

3M™ Speedglas™ Welding Safety  
Product Catalog 2012/2013



 **Speedglas™**



# Precision in Action

The Power to Protect Your World<sup>SM</sup>

**3M**

# You're Our Director... and Your Thoughts Guide Us

You have strong opinions about tools that cover your face and eyes for hours at a time. Tools that can even feed you the air you breathe.

Well ... you're in charge.

Whether you're aware of it or not, you and scores of other welders guide us. You talk to us by Facebook, by email, through distributors, and by informal and formal surveys.

We listen. We watch. Then we ask, "what if ...?"

We ask "what if ...?" throughout the day. What if ... we changed the geometry of our helmets to increase their viewing area in every direction?

What if ...

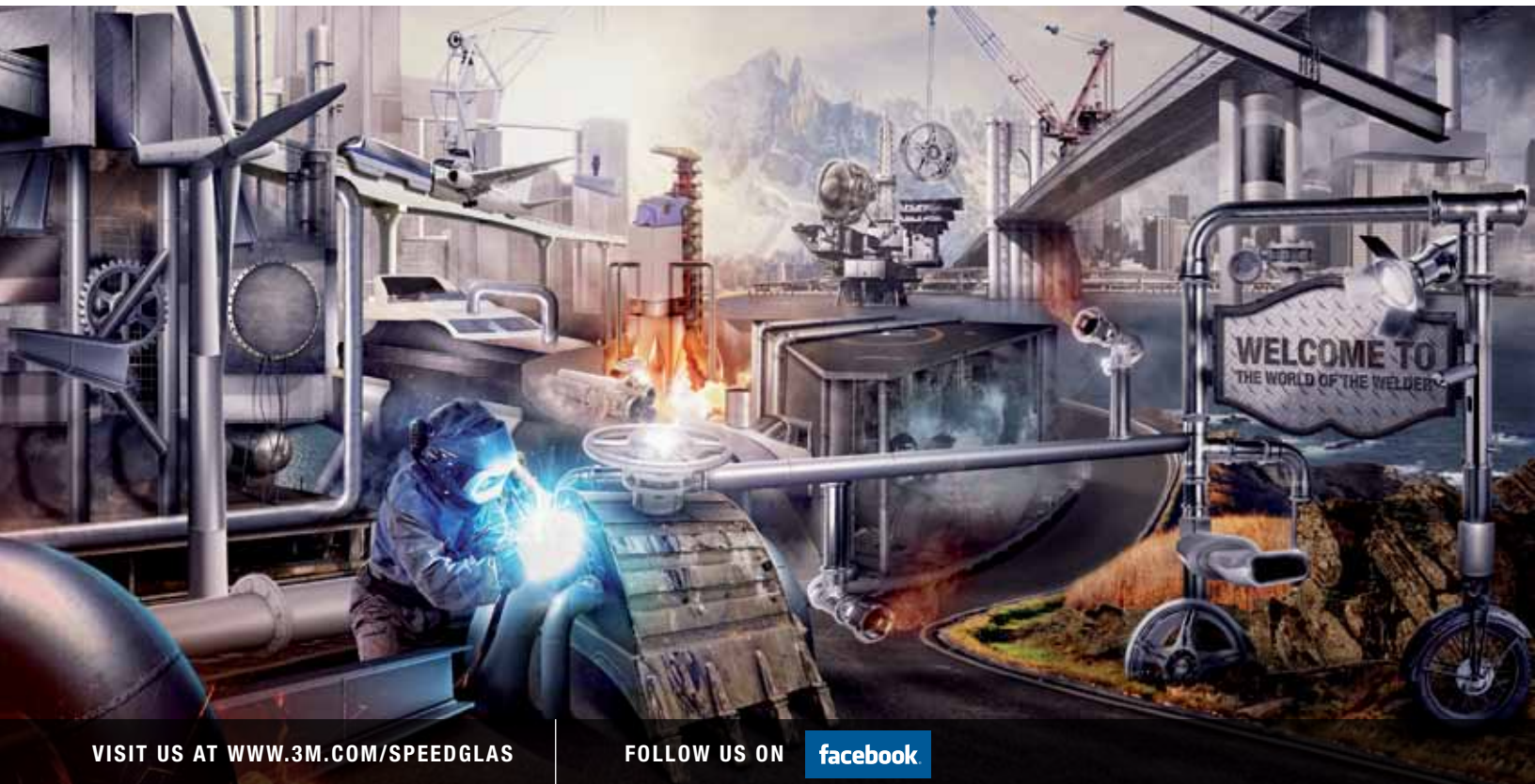
our respirators could handle even harsher environments?

What if ... what if ...?

**WHAT IF  
...?**



Just as hundreds of thousands of users rely on the 3M Speedglas brand for their best welding performance, 3M relies on welders' feedback for its future product innovations.



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## Welding Helmets and Headgear

3M™ Speedglas™ Welding Helmet 9100 Series	6
3M™ Speedglas™ Welding Helmet SL	16
3M™ Speedglas™ Welding Helmet 100 Series	18
3M™ Speedglas™ Welding Helmet 9000 Series	22
3M™ Speedglas™ Welding Helmet with Hard Hat	22
3M™ Headgear L-Series SG	24

## Respiratory Protection Air Sources

3M™ Adflo™ Powered Air Purifying Respirator	26
3M™ Speedglas™ Fresh-air III Supplied Air Regulator	29

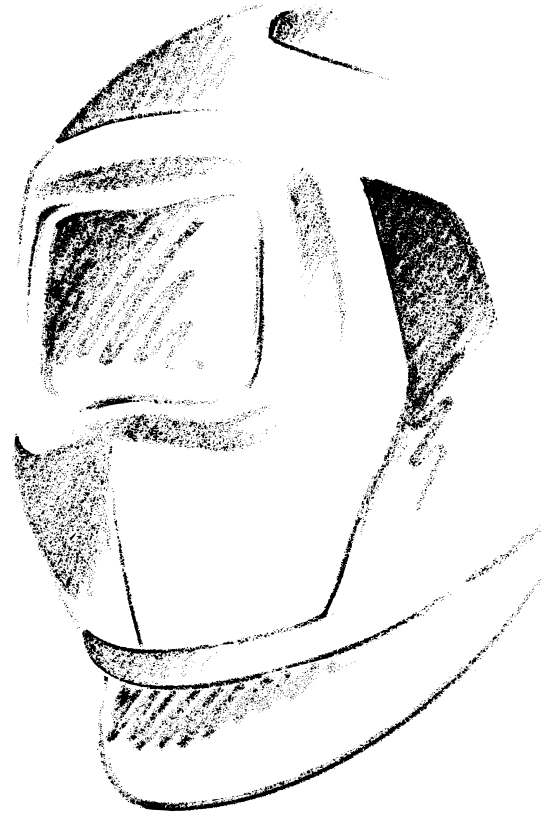
Frequently Asked Questions	31
Parts Directory	40
Care and Maintenance	60
Technical Specifications	61
Product Index	64



# Ergonomics Are Our Passion, And Your Lifeline

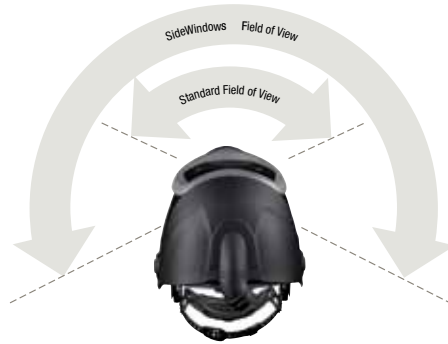
More than 35 years ago, we went to the shipyards of Sweden to observe welders. They blindly struck arcs as they continually nodded their helmets down. They were accidentally flashed by other welders — or even themselves. We asked, “What if ... welders could always see, even with their helmets down?”

Since then, we’ve been systematically addressing the welding ergonomic challenges you face.



### Unprecedented Vision:

We started with being the first to introduce an auto-darkening welding filter, but we didn't stop there. Today, our welding filters are unsurpassed in their optical acuity and low angle dependence.



### Peripheral Vision:

Reduce “tunnel vision”...try a 3M™ Speedglas™ Welding Helmet with side windows and see what you're missing!



### “Breathable” Helmets:

Aerodynamic vents that allow stale, exhaled air to freely exit the helmet to help reduce heat, humidity and fogging.



### Welding Helmet Design:

Helmets made for tough environments.



### Respiratory Protection:

Designed just for welders — and not merely carted over from some bulky industrial respirator design.



### Ultimate Comfort:

The stability and balance of the 3M™ Speedglas™ Welding Helmet Series 9100 will change how you experience welding.

# 3M — Your Expert Supplier of Personal Protective Equipment

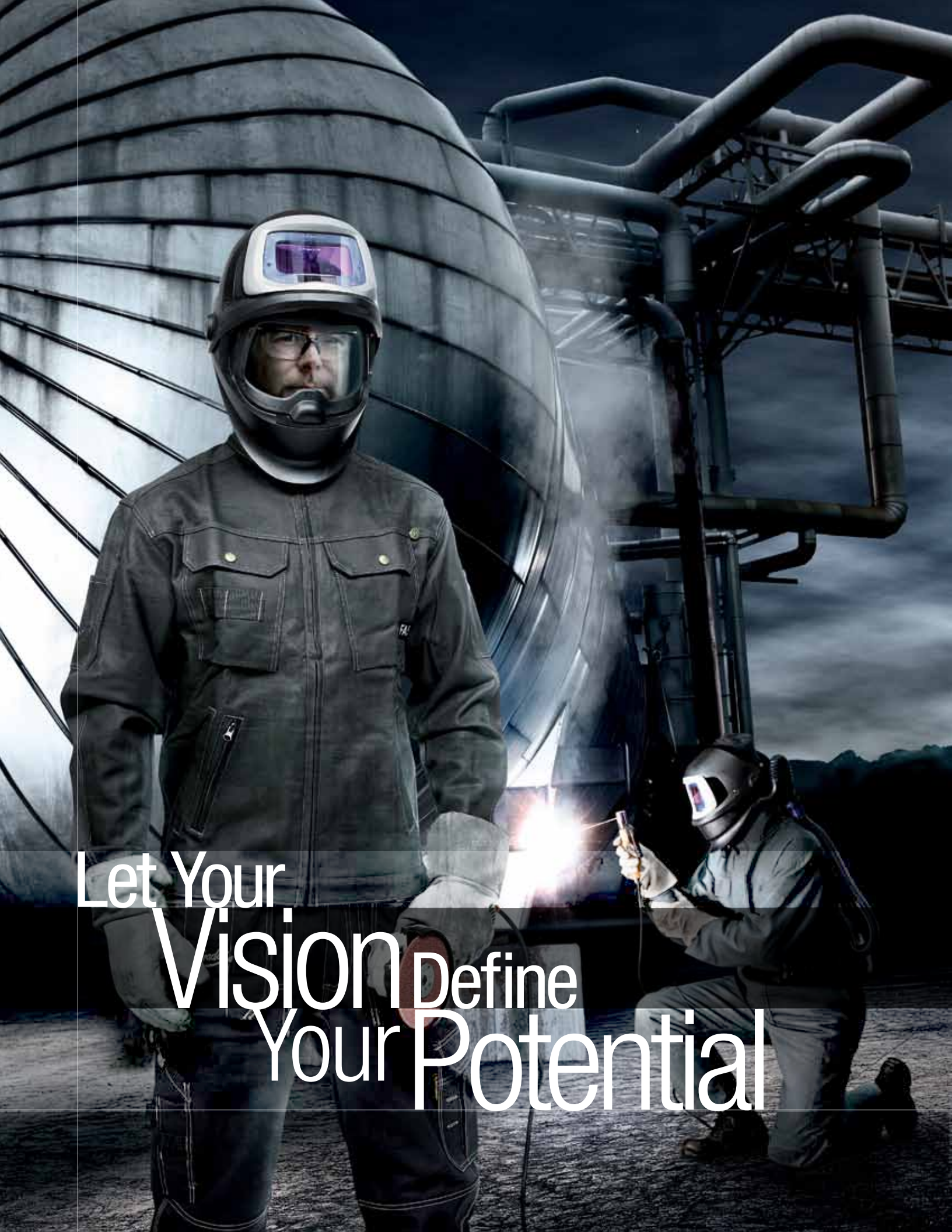
3M makes protection solutions for people in very challenging situations: military combat, first responders, shipbuilding, pharmaceutical laboratories, and industrial manufacturing.

3M has always been an innovator in worker health and safety. For example, in 1972 we introduced the first NIOSH-approved disposable filtering facepiece respirator and launched the first disposable earplug. Today, we're one of the world's leading suppliers of safety and protective equipment.

Our safety brands include: 3M™ Peltor™ Hearing Protection and Communication Headsets; 3M™ E-A-R™ Hearing Protection; 3M™ Fall Protection Equipment; and, of course, 3M™ Speedglas™ Welding Equipment.



Still working — just needs a new battery! An "old-timer" meets the new world of welding protection. If you haven't experienced the new innovations in welding protection from 3M, call your local representative for a hands-on demonstration. Our sincere thanks to all professional welders who contributed their thoughts and experiences to the development of these products. We hope you relish the results!



Let Your  
Vision Define  
Your Potential

## Experience the Future of Welding Protection!

Your patience has been rewarded with four new 3M™ Speedglas™ Welding Helmets, offering flip-up function, hard hat and/or respiratory protection. Each model also has all of the features of our top-of-the-line 3M™ Speedglas™ Welding Helmet Series 9100.



### Take full advantage of our top-of-the-line products

- Superior comfort.
- Increased balance and stability.
- Excellent optics and wider viewing angle.
- Flip-up welding helmets with clear protective visor.
- Respiratory welding helmet options.
- New multi-protection system: 3M™ Speedglas™ Hard Hat Welding Helmet 9100 MP with respiratory protection.

If you have been waiting to upgrade from your old model, your wait is over. We now have helmets for virtually every welder's needs in our industry-leading Speedglas welding helmet series 9100.

To experience the difference, call your local 3M representative for a hands-on demonstration.



# High-Comfort Head Suspension

## The headband that shapes to your head

All welding helmets in the 3M™ Speedglas™ Series 9100 feature a highly adjustable, comfortable headband. The outside of the human head is lined with nerves, arteries, and acupressure points; applying pressure to some of these spots can make a person feel fatigued. The headband of the Speedglas welding helmet series 9100 is designed to

specifically avoid these vulnerable areas. By providing multiple adjustment combinations, you can “tailor” the helmet to fit your personal preferences and comfort settings. Less pressure — and a well-adjusted, personal fit — means more comfort, all day long.

Fits head sizes 6.25 to 8 (50 to 64 cm) approx.

Smooth ratchet for precise tightening. Back portion can swivel to fit different head shapes.

Snap adjustment allows you to set the helmet at 9 different angles



Two adjustable crown straps gently saddle the top of the head for increased helmet stability and weight distribution.

Front headband designed to self-adjust to match your forehead, more evenly distributing pressure.

Four settings allow you to keep the helmet as close as possible to your face for a great view.

Large knobs make it easier to select the settings for the up-and-down pivot action, and fully raised set-up and prep “parking” position, even when wearing gloves.

## More comfortable when raised

Lifted into the raised position, the helmet’s “high point” is lower than many other helmets. From a design standpoint that means keeping the helmet as close as possible to your head. Because the helmet is more balanced, you do not need to tighten the headband as much, helping to further increase your wearing comfort.

## “Parking” position

The smooth up-and-down pivot action can be “locked” in the up position — a light pull lowers the helmet back down again.





## Excellent Optics, Wider Views

The 3M™ Speedglas™ Auto-Darkening Filters Series 9100 continue our tradition of outstanding optical quality, including uniform shading and minimal distortion across the entire filter viewing area. By selecting the right setting for each task, you help reduce eye strain and can improve the quality of every weld.

- The 3M™ Speedglas™ Filter 9100XX is 30% larger than any other Speedglas welding filter.
- Seven dark shades, including 9–13 (variable), 5 for gas welding/cutting, and 8 for micro-plasma or low-amp TIG.
- Outstanding low-amp TIG performance, even on settings as low as 1 amp.
- Any shade can be “locked-in.” For example, you can lock-in the light state shade 3 for grinding.
- Exclusive, innovative “tack welding comfort mode” which can help reduce eye strain.



Magnification made easy. The magnifying lens holder is built into the welding filter, making lens installation easier and more secure.

Seven user selectable dark shades for most types of arc welding.



The Speedglas welding filter series 9100 includes three auto-darkening filters: regular, large, and extra-large viewing area.

The tack welding comfort mode uses an intermediate shade 5 light state to help minimize eye strain during extended tack welding applications.

The Delay function allows you to set the dark-to-light switching time.

You can adjust the sensitivity of the arc detection for unsurpassed switching reliability.

3M™ Speedglas™ Welding Helmet 9100

# Designed for Ultimate Protection

Helping protect your eyes and face from radiation, heat and sparks — while providing a precise view of your work — helps make your Speedglas welding helmet 9100 one of your most important welding tools.



reddot design award  
best of the best 2009



product design award

2009



### 3M™ Speedglas™ Welding Helmet 9100-Air\*

## Respiratory Welding Helmet

All of the benefits of the 3M™ Speedglas™ Welding Helmet Series 9100 can now be used in combination with powered or supplied air respiratory protection. See further details of respirator compatibility on page 52.

3M™ Speedglas™ Welding Filter Series 9100 with superior optical performance for continuous viewing comfort.

Meets the requirements of CSA Z94.3 and the high impact requirements of ANSI Z87.1 - 2010

An airduct that is an integral part of the helmet, providing a refreshing airflow across your entire breathing zone.

The face seal readily follows the contours of both the helmet and your face.

Ergonomically designed head suspension

Side windows: Shade 5 filters that increase your field of view.



\*Product is sold with extended headcover, not shown above.



**Airflow:** The middle channel helps keep the welding filter virtually fog-free, while two side channels provide uniformly distributed air to the breathing zone.

#### Extended protection:

A flame-resistant headcover (used in this application) comes standard; ear/neck protection is available as an accessory to the 3M™ Speedglas™ Welding Helmet 9100-Air.



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

## Wider Field of View with Flip-Up Front



Introducing the Speedglas welding helmet 9100 FX, a flip-up combination of an auto-darkening welding helmet and a protective visor.

Not only is the viewing area larger compared to previous models, we've redesigned the geometry of the helmet for a wider field of view in all directions.

Side windows: Shade 5 filters that increase your field of view.

100% compatible with our top-of-the-line series of 3M™ Speedglas™ Welding Filters Series 9100.

The approx. 8 x 4.25 in. (17 x 10 cm) clear protective visor is curved, increasing your peripheral vision.

Ergonomically designed head suspension.

Deflectors inside the helmet help direct exhaled air out.

Meets the requirements of CSA Z94.3 and the high impact requirements of ANSI Z87.1 - 2010.



A spark- and spatter-resistant fabric head cover is standard on all 3M™ Speedglas™ Welding Helmet Series 9100 FX. Optional extended length head cover and ear/neck protection are available as accessories for increased coverage.

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

## Quality Respiratory Protection

For respiratory protection and excellent vision in a flip-up model, meet the new Speedglas welding helmet 9100 FX-Air. It readily connects to both powered and supplied air delivery

sources. See further details of respirator compatibility on page 56.



Meets the requirements of CSA Z94.3 and the high impact requirements of ANSI Z87.1 - 2010.

Side windows: Shade 5 filters that increase your field of view.

Wide ledge allows you to use the flip-up function without removing your gloves.

Ergonomically designed head suspension.

The breathing tube is attached to the headband instead of the helmet, allowing for a lower profile in tight spaces and more flexibility for welding while lying on your back.

The innovative 3M™ Quick Release Swivel (QRS) enables one-handed breathing tube connection and release.

\*Product is sold with extended headcover. Standard headcover shown above for illustration purposes only.

