



 **Speedglas™**  
Welding Safety

3M™ Speedglas™ Welding Safety Catalogue 2022

# The right equipment for each job

3M Science. Applied to life.™





**One of the most important lessons we have learned over the last 40 years is that no two welders are the same.**



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**Do you  
have  
the right  
equipment  
for the  
job?**







Fönsterelli  
Hil

irskylt.

TLIVING TRADING





# Gear equal to your goals

Running in the forest or on ice. Climbing a new route.  
Flying on a dirt bike. Reaching new levels in everything you do.

Every successful activity starts with a clear mental picture of your goals. And the gear you'll need to obtain those goals.

You picture yourself in the activity: What are the conditions? Is it cold and dry, or hot and humid? Quiet or

loud? Clear, dusty, or smoky? What's coming at you: snow? rocks? sparks?

Then you visualise yourself using your gear to keep your body in the correct position, perfecting your technique while staying strong and comfortable.

And you will know when you've selected the right equipment for each activity. You're confident. Relaxed. In control. Harsh conditions will not distract you. And you'll feel the pride that comes with intense, purposeful focus.





# If every welder is different, how do we listen to them all?

Whether it's a formal survey or just our everyday conversations with welders, we listen closely to their everyday challenges.

Listening to welders for decades, we've collected a lot of needs, pain points, and "It would be great to have..." comments.

Welder feedback helps us develop products for the future that can help increase productivity, comfort and protection. Our prototypes are field tested by professional welders. From their input, we make iterations until we have a high-performing offering.

This approach creates high user satisfaction and a clear way forward as we launch well-received products, like the G5-01 and G5-02. Thank you, welders, for lending us your voice.



# 3M Welding Centre of Excellence

Hundreds of thousands of times each day, welders all over the world rely on their 3M™ Speedglas™ products to achieve their best welding performance. A result of our close cooperation with welders, safety engineers and ergonomic specialists to constantly improve the performance and comfort of our products.





40

Over 40 years ago we turned the world of welding on its head by introducing the auto-darkening welding filter.



Our Welding Lab in Gagnef, Sweden has 25 employees dedicated to making 3M your #1 supplier of welding PPE for improved productivity and profitability.

13

International Design Awards since 1996



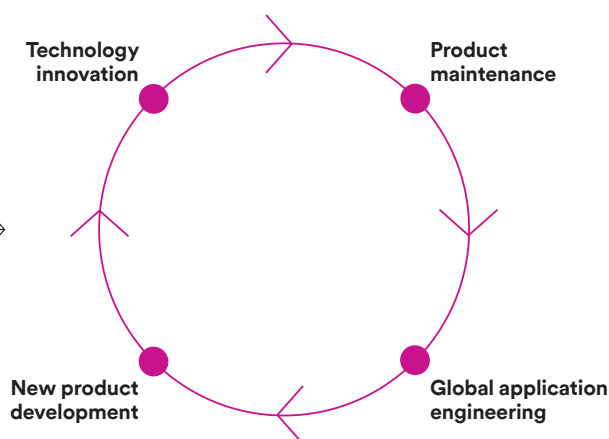
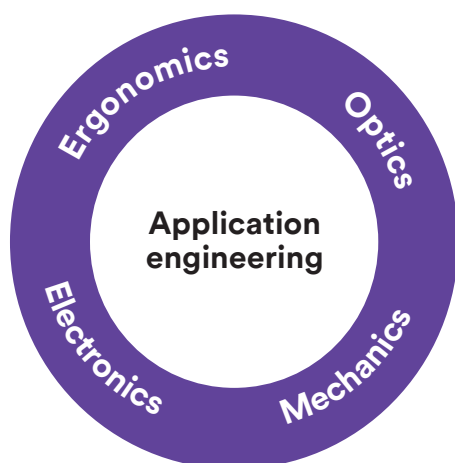
reddot design award winner 2012

8

**3M Program Awards:**

Circle of Technical Excellence & Innovation x3  
Golden Step Award x3  
Ace Award x2

## 3M Welding Lab Gagnef – areas of expertise



## Groundbreaking innovations



World's first ADF<sup>1)</sup>



Slim industrial design  
Trend-setting PAPR<sup>2)</sup> solution Adflo™



World's first curved ADF<sup>1)</sup>



Variable color settings  
Adjustable airflow helmet



Natural Color Technology ADF<sup>1)</sup>  
Improved exhalation vents  
Comfort headband



Our first PAPR<sup>2)</sup> system  
Patented SideWindows

1) ADF: Auto-Darkening Welding Filter

2) PAPR: Powered Air Purifying Respirator





## How to increase viewing contrast and comfort?

Everyone literally sees things slightly differently than anyone else. (For proof of this, just think about how you may have argued with others about colour settings on a shared TV or computer display.)

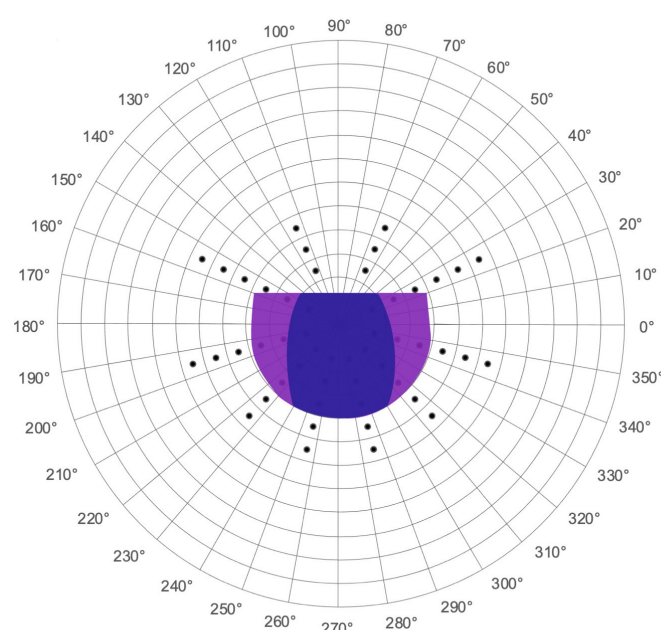
So we experimented with different colour tones for the dark state of a prototype ADF. We discovered that, broadly speaking, welders had three different colour preferences – natural, cool, and warm tones – based on which colour had the best contrast and most comfort for their eyes. The result is our 3M™ Speedglas™ Welding Filter G5-01VC (“VC” for Variable Colour).





# Constantly improving how the welder sees

To make consistently great welds, you need the best available view. Our optical and engineering experts focus on the welder's viewing experience – driven by these fundamental questions.



Using an instrument called an apertometer, we can measure the actual view angles both eyes can see through a welding filter. The blue field shows the 9100XXi filter (previously our widest). The purple field shows the G5-02 filter.

## How to optimise the field of view?

In our survey of professional welders, their clear preference was a 2-to-1 aspect ratio for ADFs. But the only way to achieve a wider view without making the helmet itself wider was by inventing a curved ADF: the 3M™ Speedglas™ Welding Helmet G5-02.

“We tested – and rejected – curved ADFs made with plastic substrates,” says Stefan Henriksson, 3M Welding Eye & Face Product Manager.

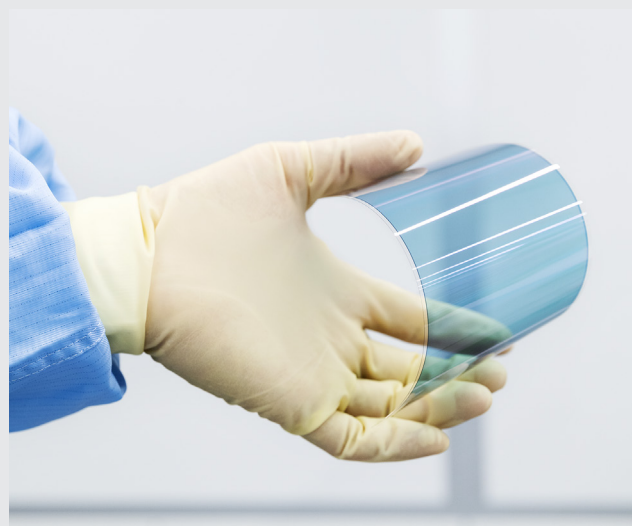
“We could not find anything that outperformed glass. The real challenge then became how to make the curved ADF. It took us years to design our one-of-a-kind, custom-engineered manufacturing machines. The reaction from welders to the curved filter has been overwhelming positive.”

## How to further refine overall optical clarity?

Since our beginning, this goal has been a core driver for our innovations. “We’re constantly exploring new optical technologies that we can leverage to the welder’s advantage,” says Kristina Magnusson, Senior Optics Specialist at the 3M Welding Centre of Excellence.

“Because we make many of our own welding filter components, we can readily test and transfer new technologies, as well as better control the entire manufacturing process.”

Our latest achievement in optical clarity is the 3M™ Speedglas™ Welding Helmet G5-02. Designed with high precision TIG welding in mind, the G5-02 provides our finest optics ever, due in part to a “glass pack” that’s 1/3 as thick as our thinnest flat ADF.





# A more natural light state

See your welds in a new light, with more contrast and natural-looking colours – as demonstrated in these photos. 3M™ Speedglas™ Natural Colour Technology may allow you to see your weld pool more accurately. And read surfaces better. Plus you can better discern coloured machine controls and displays while looking through the 3M™ Speedglas™ NC-Technology. It's a major improvement for viewing your work and your surroundings compared to conventional ADFs.



The difference is easy to see. Yes, the light state is still shade 3! But what you see through the filter appears lighter, more detailed and colourful. In fact, the improved welding filter optics can make your entire viewing experience feel more natural.



Sample competitor's filter shade 3



Speedglas 9002NC filter shade 3

3M™ Speedglas™ Natural Colour Technology is available on these filters:



G5-02



G5-01VC



G5-01TW



9100XXi

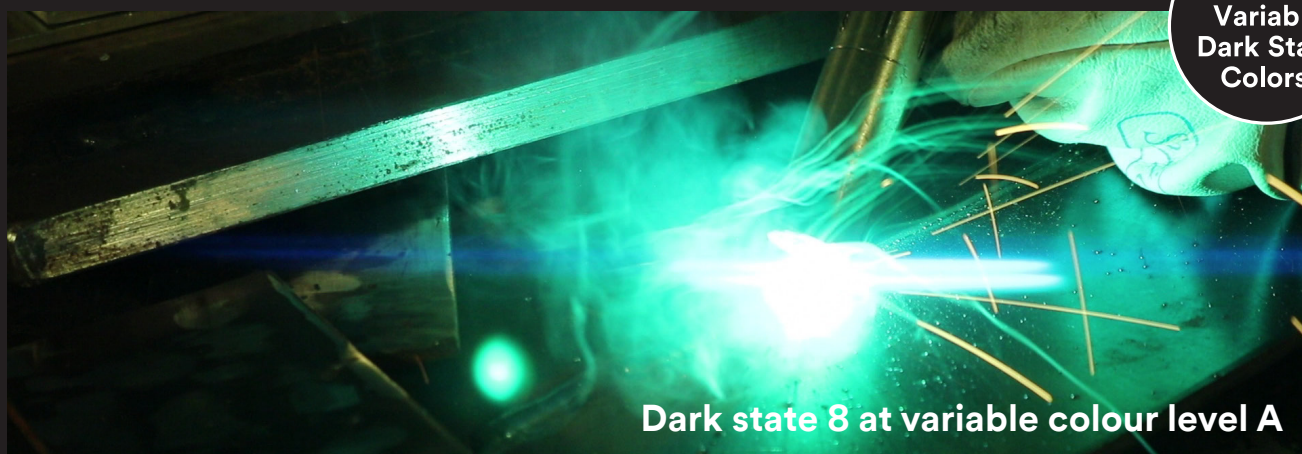


9002NC





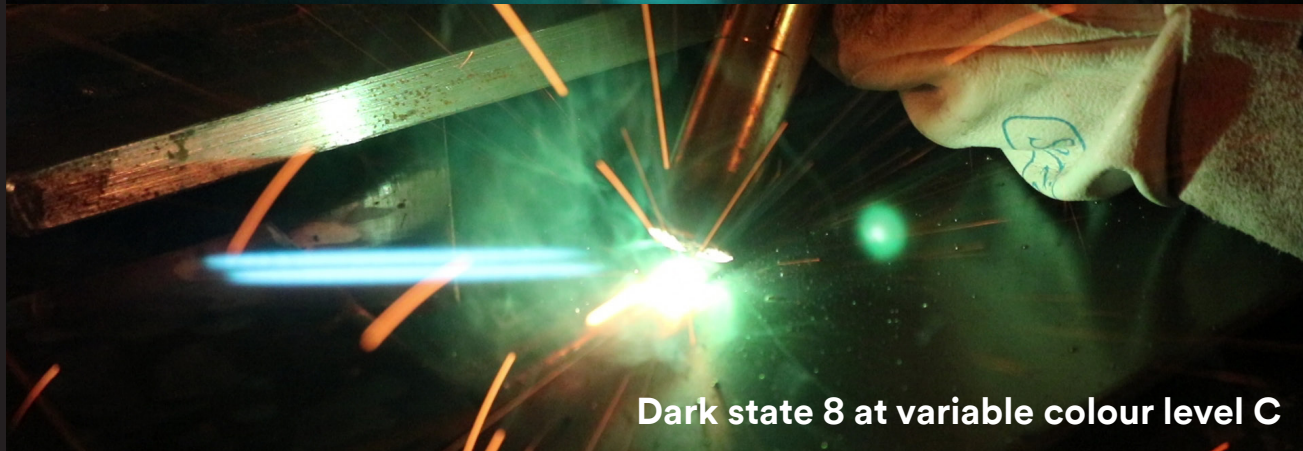
Variable  
Dark State  
Colors.



Dark state 8 at variable colour level A



Dark state 8 at variable colour level B



Dark state 8 at variable colour level C

3M™ Speedglas™ Welding Filter G5-01VC

# Which colour tone works best for you?

To provide even better view and control of your weld puddle we now introduce the 3M™ Speedglas™ Variable Colour Technology: you get to choose between natural (A), cool (B) or warm (C) tones for your dark state. You determine which colour tone provides the best viewing contrast for your welds, and the most comfort for your eyes.



Scan this  
code to see  
how it works!



# Why curved?

We gave professional welders prototypes of helmets with different aperture sizes. Their favorite aperture size was the curved, 2-to-1 aspect ratio we used for designing the G5-02 ADF. A wider view was much higher rated than a taller view.

And the only way to get wider views without making the helmet wider is by inventing a curved filter.



**100% wider**  
**ADF field of view**



# Get wider views in a slimmer helmet

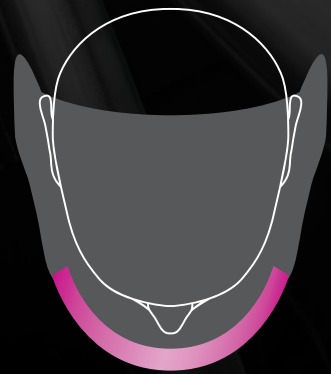
Previously, you had to compromise: either a slim helmet or a wide view. With the curved G5-02 ADF, there are no compromises.



Flat ADF in a slim helmet means the ADF can't be wide.



Expanded field of view with a flat ADF requires a wider helmet.



A curved ADF can give you a wider total field of view in a slim helmet.



## Greatly reduce distracting reflections

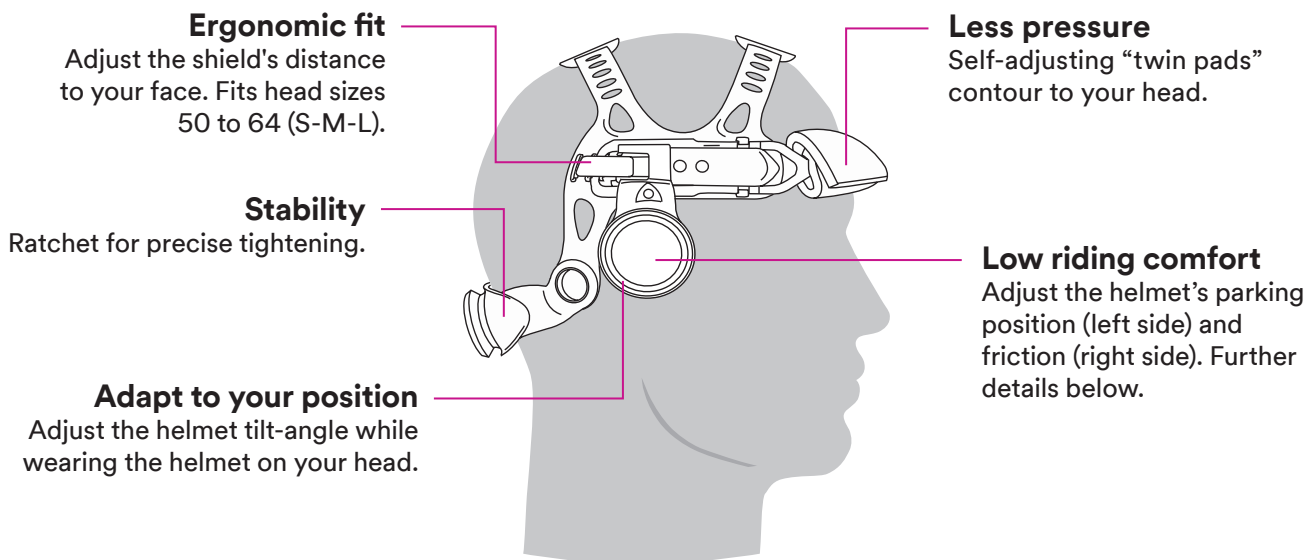
The combination of the curved welding filter and a slimmer helmet reduces "rear view" reflections and other distracting glare inside the helmet.



## 3M™ Speedglas™ Welding Helmets 9100-series

### Tailor to fit your personal preferences

With the 9100 headband, we've carefully avoided sensitive areas of the head using self-adjusting twin pads for the forehead band, multiple crown straps and a low ratchet attachment. By better contouring it around your head, our headband doesn't need to be overly tight to be comfortably secure.



We designed the 9100 helmet to "nest" down low, close to the headband, when raised. So you don't need to tighten the headband as much.

The helmet's smooth up-and-down pivot action can be locked in the up position – a light pull lowers the helmet back down again.



#### DROPS AS YOU LIKE

Drop-friction is adjusted on the wearer's righthand side:

Turn the righthand knob clockwise to increase (or counterclockwise to decrease) the effort needed to lower down the shield.

#### STABILITY WHEN RAISED

Helmet parking grip is adjusted on the wearer's lefthand side:

Turn the lefthand knob clockwise to increase (or counterclockwise to decrease) how tightly the shield is held in the raised "parked" position.





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

# Control the source and direction of your airflow

For more control over your comfort, the innovative G5-01 helmet duct system let you direct the airflow to either your face or your visor, or somewhere in between. You can even adjust the amount of air coming from the helmet's top outlet versus its two side outlets, or choose a blend of both.

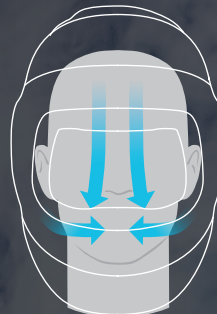
All airflow adjustments can be made while you're wearing the helmet – continuously maintaining your eye, face and respiratory protection.

An all-new face seal features a locking toggle designed for fast, secure adjustments. Two new tabs make it easier to lift the seal over your glasses. And installation channels on the helmet speed the removal and replacement of the seal.

## Highest safety class for powered air systems

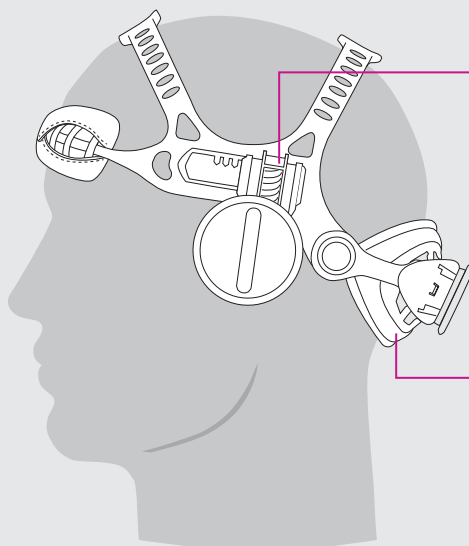
Designed for heavy-duty, high-amperage welding and grinding, the G5-01 helmet connects to the 3M™ Adflo™ Powered Air Purifying Respirator to provide TH-3 rated respiratory protection (NPF 500). For conditions where supplied air is required we offer the 3M™ Versaflo™ Series Regulators.

Variable  
Airflow.



## G5-01 Comfort headband

Design with extra comfortable back part option, less parts and further improvements compared to the Speedglas 9100 headband.



### Easy adjustment

Easy adjustment of distance to face, utilizing a button to enable sliding the welding helmet back and forth while wearing the helmet.

### Back part options

Selection of welding helmet back part; two options exist, a larger back part and a traditional (same as 9100) part.





# Hazards







## How to beat the statistics

Welding processes typically generate hazardous ultraviolet/infrared radiation and (intense) visible light that have the potential to lead to permanent eye damage. Physical eye hazards include welding spatter and grinding particles.

### Controlling exposure

Put simply, auto-darkening welding filters allow welders to keep their welding helmet in place much more often than passive welding filters.

If you can always see well, the motivation to constantly lift your shield is significantly reduced, meaning:

- You reduce the likelihood of exposure to harmful UV/IR radiation by accidentally striking an arc. Or being exposed to the arcs of nearby welders.
- You reduce the potential for foreign body eye injuries from grinding swarf or weld spatter.

Costs associated with workplace eye injuries:

**\$300M/yr**

Each year in the US alone, more than \$300 million is spent on costs associated with workplace eye injuries, including medical expenses, workers' compensation, and lost production time.

Source: [www.osha.gov/SLTC/eyefaceprotection](http://www.osha.gov/SLTC/eyefaceprotection) (01.03.2017)

**90%**

of injuries preventable with proper protection:

More than 90% of serious eye injuries at work can be prevented using appropriate protective eyewear.

Source: [www.preventblindness.org/eye-safety-work](http://www.preventblindness.org/eye-safety-work) (01.03.2017)

**1/4**

of all welding injuries are to the eyes



Eye injuries account for one quarter of all welding injuries, making them by far the most common injury for welders, according to research from the Liberty Mutual Research Institute for Safety.



# What's happening as I weld?

What do increased clumsiness, ulcers, and flu symptoms have in common? They – and other symptoms – might be associated with overexposure to welding fumes.

## Potential immediate health effects of certain welding fumes

- Eye, nose and throat irritation
- Dizziness
- Nausea
- Headaches
- Metal fume fever. Notably, it is more likely to occur after time away from the job (weekends, holidays, etc.)<sup>1)</sup>

## Potential long-term health effects of certain welding fumes

- Lung function abnormalities, including bronchial asthma, chronic obstructive pulmonary disease (COPD), pneumoconiosis and other pulmonary fibrosis (chronic beryllium disease, cobalt lung).<sup>2)</sup>
- Larynx and urinary tract growths.<sup>3)</sup>
- Certain fumes may be associated with stomach ulcers, kidney damage, and nervous system damage.<sup>3)</sup>

Occupational Exposure Limits (OEL) are typically country specific. It's legal within many country regulations to inhale up to 11 grams of zinc oxide every year. What does that mean?

## 11 gram of welding particles

To illustrate a general example: working with an OEL of 5 mg/m<sup>3</sup> for zinc oxide, a full-time welder may inhale up to 11 grams of zinc every year.<sup>4)</sup>



In recent years, much more has been learned about the health risks associated with welding fumes, with many countries acting to lower their OELs. On a country level, local requirements are becoming more stringent about welder respiratory protection.

1) "Prevalence and association of welding related systemic and respiratory symptoms in welders," Occupational & Environmental Medicine, El-Zein M., Malo J-L., Infante-Rivard C., Gautrin D., 2003;60:655-661.

2) "Welding-Related Respiratory Diseases" article, (translated from) Medycyna Pracy (Occupational Medicine), Witczak T., Walusiak J., Pałczyński C., 2009;60(3):201-8.

3) "Controlling Hazardous Fumes and Gases during Welding," OSHA Fact Sheet, U.S. Department of Labor, DSG FS-3647, March, 2013.

4) The example is based on a typical respiratory rate of 20 litres of air per minute or 2300 m<sup>3</sup> of air per year. The reference used here is the OEL of zinc for Sweden, 2015 (5mg/m<sup>3</sup>).

## TH2

TH2 rated respirator systems have a Nominal Protection Factor of 50, meaning that when the respirator is used correctly, the wearer's exposure should be reduced to 1/50th. (the area above the purple line).

## TH3

With a TH3 rated respirator, the Nominal Protection Factor is 500, meaning that when the respirator is used correctly, the wearer's exposure should be reduced to 1/500th, or approximately 0.022mg (too small of an amount to illustrate here). It's becoming more common that countries set TH3 as their standard for welding respiratory protection.





# Reducing welding fumes & exposure

Welding creates respirable and inhalable fumes. To address these hazards, employers and employees use a hierarchy of controls. The idea is that the highest priority items on the hierarchy

not only do the most to reduce fumes and worker exposure, but that they also put the least burden of responsibility on the welder. However, welding fume control has its limitations:

## 1

**Modify or substitute your welding process** to other processes that generate less fumes and/or eliminate contaminants.

**Control Limitations:**  
Substitutions may not be possible.

## 2

**Engineering controls** include modifying enclosures around the welder, or the general ventilation of the workshop, or local exhaust controls.

**Control Limitations:**  
Ventilation can be difficult to achieve due to conflicting needs, for instance heating/cooling or shielding gases.

## 3

**Work practices** include having the welder keep their head out of the plume.

**Control Limitations:**  
Space-restricted workpieces or the welding situation may not allow alternative placement of the welder's head.

## 4

**Personal respiratory protection equipment.** As an addition to steps 1 through 3 personal respiratory protection for the welder can help reduce exposure and increase protection and comfort.

**Control Limitations:**  
Companies should establish a respiratory protection program that includes selection of respirators, training and maintenance.

## FACTS:

Respiratory protection is the 3rd most frequently cited workplace violation<sup>1)</sup> in the U.S.

# 40–50 welders

in UK are hospitalised every year with pneumonia associated with welding fume. Two of these welders die every year.<sup>2)</sup>

1) Top 10 Most Frequently Cited Standards, OSHA, U.S. Department of Labor, for 2020.

2) Source: [www.hse.gov.uk/welding/illness.htm](http://www.hse.gov.uk/welding/illness.htm) (02.03.2017).





# Selection guide



# There is no one perfect welding helmet

We have populated our helmet matrix with carefully considered design blends of features, personal preferences, and performance to address the application needs of the vast majority of welders.

But for every helmet system we design, we have four driving factors:



## Reliability

We know harsh welding environments: We build our products to thrive in them. From creating reliable arc sensing/shade switching to selecting highly durable materials to designing for long-lasting mechanical operation.

## Comfort

Comfort means a helmet that helps vent stagnant air. It means a headband that avoids scientifically determined pressure points around your head. And how a helmet provides eye and face protection while being comfortable for a full shift.



## Protection

UV/IR radiation. High speed grinding particles. Falling objects. Respiratory hazards. Identify your workplace hazards - then find the right Speedglas helmet, accessories, and respiratory protection. Have a unique workplace hazard? Contact your local distributor for even more 3M solutions.

## View

Every helmet design detail can affect your view. That's why we provide high-performance auto-darkening welding filters, our side windows lenses, and large, protective clear visors. Each of these, and many more, helmet design elements maximise your ability to see.





## Quick helmet selection guide

## What kind of welder are you?



Heavy industry welding situations at high amperage and a lot of grinding.



High precision Tig welding situations where viewing wide and "clear" is necessary.



With powered or supplied air



G5-01



Standard welding helmet



G5-02



With head protection and air



9100MP<sup>1)</sup>



9100MP-Lite<sup>1)</sup>



Natural Colour Technology



Variable Colour Technology



Curved Glass Technology



Variable air flow



Bluetooth

1) Natural Colour Technology when using the 9100XXi filter.





General welding situations at mid to low amperage in a variety of materials.



#### Standard welding helmet



9100<sup>1)</sup>



9002NC



100



#### With powered or supplied air



9100-Air<sup>1)</sup>



#### With head protection



9100-QR<sup>1)</sup>



100-QR



When welding needs to happen in a lot of different situations, locations, companies, conditions and positions.



#### Standard welding helmet



9002NC



100



#### With head protection



9100-QR<sup>1)</sup>



100-QR



## Your decision tree when selecting a welding filter

<p><b>1. Is TIG the majority of your welding?</b></p>	<p><b>3M™ Speedglas™ Welding Filter G5-02</b></p> <p>For 3M Speedglas's best available optical performance during TIG welding, choose our curved welding filter for its exceptionally wide viewing area, shade 2.5 light state, and 3M™ Natural Color Technology. <b>More information on page 56–60</b></p>	
<p><b>2. Variable Colour setting for your personal preference</b></p>	<p><b>3M™ Speedglas™ Welding Filter G5-01</b></p> <p>For your best viewing comfort and contrast during welding, select from three different colour tones for your dark state. A world's first! <b>More information on page 42–47</b></p>	
<p><b>3. Would you benefit from seeing more natural colours and better contrast?</b></p>	<p><b>Natural Colour Technology</b></p> <p>See less green and more details: NC Technology can make colors appear more natural while increasing contrast for easier viewing of details. <b>More information on page 12–13</b></p>	
<p><b>4. Do you do a lot of tack welding?</b></p>	<p><b>Tack welding comfort mode</b></p> <p>Avoid possible eye fatigue from constantly switching from light to dark during prolonged tack welding. Our tack welding comfort mode uses an intermediate light state that can be easier on your eyes.</p>	
<p><b>5. How important is the size of welding filter's viewing area?</b></p>	<p><b>Welding Filter viewing size</b></p> <p>Desired viewing area is a function of both welding set-up and personal preferences. We offer a variety of filter sizes to meet many needs. <b>More information on page 62</b></p>	

## What dark shade levels are you looking for?

Welding process	Current in amperes A																							
	1.5	6	10	15	30	40	60	70	100	125	150	175	200	225	250	300	350	400	450	500	600			
MMA (covered electrodes)	8							9		10		11		12			13			14				
MAG	8							9	10		11			12			13							
TIG				8		9		10		11			12			13								
MIG									9		10		11			12		13		14				
MIG with light alloys											10		11		12		13		14					
Air-arc gouging	10												11	12		13		14		15				
Plasma jet cutting										9	10	11	12			13								
Microplasma arc welding		4	5		6		7		8		9	10		11		12								
	1.5	6	10	15	30	40	60	70	100	125	150	175	200	225	250	300	350	400	450	500	600			

Recommended shade numbers according to EN:379:2003 of welding filter for various working applications. According to the conditions of use, the next greater or the next smaller scale number can be used.



