



 **Speedglas™**
Welding Safety

3M™ Speedglas™ Welding Helmets Non-Respiratory



Why 3M™ Speedglas™?

The #1 brand in welders' PPE

Trust in a brand can't be built overnight. It takes years to become known and even longer to be trusted. In 1981, over 40 years ago, Speedglas™ released the first ever auto-darkening welding helmet and has consistently set the benchmark ever since.

While other products and brands have come and gone, the 3M™ Speedglas™ brand, guided by welders, has continued to drive innovation and lead from the front.

Made in Sweden, Speedglas is the brand of choice for professional welders and remains the world's leading brand of personal protective equipment for welders.

View the range of 3M™ Speedglas™ non-respiratory welding helmets below.



3M™ Speedglas™ Welding Helmet G5-02

- World's first curved auto-darkening welding lens
- Largest ever Speedglas viewing area (100% wider field of view)
- Advanced Speedglas True-View Technology (light state 2.5)
- Slimmer lightweight profile
- Optimised for professional TIG welding



Shade range

2.5/8-12

Viewing area

76x150mm

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3M™ Speedglas™ Welding Helmet 9100

- Professional fixed-front welding helmet with extra-large viewing area
- External grind, memory mode and SideWindows
- Speedglas True-View Technology
- Optimised for professional welders



Shade range

3/5,8-13

Viewing area

73x107mm + SideWindows

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3M™ Speedglas™ Welding Helmet 9100 FX

- Professional flip-up welding helmet with extra-large viewing area
- Clear grinding visor and SideWindows
- Speedglas True-View Technology
- Optimised for professional welders, heavy-duty grinding applications and low light conditions



Shade range **3**

3/5, 8-13

Viewing area

73x107mm + SideWindows

Page Number

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3M™ Speedglas™ Welding Helmet 9100 QR

- Professional fixed-front welding helmet with extra-large viewing area
- Safety helmet with quick-release mechanism
- External grind, memory mode and SideWindows
- Speedglas True-View Technology
- Optimised for professional welders who require head protection



Shade range

3/5, 8-13

Viewing area

73x107mm + SideWindows

Page Number

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3M™ Speedglas™ Welding Helmet 9002NC

- Premium fixed-front welding helmet with large viewing area
- Speedglas True-View Technology
- Slim lightweight profile
- Optimised for welders who prefer a narrow helmet profile



Shade range

3/8-12

Viewing area

55x107mm

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3M™ Speedglas™ Welding Helmet 100

- Fixed-front welding helmet with standard viewing area
- Suitable for welding and grinding
- Slim lightweight profile featuring six graphic designs
- Optimised for welders who require a reliable all-rounder

Shade range

3/8-12

Viewing area

44x93mm

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Hazards of Welding Fume

There is no known level of safe exposure to welding fume: action is required.

see page 12



Technical Data Information

Compare the 3M™ Speedglas™ Non-Respiratory Welding Helmet Range by technical feature.

see page 14

NEW 3M™ Speedglas™ Welding Helmet G5-02

The world's first curved auto-darkening lens



150mm

Our previous largest Speedglas ADL

3M™ Speedglas™ curved ADL G5-02



100% wider ADL field of view

NEW 3M™ Speedglas™ Welding Helmet G5-02



Wider views in a slimmer helmet

Brightest ever Speedglas light state (2.5) enhances True-View optics.

Super lightweight design follows the curvature of the head for improved weight distribution.

Optimised for low amp TIG welding, the G5-02 lens has 4 arc sensors which react down to an industry-leading 1 amp.

Curved lens and slimmer profile help reduce distracting reflections and glare inside the helmet.

Largest Speedglas lens ever with 100% wider field of view.

Lens is Bluetooth® enabled to be securely paired with a smartphone, allowing you to select shades, sensitivity and up to 4 pre-set memory modes from the palm of your hand.

New exhaled air venting system reduces heat and humidity for improved comfort.

New control panel is more intuitive, with most frequently used settings like shade (left corner) and sensitivity (right corner) positioned in the most accessible locations.



Why curved?

Feedback from professional TIG welders was unanimous; a wide view was much preferred over a taller view.

The only way to achieve wider views without making the helmet wider was by inventing a curved welding lens: a design that has taken 20 years to perfect!



3M™ Speedglas™ Welding Helmet G5-02
Part Number: 62 11 20

Setting a new world standard for precision viewing, the G5-02 is built for TIG welders doing high-performance, critical work.