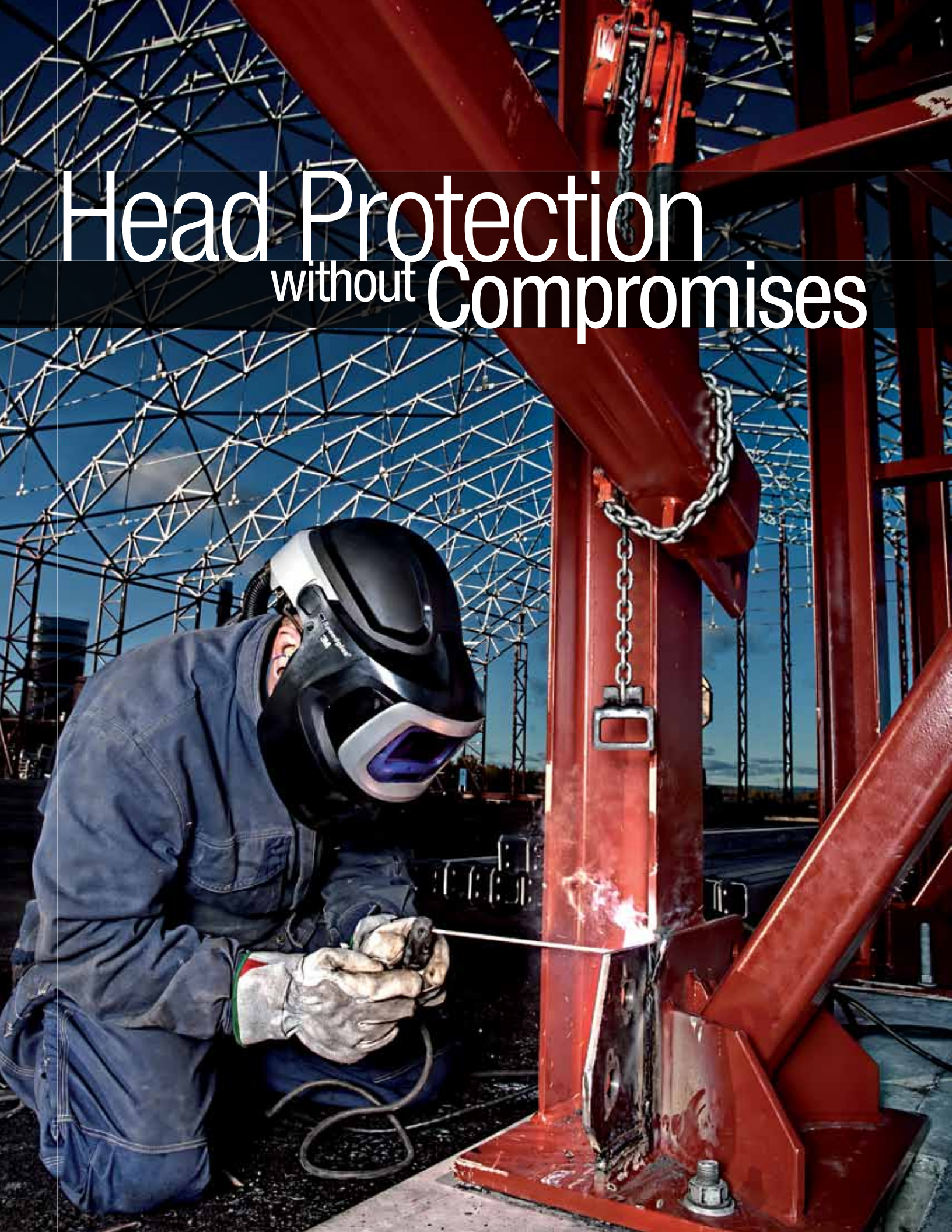


To help increase comfort, air is directed toward the face. An optional air diffuser broadens and reduces the speed of the airflow for your maximum comfort.



A quick lift of the front panel and you get a clear, 8 x 4.25 in. (17 x 10 cm approx.) view — perfect for precision grinding and inspection in low light conditions, while maintaining respiratory protection.

# Head Protection without Compromises



**NEW**

## 3M™ Speedglas™ Welding Helmet 9100 MP

# Multiple Features

Introducing the Speedglas welding helmet 9100 MP (Multi-Protection). We've seamlessly integrated five levels of welder protection: head, eye, face, respiratory and hearing into one

comfortable and easy-to-use system. Speedglas welding helmet 9100 MP: comfortable, all-in-one, welding protection for highly demanding environments.

100% compatible with all of the latest 3M™ Speedglas™ Welding Filter Series 9100 including the top-of-the-line 9100XX filter.

Two shade 5 passive side windows add peripheral welding vision.

A large (approx. 8in x 4.25in), curved, protective visor with excellent views up, down and peripherally. Meets the requirements of CSA Z94.3 and the high impact requirements of ANSI Z87.1-2010



The hard hat shell is made from heat resistant polycarbonate and meets the ANSI Z89.1-2009 requirements for Type 1 Class G hard hats. An optional, aluminum fabric reflects radiant welding heat.



Designed from inception to take our optional 3M™ Peltor™ Earmuff Assembly M-985: low-profile hearing protection with liquid/foam ear cushions and orange housings.



## Look Around... Really Look Around

The clear protective visor is wide (approx 8 in. x 4.25 in), curved and offers great views up, down and side-to-side. It's perfect for prepping and inspecting welds...and just walking around your facility. Then, pull down your welding shield and appreciate the side windows views: you can have peripheral vision at all times, even when welding.



“I forget I’m  
Wearing it”



## 3M™ Speedglas™ Welding Helmet SL

# When Your #1 Priority is Super Light

At a mere 13 oz (379 grams) — including its auto-darkening filter — the Speedglas welding helmet SL is 25% lighter than any other Speedglas welding helmet model.



reddot design award  
winner 2007



product design award  
2008



INTERNATIONAL DESIGN  
EXCELLENCE AWARDS '08  
GOLD



Our narrowest helmet:  
perfect for many super  
tight spaces.

Five adjustable dark  
shades 8–12 and a  
light shade of 3. Four  
sensitivity settings.

Grab & Go:  
A motion sensor auto-  
matically turns ON the  
welding filter when you  
pick up the helmet.

Appropriate for most arc  
welding processes —  
such as Stick, MIG/MAG,  
TIG and plasma welding.

Dark shade can be  
increased to 13 or 14  
using upgrade plates.



## Quick and light, perfect for fast tasks

Using specialized manufacturing techniques, we greatly reduced the weight of the auto-darkening filter. And unlike other lightweight helmets that can absorb moisture and become heavy, the Speedglas welding helmet SL is made from a strong, non-absorbent material.

Designed for quick welding tasks, a motion sensor automatically turns ON the welding filter when you pick up the helmet.





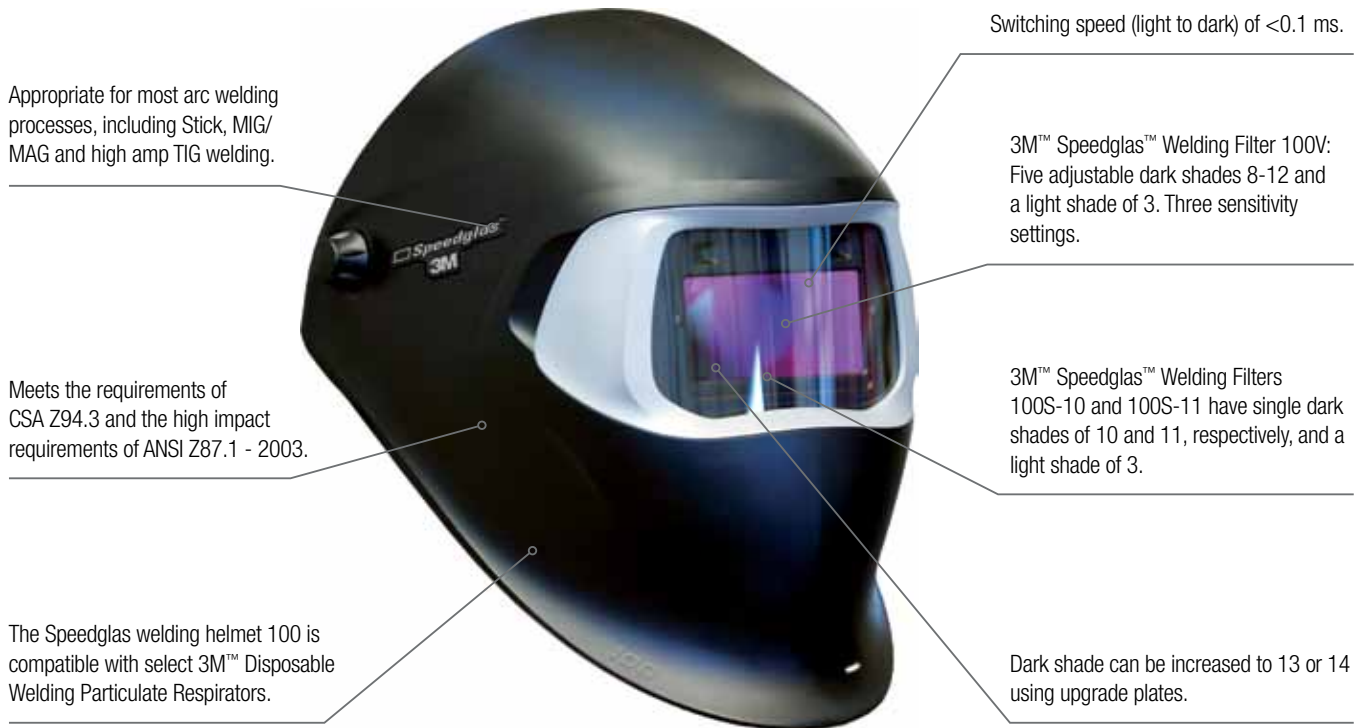
Premium  
Made Affordable

## 3M™ Speedglas™ Welding Helmet Series 100

# High-End Features, Affordable Price

The Speedglas welding helmet 100 allows you to take advantage of excellent optical quality and reliable light-to-dark switching at an affordable price.

In addition to the black model, you can choose from several highly creative graphic helmet designs.



## Performance made simple

The easy-to-use 3M™ Speedglas™ Welding Helmet 100 can be an ideal auto-darkening helmet for the occasional welder. Welders can benefit from the ability to clearly see with their welding protection in place. In addition to the black helmet, we offer a series of stunning graphic helmets — each with a unique personality.





Image  
is Everything

## Make a Visual Impact

### 3M™ Speedglas™ Graphic Welding Helmets Series 100

Speedglas welding helmet series 100 delivers impressive protection and performance with distinctive graphic designs — all with a specific identity. Styles are refreshed often, contact your 3M representative to learn about the latest styles.



American Pride



Boneyard



Ice Hot



Xterminator



Raging Skull



Razor Dragon



Trojan Warrior



Blazed



Aces High

## Female Graphic Edition

Inspired by women welders, 3M launched the first line of women specific designs. Our design team took direct inspiration from women welders to work with intricate patterns and graphics. The resulting designs are an avenue for personal expression.



### Steel Rose

Toughness and patinated grace. Strong, fearless, and feminine at the same time. Steel aesthetics emphasize the protective qualities of the helmet.

Designed by Ergonomidesign(IFP)



### Wild-N-Pink

Pretty in pink, but do not touch! A vivacious vine flourishes behind a protective overlay of barbed wire and razor-sharp metal sculpture. Admire from a distance.



### Skull Jewels

An elaborate floral grill motif emerges into a decorative skull and covers the entire helmet. The skull and flowers engage in visual interplay as one becomes the other, and vice-versa.

Designed by Ergonomidesign (IFP)



### Steel Eyes

Projecting inner strength, with focused eyes looking through a blaze of lilac flames.

Designed by Ergonomidesign (IFP)

## 3M™ Speedglas™ Welding Helmet 9000



The 3M™ Speedglas™ Welding Helmet 9000 will be phasing out in 2013 and replaced by the 3M™ Speedglas™ Welding Helmets and Filters Series 9100. Contact your local 3M sales representative for more information on the phase-out plan. (See page 6 for more details of our new Speedglas product line.)

► Technical Specifications on page 63. Ordering information on page 48.

## 3M™ Speedglas™ ProTop Systems

### For Overhead Hazards

The key to the Speedglas ProTop systems is the innovative pivot mechanism that connects the welding helmet to its hardhat. The mechanism keeps the welding helmet close to the hardhat at all times, for excellent balance and reduced strain on your neck muscles.

- Available with Speedglas welding filter series 9002, variable shade 9 - 13 or dual shade 10 - 11.
- Side windows option.
- Exclusive exhaust vents.



3M™ Speedglas™ ProTop Systems have a special low profile design with minimal projections, so it is less likely to snag on surrounding obstacles.

► Technical Specifications on page 63. Ordering information on page 49.

# Hard Hat Option for 3M™ Speedglas™ Welding Helmets

Welders working in areas with overhead hazards can now benefit from the hard hat options for 3M™ Speedglas™ Welding Helmet 9100 and 3M™ Speedglas™ Welding Helmet 100.

The 3M™ Hard Hat H-701R has a comfortable 4-point ratchet suspension and standard brow pad. Hard hat features accessory slots for earmuff attachment and/or headgear and faceshield attachment. Meets requirements of ANSI/ISEA Z89.1-2009 Type 1, Class C, G, and E standards, as well as CSA Z94.1 Type 1, Class C, G, and E standards.

## Can also fit other types of hard hats!

Using our hard hat adapter, you can easily fit many of the industry's most popular hard hats with the Speedglas welding helmet 9100. See the Hard Hat Adapter Compatibility list (at right).



### Hard Hat Adapter Compatibility for 3M™ Speedglas™ Welding Helmet 9100

- 3M™ Hard Hat H-701R
- MSA V-gard® Hard Hat with fas-trac suspension
- MSA Thermalgard® Hard Hat with fas-trac suspension
- Fibre-Metal® Hard Hat E2RW
- Jackson Safety® Hard Hat SC6 with ratchet suspension 391
- Bullard® Hard Hat S61 Series with ratchet suspension

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Photo shows hard hat adapter for 3M™ Speedglas™ Welding Helmet 9100: part no 06-0014-00NR. Similar item is available for 3M™ Speedglas™ Welding Helmet 100: part no 07-0014-00NR.

## 3M™ Speedglas™ Headgear L-Series SG

# Made with Your Safety in Mind

Benefit from the superior optical performance of a Speedglas auto-darkening welding filter as well as the added safety of an L-series hard hat and the comfort of continuous airflow. Whether welding or grinding, our products may help you stay more comfortable and productive.

- Positive pressure airflow reduces breathing resistance and helps provide respiratory protection without the need for a tight face seal. No fit testing required.
- Wideview faceshield allows for excellent peripheral and downward vision.
- Can be worn with limited facial hair, prescription eyewear or safety glasses. (Do not wear if facial hair comes between the face and respirator face seal.)
- Select from a passive welding filter or from 3M™ Speedglas™ Welding Filter Series 9100 with superior optical performance for continuous viewing comfort.
- 3M™ Speedglas™ Fresh-air III Supplied Air System allow workers to regulate the airflow, as well as cool or heat the air entering the headgear — ideal for extreme temperature working environments.
- For full mobility, combine with our 3M™ Adflo™ Powered Air Purifying Respirator and HE particulate filter.



## 3M™ Speedglas™ Headgear L-Series SG for Powered or Supplied Air Protection



### 3M™ Headgear L-705 SG

Hard hat with welding shield and wideview faceshield.



### 3M™ Headgear L-905 SG

Welding helmet with welding shield and wideview faceshield.





“It’s Like My Own  
Private Oasis”

### 3M™ Adflo™ Powered Air Purifying Respirator

## A refreshing breeze for more comfortable welding

With its smart, compact design, the 3M™ Adflo™ Powered Air Purifying Respirator has been created to meet your welding needs. This unit is designed to offer continuous filtered air. By using the Adflo PAPR, you get both increased protection and comfort.

### Full mobility

The slim profile is perfect for use in tight spaces.

Its ergonomics are based on your need for lightweight, adaptable and easy-to-use respiratory protection.

### An adaptable system that saves money

With the HE filter and OV/AG cartridge, the Adflo PAPR can help protect against both particles and certain gases — all in one system. And you can selectively replace either the particle filter or the OV/AG cartridge as needed: you don't need to change the filter and cartridge at the same time.



### Constant flow of clean air

The Adflo PAPR is designed to provide airflow which is at a constant nominal rate of approximately 7 CFM (205 litres/minute), regardless of the battery's charge or the particle loading of the filter.



- A Filter cover:** holds the user-replaceable spark arrestor (not shown below).
- B Prefilter:** designed to increase the service life of the particle filter.
- C HE particle filter:** high efficiency particulate filtration.
- D OV/AG cartridge:** OV/AG cartridge captures certain organic vapors and acid gases. OV/AG cartridges are sold separately.
- E NiMH battery:** fully charges in approximately four hours. Expected operating time is up to 8-10 hours with new particle filter and new, fully-charged battery.
- F Brushless motor:** with an average life three times longer than conventional motors.
- G Filter/Battery Indicator:** indicates the loading status of the particle filter and remaining battery life.
- H Breathing tube:** breathing tubes available to fit all Speedglas welding helmet models.
- I Exclusive airflow pattern:** evenly distributes filtered air throughout the entire breathing zone of the helmet. The intelligent PAPR unit is designed to keep the airflow at a constant preset level.
- J Soft, flexible face seal (removed here for clarity):** comfortable face seal can be worn with limited facial hair and provides respiratory protection.



Shown here: 3M™ Adflo™ Powered Air Purifying Respirator with 3M™ Speedglas™ Welding Helmet 9100 FX-Air.

### 3M™ Speedglas™ Welding Helmet 9100-Air with 3M™ Adflo™ PAPR

Welding helmet with auto-darkening filter. Ergonomic welder protection with optimal mobility and ease-of-use.



Speedglas welding helmet 9100-Air with Adflo PAPR with HE filter:

- 25-1101-10SW system with Speedglas welding filter 9100V.
- 25-1101-20SW system with Speedglas welding filter 9100X.
- 25-1101-30SW system with Speedglas welding filter 9100XX.

Speedglas welding helmet 9100-Air and Adflo PAPR with HE filter and OV/SD/CL/HC cartridge:

- 25-3301-10SW system with Speedglas welding filter 9100V.
- 25-3301-20SW system with Speedglas welding filter 9100X.
- 25-3301-30SW system with Speedglas welding filter 9100XX.

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### 3M™ Speedglas™ Welding Helmet 9100 FX-Air with 3M™ Adflo™ PAPR

Welding helmet with auto-darkening welding filter and an approx. 8 in. x 4.25 in. clear visor for weld preparations.

Excellent for low-light conditions and eye, face and respiratory protection.



Speedglas welding helmet 9100 FX-Air with Adflo PAPR with HE filter:

- 26-1101-10SW system with Speedglas welding filter 9100V.
- 26-1101-20SW system with Speedglas welding filter 9100X.
- 26-1101-30SW system with Speedglas welding filter 9100XX.

Speedglas welding helmet 9100 FX-Air and Adflo PAPR with HE filter and OV/SD/CL/HC cartridge:

- 26-3301-10SW system with Speedglas welding filter 9100V.
- 26-3301-20SW system with Speedglas welding filter 9100X.
- 26-3301-30SW system with Speedglas welding filter 9100XX.

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### 3M™ Speedglas™ Welding Helmet 9100 MP with 3M™ Adflo™ PAPR

Welding helmet with hard hat, auto-darkening welding filter and an approx. 8 in. x 4.25 in. clear visor for weld preparations.

Five levels of welder protection: head, eye, face, respiratory and optional hearing combined into one system.



Speedglas welding helmet 9100 MP with Adflo PAPR with HE filter:

- 27-1101-10SW system with Speedglas welding filter 9100V.
- 27-1101-20SW system with Speedglas welding filter 9100X.
- 27-1101-30SW system with Speedglas welding filter 9100XX.

3M™ Speedglas™ Fresh-air III Supplied Air Regulator

# Lightweight System Delivers Maximum Airflows

For welding environments where supplied air respiratory protection is needed, the 3M™ Speedglas™ Fresh-air III Supplied Air Regulator System, can be used with the 3M™ Speedglas™ Welding Helmets 9100-Air, 9100 FX-Air and 9100 MP. The lightweight, belt-mounted regulator allows you to regulate the airflow from a supplied air source and cool or heat the air entering the headgear by as much as 50°F (28°C), - ideal for extreme temperature work environments.


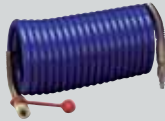




## Quick Connections

The belt-mounted regulator connects to an approved air hose with a quick release connector system. Oil mist, water vapor, or non-toxic, unpleasant odors in the air supply can be removed with an air filter regulator panel, such as 3M™ Filter and Regulator Panel W-2806 or 256-02-00.

## Respirator Standards

The Speedglas Fresh-air III supplied air regulator system meets National Institute for Occupational Safety and Health (NIOSH) standards for supplied air respirators, OSHA assigned protection factor of 25 with Speedglas welding helmets 9100-Air/9100 FX-Air/9100 MP, and Freshair III SAR regulator (3M™ Valves V-Series). Meets the requirements of CSA Z94.3 for CSA marked products and the high impact requirements of ANSI Z87.1 - 2010.

Available Supplied Air Hoses and Panels	3M™ Supplied Air Hoses		3M™ Filter and Regulator Panels	
				
<b>Part Numbers</b>	W-9425-25 (25 ft). W-9435-50 (50 ft). W-9435-100 (100 ft).	W-2929-25 (25 ft). W-2929-50 (50 ft). W-2929-100 (100 ft).	W-2806 Filter and Regulator Panel, 50 cfm W-2808 CO Monitor Retrofit Kit.	256-02-00 Portable Filter and Regulator Panel, 50 cfm.
<b>Applications</b>	3/8 in High Pressure Hose (25, 50, or 100 ft).		Helps to remove water, oil, particles, odors and vapors.	Removes limited amounts of carbon monoxide and other contaminants without using large desiccant drying towers.

## 3M™ Speedglas™ Welding Helmet 9100-Air with 3M™ Speedglas™ Fresh-air III Supplied Air Regulator (SAR)

Welding helmet with auto-darkening welding filter combined with NIOSH-approved supplied air respirator system.



25-5802-30SW.

Speedglas welding helmet 9100-Air with Fresh-air III SAR and V-100 cooling valve:

- 25-5702-10SW with Speedglas welding filter 9100V.
- 25-5702-20SW with Speedglas welding filter 9100X.
- 25-5702-30SW with Speedglas welding filter 9100XX.

Speedglas welding helmet 9100-Air with Fresh-air III SAR and V-200 heating valve:

- 25-5802-10SW with Speedglas welding filter 9100V.
- 25-5802-20SW with Speedglas welding filter 9100X.
- 25-5802-30SW with Speedglas welding filter 9100XX.

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## 3M™ Speedglas™ Welding Helmet 9100 FX-Air with 3M™ Speedglas™ Fresh-air III Supplied Air Regulator (SAR)

Welding helmet with hard hat, auto-darkening welding filter and an approx. 8 in. x 4.25 in. clear visor for weld preparations. Excellent for low-light conditions and eye, face and respiratory protection.



26-5702-30SW.