## 3M™ Speedglas™ Auto-Darkening Filters

## Selector table

● Best<sup>1)</sup>
● Better<sup>1)</sup>
● Good<sup>1)</sup>
× Not Recommended<sup>1)</sup>

Specification	G5-01TW	G5-01VC	G5-02	9100XXi	9100XX	9100X	9100V	9002NC	100V	100B
MMAW (electrode)	●	●	●	●	●	●	●	●	●	●
MIG/MAG	●	●	●	●	●	●	●	●	●	●
TIG (>20A)	●	●	●	●	●	●	●	●	●	×
TIG (1A-20A)	●	●	●	●	●	●	●	●	×	×
Plasma (welding and cutting)	●	●	● <sup>3)</sup>	●	●	●	●	●	×	×
Risk for hidden arc	●	●	●	●	●	●	●	●	×	×
Tack welding	●	●	●	●	●	●	●	●	●	×
Grinding	● <sup>4)</sup>	● <sup>4)</sup>	×	●	●	●	●	●	●	●
3M™ Speedglas™ Natural Colour Technology	Yes				No			Yes	No	
Switching time, dark-light	50–1 300 ms		50–1000 ms	40–800 ms	40–1 300 ms			60–400 ms	40–250 ms	150–250 ms
Switching time, light -dark	0,1 ms (+23° C)									
Dark state	Shade 8–13	Shade 8–14	Shade 8–12	Shade 5, 8, 9–13				Shade 8–12		Shade 10–12
Light state	Shade 3		Shade 2,5	Shade 3						
UV/IR Protection (permanent)	Shade 13	Shade 14	Shade 12	Shade 13				Shade 12		
Viewing area, approx. (mm)	109×73		150×76	107×73		107×54	93×45	107×55	93×44	
External grinding mode control	No			Yes <sup>2)</sup>	No					
Auto ON	Yes				No			No		
Solar cell	No					Yes		No		
Battery lifetime (hours)	1500			1800	2 000	2 500	2 800	2 000	1500	
Number of sensors (arc detection)	4			3				2		
Classification	1/1/1/1	1/1/1/2	–	1/1/1/2					1/2/2/2	
Approval (welding filter)	EN 379		CE <sup>5)</sup>	EN 379						

1) The ratings (best - better - good - not recommended) above refer to the products listed in this chart and should be seen as general recommendations based on differences in product comfort features and configuration options when using these selected Speedglas welding helmet series.

2) When used with the front cover 9100XXi and the 3M™ Speedglas™ Welding Helmets 9100, 9100-QR or 9100-Air, see page 52–53.

3) G5-02 are very suitable for low amp plasma welding

4) G5-01TW and VC are used in flip-up helmet

5) Based on requirement in EN 379 and ISO 16321



# Refine your helmet selection based on your preferences

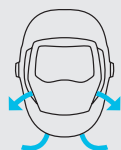
## Standard welding helmets



Specification Welding helmets (non-air)	G5-02	9100	9100-QR	9002NC	100	100-QR
<b>Eye and Face Protection</b> (Approval) Welding Helmets Protection Plates Visor Plates	EN 175:F EN 166:FT –	EN 175:B EN 166:BT –	EN 175:B EN 166:BT –	EN 175:B EN 166:BT –	EN 175:B EN 166:BT –	EN 175:B EN 166:BT –
<b>Head protection</b> (Approval)	–	–	EN 397 <sup>2)</sup>	–	–	EN 397 <sup>2)</sup>
<b>Respiratory protection<sup>1)</sup></b>	All helmets are compatible with 3M disposable or reusable respirators; see page 70–73. See next page for helmets available with powered and supplied air respiratory protection.					
<b>Hearing protection</b> – compatible options (see page 74–78)	Earmuffs Earplugs	Earmuffs Earplugs	Earmuffs Earplugs	Earmuffs Earplugs	Earmuffs Earplugs	Earplugs
① Exhaust vents	YES	YES	YES	YES	–	–
② Side windows	Curved ADF	Optional	YES	–	–	–
④ Flip-up with clear visor	–	–	–	–	–	–
Wide view	YES	–	–	–	–	–
Graphics option	–	–	–	–	YES	–
Auto-darkening filter options (see page 26–27)	G5-02 (Curved ADF)	9100V 9100X 9100XX 9100XXi	9100V 9100X 9100XX 9100XXi	9002NC	100V 100B	100V 100B

1) This overview shows only our helmets without air delivery connection. Helmets for powered or supplied air respirator systems see page 29.

2) With 3M™ Safety Helmet H-701.



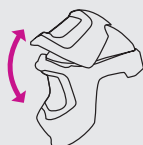
① Exhaust vents  
– exhaled air is  
channeled out via  
side vents.



② Side windows  
– shade 5 filters that  
widen your field of  
vision.



③ High-comfort  
Speedglas headband  
with smooth ratchet for  
precise tightening.



④ Big, curved 17×10 cm  
clear protective visor,  
increasing your vision.



⑤ Adjust the airflow to  
your face or your visor,  
and the airflow coming  
from the top or side  
outlets – all without  
lifting your helmet.



⑥ Curved ADF  
follows the curvature  
of your head for  
wider total field of  
view in a slim helmet.



## Welding helmets for powered or supplied air respiratory protection



Specification Welding helmet systems (air)	G5-01	9100-Air	9100MP	9100MP-Lite
<b>Eye and Face Protection</b> (Approval) Welding Helmets Protection Plates Visor Plates	EN 175:B EN 166:BT EN 166:BT	EN 175:B EN 166:BT –	EN 175:B EN 166:BT EN 166:BT	EN 175:B EN 166:BT EN 166:BT
<b>Head protection</b> (Approval)	–	–	EN 397 Safety Helmet	EN 812 Bump Cap
<b>Respiratory protection</b> (Approval) <sup>3)</sup> Adflo Powered Air Purifying Respirator VersaFlo Supplied Air Regulator V-500E	EN 12941 (TH3) NPF 500 EN 14594 (3B) NPF 200	EN 12941 (TH2) NPF 50 EN 14594 (3B) NPF 200	EN 12941 (TH3) NPF 500 EN 14594 (3B) NPF 200	EN 12941 (TH3) NPF 500 EN 14594 (3B) NPF 200
<b>Hearing protection</b> – compatible options (see page 74–78)	Earplugs	Earmuffs Earplugs	Earmuffs Earplugs	Earmuffs Earplugs
② Side windows	–	YES	YES	YES
③ High-comfort headband	YES	YES	–	–
④ Flip-up with clear visor	YES	–	YES	YES
⑤ Adjustable airflow	YES	–	— <sup>4)</sup>	— <sup>4)</sup>
Auto-darkening filter options (see page 26–27)	G5-01TW, G5-01VC	9100V, 9100X, 9100XX, 9100XXi	9100V, 9100X, 9100XX, 9100XXi	9100V, 9100X, 9100XX, 9100XXi

3) The nominal protection factor based on laboratory-measured performance data according to European Standards.  
The protection factor is assigned by local authorities in each European country and can therefore be different for each country.

4) Limited adjustability of airflow.

## Grinding headtops for powered or supplied air respiratory protection



Specification Visors and Helmets (air)	M-207	M-307	M-407
<b>Eye and Face Protection</b> (Approval) Visor Plates	EN 166 1:BT:3	EN 166 1:BT:3	EN 166 1:BT:3
<b>Head protection</b> (Approval)	EN 812	EN 397	EN 397
<b>Respiratory protection</b> (Approval) <sup>3)</sup> Adflo Powered Air Purifying Respirator VersaFlo Supplied Air Regulator	EN 12941 (TH2) NPF 50 EN 14594 (2B) NPF 50	EN 12941 (TH2) NPF 50 EN 14594 (3B) NPF 200	EN 12941 (TH2) NPF 50 EN 14594 (3B) NPF 200
<b>Hearing protection</b> – compatible options (see page 74–78)	Earmuffs Earplugs	Earmuffs Earplugs	Earmuffs Earplugs
<b>Flame-retardant shroud</b>	–	–	YES
<b>Type of protective visor</b>	Clear-coated polycarbonate	Clear-coated polycarbonate	Clear-coated polycarbonate

3) The nominal protection factor based on laboratory-measured performance data according to European Standards.  
The protection factor is assigned by local authorities in each European country and can therefore be different for each country.



# Equipment that can potentially pay for itself in two months

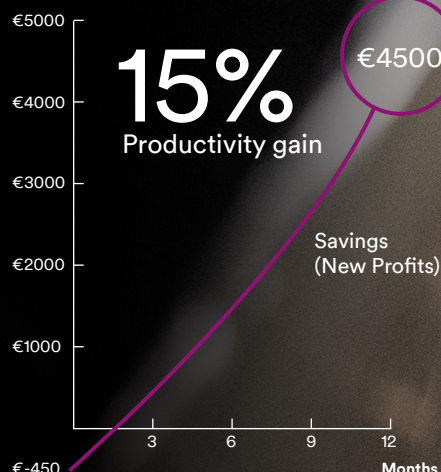
Not only can you weld faster when you can see more clearly, but your entire movement around your workpiece can become more efficient when you're not constantly having to raise and lower your shield.

We've studied welders and their increased efficiency when using our auto-darkening filters (ADFs) for almost four decades:

- The shorter the weld, the greater the productivity increase. Not surprising, applications requiring lots of tack welds have the most to gain.
- Where the final appearance of the weld is critical – for example, on high-value items – reduction in scrap alone (e.g., from bad starts) can quickly pay for our helmets.
- Since most welders do a combination of tack and longer welds, we use a conservative, generalised estimate of 15% gain in productivity.

So, for example, if you're paying a welder €20 per hour, a 15% improvement in productivity will pay for a €450 helmet in about two months and result in a year-end increase in savings (new profits) of €4500 when compared to continuing to use passive filters.

This is an example:



## \$28,280

Average cost of injuries to the face, including disabling and non-disabling eye injuries.<sup>1)</sup>

## 20,300

Lost work days in 2012<sup>1)</sup>

## Ask yourself

Are you doing everything possible to maximise the amount of time your welders have their shield in the safe, down position?







# The right equipment for each job

It is the employer's responsibility to identify all welding hazards in their workplace, to explain those hazards to their welders, and to develop a documented welder safety protection plan.

That protection plan needs to be specific and cover all variables that a welder may encounter. Those variables can include changes to base metals, electrodes, the amount of sparks or splatter generated, fume intensity, the location of the weld, ventilation limitations, and so on.

The protection plan must then instruct welders how these variables impact their selection of personal protective equipment (PPE) for specific welding applications.

Fortunately, the 3M™ Speedglas™ team has developed a wide range of PPE, so welders can select the right equipment for each job. That means meeting several of the welder's protection needs – plus empowering welders to perform at their highest levels.



## Identify the hazards

Make a list of all the risks in your welding environment (arc radiation, sparks, fumes, noise, trip hazards, falling objects, etc). 3M can help identify consultants and measurement tools.



## Assess the risk levels

By evaluating every risk, you can prioritise their mitigation. See more details in each section of this catalogue. If there are any doubts or ambiguities, always consult a professional safety engineer.



## Select the right PPE

Now that you know the levels of protection needed for a specific application, you can select the right level of PPE to help protect each vulnerability: eye, face, head, hearing, and respiratory system.

Within the appropriate level of protection, let welders choose on matters of personal preference regarding comfort, style, and ease of maintenance. For example, sweatbands can be in leather, fleecy cotton, or towelling. These personalised comfort choices help to maximise user acceptance of PPE.



## Training, motivation and maintenance

For maximum benefit from any piece of PPE, it pays to focus on user acceptance and proper use. 3M can help:

- On-site training by 3M personnel or a visit from our Welding Safety Caravan (not available in all countries). We'll show you equipment options based on your needs.
- 3M eAcademy - the flexible way to discover and learn throughout your busy day:  
[www.3m.com/3M/en\\_US/3m-academy/log-in](http://www.3m.com/3M/en_US/3m-academy/log-in)
- Other techniques, such as Toolbox Talks, educational posters for your facilities, online videos, etc.



For further details please visit [www.speedglas.com](http://www.speedglas.com) and select your country to find local welding safety information from 3M.









# **Respiratory Protection Welding Systems**







# A quick look at 4 respirator styles and their advantages

The following is an overview of the four general types of 3M respiratory protection found in this Catalogue. In addition to your application's specific filtration requirements, your selection process may include factors such as equipment style/configuration, personal preference/comfort, and maintenance considerations.



## 3M™ Adflo™ Powered Air Purifying Respirator

Provides a constant flow of filtered air over your face.

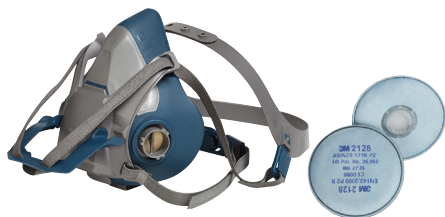
Enables high mobility with a high level of protection against specific particulates and/or gases.



## 3M™ Versaflo™ Supplied Air Regulators

Can be suitable for protecting against contaminants with poor warning properties (e.g., no smell or taste).

Cool or heat your airflow by as much as 28°C using the V-100E or V-200E (respectively) regulators.



## 3M™ Reusable Respirators

Choose from three different half mask series – based on your filtration needs and maintenance/personal comfort preferences.

All three series are compatible with many 3M™ Speedglas™ Welding Helmets.



## 3M™ Filtering Facepiece Respirators for welding

Provide lightweight, convenient, comfortable respiratory protection against dusts, mists, and metal fumes.

Fit under virtually all welding helmets.



### Designed for welders

The ergonomic leather belt, shaped for maximum freedom, is extra wide around the PAPR for additional back support.

### A system for your needs

System components are designed to work securely together, combining head, eye, face and respiratory protection.

### Move around

The slim profile and ergonomic PAPR design makes it easier to go into tight spaces. The robust 3M™ Adflo™ Powered Air Purifying Respirator provides all of the features you would expect in a premium system, including easy-to-use functionality.



## 3M™ Adflo™ Powered Air Purifying Respirator

# Your own filtered air flow... ...mobile and adaptable







Is there a way to both provide respiratory protection against harmful welding fumes while increasing the comfort around your face and head? Tackle workplace hazards with a respiratory protection solution workers will want to wear.

As one of the most popular respirators of its kind in the world, the 3M™ Adflo™ Powered Air Purifying Respirator is designed to provide welders a constant nominal airflow rate of 170 litres per minute<sup>1)</sup>, regardless of the battery's charge or the particle loading of the filter.

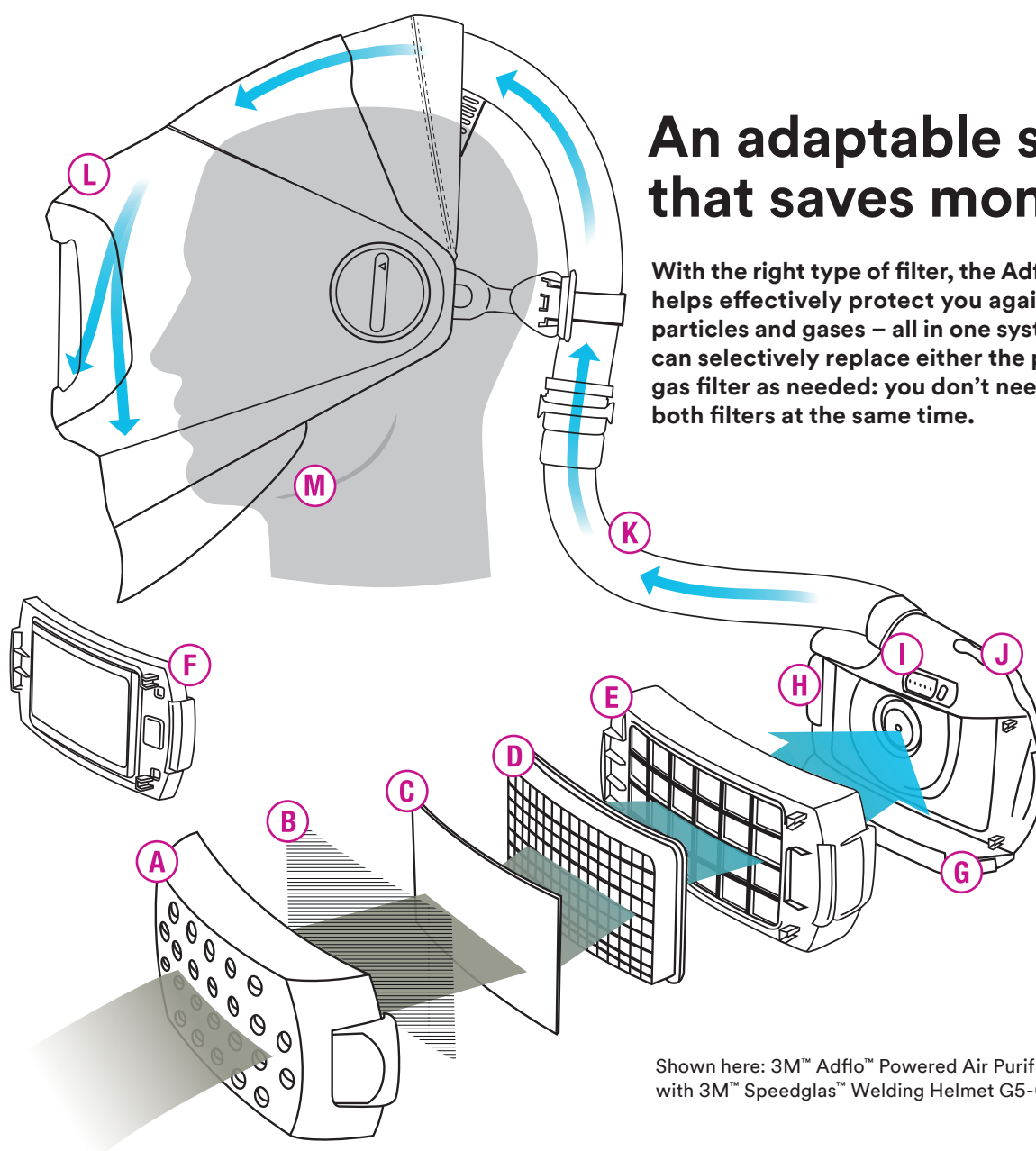
## Green for go

As soon as you turn on your Adflo powered air purifying respirator, a display indicates the status of the filter. Green light means that the unit is working normally. Red light indicates that the filter is clogging.

<p><b>1. One green indicator:</b> new particle filter. <b>Two green indicators:</b> if also a new gas filter is installed.</p> 	<p><b>2. As the filter is clogging</b> more indicators will lit up.</p> 	<p><b>3. Three green and one red light:</b> expect a shorter battery runtime. Particle filter replacement is recommended.</p> 	<p><b>4. Three green and two red lights:</b> the particle filter is clogged and must be replaced.</p> 
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1) 205 litres per minute for the version with the larger battery





## An adaptable system that saves money

With the right type of filter, the Adflo respirator helps effectively protect you against both particles and gases – all in one system. And you can selectively replace either the particle or the gas filter as needed: you don't need to change both filters at the same time.

Shown here: 3M™ Adflo™ Powered Air Purifying Respirator with 3M™ Speedglas™ Welding Helmet G5-01

- A Filter cover:** holds the different available Adflo filters.
- B Spark arrestor.**
- C Prefilter:** increases the service life of the particle filter.
- D Particle filter:** high efficiency particulate filtration (must be installed at all times).
- E Gas filter:** (A1B1E1 or A2) captures organic, inorganic and/or acid gases and vapours. Gas filters sold separately.
- F Odour filter:** removes unpleasant smells (not needed if a gas filter is installed); sold separately.
- G Li-ion battery:** fully charges in approx. 4,5 hours. Expected operating time is 7–9 hours at the standard 170 l/m airflow setting with a new particle filter and a new, fully-charged battery.
- H Brushless motor.**
- I Filter/Battery Indicator:** LED status for both the particle filter and battery.
- J Airflow plus:** for hot, humid jobs, you can increase the airflow from 170 l/min to 200 l/min with the push of a button.
- K Breathing tube:** different options available.
- L Airflow:** for your maximum comfort filtered air is distributed throughout the entire breathing zone. Plus, the intelligent PAPR keeps the airflow rate at a constant, preset level.
- M Soft, flexible face seal (removed here for clarity):** creates a positive pressure environment within the helmet, helping keep the surrounding pollutants at bay.



## High quality air

The airline supply must be air of breathable quality meeting the requirements of EN 12021. On page 100 you will find air cleaning stations from 3M.

## Stay aware

If your air supply would ever fall below 170 lpm, the regulator's warning whistle will sound.

## Many helmet options

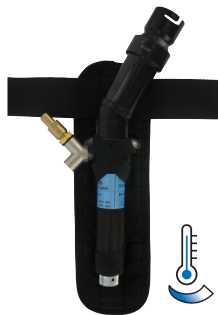
Achieve a Nominal Protection Factor of 200 when you combine the 3M™ Versaflo™ Belt Mounted Regulators with our 3M™ Speedglas™ Welding Helmets 9100-Air, 9100 FX-Air, 9100MP, 9100MP-Lite or G5-01.



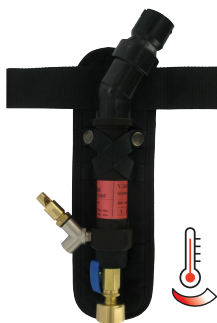


## 3M™ Versaflo™ Supplied Air Regulators

# Light on your belt and soft on your ears



V-100E Air Cooling



V-200E Air Heating



V-500E Flow Controlled

The balanced, belt-worn, V-500E regulator consistently delivers the airflow level you set (170-305 l/min). An integrated silencer keeps the noise level equivalent to a typical conversation.

There are two alternative regulators to either cool (V-100E) or heat (V-200E) the airflow by as much as 28°C. These regulators are excellent choices for workers exposed to uncomfortable temperature ranges.



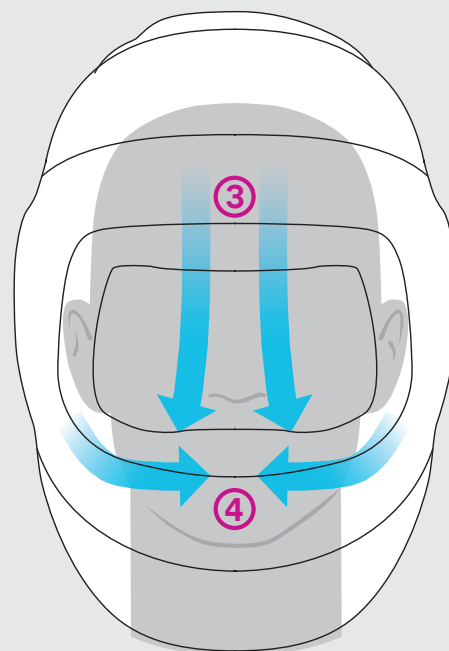
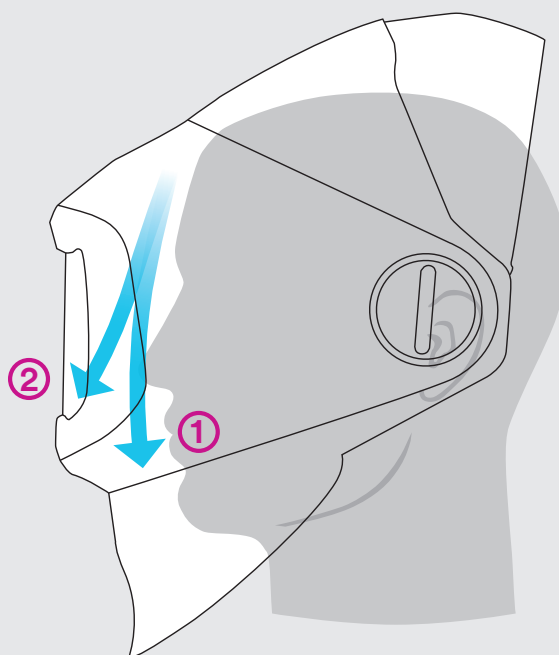
## 3M™ Speedglas™ Welding Helmet G5-01

# Take control of your flow

For more control over your comfort, the innovative G5-01 helmet duct system lets you direct the airflow to either your face ①, your visor ②, or some combination of both.

You can even adjust the amount of air coming from the top outlet ③ vs. the two side outlets ④, or choose a blend of both.

All airflow adjustments can be made while you're wearing the helmet – and continuously maintaining your eye, face and respiratory protection.



Scan this code to see how it works!



## Stay protected

This flip-up functionality allows you to seamlessly switch between welding and grinding tasks while maintaining powered air purifying respirator protection. The clear visor also allows you to set-up, inspect and move around the workplace without the need to remove the face protection or break the positive pressure respiratory seal.





## A system for many needs

Designed for heavy-duty, high-amperage welding and grinding, the G5-01 welding helmet connects to the 3M™ Adflo™ Powered Air Purifying Respirator to provide TH3-rated respiratory protection (NPF 500). The robust Adflo respirator provides all of the features you would expect in a premium system, including easy-to-use functionality.

For conditions where supplied air is required we can offer the 3M™ Versaflo™ Series Regulators.



Helmet  
viewed  
from below

An all-new face seal features a locking toggle designed for fast, secure adjustments. Two new tabs make it easier to lift the seal over your glasses. And installation channels on the helmet speed the removal and replacement of the seal.



Scan this code  
to see how easy  
it is to adjust!

## Light up your workspace

A new, optional helmet-mounted task light provides hours of powerful lighting and runs off the Adflo battery pack, helping welders to enter and work in poorly lit spaces.

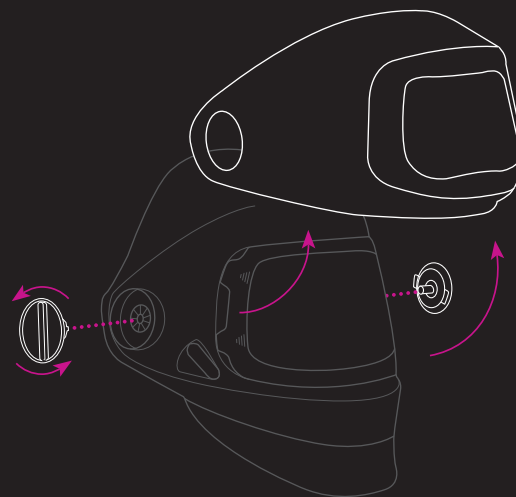
- Task light specifically designed for welding
- Light weight – powered by the Adflo battery
- Positioned to cast a wide light of the workpiece
- Designed for even light distribution at normal welding distance
- Configurable light intensity





Designed to be slim,  
without compromising  
on heavy-duty coverage

**The Speedglas  
welding helmet  
G5-01 is designed  
for rough conditions.**



For extended non-welding work, just unscrew the two dials to completely remove the welding visor and re-attach the dials again, reducing the helmet weight by up to 36%.



Easy to access and use controls: all adjustable functions are imprinted on the helmet, and adjustments can be made while wearing the helmet and your gloves.





Helmet in standard configuration with rigid neck protection and the smaller, fabric head protection.

For increased visibility at all times, add the fluorescent yellow extended head protection **16 90 21**



To better enable you to weld when looking down, replace the rigid neck protection with, for example, the smaller fabric neck protection **16 90 41**

When you need the durability of leather, attach the leather head protector **16 90 22** and the leather neck protector **16 90 43**



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**

To maximise 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**





**Comfortable to wear**

Enhanced headband and adjustable airflow

**View during work**

Large field of view with Natural Colour and contrast

**Reliable protection**

Filtered air and large area covered

**A better view of your weld**

The G5-01VC filter comes with a Variable Colour Technology option





3M™ Speedglas™ Welding Helmet G5-01

Farewell to  
compromises



Based on extensive input from welders working at high amperages that need to grind frequently, the 3M™ Speedglas™ Heavy-Duty Welding Helmet G5-01 is created to be adaptable to an individual's needs and situations.

For a list of heavy-duty coverage options, see page 45.

Features <sup>1)</sup>	G5-01
Mechanical strength (EN 166, EN 175)	CLASS B
Side windows	
Variable airflow distribution	✓
Auto-ON	✓
Exhaust vents /deflector	
Flip-up	✓
Graphics option	
Head protection	
Natural Colour Technology	✓
Variable Colour Technology	✓
Curved Glass Technology	
Powered Air EN 12941 NPF	TH3 500
Supplied Air EN 14594 NPF	3B 200

1) More details about the features referenced, see page 26–29.







### **Weld with confidence**

Head, eye, face, hearing and respiratory – we've seamlessly integrated five levels of welder protection into one easy-to-use system.



### **Extend coverage**

All-new accessory shroud covers front and back of neck and shoulders, as well as upper chest and back. See page 89.



### **See more of your work**

A large (17×10 cm) curved protection visor with large views up, down, and side-to-side.



## 3M™ Speedglas™ Welding Helmet 9100MP

# Multiple levels of protection



Features <sup>1)</sup>	9100MP
Mechanical strength (EN 166, EN 175)	CLASS B
Side windows	✓
Variable airflow distribution	
Auto-ON	✓ <sup>2)</sup>
Exhaust vents /deflector	
Flip-up	✓
Graphics option	
Head protection	EN 397
Natural Colour Technology	✓ <sup>2)</sup>
Variable Colour Technology	
Curved Glass Technology	
Powered Air EN 12941 NPF	TH3 500
Supplied Air EN 14594 NPF	3B 200

1) More details about the features referenced, see page 26–29.

2) Only in combination with 3M™ Speedglas™ Welding Filter 9100XXi.



Have you tried multi-protection systems where some component seemed to clash with the other components?

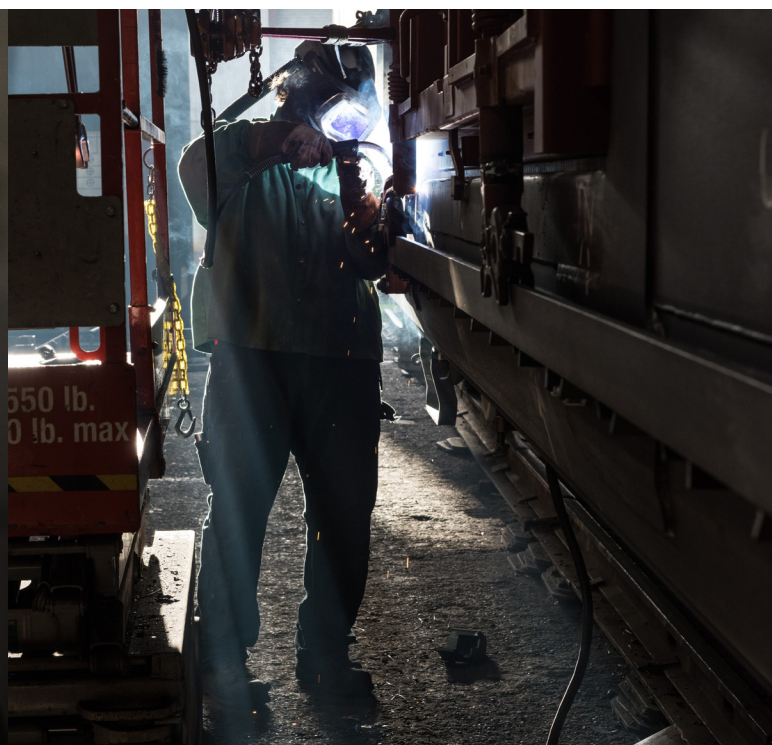
That's why we built our 3M™ Speedglas™ Welding Helmet 9100MP (multi-protection) just for welders. You can now work in a highly integrated, comfortable, protective envelope, with big, wide views as you weld, prep and grind.