Simplify your workflow

The 9100XXi features external controls – enabling convenient, 'gloves-on' movement between grinding and two customised welding settings with the press of a button.

Increased range of vision

Peripheral SideWindows offer a wider view, allowing you to see previously hidden peripheral hazards.

Versatility at your fingerprints

Weld, Cut, Grind, Hidden Arc, Outdoor, Passive and Tack - all with the highest possible optical classification.

Upgrade your protection for less

The 3M Speedglas 9100XXi welding lens used in this helmet is also compatible with the entire Speedglas 9100 respiratory welding helmet range. This means if you don't currently require a welding helmet with integrated respiratory protection, but feel you may in the future, the 9100XXi lens will allow you to upgrade to powered or supplied air respiratory protection at a fraction of the price when the time comes.



3M™ Speedglas™ Welding Helmet 9100XXi

High performance and comfort



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

High comfort head harness with two crown straps for optimum balance.

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

Speedglas™ Welding Lens 9100XXi with True-View for crisp colour and contrast.

Heat reflecting silver front with an external button for grind and welding memory settings.

Lens reacts down to an industry-leading 1 amp.

Auto-On and equipped with the all-important centre sensor for TIG welding.

Extended-length, flame-resistant head, neck and ear protection available as accessories.

Increased coverage for ears and neck.





Simply squeeze to attach or remove your welding helmet - even with gloved hands.

Need head protection?

The 9100XXi QR is a viable alternative: complete with a Quick-Release safety helmet. Even with a gloved hand, this welding helmet can be seamlessly attached to or detached from a hard hat for flexible, world class protection!

3M™ Speedglas™ Welding Helmet 9100XXi
Part Number: 50 18 26

3M™ Speedglas™ Welding Helmet 9100XXi QR
Part Number: 50 36 26



Well-balanced design

The 9100 FX is balanced in both ergonomics and functionality. A welding helmet and grinding visor that sits perfectly balanced for all-day wear.

Continuous protection

Easy switching between welding and grinding means there is no need to remove your helmet - you're always protected.

Expand your view

A quick lift of the front cover and you get a big, 170x100mm, clear view – perfect for precision grinding, even in low light conditions.

More natural colour and contrast

The Speedglas welding lens 9100XXi helps you see your welds in a new light, providing more contrast and natural-looking colours.

Upgrade your protection for less

The 3M Speedglas 9100XXi welding lens used in this helmet is also compatible with the entire Speedglas 9100 respiratory welding helmet range. This means if you don't currently require a welding helmet with integrated respiratory protection, but feel you may in the future, the 9100XXi lens will allow you to upgrade to powered or supplied air respiratory protection at a fraction of the price when the time comes.



3M™ Speedglas™ Welding Helmet 9100XXi FX

Flip up to grind with a large clear view



Speedglas™ Welding Lens 9100XXi with Auto-On and True-View for crisp colour and contrast.



High comfort head harness with two crown straps for optimum balance.

Smooth flip-up function with curved 170x100 mm clear grinding visor.

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



Lens reacts down to an industry-leading 1 amp.

The entire helmet can also be locked in the perfectly balanced, up, parked position.

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

Exhaust vents to assist in removing exhaled air.

The perfect combination

A flip-up combination of an auto-darkening welding helmet and clear protective visor gives you a perfectly balanced and highly functional helmet for comfortable, all-day use.

Seamlessly switch between welding and grinding!

3M™ Speedglas™ Welding Helmet 9100XXi FX
Part Number: 54 18 26



Additional spark and spatter resistant head, neck and ear covers are available as accessories.

3M™ Speedglas™ Welding Helmet 9002NC

Slim and lightweight, with precision optics



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

The super-light, slim profile 9000 Series helmet weighs just 485 grams.

Lens reacts down to an industry-leading 1 amp and has the highest optical classification (1/1/1).

Speedglas™ 9002NC lens is compatible with existing Speedglas 9000 Series helmets.

Upgraded welding lens now has True-View for improved colour and contour recognition.



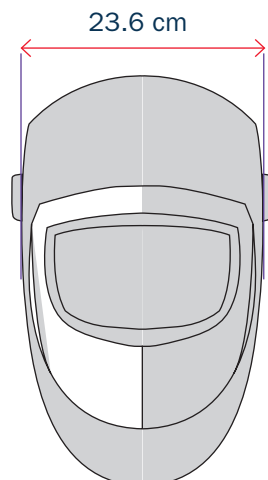
New head harness with ratchet mechanism provides a comfortable custom fit.

