levels 9–13.
- Four adjustable sensitivity levels.
- Unsurpassed in intelligent switching during low-amp steady TIG welding.
- Three adjustable delay settings.
- Switching time light to dark 0.1 ms.
- Light state 3.
- LED display.

Part No

- 40 11 70** Complete welding shield.
- 40 18 70** Complete welding shield with SideWindows.

▶ **Speedglas™ 9000XF**

Fixed shade welding shield with extra large viewing area.

- Extra large viewing area (55x107mm).
- Fixed dark shade 10, 11 or 12.
- Manual sensitivity adjustment.
- Switching time light to dark 0.4 ms.
- Light state 3.

Part No

- 40 11 50** Complete welding shield
- 40 11 51** (shade 10, 11 and 12).
- 40 11 52**
- 40 18 50** Complete welding shield
- 40 18 51** with SideWindows
- 40 18 52** (shade 10, 11 and 12).

▶ **Speedglas™ 9002D**

The latest addition to the 9002 series welding shields with dual shades.

- Dual dark shade levels 9 and 11.
- Two adjustable sensitivity levels.
- Switching time light to dark 0.4 ms.
- Light state 3.
- LED display.

Part No

- 40 11 40** Complete welding shield.
- 40 18 40** Complete welding shield with SideWindows.





▶ **Speedglas™ Utility**

Robust entry level welding shield for MIG and stick welding.

- Fixed dark shade in either 10 or 11.
- Two year warranty.

Part No

- 40 81 10** Complete welding shield shade 10.
- 40 81 11** Complete welding shield shade 11.

▶ **Speedglas™ 9000 ProTop Welding shield**

Welding shield with auto-darkening welding lens and safety helmet.

Part No

- 48 31 70** With Speedglas™ 9002V welding lens.
- 48 31 80** With Speedglas™ 9002X welding lens.
- 48 38 70** With Speedglas™ 9002V welding lens and SideWindows.
- 48 38 80** With Speedglas™ 9002X, welding lens and SideWindows.



▶ **Speedglas™ 9000 FlexView Welding shield**

Welding shield with auto-darkening welding lens and a 120x90mm clear visor for welding prep.

Part No

- 44 11 70** With Speedglas™ 9002V welding lens.
- 44 11 80** With Speedglas™ 9002X welding lens.
- 44 18 70** With Speedglas™ 9002V welding lens and SideWindows.
- 44 18 80** With Speedglas™ 9002X welding lens and SideWindows.



Spare Parts and Accessories

Cover lenses

- 42 60 00** Outside standard 140C (pk=10).
- 42 70 00** Outside scratch resistant 145C (pk=10).
- 42 70 71** Outside high heat 205C (pk=10).
- 42 80 00** Inside (42x91mm) 9002U/D/V (pk=5).
- 42 80 10** Inside (53x103mm) 9002XF/X (pk=5).
- 42 30 05** FlexView (120x90mm) (pk=5).



Sweatbands

- 16 70 00** Towelling.
- 16 75 00** Towelling (pk=5).
- 16 80 00** Leather.



Battery

- 42 20 00** 9000 Lithium (pk=2).

Head harness

- 16 50 20** 9000 Head harness.
- 16 60 00** 9000 Head harness attachments.



Magnifying lens

- 17 10 15** 9000 Magnifying lens attachment.
- 17 10 20** Diopter 1.0x.
- 17 10 21** Diopter 1.5x.
- 17 10 22** Diopter 2.0x.
- 17 10 23** Diopter 2.5x.



Head and throat protection

Our new generation of cloth protectors are made from Tecaweld™. Offers improved resistance to flames and molten metal, as well as excellent flexibility and durability.

- 16 40 09** Head protector: 100% Tecaweld.
- 16 90 01** Throat protector: 100% Tecaweld.
- 16 91 00** Head Cape: 100% Tecaweld.





Particle filter

- 83 60 10 Pre-filter (pk= 5).
- 83 70 10 Particle filter P SL.



Odour filter

Excellent for removing unpleasant odours when using the particle filter configuration.

- 83 71 10 Complete odour filter.
- 83 71 20 Replacement odour filter pad.



Gas filter

For protection from specific organic (A), inorganic (B) and acidic (E) vapours.

- 83 72 42 Gas filter A1B1E1.
- 83 75 42 Gas filter A1+.



Battery

- 83 76 20 Standard NiMH.
- 83 76 21 Heavy-Duty NiMH.



Face seal

- 43 40 01 Face seal for welding shield.
- 80 40 05 Face seal for clear or shade 5 protective visor.



Air hose

- 83 40 00 Standard air hose 0,95m.
- 83 40 03 Air hose cover.
- 83 40 05 Rubber air hose 0,95m.
- 83 40 10 Standard air hose 1,20m
- 83 40 12 Standard air hose 1,90m.
- 83 40 13 Standard air hose 2,85m.



Our focus is welders

Our integrated production enables us to achieve outstanding quality control in all processes. As a result, Speedglas™ is the world's leading brand of protective equipment for welders. And just as hundreds of thousands of users rely on Speedglas™ products every day for their best welding performance, we rely on welder comments for future product designs, developments and improvements.



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3M Australia Pty. Limited
950 Pacific Hwy
Pymble NSW 2073 Australia

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Australian Welding Supplies Pty. Ltd
Unit 9, 6-8 McLachlan Avenue
Artarmon NSW 2064 Australia
Tel: (02) 9439 0111
Fax: (02) 9439 0100

E-mail: sales@awsupplies.com.au
www.awsupplies.com.au