Speedglas welding helmet 9100 FX-Air with Fresh-air III SAR and V-100 cooling valve:

- 26-5702-10SW with Speedglas welding filter 9100V.
- 26-5702-20SW with Speedglas welding filter 9100X.
- 26-5702-30SW with Speedglas welding filter 9100XX.

Speedglas welding helmet 9100 FX-Air with Fresh-air III SAR and V-200 heating valve:

- 26-5802-10SW with Speedglas welding filter 9100V.
- 26-5802-20SW with Speedglas welding filter 9100X.
- 26-5802-30SW with Speedglas welding filter 9100XX.

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## 3M™ Speedglas™ Welding Helmet 9100 MP with 3M™ Speedglas™ Fresh-air III Supplied Air Regulator (SAR)

Welding helmet with hard hat, auto-darkening welding filter and an approx. 8 in. x 4.25 in. clear visor for weld preparations. Five levels of welder protection: head, eye, face, respiratory and optional hearing combined into one system.



27-5902-20SW

Speedglas welding helmet 9100 MP with Fresh-air III SAR and V-100 cooling valve:

- 27-5702-10SW with Speedglas welding filter 9100V.
- 27-5702-20SW with Speedglas welding filter 9100X.
- 27-5702-30SW with Speedglas welding filter 9100XX.

Speedglas welding helmet 9100 MP with Fresh-air III SAR and V-300 air-regulating valve:

- 27-5902-10SW with Speedglas welding filter 9100V.
- 27-5902-20SW with Speedglas welding filter 9100X.
- 27-5902-30SW with Speedglas welding filter 9100XX.

# Frequently Asked Questions about Hexavalent Chromium and Manganese

Hexavalent Chromium (CrVI) is a form of the metal chromium that rarely occurs naturally and is most commonly produced by industrial processes. It has the ability to gain electrons from other elements (a strong oxidizer) which means it can react easily with them. Because of its ability to react with other elements, it can produce hard coatings, which is why it is used in paints for boats, cars and airplanes. Hexavalent chromium fume (a small metal particle) can also be generated when performing “hot work” such as welding on stainless steel or melting chromium metal. In these situations the chromium is not originally hexavalent, but the high temperatures involved in the process result in oxidation that converts the chromium to the hexavalent state. These properties are also what make it a health hazard. Hexavalent Chromium is often referred to as Hex Chrom, Hex Chrome, Chromium 6, Hexa Chrom, Cr(VI), or HexChrome.

Manganese is a grey-white metal resembling iron. Manganese is used extensively to produce a variety of important alloys and to desulfurize and deoxidize steel. Manganese is also in many welding rods and filler metals to promote hardness. Manganese oxide fume is formed when manganese metal is heated and reacts with oxygen in the air such as occurs during welding.

One of the more recent ailments identified by the National Institutes of Health ([www.nih.gov](http://www.nih.gov)) that can afflict welders is manganism, also known as welder’s disease. Overexposure to manganese fume has been linked to weakness/lethargy, speech and psychological disturbances, paralysis, and tremors.

To help reduce the risk of adverse health effects caused by exposures to airborne materials such as Cr(VI) and manganese, the United States Occupational Safety and Health Administration (OSHA) has established permissible exposure limits (PELs) which are law. In addition, the American Conference of Governmental Industrial Hygienists (ACGIH) sets threshold limit values (TLVs<sup>®</sup>) which are airborne exposure limit guidelines. TLVs<sup>®</sup> are often used by industrial hygienists because they are evaluated on a more frequent basis than OSHA PELs.

## Standards, Regulations and Enforcement Cr(VI)

On February 28th, 2006 (OSHA) published the final Hexavalent Chromium (CrVI) Standard. There are three versions of the standard: General Industry (1910.1026), Construction (1910.1126), and Shipyards (1515.1026). The requirements of each standard are very similar.

All CrVI inhalation exposure is covered by these rules, with the exception of exposures from Portland Cement and application of regulated pesticides, e.g. treatment of wood with pesticides (exposures resulting from sawing or sanding treated wood are covered). The OSHA PEL for all industries is 5 micrograms per cubic meter of air (5 µg/m<sup>3</sup>), reduced from 52 µg/m<sup>3</sup>, a difference of an order of magnitude. The PEL is a time weighted average (TWA) meaning it is a concentration limit for a conventional 8-hour workday and 40-hour workweek. The action level, or the level where many of the requirements of the standard such as medical surveillance may be required, is 2.5 µg/m<sup>3</sup>. There is no short term exposure limit (STEL).



The effective dates for implementing interim control measures, including respiratory protection were as follows:

- Employers with more than 20 employees  
– November 27, 2006
- Employers with less than 20 employees  
– May 30, 2007

Feasible engineering controls to effectively reduce hexavalent chromium exposures to acceptable levels needed to be in place by May 31, 2010. Where engineering controls are not feasible other controls, such as administrative controls and/or personal protective equipment (PPE) must be implemented.

OSHA has implemented a new National Emphasis Program (NEP) to identify and reduce or eliminate the health hazards associated with occupational exposure to hexavalent chromium and other toxic substances commonly found in conjunction with hexavalent chromium. This NEP, which became effective February 23, 2010 targets industries where overexposures to hexavalent chromium are known to occur. A copy of this instructional manual can be found at: [www.osha.gov/OshDoc/Directive\\_pdf/CPL\\_02-02-076.pdf](http://www.osha.gov/OshDoc/Directive_pdf/CPL_02-02-076.pdf)

## Manganese

The current OSHA PEL for manganese is 5 milligrams per cubic meter of air ( 5 mg/m<sup>3</sup>). This PEL is a ceiling limit which means the exposure shall at no time exceed the exposure limit given for that substance. OSHA has had the same exposure limit for manganese since 1971.

The ACGIH TLV for manganese is a TWA limit of 0.1 mg/m<sup>3</sup>. The 2012 edition of the ACGIH TLVs<sup>®</sup> and BEIs<sup>®</sup> includes a proposed revision to the manganese TLV<sup>®</sup>. This Notice of Intended Change (NIC) includes revising the current TLV-TWA for total manganese to 0.1 mg/m<sup>3</sup> for the inhalable fraction, and 0.02 mg/m<sup>3</sup> for the respirable fraction. The ACGIH's proposals should be considered trial values, and will remain on the NIC for approximately one year. If ACGIH neither finds nor receives any substantive data that changes its scientific opinion regarding an NIC TLV<sup>®</sup>, then the value is recommended for adoption by ACGIH. If they find or receive substantive data that changes its scientific opinion regarding the NIC TLV<sup>®</sup>, the recommendation could change to be either retained or withdrawn from the NIC. The respirable fraction is the smallest size fraction typically sampled, thus representing fume particles. This would most likely be the limit used for evaluating welding exposures.





## Respiratory Protection for Cr(VI) and Manganese Exposure

In many cases, changes in manufacturing processes and engineering controls alone can't reduce exposure levels to below the occupational exposure limits (OELs). In such cases, it may be appropriate to use respiratory protection. For any particular application, an array of respirator types that provide an appropriate level of protection are available. The cost of these respirators may vary from around \$1 for a basic negative-pressure, disposable, filtering facepiece to \$1,000 or more for a powered or supplied-air system. Respirators should be selected based on results from air sampling and the necessary assigned protection factor (APF) as established within OSHA 29 CFR 1910.134. OSHA requires employers to implement a written respiratory protection program when respiratory protection is used. Elements of the written program include respirator selection, use, care and maintenance, medical evaluation, training, and fit testing.

## Respirator Selection for Hexavalent Chromium Exposures

The table below shows suggested respiratory protection for hexavalent chromium up to the maximum use concentrations based on the OSHA APFs and PEL of 5 µg/m<sup>3</sup>.

Exposure	Respiratory Protection
≤ 50 µg/m <sup>3</sup>	Half Facepiece with N, R, or P class particulate filter (includes filtering facepiece respirator) Any other respirator with an APF ≥ 10
≤ 125 µg/m <sup>3</sup>	Full Facepiece with N, R, or P class particulate filter PAPR with HEPA Filter and Full Facepiece, Hood/Helmet, or Loose Fitting Facepiece Continuous flow supplied-air system with Full Facepiece, Hood/Helmet or Loose Fitting Facepiece
≤ 250 µg/m <sup>3</sup>	Full Facepiece with N, R, or P class particulate filter PAPR with HEPA Filter and Full Facepiece or Hood/Helmet Continuous flow supplied-air system with Full Facepiece or Hood/Helmet
≤ 5000 µg/m <sup>3</sup>	PAPR with HEPA Filter and Full Facepiece or Hood/Helmet Continuous flow supplied-air system with Full Facepiece or Hood/Helmet(1)

(1) Manufacturer must provide evidence that hood/helmet respirator systems meet APF of 1,000

## Respirator Selection for Manganese Oxide Fume Exposures

The table below shows suggested respiratory protection for manganese up to the maximum use concentrations based on the OSHA APFs and ACGIH TLV of 0.02 mg/m<sup>3</sup> for respirable fraction.

Exposure	Respiratory Protection
≤ 0.2 mg/m <sup>3</sup>	Half Facepiece with N, R, or P class particulate filter (includes filtering facepiece respirator) Any other respirator with an APF ≥ 10
≤ 0.5 mg/m <sup>3</sup>	Full Facepiece with N, R, or P class particulate filter PAPR with HEPA Filter and Full Facepiece, Hood/Helmet, or Loose Fitting Facepiece Continuous flow supplied-air system with Full Facepiece, Hood/Helmet or Loose Fitting Facepiece
≤ 1 mg/m <sup>3</sup>	Full Facepiece with N, R, or P class particulate filter PAPR with HEPA Filter and Full Facepiece or Hood/Helmet Continuous flow supplied-air system with Full Facepiece or Hood/Helmet
≤ 200 mg/m <sup>3</sup>	PAPR with HEPA Filter and Full Facepiece or Hood/Helmet Continuous flow supplied-air system with Full Facepiece or Hood/Helmet(1)

(1) Manufacturer must provide evidence that hood/helmet respirator systems meet APF of 1,000

## Summary

Cr(VI) and Manganese are found in many manufacturing processes. The proposed changes to manganese exposure levels may have an affect on various industries and industrial processes. As a precaution, review MSDS sheets for materials containing these substances in manufacturing processes. If there are questions regarding the air quality, it may be a good idea to discuss the option of air sampling with an industrial hygienist to better determine the levels of contaminants within a given process. If the air sampling results indicate exposure levels above the occupational exposure limit (either PEL or TLV, whichever the employer is using), changes to manufacturing processes, use of other engineering controls or PPE may be suitable choices to reduce employee exposures to acceptable levels.

Further questions regarding this article or selection of respiratory protection may be directed to 3M OH&ESD Technical Service at 1-800-243-4630.

# How Auto-Darkening Filters Work



## Before:

With the welding helmet in the safe, down position, you have a clear view through the welding filter. Both of your hands are free and the electrode can be precisely positioned.



## During:

Within 0.1 milliseconds of the arc strike, the filter has switched to the dark state.



## After:

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

## Eye protection that helps increase your efficiency

The key to remember with 3M™ Speedglas™ Auto Darkening Welding Filters is consistency. They enable consistent, comfortable viewing and provide protection from ultraviolet and infrared (UV/IR) radiation. They consistently auto-switch from clear to dark, and back again, to help increase productivity while you weld.

## Awkward made easier

Speedglas welding filters also help reduce neck-strain from “helmet nodding,” while greatly increasing the accuracy of electrode placement. This, in turn, reduces the need for grinding and rework. In addition, you can get into tight, cramped spaces with your eye and face protection already in place. The filter’s, clear optics make even extremely awkward welds easier.

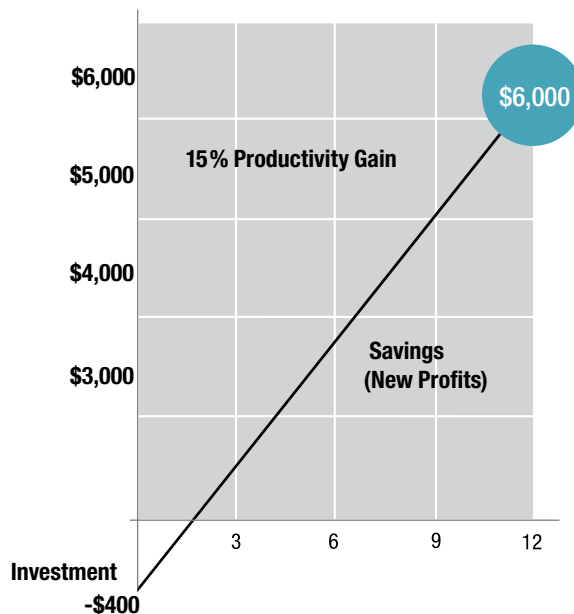
## How fast does a 3M™ Speedglas™ Welding Helmet pay for itself?

If profitability is defined in terms of protection, one day is enough. But while “protection” sometimes can be difficult to measure, efficiency and weld quality are much easier to gauge. Studies show that you can increase efficiency substantially when using Speedglas auto-darkening welding filters. Not only can you work faster when you can see clearly, but you move more efficiently, placing electrodes more precisely.

Most “bad weld starts” can be reduced and fewer bad welds mean less grinding and higher overall quality levels.

## For example:

Productivity gains are, of course, dependent on the application. If you do lots of tack welds, you will have much greater productivity gains than a welder doing long seam welds. With that said, this example uses a conservative 15% gain in productivity. If cost for salary is \$20 per hour, the welding helmet will pay for itself in approximately two months. In one year the productivity gain could be up to \$6000 in savings (also known as new profits). Note: Dollar amounts are approximate and may vary.

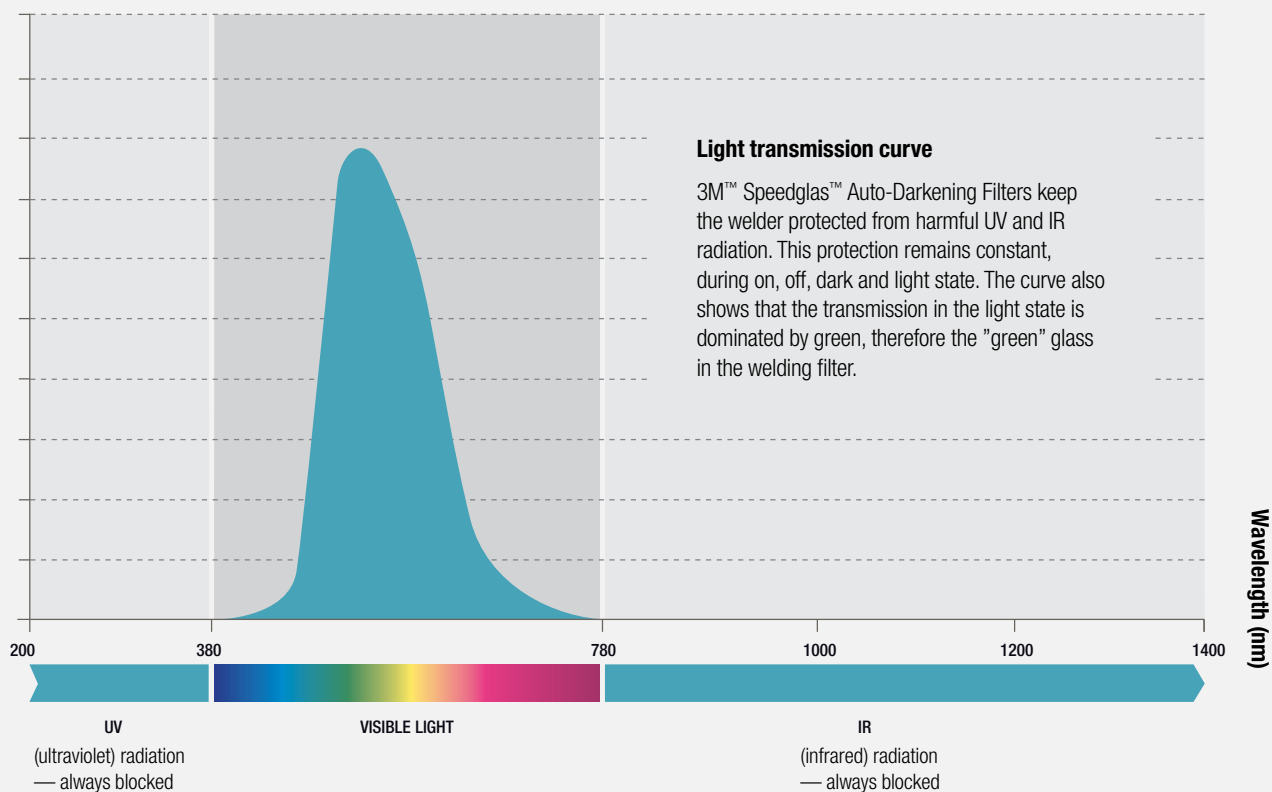


# Recommended guide for shade numbers according to ANSI Z49.1 -2012

Welding process	Current in amperes A																									
	1.5	6	10	20	30	40	60	70	100	125	150	175	200	225	250	300	350	400	450	500	600	700	800	900	1000	
Shielded Metal Arc									10				12			14										
Gas Metal Arc Welding									11				12			14										
Gas Tungsten Arc Welding						10			12						14											
Air Carbon Arc Cutting															12										14	
Plasma Arc Welding			6-8			10									12										14	
Plasma Arc Cutting															9										12	
Carbon Arc Welding																										14
	1.5	6	10	15	30	40	60	70	100	125	150	175	200	225	250	300	350	400	450	500	600	700	800	900	1000	

The table recommends best dark shade 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.

## Transmittance (%)



# Changes to the ANSI Z87.1-2010 Standard for Eye and Face Protective Devices\*



The ANSI/ISEA Z87.1-2010, replaces the Z87.1-2003 standard. As of the date of this summary, the Occupational Safety and Health Administration (OSHA) has not incorporated the 2010 standard into the eye and face protection regulation (29 CFR 1910.133). OSHA accepts the three latest ANSI standards (1989, 2003 and 2010).

This summary of the revision of this eye and face protection standard focuses on the key changes to the standard; it does not represent any official or legal interpretation of the standard or even serve as a complete summary of the revision. If questions occur, the revised standard itself should be reviewed and relied on, rather than this summary.

## The key changes to the eye and face protection standard include:

A focus on the hazard, rather than on the protector type, to encourage safety personnel and users to evaluate and identify specific hazards in their workplace such as Impact, Optical Radiation, Splash, Dust, and Fine Dust Particles. Therefore, under the revised standard, selection of the appropriate eye and face protective devices should be based on the hazard.

## Performance Markings

Users will now be able to match the hazard they need protection from by identifying marks located on the protectors, spectacles, goggles, faceshields and welding helmets.

The standard includes performance requirements for dust and mist, as well as for UV (ultra violet), visible light and IR (infra red) filters. Testing is optional, however if a manufacture wants to claim any specific performance the protectors must be tested and marked according to requirement listed in Table 4a of the standard.

- Welding lenses shall be marked W followed by shade number.
- UV protectors shall be marked U followed by scale number.
- IR protectors shall be marked R followed by scale number.
- Visible Light filters shall be marked L followed by a scale number.
- Special purpose lenses (less than 85% transmission) shall be marked S.
- Variable tints lens (photochromic) shall be marked with a V.

There are also specific performance and marking requirements for devices claiming to provide protection from splash/droplet, dust or fine dust hazards. The Splash/Droplet Test is intended to determine the capability of the goggle to keep liquid splashes or sprays from reaching the wearer's eyes.

The Dust Test is intended to determine the capability of the goggle to keep large dust particles from reaching the wearer's eye. (Dust with particle size  $> 5 \mu\text{m}$ ) The Fine Dust Test is intended to determine the capability of the goggle to keep fine dust particles from reaching the wearer's eye. (Dust with particle size  $< 5 \mu\text{m}$ ).

\* Safety prescription spectacle protective devices may have different requirements in some cases.

## Changes to the ANSI Z87.1-2010 Standard

The frame/shroud or lens of these protector types shall be marked as follows:

- D3-Splash and droplet
- D4-Dust
- D5-Fine dust.

## Impact Rating Markings

All protectors must demonstrate entry-level impact protection via the drop ball test. Both the high mass impact test and the high velocity impact test must be completed on any impact-rated protector. Impact-rated protectors shall include a permanent marking identifying the manufacturer and indicate “Z87+” on both the front and at least one of the temples.

Frames that are intended for use as Not Rated for Impact can be marked “Z87” (no “+”). Example: “3M+W3” for an impact rated protector with a shade 3.0 welding filter.



## New headform for product testing

The 2010 revision of the standard adopts the European (CE) small & medium headform sizes for testing to harmonize with existing international test methods.

## Minimum Frontal Coverage Area:

It is important that the protective eyewear cover the soft tissue that surrounds the eye to minimize exposure to flying particles. The coverage area requires the eyewire and lens shall cover in plane view an area of not less than 40 mm in width and 33 mm in height (elliptical) in front of each eye, centered on the geometrical center of the lens.

Frames designed for small head sizes shall cover in plane view an area of not less than 34 mm (1.34 in.) in width and 28 mm (1.10 in.) in height (elliptical), centered on the geometrical center of the lens. Frames designed for small head sizes shall be tested on the 54 mm (2.13 in.) papillary distance (PD) headform. Frames that are tested using the small headform shall be marked on the frame with the letter “H.”



## Lateral (Side Coverage)

The standard now requires lateral coverage for impact rated protectors. This inclusion is consistent with other international product standards. Lateral (side) coverage usually in the form of a fixed or detachable shield will not be allowed to have any openings larger in diameter than 1.5 mm (0.060 in).