### **Weld with confidence**

Head, eye, face, hearing and respiratory – we've seamlessly integrated five levels of welder protection into one easy-to-use system.

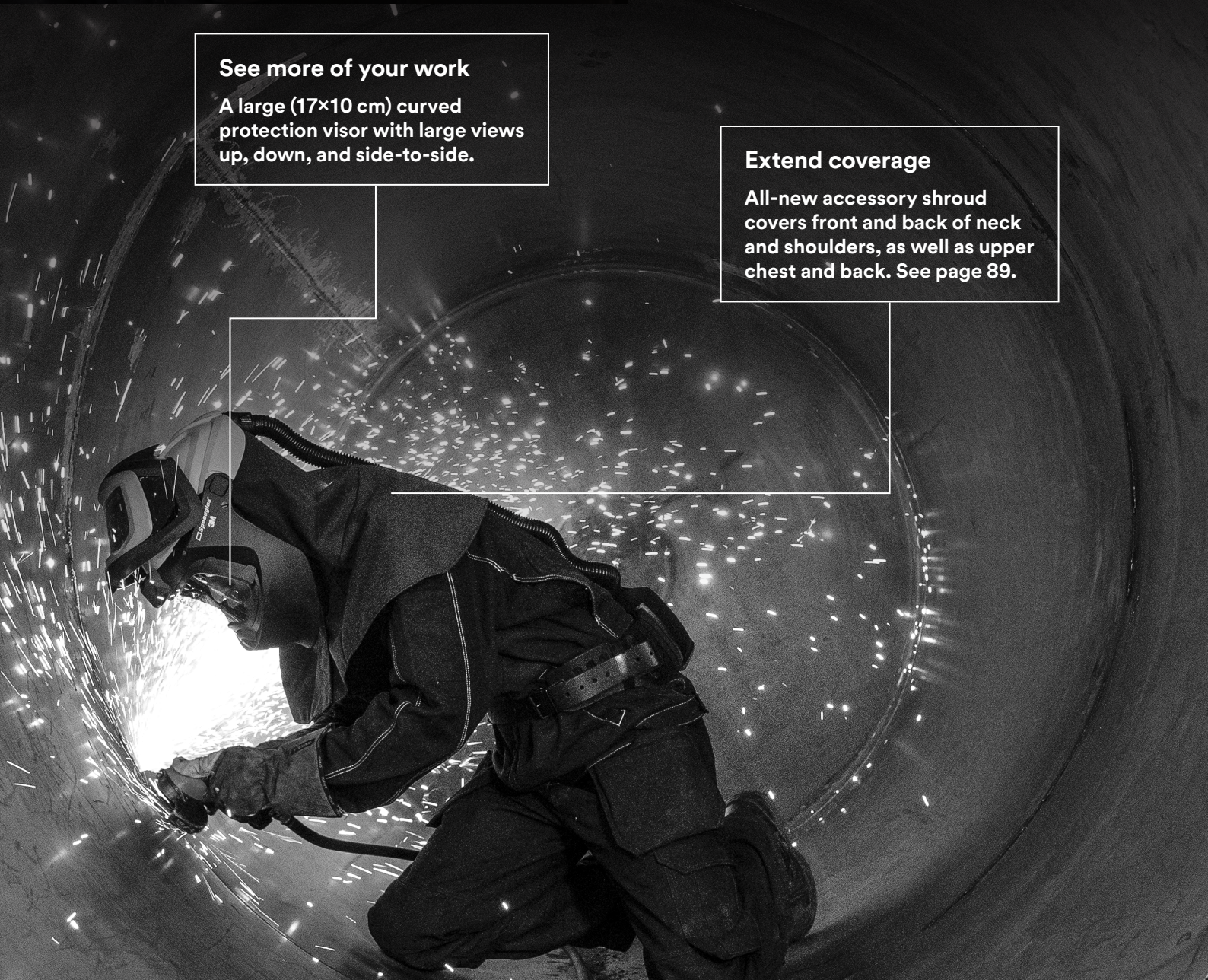


### **See more of your work**

A large (17×10 cm) curved protection visor with large views up, down, and side-to-side.

### **Extend coverage**

All-new accessory shroud covers front and back of neck and shoulders, as well as upper chest and back. See page 89.





## 3M™ Speedglas™ Welding Helmet 9100MP-Lite

# Multiple protection but 20% lighter



Features <sup>1)</sup>	9100MP-Lite
Mechanical strength (EN 166, EN 175)	CLASS B
Side windows	✓
Variable airflow distribution	
Auto-ON	✓ <sup>2)</sup>
Exhaust vents /deflector	
Flip-up	✓
Graphics option	
Head protection	EN 812
Natural Colour Technology	✓ <sup>2)</sup>
Variable Colour Technology	
Curved Glass Technology	
Powered Air EN 12941 NPF	TH3 500
Supplied Air EN 14594 NPF	3B 200

1) More details about the features referenced, see page 26–29.

2) Only in combination with 3M™ Speedglas™ Welding Filter 9100XXi.



All of the great, multi-protection systems of the 9100MP but with a lighter (EN812) bump cap.

The 3M™ Speedglas™ Welding Helmet 9100MP-Lite features big, wide views for welding, prep and grinding and readily connects to 3M powered air or supplied air respiratory systems. The cap protects against bumps and scrapes as you move around your work area.

## Impact protection

9100MP



## ≈20% lighter

9100MP-Lite



### **Simplify your workflow**

The 9100XXi kit (special front and welding filter) houses external controls – enabling convenient, “gloves-on” memory mode switching – to help you weld, grind and see your finish.

### **Transform your safety helmet**

As you attach and detach the 9100-QR welding helmet, you don't need to remove your safety helmet – so your head is protected at all times.

### **Extend your coverage**

With our optional flame-retardant headcovers and ear/neck protectors.





## 3M™ Speedglas™ Welding Helmets 9100, 9100-Air and 9100-QR

# High-performance and comfort



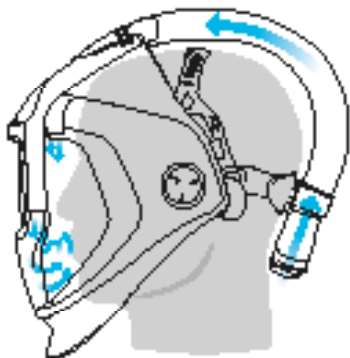
9100



9100-Air



9100-QR



Features <sup>1)</sup>	9100	9100-Air	9100-QR
Mechanical strength (EN 166, EN 175)	CLASS B	CLASS B	CLASS B
Side windows	✓	✓	✓
Variable airflow distribution			
Auto-ON	✓ <sup>2)</sup>	✓ <sup>2)</sup>	✓ <sup>2)</sup>
Exhaust vents /deflector	✓		✓
Flip-up			
Graphics option			
Head protection			✓
Natural Colour Technology	✓ <sup>2)</sup>	✓ <sup>2)</sup>	✓ <sup>2)</sup>
Variable Colour Technology			
Curved Glass Technology			
Powered Air EN 12941 NPF		TH2 50	
Supplied Air EN 14594 NPF		3B 200	

<sup>1)</sup> More details about the features referenced, see page 28–29.

<sup>2)</sup> Only in combination with 3M™ Speedglas™ Welding Filter 9100XXi.



Protecting your eyes and face from radiation, heat and sparks – while providing a precise view of your work – makes your Speedglas welding helmet 9100 one of your most important welding tools.

All of these benefits can be used with powered or supplied air respiratory protection in combination with the Speedglas welding helmet 9100-Air.

If your work situation requires head protection, test out our Speedglas welding helmet 9100-QR. It quickly attaches to many of the industry's most popular safety helmets, including the 3M™ Safety Helmet H-701.



A grayscale photograph of a welder in a workshop. The welder is wearing a protective mask and gloves, and is holding a welding torch. The background shows a pegboard with various tools and a workbench with some equipment. The image is overlaid with a dark gray semi-transparent layer.

# Standard welding helmets







## 3M™ Speedglas™ Welding Helmet G5-02

# Your world is curved, not flat

Introducing the world's first curved auto-darkening filter (ADF) with the 3M™ Speedglas™ Welding Helmet G5-02.

Utilizing the new 3M™ Speedglas™ Curved Glass Technology, its shape follows your head's curvature and the range of your peripheral vision.

### Think about it:

The wider a flat ADF gets, the wider the helmet must become. We like to present our latest solution by using a curved glass.

Light  
shade 2.5



Natural  
Colour



4 arc  
sensors







### Good protection against radiation

The wide, curved lens means the shield can be closer to your eyes, for a great view of your arc plus increased head, side and neck coverage when compared to many helmets with a flat front design.



### Comfortable to wear

Relatively low weight, closeness to face and better centre of gravity



### Good visibility before and after welding

Curved lens with our largest view ever, Natural Colour Technology and 2.5 in light state. Plus magnifying lens options.



3M™ Speedglas™ Welding Helmet G5-02

World’s first curved auto-darkening filter



Features <sup>1)</sup>	G5-02
Mechanical strength (EN 166, EN 175)	CLASS F
Side windows	
Variable airflow distribution	
Auto-ON	✓
Exhaust vents /deflector	✓
Flip-up	
Graphics option	
Head protection	
Natural Colour Technology	✓
Variable Colour Technology	
Curved Glass Technology	✓
Powered Air EN 12941 NPF	
Supplied Air EN 14594 NPF	

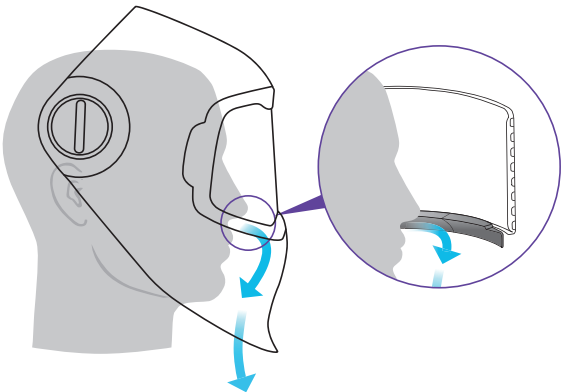
1) More details about the features referenced, see page 27–29.



Designed for TIG welders, the G5-02 helmet creates a new world standard for precision ADF viewing. This is a helmet for welders doing high-performance, critical work.

You'll also benefit from a lighter total helmet weight, due to a thin ADF glass pack. What's more, you'll notice that the center of gravity is closer to the center of your head, giving you better weight distribution.

And for the slim helmet we created a new exhaled air venting design which may help you feel more comfortable.





## 3M™ Speedglas™ Auto-Darkening Filter G5-02

# Leading Edge Innovation for great view

Great clarity before, during and after welding, with our 3M™ Speedglas™ Natural Colour Technology. Colours appear brighter and more realistic in both the light and dark states. And a more realistic view enables better control over your arc. Certified to shade 2.5.



## 3M™ Speedglas™ Auto-Darkening Filter G5-01

# Colour Technology to suit your needs

There are two options of 3M™ Speedglas™ Auto-Darkening Filter Series G5-01 – both offering the popular 3M™ Speedglas™ Natural Colour Technology with great clarity before, during and after welding.

### Smoother dark-light filter transition

Both G5-01 filters are also designed to minimise eye strain when switching from dark state to light state, by using an intermediate shade (only sensitivity 4 and 5).

### Speedglas welding filter G5-01VC



- Adjustable dark shades 5 (cut) and 8 to 14.
- Variable colour technology

### Speedglas welding filter G5-01TW



- Adjustable dark shades 5 (cut) and 8 to 13.
- Tack Welding Mode



# Your choice of auto-darkening filters (ADF)

The 3M™ Speedglas™ Welding Filter Series 9100 continues our tradition of great optical quality, including uniform shading and minimal distortion across the entire filter viewing area.

By selecting just the right setting for each task, you can reduce eye strain and improve the quality of every weld.



## 3M™ Speedglas™ Auto-Darkening Filter 9100XXi

- See your welds in a new light, with more contrast and natural-looking colours.
- Grab and go welding with Auto-ON.
- 107×73 mm viewing area.
- Dark shades 5, 8, and 9 through 13.
- Any shade can be locked-in.
- Delay settings allow the welder to extend the dark state for when the weld pool is still cooling.
- When used with the special 9100XXi Silver Front Panel and the Speedglas Welding Helmets 9100, 9100-Air and 9100-QR, you'll have access to the external control for both grinding and the memory modes.



## 3M™ Speedglas™ Auto-Darkening Filter 9100XX

- 107×73 mm viewing area.
- Dark shades 5, 8, and 9 through 13.
- Any shade can be locked-in.
- The tack welding comfort mode may help reduce eye fatigue resulting from the eye constantly adjusting to differing light levels during tack welding. Using an intermediate light state (shade 5).
- Delay settings allow the welder to extend the dark state for when the weld pool is still cooling.



## 3M™ Speedglas™ Auto-Darkening Filter 9100X

- 107×54 mm viewing area.
- Dark shades 5, 8, and 9 through 13.
- Any shade can be "locked-in."
- The tack welding comfort mode may help reduce eye fatigue resulting from the eye constantly adjusting to differing light levels during tack welding. Using an intermediate light state (shade 5).
- Delay settings allow the welder to extend the dark state for when the weld pool is still cooling.



## 3M™ Speedglas™ Auto-Darkening Filter 9100V

- 93×45 mm viewing area.
- Dark shades 5, 8, and 9 through 13.
- Any shade can be "locked-in."
- The tack welding comfort mode may help reduce eye fatigue resulting from the eye constantly adjusting to differing light levels during tack welding. Using an intermediate light state (shade 5).
- Delay settings allow the welder to extend the dark state for when the weld pool is still cooling.



# A quick guide to welding filter sizes



**G5-02**  
150 × 76 mm (curved)



**G5-01**  
109 × 73 mm



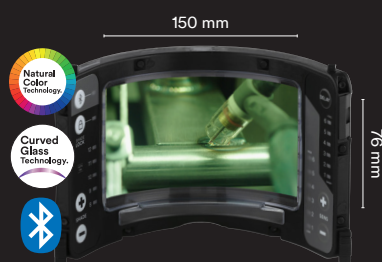
**9100XX/9100XXi**  
107 × 73 mm



**9002NC**  
107 × 55 mm



**100**  
93 × 44 mm



**G5-02**  
150 × 76 mm (curved)



**G5-01VC**  
109 × 73 mm



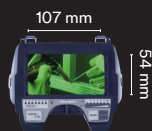
**G5-01TW**  
109 × 73 mm



**9100XXi**  
107 × 73 mm



**9100XX**  
107 × 73 mm



**9100X**  
107 × 54 mm



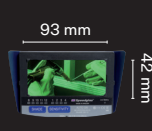
**9100V**  
93 × 45 mm



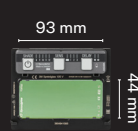
**9100 Passive**  
110 × 90 mm



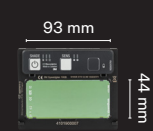
**9002NC**  
107 × 55 mm



**SL**  
93 × 42 mm



**100V**  
93 × 44 mm



**100B**  
93 × 44 mm



# Staying connected now and in the future

## Today's benefits from the 3M Connected Equipment App

- Opt-in by securely pairing your smartphone to your G5-01 or G5-02 welding filter using the 3M Connected Equipment App.
- Program up to 10 ADF memory modes (i.e., settings for dark shades, sensitivity, delay, etc.) using your phone.
- Easily record your maintenance log for your welding helmet to the app.
- Instantly know statistics, including hours on; hours in dark state; hours in light state; and the number of on/off cycles.
- Get ready access to user manuals and parts lists and, when Web-connected, to how-to videos.



All 3M™ Speedglas™ Generation 5 have Bluetooth™ connectivity, enabling the Internet of Things (IoT) productivity for welding safety. This will allow you to be part of the connected future and benefit from the evolution of features and data accessibility





### Improved comfort

Head suspension features a smooth ratchet for easy tightening – even while wearing gloves!

### Award-winning design

More than 20 years ago, the 3M™ Speedglas™ Welding Helmet 9000 set a new standard for rugged, dependable protection.

A helmet loved by many welders and internationally awarded for its ergonomic design.

### Better control of the weld puddle

Improved optics in the 3M™ Speedglas™ Welding Filter 9002NC helps you see your welds in a new light, which may be perceived as better contrast and more natural looking colours.





## 3M™ Speedglas™ Welding Helmet 9002NC

# Light and narrow, for quick tasks

You asked and we listened.  
Many welders think our classic  
Speedglas helmet 9000 has the  
ideal blend of shape and balance.

So we've brought it back  
– upgraded for a totally  
new optical experience.



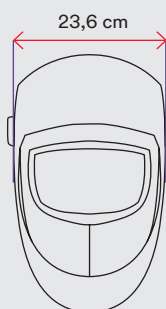
Features <sup>1)</sup>	9002NC
Mechanical strength (EN 166, EN 175)	CLASS B
Side windows	
Variable airflow distribution	
Auto-ON	
Exhaust vents /deflector	✓
Flip-up	
Graphics option	
Head protection	
Natural Colour Technology	✓
Variable Colour Technology	
Curved Glass Technology	
Powered Air EN 12941 NPF	
Supplied Air EN 14594 NPF	

1) More details about the features  
referenced, see page 27–28.



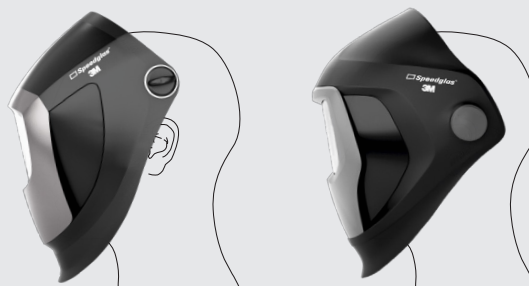
## Freedom of movement

Shield width



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

Coverage



### Pick your preference

The 9002NC helmet (left) is slimmer and not as deep as a 9100 helmet (right), making it more maneuverable and lighter in weight. On the other hand, the deeper and wider 9100 series covers more of your ears, neck, and sides of your head.





### Variable shades for flexibility

User selectable shades. A lockable shade 3 light state for grinding. And three sensitivity settings for customised light-to-dark switching.

### Want to stand out?

Make an impactful statement with one of our powerful, distinctive graphic designs. Find them all on page 114.





3M™ Speedglas™  
Welding Helmet Series 100 and 100-QR

# Weld with personality

Features <sup>1)</sup>	100	100-QR
Mechanical strength (EN 166, EN 175)	CLASS B	CLASS B
Side windows		
Variable airflow distribution		
Auto-ON		
Exhaust vents /deflector		
Flip-up		
Graphics option <sup>2)</sup>	✓	
Head protection		✓
Natural Colour Technology		
Variable Colour Technology		
Curved Glass Technology		
Powered Air EN 12941 NPF		
Supplied Air EN 14594 NPF		

1) More details about the features  
referenced, see page 27–28.

2) 100B is only available in black.



**100 Skull**  
The 100 helmet shown with  
the Skull graphics option;  
standard colour is black.



**100-QR**  
Now with an option for  
head protection – the 3M™  
Speedglas™ Welding Helmet  
100-QR (quick release).

Get your career off to a great  
start with high-performance  
eye and face protection!



For more option of  
graphics see page 114

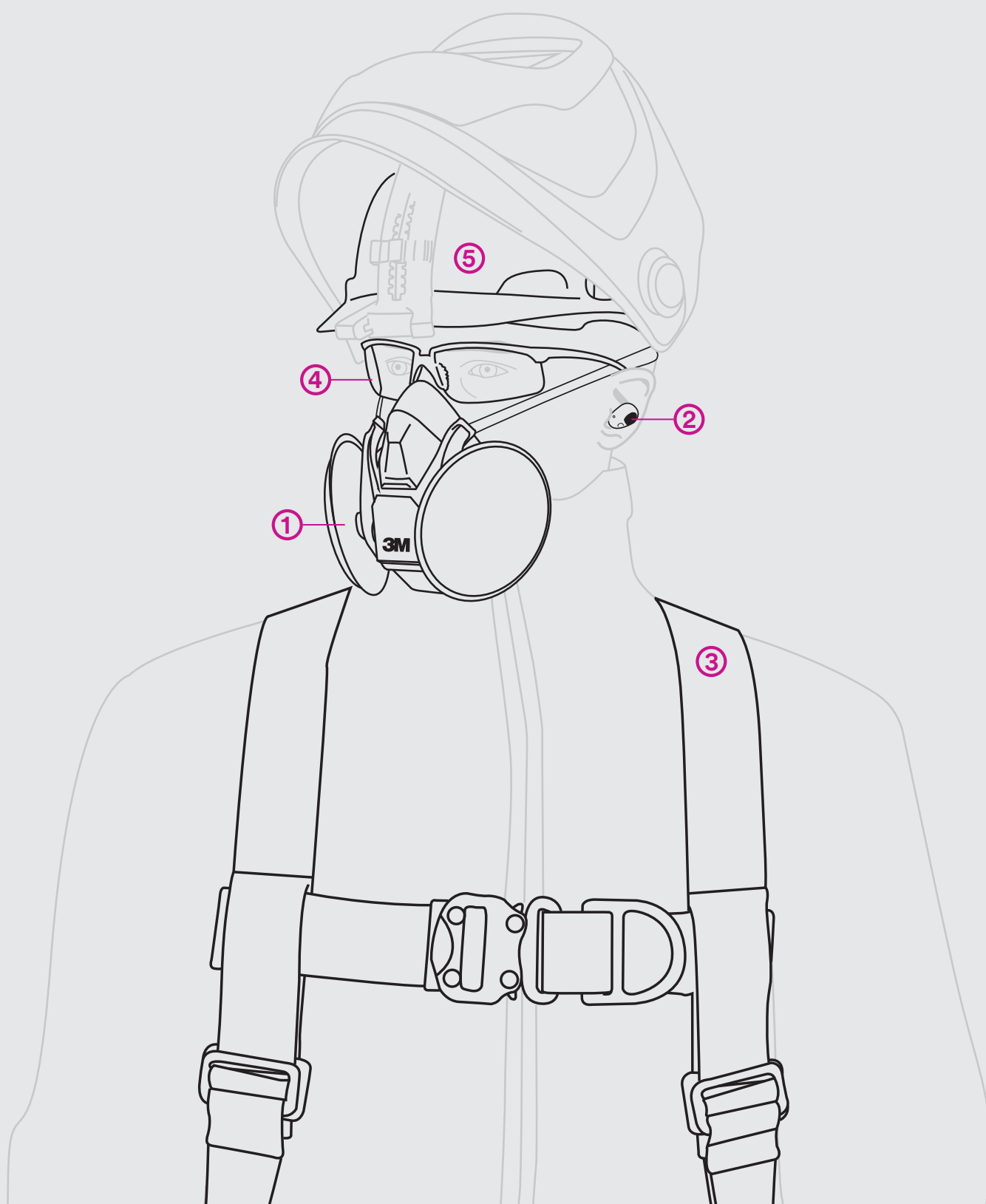


A grayscale photograph of a worker in a dark industrial setting, wearing a full-face respirator, safety glasses, and a 3M-branded respirator mask. The worker is focused on a task, using a power tool on a piece of machinery. The background is filled with industrial equipment and pipes, creating a sense of a busy manufacturing or maintenance environment. The overall tone is professional and emphasizes safety and industrial application.

# Complementary 3M products



① Respiratory protection	70
② Hearing protection	74
③ Fall protection	79
④ Eye protection	80
⑤ Head protection	84







**Soft on your face**  
Soft facepieces  
and face seals.



## 3M™ Reusable Respirators



### 3M™ Secure Click™ Half Mask, Reusable Respirator HF-800 Series

- Unique particle and gas filter connection, push until you hear a click
- Speaking diaphragm designed to help provide easier communication while working
- Exhalation valve directs exhaled breath and moisture downward



### 3M™ Maintenance-free Reusable Respirator 4000+ Series

- Maintenance-free: save time with integrated filters.
- Less heat and moisture build-up due to the central exhalation valve.
- Reusable until damaged, clogged with particulates, or saturated with gas.



### 3M™ Reusable Half Masks 6500 Series

- Our silicone facepiece keeps it shape, even in high-heat environments.
- Low-profile, wide field-of-view design.
- Easy on and off, in non-contaminated environments, with our convenient Quick Latch (QL) Drop-Down Mechanism.
- Easy breathing with 3M™ CoolFlow™ Exhalation Valve.



### 3M™ Reusable Half Masks 7500 Series

- Soft silicone face piece material for great comfort and durability.
- Easy breathing with 3M™ CoolFlow™ Exhalation Valve.
- Convenient Drop-Down Mechanism.

3M™ Reusable Respirators	Performance level	Approval
Secure click HF-800 Series with 3M™ Particulate Filter 3128	10 x OEL for Ozone 12 x OEL for particles Plus relief from nuisance level acid gas/organic vapours	EN 140:1998 (masks) EN 143:2000 + A1:2006
Secure click HF-800 Series with 3M™ Particulate Filter 3138	10 x OEL for Ozone 50 x OEL for particles Plus relief from nuisance level acid gas/organic vapours	EN 140:1998 (masks) EN 143:2000 + A1:2006
Maintenance Free Reusable Respirator 4255+	10 x OEL <sup>1)</sup> or 5000ppm (whichever is lower) for organic vapour <sup>2)</sup> 50 x OEL <sup>1)</sup> for particles	EN405:2001 + A1:2009 FFA2P3 R D
Maintenance Free Reusable Respirator 4277+	10 x OEL <sup>1)</sup> or 1000ppm (whichever is lower) for organic vapours <sup>2)</sup> , inorganic vapours and acid gases 50 x OEL <sup>1)</sup> for particles	EN405:2001 + A1:2009 FFABE1P3 R D
Half masks 6500QL or 7500 with 3M™ Particulate Filters 2128	10 x OEL <sup>1)</sup> for Ozone 12 x OEL <sup>1)</sup> for solid and liquid particles (P2 R) Plus relief from nuisance level <sup>3)</sup> acid gas/organic vapours.	EN140:1998 (masks) EN143:2000 + A1:2006
Half masks 6500QL or 7500 with Particulate Filter 2138	10 x OEL <sup>1)</sup> for Ozone 50 x OEL <sup>1)</sup> for solid and liquid particles (P3 R) Plus relief from nuisance level <sup>3)</sup> acid gas/organic vapours.	EN140:1998 (masks) EN143:2000 + A1:2006

Since everyone's head size and shape is different, we recommend that you work with your 3M™ distributor to find the respirator models that are most compatible with your welding helmet(s). The filter option reference is for particle filtration. The 3M™ Half masks can be combined with many other types of filters for both gases and vapours. Please visit [www.3M.com](http://www.3M.com) to find other options.

1) OEL = Occupational Exposure Limit – please use local exposure limit.

2) Organic vapours boiling point >65 degrees C.

3) Nuisance level means concentrations below the OEL.





www.speedglas.com

### Metal nose clip

Shape it to your individual nose size and facial profile with the adjustable metal nose clip.

### Exhalation Valve

Welding and metal pouring respirators all feature the proprietary 3M™ CoolFlow™ Exhalation Valve.

### Breathe easy

3M™ Advanced Electret Filter Material combines effective filtration with low breathing resistance.

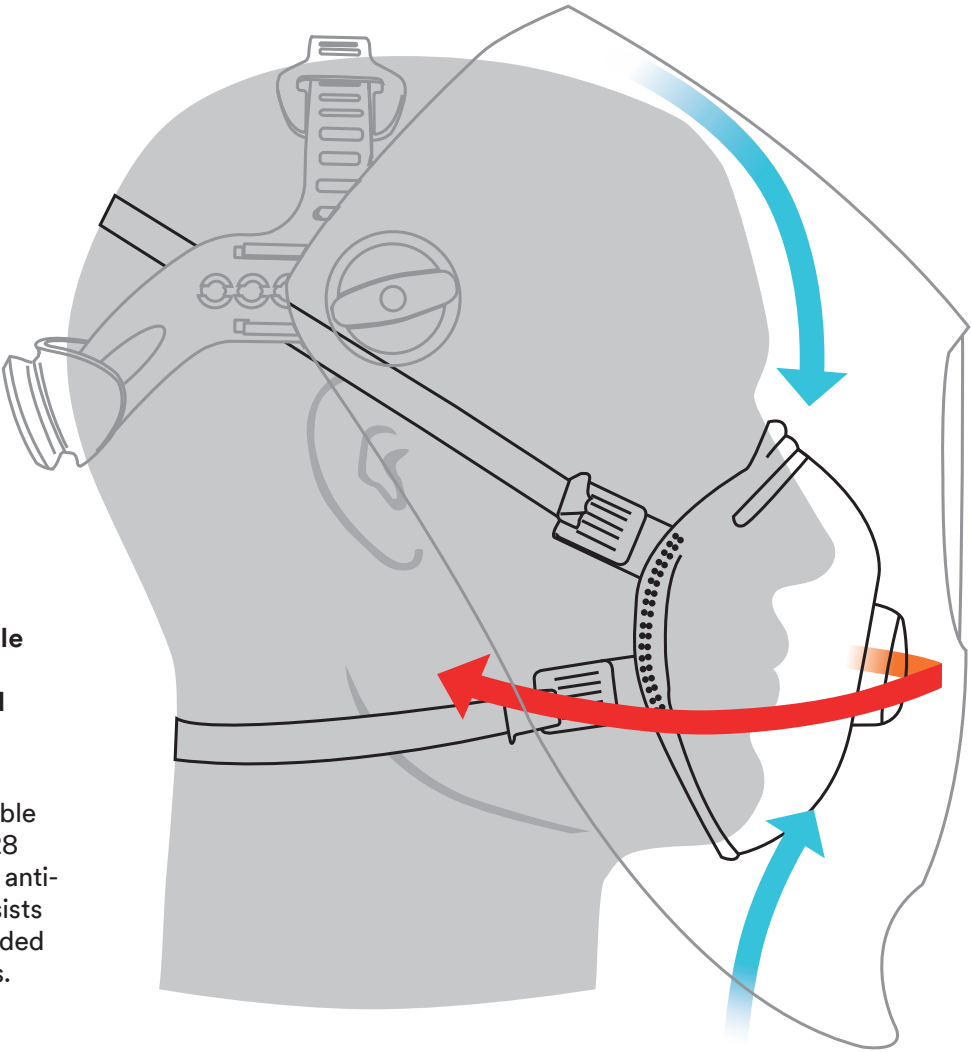




3M™ Welding Fume Disposable Respirators

# Light, convenient and comfortable protection

Looking for lightweight, effective and comfortable respiratory protection against dusts, mists, and metal fumes?