Aerodynamic exhaust vents assist in removing exhaled air, helping to keep your welding lens fog-free.

Freedom of movement

Shield width

The slim profile offers increased freedom of movement in tight spaces.



A legend has returned

Many welders think the classic Speedglas helmet 9000 has the ideal blend of shape and balance. The 9002NC welding lens is compatible with all existing Speedglas 9000 series welding helmets!

To see your welds in a new light, upgrade to the 3M™ Speedglas™ 9002NC with elite True-View optics for superior colour and contrast.

3M™ Speedglas™ Welding Lens 9002NC
Part Number: 40 00 85

3M™ Speedglas™ Welding Helmet 9002NC
Part Number: 40 13 85

3M™ Speedglas™ Welding Helmet Series 100V

Image is everything!

Appropriate for most arc welding processes including Stick, MIG and TIG welding.

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

Choice of six quality Speedglas helmet graphics (pictured: 752820).

Made in Sweden, backed by a three year warranty.



Now with advanced TST (TIG Sensor Technology).

Shade 3 sensitivity setting for grinding.



Improved head harness with smooth ratchet mechanism for precise tightening and comfort.

Built-in holder for magnifying lenses. Attaching the lens is easier and the fit is more accurate.

New delay function allows you to set the dark-to-light opening time.

High-end performance

The Speedglas™ welding helmet series 100 is equipped with industry-leading features, allowing you to take advantage of Speedglas' optical clarity at a highly-affordable price.

3M™ Speedglas™ 100V Ninja
Part Number: 75 11 20

3M™ Speedglas™ 100V Trojan Warrior
Part Number: 75 16 20

3M™ Speedglas™ 100V Xterminator
Part Number: 75 22 20

3M™ Speedglas™ 100V Ice Hot
Part Number: 75 25 20

3M™ Speedglas™ 100V Skull
Part Number: 75 28 20

3M™ Speedglas™ 100V Motor
Part Number: 75 29 20





Welding Fume Is Serious. Action Is Required.

The important point to understand is that while the risk posed by welding fume is serious, keeping yourself safe can be straightforward.

The 2017 IARC reclassification of welding fume as ‘carcinogenic to humans’ simply confirmed what was already known – welding fume is extremely bad for health and workplaces must protect their workers. Excessive exposure to welding fume can cause multiple types of cancer, including lung, larynx, and urinary tract.

‘Welders present, on average, a 43% increased risk of lung cancer when compared with those who have never welded or been exposed to welding fume’¹. ‘This increased risk of lung cancer is regardless of the type of steel welded, the welding process and independent of exposure to smoking’¹. Precedent for workers’ compensation based on a link between welding fume and cancer was established in the Australian courts back in 2014, opening the door for future compensation claims.

Aside from cancer, welding fume can also cause serious long-term health effects like lung function

Simple Takeaway

There is no known level of safe exposure to welding fume: action is required.

abnormalities, including bronchial asthma, chronic obstructive pulmonary disease (COPD), pneumoconiosis and other pulmonary fibrosis, as well as stomach ulcers, kidney damage and nervous system damage.

Recognising welding fume as carcinogenic and the other associated health risks should encourage all employers of welders to review their risk assessments and revise their control measures.

There is no known level of safe exposure to welding fume: action is required.

Exposure limits are just the beginning.

The exposure standards in Australia and New Zealand 'do not identify a dividing line between a healthy or unhealthy working environment'². They simply establish a legal maximum upper limit. 'Therefore, exposure standards should not be considered as representing an acceptable level of exposure to workers'².

Take for example, a welder operating within the workplace exposure standards for general welding fume (5 mg/m³). If the welder is wearing no respiratory personal protective equipment (PPE), they could inhale up to 11 grams of a carcinogenic substance (welding fume) every year*.

Moreover, an Australian or New Zealand welder operating under the legal workplace exposure limits for welding fume in Australia is exposed to 4 times the level of a known carcinogen than that of a German welder working under the TGRS 528 (1.25 mg/m³) exposure limits in Germany.

The world has shifted to more of a health and safety focus—the result of court cases and

research. Australian and New Zealand companies are now completely changing their stance on welding fume and welders' PPE.

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 a '43% increased risk of lung cancer'¹ regardless of the type of steel welded, the welding process or time-period is of serious public health relevance.

Being aware of information like this should act as the trigger at your workplace to introduce PPE with higher protection factors to give exposed workers the protection they deserve.

For a step-by-step summary on how to get started, please contact AWS (www.awsi.com.au).

