



 **Speedglas™**  
Welding Safety

# 3M™ Speedglas™ G5-03TW Pro Air Welding Helmet with Heavy-Duty Adflo™ PAPR

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# 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.

The 3M Speedglas Welding Helmet G5-03 Pro Air is built for professional welders. A welding helmet versatile enough that you don't have to compromise on function, performance OR safety.

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## NEW Welding Fume Workplace Exposure Standard!

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The Safe Work Australia Workplace Exposure Standard (WES) for welding fume was lowered from **5mg/m<sup>3</sup>** to **1mg/m<sup>3</sup>** in January 2024. This new limit applies to welders and anyone who may be exposed to welding fume. All workplaces must comply 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

### Simple Takeaway

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

welded, the welding process or time-period is of serious public health relevance.

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.

To that end, welding helmets with integrated powered air respiratory protection are proven to be highly effective in reducing exposure to welding fume.

# Heavy-duty respiratory protection

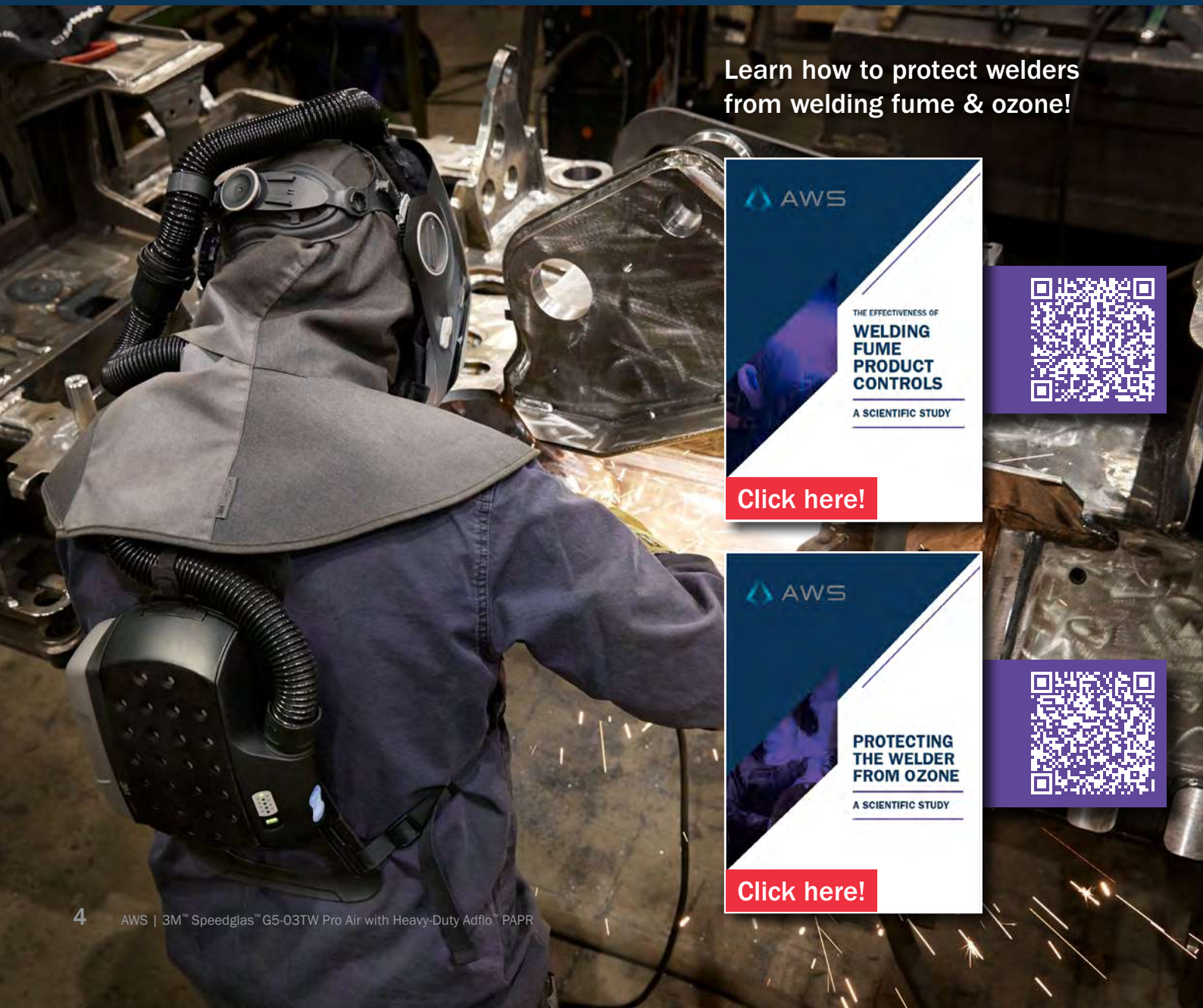
Keeping yourself safe can be straightforward