Especially designed for welders, the 3M™ Disposable Respirators 9925 and 9928 include a flame-retardant, anti-clog outer surface that resists blockage even after extended use against welding fumes.



3M™ Particulate Filters	Model	Approval	Substance
	9925 – Without face seal.	EN149:2001 + A1:2009 FFP2 NR D	12 x OEL <sup>1)</sup> + Ozone 10 x OEL Nuisance level <sup>2)</sup> odours below OEL <sup>1)</sup> .
	9928 – With soft, PVC inner face seal. Improves comfort and can be hygienically cleaned (can be used for more than one shift).	EN149:2001 + A1:2009 FFP2 R D	12 x OEL <sup>1)</sup> + Ozone 10 x OEL Nuisance level <sup>2)</sup> odours below OEL <sup>1)</sup> .

1) OEL = Occupational Exposure Limit - please use local exposure limit.  
2) Nuisance level means concentrations below the OEL.

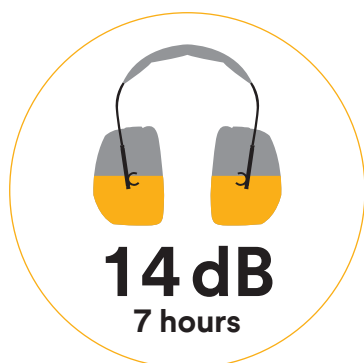


# The challenge of hearing protection for welders



## Even five minutes of carelessness can significantly reduce the protection received

That's right: if you're in a harmfully loud workplace – at or above 85 decibels – then not having your ear protection in place even just 10% of the time can significantly reduce your protection. Noise-induced hearing loss (NIHL) is caused by the damage and eventual death of the ear's hair cells. Unlike some other cells, human ear hair cells never grow back.<sup>1)</sup>



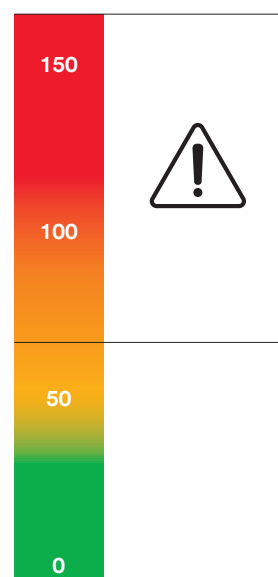
## Too loud may be less loud than you think

Think of all of the noises that surround you at your welding shop. Your tools, of course. But also the sudden, short, yet very loud noises: metal falling onto metal or hammers banging metal into place. Those sudden noisy spikes, at or above 85 decibels, could be damaging your hearing unless your hearing protection is always in place.



### Work Scale Decibels (dBA)<sup>1)</sup>

Jet Engine	120–140
Sand Blasting	110–120
Punch Press	100–110
Tractor	97
Belt Sander	93
<b>Risk of hearing loss</b>	<b>85</b>
Air Conditioning Unit	60
Electrical Transformer	45
Watch Ticking	20



<sup>1)</sup><https://www.nidcd.nih.gov/health/noise-induced-hearing-loss>



# Moving towards 100% usage

## Measure the noise

Determine where your facility falls on the regulations' scale of Exposure Action Values (see table below) by having a professionally designed sound level and exposure testing assessment.

## Create a Hearing Conservation Programme

Between the lower and upper Exposure Action Values, it is required to:

1. Provide information on potential hearing loss risks.
2. Provide the appropriate hearing protection devices.
3. Provide training.

## Select hearing protection that your workers want to wear

This is an important step in moving towards 100% usage. The following pages offer Hearing Protection Equipment (HPE) options for virtually every welder's needs and preferences.

Exposure Action Values	
87dB (A) 140dB (C) Peak LEX, 8h	<b>Limit Value</b> Cannot be exceeded at any time. Can be achieved with HPE.
85dB (A) 137dB (C) Peak LEX, 8h	<b>Upper Exposure Action Value</b> HPE must be used and a Hearing Conservation Programme initiated.
80dB (A) 135dB (C) Peak LEX, 8h	<b>Lower Exposure Action Value</b> HPE must be made available on request.

**Despite industry regulations, 40 million workers are exposed to loud noise and 13 million suffer from hearing disorders.<sup>1)</sup>**

<sup>1)</sup> European Agency for Safety and Health at Work 2016



## 3M™ PELTOR™ Electronic Earplug, EEP-100 EU

# Stay aware and communicate

3M™ PELTOR™ Electronic Earplug, EEP-100 EU, can help users protect their hearing, and also help promote auditory situational awareness and face-to-face communication.



3M™ PELTOR™ Electronic Earplugs help protect against hazardous noise, whilst allowing ambient sounds to be heard and increasing your ability to communicate with nearby colleagues, as well as hearing warning signals, approaching vehicles in lower noise environments.





## 3M™ PELTOR™ X Series Earmuffs

**Noise reducing earmuffs**  
Features 3M™ proprietary foam cushioning for lasting comfort

**Helmet mounted**  
Integrated design for more robustness



**Comfortable**  
Lightweight cups to help minimise heat and moisture build-up

**Stylish and reliable**  
New ear cushion foam technology for an effective acoustic seal and reliable protection

## 3M™ PELTOR™ Welding Earmuffs H505B

**Lightweight low profile design**  
Fits nicely under 3M™ Speedglas™ 9100 Series and other welding helmets

**Less scratch sound**  
Semi-soft cup surface helps minimise scratch sound transmission



**Stays in place**  
Two-point suspension and wire headband for a secure, comfortable fit


**Comfortable noise reduction**  
Soft ear cushions provide a comfortable seal and helps reduce noise exposure











# Hearing protection for welders

A selection of 3M™ Earmuffs and Earplugs<sup>1)</sup>

<b>3M   PELTOR™</b>							
3M™ PELTOR™ Earmuffs and Level Dependent Ear Plug	H505B	X1 Earmuffs	X2 Earmuffs	X3 Earmuffs	X4 Earmuffs	X5 Earmuffs	EEP-100 EU
<b>Design</b>	Neckband	Helmet mounted <sup>1)</sup>	Helmet mounted <sup>1)</sup>	Helmet mounted <sup>1)</sup>	Slim, fluorescent, helmet mounted <sup>1)</sup>	Helmet mounted <sup>1)</sup>	Level dependent ear plug
<b>SNR<sup>2)</sup></b>	24dB	26dB	30dB	32dB	32dB	36dB	32dB / 36dB / 38dB
<b>Part No</b>	H505B	X1P3	X2P3	X3P3	X4P3	X5P3	EEP-100
<b>With 3M™ Welding Helmet</b>							
<b>G5-01</b>	●						●
<b>G5-02</b>	●						●
<b>Speedglas 9100</b>	●						●
<b>Speedglas 9100 Air</b>	●						●
<b>Speedglas 9100-QR<sup>3)</sup></b>		●	●	●	●	●	●
<b>Speedglas 9100 FX</b>	●						●
<b>Speedglas 9100 FX-Air</b>							●
<b>Speedglas 9100MP/ MP-Lite<sup>4)</sup></b>		●	●	●	●	●	●
<b>Speedglas 9002NC</b>	●						●
<b>Speedglas 100</b>	●						●
<b>Speedglas 100-QR</b>							●
<b>Versaflo M-series<sup>4)</sup></b>	●	● <sup>5)</sup>	● <sup>5)</sup>	● <sup>5)</sup>	● <sup>5)</sup>	● <sup>5)</sup>	●

<b>3M   E-A-R™</b>						
<b>3M Earplug<sup>6)</sup></b>	<b>3M 1100</b>	<b>E-A-R™ Classic™</b>	<b>3M™ Flexible Fit HA</b>	<b>E-A-R™ Ultrafit™</b>	<b>E-A-R™ Ultrafit™ X</b>	<b>E-A-Rcaps™</b>
<b>Description</b>	Disposable foam earplug (high attenuation)	Disposable foam earplug, (regular & small size options)	First washable foam earplug & first with one hand insertion SNR (hygienic, and reusable/washable). Fitting stem helps make ear tip insertion easy.	Reusable earplug with cord	Reusable/washable earplug with Ultrafit™ tip and bent fitting stem for easier insertion (highest attenuation of reusable/washable earplugs)	Under-the-Chin for compatibility with other PPE
<b>SNR<sup>2)</sup></b>	37dB	28dB	25dB / 30dB	32dB	35dB	23dB
<b>Part No</b>	1100	PP-01-002 (regular size uncorded)	328-1001 (corded model)	UF-01-000 (corded)	UF-01-014 (corded)	EC-01-000

These recommendations are general and are based on usage with 3M™ Welding Helmets. Your personal preferences may result in different selections: for additional product information and technical specifications, please visit [www.3M.com](http://www.3M.com)

1) 3M™ Peltor™ X series earmuffs are also available in a neckband or headband model.

2) 3M strongly recommends personal fit testing of hearing protectors. Research suggests that users may receive less noise reduction than indicated by the attenuation label value(s) on the packaging due to variation in fit, fitting skill, and motivation of the user. Refer to applicable regulations or guidance on how to adjust attenuation label value(s). In the absence of applicable regulations, it is recommended that the attenuation label value(s) be reduced to better estimate typical protection.

3) Consult the X series user instruction for compatible safety helmets

4) Please add assembly part number Z3AF/2 when ordering X-series earmuffs for the headtops 9100MP/MP-Lite and Versaflo™ M-Series.

5) Only Versaflo M-200 and M-300 Series.

6) The 3M™ E-A-R™ Hearing Protection listed here were selected for use in a typical welding environment. For additional 3M hearing protection selections, and to get more product information and specifications, please visit [www.3M.com](http://www.3M.com)



## 3M™ Protecta® Welders Range

# 3M™ Fall Protection Welders Range

Fire and sparks are a major concern in jobs such as welding, cutting, electrical maintenance and other high temperature applications. Staying protected requires special materials to resist these hazards.

The 3M™ Fall Protection Welders range is specifically designed to resist the potential heat damage experienced in these applications. Featuring highly durable heat resistant & flame retardant Modacrylic over Kevlar® webbing and a lightweight design provides the ideal solutions for welding at height.



Fall Protection

Our Fall Protection range for Welders includes:



**3M™ PROTECTA® PRO™  
Welders Harness**



**3M™ Protecta® Pro™ Welders Shock  
Absorbing Lanyard**



**3M™ DBI-SALA® Nano-Lok™ SRL  
for Hot Work**



### Compatibility

We strive to ensure our eyewear is compatible with other 3M products, such as our helmets, respiratory or hearing protection.

### Engineered for safety, designed for style

The 3M™ Eye Protection portfolio seeks to deliver quality eyewear that helps provide an optimal balance of comfort, protection and design.

### Confident protection

All 3M protective eyewear sold in Europe are CE-marked and approved to EN 166:2001.





# How well do they fit?

## Making a measured evaluation of eyewear fit

Everyone's face and head are different – so how is one model of eyewear going to fit everybody? You know the challenge. Ill-fitting safety glasses can cause pressure and pain in some very vulnerable areas: your temples, your ears...even the bridge of your nose. Discomfort and lack of style are often major reasons for noncompliance.

To make a meaningful, measured determination of eyewear fit and security on each of your employees, we've developed a 4-step method<sup>1)</sup>.

The 3M™ Eyewear Fit System uses coverage and gap gauge tools to assess four key elements of protective eyewear fit:

①

### View

Assessment to ensure the wearer can see in all directions of eye rotation without major obstruction to the field of view that could interfere with the ability to perform work tasks.

②

### Coverage

The coverage gauge assesses how well the safety eyewear covers the soft tissue area around the eyes.

③

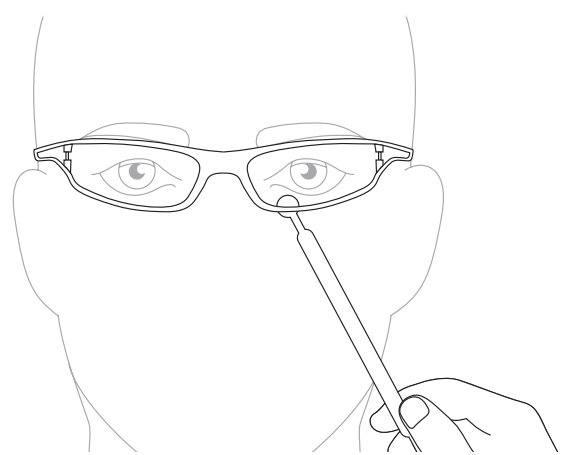
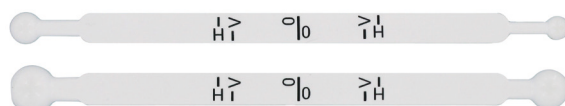
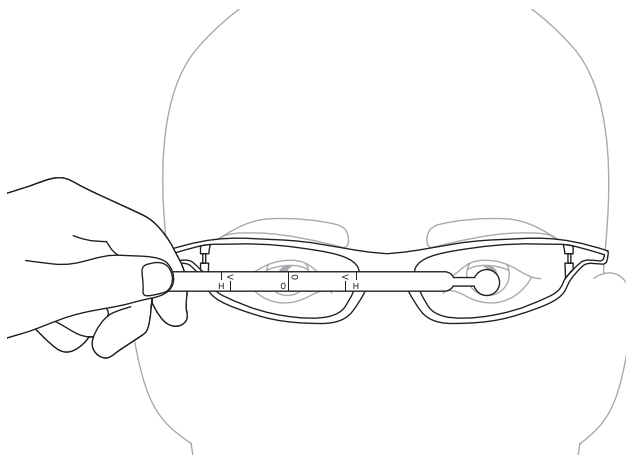
### Security

Assessment to ensure the eyewear stays in place on the wearer's head and does not fall off with head movement.

④

### Gaps

The gap gauges help to identify gaps between the eyewear and the face. Large gaps can provide a clear path for flying debris.



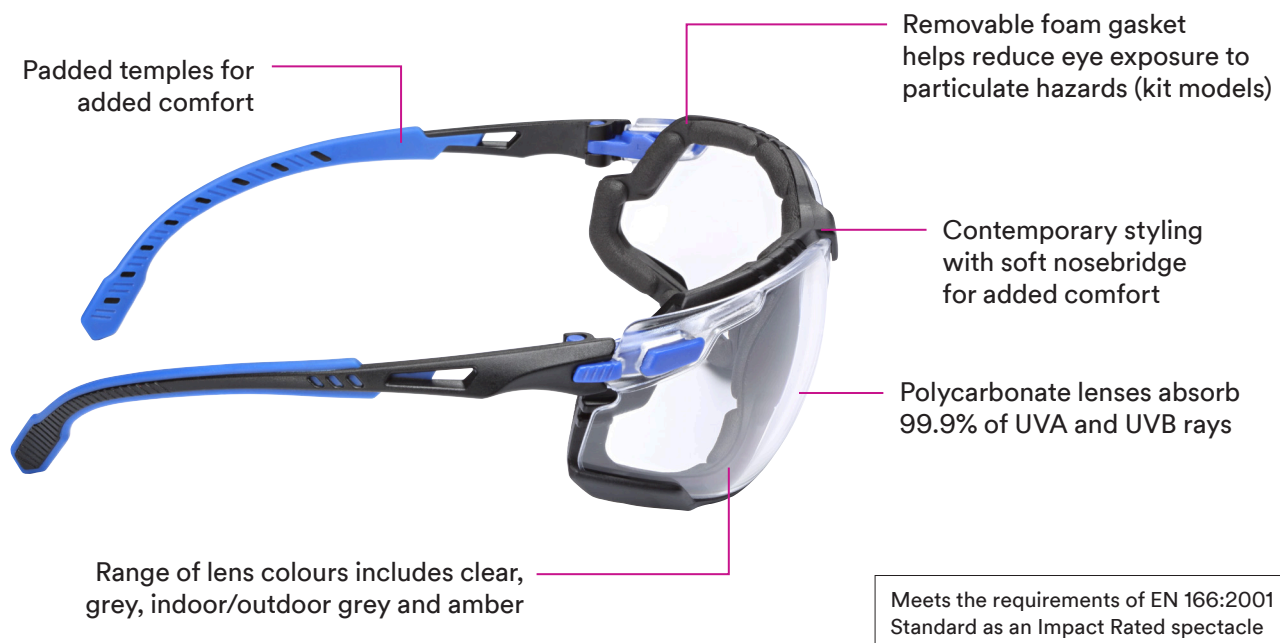
<sup>1)</sup> The full 6 step method is unique to 3M and is available free of charge (subject to terms and conditions, see website for details). Find out more by contacting your 3M Personal Safety Sales Representative or visit [www.3M.com](http://www.3M.com)



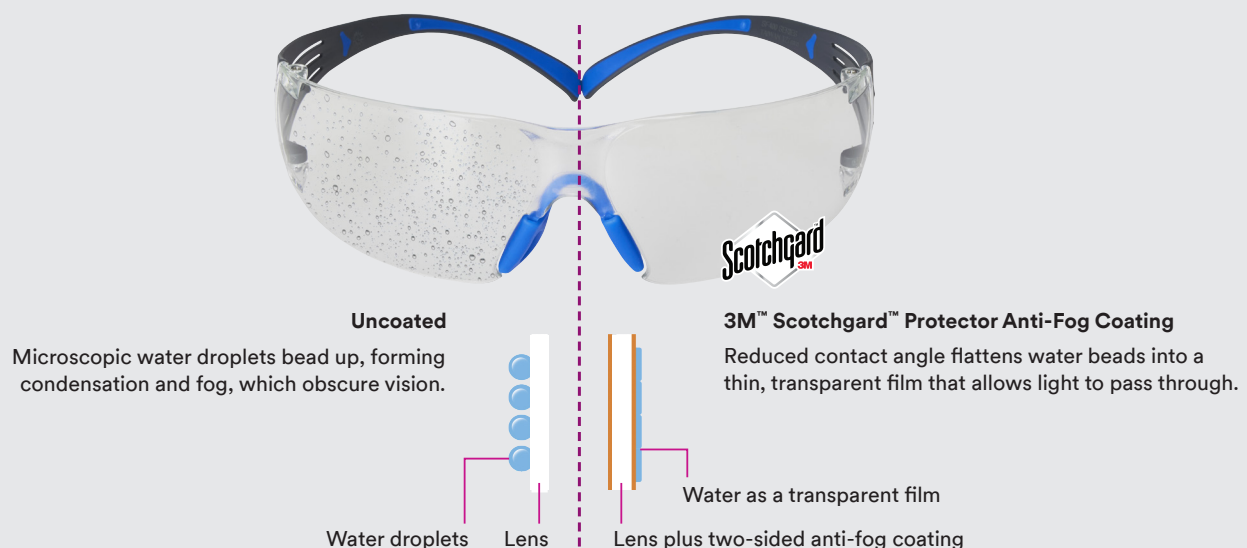
## 3M™ Solus™ 1000 Series Spectacles

# Configurable design with detachable gasket, temple or strap options

Sporty, low profile, available in multiple frame colours and lens tints with 3M™ Scotchgard™ Protector Anti-Fog Coating.



## 3M™ Scotchgard™ Anti-Fog Coating. Long-lasting clarity.

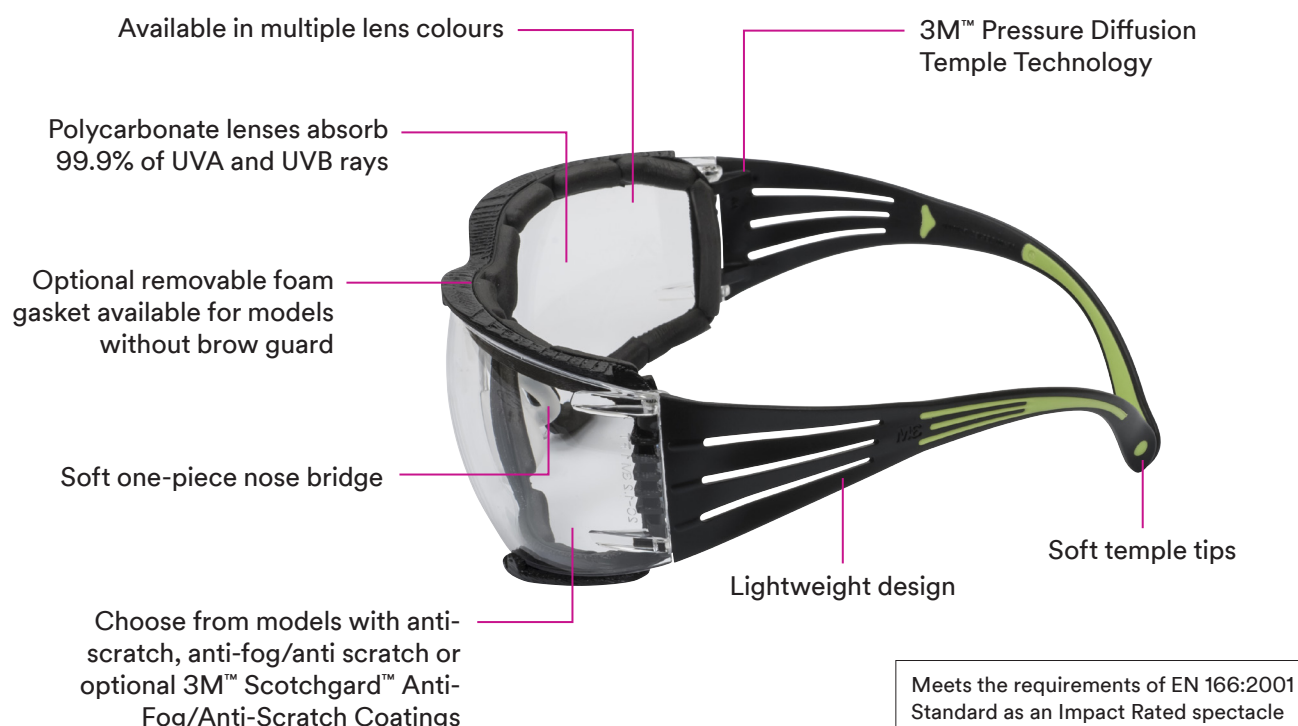




## 3M™ SecureFit™ 400 Series Spectacles

# Comfort and design in a variety of colours

Take the next step in comfort with 3M™ SecureFit™ 400 Safety Glasses, featuring 3M™ Pressure Diffusion Temple Technology, a soft one-piece nose bridge, dual-injected temples and a range of options, including lens colours, premium coatings, readers and more.



Part No	Lens Type	Coating	EN166 Lens Marking
SF201AF-EU	PC Clear	AS/AF	2C-1.2 3M 1 FT
SF202AF-EU	PC Amber	AS/AF	2C-1.2 3M 1 FT
SF203AF-EU	PC Grey	AS/AF	5-3.13M 1 FT
SF201SGAF-BLU	PC Clear	SGAF	2C-1.2 3M 1 FT KN
SF401AF-EU	PC Clear	AS/AF	2C-1.2 3M 1 FT
SF401SGAF-BLU-EU	PC Clear	SGAF	2C-1.2 3M 1 FT KN
SF401SGAF-BLU-EU-F	PC Clear + Foam	SGAF	2C-1.2 3M 1 FT KN
SF401SGAF-RED-EU	PC Clear	SGAF	2C-1.2 3M 1 FT KN
SF403AF-EU	PC Amber	AS/AF	2C-1.2 3M 1 FT
SF402AF-EU	PC Grey	AS/AF	5-3.13M 1 FT
SF402SGAF-BLU EU	PC Grey	SGAF	5-3.1 3M 1 FT KN
SF403SGAF-YEL EU	PC Amber	SGAF	2C-1.2 3M 1 FT KN
SF407SGAF-BLU EU	PC Indoor/Outdoor Light Grey	SGAF	5-1.7 3M 1 FT KN
SF410AS-EU	PC Indoor/Outdoor	AS	5-1.7 3M 1 FT
SF408AS-EU	PC Blue Mirror	AS/AF	5-3.13M 1 FT
SF400FI	Removable foam insert	-	-
S1101SGAF	PC Clear	SGAF	2C-1.2 3M 1 FT KN
S1102SGAF	PC Grey	SGAF	5-3.13M 1 FT KN
S1103SGAF	PC Amber	SGAF	2C-1.2 3M 1 FT KN
S1101SGAFKT	PC Clear + Foam and Strap	SGAF	2C-1.2 3M 1 BT K N

## Selected 3M™ Protective Eyewear

To learn more about our range of protective eyewear, please visit [www.3m.com](http://www.3m.com)

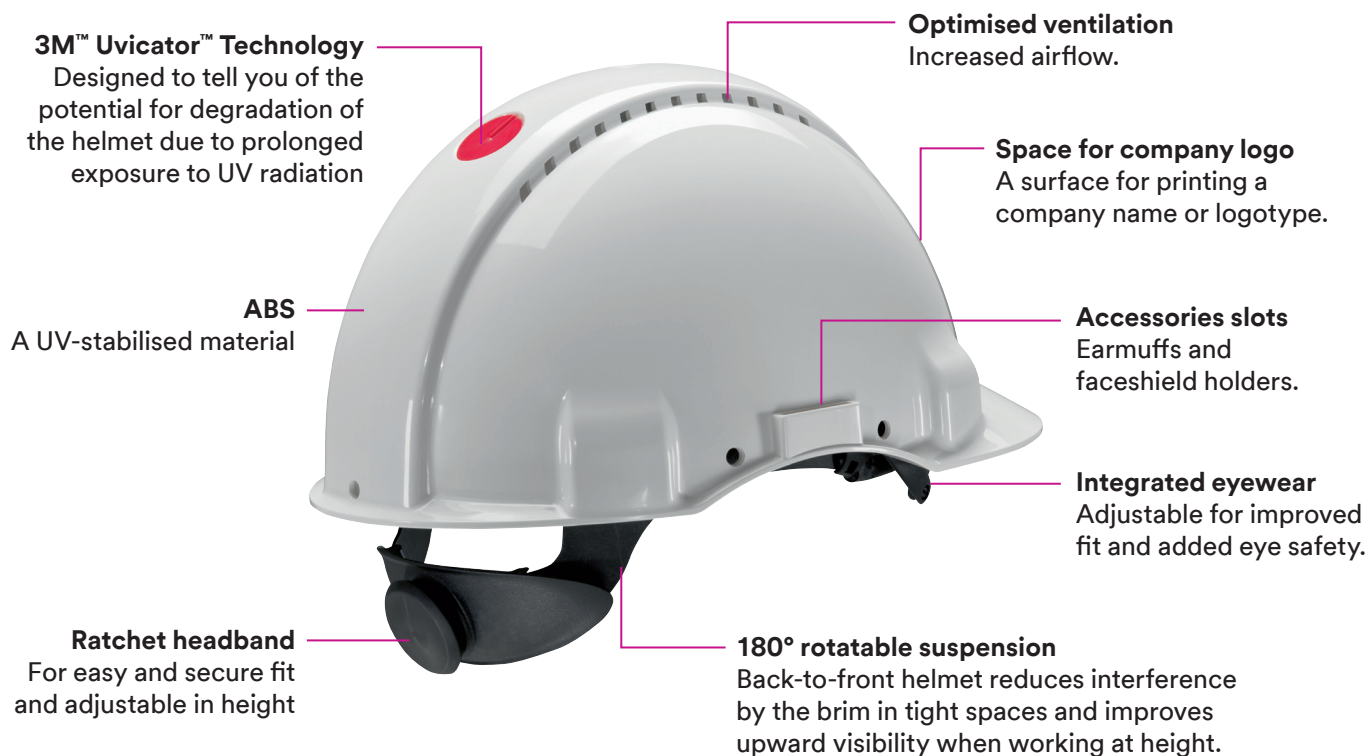


## 3M™ Safety Helmet G3000 Series

# Lightweight but tough

3M™ Series G3000 hard hat has been designed in close collaboration with industrial workers. It is intended for use in harsh environments with tough demands for effective protection, excellent ventilation and a maximum field of vision. Softly rounded design, without any sharp or protruding

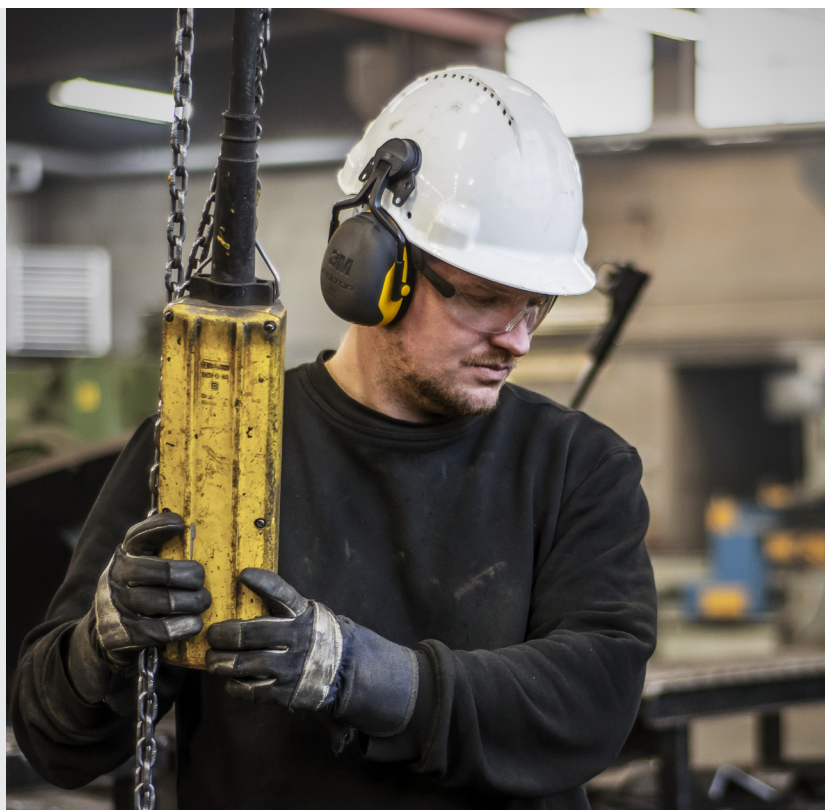
components, the extremely comfortable lining and the simple adjustment of the neck strap make the G3000 unique. The helmet lining can be turned through 180 degrees – a big advantage when working in confined spaces, as it gives the wearer the maximum field of vision.



Available in 8 colours, with ratchet or pin-lock suspension



<b>Material:</b>	UV-stabilised ABS
<b>Colours:</b>	Yellow, White, Orange, Red, Blue, Green, Hi-Viz and Black
<b>Weight:</b>	310g (pin-lock) 334g (ratchet)
<b>Size:</b>	54–62cm for pin-lock version 53–62cm for ratchet version





### Compatibility

The 3M™ Speedglas™ Quick Release (QR) Rail allows you to attach a Speedglas welding helmet to your G3001 safety helmet.