3M™ Speedglas™ Respiratory Welding Helmet Brochure

For information on welding helmets with integrated respiratory protection, ask for the featured brochure. Alternatively, contact AWS for an on-site demonstration or welding fume toolbox talk.



1. 2019 Honaryar MK, Lunn RM, Luce D, et al. Occup Environ Med
2. Guidance on the interpretation of workplace exposure standards for airborne contaminants, Safe Work Australia, April 2013

*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).



Specification	3M™ Speedglas™ Welding Helmet 100V See page 11	3M™ Speedglas™ Welding Helmet 9002NC 40 13 85
MMAW (electrode)	●	●
MIG/MAG	●	●
TIG (>10A)	●	●
TIG (1A-10A)	×	●
Plasma (welding and cutting)	×	●
Hidden Arc	×	●
Tack welding	●	●
Grinding (welding lens)	●	×
Grinding (clear visor)	No	No
Viewing area (welding lens)	44 x 93 mm	55 x 107 mm
3M™ Speedglas™ Curved Glass Technology	No	No
Battery lifetime	1 500 hours	2 000 hours
Memory mode	No	No
Classification ²⁾	1 / 2 / 2	1 / 1 / 1 (with True-View)
Dark state	Shades 8-12	Shades 8-12
Light state	Shade 3	Shade 3
UV Protection	Shade 12 (permanent)	Shade 12 (permanent)
Switching time, light-dark	0.1 ms (+23° C)	0.1 ms (+23° C)
Delay (switching time, dark-light)	40-250 ms	60-400 ms
SideWindows	No	No
Exhaust vents	No	Yes
Bluetooth connectivity	No	No
Safety helmet	No	No



Welding Helmet Selector Tool

If you're still unsure about which helmet best suits your needs, try our **Welding Helmet Selector Tool**:
 Visit www.aws.com.au/welding-helmet-selector

3M™ Speedglas™ Welding Helmets

● Best¹⁾ ● Better¹⁾ ● Good¹⁾ × Not Recommended¹⁾



3M™ Speedglas™ Welding Helmet 9100XXi	3M™ Speedglas™ Welding & Safety Helmet 9100XXi QR	3M™ Speedglas™ Welding Helmet 9100XXi FX	3M™ Speedglas™ Welding Helmet G5-02
50 18 26	50 36 26	54 18 26	62 11 20
●	●	●	●
●	●	●	●
●	●	●	●
●	●	●	●
●	●	●	●
●	●	●	●
●	●	●	●
●	●	●	●
●	●	●	●
No	No	Clear Visor	×
73 x 107 mm	73 x 107 mm	170 x 100 mm	No
No	No	73 x 107 mm	Curved 76 X 150 mm
No	No	No	Yes
1 800 hours	1 800 hours	1 800 hours	1 500 hours
Yes - 2	Yes - 2	No	Yes - 4 (via mobile app)
1 / 1 / 1 (with True-View)	1 / 1 / 1 (with True-View)	1 / 1 / 1 (with True-View)	Curved glass technology surpasses current testing methods
Shades 5, 8-13	Shades 5, 8-13	Shades 5, 8-13	Shades 8-12
Shade 3	Shade 3	Shade 3	Shade 2.5
Shade 13 (permanent)	Shade 13 (permanent)	Shade 13 (permanent)	Shade 12 (permanent)
0.1 ms (+23° C)	0.1 ms (+23° C)	0.1 ms (+23° C)	0.1 ms (+23° C)
40-800 ms	40-800 ms	40-800 ms	50–1000 ms
Yes	Yes	Yes	No
Yes	Yes	Yes	Yes
No	No	No	Yes
No	Yes	No	No

1) The ratings above (best - better - good - not recommended) only refer to the products listed in this chart and should be considered as general recommendations only.

2) Auto-darkening welding lenses have a classification system in European Standard EN379: optical class / diffusion of light / variation on luminous transmittance. Classification range from 1 to 3, with 1 being the best.

All Speedglas welding helmets featured in the table above are compliant with the relevant Australian and New Zealand standards (AS/NZS).

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.

As a company that specialises in welding safety equipment, it is our goal to raise awareness on the important issues that welders face.

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

www.awsi.com.au/welding-safety-white-papers



**Welding fume
a known
carcinogen**

A closer look at the recent reclassification of welding fume as Group 1 Carcinogenic to Humans



AWS

A PRACTICAL GUIDE TO
**WELDING FUME
CONTROL**



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