Coverage will be lateral from the vertical plane of the lenses tangential to a point not less than 10mm posterior to the corneal plane and not less than 10mm in height (8mm for the small head form) above/below the horizontal plane.

## Sideshields

All impact rated protectors must have side protection (permanent, detachable or integrated). While most sideshields are specifically designed for each individual protector, any use of aftermarket sideshields shall be tested on representative frames for which the product is specified to fit. Sideshields shall include a permanent marking identifying the manufacturer and indicate “Z87+”.

## After Market Components

Non-original equipment manufacturers of devices (i.e. sideshields and lenses) that are represented as an “accessory” to protectors must now perform testing to assure that the “accessory” does not compromise the integrity of the Z87 protector. This test requirement assures that replacement parts claimed as compatible with various frames, meet the standard in all combinations.

## Ignition Test

The flammability test was replaced with an ignition test which uses a hot steel rod contacting the protector to determine if the protector will ignite. The flammability test was eliminated since it was not representative of realistic use as it measured resistance to material igniting from contact with hot metal rather than the unlikely event that the device will be in flames.

## Selection Chart

A pull-out selection chart has been added to aid users in identifying and selecting the types of eye and face protectors that are available, their capabilities and limitation for the hazard source operations listed. Selection includes recommended protectors for various types of work activities that can expose the worker to impact, heat, chemical, dust or optical radiation hazards.

# Assigned Protection Factors Information

On August 24, 2006 the Occupational Safety and Health Administration amended its regulation for respiratory protection (29 CFR 1910.134) by adding definitions and requirements for Assigned Protection Factors (APFs) and Maximum Use Concentrations (MUCs). The revisions also supersede many of the APF requirements established in substance specific standards. This final rule became effective November 22, 2006. The final rule defines APFs and MUCs as:

Assigned Protection Factor (APF) means the workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees when the employer implements a continuing, effective respiratory protection program as specified by this section [meaning 29 CFR 1910.134].

Maximum Use Concentration (MUC) means the maximum atmospheric concentration of a hazardous substance from which an employee can be expected to be protected when wearing a respirator, and is determined by the assigned protection factor of the respirator or class of respirators and the exposure limit of the hazardous substance.

The MUC can be determined mathematically by multiplying the assigned protection factor specified for a respirator by the required OSHA permissible exposure limit, short-term exposure limit, or ceiling limit. When no OSHA exposure limit is available for a hazardous substance, an employer must determine a MUC on the basis of relevant available information and informed professional judgment. Table 1 of 29 CFR 1910.134 lists the APFs the employer must use beginning November 22, 2006. Footnote 4 of table 1 states: “The employer must have evidence provided by the respirator manufacturer that testing of these respirators demonstrates performance at a level of protection of 1000 or greater to receive an APF of 1000. This level of performance can best be demonstrated by performing a workplace protection factor (WPF) or simulated workplace protection factor (SWPF) study or equivalent testing. Absent such testing, all other PAPRs and SARs with helmets/hoods are to be treated as loose-fitting facepiece respirators, and receive an APF of 25.”

The definitions of WPF and SWPF are provided in the Federal Register August 24, 2006, Vol. 71 Number 164.

Type of Respirator 1,2	Quarter Mask	Half Mask	Full Facepiece	Helmet/ Hood	Loose-Fitting Facepiece
1. Air-Purifying Respirator	5	10 <sup>3</sup>	50	—	—
2. Powered Air-Purifying Respirator (PAPR)	—	50	1,000	25/1,000 <sup>4</sup>	25
<b>3. Supplied-Air Respirator (SAR) or Airline Respirator</b>					
• Demand mode	—	10	50	—	—
• Continuous flow mode	—	50	1,000	25/1,000 <sup>4</sup>	25
• Pressure-demand or other positive-pressure mode	—	50	1,000	—	—
<b>4. Self-Contained Breathing Apparatus (SCBA)</b>					
• Demand mode	—	10	50	50	—
• Pressure-demand or other positive-pressure mode	—	—	10,000	—	—

1. Employers may select respirators assigned for use in higher workplace concentrations of a hazardous substance for use at lower concentrations of that substance, or when required respirator use is independent of concentration.

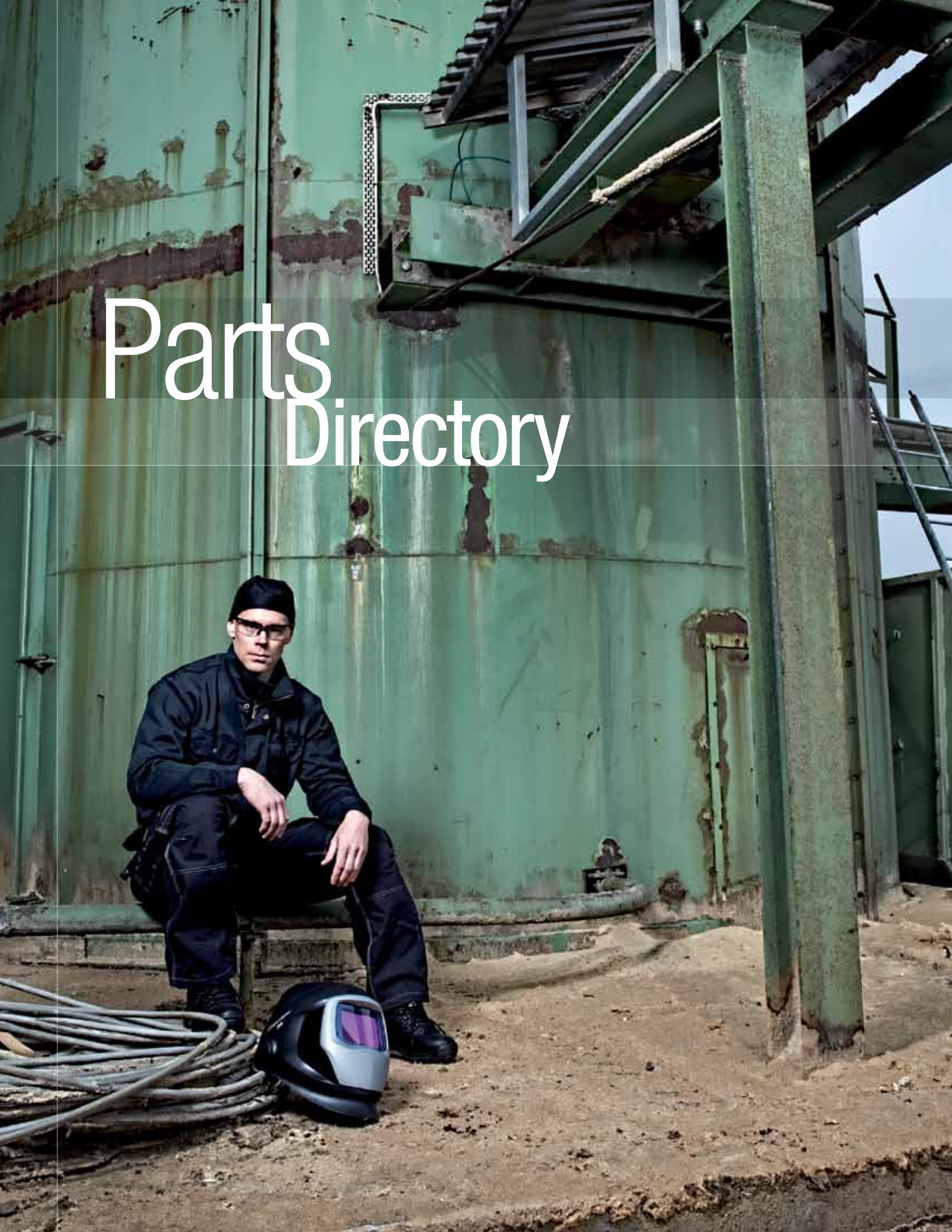
2. The assigned protection factors in Table 1 are only effective when the employer implements a continuing, effective respirator program as required by this section (29 CFR 1910.134), including training, fit testing, maintenance, and use requirements.

3. This APF category includes filtering facepieces, and half masks with elastomeric facepieces.

4. The employer must have evidence provided by the respirator manufacturer that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater to receive an APF of 1,000. This level of performance can best be demonstrated by performing a WPF or SWPF study or equivalent testing. Absent such testing, all other PAPRs and SARs with helmets/hoods are to be treated as loose-fitting facepiece respirators, and receive an APF of 25.

5. These APFs do not apply to respirators used solely for escape. For escape respirators used in association with specific substances covered by 29 CFR 1910 subpart Z, employers must refer to the appropriate substance-specific standards in that subpart. Escape respirators for other IDLH atmospheres are specified by 29 CFR 1910.134 (d)(2)(iii).

# Parts Directory





3M™ Welding Helmets (non-respiratory models)

Speedglas™ Welding Helmet 9100	43
Speedglas™ Welding Helmet 9100 FX	44
Speedglas™ Welding Helmet Series 100	46
Speedglas™ Welding Helmet SL	47
Speedglas™ Welding Helmet 9002D	47
Speedglas™ Welding Helmet 9000/Utility	45
Speedglas™ Welding Helmet 9000 ProTop	49
Hard Hat Options for Speedglas™ Welding Helmets 9100 / 100	49

3M™ Respiratory Protection

Adflo™ Powered Air Purifying Respirator	51
Speedglas™ Fresh-air III Supplied Air Systems	52
Speedglas™ Fresh-air II Supplied Air Systems	52
3M Compressed Air Filter and Regulator Panels	53

3M™ Headtops for Respiratory Protection

Speedglas™ Welding Helmet 9100-Air	54
Speedglas™ Welding Helmet 9100 MP	55
Speedglas™ Welding Helmet 9100 FX-Air	56
Speedglas™ Welding Helmets 9000/FlexView HWR	57
Speedglas™ Powered and Supplied Air Protection L-Series SG	58
3M Faceshield ClearVisor	59

Care and Maintenance	60
Technical Specifications	61
Product Index	64



# 3M™ Speedglas™ Welding Helmet — Product Overview

The 3M™ Speedglas™ Auto-Darkening Welding Filter was one of the first of its type on the market, bringing a new standard to eye protection and comfort for welders.

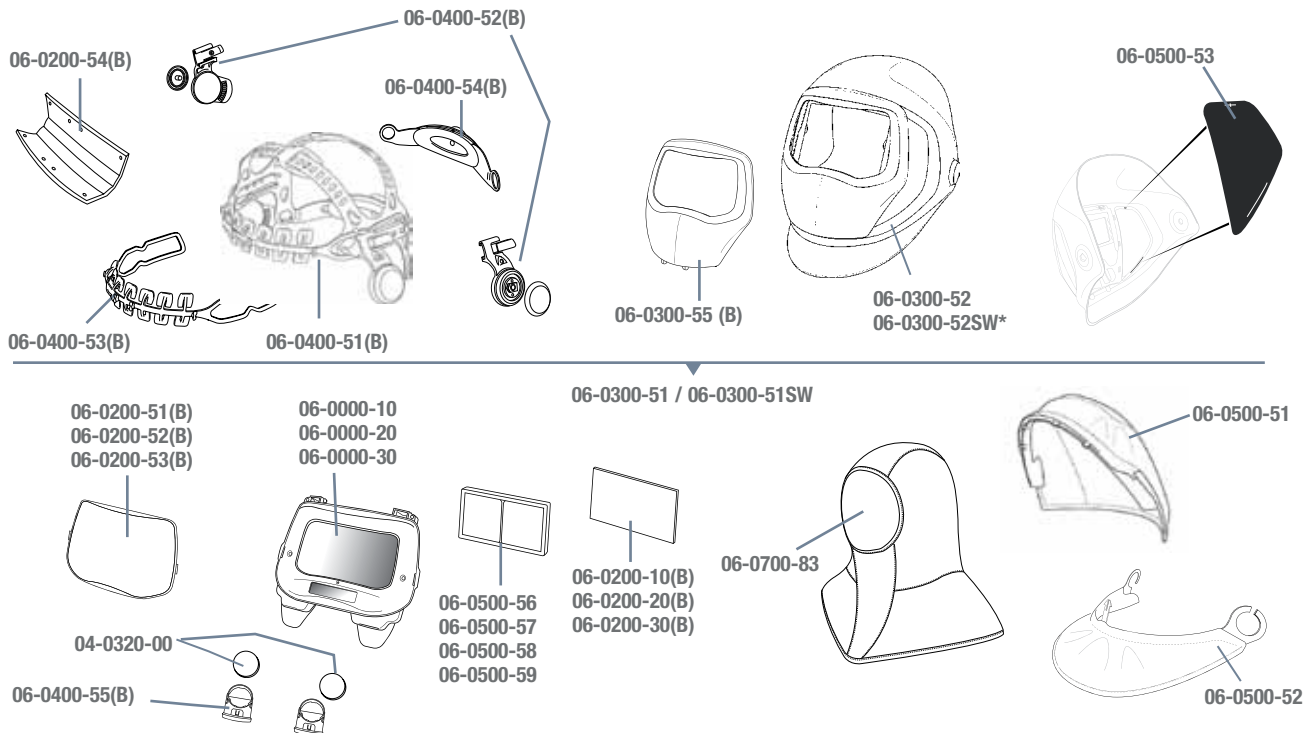
Today, there is a great family of Speedglas welding helmets, each model with its specific series of welding filters:



# 3M™ Speedglas™ Welding Helmet 9100



Part No	Description	Part No	Description	Part No	Description
06-0100-10	Speedglas welding helmet 9100 with welding filter 9100V.	06-0100-20	Speedglas welding helmet 9100 with welding filter 9100X.	06-0100-30	Speedglas welding helmet 9100 with welding filter 9100XX.
06-0100-10SW	Speedglas welding helmet 9100 with side windows and welding filter 9100V.	06-0100-20SW	Speedglas welding helmet 9100 with side windows and welding filter 9100X.	06-0100-30SW	Speedglas welding helmet 9100 with side windows and welding filter 9100XX.



## Accessories and consumables

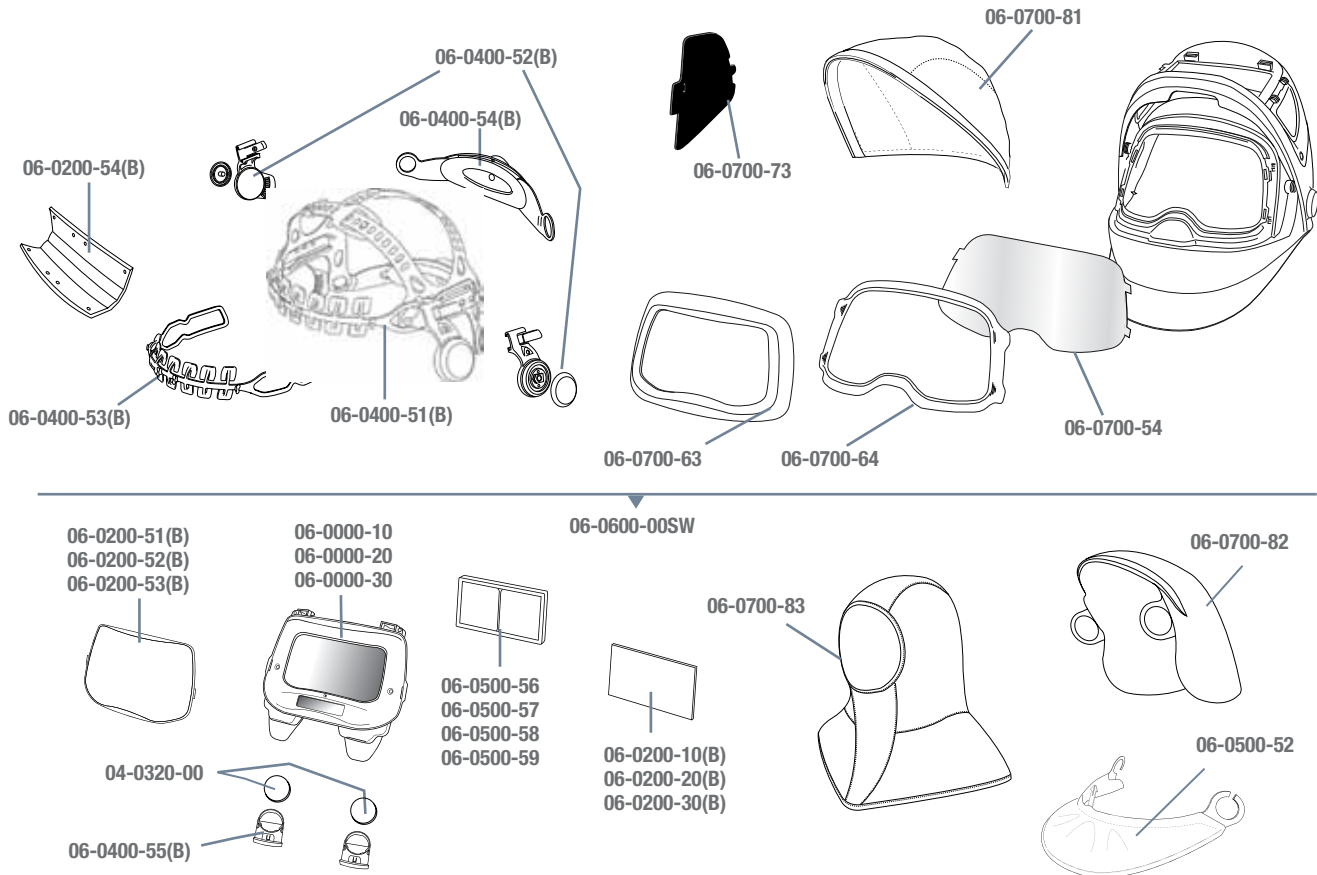
Part No	Description	Part No	Description	Part No	Description
04-0320-00	Batteries, 2/case	06-0200-54	Comfort sweatband, 3/case	06-0300-55	Silver front panel
06-0000-10	Speedglas welding filter 9100V, variable shade 5, 8, 9-13	06-0200-54-B	Comfort sweatband, 12/case	06-0300-55-B	Part no 06-0300-55, 5/case
06-0000-20	Speedglas welding filter 9100X, variable shade 5, 8, 9-13	06-0201-10	Starter kit 9100V, incl 5 outside protection plates, 2 inside protection plates and 1 sweatband	06-0400-51	Headband incl assembled parts.
06-0000-30	Speedglas welding filter 9100XX, variable shade 5, 8, 9-13	06-0201-20	Starter kit 9100X, incl 5 outside protection plates, 2 inside protection plates and 1 sweatband	06-0400-51-B	Part no 06-0400-51, 5/case
06-0200-10	Inside protection plate 9100V, 5/case	06-0201-30	Starter kit 9100XX, incl 5 outside protection plates, 2 inside protection plates and 1 sweatband	06-0400-52	Pivot mechanism headband, left and right.
06-0200-10-B	Part no 06-0200-10, 25/case	06-0300-51	Speedglas welding helmet 9100 without side windows, with headband and silver front panel	06-0400-52-B	Part no 06-0400-52, 5/case
06-0200-20	Inside protection plate 9100X, 5/case	06-0300-51SW	Speedglas welding helmet 9100 with side windows, headband and silver front panel	06-0400-53	Headband front part.
06-0200-20-B	Part no 06-0200-20, 25/case	06-0300-52	Speedglas welding helmet 9100 without side windows, without headband	06-0400-53-B	Part no 06-0400-53, 5/case
06-0200-30	Inside protection plate 9100XX, 5/case	06-030052SW*	Speedglas welding helmet 9100 with side windows, without headband.	06-0400-54	Headband back part.
06-0200-30-B	Part no 06-0200-30, 25/case			06-0400-54-B	Part no 06-0400-54, 5/case
06-0200-51	Outside protection plate standard, 10/case			06-0400-55	Battery holder 9100, 2/case
06-0200-51-B	Part no 06-0200-51, 50/case			06-0400-55-B	Part no 06-0400-55, 10/case
06-0200-52	Outside protection plate scratch resistant, 10/case			06-0500-51	Extended coverage 9100, Crown
06-0200-52-B	Part no 06-0200-52, 50/case			06-0500-52	Extended coverage 9100, Ear & Neck
06-0200-53	Outside protection plate high temperature, 10/case			06-0500-53*	SideWindow cover plates, 2/case.
06-0200-53-B	Part no 06-0200-53, 50/case			06-0500-56	Magnification plate 1.5x.
				06-0500-57	Magnification plate 2.0x.
				06-0500-58	Magnification plate 2.5x.
				06-0500-59	Magnification plate 3.0x.
				06-0700-83	Full Hood, black/grey.

\* Please use Part No 06-0300-52SW when ordering replacement Side windows.