# After sales

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# Optimise your workspace

It just takes a few moments every day to ensure that your 3M™ Speedglas™ gear is in optimum shape for your next use. Those few moments will be well spent time for your increased comfort and productivity – plus the service life of your system.

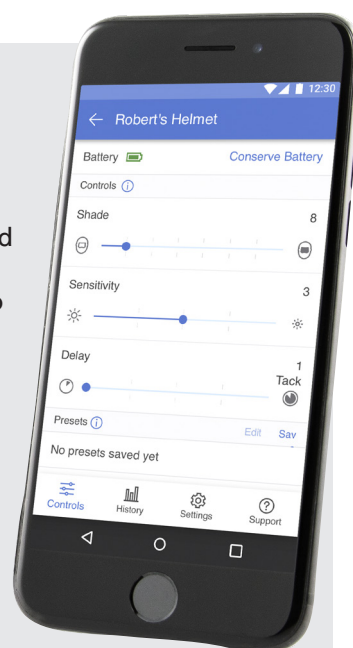
Pick a maintenance routine that works best for you: beginning of shift, after lunch, or end of work.

Your reward will be high clarity views, a refreshed helmet, and gear that's comfortable to wear and work in. Daily maintenance is especially important for respiratory systems to assure a continuous supply of filtered air.

Maintenance basics are covered **on pages 91 (filter and helmets) and 98 (3M™ Adflo™)**. For complete maintenance guidelines, refer to the User Instruction manual that came with your equipment.

## Our app can help

The free 3M™ Connected Equipment app gives you immediate access to all manuals – including illustrated parts lists and maintenance procedures. It also has links to YouTube™ videos for the most common tasks, like replacing a protection plate/cover or face seal. You can even use the app as your maintenance log.



All 3M™ Speedglas™ Generation 5 helmets have support for the 3M™ Connected Equipment app.





As the outer protection plate becomes deeply pitted, scratched or too dirty to clean with soft cloth, it's probably time to replace it. Ensure you order the right protection plate/ cover to your welding filter:

Outer protection plate		For welding filter model								
Part No	Description	G5-01	G5-02	9100V	9100X	9100XX 9100XXi	9100 Passive	100 Series	10V	9002NC
12 60 00	Standard								●	
42 60 00	Standard									●
42 70 00	Scratch resistant									●
42 70 71	Heat resistant									●
52 60 00	Standard	●		●	●	●	●			
52 70 00	Scratch resistant	●		●	●	●	●			
52 70 01	Extra Scratch resistant	●		●	●	●	●			
52 70 70	Heat resistant	●		●	●	●	●			
62 60 00	Scratch resistant		●							
72 60 00	Standard									
72 70 00	Scratch resistant									
77 60 00	Standard							●		
77 70 00	Scratch resistant							●		
77 70 70	Heat resistant							●		

Regularly clean the inner cover plate with a soft cloth and replace if any pits or scratches occur. Ensure you order the right plate to your filter:

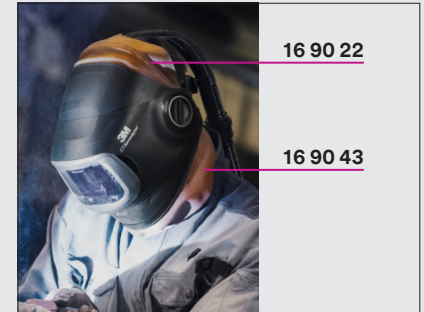
Inner cover plate			For welding filter model								
Part No	Description	L x H (mm)	G5-01	G5-02	9100V	9100X	9100XX 9100XXi	9100 Passive 100 Passive	100S 100V	10V	9002NC
12 60 00	Clear	110×90						●			
42 80 00	Clear	91×42							●	●	
42 80 10	Clear	103×53									●
42 80 30	+1 Shade	103×53									●
42 80 50	+2 Shade	103×53									●
52 80 05	Clear	117×50			●						
52 80 15	Clear	117×61				●					
52 80 25	Clear	117×77	●				●				
62 40 00	Clear	150×76		●							



# We got you covered

Every welder is different, and each day your tasks can change. As the owner of a 3M™ Speedglas™ Welding Helmet, you have a variety of accessories available to help ensure your protection and comfort.

Plus, we now offer a new generation of additional coverage products made in flame-retardant textiles for protection against molten metal, sparks and flames.



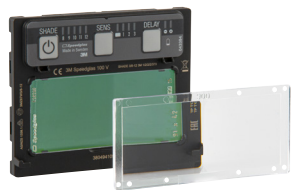
## Quick guide to extend your protection

Part No	Available additional coverage	G5-01	G5-02	9002NC	100	9100 + 9100-Air	9100FX + 9100 FX-Air	9100-QR 100-QR 10/10-QR	9100MP 9100MP-Lite
<b>Head protection</b>									
16 40 09	Cotton / Para-aramid			●	●				
16 90 05	Cotton / Para-aramid		●			●			
16 90 06	Cotton / Para-aramid (small)						●		
16 90 07	Cotton / Para-aramid (large)						●		
16 90 14	Modacrylic/Rayon / FR coating / Aluminium								●
16 90 20	Cotton / Para-aramid	●							
16 90 21	Viscose FR / Wool / Para-Aramid / Antistatic Fiber (Fluorescent yellow)	●							
16 90 22	Leather	●							
16 90 23	Cotton / Para-aramid (large)	●							
16 90 24	Scrape guard	●							
16 90 35	Cotton / Para-aramid (Extended Protection kit)	●							
<b>Neck protection</b>									
16 40 05	Neck protection leather		●	●	●			●	
16 90 01 <sup>1)</sup>	Cotton / Para-aramid		●	●	●				
16 90 10	Cotton / Para-aramid					●	●		
16 90 15	Cotton / Para-aramid	●							●
16 90 30	Cotton / Para-aramid (Shroud)	●							
16 90 40	Rigid	●							
16 90 41	Cotton / Para-aramid	●							
16 90 42	Cotton / Para-aramid (large)	●							
16 90 43	Leather	●							
<b>Hood</b>									
16 91 00	Cotton / Para-aramid	●	●	●	●	●	●	●	●
<b>Breathing tube cover</b>									
83 40 18	Cotton/ Para-aramid	●				●	●		●

1) Alternative neck protection available in leather (part no 16 40 05).



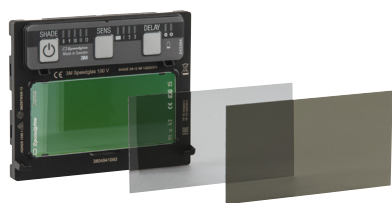
# Time to upgrade your visibility?



## Getting too close to your arc?

Start with the easiest solution first: replace your welding filter's outer protection plates more frequently!

If you still can't see the detail you need, try one of our magnifying lenses. They come in x1.0, x1.5, x2.0, x2.5 and x3.0 strengths. For details, see the Accessories and Spare Parts section for each helmet.



## Want an even darker shade?

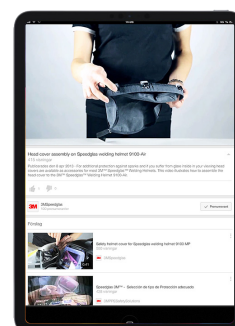
Welding at very high amperages can create such an intense weld pool that you may feel eye strain, even when using a dark shade selection. On the welding filter series 9000 and 100, you can replace the standard (clear) inner protection plate with either our +1 or +2 shade plates. For details, **see page 88**.

System	Component	Typically replaced	Notes
Welding filters	Outer protection plate	Once a week	Replace anytime the plate becomes deeply pitted, scratched or too dirty to clean with soft cloth or lens paper
Welding filters	Inner cover plate	Once a month	Regularly clean with a soft cloth and replace if any pits or scratches occur.
Welding helmets	Visor plate	Every two weeks	Replace more often if visibility is reduced.
Welding helmets	Sweatband	Once a month	Replace more often if sweatband becomes unhygienic.
Welding helmets with respirator	Face seal	At least every 2 months	Replace earlier in really dirty environments or whenever the seal becomes unhygienic.
Welding helmets with respirator	Breathing tube	If damaged, deformed or leaking any air	To extend the life of breathing tube, use a tube cover or a heavy-duty rubber breathing tube.

Important information. Note that higher-than-normal levels of pollutants, heat, and sparks will require more frequent replacements of components. Chart assumes minimum 4 hours usage per day. Ordering information for each series of welding helmet can be found in the After sales chapter, **page 86**.



Learn more about product maintenance from Speedglas YouTube channel!  
Scan the QR code or visit [youtube.com/3MSpeedglas](https://youtube.com/3MSpeedglas)





To optimise the useful life of your welding equipment and avoid the additional cost of replacement, regular maintenance is important. Replace all damaged parts immediately to help ensure intended degree of protection.



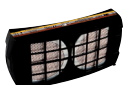


Below is a helpful overview; always read and follow User Instructions.

## Before use

- 1. Helmet and headband.** Inspect for cracks or any damaged parts. Replace if needed.
- 2. Welding filter.** Check that the sensors are clean. Replace the battery if the low battery indicator flashes or if the indicators do not flash when the buttons are pressed.
- 3. Protection plates.** Ensure that your welding filter is equipped with an outer protection plate and inner cover plate. To help provide the best possible vision, they should be clean and without scratches.
- 4. Magnification.** If you can't see the detail you need, try one of our magnifying lenses, available in x1.0, x1.5, x2.0, x2.5 and x3.0 strengths.
- 5. Respiratory helmets: face seal.** If the face seal is damaged, there is a risk that contaminated air will get inside the helmet. Verify it's in place and free from splits and tears.
- 6. Respiratory helmets: breathing tube.** Confirm that the tube is undamaged and not leaking any air. To extend the life of the breathing tube, use a breathing tube cover or a heavy-duty breathing tube

## After use

- 1. Clean the helmet.** Wipe with a moist tissue or cloth, both inside and outside the helmet.
- 2. Face seal and sweatband.** Remove for additional cleaning as needed and replace if they have splits or tears or whenever they become unhygienic.
- 3. Protection plate/cover and visor plate.** Clean with a soft cloth and replace if any pits or scratches occur.
- 4. Breathing tube.** Replace if damaged, deformed or leaking any air. If you suspect that the inside of the breathing tube is dirty, it must be changed. DO NOT rinse, immerse in water, or clean with solvents.
- 5. Storage.** Store the helmet in a dry, clean area away from direct sunlight, high temperatures and solvents, as stated in the user instructions. Ideally use the bag that comes with the helmet or similar.

3M™ Adflo™ component	Typically replaced <sup>1)</sup>	Notes
 Prefilter	Once a week	Regular replacement of the prefilter extends the life of the particle filter.
 Particle filter	At least every month	Replace when particle filter indicator becomes red. Otherwise, replace whenever the battery operating time becomes too short, or when the low airflow alarm is triggered by a fully loaded filter. Note: Do NOT attempt to clean the particle filter with supplied air
 Gas filter	According to regulations at your work place	Smell and taste is not recommended as a measure for determining when to change gas filters.
 Odour filter	Any time you smell unpleasant odours	Note: odour filter is not required if a gas filter is used.
 Spark arrestor	As needed	Make sure that the spark arrestor is clean for proper function. Replace if deformed and no longer fitting well.

<sup>1)</sup> Important information. Note that higher-than-normal levels of pollutants, heat, and sparks will require more frequent replacement of components. Chart assumes minimum 4 hours usage per day. Ordering information for each series of welding helmet can be found in the After sales chapter, page 86.



# Welding and grinding respiratory protection systems

## 3M™ Speedglas™ Welding Helmets



G5-01

9100 Air

9100MP

9100MP-Lite

## 3M™ Versaflo™ Headtops for grinding



M-207

M-307

M-407

## 3M™ Adflo™ Powered Air Purifying Respirator



## 3M™ Versaflo™ Supplied Air Regulators

V-100E  
Air CoolingV-200E  
Air HeatingV-500E  
Flow Controlled

## Breathing tubes<sup>2)</sup>



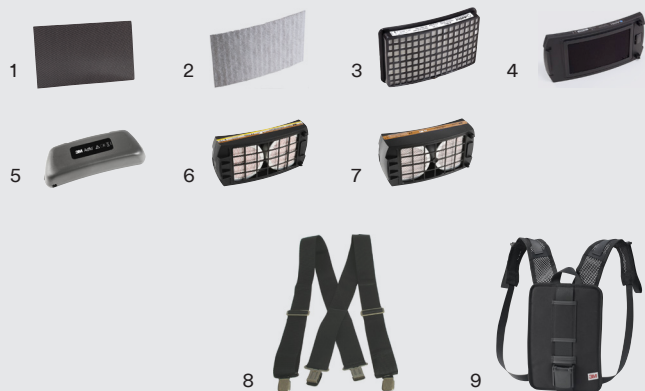
The QRS (Quick Release Swivel) breathing tubes allow fast and easy connection. Most systems come with the self-adjusting length for improved fit, made in polyurethane (83 40 16). As an alternative the high durability rubber tube (83 40 17) or the extra long breathing tube (83 40 19) is sold separately.

## Breathing tubes



The QRS (Quick Release Swivel) breathing tubes allow fast and easy connection. Most systems come with the self-adjusting length for improved fit, made in polyurethane (83 40 16). As an alternative the high durability rubber tube (83 40 17) is sold separately.

## Filters and accessories



1. Spark arrestor

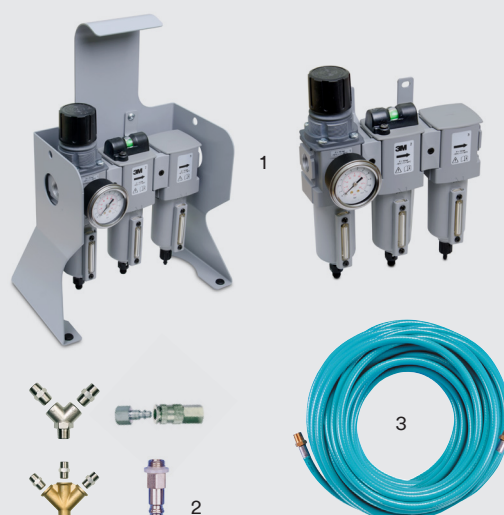
2. Prefilter<sup>1)</sup>3. Particle filter<sup>1)</sup>4. Odour filter  
Not needed  
when you  
use gas filter.5. Heavy-duty  
battery  
Extends the  
operation  
hours to  
10–13 hours  
(7–9 hours  
with standard  
battery).6. Gas filter  
A1B1E1<sup>2)</sup>7. Gas filter A2<sup>2)</sup>

8. Braces

9. Backpack

More information about Adflo accessories see page 99.

## Air Supply

1. 3M™ Aircare™ Filtration  
Units (wall-mounted or  
stand alone)2. Couplings and  
branch sets3. Air supply tubes  
(7,5–30 m)

More information about air supply see page 100–101.

1) Included as standard when you order a complete respiratory protection system with welding helmet and air delivery unit; must always be used.

2) Gas filter must always be used together with a particle filter and we recommend to use a heavy-duty battery (sold separately: 83 76 31). In some configurations it is also required to use a breathing tube with silencer (non-QRS: 83 40 09), always verify approved combinations with your Safety Engineer or contact a certified Industrial Hygienist for advice.



# A new system or an upgrade?

The 3M™ Speedglas™ Welding Helmet G5-01 fits both your 3M™ Adflo™ Powered Air Purifying Respirator as well as the 3M™ Versaflo™ Supplied Air Regulators<sup>1)</sup>.



	Speedglas welding filter G5-01TW	Speedglas welding filter G5-01VC
<b>Complete powered air system</b>	Helmet G5-01 with welding filter G5-01TW and Adflo respirator. <b>Part No 61 78 20</b>	Helmet G5-01 with welding filter G5-01VC and Adflo respirator. <b>Part No 61 78 30</b>
<b>Incl consumable starter kit</b>	Helmet G5-01 with welding filter G5-01TW, consumable kit (79 20 00) and Adflo respirator. <b>Part No 61 78 29</b>	Helmet G5-01 with welding filter G5-01VC, consumable kit (79 20 00) and Adflo respirator. <b>Part No 61 78 39</b>
<b>Upgrade your old system</b>	Helmet G5-01 with welding filter G5-01TW. <b>Part No 61 11 20</b>	Helmet G5-01 with welding filter G5-01VC. <b>Part No 61 11 30</b>

When you order a complete system, it comes with our new storage bag. Featuring a fast, double-zipper opening top and large carry handles, the bag keeps your gear protected and clean when not in use.



Scan this code to see how to unbox your new system

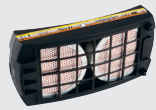
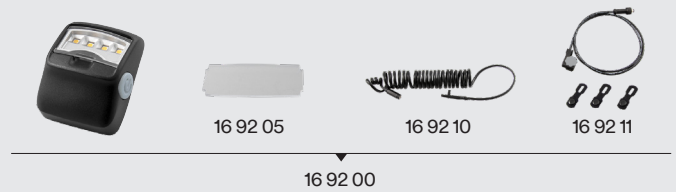


<sup>1)</sup> The following Adflo systems are equipped with a heavy-duty Li-ion battery which extends operating time to 10–12 hours, at sea level with a fully charged battery and new clean filter. Actual system duration are dependent on configuration and environment.



# Accessories for 3M™ Speedglas™ Welding Helmets G5-01

We offer numerous accessories so you can configure your 3M™ Speedglas™ Welding Helmet G5-01 to meet your individual preferences and application needs.



83 72 42  
83 75 42



83 71 10



83 71 20



BPK-01



83 50 20



83 40 18



16 90 21



16 90 23

16 90 35



16 90 30



16 91 00

Part No	Description	Part No	Description
16 90 20	Head protection in fabric	16 92 10	Long power cable for task light
16 90 21	Head protection in fabric (large)	16 92 11	Short power cable for task light
16 90 22	Head protection in leather	16 92 23	Pouch with Adflo battery, for task light when using supplied air regulator (not shown)
16 90 23	Head protection in fabric (large)	83 40 18	Flame retardant breathing tube cover (recommended when using the task light).
16 90 24	Scrape guard (not shown)	83 50 20	Braces for respirator
16 90 30	Shroud	83 71 10	Adflo odour filter
16 90 35	Extended cover kit (shroud and large head cover in fabric)	83 71 20	Odour filter pad
16 90 41	Neck protection in fabric (small)	83 72 42	Adflo gas filter A1B1E1
16 90 42	Neck protection in fabric (large)	83 75 42	Adflo gas filter A2
16 90 43	Neck protection in leather	BPK-01	Backpack for respirator
16 92 00	Task light, incl mounting parts and cables		
16 92 05	Protection plate for task light, pkg. of 5		



Subscribe to our YouTube channel to learn more about product features and maintenance.

[www.youtube.com/3MSpeedglas](http://www.youtube.com/3MSpeedglas)



## 3M™ Versaflo™ Supplied Air Regulators



V-100E



V-200E

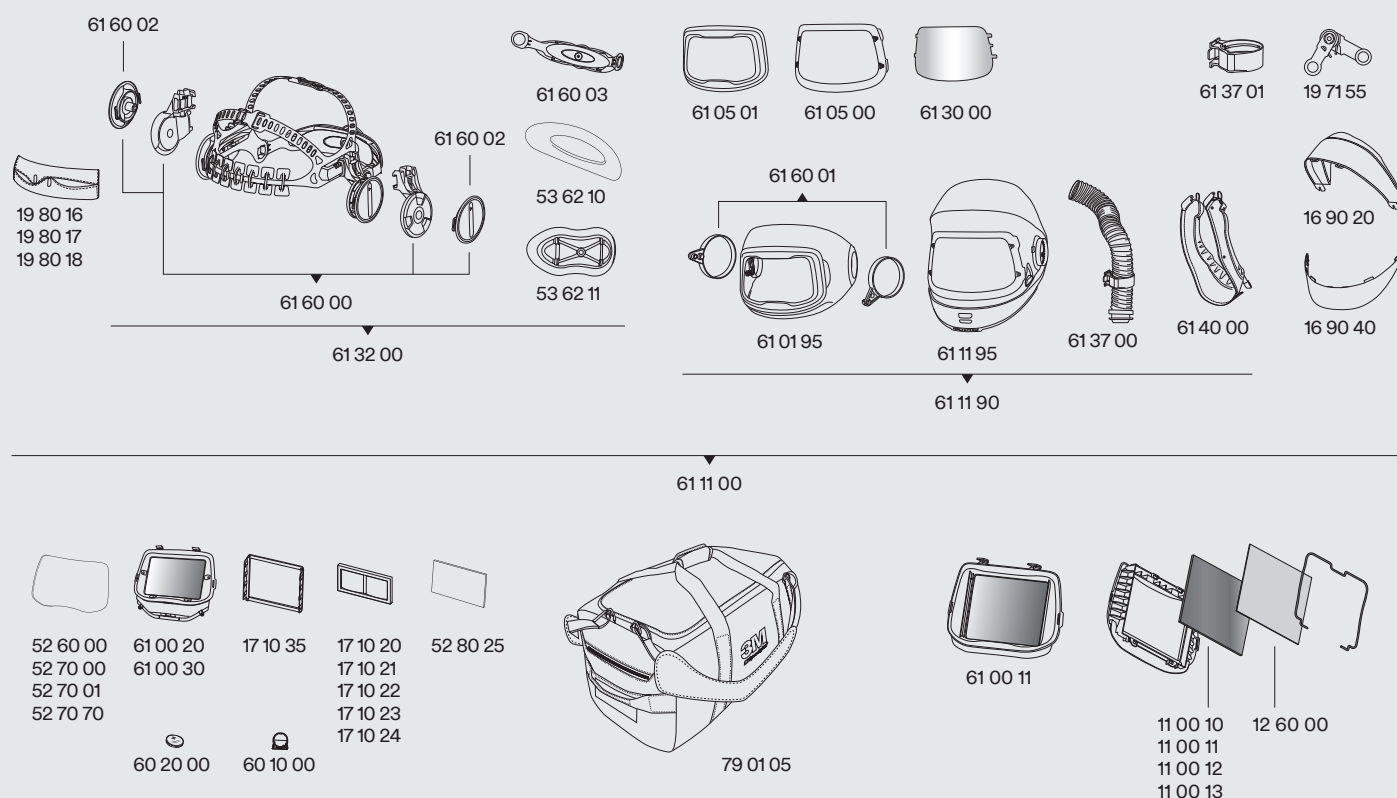


V-500E

**V-100E** Air cooling regulator  
**V-200E** Air heating regulator  
**V-500E** Flow controlled regulator



## Spare parts &amp; accessories 3M™ Speedglas™ Welding Helmets G5-01



Part No	Description	Part No	Description	Part No	Description
11 00 10	Passive welding filter lens shade 10 (110×90)	52 70 01	Outer protection plate (scratch +), pkg of 10	61 30 00	Visor plate, anti-fog and hardcoated, pkg. of 5
11 00 11	Passive welding filter lens shade 11 (110×90)	52 70 70	Outer protection plate (heat), pkg of 10	61 32 00	Headband with assembly parts
11 00 12	Passive welding filter lens shade 12 (110×90)	52 80 25	Inner cover plate, pkg of 5	61 37 00	Air duct breathing tube (short) incl. holder
11 00 13	Passive welding filter lens shade 13 (110×90)	53 62 10	Cushion part for headband G5-01	61 37 01	Holder for breathing tube
12 60 00	Inner cover plate for passive filter	53 62 11	Large head rest	61 40 00	Face seal
16 90 20	Head protection in fabric (small)	60 10 00	Battery holder	61 60 00	Pivot and sliding mechanism, including pivot knobs
16 90 40	Neck protection rigid	60 20 00	Battery CR2450	61 60 01	Pivot rings for outer shield
17 10 20	Magnifying lens 1.0X	61 00 11	Speedglas passive welding filter kit G5-01 (shade 11)	61 60 02	Pivot knobs (1pcs)
17 10 21	Magnifying lens 1.5X	61 00 20	Speedglas welding filter G5-01TW	61 60 03	Headband back part
17 10 22	Magnifying lens 2.0X	61 00 30	Speedglas welding filter G5-01VC	61 78 00	Helmet G5-01, without welding filter, with 3M™ Adflo™ Powered Air Repirator
17 10 23	Magnifying lens 2.5X	61 01 95	Outer shield	61 78 09	Helmet G5-01, without welding filter, with 3M™ Adflo™ Powered Air Repirator and consumable starter kit
17 10 24	Magnifying lens 3.0X	61 05 00	Front cover for inner visor	79 01 05	Carry Bag
17 10 35	Magnifying lens holder	61 05 01	Front cover for flip-up	79 20 00	Consumable starter kit G5-01, includes 3 different sweatbands, face seal, visor plate, inner and outer cover plates.
19 71 55	Hinge mechanism, 1 pair	61 11 00	Welding helmet G5-01, without welding filter		
19 80 16	Sweatband (towelling), pkg of 3	61 11 90	Welding helmet G5-01, without welding filter, without neck or head protection		
19 80 17	Sweatband (fleecy cotton), pkg of 3	61 11 95	Inner shield with airduct and airflow controls (including visor frame)		
19 80 18	Sweatband (leather)				
52 60 00	Outer protection plate (standard), pkg of 10				
52 70 00	Outer protection plate (scratch), pkg of 10				







# Increase your comfort



**Braces**

83 50 20



**Backpack**

BPK-01



**Personalise your comfort when using the 3M™ Adflo™ respirator**

Braces (83 50 20) attach to the Adflo leather belt for better weight distribution and stability.

Some welders prefer to wear the Backpack (BPK-01), which holds the PAPR flat against your back and can make it easier to move around some workspaces.

## 3M™ Speedglas™ Welding Helmets G5-01 headband

### Tailor to fit your preferences

#### ① Extra-large back pad

Delivered with an extra-large, head rest for enhanced comfort as standard and a smaller one as optional.

#### ② Adjustment options

Adjust the distance and angle from your eyes to the clear visor and welding filter.

#### ③ New headband design

Upgraded, self-adjusting comfort paddles along your forehead.





# 3M™ Adflo™ Powered Air Purifying Respirator



Respirator without headtop  
– standard battery

Part No	Description
83 77 30	Adflo respirator with self-adjusting breathing tube QRS, breathing tube adapter, airflow indicator, prefilter, spark arrestor, particle filter, battery, belt and charger.

For gas filter configuration we recommend using the Adflo respirator with heavy-duty battery.



Respirator without headtop  
– heavy duty battery

Part No	Description
83 77 31	Adflo respirator with self-adjusting breathing tube QRS, breathing tube adapter, airflow indicator, prefilter, spark arrestor, particle filter, heavy-duty battery, belt and charger.

For gas filter configuration please add these items to above order: **83 72 42** for gas filter A1B1E1, or **83 75 42** for gas filter A2.



Adflo Battery Charger

Part No	Description
83 31 11	Adflo Battery Charger for Li-ion battery



## Standard battery

Don't get weighted down. A lightweight lithium-ion battery pack designed for the Adflo respirator.

- Run time 7–9 hours<sup>1)</sup>
- Charging time 4 hours
- Compact and lightweight



## Heavy-duty battery

Find your endurance. A high-capacity lithium-ion battery pack extends the operating hours of the respirator.

- Long run time 10–13 hours<sup>1)</sup>
- Charging time 4–5 hours
- Compact and lightweight



## 3M™ Adflo™ Battery Charger Organizing Stand

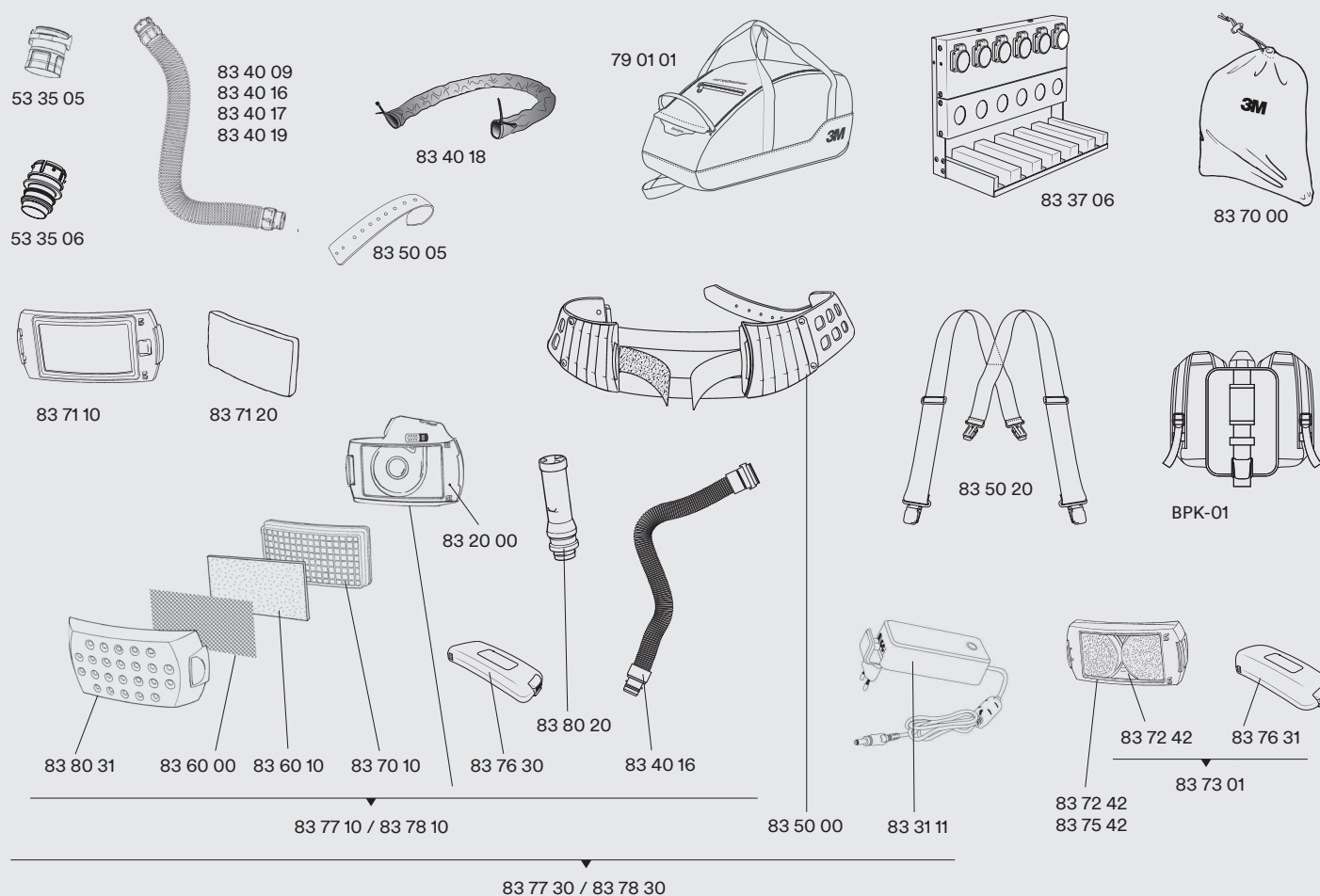
The 6-position battery charger organizing stand for Adflo battery chargers provides the ability to charge six batteries at the same time. Saving both time and hassle. Compatible with Adflo NiMH batteries and Adflo Li-ion batteries. Flexible installation: either mount on wall or stand-alone.