'Welding helmets with integrated powered air purifying respirators (PAPR) are the most widely used form of respiratory protection amongst welders in Australia and New Zealand'<sup>2</sup> and are mandatory within many businesses.

The 3M™ Speedglas™ G5-03 Pro Air Welding Helmets with Heavy-Duty Adflo™ PAPR offer welders a view like no other fixed-front welding helmet on the market, while maintaining their desired level of respiratory protection with no breathing resistance.

The powered air respirator goes where the welder goes, allowing unrestricted movement around the workplace with uninterrupted eye, face and respiratory protection.

Furthermore, the Adflo PAPR provides a Required Minimum Protection Factor (RMPF) of 50. This RMPF means the respirator will supply a **minimum 50 times cleaner air** than the welder would otherwise be breathing unprotected.



Learn how to protect welders from welding fume & ozone!

THE EFFECTIVENESS OF  
**WELDING FUME PRODUCT CONTROLS**  
A SCIENTIFIC STUDY

[Click here!](#)



**PROTECTING THE WELDER FROM OZONE**  
A SCIENTIFIC STUDY

[Click here!](#)



# Mobile and adaptable

## 3M™ Adflo™ Heavy-Duty Powered Air Purifying Respirator (PAPR)

As one of the most popular respirators of its kind in the world, the Adflo™ Powered Air Purifying Respirator is designed to provide a constant nominal airflow rate of 170/200 litres per minute, regardless of the battery's charge or the particle loading of the filter.

With its slim profile, the Adflo respirator offers excellent lightweight, adaptable and easy-to-use respiratory protection.



Technical Data	3M™ Adflo™ Powered Air Respirator
Approvals Respiratory Protection	Conforms to AS/NZS1716
Required Minimum Protection Factor (RMPF) <sup>1)</sup>	50
Airflow Standard Airflow Plus	170 litres/minute 200 litres/minute
Battery: Charging time	Li-ion with rapid charge (0-80% in an hour) <sup>2)</sup> 5.5 hours (heavy-duty)
<b>Operating hours</b>	<b>12 hours (heavy-duty)</b>
Weight Respirator	1133 grams
Noise level dB	Max 75 dB
Belt	Leather 75-115cm
<small>Gas and odour filters are available as an optional extra.            1) For mechanically and thermally generated particles.            2) Heavy duty battery will be 80% charged (9.6 hours run time) in approximately one hour.</small>	

### Industry leading protection

Since its launch, the 3M™ Adflo™ powered air respirator has become synonymous with welders' respiratory protection. The system is designed to meet the specific needs of welders.

### Lightweight with Rapid Charge

The new Li-ion Adflo respirator is over 15% lighter<sup>^</sup> than the older style version with Ni-MH (black) battery. The lightweight battery charges up to 80% capacity in approximately an hour.

### Filtered air to breathe

Constant, clean air flows directly into your breathing zone. Choose between 170 litres per minute or 200 litres per minute (for hot, humid jobs) with the push of a button.

<sup>^</sup> When compared to the previous Adflo PAPR system that featured a nickel metal hydride battery.

### Adaptable filtration

With the right type of filter, the Adflo powered air respirator effectively protects against a range of gases, vapours and particles.

### You only have one set of lungs

The Adflo respirator complies with Australian and New Zealand Standard AS/NZS 1716 for powered air respirators and offers a Required Minimum Protection Factor (RMPF) of 50 for mechanically and thermally generated particles.

### Heavy Duty Battery

An Adflo PAPR keeps you protected during long shifts. The Speedglas G5-03 Pro Air comes standard with the heavy duty Adflo battery, which can offer up to 12 hours continuous protection.