# 3M™ Speedglas™ Welding Helmet 9100 FX



Part No	Description	Part No	Description	Part No	Description
06-0600-10SW	Speedglas welding helmet 9100 FX with welding filter 9100V	06-0600-20SW	Speedglas welding helmet 9100 FX with welding filter 9100X	06-0600-30SW	Speedglas welding helmet 9100 FX with welding filter 9100XX



## Accessories and consumables

Part No	Description	Part No	Description	Part No	Description
04-0320-00	Batteries 2/case	06-0200-52	Outside protection plate scratch resistant, 10/case	06-0500-52	Extended coverage, ear and neck
06-0000-10	Speedglas welding filter 9100V, variable shade 5, 8, 9-13.	06-0200-52-B	Part no 06-0200-52, 50/case	06-0500-56	Magnification plate 1.5x.
06-0000-20	Speedglas welding filter 9100X, variable shade 5, 8, 9-13.	06-0200-53	Outside protection plate high temperature, 10/case	06-0500-57	Magnification plate 2.0x.
06-0000-30	Speedglas welding filter 9100XX variable shade 5, 8, 9-13.	06-0200-53-B	Part no 06-0200-53, 50/case	06-0500-58	Magnification plate 2.5x.
06-0200-10	Inside protection plate 9100V, 5/case	06-0200-54	Comfort sweatband, 12/case	06-0500-59	Magnification plate 3.0x.
06-0200-10-B	Part no 06-0200-10, 25/case	06-0200-54-B	Comfort sweatband, 12/case	06-0600-00SW	Speedglas helmet 9100 FX, without welding filter, with headband.
06-0200-20	Inside protection plate 9100X, 5/case	06-0400-51	Headband incl assembled parts.	06-0700-54	Wide-view clear grinding visor, anti-fog, 5/case.
06-0200-20-B	Part no 06-0200-20, 25/case	06-0400-51-B	Part no 06-0400-51, 5/case	06-0700-63	Front panel, chrome
06-0200-30	Inside protection plate 9100XX, 5/case	06-0400-52	Pivot mechanism headband, left and right.	06-0700-64	Wide-view clear grinding visor frame, black
06-0200-30-B	Part no 06-0200-30, 25/case	06-0400-52-B	Part no 06-0400-52, 5/case	06-0700-73	SideWindow cover plates, 2/case.
06-0200-30-B	Part no 06-0200-30, 25/case	06-0400-53	Headband front part.	06-0700-81	Standard headcover, crown, black
06-0200-51	Outside protection plate standard, 10/case	06-0400-53-B	Part no 06-0400-53, 5/case	06-0700-82	Extended headcover, head and neck
06-0200-51-B	Part no 06-0200-51, 50/case	06-0400-54	Headband back part.	06-0700-83	Full Hood, black/grey
		06-0400-54-B	Part no 06-0400-54, 5/case		
		06-0400-55	Battery holder 9100, 2/case		
		06-0400-55-B	Part no 06-0400-55, 10/case		

# Featured Accessories

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 maximize 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:



06-0700-83



BPK-01



06-0700-81  
06-0700-82



06-0500-54



06-0500-55



06-0500-51

06-0500-52

06-0500-52

Ordering Information for Additional Coverage Products	3M™ Speedglas™ Welding Helmets 9000 / SL /100	3M™ Speedglas™ Welding Helmet 9100 MP	3M™ Speedglas™ Welding Helmets 9100 / 9100-Air	3M™ Speedglas™ Welding Helmets 9100 FX / 9100 FX-Air
Head protection	Part No 16-0099-30*	N/A	Part No 06-0500-51	Part No 06-0700-81 (standard)** Part No 06-0700-82 (extended)
Neck protection	Part No 02-0690-00*	Part No 27-0099-85*	Part No 06-0500-52*	
Hood	Part No 06-0700-83*		Part No 06-0700-83*	
Backpack	BPK-01 - For use with Adflo™ PAPR			
Welding beanie Material	Part No 06-0500-54 Cotton			
Welding cap Material	Part No 06-0500-55 50 Wash FR Fabric			

\* Tested to EN/ISO 11611.

\*\* Standard headcover not NIOSH-approved on 3M™ Speedglas™ Welding Helmet 9100 FX-Air.

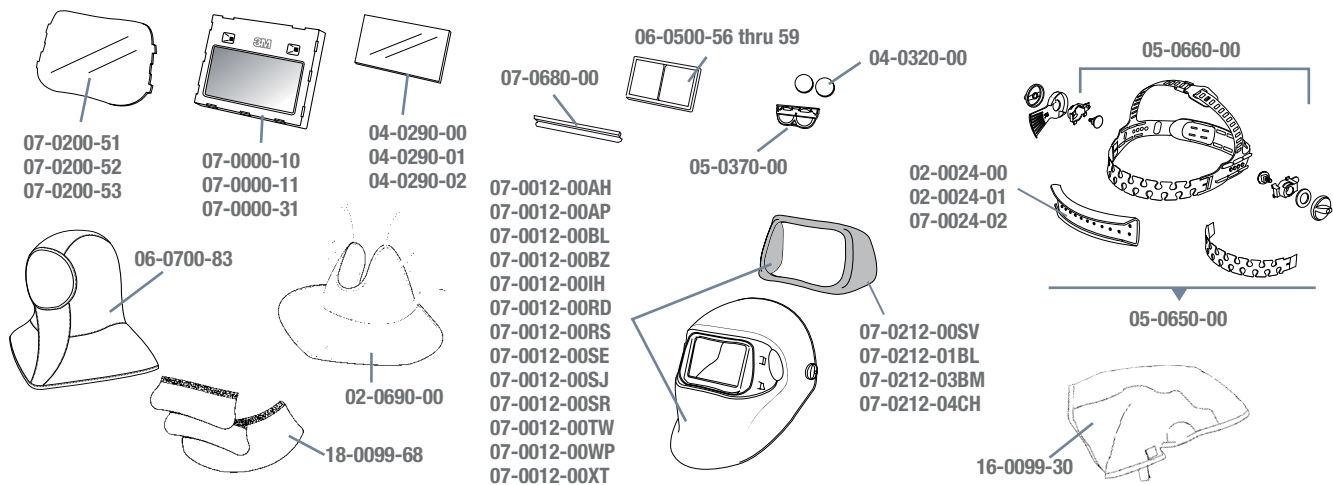
# 3M™ Speedglas™ Welding Helmet 100 Series

07-0012-31BY



Part No	Description	Part No	Description	Part No	Description
07-0012-31AH	Speedglas welding helmet 100 Aces High*	07-0012-31BZ	Speedglas welding helmet 100 Blazed*	07-0012-31SR	Speedglas welding helmet 100 Steel Rose*
07-0012-31AP	Speedglas welding helmet 100 American Pride*	07-0012-31IH	Speedglas welding helmet 100 Ice Hot*	07-0012-31TW	Speedglas welding helmet 100 Trojan Warrior*
07-0012-10BL	Speedglas welding helmet 100 Black with welding filter 100S-10	07-0012-31RD	Speedglas welding helmet 100 Razor Dragon*	07-0012-31WP	Speedglas welding helmet 100 Wild-N-Pink*
07-0012-11BL	Speedglas welding helmet 100 Black with welding filter 100S-11	07-0012-31RS	Speedglas welding helmet 100 Raging Skull*	07-0012-31XT	Speedglas welding helmet 100 Xterminator*
07-0012-31BL	Speedglas welding helmet 100 Black*	07-0012-31SE	Speedglas welding helmet 100 Steel Eyes*		
07-0012-31BY	Speedglas welding helmet 100 Boneyard*	07-0012-31SJ	Speedglas welding helmet 100 Skull Jewels*		

\* With Speedglas welding filter 100V.



## Accessories and consumables

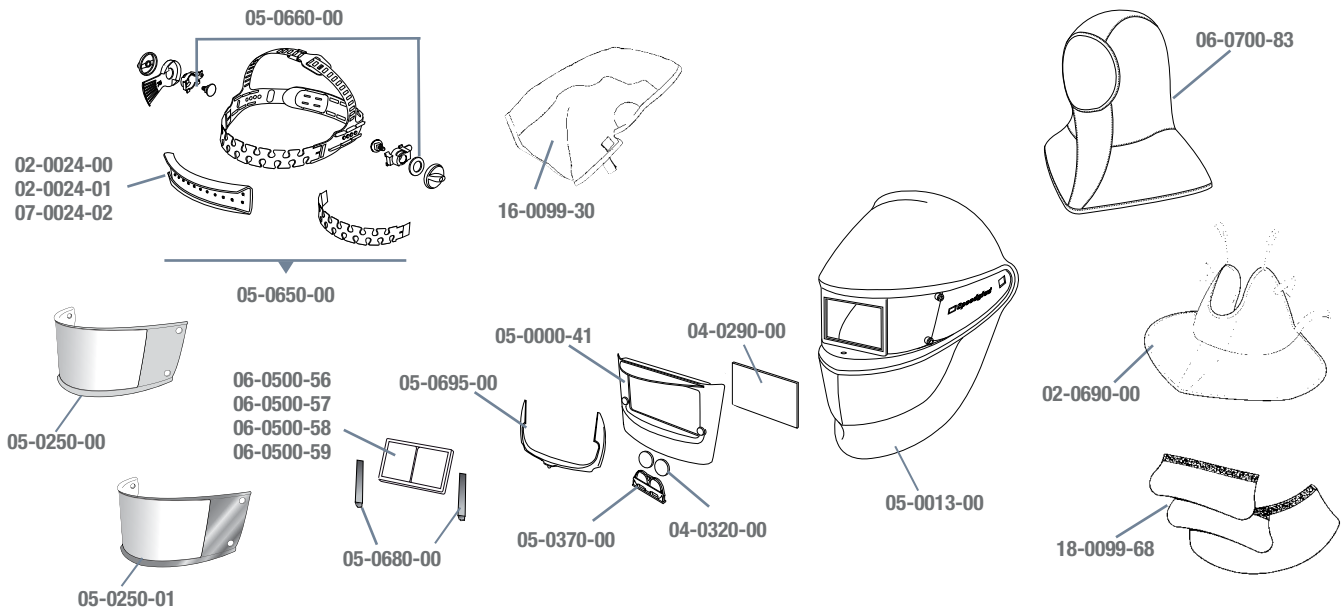
Part No	Description	Part No	Description	Part No	Description
02-0024-00	Sweatband, cotton fleece with padding	07-0000-31	Speedglas welding filter 100V, shade 8-12.		filter, without headband.
02-0024-01	Sweatband, leather.	07-0012-00AH	Welding helmet Aces High, without filter, without headband.	07-0012-00TW	Welding helmet Trojan Warrior, without filter, without headband.
02-0690-00	Throat protection, black/grey.	07-0012-00AP	Welding helmet American Pride, without filter, without headband.	07-0012-00WP	Welding helmet Wild-N-Pink, without filter, without headband.
04-0290-00	Inside protection plate, 5/case.	07-0012-00BL	Welding helmet black, without welding filter, without headband.	07-0012-00XT	Welding helmet Xterminator, without filter, without headband.
04-0290-01	Inside protection plate, +1 shade, 5/case.	07-0012-00BY	Welding helmet Boneyard, without welding filter, without headband.	07-0024-02	Sweatband, fleece, 2/case.
04-0290-02	Inside protection plate, +2 shade, 5/case.	07-0012-00BZ	Welding helmet Blazed, without welding filter, without headband.	07-0200-51	Outside protection plate, standard, 10/case
04-0320-00	Battery, 2/case.	07-0012-00IH	Welding helmet Ice Hot without welding filter, without headband.	07-0200-52	Outside protection plate, scratch resistant, 10/case.
05-0370-00	Battery cover.	07-0012-00RD	Welding helmet Razor Dragon, without filter, without headband.	07-0200-53	Outside protection plate, high temperature, 10/case.
05-0650-00	Comfort headband with assembly parts.	07-0012-00RS	Welding helmet Raging Skull, without filter, without headband.	07-0212-00SV	Silver front frame 100
05-0660-00	Assembly parts for headband.	07-0012-00SE	Welding helmet Steel Eyes, without filter, without headband.	07-0212-01BL	Black front frame 100, glossy
06-0500-56	Magnification plate 1.5x.	07-0012-00SJ	Welding helmet Skull Jewels, without filter, without headband.	07-0212-03BM	Black front frame 100, matte
06-0500-57	Magnification plate 2.0x.	07-0012-00SR	Welding helmet Steel Rose, without	07-0212-04CH	Chrome front frame 100
06-0500-58	Magnification plate 2.5x.			07-0680-00	Holder for magnifier, 2/case
06-0500-59	Magnification plate 3.0x.			16-0099-30	Headcover, FR cotton
06-0700-83	Full hood, black/grey			18-0099-68	Throat and side protector, leather.
07-0000-10	Speedglas welding filter 100S-10, shade 10.				
07-0000-11	Speedglas welding filter 100S-11, shade 11.				

# 3M™ Speedglas™ Welding Helmet SL



05-0013-41

Part No	Description	Part No	Description	Part No	Description
02-0024-00	Sweatband, cotton fleece with padding.	05-0250-00	Outside protection plate, 5/case.	06-0500-58	Magnification plate 2.5x.
02-0024-01	Sweatband, leather.	05-0250-01	Outside protection plate, scratch resistant, 5/case.	06-0500-59	Magnification plate 3.0x.
02-0690-00	Throat protection black/grey.	05-0370-00	Battery holder.	06-0700-83	Full hood, black/grey.
04-0290-00	Inside protection plate, 5/case.	05-0650-00	Headband with assembly parts.	07-0024-02	Sweatband, fleece, black 2/case.
04-0320-00	Battery, 2/case.	05-0660-00	Assembly parts for headband.	16-0099-30	Headcover, FR Cotton
05-0000-41	Welding filter SL, shade 8-12.	05-0680-00	Magnifying lens holder	18-0099-68	Throat and side protector, leather.
05-0013-00	Welding helmet, without headband.	05-0695-00	Spatter protector		
05-0013-41	Welding helmet SL with filter, variable shade 8-12.	06-0500-56	Magnification plate 1.5x.		
		06-0500-57	Magnification plate 2.0x.		



# 3M™ Speedglas™ Welding Helmets 9000 and 9000 FlexView with 9002D Filter



04-0012-15  
04-0012-15SW

Part No	Description	Part No	Description
04-0012-15	Speedglas 9000 welding helmet, without side windows, with welding filter 9002D, shade 10-11.	04-0016-15	Speedglas 9000 FlexView welding helmet, without side windows, with welding filter 9002D, shade 10-11.
04-0012-15SW	Speedglas 9000 welding helmet with side windows and welding filter 9002D, shade 10-11.	04-0016-15SW	Speedglas 9000 welding helmet with side windows and welding filter 9002D, shade 10-11.



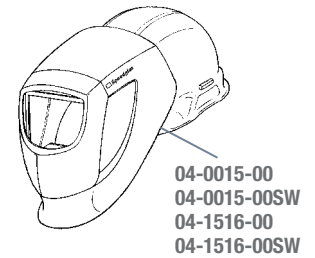
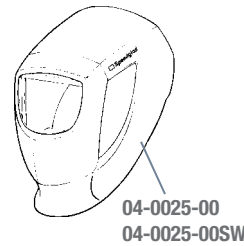


# 3M™ Speedglas™ ProTop System

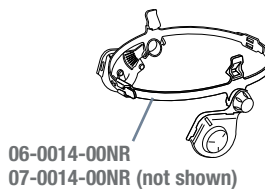


04-0015-15SW  
04-0015-21SW  
04-0015-31SW

Part No	Description	Part No	Description	Part No	Description
H-700-BP	Hard hat replacement brow pad, 20/case.	04-0015-31SW	ProTop system with side windows and welding filter 9002V.	04-1516-15	FlexView ProTop system, without side windows, with welding filter 9002D.
04-0015-00	ProTop system without side windows, without welding filter	04-0023-02	Hard hat, white.	04-1516-15SW	FlexView ProTop system with side windows and welding filter 9002D.
04-0015-00SW	ProTop system with side windows, without welding filter	04-0025-00	ProTop welding hood with pivot mechanism, without hard hat, welding filter, without strap.	04-1516-21	FlexView ProTop system without side windows, with welding filter 9002X.
04-0015-15	ProTop system without side windows, with welding filter 9002D.	04-0025-00SW	ProTop welding hood with pivot mechanism and side windows, without hard hat, without welding filter, without strap.	04-1516-21SW	FlexView ProTop system with side windows and welding filter 9002X.
04-0015-15SW	ProTop system with side windows and welding filter 9002D.	04-0315-00	ProTop strap.	04-1516-31	FlexView ProTop system without side windows, with welding filter 9002V.
04-0015-21	ProTop system without side windows, with welding filter 9002X.	04-1516-00	FlexView ProTop system without side windows, without welding filter	04-1516-31SW	FlexView ProTop system with side windows and welding filter 9002V.
04-0015-21SW	ProTop system with side windows and welding filter 9002X	04-1516-00SW	FlexView ProTop system with side windows, without welding filter		
04-0015-31	ProTop system without side windows, with welding filter 9002V.				



## Hard Hat Options for 3M™ Speedglas™ Welding Helmets 9100 / 100

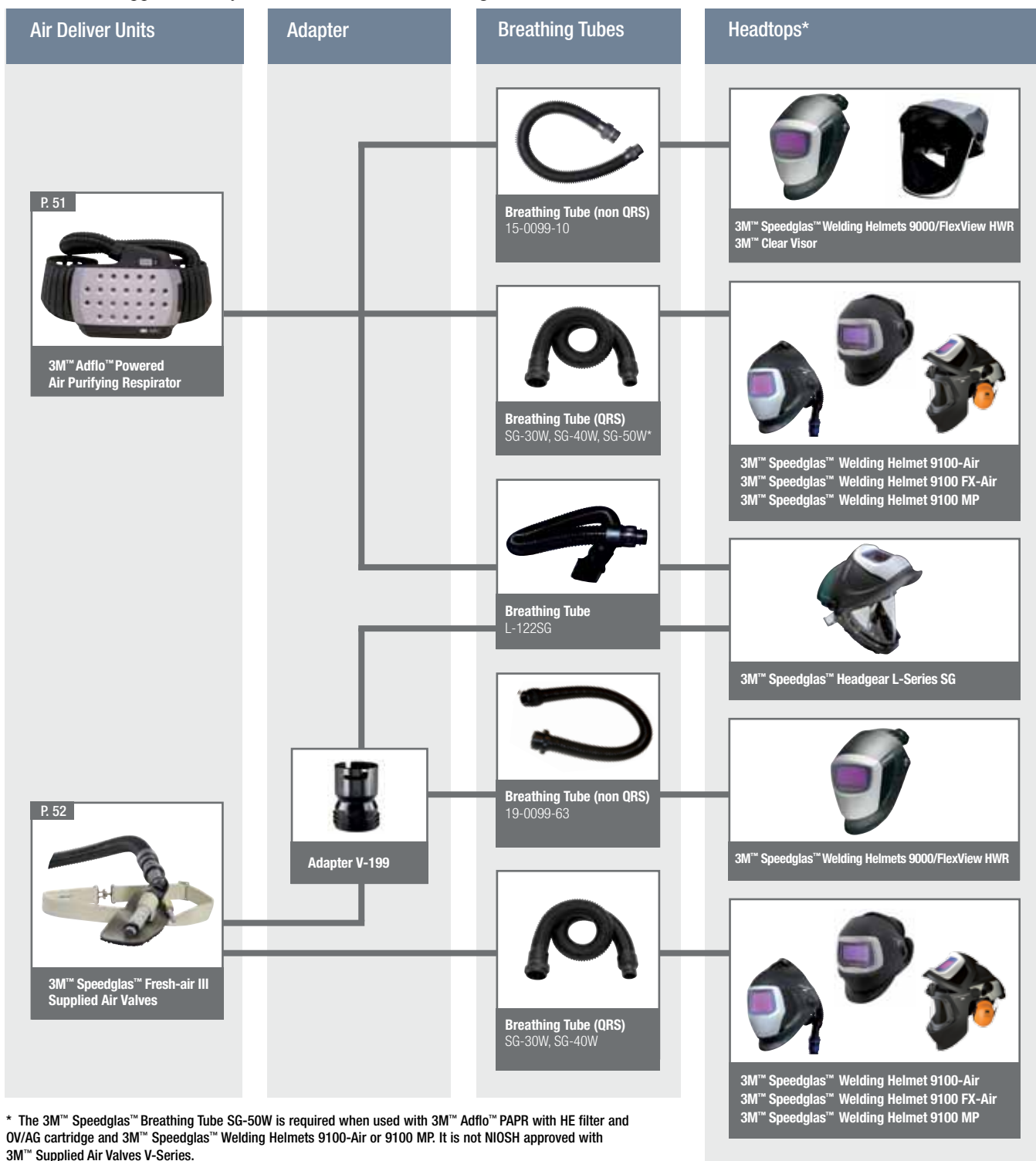


Part No	Description	Part No	Description	Part No	Description
04-0023-02	Hard hat, white.	06-0100-20HASW	Speedglas welding helmet 9100 with side windows, hard hat adapter and welding filter 9100X, without hard hat.	06-0100-30HHSW	Speedglas welding helmet 9100 with side windows, hard hat and welding filter 9100XX
06-0014-00NR	Hard hat adapter for Speedglas welding helmet 9100 with assembly parts, without hard hat.	06-0100-20HHSW	Speedglas welding helmet 9100 with side windows, hard hat and welding filter 9100X.	07-0012-31BL-HA	Speedglas welding helmet 100 with welding filter 100V and hard hat adapter, without hard hat.
06-0100-10HASW	Speedglas welding helmet 9100, with side windows, hard hat adapter and welding filter 9100V, without hard hat.	06-0100-30HASW	Speedglas welding helmet 9100 with side windows, hard hat adapter and welding filter 9100XX, without hard hat.	07-0012-31BL-HH	Speedglas welding helmet 100 with hard hat and welding filter 100V.
06-0100-10HHSW	Speedglas welding helmet 9100 with side windows, hard hat and welding filter 9100V.			07-0014-00NR	Hard hat adapter for Speedglas welding helmet 100 with hard hat assembly parts, without hard hat (not shown).