Part No: 83 37 06

1) Expected operating times are when using a new, fully-charged battery, new particle filter and a standard airflow setting.



## Spare parts &amp; accessories 3M™ Adflo™ Powered Air Purifying Respirator



Part No	Description	Part No	Description	Part No	Description
<b>53 35 05</b>	Adapter for non-QRS breathing tubes when using Speedglas welding helmet series 9100.	<b>83 50 10</b>	Quick connection for belt (not shown).	<b>83 77 10</b>	Adflo respirator with self-adjusting breathing tube QRS, adapter (53 35 06), airflow indicator, prefilter, spark arrestor, particle filter and battery.
<b>53 35 06</b>	Adapter for QRS breathing tubes when using Speedglas welding helmet series 9000.	<b>83 50 20</b>	Braces.		
<b>79 01 01</b>	Product carry bag.	<b>83 60 00</b>	Spark arrestor.	<b>83 80 20</b>	Airflow indicator.
<b>80 60 20</b>	Backpack.	<b>83 60 10</b>	Prefilter, pkg of 5.	<b>83 80 31</b>	Filter cover black.
<b>83 20 00</b>	PAPR assembly, without filter, without filter cover.	<b>83 60 80</b>	Prefilter, pkg of 80.	<b>BPK-01</b>	Backpack.
<b>83 31 11</b>	Battery charger for Li-ion batteries.	<b>83 70 00</b>	Storage bag.		
<b>83 40 09</b>	Breathing tube with silencer and QRS connection	<b>83 70 10</b>	Particle filter P SL (sold in 2-, 20-, 80-pack)		
<b>83 40 16</b>	Breathing tube self adjusting QRS	<b>83 70 12</b>	Particle filter P SL, pkg of 2.		
<b>83 40 17</b>	Breathing tube heavy duty rubber QRS	<b>83 70 20</b>	Particle filter P SL, pkg of 20.		
<b>83 40 19</b>	Breathing tube long QRS	<b>83 70 80</b>	Particle filter P SL, pkg of 80.		
<b>83 50 00</b>	Belt.	<b>83 71 10</b>	Odour filter.		
<b>83 50 05</b>	Front part, belt.	<b>83 71 20</b>	Odour filter pad.		
		<b>83 72 42</b>	Gas filter A1B1E1.		
		<b>83 73 01</b>	Gas filter kit: A1B1E1 filter and Li-ion Heavy-Duty battery.		
		<b>83 75 42</b>	Gas filter A2.		
		<b>83 76 30</b>	Li-ion Battery (standard).		
		<b>83 76 31</b>	Li-ion Battery Heavy-Duty.		

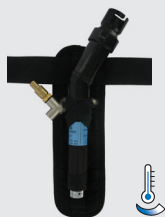


## 3M™ Versaflo™ Supplied Air Regulators



**Versaflo supplied air regulator V-500**

Part No	Description
<b>V-500E</b>	Flow controlled supplied air regulator, including belt. User adjustable airflow, from 170 to 305 l/m.



**Versaflo supplied air regulator V-100**

Part No	Description
<b>V-100E</b>	Air cooling supplied air regulator, including belt. Lets users cool the airflow by up to 28°C.



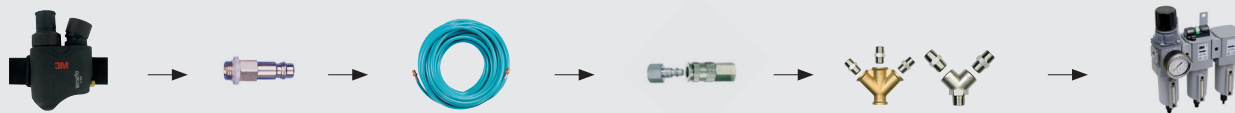
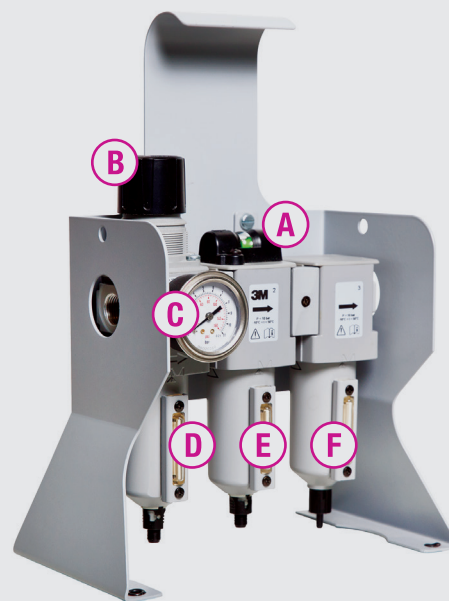
**Versaflo supplied air regulator V-200**

Part No	Description
<b>V-200E</b>	Air heating supplied air regulator, including belt. Lets users heat the airflow by up to 28°C.

## 3M™ Aircare™ Filtration Systems

To make the quality of the air supply breathable, oil aerosols, water vapour, particulates, and non-toxic, unpleasant odours must be removed to EN 12021 requirements. The 3M™ Aircare™ Filtration Systems ACU-3 (wall mount) and ACU-4 (floor mount) provide three-stage filtration for up to three users or two users plus an air tool.

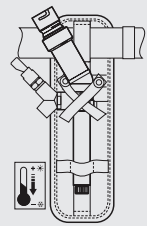
- A** Differential pressure indicator
- B** Pressure regulator (lockable)
- C** Pressure gauge
- D** Pre-filter  
Semi Auto Drains (stage 1, 2) and Manual Drain (stage 3)
- E** Coalescing filter
- F** Absorber filter with activated charcoal



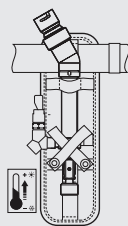
Select type of regulator	Select Belt Unit Coupling Plug (1/4" BSP)	Select type of Air Supply Tube (Output 3/8" BSP - both ends)	Select Coupling Set for Air Supply Tube (3/8" BSP)	Select type of Branch Set (incl 3/8" BSP adapters)	Select Air Filtration Unit Input: 1/2" or 3/8" female thread BSP. (2 adapters included – 3/8" BSP to 3/8" male pipe thread BSP. Output: 3/8" BSP.
<b>V-100E:</b> Air cooling regulator V-100E.	<b>530-12-52P3:</b> Coupling plug Rectus 25.	<b>308-00-30P:</b> 10 m standard duty hose.	<b>530-12-81P3:</b> Coupling set Rectus 25.	<b>312-03-00P3:</b> 3-Way Branch Set.	<b>ACU-03:</b> 3M™ Aircare™ Filtration System (wall mounted)
<b>V-200:</b> Air heating regulator V-200E.	<b>530-12-53P3:</b> Coupling plug Rectus 95.	<b>308-00-31P:</b> 30 m standard duty hose.	<b>530-12-82P3:</b> Coupling set Rectus 95.	<b>312-03-01P3:</b> 2-Way Branch Set.	<b>ACU-04:</b> 3M™ Aircare™ Filtration System (stand alone).
<b>V-500E:</b> Flow controlled regulator V-500E.		<b>308-00-40P:</b> 7.5 m coiled hose.			
		<b>308-00-72P:</b> 10 m standard duty, antistatic, high temperature hose.			



## Spare parts &amp; accessories for 3M™ Versaflo™ Supplied Air Regulators

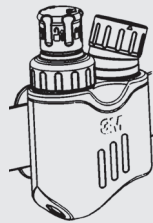
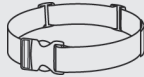


V-100E



V-200E

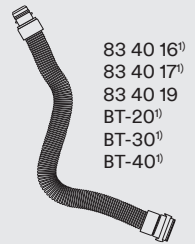
TR-325

V-500E<sup>1)</sup>

023-05-51P



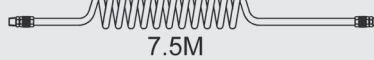
530-12-53P3

83 40 16<sup>1)</sup>  
83 40 17<sup>1)</sup>  
83 40 19  
BT-20<sup>1)</sup>  
BT-30<sup>1)</sup>  
BT-40<sup>1)</sup>

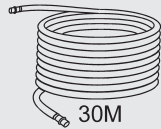
83 40 18



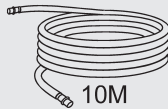
308-00-40P



7.5M



308-00-31P

308-00-30P  
308-00-72P

312-03-00P3



312-03-01P3

530-12-81P3



ACU-04



ACU-03

Part No	Description	Part No	Description	Part No	Description
83 40 16 <sup>1)</sup>	Breathing tube, self-adjusting (52,5 to 85 cm), with QRS connection for Speedglas welding helmets.	312-03-00P3	3-way manifold.	BT-30 <sup>1)</sup>	Breathing tube, self-adjusting (52,5 to 85 cm), with QRS connection, for Versaflo headtops M-Series.
83 40 17 <sup>1)</sup>	Breathing tube, heavy-duty rubber (80 cm), with QRS connection for Speedglas welding helmets.	312-03-01P3	2-way manifold.	BT-40 <sup>1)</sup>	Breathing tube, heavy-duty rubber (80 cm), with QRS connection, for Versaflo headtops M-Series.
83 40 18	Flame resistant breathing tube cover.	530-12-53P3	Belt unit coupling plug – Rectus 95.	TR-325	Belt.
83 40 19	Breathing tube long QRS	530-12-81P3	Socket and plug – Rectus 95.	V-100E	Versaflo air cooling supplied air regulator V-100E, with belt.
023-05-51P	Carbon filter.	ACU-03	3M™ Aircare™ Filtration System (wall mounted).	V-200E	Versaflo air heating supplied air regulator V-200E, with belt.
308-00-30P	Standard duty air supply tube, 10 m.	ACU-04	3M™ Aircare™ Filtration System (stand alone).	V-500E	Versaflo flow controlled supplied air regulator V-500E with belt.
308-00-31P	Standard duty air supply tube, 30 m.	BT-20L <sup>1)</sup>	Breathing tube with QRS connection, polyurethane (length 96,5 cm), for Versaflo headtops M-Series.		
308-00-40P	Coiled air supply tube, 7.5 m.	BT-20S <sup>1)</sup>	Breathing tube with QRS connection, polyurethane (length 73,5 cm), for Versaflo headtops M-Series.		
308-00-72P	Standard duty, anti-static, high temp air supply tube, 10 m.				

<sup>1)</sup> When the V-500E regulator is used with Versaflo headtops M-Series, the BT-Series breathing tubes must be used.



# 3M™ Speedglas™ Welding Helmet 9100-Air Systems



Part No	Description
56 77 00 <sup>1)</sup>	Without welding filter, with Adflo powered air purifying respirator.
56 77 26 <sup>1)</sup>	With Speedglas welding filter kit 9100XXi, incl welding filter (107×73 mm) and front cover, with Adflo powered air purifying respirator.

Part No	Description
56 85 00 <sup>1)</sup>	Without welding filter, with Versaflo supplied air regulator V-500E.
Please note, supplied air regulators with heating or cooling (V-100/V-200) only as separate order (not as system), see <b>page 100–101</b> .	

Alternative 3M™ Speedglas™ Welding Filters	
Part No	Description
50 00 01	Passive filter kit 9100 (110×90 mm), shade 11.
50 00 05	Auto-darkening filter 9100V (93×45 mm), variable shade 5, 8, 9–13.
50 00 15	Auto-darkening filter 9100X (107×54 mm), variable shade 5, 8, 9–13.
50 00 25	Auto-darkening filter 9100XX (107×73 mm), variable shade 5, 8, 9–13.
50 00 26	Auto-darkening filter 9100XXi (107×73 mm), variable shade 5, 8, 9–13.

## Maintenance tips for 3M™ Speedglas™ Welding Helmet 9100-Air

Subscribe to our YouTube channel to learn more about product features and maintenance. A few examples:



Scan QR-code or use this URL:

[www.youtube.com/3MSpeedglas](https://www.youtube.com/3MSpeedglas)



Adjust the air duct length to your personal preferences.



A face seal in good working order is essential at all times. Do you know how to replace it?

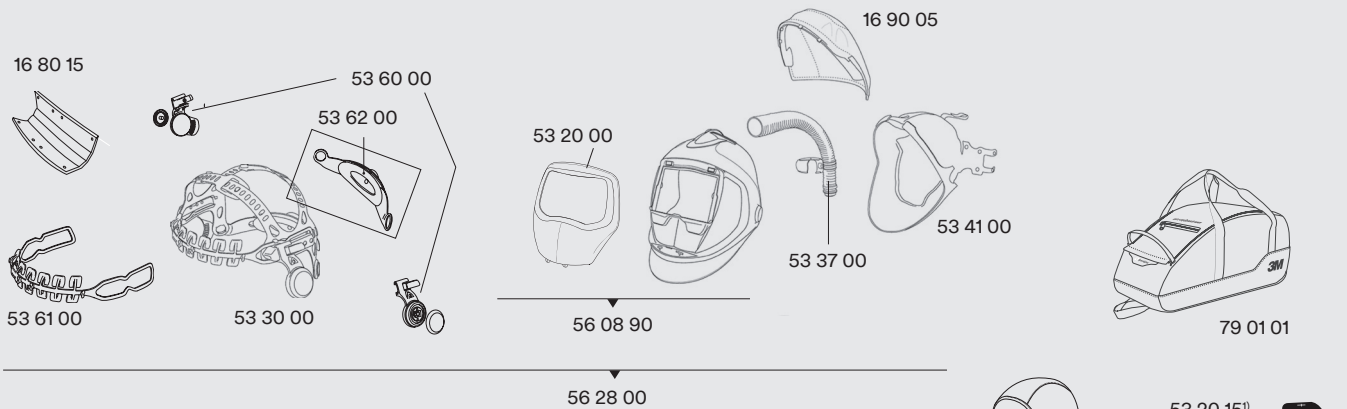


For additional protection against sparks, or to block distracting reflections, the extended head cover might be useful.

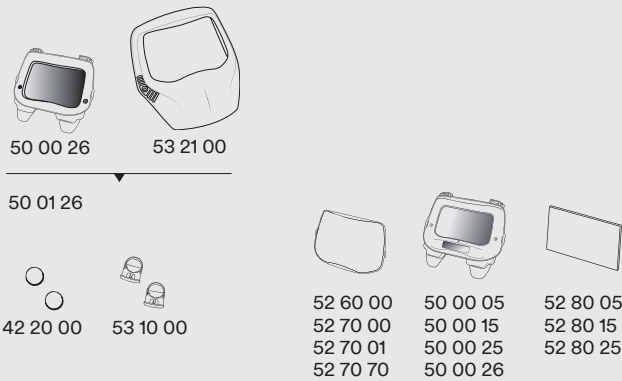
1) With storage bag (79 01 01)



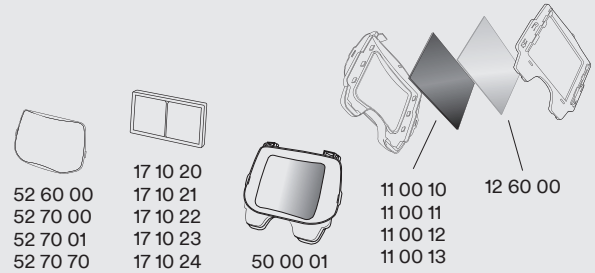
## Spare parts &amp; accessories for 3M™ Speedglas™ Welding Helmet 9100-Air



## Auto-darkening Filter



## Passive Filter



Part No	Description	Part No	Description	Part No	Description
16 80 15	Comfort sweatband, pkg of 3.	52 60 00	Outer protection plate, standard, pkg of 10.	53 21 00	Heat-reflecting front cover 9100XXi.
16 90 05	Head protection.	52 70 00	Outer protection plate scratch resistant, pkg of 10.	53 30 00	Headband with assembly parts.
16 90 10	Neck protection.	52 70 01	Outer protection plate, extra scratch resistant, pkg of 10.	53 37 00	Air duct.
16 91 00	Hood.	52 70 70	Outer protection plate, heat resistant pkg of 10.	53 41 00	Face seal.
17 10 20	Magnifying lens 1.0.	52 80 05	Inner cover plate for 9100V filter, pkg of 5. Plate marking 117×50.	53 60 00	Pivot mechanism, left and right.
17 10 21	Magnifying lens 1.5.	52 80 15	Inner cover plate for 9100X filter, pkg of 5. Plate marking 117×61.	53 61 00	Headband front part.
17 10 22	Magnifying lens 2.0.	52 80 25	Inner cover plate for 9100XX/9100XXi filters, pkg of 5. Plate marking 117×77.	53 62 00	Headband back part.
17 10 23	Magnifying lens 2.5.	53 10 00	Battery holder, pkg of 2.	56 08 90 <sup>1)</sup>	Speedglas welding helmet 9100 Air without headband, without air duct, without face seal, without welding filter.
17 10 24	Magnifying lens 3.0.	53 20 00	Heat-reflecting front cover 9100.	56 28 00	Speedglas welding helmet 9100 Air, without welding filter.
42 20 00	Battery CR2032 Lithium 3V, pkg of 2.	53 20 15 <sup>1)</sup>	Side windows cover plate, 2 pairs.	79 01 01	Product storage bag.
50 00 05	Speedglas welding filter 9100V.				
50 00 15	Speedglas welding filter 9100X.				
50 00 25	Speedglas welding filter 9100XX.				
50 00 26	Speedglas welding filter 9100XXi				
50 01 26	Speedglas welding filter kit 9100XXi (incl front cover and welding filter).				

1) Please use Part No 56 08 90 when new side windows are required.

# 3M™ Speedglas™ Welding Helmets 9100MP/9100MP-Lite



57 77 26



57 85 00



50 00 26



50 00 01



50 00 05



50 00 15



50 00 25

### Helmet systems with powered air

Part No	Description
57 77 00 <sup>1)</sup>	Welding helmet 9100MP without welding filter, with Adflo powered air purifying respirator.
57 77 26 <sup>1)</sup>	Welding helmet 9100MP welding filter 9100XXi (107×73 mm) and Adflo powered air purifying respirator.
59 77 00 <sup>1)</sup>	Welding helmet 9100MP-Lite without welding filter, with Adflo powered air purifying respirator.

### Helmet systems with supplied air

Part No	Description
57 85 00 <sup>1)</sup>	Welding helmet 9100MP without welding filter, with Versaflo supplied air regulator V-500E.

Please note, supplied air regulators with heating or cooling (V-100/V-200) only as separate order (not as system), see page 100–101.

### Alternative 3M™ Speedglas™ Welding Filters

Part No	Description
50 00 01	Passive filter kit 9100 (110×90 mm), shade 11.
50 00 05	Auto-darkening filter 9100V (93×45 mm), variable shade 5, 8, 9–13.
50 00 15	Auto-darkening filter 9100X (107×54 mm), variable shade 5, 8, 9–13.
50 00 25	Auto-darkening filter 9100XX (107×73 mm), variable shade 5, 8, 9–13.
50 00 26	Auto-darkening filter 9100XXi (107×73 mm), variable shade 5, 8, 9–13.

## Maintenance tips for 3M™ Speedglas™ Welding Helmet 9100MP

Subscribe to our YouTube channel to learn more about product features and maintenance. A few examples:

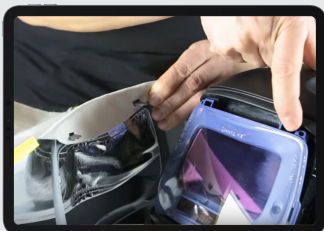


Scan QR-code or use this URL:

[www.youtube.com/3MSpeedglas](https://www.youtube.com/3MSpeedglas)



Need to re-fresh the head protection on your 9100MP? Find out how to remove the safety helmet.



Learn how to install the heat-reflecting, silver-coated helmet cover, helping to shed dust and particles from your helmet.

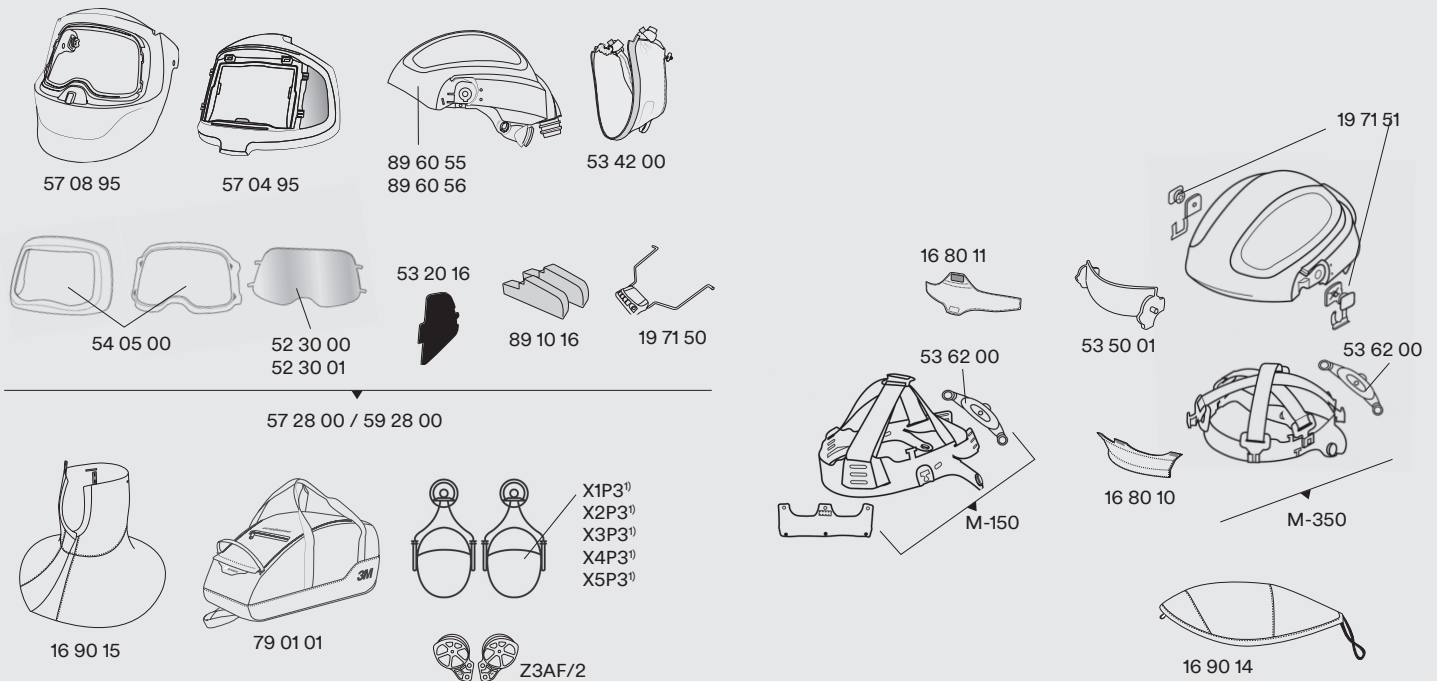


Need higher attenuation for your hearing protection, or is it just time to replace the old ones? See how to assemble the earmuffs in this video.

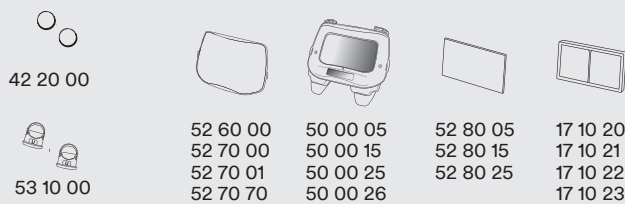
1) With storage bag (79 01 01)



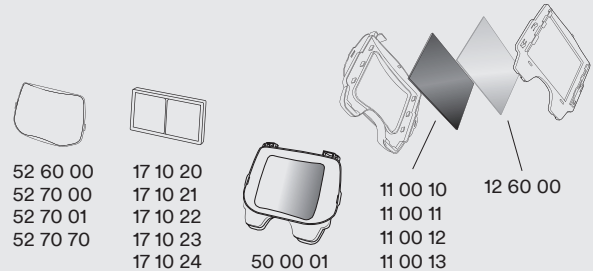
## Spare parts &amp; accessories for 3M™ Speedglas™ Welding Helmets 9100MP/9100MP-Lite



## Auto-darkening Filter



## Passive Filter



Part No	Description	Part No	Description	Part No	Description
16 80 10	Sweatband 9100MP, pkg of 2.	52 60 00	Outer protection plate, standard, pkg of 10.	54 05 00	Front cover kit.
16 80 11	Sweatband 9100MP-Lite, for TH3 level of protection pkg of 2 (not included in M-150).	52 70 00	Outer protection plate scratch resistant, pkg of 10.	57 04 95	Outer shield.
16 90 14	Safety helmet cover.	52 70 01	Outer protection plate extra scratch resistant, pkg of 10.	57 08 95	Inner shield.
16 90 15	Shroud.	52 70 70	Outer protection plate heat resistant, pkg of 10.	57 28 00	Welding helmet 9100MP, without welding filter.
17 10 20	Magnifying lens 1.0.	52 80 05	Inner cover plate for 9100V filter, pkg of 5. Plate marking 117×50.	59 28 00	Welding helmet 9100MP-Lite, without welding filter.
17 10 21	Magnifying lens 1.5.	52 80 15	Inner cover plate for 9100X filter, pkg of 5. Plate marking 117×61.	89 60 55	Safety helmet 9100MP, incl head suspension and sweatband.
17 10 22	Magnifying lens 2.0.	52 80 25	Inner cover plate for 9100XX/9100XXi filters, pkg of 5. Plate marking 117×77.	89 60 56	Bump cap 9100MP-Lite, incl head suspension and sweatband.
17 10 23	Magnifying lens 2.5.	53 10 00	Battery holder, pkg of 2.	79 01 01	Product storage bag.
17 10 24	Magnifying lens 3.0.	53 20 16	SideWindow cover plates.	M-350	Head suspension for 9100MP.
19 71 50	Flip-up mechanism.	53 42 00	Face seal.	X1P3	3M™ Peltor™ Earmuffs X1 (26 dB). <sup>1)</sup>
19 71 51	Pivot kit.	53 50 01	Helmet airflow deflector for 9100MP-Lite.	X2P3	3M™ Peltor™ Earmuffs X2 (30 dB). <sup>1)</sup>
42 20 00	Battery CR2032 Lithium 3V, pkg of 2.	53 62 00	Headband ratchet.	X3P3	3M™ Peltor™ Earmuffs X3 (32 dB). <sup>1)</sup>
50 00 05	Speedglas welding filter 9100V.			X4P3	3M™ Peltor™ Earmuffs X4 (32 dB). <sup>1)</sup>
50 00 15	Speedglas welding filter 9100X.			X5P3	3M™ Peltor™ Earmuffs X5 (36 dB). <sup>1)</sup>
50 00 25	Speedglas welding filter 9100XX.			Z3AF/2	Helmet assembly parts for Peltor X-series earmuffs, left and right.
50 00 26	Speedglas welding filter 9100XXi.				
52 30 00	Visor plate, standard, pkg of 5.				
52 30 01	Visor plate, anti-fog, pkg of 5.				

<sup>1)</sup> Please add assembly parts Z3AF/2 when ordering earmuffs for 9100MP and 9100MP-Lite welding helmets.

# 3M™ Versaflor™ M-Series Headtops for grinding

## Spare parts & accessories



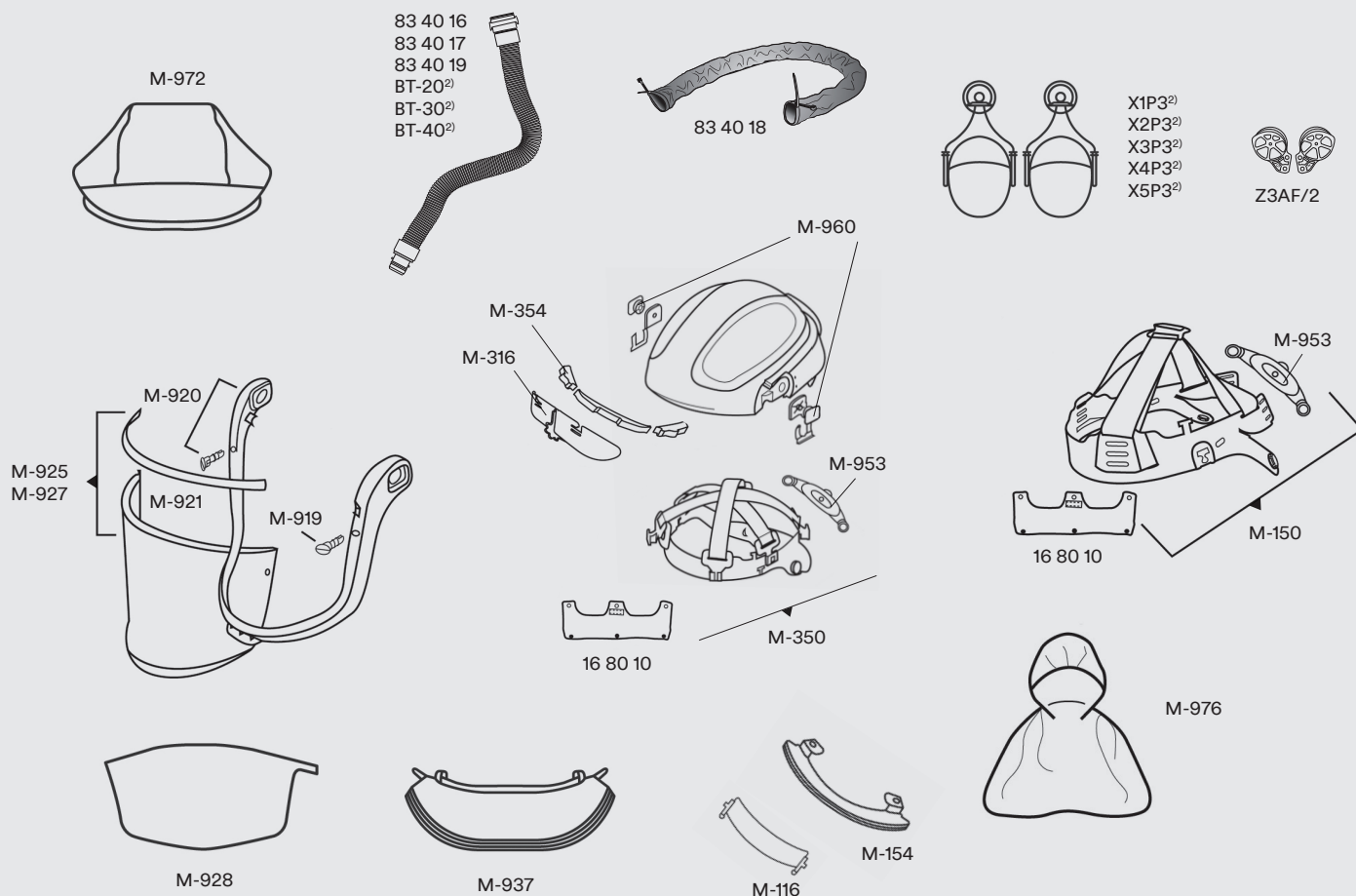
M-207



M-307



M-407



Part No	Description	Part No	Description	Part No	Description
16 80 10	Sweatband, fleecy cotton, pkg of 2.	BT-40 <sup>1)</sup>	Breathing tube, heavy-duty rubber, with QRS connection.	M-972	Flame resistant headtop cover.
83 40 16	Breathing tube, self-adjusting (52,5 to 85 cm), with QRS connection.	M-116	Airflow deflector.	M-976	Head, neck and shoulder cover.
83 40 17	Breathing tube, heavy-duty rubber, with QRS connection.	M-150	Head suspension.	X1P3	3M™ Peltor™ Earmuffs X1 (26 dB). <sup>2)</sup>
83 40 18	Flame resistant breathing tube cover.	M-154	Forehead seal.	X2P3	3M™ Peltor™ Earmuffs X2 (30 dB). <sup>2)</sup>
83 40 19	Breathing tube long QRS	M-316	Airflow deflector (M-307).	X3P3	3M™ Peltor™ Earmuffs X3 (32 dB). <sup>2)</sup>
85 77 20	Versaflor helmet M-307 with Adflo powered air purifying respirator.	M-350	Head suspension (M-307).	X4P3	3M™ Peltor™ Earmuffs X4 (32 dB). <sup>1)</sup>
BT-20 S&L <sup>1)</sup>	Breathing tube, polyurethane (in two lengths), with QRS connection.	M-354	Forehead seal (M-307).	X5P3	3M™ Peltor™ Earmuffs X5 (36 dB). <sup>1)</sup>
BT-30 <sup>1)</sup>	Breathing tube, self-adjusting (52,5 to 85 cm), with QRS connection.	M-919	Visor frame buttons.	Z3AF/2	Helmet assembly parts for Peltor X-series earmuffs, left and right.
		M-920	Visor frame.	M-207	Faceshield M-207.
		M-921	Visor gasket.	M-307	Helmet M-307.
		M-925	Visor standard (uncoated), molten metal splash protection to EN166.	M-407	Helmet with shroud M-407.
		M-927	Visor coated.		
		M-928	Peel-off visor cover.		
		M-937	Flame resistant face seal.		
		M-953	Ratchet.		
		M-956	Ratchet comfort pad.		
		M-960	Pivot kit.		