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

Designed for the professional welder, the 3M™ Speedglas™ Welding Helmet G5-03TW Pro Air connects to the 3M™ Adflo™ Powered Air Purifying Respirator (PAPR) for industry leading respiratory protection.

**Ergonomic head harness with 6 points of adjustment**

Read more on page 10

**Extra-large viewing area with SideWindows**

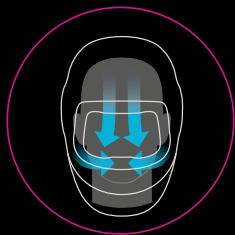
Read more on page 10

**Large coverage area**



**External adjustment of air distribution**

Read more on page 11

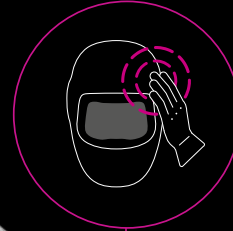


**Task light option**

Read more on page 13

**TAP function for grind & cut**

Read more on page 7



**New advanced optics**

Read more on page 8



**Selection of extended coverage available**

Read more on page 12



TAP on the side of the welding helmet, with or without a glove, to easily switch between grind (or cut) mode and weld mode.

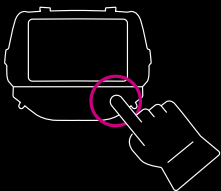
No need to remove your helmet and compromise your protection.

# Easy switching is just a TAP away

Switch quickly between modes (GRIND/CUT and WELD) by simply tapping the side of the helmet with your hand – even when wearing gloves.

The TAP function is robust and intuitive, and can be deactivated if needed.

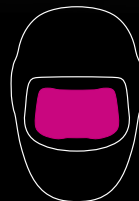
Built into the G5-03TW welding lens, the TAP function can help to improve productivity with button-less control.



**1** Use the interface on the lens to set if you want to use TAP function with grind or cut mode.



**2** TAP on the side of the welding helmet to switch between GRIND and WELD mode or CUT and WELD mode.



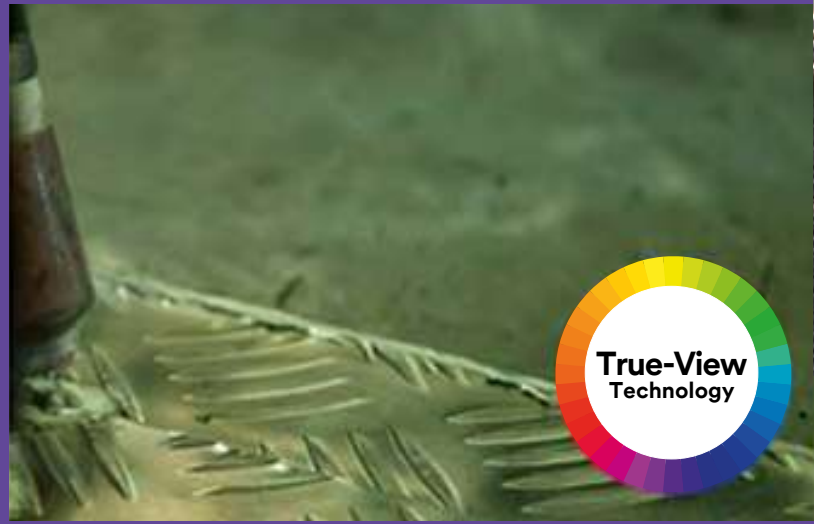
**3** The welding lens will switch to the desired setting.