# Compatibility of Air Delivery Units and Headtops

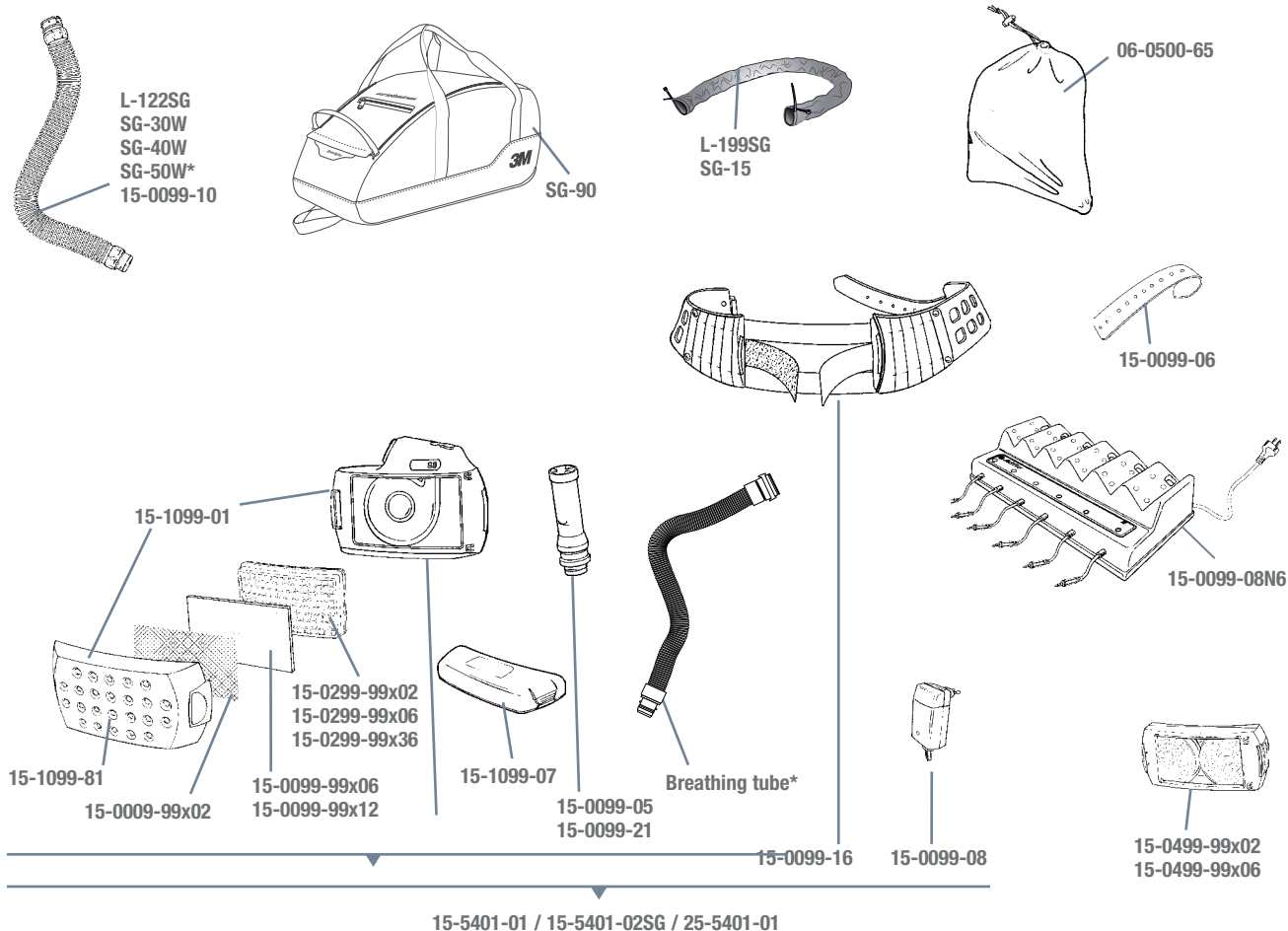
The 3M™ Speedglas™ Welding Helmet Series 9100 features breathing tubes with QRS connection (Quick Release Swivel), which enables one-handed connection and release. The SG-30W breathing tube comes standard with most 3M™ Adflo™ PAPR HE Systems and 3M™ Speedglas™ Fresh-air III Supplied Air Systems. The SG-40W breathing

tube is an option for more demanding conditions and also comes standard with complete systems that include the 3M™ Speedglas™ Welding Helmet 9100 MP. The SG-50W breathing tube is standard on the 3M™ Adflo™ PAPR HE/OV-AG systems.



\* The 3M™ Speedglas™ Breathing Tube SG-50W is required when used with 3M™ Adflo™ PAPR with HE filter and OV/AG cartridge and 3M™ Speedglas™ Welding Helmets 9100-Air or 9100 MP. It is not NIOSH approved with 3M™ Supplied Air Valves V-Series.

# 3M™ Adflo™ Powered Air Purifying Respirator



15-5401-01 / 15-5401-02SG / 25-5401-01

## Accessories and consumables

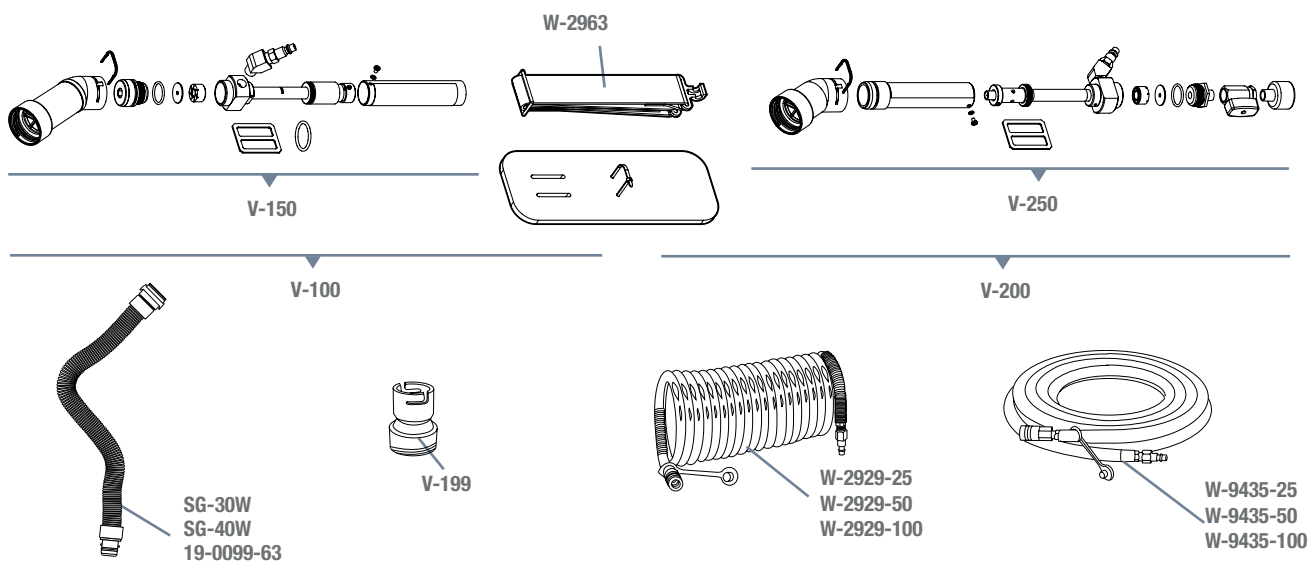
Part No	Description	Part No	Description	Part No	Description
L-122SG	Breathing tube for L-series headgear.	15-0099-08N6	6-station battery charger.	15-1099-81	PAPR filter cover
L-199SG	High temperature breathing tube cover.	15-0099-10	Breathing tube assembly (includes 15-0099-11 and 15-0099-12).	15-5401-01*	Adflo PAPR with breathing tube assembly (15-0099-10), airflow indicator, prefilter, spark arrestor, HE particulate filter, filter cover, battery, belt and charger
SG-15	Flame resistant breathing tube cover (replaces 17-0099-54).	15-0099-11	Gasket for non-QRS breathing tubes (not shown).	15-5401-02SG*	Adflo PAPR with L-122SG breathing tube, airflow indicator, prefilter, spark arrestor, filter cover, HE particulate filter, battery, belt and charger
SG-30W	Breathing tube, self-adjusting, with QRS connection.	15-0099-12	Breathing tube rubber o-ring (not shown).	25-5401-01*	Adflo PAPR with SG-30W self-adjusting breathing tube, airflow indicator, prefilter, spark arrestor, filter cover, HE particulate filter, battery, belt and charger.
SG-40W	Breathing tube, heavy-duty, with QRS connection.	15-0099-16	Belt, leather.		
SG-50W*	Breathing tube, sound-dampening, with QRS connection.	15-0099-21	Flow Indicator		
SG-90	Carry bag.	15-0099-99x06	Prefilter, 6/case		
06-0500-65	Protective bag	15-0099-99x12	Prefilter, 12/case		
15-0009-99x02	Spark arrestor, 2/case.	15-0299-99x02	HE particulate filter, 2/case		
15-0099-05	Airflow indicator	15-0299-99x06	HE particulate filter, 6/case		
15-0099-06	Leather belt front replacement	15-0299-99x36	HE particulate filter, 36/case		
15-0099-08	Battery charger	15-0499-99x02	OV/AG cartridge, 2/case		
		15-0499-99x06	OV/AG cartridge, 6/case		
		15-1099-01	PAPR assembly and filter cover		
		15-1099-07	Battery		

\* The 3M™ Speedglas™ Breathing Tube SG-50W is required when used with 3M™ Adflo™ PAPR with HE filter and OV/AG cartridge and 3M™ Speedglas™ Welding Helmets 9100-Air or 9100 MP.

# 3M™ Speedglas™ Fresh-air III Supplied Air System



Part No	Description	Part No	Description	Part No	Description
19-0099-63	Fresh-air III breathing tube V-Series	V-150	Vortex cooling valve	W-2929-25	High pressure air supply hose, 25 ft.
SG-30W	Breathing tube, self-adjusting, with QRS connection.	V-199	Adapter (for use with SG-30W and SG-40W breathing tubes), 4/case.	W-2929-50	High pressure air supply hose, 50 ft.
SG-40W	Breathing tube, heavy-duty rubber, with QRS connection.	V-200	Vortemp heating assembly, includes valve V-250, belt W-2963 and holder.	W-2929-100	High pressure air supply hose, 100 ft.
V-100	Vortex cooling assembly, includes valve V-150, belt W-2963 and holder with QRS connection.	V-211	Vortemp muffler kit (replacement muffler for the heating assembly V-200).	W-2963	Waist belt, cotton
V-111	Vortex muffler kit (replacement muffler for the cooling assembly V-100).	V-215	Vortemp spare parts kit (for the heating assembly V-200).	W-9435-25	High pressure air supply hose, 25 ft.
V-115	Vortex spare parts kit (for the cooling assembly V-100).	V-250	Vortemp heating valve	W-9435-50	High pressure air supply hose, 25 ft.
				W-9435-100	High pressure air supply hose, 25 ft.



# 3M™ Speedglas™ Fresh-air II Supplied Air System



## Consumables (not shown)

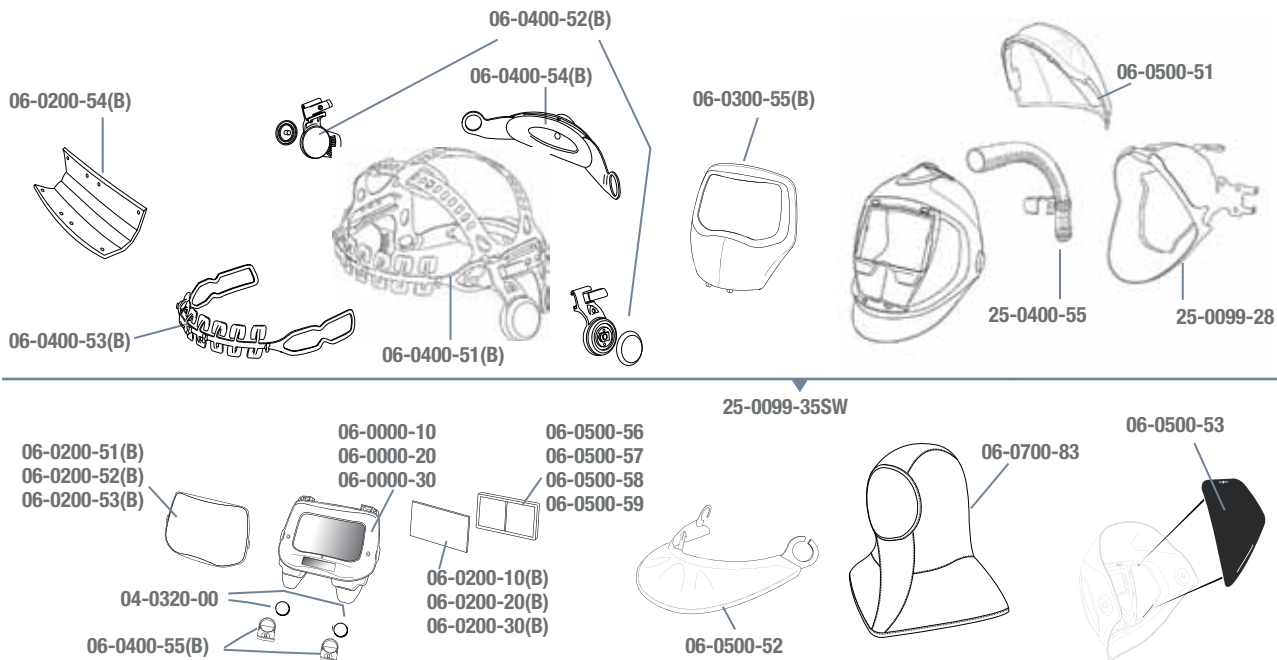
Part No	Description	Part No	Description	Part No	Description
18-0099-16	Comfort Belt	18-0099-43	Coil air supply hose with couplings, 25 ft.	18-0099-45	Coil air supply hose with couplings, 100 ft.
18-0099-40	Air supply hose with couplings, 25 ft.	18-0099-44	Coil air supply hose with couplings, 50 ft.	18-0099-55	Fresh-air II valve shield
18-0099-41	Air supply hose with couplings, 50 ft.			18-0099-63	Fresh-air II breathing tube
18-0099-42	Air supply hose with couplings, 100 ft.				



# 3M™ Speedglas™ Welding Helmet 9100-Air for Respiratory Protection



Part No	Description	Part No	Description	Part No	Description
25-1101-00SW	Speedglas welding helmet 9100-Air without welding filter with Adflo PAPR and HE filter.	25-3301-10SW	Speedglas welding helmet 9100-Air with welding filter 9100V and Adflo PAPR with HE filter and <b>OV/AG cartridge</b> .	25-5702-20SW	Speedglas welding helmet 9100-Air with welding filter 9100X and Fresh-air III SAR, V-100 valve.
25-1101-10SW	Speedglas welding helmet 9100-Air with welding filter 9100V and Adflo PAPR with HE filter.	25-3301-20SW	Speedglas welding helmet 9100-Air with welding filter 9100X and Adflo PAPR with HE filter and <b>OV/AG cartridge</b> .	25-5702-30SW	Speedglas welding helmet 9100-Air with welding filter 9100XX and Fresh-air III SAR, V-100 valve.
25-1101-20SW	Speedglas welding helmet 9100-Air with welding filter 9100X and Adflo PAPR with HE filter.	25-3301-30SW	Speedglas welding helmet 9100-Air with welding filter 9100XX and Adflo PAPR with HE filter and <b>OV/AG cartridge</b> .	25-5802-10SW	Speedglas welding helmet 9100-Air with welding filter 9100V and Fresh-air III SAR, V-200 valve.
25-1101-30SW	Speedglas welding helmet 9100-Air with welding filter 9100XX and Adflo PAPR with HE filter.	25-5702-10SW	Speedglas welding helmet 9100-Air with welding filter 9100V and Fresh-air III SAR, V-100 valve.	25-5802-20SW	Speedglas welding helmet 9100-Air with welding filter 9100X and Fresh-air III SAR, V-200 valve.
25-3301-00SW	Speedglas welding helmet 9100-Air without welding filter, with Adflo PAPR, HE filter and <b>OV/AG cartridge</b> .	25-5802-30SW	Speedglas welding helmet 9100-Air with welding filter 9100XX and Fresh-air III SAR, V-200 valve.		



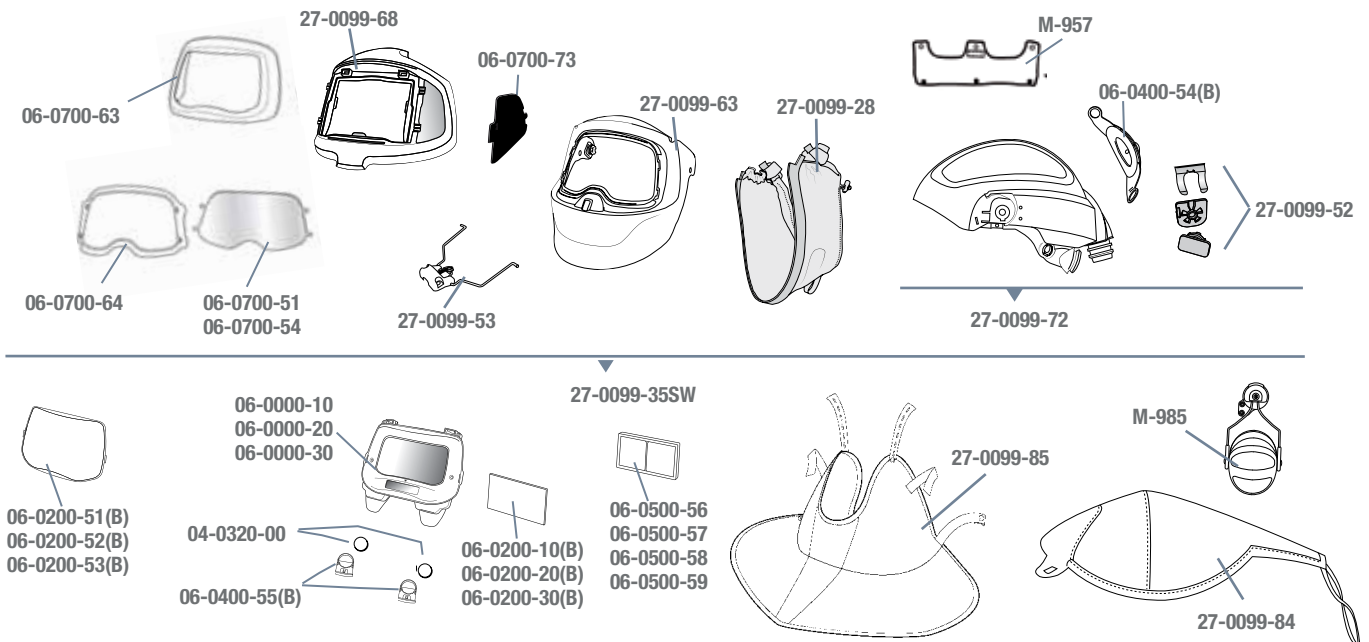
## Accessories and consumables

Part No	Description	Part No	Description	Part No	Description
04-0320-00	Battery, 2/case.	06-0200-52-B	Part no 06-0200-52, 50/case	06-0400-54-B	Part no 06-0400-54, 5/case
06-0000-10	Speedglas Welding Filter 9100V.	06-0200-53	Outside protection plate high temperature, 10/case	06-0400-55	Battery holder 9100, 2/case
06-0000-20	Speedglas Welding Filter 9100X.	06-0200-53-B	Part no 06-0200-53-B, 50/case	06-0400-55-B	Part no 06-0400-55, 10/case
06-0000-30	Speedglas Welding Filter 9100XX.	06-0200-54	Comfort sweatband, 3/case	06-0500-51	Extended coverage, crown.
06-0200-10	Inside protection plate 9100V, 5/case	06-0200-54-B	Comfort sweatband, 12/case	06-0500-52	Extended coverage, ear and neck.
06-0200-10-B	Part no 06-0200-10, 25/case	06-0300-55	Silver front panel.	06-0500-53	Side/Window cover plates, 2/case
06-0200-20	Inside protection plate 9100X, 5/case	06-0300-55-B	Part no 06-0300-55, 5/case.	06-0500-56	Magnification plate 1.5x.
06-0200-20-B	Part no 06-0200-20, 25/case	06-0400-51	Headband incl assembled parts.	06-0500-57	Magnification plate 2.0x.
06-0200-30	Inside protection plate 9100XX, 5/case	06-0400-51-B	Part no 06-0400-51, 5/case	06-0500-58	Magnification plate 2.5x.
06-0200-30-B	Part no 06-0200-30, 25/case	06-0400-52	Pivot mechanism headband, left and right.	06-0500-59	Magnification plate 3.0x.
06-0200-51	Outside protection plate standard, 10/case	06-0400-52-B	Part no 06-0400-52, 5/case	06-0700-83	Full hood, black/grey
06-0200-51-B	Part no 06-0200-51, 50/case	06-0400-53	Headband front part.	25-0099-28	Face seal
06-0200-52	Outside protection plate scratch resistant, 10/case	06-0400-53-B	Part no 06-0400-53, 5/case	25-0099-35SW	9100-Air welding helmet, without welding filter.
		06-0400-54	Headband back part.	25-0400-55	Air duct tube

# 3M™ Speedglas™ Welding Helmet 9100 MP



Part No	Description	Part No	Description	Part No	Description
27-1101-00SW	Speedglas welding helmet 9100 MP without welding filter, with Adflo PAPR and HE filter.	27-5702-00SWSR	Speedglas welding helmet 9100 MP without welding filter, with Fresh-air III SAR, V-100SR valve and Schrader fitting.	27-5902-10SW	Speedglas welding helmet 9100 MP with welding filter 9100V and Fresh-air III SAR, V-300 valve.
27-1101-10SW	Speedglas welding helmet 9100 MP with welding filter 9100V and Adflo PAPR with HE filter.	27-5702-10SW	Speedglas welding helmet 9100 MP with welding filter 9100V and Fresh-air III SAR, V-100 valve.	27-5902-20SW	Speedglas welding helmet 9100 MP with welding filter 9100X and Fresh-air III SAR, V-300 valve.
27-1101-20SW	Speedglas welding helmet 9100 MP with welding filter 9100X and Adflo PAPR with HE filter.	27-5702-20SW	Speedglas welding helmet 9100 MP with welding filter 9100X and Fresh-air III SAR, V-100 valve.	27-5902-30SW	Speedglas welding helmet 9100 MP with welding filter 9100XX and Fresh-air III SAR, V-300 valve.
27-1101-30SW	Speedglas welding helmet 9100 MP with welding filter 9100XX and Adflo PAPR with HE filter.	27-5702-30SW	Speedglas welding helmet 9100 MP with welding filter 9100XX and Fresh-air III SAR, V-100 valve.		