For powered air purifying respirator options, please see page 98–99. For supplied air regulator options, see page 100–101.

1) When the V-500E regulator is used with Versaflor headtops M-Series, the BT-Series breathing tubes must be used.

2) Please add assembly parts Z3AF/2 when ordering earmuffs for Versaflor Headtops M-Series.



# 3M™ Speedglas™ Welding Helmet Series G5-02



## 3M™ Welding Helmet G5-02

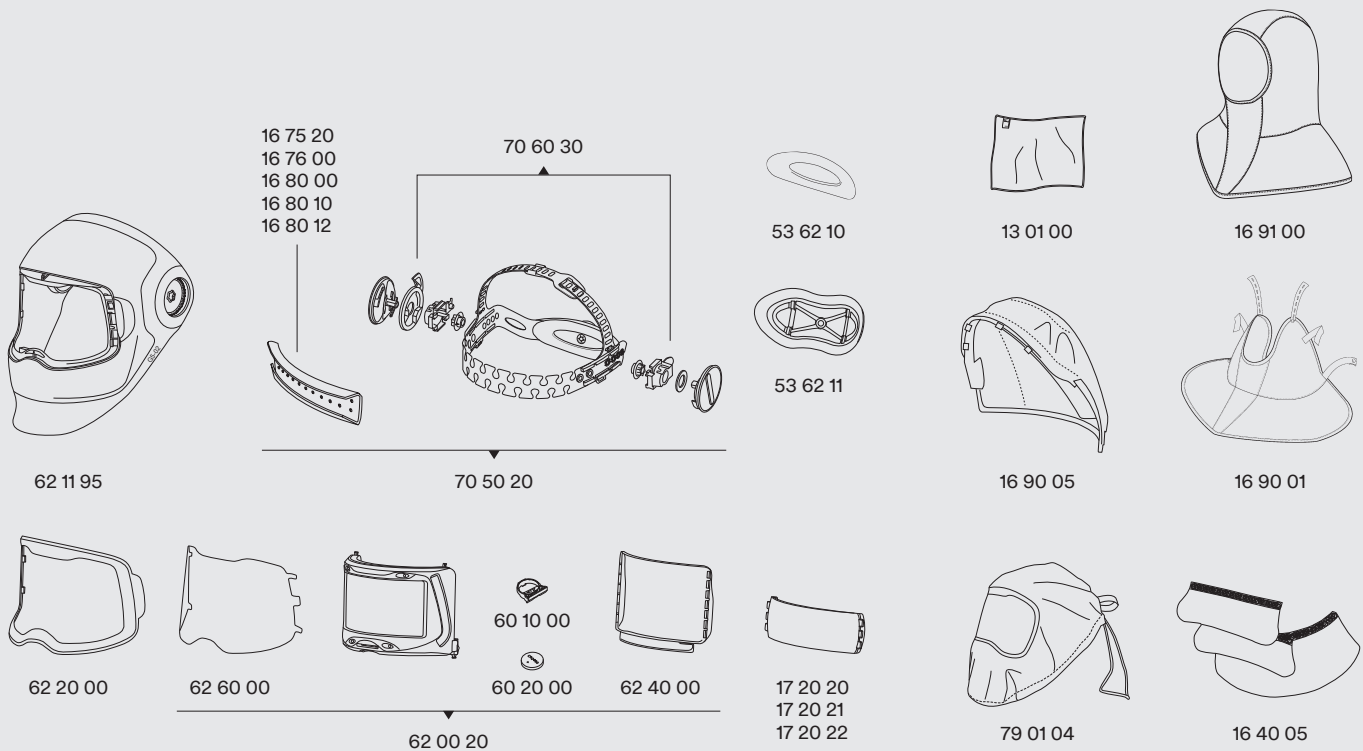
### Part No Description

**62 11 20** Including curved welding filter, headband, cleaning wipe and storage bag.

### Ready to experience the curved ADF?

Designed for high-end TIG welders, the G5-02 helmet literally sets a new world standard for precision ADF viewing. Be one of the first to experience 3M™ Speedglas™ Curved Glass Technology, order a complete helmet system.

### Spare parts & accessories for 3M™ Welding Helmets G5-02



Part No	Description	Part No	Description	Part No	Description
13 01 00	3M cleaning wipe.	16 91 00	Hood black/grey.	62 11 95	Helmet without welding filter, without headband, without front cover.
16 40 05	Ear and neck protection in leather (3 parts).	17 20 20	Magnifying lens x1.5	62 20 00	Front cover.
16 90 05	Head protection in fabric.	17 20 21	Magnifying lens x2.0	62 40 00	Inner protection plates, pkg of 2.
16 75 20	Sweatband, towelling, purple, pkg of 2.	17 20 22	Magnifying lens x2.5	62 60 00	Scratch resistant outer protection plate, pkg of 5.
16 76 00	Sweatband, towelling, pkg of 20.	53 62 10	Cushion part for headband	70 50 20	Headband with assembly parts and sweatband.
16 80 00	Sweatband, leather.	53 62 11	Large headrest (back pad)	70 60 30	Assembly parts (pivots) for headband.
16 80 10	Sweatband in fleecy cotton (length 24 cm), pkg of 2.	60 10 00	Battery holder.	79 01 04	Helmet storage bag.
16 80 12	Sweatband in fleecy cotton (length 21 cm), pkg of 2.	60 20 00	Battery CR2450 Lithium 3V.		
16 90 01	Neck protection.	62 00 20	Curved welding filter G5-02, incl inner and outer protection plates.		
		62 11 20	Helmet G5-02 with welding filter, headband, cleaning wipe and bag.		

# 3M™ Speedglas™ Welding Helmet 9100



50 18 26



50 18 00



50 00 26



50 00 01



50 00 05



50 00 15



50 00 25

## Helmets with side windows – auto-darkening filter

Part No	Description
50 18 15	With Speedglas welding filter 9100X (107×54 mm).
50 18 25	With Speedglas welding filter 9100XX (107×73 mm).
50 18 26	With Speedglas filter kit 9100XXi, incl welding filter and front cover 9100XXi (107×73 mm).

## Helmets without welding filter

Part No	Description
50 11 00	Welding helmet 9100 without side windows, with headband and silver front.
50 18 00	Welding helmet 9100 with side windows, headband and front cover.

## Welding filters

Part No	Description
50 00 01	Passive filter kit 9100 shade 11 (110×90 mm).
50 00 05	Auto-darkening filter 9100V, variable shade 5, 8, 9–13 (93×45 mm).
50 00 15	Auto-darkening filter 9100X, variable shade 5, 8, 9–13 (107×54 mm).
50 00 25	Auto-darkening filter 9100XX, variable shade 5, 8, 9–13 (107×73 mm).
50 00 26	Auto-darkening filter 9100XXi variable shade 5, 8, 9–13 (107×73 mm).



## 3M™ Speedglas™ Welding Filter Kit 9100XXi

Our welding filter with advanced optics and a specially designed front cover with external controls for grinding and memory modes. This complete kit (front cover and welding filter) is compatible with Speedglas welding helmet models 9100, 9100-Air and 9100-QR.

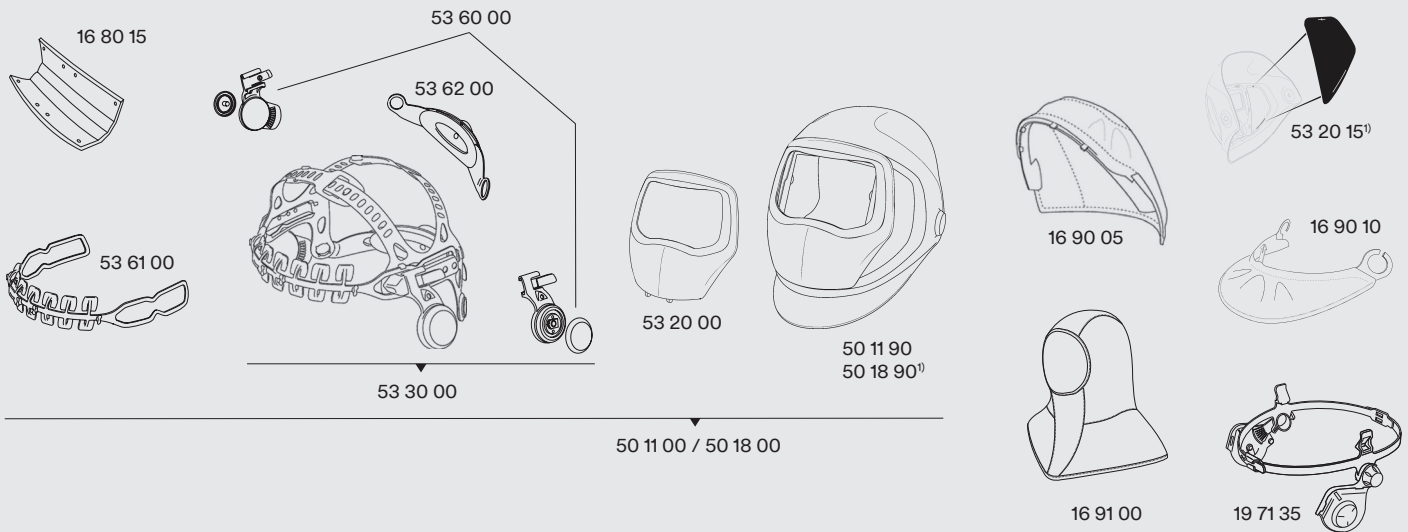
Read more about the 9100XXi welding filter [on page 61](#).



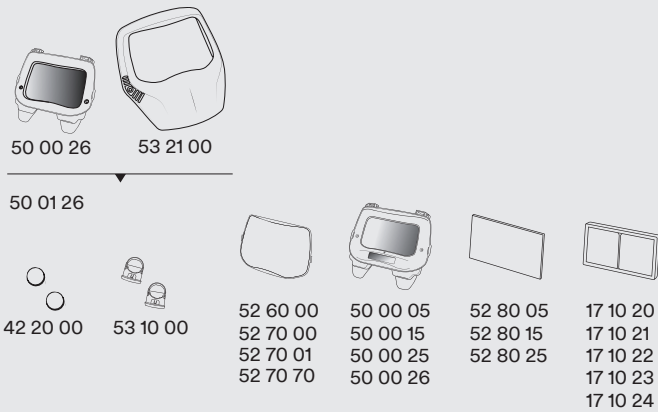
Part No:  
50 01 26 Welding filter and front cover 9100XXi



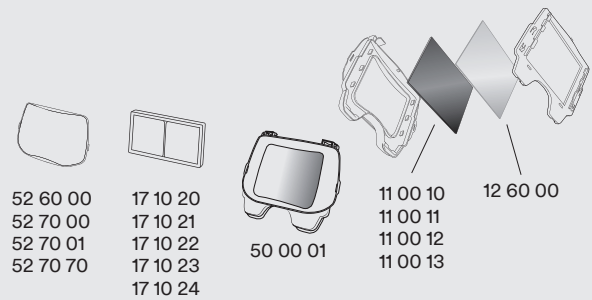
## Spare parts &amp; accessories for 3M™ Speedglas™ Welding Helmet 9100



## Auto-darkening Filter



## Passive Filter



Part No	Description	Part No	Description	Part No	Description
11 00 10	Passive welding filter lens shade 10 (110×90).	50 00 01	Speedglas passive welding filter kit 9100 (shade 11).	52 70 00	Outer protection plate scratch resistant, pkg of 10.
11 00 11	Passive welding filter lens shade 11 (110×90).	50 00 05	Speedglas welding filter 9100V.	52 70 01	Outer protection plate extra scratch resistant, pkg of 10.
11 00 12	Passive welding filter lens shade 12 (110×90).	50 00 15	Speedglas welding filter 9100X.	52 70 70	Outer protection plate heat resistant, pkg of 10.
11 00 13	Passive welding filter lens shade 13 (110×90).	50 00 25	Speedglas welding filter 9100XX.	52 80 05	Inner cover plate for 9100V filter, pkg of 5. Plate marking 117×50.
12 60 00	Inner cover plate for passive filter 9100.	50 00 26	Speedglas welding filter 9100XXi.	52 80 15	Inner cover plate for 9100X filter, pkg of 5. Plate marking 117×61.
16 80 15	Comfort sweatband, pkg of 3.	50 01 26	Speedglas welding filter kit 9100XXi (incl front cover and welding filter).	52 80 25	Inner cover plate for 9100XX filter, pkg of 5. Plate marking 117×77.
16 90 05	Head protection.	50 11 00	Welding helmet without side windows, with headband.	53 10 00	Battery holder, pkg of 2.
16 90 10	Neck protection.	50 11 90	Welding helmet without side windows, without headband, with front cover 9100.	53 20 00	Heat-reflecting front cover 9100.
16 91 00	Hood.	50 18 00	Welding helmet with side windows and headband, with front cover 9100.	53 20 15 <sup>1)</sup>	Side windows cover plate, 2 pairs.
17 10 20	Magnifying lens 1.0.	50 18 90 <sup>1)</sup>	Welding helmet with side windows, without headband, with front cover.	53 21 00	Heat-reflecting front cover 9100XXi.
17 10 21	Magnifying lens 1.5.	52 60 00	Outer protection plate standard, pkg of 10.	53 30 00	Headband with assembly parts.
17 10 22	Magnifying lens 2.0.			53 60 00	Pivot mechanism, left and right.
17 10 23	Magnifying lens 2.5.			53 61 00	Headband front part.
17 10 24	Magnifying lens 3.0.			53 62 00	Headband back part.
19 71 35	Safety helmet adapter 9100, with assembly parts.				
42 20 00	Battery, pkg of 2.				

1) Please use Part No 50 18 90 when new side windows are required.

# 3M™ Speedglas™ Welding Helmet 9100-QR



58 36 26



58 26 00



50 00 26



50 00 01



50 00 05



50 00 15



50 00 25

## Welding helmets – with 3M™ Safety Helmet H-701

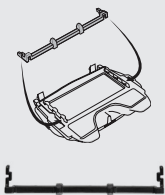
Part No	Description
58 36 15	With Speedglas welding filter 9100X, with rail and safety helmet (107×54 mm).
58 36 25	With Speedglas welding filter 9100XX (107×73 mm).
58 36 26	With Speedglas welding filter kit 9100XXi, incl welding filter (107×73 mm) and front cover 9100XXi.

## Welding helmets – without safety helmet

Part No	Description
58 26 00	With QR rail, without welding filter.
58 26 15	With QR rail and Speedglas welding filter 9100X.
58 26 25	With QR rail and Speedglas welding filter 9100XX (107×54 mm).
58 26 26	With QR rail and Speedglas welding filter kit 9100XXi and rail, incl welding filter (107×73 mm) and front cover.

## Alternative 3M™ Speedglas™ Welding Filters

Part No	Description
50 00 01	Passive filter kit 9100, shade 11 (110×90 mm).
50 00 05	Auto-darkening filter 9100V, variable shade 5, 8, 9–13 (93×45 mm).
50 00 15	Auto-darkening filter 9100X, variable shade 5, 8, 9–13 (107×54 mm).
50 00 25	Auto-darkening filter 9100XX, variable shade 5, 8, 9–13 (107×73 mm).
50 00 26	Auto-darkening filter 9100XXi variable shade 5, 8, 9–13 (107×73 mm).



### Distance bar

To avoid scratches on the larger welding filters (9100X, 9100XX, 9100XXi) when raising the welding helmet, we recommend using this distance bar (included when you buy a complete helmet with these welding filters). Also sold as spare part.

Part No 53 11 00



### Earmuff bar

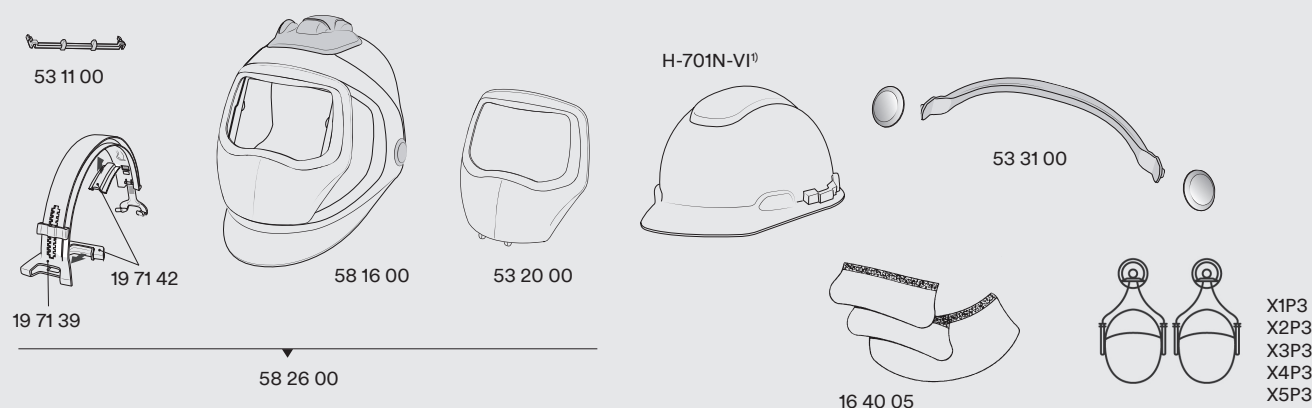
When using earmuffs, we recommend you to install this earmuff bar to widen the 9100-QR welding helmet.

Sold as separate accessory.

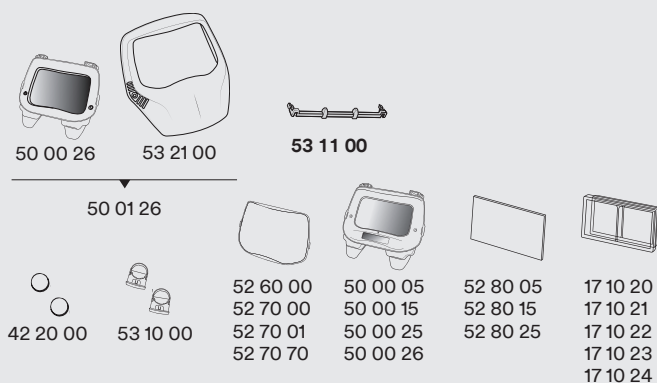
Part No 53 31 00



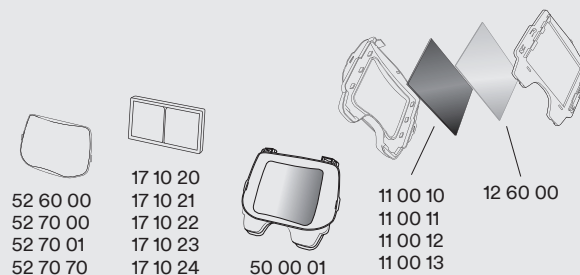
## Spare parts &amp; accessories for 3M™ Speedglas™ Welding Filters &amp; Helmet 9100-QR parts



## Auto-darkening Filter



## Passive Filter



Part No	Description	Part No	Description	Part No	Description
11 00 10	Passive welding filter lens shade 10.	52 60 00	Outer protection plate standard, pkg of 10.	53 31 00	Earmuff bar for Speedglas welding helmet 9100-QR.
11 00 11	Passive welding filter lens shade 11.	52 70 00	Outer protection plate scratch resistant, pkg of 10.	58 16 00	Welding helmet 9100-QR without rail, without welding filter, without safety helmet.
11 00 12	Passive welding filter lens shade 12.	52 70 01	Outer protection plate extra scratch resistant, pkg of 10.	58 26 00	Welding helmet 9100-QR with rail, without welding filter, without safety helmet.
11 00 13	Passive welding filter lens shade 13.	52 70 70	Outer protection plate heat resistant, pkg of 10.	H-701N-VI¹	3M™ Safety Helmet H-701R, white (unvented).
12 60 00	Inner cover plate for passive filter 9100.	52 80 05	Inner cover plate for 9100V filter, pkg of 5. Plate marking 117×50.	X1P3	3M™ Peltor™ Earmuffs X1 (26 dB) helmet attachment.
16 40 05	Ear and neck protection in leather.	52 80 15	Inner cover plate for 9100X filter, pkg of 5. Plate marking 117×61.	X2P3	3M™ Peltor™ Earmuffs X2 (30 dB) helmet attachment.
19 71 39	Quick release rail for safety helmet.	52 80 25	Inner cover plate for 9100XX filter, pkg of 5. Plate marking 117×77.	X3P3	3M™ Peltor™ EarMuffs X3 (32 dB) helmet attachment.
19 71 42	Rubber friction pads for quick release rail.	53 10 00	Battery holder for welding filter series 9100, pkg of 2.	X4P3	3M™ Peltor™ Earmuffs X4 (33 dB) helmet attachment.
42 20 00	Battery CR2032 Lithium 3V, pkg of 2.	53 11 00	Distance bar for welding filters 9100X, 9100XX and 9100XXi.	X5P3	3M™ Peltor™ Earmuffs X5 (36 dB) helmet attachment.
50 00 01	Speedglas passive welding filter kit 9100 (shade 11).	53 20 00	Heat-reflecting front cover 9100.		
50 00 05	Speedglas welding filter 9100V.	53 21 00	Heat-reflecting front cover for welding filter kit 9100XXi.		
50 00 15	Speedglas welding filter 9100X.				
50 00 25	Speedglas welding filter 9100XX.				
50 00 26	Speedglas welding filter 9100XXi.				
50 01 26	Speedglas welding filter kit 9100XXi (incl front cover and welding filter).				

1) Many alternative colours available, see page 84.

# 3M™ Speedglas™ Welding Helmet 9002NC



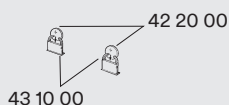
## Helmet with auto-darkening filter

Part No	Description
40 13 85	Welding helmet without side windows, with welding filter 9002NC, variable shade 8–12 (107×54 mm).

## Welding filter (only)

Part No	Description
40 00 85	3M™ Speedglas™ Welding Filter 9002NC, variable shade 8–12 (107×54 mm).

## Spare parts & accessories for 3M™ Speedglas™ Welding Helmet 9002NC

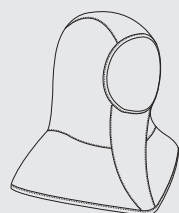


40 00 85	42 60 00	42 80 10	17 10 20
	42 70 00	42 80 30	17 10 21
	42 70 71	42 80 50	17 10 22
			17 10 23
			17 10 24

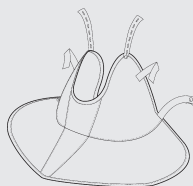
43 20 02



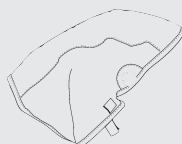
40 13 95



16 91 00



16 90 01

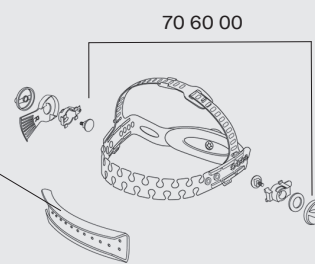


16 40 09



16 40 05

16 75 20  
16 76 00  
16 80 00  
16 80 10  
16 80 12



70 60 00

70 50 15

Part No	Description	Part No	Description	Part No	Description
16 40 05	Ear and neck protection in leather.	40 00 85	Speedglas welding filter 9002NC, shade 8–12.	42 80 50	Inner cover plate, +2 Shades, pkg of 5.
16 40 09	Head protection.	42 20 00	Battery CR2032 Lithium 3V, pkg of 2.	43 10 00	Battery cover, pkg of 2.
16 75 20	Sweatband towelling, pkg of 2.	42 30 00	Protective visor plate FlexView, pkg of 10.	43 20 02	Front cover
16 76 00	Sweatband towelling, pkg of 20.	42 60 00	Outer protection plate, standard, pkg of 10. Plate marking 42 01 50.	44 20 00	Front cover FlexView, silver.
16 80 00	Sweatband, leather.	42 70 00	Outer protection plate, scratch resistant, pkg of 10. Plate marking 42 01 00.	70 50 15	Headband with assembly parts.
16 80 10	Sweatband, fleecy cotton, pkg of 2.	42 70 71	Outer protection plate, heat resistant, pkg of 10. Plate marking 42 01 71 HEAT.	70 60 00	Assembly parts for headband.
16 90 01	Neck protection.	42 80 10	Inner cover plate pkg of 5. Plate marking 42 02 10.		
16 91 00	Hood.	42 80 30	Inner cover plate, +1 Shade, pkg of 5.		
17 10 20	Magnifying lens 1.0.				
17 10 21	Magnifying lens 1.5.				
17 10 22	Magnifying lens 2.0.				
17 10 23	Magnifying lens 2.5.				
17 10 24	Magnifying lens 3.0.				
19 71 40	Holder for welding filter (FlexView).				
40 13 95	Welding helmet 9000, without Side windows, without front, without headband, without filter.				



# 3M™ Speedglas™ Welding Helmet SL



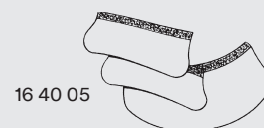
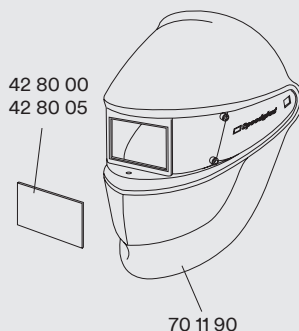
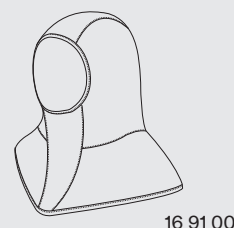
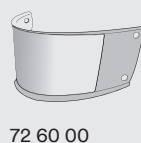
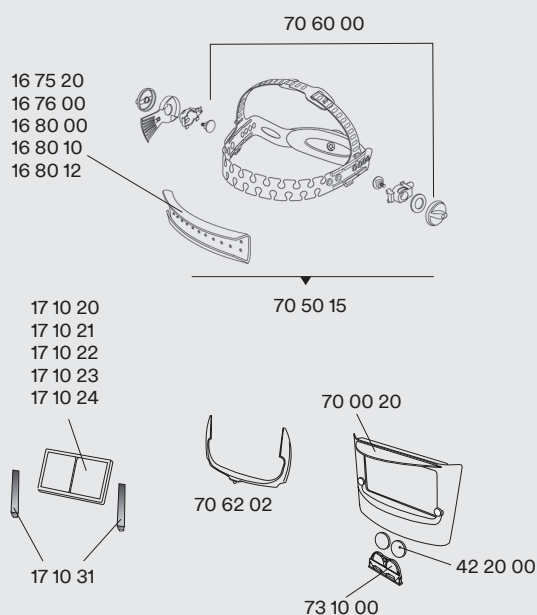
## Helmet with auto-darkening filter

Part No	Description
70 11 20	Welding helmet SL with welding filter, variable shade 8–12 (93×42 mm).

## Welding filter (only)

Part No	Description
70 00 20	3M™ Speedglas™ Welding Filter SL, variable shade 8–12 (93×42 mm).

## Spare parts & accessories for 3M™ Speedglas™ Welding Helmet SL



Part No	Description	Part No	Description	Part No	Description
16 40 05	Ear and neck protection in leather (3 parts).	17 10 20	Magnifying lens 1.0.	70 11 90	Welding helmet, without headband.
16 75 20	Sweatband, towelling, purple, pkg of 2.	17 10 21	Magnifying lens 1.5.	70 50 15	Headband with assembly parts.
16 76 00	Sweatband, towelling, pkg of 20.	17 10 22	Magnifying lens 2.0.	70 60 00	Assembly parts for headband.
16 80 00	Sweatband, leather.	17 10 23	Magnifying lens 2.5.	70 62 02	Filter locking frame, pkg of 2.
16 80 10	Sweatband, fleecy cotton, pkg of 2.	17 10 24	Magnifying lens 3.0.	72 60 00	Outer protection plate, standard, pkg of 5. Plate marking 030226.
16 80 12	Sweatband, fleecy cotton, pkg of 2.	17 10 31	Holder for magnifying lens.	73 10 00	Battery cover.
16 90 01	Neck protection.	42 20 00	Battery CR2032 Lithium 3V, pkg of 2.		
16 91 00	Hood black/grey.	42 80 00	Inner cover plate pkg of 5. Plate marking 42 02 00.		
		42 80 05	42 80 00, pkg of 200.		
		70 00 20	Speedglas welding filter SL.		