**4** Tap again and the lens switches back to welding mode.



Standard auto-darkening welding lens



Speedglas G5-03TW welding lens with True-View

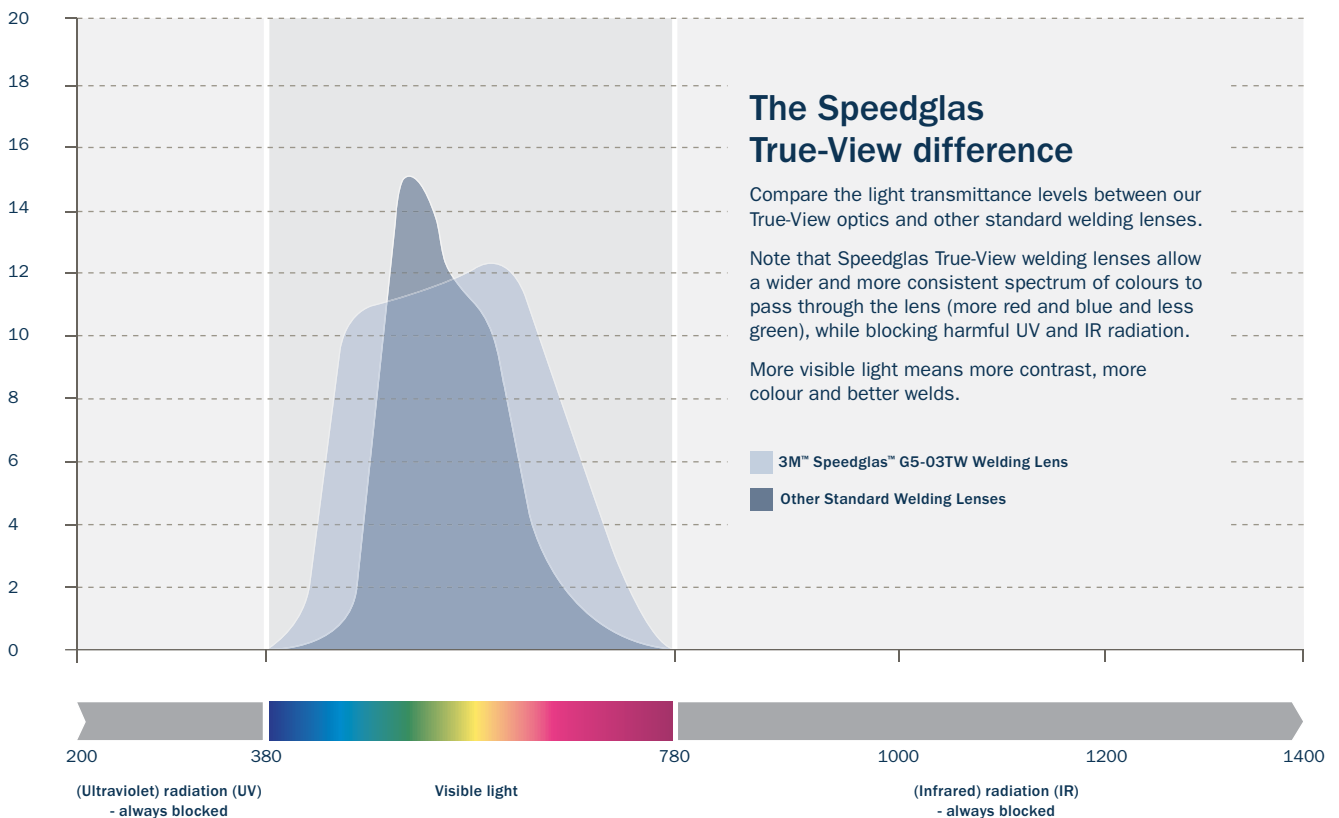
# A more natural light state

Imagine what more realistic-looking colours and details could do for your welds:

- Provide better control of your weld puddle – with a view that appears lighter, brighter and more realistic.
- Help you focus on your welding set-up, welding technique and inspection of just-completed welds.
- Give you a clearer view of coloured welding machine controls – even with your helmet in the safe, down position.



Transmittance (%)



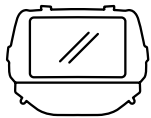




# Enhance your grinding

With an extra-bright light shade of 2.5, the G5-03TW welding lens is ideally equipped to provide even better clarity and contrast to maximise the benefit of True-View on welders' vision in the light state.

The 2.5 light state in combination with an optional task light will allow you to grind with increased visibility. The TAP function allows for quick and easy switching between welding and GRIND mode.



**Light state 2.5**



**TAP function**



**Task light**



## There's an app for that...

### Bluetooth® connectivity

- Opt in by securely pairing your smartphone to your G5-03TW welding lens using the 3M Connected Equipment App
- Control all your welding lens settings directly from your smart phone
- Program memory modes (settings for dark shades, sensitivity and delay)
- Easily record your welding helmet maintenance log to the App
- Review statistics including: when your ADL was first activated; hours on; hours in the dark state; hours in the light state; and the number of on/off cycles
- Have instant access to User Manuals and the Parts List

# Enhance peripheral vision

Speedglas SideWindows give you excellent peripheral vision as you weld.