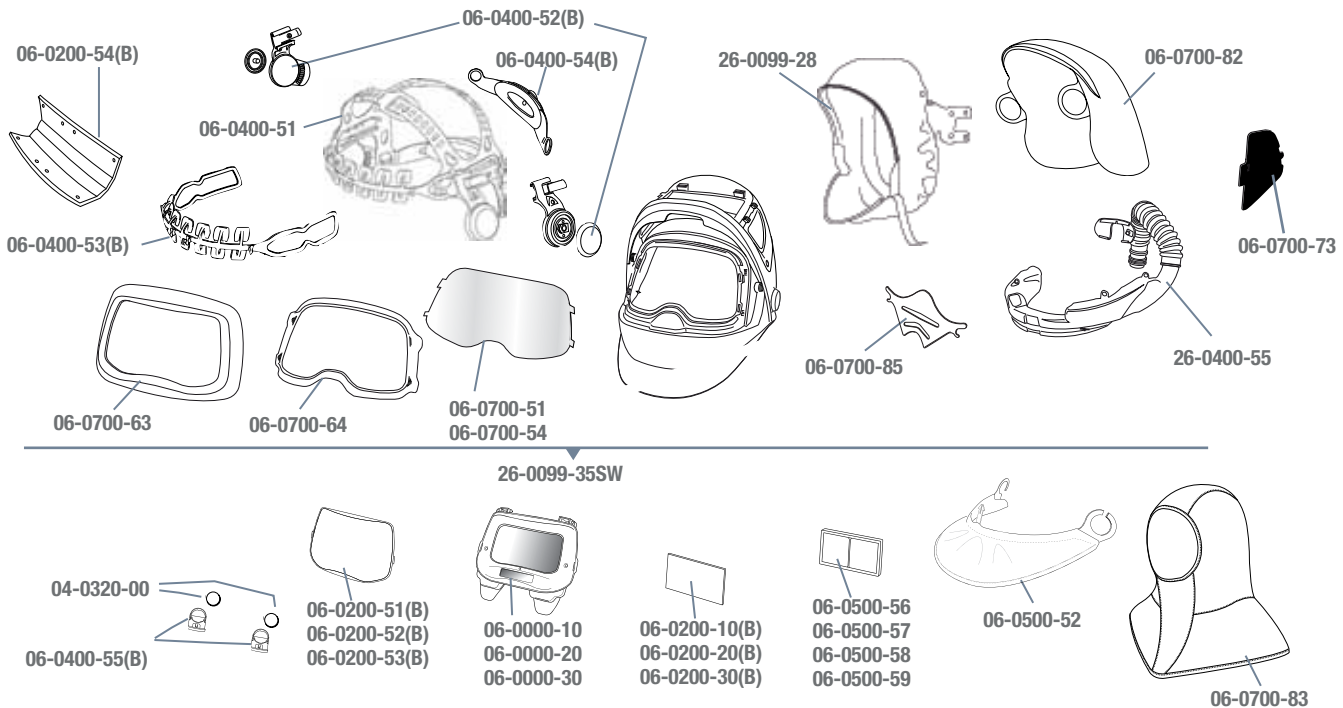
## Accessories and consumables

Part No	Description	Part No	Description	Part No	Description
M-350	Versafo replacement head suspension (not shown above)	06-0200-52-B	Part no 06-0200-52 (bulk), 50/case	06-0700-54	Wide-view clear grinding visor, anti-fog, 5/ case.
M-957	Versafo forehead comfort pad/sweat pad, 10/case.	06-0200-53	Outside protection plate high temperature, 10/case	06-0700-63	Front panel, chrome.
M-985	3M™ Peltor™ Earmuff Assembly Kit	06-0200-53-B	Part no 06-0200-53 (bulk), 50/case	06-0700-64	Wide-view clear grinding visor frame, black
04-0320-00	Battery, 2/case.	06-0202-10	Starter kit 9100V (for 9100 MP), incl 5 outside protection plates, 2 inside protection plates, and 1 sweat pad	06-0700-73	SideWindow cover plates, 2/case.
06-0000-10	Speedglas welding filter 9100V.	06-0202-20	Starter kit 9100X (for 9100 MP), incl 5 outside protection plates, 2 inside protection plates, and 1 sweat pad	27-0099-28	Face seal
06-0000-20	Speedglas welding filter 9100X.	06-0202-30	Starter kit 9100XX (for 9100 MP), incl 5 outside protection plates, 2 inside protection plates, and 1 sweat pad	27-0099-35SW	Speedglas welding helmet 9100 MP with hard hat, without welding filter.
06-0000-30	Speedglas welding filter 9100XX.	06-0400-54	Headband back part.	27-0099-52	Pivot kit
06-0200-10	Inside protection plate 9100V, 5/case	06-0400-54-B	Part no 06-0400-54 (bulk), 5/case	27-0099-53	Flip-up mechanism
06-0200-10-B	Part no 06-0200-10 (bulk), 25/case	06-0400-55	Battery holder 9100, 2/case	27-0099-63	Inner shield
06-0200-20	Inside protection plate 9100X, 5/case	06-0400-55-B	Part no 06-0400-55 (bulk), 10/case.	27-0099-68	Outer shield
06-0200-20-B	Part no 06-0200-20 (bulk), 25/case	06-0700-51	Wide-view clear grinding visor, standard, 5/case.	27-0099-72	Hard hat incl pivot kit
06-0200-30	Inside protection plate 9100XX, 5/case			27-0099-84	Radiant heat hard hat cover for 9100 MP helmet.
06-0200-30-B	Part no 06-0200-30 (bulk), 25/case			27-0099-85	Throat and neck coverage.
06-0200-51	Outside protection plate standard, 10/case				
06-0200-51-B	Part no 06-0200-51 (bulk), 50/case				
06-0200-52	Outside protection plate scratch resistant, 10/case				

# 3M™ Speedglas™ Welding Helmet 9100 FX-Air for Respiratory Protection



Part No	Description	Part No	Description	Part No	Description
26-1101-00SW	Speedglas welding helmet 9100 FX-Air without welding filter and Adflo PAPR with HE filter.	26-3301-10SW	Speedglas welding helmet 9100 FX-Air with welding filter 9100V and Adflo PAPR with HE filter and OV/AG cartridge	26-5702-30SW	Speedglas welding helmet 9100 FX-Air with welding filter 9100XX and Fresh-air III SAR, V-100 valve
26-1101-10SW	Speedglas welding helmet 9100 FX-Air with welding filter 9100V and Adflo PAPR with HE filter.	26-3301-20SW	Speedglas welding helmet 9100 FX-Air with welding filter 9100X and Adflo PAPR with HE filter and OV/AG cartridge	26-5802-10SW	Speedglas welding helmet 9100 FX-Air with welding filter 9100V and Fresh-air III SAR, V-200 valve
26-1101-20SW	Speedglas welding helmet 9100 FX-Air with welding filter 9100X and Adflo PAPR with HE filter.	26-3301-30SW	Speedglas welding helmet 9100 FX-Air with welding filter 9100XX and Adflo PAPR with HE filter and OV/AG cartridge	26-5802-20SW	Speedglas welding helmet 9100 FX-Air with welding filter 9100X and Fresh-air III SAR, V-200 valve
26-1101-30SW	Speedglas welding helmet 9100 FX-Air with welding filter 9100XX and Adflo PAPR with HE filter.	26-5702-10SW	Speedglas welding helmet 9100 FX-Air with welding filter 9100V and Fresh-air III SAR, V-100 valve	26-5802-30SW	Speedglas welding helmet 9100 FX-Air with welding filter 9100XX and Fresh-air III SAR, V-200 valve
26-3301-00SW	Speedglas welding helmet 9100 FX-Air, without welding filter, with Adflo PAPR, HE filter and OV/AG cartridge.	26-5702-20SW	Speedglas welding helmet 9100 FX-Air with welding filter 9100X and Fresh-air III SAR, V-100 valve		



## Accessories and consumables

Part No	Description	Part No	Description	Part No	Description
04-0320-00	Battery, 2/case.	06-0200-53-B	temperature, 10/case	06-0500-58	Magnification plate 2.5x.
06-0000-10(B)	Speedglas welding filter 9100V.	06-0200-54	Part no 06-0200-53 (bulk), 50/case	06-0500-59	Magnification plate 3.0x.
06-0000-20(B)	Speedglas welding filter 9100X.	06-0200-54-B	Comfort sweatband, 3/case	06-0700-51	Wide-view clear grinding visor, standard, 5/case.
06-0000-30(B)	Speedglas welding filter 9100XX.	06-0400-51	Comfort sweatband (bulk), 12/case	06-0700-54	Wide-view clear grinding visor, anti-fog, 5/case.
06-0200-10	Inside protection plate 9100V, 5/case	06-0400-51-B	Headband incl assembled parts.	06-0700-63	Front panel, chrome.
06-0200-10-B	Part no 06-0200-10 (bulk), 25/case	06-0400-52	Part no 06-0400-51 (bulk), 5/case	06-0700-64	Wide-view clear grinding visor frame, black
06-0200-20	Inside protection plate 9100X, 5/case	06-0400-52-B	Pivot mechanism headband, left and right.	06-0700-73	SideWindow cover plates, 2/case
06-0200-20-B	Part no 06-0200-20 (bulk), 25/case	06-0400-53	Part no 06-0400-52 (bulk), 5/case	06-0700-82	Extended head cover, head and neck.
06-0200-30	Inside protection plate 9100XX, 5/case	06-0400-53-B	Headband front part.	06-0700-83	Full hood, black/grey.
06-0200-30-B	Part no 06-0200-30 (bulk), 25/case	06-0400-54	Part no 06-0400-53 (bulk), 5/case	06-0700-85	Air diffuser
06-0200-51	Outside protection plate standard, 10/case	06-0400-54-B	Headband back part.	26-0099-28	Face seal
06-0200-51-B	Part no 06-0200-51 (bulk), 50/case	06-0400-55	Part no 06-0400-54 (bulk), 5/case	26-0099-35SW	Welding helmet 9100 FX-Air without welding filter, with headband.
06-0200-52	Outside protection plate scratch resistant, 10/case	06-0400-55-B	Battery holder 9100, 2/case	26-0400-55	Duct assembly.
06-0200-52-B	Part no 06-0200-52 (bulk), 50/case	06-0500-52	Part no 06-0400-55 (bulk), 10/case.		
06-0200-53	Outside protection plate high	06-0500-56	Extended coverage, ear and neck.		
		06-0500-57	Magnification plate 1.5x.		
			Magnification plate 2.0x.		

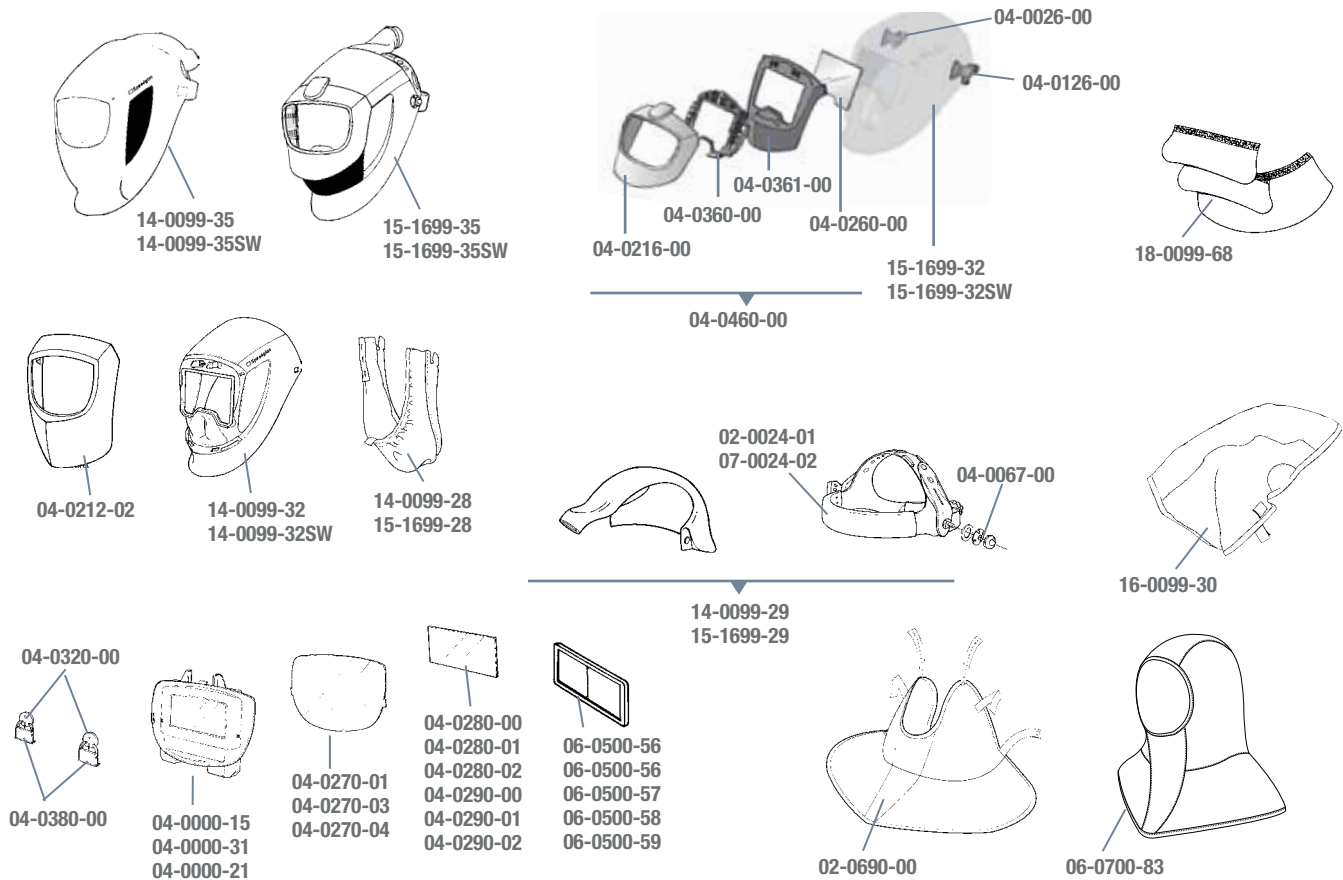


# 3M™ Speedglas™ Welding Helmet 9000 HWR and FlexView HWR for Respiratory Protection



Part No	Description	Part No	Description	Part No	Description
02-0024-01	Sweatband, leather.	04-0280-02	Inside protection plate, +2 shade, for filters 9002X/9000XF, 5/case.	14-0099-32	Inner shell 9000 HWR, without airduct.
02-0690-00	Throat protection black/grey.	04-0290-00	Inside protection plate for filters 9002D/9002V, 5/case.	14-0099-32SW*	Inner shell 9000 HWR, with side windows, without airduct.
04-0000-15	Speedglas welding filter 9002D, shade 10-11.	04-0290-01	Inside protection plate, +1 shade, for filters 9002D/9002V, 5/case.	14-0099-35	Speedglas welding helmet 9000 HWR, without welding filter.
04-0000-21	Speedglas welding filter 9002X, variable shade 9-13.	04-0290-02	Inside protection plate, +2 shade, for filters 9002D/9002V, 5/case.	14-0099-35SW*	Speedglas welding helmet 9000 HWR, with side windows, without welding filter.
04-0000-31	Speedglas welding filter 9002V, variable shade 9-13.	04-0320-00	Battery, 2/case.	15-1699-28	FlexView HWR face seal
04-0026-00	Headband pivot "S" stop, right, 10/case	04-0360-00	FlexView welding filter holder.	15-1699-29	Headband assembly FlexView HWR, with air duct.
04-0067-00	Assembly parts for headband.	04-0361-00	FlexView middle helmet panel, black.	15-1699-32	FlexView HWR inner shell
04-0126-00	FlexView pivot "S" stop, left, 10/case	04-0380-00	Battery holder blue, 2/case.	15-1699-32SW	FlexView HWR inner shell, with side windows
04-0212-02	Silver front panel.	04-0460-00	FlexView replacement kit.	15-1699-35	Speedglas welding helmet FlexView HWR, without welding filter.
04-0270-01	Outside protection plate, standard, 10/case.	06-0500-56	Magnification plate 1.5x.	15-1699-35SW	Speedglas welding helmet FlexView HWR, with side windows, without welding filter.
04-0270-03	Outside protection plate, scratch resistant, 10/case.	06-0500-57	Magnification plate 2.0x.	16-0099-30	Head cover, FR cotton.
04-0270-04	Outside protection plate, high temperature, 10/case.	06-0500-58	Magnification plate 2.5x.	18-0099-68	Throat and side protector, leather.
04-0280-00	Inside protection plate, for filters 9002X/9000XF, 5/case.	06-0500-59	Magnification plate 3.0x.		
04-0280-01	Inside protection plate, +1 shade, for filters 9002X/9000XF, 5/case.	06-0700-83	Full hood black/grey.		
		07-0024-02	Sweatband, fleece, 2/case.		
		14-0099-28	Face seal 9000 HWR		
		14-0099-29	Headband assembly 9000 HWR, with air duct		

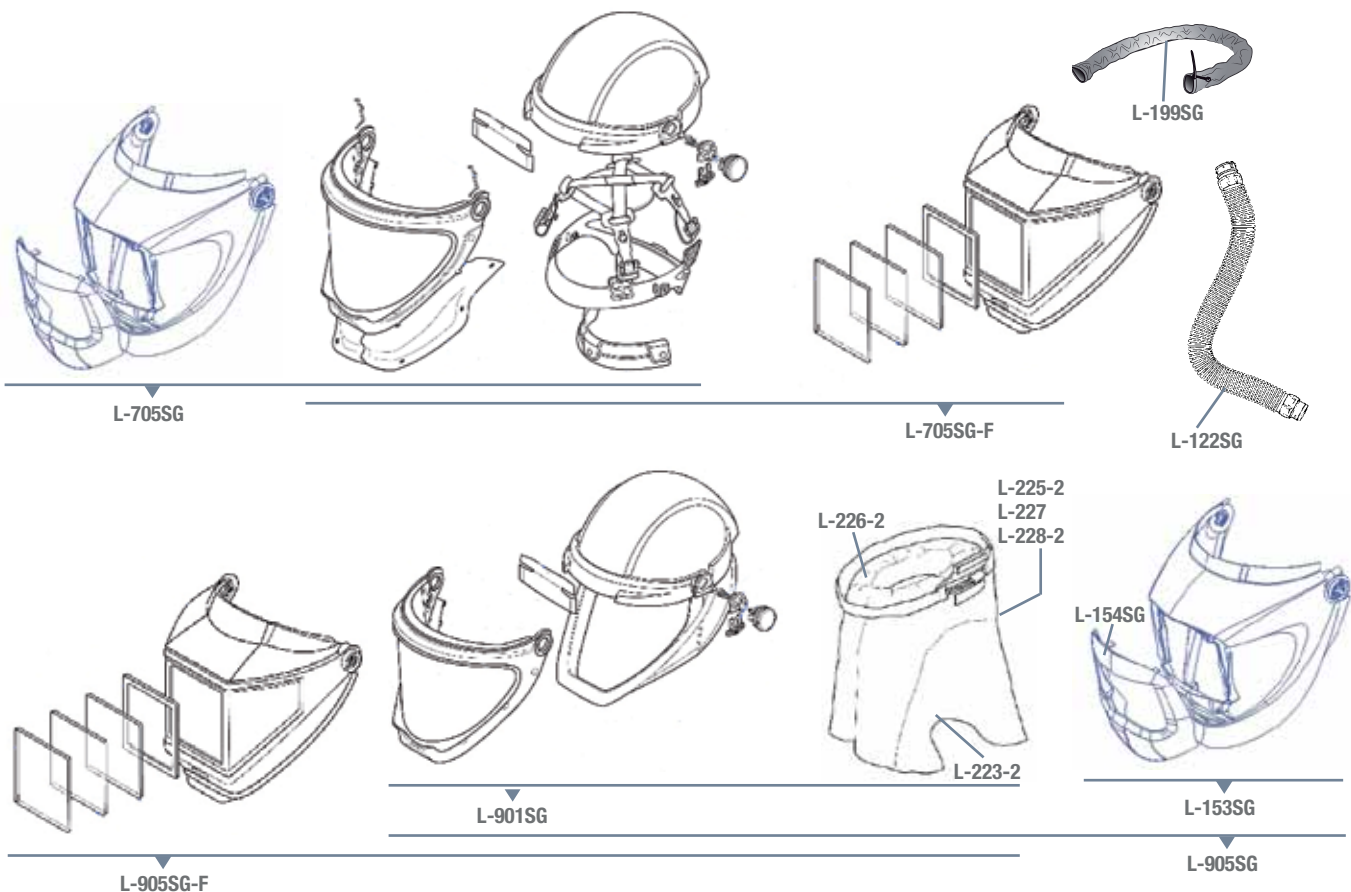
\* Please use Part No 14-0099-SW or 15-1699-32SW to replace the side windows.