# 3M™ Speedglas™ Welding Helmet Series 100/100-QR



75 11 20



78 35 20



75 00 14



75 11 20

## 3M™ Speedglas™ Welding Helmet 100 (black)

Part No	Description
75 11 01	With passive welding filter, shade 11.
75 11 14	With Speedglas welding filter 100B, variable shade 10–12 (93×44 mm).
75 11 20	With Speedglas welding filter 100V, variable shade 8–12 (93×44 mm).
75 11 90	Without welding filter, without headband.

## 3M™ Speedglas™ Welding Helmet 100-QR

Part No	Description
78 25 20	Welding helmet 100-QR with welding filter 100V, without safety helmet, with QR rail.
78 35 20	Welding helmet 100-QR with 3M safety helmet H-701R QR rail and welding filter 100V (93×44 mm).

## Alternative 3M™ Speedglas™ Welding Filters

Part No	Description
75 00 14	Auto-darkening filter 100B, variable shade 10–12 (93×44 mm).
75 00 20	Auto-darkening filter 100V, variable shade 8–12 (93×44 mm).



### Skull helmet

Part No	Description
75 28 20	With filter 100V.



### Motor helmet

Part No	Description
75 29 20	With filter 100V.



### Ice Hot helmet

Part No	Description
75 25 20	With filter 100V.



### Xterminator helmet

Part No	Description
75 22 20	With filter 100V.



### Razor Dragon helmet

Part No	Description
75 24 20	With filter 100V.



### Aces High helmet

Part No	Description
75 17 20	With filter 100V.



### Trojan Warrior helmet

Part No	Description
75 16 20	With filter 100V.

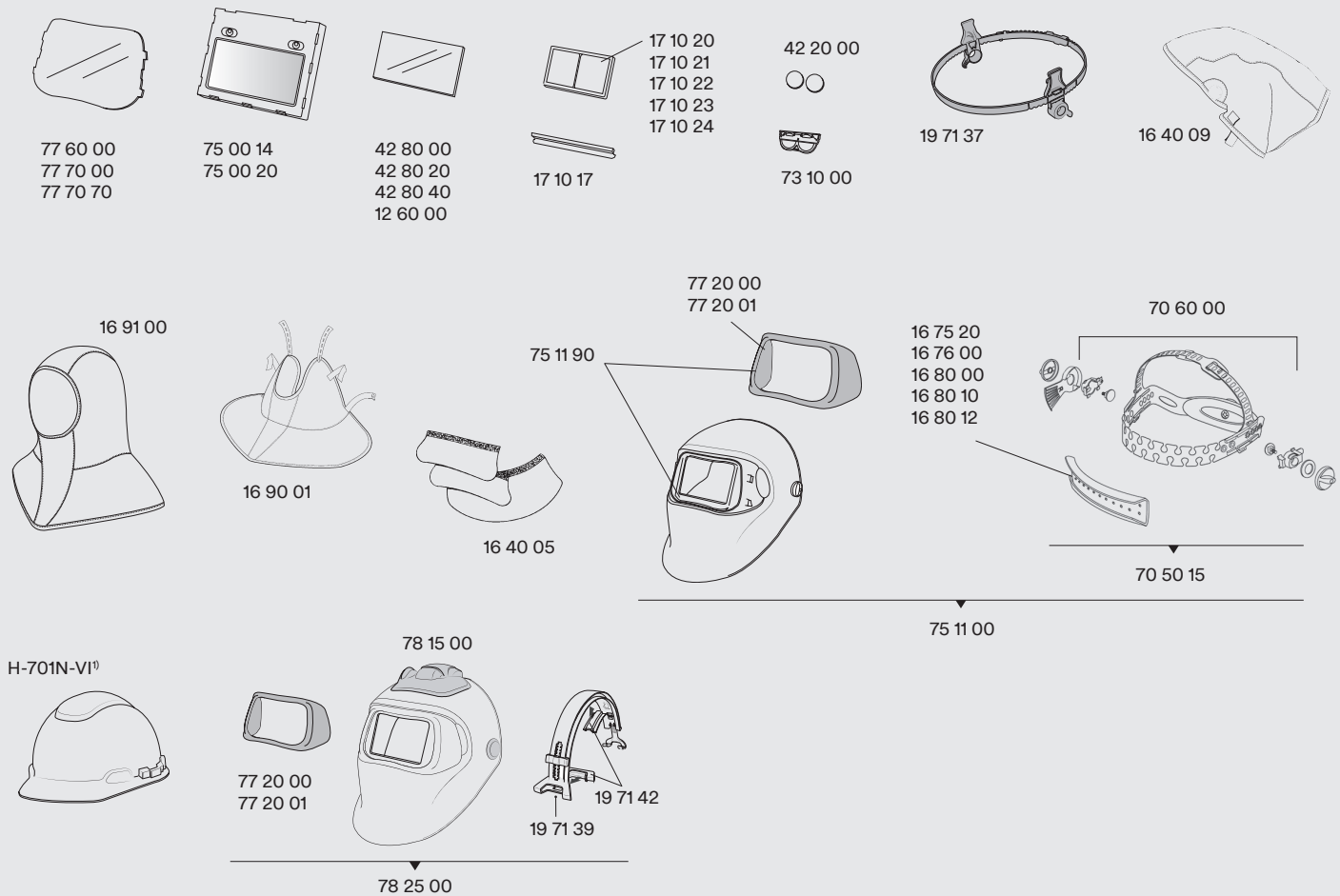


### Blaze helmet

Part No	Description
75 12 20	With filter 100V.




## Spare parts &amp; accessories for 3M™ Speedglas™ Welding Helmet Series 100/100-QR



Part No	Description	Part No	Description	Part No	Description
<b>12 60 00</b>	Inner cover plate for 100 passive filter.	<b>19 71 43</b>	Pivot cover plate kit for quick release welding helmets (QR), pkg of 2.	<b>77 20 00</b>	Front frame, silver.
<b>16 40 05</b>	Ear and neck protection in leather.	<b>42 20 00</b>	Battery CR2032 Lithium 3V, pkg of 2.	<b>77 20 01</b>	Front frame, black.
<b>16 40 09</b>	Head protection.	<b>42 80 00</b>	Inner cover plate, pkg of 5.	<b>77 60 00</b>	Outer protection plate, standard, pkg of 10.
<b>16 75 20</b>	Sweatband, towelling purple, pkg of 2.	<b>42 80 20</b>	Inner cover plate, +1 shade, pkg of 5.	<b>77 70 00</b>	Outer protection plate, scratch resistant, pkg of 10.
<b>16 76 00</b>	Sweatband, towelling purple, pkg of 20.	<b>42 80 40</b>	Inner cover plate, +2 shade, pkg of 5.	<b>77 70 70</b>	Outer protection plate, heat resistant, pkg of 10.
<b>16 80 00</b>	Sweatband, leather.	<b>70 50 15</b>	Headband with assembly parts.	<b>78 15 00</b>	Welding helmet 100-QR without rail, without filter, without safety helmet.
<b>16 80 10</b>	Sweatband, fleecy cotton, pkg of 2.	<b>70 60 00</b>	Assembly parts for headband.	<b>78 25 00</b>	Welding helmet 100-QR with rail, without welding filter, without safety helmet.
<b>16 80 12</b>	Sweatband, fleecy cotton (short), pkg of 2.	<b>73 10 00</b>	Battery cover.	<b>78 35 20</b>	Welding helmet 100-QR with rail and 3M™ Safety Helmet H-701R with filter 100V.
<b>16 90 01</b>	Neck protection.	<b>75 00 14</b>	Speedglas welding filter 100B, variable shade 10–12.	<b>H-701N-VI<sup>1)</sup></b>	White 3M™ Safety Helmet H-701R (unvented), with ratchet suspension.
<b>16 91 00</b>	Hood.	<b>75 00 20</b>	Speedglas welding filter 100V, variable shade 8–12.		
<b>17 10 17</b>	Holder for magnifier (older models of welding filters).	<b>75 05 11</b>	Speedglas 100 passive kit: 110×90 mm passive welding filter shade 11, inner cover plate, outer protection plate and filter frame (not shown).		
<b>17 10 20</b>	Magnifying lens 1.0.	<b>75 11 00</b>	100 welding helmet black, without filter, with headband.		
<b>17 10 21</b>	Magnifying lens 1.5.	<b>75 11 90</b>	100 welding helmet black, without filter, without headband.		
<b>17 10 22</b>	Magnifying lens 2.0.				
<b>17 10 23</b>	Magnifying lens 2.5.				
<b>17 10 24</b>	Magnifying lens 3.0.				
<b>19 71 37</b>	Safety helmet adapter (loop), with assembly parts.				
<b>19 71 39</b>	Quick release rail for safety helmet.				
<b>19 71 42</b>	Rubber friction pads for quick release rail.				

1) Many alternative colours available, see page 84.



# Legacy products and replacement parts



# 3M™ Welding Helmets 10V/10-QR



## 3M™ Welding Helmet 10V

Part No	Description
10 11 01	with welding filter 10V, variable shade 10-12 (93×44 mm).



## 3M™ Welding Helmet 10-QR

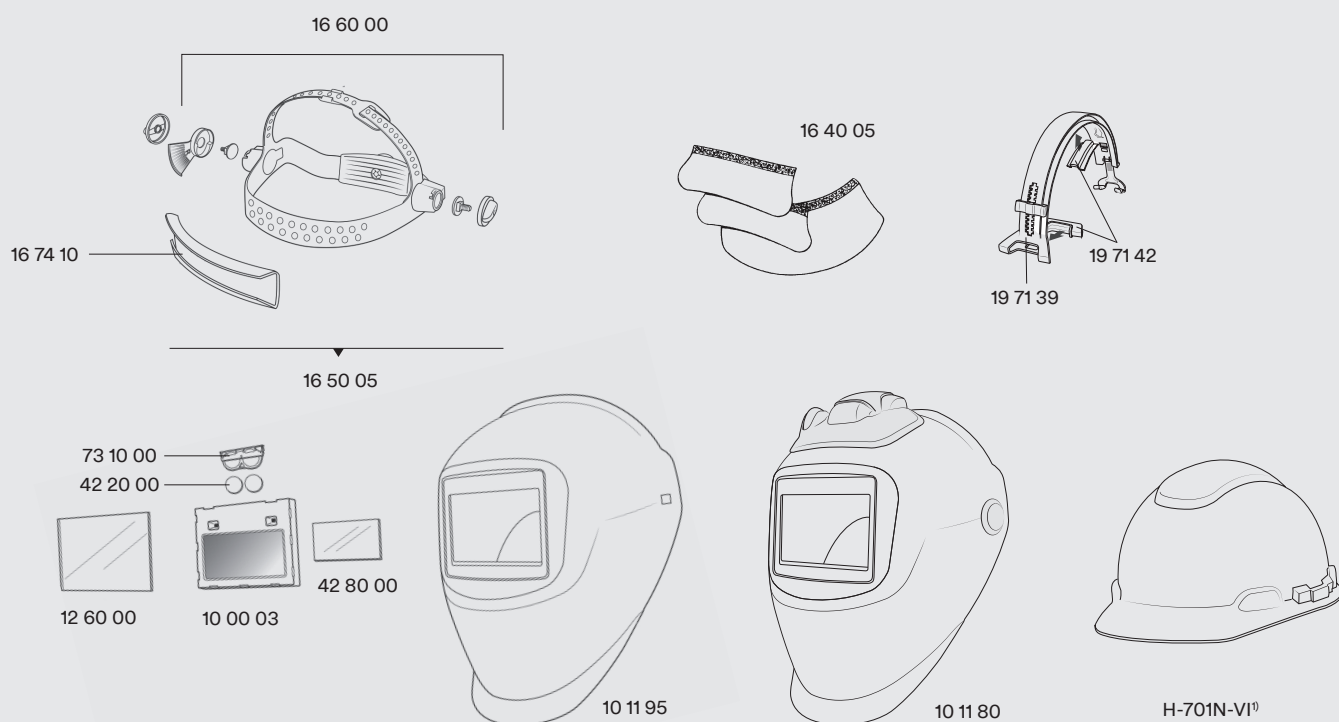
Part No	Description
10 11 03	With welding filter 10V, QR rail and 3M™ Safety Helmet H-701



## 3M™ Welding Filter 10V

Part No	Description
10 00 03	Welding filter 10V, variable shade 10-12 (93×44 mm).

### Spare parts & accessories for 3M™ Welding Helmets 10V/10-QR



Part No	Description	Part No	Description	Part No	Description
10 00 03	3M welding filter 10V, shade 10-12.	16 50 05	Headband with assembly parts.	42 80 00	Inner cover plate pkg of 5. Plate marking 42 02 00.
10 11 80	Welding helmet 10-QR, without filter, without safety helmet.	16 60 00	Assembly parts for headband.	73 10 00	Battery cover.
10 11 95	Welding helmet 10V without headband, without welding filter.	16 74 10	Sweatband.	H-701N-VI <sup>1)</sup>	White 3M™ Safety Helmet H-701R (unvented), with ratchet suspension.
12 60 00	Outer protection plate.	19 71 39	Quick release rail for safety helmet.		
16 40 05	Ear and neck protection in leather (3 parts).	19 71 42	Rubber friction pads for quick release rail.		
		42 20 00	Battery CR2032 Lithium 3V, pkg of 2.		

1) Many alternative colours available, see page 84.

# 3M™ Speedglas™ Welding Helmet 9100 FX-Air



54 77 25



54 88 00



50 00 26



50 00 01



50 00 05



50 00 15



50 00 25

## Helmet systems with powered air

Part No	Description
54 77 00 <sup>1)</sup>	Without welding filter, with Adflo powered air purifying respirator.
54 77 26 <sup>1)</sup>	With Speedglas welding filter kit 9100XXi, incl welding filter (107×73 mm) and front cover, with Adflo powered air purifying respirator.

## Helmet systems with supplied air

Part No	Description
54 88 00 <sup>1)</sup>	Without welding filter, with Versaflo supplied air regulator V-500E.
Please note, supplied air regulators with heating or cooling (V-100/V-200) only as separate order (not as system), see page 100–101.	

## Alternative 3M™ Speedglas™ Welding Filters

Part No	Description
50 00 01	Passive filter kit 9100 (110×90 mm), shade 11.
50 00 05	Auto-darkening filter 9100V (93×45 mm), variable shade 5, 8, 9–13.
50 00 15	Auto-darkening filter 9100X (107×54 mm), variable shade 5, 8, 9–13.
50 00 25	Auto-darkening filter 9100XX (107×73 mm), variable shade 5, 8, 9–13.
50 00 26	Auto-darkening filter 9100XXi (107×73 mm), variable shade 5, 8, 9–13.

## Maintenance tips for 3M™ Speedglas™ Welding Helmet 9100 FX-Air

Subscribe to our YouTube channel to learn more about product features and maintenance. A few examples:



Scan QR-code or use this URL:

[www.youtube.com/3MSpeedglas](https://www.youtube.com/3MSpeedglas)



It is important that the face seal is correctly mounted and fitted to provide the anticipated protection factor.



Is your clear visor not so clear anymore, after periods of frequent grinding? From our YouTube channel you will learn how to replace it.

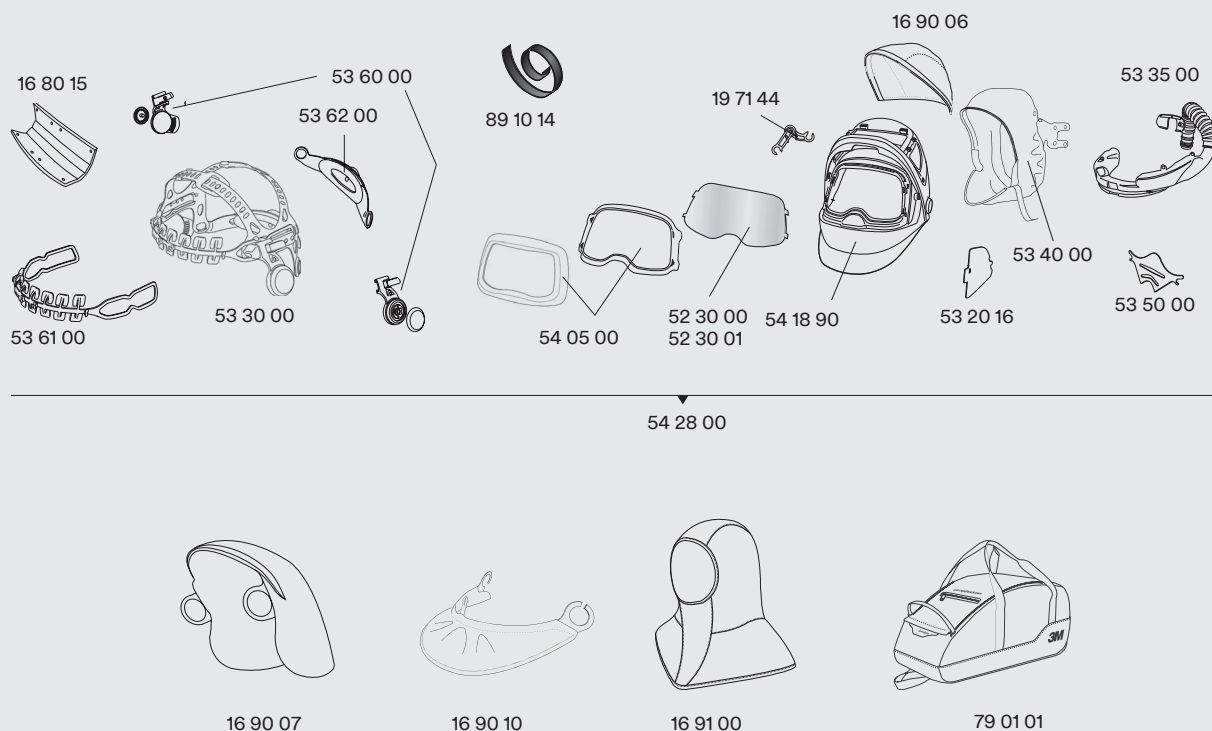


If you need additional protection for your head, find out on our channel how to assemble the head cover for additional protection against sparks.

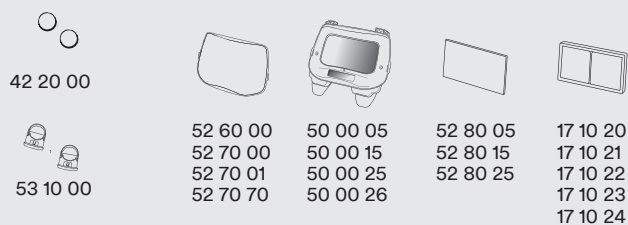
<sup>1)</sup> With storage bag (79 01 01)



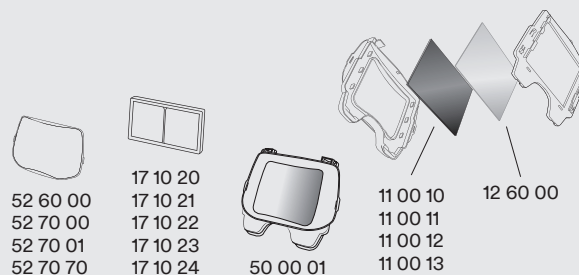
## Spare parts &amp; accessories for 3M™ Speedglas™ Welding Helmet 9100 FX-Air



## Auto-darkening Filter



## Passive Filter



Part No	Description	Part No	Description	Part No	Description
16 80 15	Comfort sweatband, pkg of 3.	52 30 01	Visor plate, anti-fog, pkg of 5.	53 30 00	Headband with assembly parts.
16 90 06	Head protection, (small).	52 60 00	Outer protection plate, standard, pkg of 10.	53 35 00	Air duct.
16 90 07	Head protection, (large).	52 70 00	Outer protection plate scratch resistant, pkg of 10.	53 40 00	Face seal.
16 90 10	Neck protection.	52 70 01	Outer protection plate extra scratch resistant, pkg of 10.	53 50 00	Air deflector parts.
16 91 00	Hood.	52 70 70	Outer protection plate, heat resistant, pkg of 10.	53 60 00	Pivot mechanism, left and right.
17 10 20	Magnifying lens 1.0.	52 80 05	Inner cover plate for 9100V filter, pkg of 5. Plate marking 117×50.	53 61 00	Headband, front part.
17 10 21	Magnifying lens 1.5.	52 80 15	Inner cover plate for 9100X filter, pkg of 5. Plate marking 117×61.	53 62 00	Headband, back part.
17 10 22	Magnifying lens 2.0.	52 80 25	Inner cover plate for 9100XX/9100XXi filters, pkg of 5. Plate marking 117×77.	54 05 00	Front cover kit.
17 10 23	Magnifying lens 2.5.	53 10 00	Battery holder, pkg of 2.	54 18 90	Helmet without welding filter, without face seal, without air duct, without headband.
17 10 24	Magnifying lens 3.0.	53 20 16	Side windows cover plate, 2 pairs.	54 28 00	Helmet without welding filter, with headband.
19 71 44	Hinge mechanism, 2 pcs			79 01 01	Product storage bag.
42 20 00	Battery CR2032 Lithium 3V, pkg of 2.			89 10 14	Velcro for head cover, pkg of 2.
50 00 05	Speedglas welding filter 9100V.			89 10 15	9100 FX Air service kit (not shown).
50 00 15	Speedglas welding filter 9100X.				
50 00 25	Speedglas welding filter 9100XX.				
50 00 26	Speedglas welding filter 9100XXi.				
52 30 00	Visor plate, standard, pkg of 5.				

# 3M™ Speedglas™ Welding Helmet 9100 FX



50 00 26



50 00 01



50 00 05



50 00 15



50 00 25

### Helmets with side windows – and auto-darkening filter

Part No	Description
54 18 15	With Speedglas welding filter 9100X (107×54 mm).
54 18 25	With Speedglas welding filter 9100XX (107×73 mm).
54 18 26	With Speedglas welding with filter 9100XXi (107×73 mm).

### Helmet without welding filter

Part No	Description
54 18 00	Welding helmet 9100 FX with side windows, headband and front cover.

### Alternative 3M™ Speedglas™ Welding Filters

Part No	Description
50 00 01	Passive filter kit 9100 shade 11 (110×90 mm).
50 00 05	Auto-darkening filter 9100V, variable shade 5, 8, 9–13 (93×45 mm).
50 00 15	Auto-darkening filter 9100X, variable shade 5, 8, 9–13 (107×54 mm).
50 00 25	Auto-darkening filter 9100XX, variable shade 5, 8, 9–13 (107×73 mm).
50 00 26	Auto-darkening filter 9100XXi variable shade 5, 8, 9–13 (107×73 mm).

## Passive filters combined in flip-up helmets

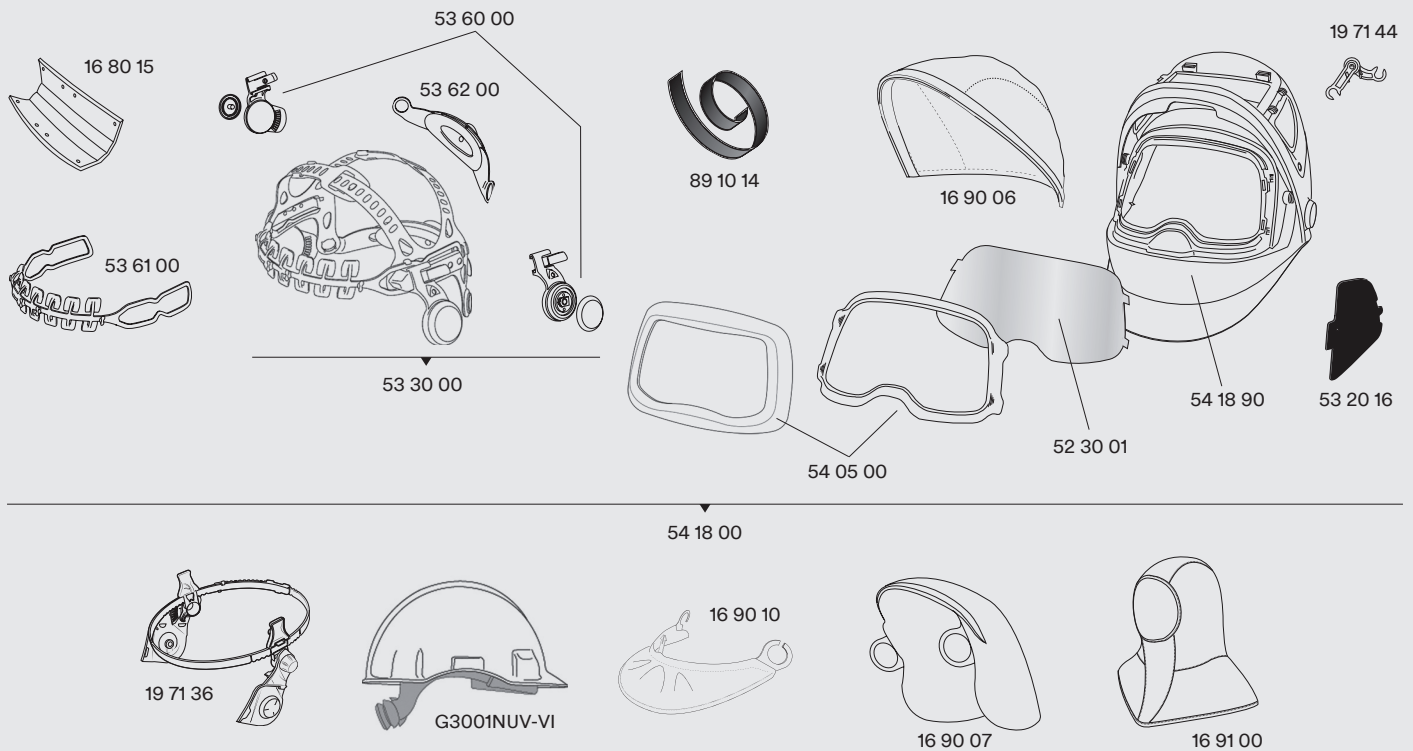
With the 3M™ Speedglas™ Flip-up Welding Helmets, the side windows offer additional peripheral welding vision. Now also compatible with passive welding filters appropriate for long, continuous welds and less sensitive to humidity and heat.

Excellent low-cost options for large, 110 × 90 mm welding viewing area. And you can easily upgrade to a high performance Speedglas auto-darkening filter at any time.

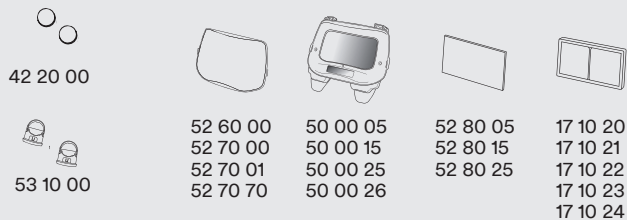




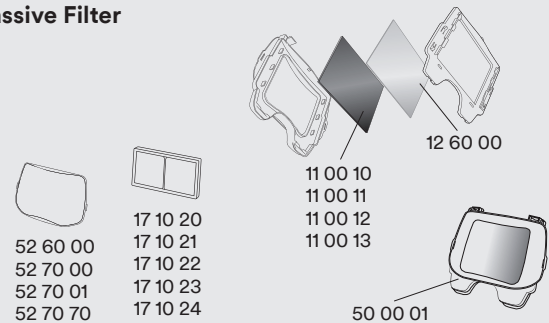
## Spare parts &amp; accessories for 3M™ Speedglas™ Welding Helmet 9100 FX




## Auto-darkening Filter



## Passive Filter



Part No	Description	Part No	Description	Part No	Description
11 00 10	Passive welding filter lens shade 10.	50 00 05	Speedglas welding filter 9100V.	53 60 00	Pivot mechanism, left and right.
11 00 11	Passive welding filter lens shade 11.	50 00 15	Speedglas welding filter 9100X.	53 61 00	Headband front part.
11 00 12	Passive welding filter lens shade 12.	50 00 25	Speedglas welding filter 9100XX.	53 62 00	Headband back part.
11 00 13	Passive welding filter lens shade 13.	50 00 26	Speedglas welding filter 9100XXi.	54 05 00	Front cover kit.
12 60 00	Inner cover plate for passive filter 9100.	52 30 01	Visor plate anti-fog, pkg of 5.	54 18 00	Welding helmet, without welding filter, with headband.
16 80 15	Comfort sweatband, pkg of 3.	52 60 00	Outer protection plate, standard, pkg of 10.	54 18 90	Welding helmet, without welding filter, without headband.
16 90 06	Head protection (small).	52 70 00	Outer protection plate scratch resistant, pkg of 10.	89 10 14	Velcro for Headcover, pkg of 2.
16 90 07	Head protection (large).	52 70 01	Outer protection plate extra scratch resistant, pkg of 10.	53 62 00	Headband back part.
16 90 10	Neck protection, black.	52 70 70	Outer protection plate, heat resistant pkg of 10.	G3001NUV-VI	3M™ Safety Helmet G3001, white (unvented).
16 91 00	Hood, black/grey.	52 80 05	Inner cover plate for 9100V filter, pkg of 5. Plate marking 117×50.		
17 10 20	Magnifying lens 1.0.	52 80 15	Inner cover plate for 9100X filter, pkg of 5. Plate marking 117×61.		
17 10 21	Magnifying lens 1.5.	52 80 25	Inner cover plate for 9100XX filter, pkg of 5. Plate marking 117×77.		
17 10 22	Magnifying lens 2.0.	53 10 00	Battery holder, pkg of 2.		
17 10 23	Magnifying lens 2.5.	53 20 16	Side windows cover plate, 2 pairs.		
17 10 24	Magnifying lens 3.0.	53 30 00	Headband with assembly parts.		
19 71 36	Safety helmet adapter 9100FX, with assembly parts.				
19 71 44	Hinge mechanism, 2 pcs				
42 20 00	Battery CR2032 Lithium 3V, pkg of 2.				
50 00 01	Speedglas passive welding filter kit 9100 (shade 11).				



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# Share your welding selfies!

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# Ongoing customer support

To help keep your equipment working as it should, and to ensure you get the most from your investment, our support team at 3M is able to offer assistance on several levels:

## Care & Maintenance Posters

Guidance on the appropriate maintenance checks is provided in the User Instructions supplied with all new equipment. Our Care & Maintenance Posters make this information available on a day-to-day basis and are a strong visual reminder.

## Welding Specialists

Based across your country and supporting our 3M distributor network, our welding specialists have a sound understanding of national health and safety laws coupled with years of experience in the welding market.

## Helpline

3M has local helplines for any technical queries. For further details find your local contact information at [www.3M.com](http://www.3M.com).

All the support material can be downloaded and printed. Just visit: [www.3M.com](http://www.3M.com) (select your country and then Speedglas brand).



## ⚠ WARNING

Product standards determine what type and level of protection is provided. Check the technical information and product markings to determine the product standard. This information should be considered but not in isolation when consulting your risk assessment. Always consider local regulation and requirements. The result of the risk assessment should determine if the PPE is an appropriate control. For more information see the user instructions or contact 3M for technical support.



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