Previously hidden peripheral hazards such as beams, obstacles, and other workers are now visible through two shade 5 side lenses (with conventional shade 13 UV/IR protection).



# Adjust your welding helmet, not yourself

Tailor your head harness to fit your preferences

## ① New headband design

Improved, self-adjusting comfort paddles along your forehead.

## ② Adjustment options

Control the distance and angle from your eyes to the clear visor and welding lens.

## ③ Extra-large back pad

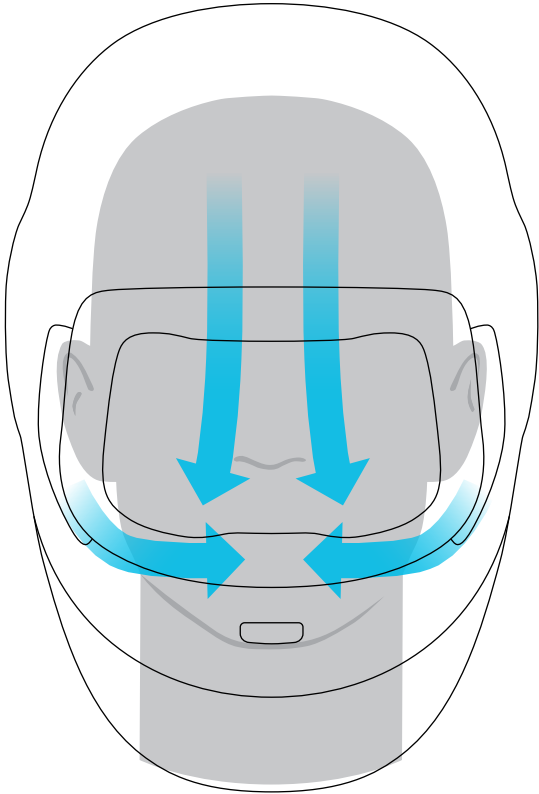
Delivered with an optional extra-large back head pad for enhanced comfort.



# Don't go with the flow

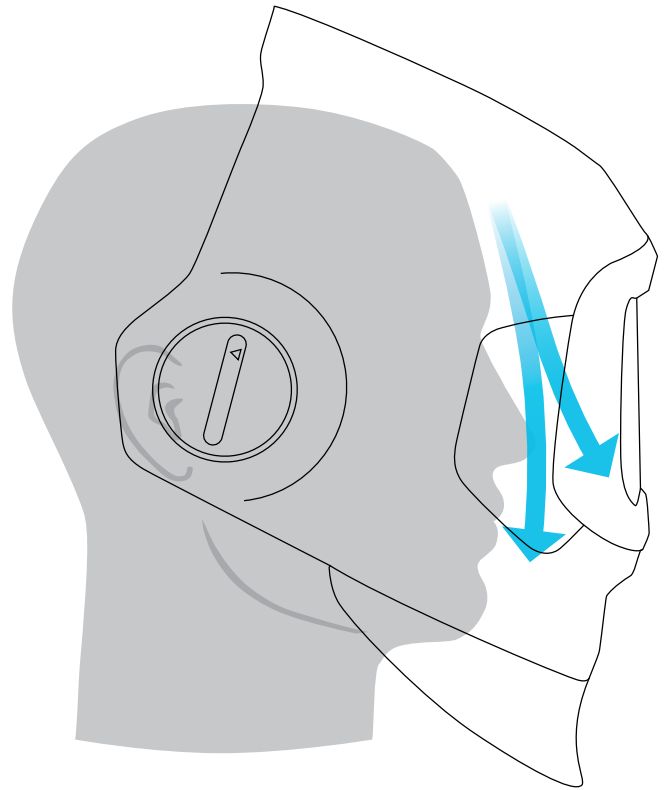
Take complete control over the direction and movement of airflow within your G5-03 Pro Air welding helmet.

Direct the air flow over your face, head, or a combination of both. Customised air distribution helps prevent your eyes from drying out, leading to increased comfort.



## Left side control

Adjust the amount of air coming from the top outlet vs. the two side outlets, or choose a combination of both.



## Right side control

Direct the airflow to either your face, your visor, or a combination of both.



# Configure your coverage



Helmet comes standard with rigid neck protection and fabric head protection as shown here



To better enable you to weld when looking down, remove the rigid neck protection and replace with the small fabric neck protection [16 90 41](#)




Increase coverage of your head, neck and chest by adding the larger fabric head cover [16 90 23](#) and/or the extended fabric neck protection [16 90 42](#)



When you need the durability of leather, attach the leather head protector [16 90 22](#) and the leather neck protector [16 90 43](#)

To maximize coverage from sparks, add the fabric shroud [16 90 30](#) and the extended, larger fabric head protection [16 90 23](#). Also available as a kit, [16 90 35](#)





Designed to provide powerful uniform lighting from a welding working distance.

Positioned to cast a wide light on the workpiece with configurable light intensity.



G5-03 Pro Air Task Light Kit  
Part No 16 92 00

## Let there be light...

Built specifically for welding, the optional helmet-mounted task light helps welders stay productive in poorly lit areas.

It delivers a better view of the work area before and after welding, which can help to reduce fatigue.

3M™ Speedglas™ Task Light is designed to be low profile and lightweight.

For welders using the 3M™ Speedglas™ Welding Helmet G5-03 Pro Air, the task light is powered by the 3M™ Adflo™ Powered Air Purifying Respirator.



# Technical specifications



Specification	3M™ Speedglas™ G5-03TW Pro Air Welding Helmet 63 77 20
MMAW (electrode)	✓
MIG/MAG	✓
TIG (>10A)	✓
TIG (1A-10A)	✓
Plasma (welding and cutting)	✓
Hidden Arc	✓
Tack welding	✓
Grinding (welding lens)	TAP Technology (shade 2.5)
Viewing area (welding lens)	73 x 109 mm
Battery lifetime	1 500 - 2 000 hours
Memory modes	Yes (via mobile app)
Dark state	Shades 5, 8-13
Light state	Shade 2.5 (with True-View)
UV/IR Protection	Shade 13 (permanent)
Switching time, light-dark	0.1 ms (+23° C)
Delay (switching time, dark-light)	50-1300 ms
Two step recovery	Yes (shade 5)
SideWindows	Yes
Climate flow control	Yes
Bluetooth® connectivity	Yes
Optional task light	Yes
Standards Compliance	
Eye protection	AS/NZS1338.1
Face protection	AS/NZS1337.1
Respiratory protection	AS/NZS1716 / RMPF <sup>1)</sup> 50

1) Required Minimum Protection Factor (RMPF): for mechanically and thermally generated particles.

# Increase your comfort



Part No.	Description	Part No.	Description
16 90 20 •	Head Protection Fabric (Small)	16 92 05 •	Lens Cover Task Light Pk=5
16 90 22 •	Head Protection Leather	83 40 18 •	Tube Breathing Cover Flame Resistant Adflo (Recommended when using Task Light)
16 90 23 •	Head Protection Fabric (Large)	83 71 10 •	Filter Odour Adflo
16 90 30 •	Shroud	83 71 20 •	Filter Odour Replacement Pad Adflo
16 90 35 •	Extended Cover Kit (Shroud and Large Head Cover Fabric)	83 72 42 •	Filter Nuis Level Organic Vapour/Acid Gas Adflo
16 90 41 •	Neck Protection Fabric (Small)	83 75 42 •	Filter Gas A1 Adflo
16 90 42 •	Neck Protection Fabric (Large)	954015HD •	Heavy Duty PAPR Backpack
16 90 43 •	Neck Protection Leather		
16 91 00 •	Welding Hood		
16 92 00 •	Task Light, Inc Mounting Parts & Cables		

## Common parts between G5-01 and G5-03 Pro Air



For optimal flexibility onsite, many G5-01 spare parts are also compatible with G5-03 Pro Air. This allows you to hold less spare part inventory, while retaining the flexibility you need to customise your equipment.

All parts common with G5-01 are marked with a dot (•) after the part number.

Example: 16 90 30 • Shroud



## 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 Nederman, Plymovent and Bomaksan 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](http://www.apexweldingsafety.com.au)

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 [facebook.com/apexweldingsafety](https://facebook.com/apexweldingsafety)

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

### References

1. 2019 Honaryar MK, Lunn RM, Luce D, et al. Occup Environ Med
2. 2024 Welding Fume Survey, AWS.