# 3M™ Headgear L-Series with 3M™ Adflo™ Powered Air Purifying Respirator



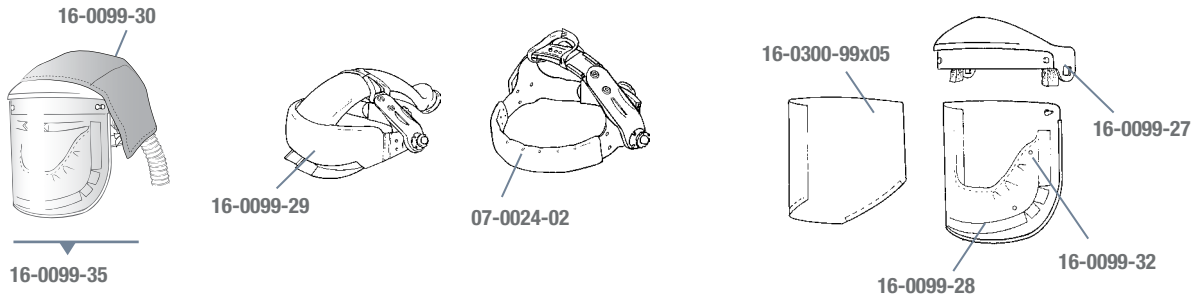
Part No	Description	Part No	Description	Part No	Description
16-0705-SGV	Hard Hat L-705SG wideview faceshield with Speedglas welding filter 9100V and Adflo PAPR with HE filter.	16-0705-SGXX	Hard Hat L-705SG wideview faceshield with Speedglas welding filter 9100XX and Adflo PAPR with HE filter.	16-0905-SGX	Helmet L-905SG wideview faceshield with Speedglas welding filter 9100X and Adflo PAPR with HE filter.
16-0705-SGX	Hard Hat L-705SG wideview faceshield with Speedglas welding filter 9100X and Adflo PAPR with HE filter.	16-0905-SGV	Helmet L-905SG wideview faceshield with Speedglas welding filter 9100V and Adflo PAPR with HE filter.	16-0905-SGXX	Helmet L-905SG wideview faceshield with Speedglas welding filter 9100XX and Adflo PAPR with HE filter.



## Accessories and consumables

Part No	Description	Part No	Description	Part No	Description
L-122SG	Breathing tube	L-228-2	Outer shroud, nylon	L-905SG-F	Helmet with welding helmet and wideview faceshield
L-153SG	Welding helmet kit	L-705SG	Harhat with welding helmet and wideview faceshield, without welding filter.	15-0099-20	Adflo flow indicator rubber adapter for L-SG type systems (not shown).
L-154SG	Silver front panel	L-705SG-F	Harhat with welding helmet and wideview faceshield	15-0099-21	Adflo flow indicator for L-SG type systems (not shown).
L-199SG	Breathing tube cover, high temperature.	L-901SG	Helmet with wideview faceshield	15-5401-02SG	Adflo PAPR assembly (not shown)
L-223-2	Outer shroud standard.	L-905SG	Helmet with welding helmet and wideview faceshield, without welding filter.		
L-225-2	Outer shroud, flame retardant.				
L-226-2	Inner shroud				
L-227	Outer shroud, flame retardant, leather				

# 3M™ Faceshield ClearVisor™ with 3M™ Adflo™ Powered Air Purifying Respirator



Part No	Description	Part No	Description	Part No	Description
07-0024-02	Sweatband, fleece, 2/case	16-0099-32	Clear window with fasteners and face seal, without brow guard.	16-1101-40	ClearVisor faceshield assembly with Adflo PAPR and HE particulate filter.
16-0099-27	Brow guard	16-0099-35	ClearVisor polycarbonate	16-3301-40	ClearVisor faceshield assembly with Adflo PAPR, HE particulate filter and AV/AG cartridge
16-0099-28	Face seal	16-0300-99x05	Clear window strip off shielding film, 5/case		
16-0099-29	Faceseal and headband assembly with air duct.				
16-0099-30	Headcover, FR cotton.				



# Care and Maintenance

Every day welding sparks, heat, fumes, and normal wear-and-tear grind away at your protection equipment. Therefore, we designed all 3M™ Speedglas™ Personal Protective Equipment with ease of maintenance in mind. Replacement parts can be installed by hand, without tools. For maximum safety and comfort, inspect your equipment daily and make it a regular habit to check and change the following items. Please consult the user instructions for further details.



System	Component	Typically Replaced	Notes
Welding Filters	Outside 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	Inside Protection 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.
PAPR	Prefilter	Once a week	Regular replacement of the prefilter extends the life of the particle filter, saving money while also increasing the battery run-time.
PAPR	Particle Filter	At least every month	Replace when particle filter indicator becomes red or if filter is damaged. Otherwise, replace whenever the battery operating time becomes too short, or when "fully loaded" filter triggers low airflow alarm.
PAPR	OV/AG Cartridge	At least every 3 or 4 weeks	Immediately replace the cartridge according to the established cartridge change out schedule or any time you can smell odors while wearing the PAPR.
PAPRs	Spark arrestor	As needed	Replace if deformed and no longer fitting well.
Respirators	Breathing Tube	As needed	If damaged, deformed or leaking any air and if holes, cuts, or tears are noticed. To extend the life of breathing tube, use a tube cover or a heavy-duty rubber breathing tube.
Welding Helmets with PAPRs	Face Seal	At least every 2 months	Replace earlier in really dirty environments or whenever the seal becomes unhygienic, also if damaged (holes, cuts, tears).

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 Parts Directory.

# Technical Specifications of 3M™ Air Delivery Units for Welding Safety



Technical Specifications	3M™ Adflo™ Powered Air Purifying Respirator	3M™ Speedglas™ Fresh-air III Supplied Air Regulator
<b>Filters / Cartridges</b>	HE particle filter OV/AG cartridge	N/A
<b>Airflow</b>	7 CFM (200 l/min)	6-15 CFM
<b>Air Pressure Air Quality</b>	N/A N/A	Varies with hose length. See product user instructions. V-100/200: 62–91 psig V-300: 30–63 psig
<b>Weight (approx.)</b> PAPR (with belt and HE filter) / Valve (without pad or belt)	2.6 lbs	V-100: 12.3 oz V-200: 14.8 oz V-300: 9.5 oz
<b>Battery</b> Charging time Operating hours*	NiMH Less than 4 hours 5–6 hours (OV/AG cartridge + HE filter) 8–10 hours (HE filter)	N/A
<b>Belt</b> Optional extension	Leather, 30–45 in. + 26 in.	Cotton, up to 43 in.
<b>Temperature range</b> Operation Storage	23°F to 131°F -4°F to 131°F	23°F to 131°F -4°F to 131°F

\* Run times are with new, fully-charged batteries and new filters /cartridges.

# Technical Data 3M™ Speedglas™ Welding Helmets and Welding Filters

- Best\*\***
- Better\*\***
- Good\*\***
- Not Recommended\*\***



	3M™ Speedglas™ Welding Helmet 9100 MP			3M™ Speedglas™ Welding Helmets 9100 FX and 9100 FX-Air			3M™ Speedglas™ Welding Helmets 9100 and 9100-Air		
3M™ Speedglas™ Welding Filter Options	9100XX Filter	9100X Filter	9100V Filter	9100XX Filter	9100X Filter	9100V Filter	9100XX Filter	9100X Filter	9100V Filter
MMAW (Electrode)									
MIG/MAG									
TIG (>20A)									
TIG (1A-20A)									
Plasma (welding and cutting)									
Risk for hidden arc									
Tack welding									
Grinding (welding filter)									
Grinding (clear visor)							N/A	N/A	N/A
Viewing area (welding filter)	2.8 x 4.2 in. (72 x 107 mm)	2.1 x 4.2 in. (54 x 107 mm)	1.8 x 3.7 in. (45 x 93 mm)	2.8 x 4.2 in. (72 x 107 mm)	2.1 x 4.2 in. (54 x 107 mm)	1.8 x 3.7 in. (45 x 93 mm)	2.8 x 4.2 in. (72 x 107 mm)	2.1 x 4.2 in. (54 x 107 mm)	1.8 x 3.7 in. (45 x 93 mm)
Battery lifetime	2 000 hours	2 500 hours	2 800 hours	2 000 hours	2 500 hours	2 800 hours	2 000 hours	2 500 hours	2 800 hours
Solar cell	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Hard hat options	Yes			No			Yes (non-air version)		
Classification (per EN 379)*	1 / 1 / 1 / 2			1 / 1 / 1 / 2			1 / 1 / 1 / 2		
Dark state	Shade 5, 8, 9–13			Shade 5, 8, 9–13			Shade 5, 8, 9–13		
Light state	Shade 3			Shade 3			Shade 3		
UV/IR Protection	Shade 13 (permanent)			Shade 13 (permanent)			Shade 13 (permanent)		
Auto ON	No			No			No		
Switching time, light -dark	0.1 ms (+23° C)			0.1 ms (+23° C)			0.1 ms (+23° C)		
Delay (switching time, dark-light)	40–1 300 ms			40–1 300 ms			40–1 300 ms		
Side windows option	Yes			Yes			Yes		
Exhaust vents	N/A			Yes (non-air version)			Yes (non-air version)		
Number of sensors (arc detection)	3			3			3		
Approvals Head, Eye and Face protection Welding helmet and filter, protection plates Hard Hat	ANSI Z87.1 - 2010 ANSI Z89.1-2009 -Type 1, Class G			ANSI Z87.1 - 2010 N/A			ANSI Z87.1 - 2010 N/A		
Approval Respiratory Protection Adflo powered air purifying respirator Fresh-air III supplied air valve	APF 25 APF 25			with Speedglas welding helmet 9100 FX-Air APF 25 APF 25			with Speedglas welding helmet 9100-Air APF 25 APF 25		

\* Auto-darkening welding filters have a four-part classification: optical class / diffusion of light / variation on luminous transmittance / angle dependence. Classifications range from 1 to 3, with 1 being the best.

\*\* The ratings (good - better - best) 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



# Product Index

Part No	3M ID No	Page
H-700BP	70-0716-1420-3	49
L-122SG	70-0715-1652-3	51, 58
L-153SG	70-0715-1653-1	58
L-154SG	70-0715-1654-9	58
L-199SG	70-0715-1655-6	51
L-223-2	70-0710-9278-0	58
L-225-2	70-0710-9279-8	58
L-226-2	70-0710-9280-6	58
L-227	70-0710-9281-4	58
L-228-2	70-0710-9282-2	58
L-705SG	70-0715-1656-4	58
L-705SG-F	70-0715-3435-1	58
L-901SG	70-0715-1657-2	58
L-905SG	70-0715-1658-0	58
L-905SG-F	70-0715-3436-9	58
M-350	70-0715-6202-2	55
M-985	70-0715-6228-7	55
SG-15	70-0716-0797-5	51
SG-30W	70-0716-0685-2	51-52
SG-40W	70-0716-0686-0	51-52
SG-50W	70-0716-0815-5	51
SG-90	70-0716-0798-3	51
V-100	70-0707-9901-3	52
V-111	70-0707-9903-9	52
V-115	70-0707-9904-7	52
V-150	70-0707-9907-0	52
V-199	70-0710-4251-2	52
V-200	70-0707-9909-6	52
V-211	70-0707-9911-2	52
V-215	70-0707-9912-0	52
V-250	70-0707-9914-6	52
W-1449-2	78-8052-3222-6	53
W-1596	78-8007-5562-7	53
W-2119	78-8008-6062-5	53
W-2806	78-8069-8764-6	53
W-2808	70-0708-8993-9	53
W-2811-10	78-8008-6159-9	53
W-2915M	70-0714-0191-6	53
W-2916	12-7994-6298-6	53
W-2920	78-8008-6163-1	53
W-2921	78-8008-6216-7	53
W-2923	78-8008-6232-4	53
W-2924	78-8069-8755-4	53
W-2925	78-8014-3184-8	53
W-2929-25	78-8069-8628-3	52
W-2929-50	78-8069-8629-1	52

Part No	3M ID No	Page
W-2929-100	78-8069-8630-9	52
W-2963	78-8025-5233-7	52
W-3012	78-8029-4554-9	53
W-3013-4	78-8029-4555-6	53
W-3079	78-8069-8765-3	53
W-3094M	70-0714-0192-4	53
W-3095	78-8008-6160-7	53
W-3096	70-0707-5708-6	53
W-3098	78-8008-6166-4	53
W-3099	70-0707-5709-4	53
W-3182-2	78-8052-3215-0	53
W-3281-2	70-0704-0568-6	53
W-9435-25	78-8007-5637-7	52
W-9435-50	78-8007-5633-6	52
W-9435-100	78-8008-5757-1	52
02-0024-00	70-0712-7269-7	46-48
02-0024-01	70-0712-7270-5	46-48, 57
02-0690-00	70-0712-7272-1	46-48, 57
04-0000-15	70-0712-8764-6	48, 57
04-0000-21	70-0712-7246-5	48, 57
04-0000-31	70-0712-7241-6	48, 57
04-0012-00	70-0712-7273-9	48
04-0012-00SW	70-0712-7276-2	48
04-0012-15	70-0714-0144-5	47
04-0012-15SW	70-0714-0141-1	47
04-0015-00SW	70-0712-7464-4	49
04-0015-15	70-0714-0143-7	49
04-0015-15SW	70-0714-0145-2	49
04-0015-21	70-0712-7259-8	49
04-0015-21SW	70-0712-7260-6	49
04-0015-31	70-0712-7261-4	49
04-0015-31SW	70-0712-7262-2	49
04-0016-00	70-0712-7465-1	48
04-0016-00SW	70-0712-7466-9	48
04-0016-15	70-0714-0149-4	47
04-0016-15SW	70-0714-0148-6	47
04-0022-00	70-0712-7278-8	48
04-0022-00SW	70-0712-7279-6	48
04-0023-02	70-0716-2145-5	49
04-0025-00	70-0712-7534-4	49
04-0025-00SW	70-0712-7535-1	49
04-0026-00	70-0712-7280-4	48, 57
04-0067-00	70-0715-6454-9	57
04-0015-00	70-0712-7492-5	49
04-0112-00	70-0712-7281-2	48
04-0112-00SW	70-0712-7282-0	48



# Product Index

Part No	3M ID No	Page	Part No	3M ID No	Page
04-0114-00	70-0712-7283-8	48	06-0000-30	70-0715-1011-2	43-44, 54-56
04-0116-00	70-0712-7467-7	48	06-0014-00NR	70-0715-6456-4	49
04-0116-00SW	70-0712-7468-5	48	06-0100-10	70-0715-1012-0	43
04-0126-00	70-0712-7469-3	48, 57	06-0100-10HASW	70-0715-6461-4	49
04-0212-02	70-0712-7284-6	48, 57	06-0100-10HHSW	70-0715-6458-0	49
04-0216-00	70-0712-7470-1	48	06-0100-10SW	70-0715-1013-8	43
04-0260-00	70-0712-7471-9	48	06-0100-20	70-0715-1014-6	43
04-0270-01	70-0715-6455-6	48, 57	06-0100-20HASW	70-0715-6459-8	49
04-0270-03	70-0712-7286-1	48, 57	06-0100-20HHSW	70-0715-6460-6	49
04-0270-04	70-0712-7287-9	48, 57	06-0100-20SW	70-0715-1015-3	43
04-0280-00	70-0712-7288-7	48, 57	06-0100-30	70-0715-1045-0	43
04-0280-01	70-0712-7289-5	48, 57	06-0100-30HASW	70-0715-6461-4	49
04-0280-02	70-0712-7290-3	48, 57	06-0100-30HHSW	70-0715-6462-2	49
04-0290-00	70-0712-7291-1	46-48, 57	06-0100-30SW	70-0715-1046-8	43
04-0290-01	70-0712-7292-9	46, 48, 57	06-0200-10	70-0715-1009-6	43-44, 54-56
04-0290-02	70-0712-7293-7	46, 48, 57	06-0200-10-B	70-0715-1050-0	43-44, 54-56
04-0315-00	70-0712-7537-7	49	06-0200-20	70-0715-1016-1	43-44, 54-56
04-0320-00	70-0712-7294-5	43-44, 46-48, 54, 56-57	06-0200-20-B	70-0715-1074-0	43-44, 54-56
04-0360-00	70-0712-7472-7	48, 57	06-0200-30	70-0715-1017-9	43-44, 54-56
04-0361-00	70-0712-7473-5	48, 57	06-0200-30-B	70-0715-1075-7	43-44, 54-56
04-0380-00	70-0712-7295-2	48, 57	06-0200-51	70-0715-1018-7	43-44, 54-56
04-0390-00	70-0712-7296-0	48	06-0200-51-B	70-0715-1051-8	43-44, 54-56
04-0460-00	70-0712-7474-3	48, 57	06-0200-52	70-0715-1019-5	43-44, 54-56
04-0550-00	70-0714-0373-0	48	06-0200-52-B	70-0715-1052-6	43-44, 54-56
04-0650-00	70-0712-7299-4	48	06-0200-53	70-0715-1020-3	43-44, 54-56
04-0660-00	70-0712-7300-0	48	06-0200-53-B	70-0715-1058-3	43-44, 54-56
04-1516-00	70-0712-7475-0	49	06-0200-54	70-0715-1087-2	43-44, 54-56
04-1516-00SW	70-0712-7476-8	49	06-0200-54-B	70-0715-1054-2	43-44, 54-56
04-1516-15	70-0714-0147-8	49	06-0201-10	70-0715-1021-1	43
04-1516-15SW	70-0714-0146-0	49	06-0201-20	70-0715-1022-9	43
04-1516-21	70-0712-8712-5	49	06-0201-30	70-0715-1023-7	43
04-1516-21SW	70-0712-8713-3	49	06-0300-51	70-0715-1024-5	43
04-1516-31	70-0712-8714-1	49	06-0300-51SW	70-0715-1025-2	43
04-1516-31SW	70-0712-8715-8	49	06-0300-52	70-0715-1026-0	43
05-0000-41	70-0714-0165-0	47	06-0300-52SW	70-0715-1027-8	43
05-0013-00	70-0714-0168-4	47	06-0300-55	70-0716-2189-3	43, 54
05-0013-41	70-0714-0172-6	47	06-0300-55B	70-0716-2190-1	43, 54
05-0250-00	70-0714-0166-8	47	06-0400-51	70-0715-1029-4	43-44, 54-56
05-0250-01	70-0714-0167-6	47	06-0400-51-B	70-0715-1056-7	43-44, 54-56
05-0370-00	70-0714-0171-8	46, 47	06-0400-52	70-0715-1030-2	43-44, 54-56
05-0650-00	70-0714-0169-2	46, 47	06-0400-52-B	70-0715-1057-5	43-44, 54-56
05-0660-00	70-0714-0170-0	46, 47	06-0400-53	70-0715-1031-0	43-44, 54-56
05-0680-00	70-0715-3427-8	47	06-0400-53-B	70-0715-1053-4	43-44, 54-56
05-0695-00	70-0715-3430-2	47	06-0400-54	70-0715-1032-8	43-44, 54-56
06-0000-10	70-0715-1008-8	43-44, 54-56	06-0400-54-B	70-0715-1059-1	43-44, 54-56
06-0000-20	70-0715-1010-4	43-44, 54-56	06-0400-55	70-0715-1033-6	43-44, 54-56

# Product Index

Part No	3M ID No	Page
06-0400-55-B	70-0715-1060-9	43-44, 54-56
06-0500-51	70-0715-1034-4	43, 54
06-0500-52	70-0715-1035-1	43-44, 54, 56
06-0500-53	70-0715-1036-9	43, 54
06-0500-56	70-0715-1039-3	43-44, 46-47, 54, 56-57
06-0500-57	70-0715-1040-1	43-44, 46-47, 54, 56-57
06-0500-58	70-0715-1041-9	43-44, 46-47, 54, 56-57
06-0500-59	70-0715-1042-7	43-44, 46-47, 54, 56-57
06-0500-65	70-0716-2142-2	51
06-0600-00SW	70-0716-0626-6	44
06-0600-10SW	70-0716-0627-4	44
06-0600-20SW	70-0716-0629-0	44
06-0600-30SW	70-0716-0631-6	44
06-0700-51	70-0716-0633-2	55
06-0700-54	70-0716-0634-0	44, 55, 56
06-0700-63	70-0716-0635-7	44, 55, 56
06-0700-64	70-0716-0636-5	44, 55, 56
06-0700-73	70-0716-0637-3	44, 55, 56
06-0700-81	70-0716-0643-1	44
06-0700-82	70-0716-0644-9	44, 56
06-0700-83	70-0716-0638-1	43-44, 46-48, 54, 56-57
06-0700-85	70-0716-0684-5	56
07-0000-10	70-0715-3379-1	46
07-0000-11	70-0715-3380-9	46
07-0000-31	70-0715-3381-7	46
07-0012-00AH	70-0715-3393-2	46
07-0012-00AP	70-0715-4454-1	46
07-0012-00BL	70-0715-3388-2	46
07-0012-00BY	70-0716-1770-1	46
07-0012-00BZ	70-0715-3389-0	46
07-0012-00IH	70-0716-1771-9	46
07-0012-00RD	70-0716-1772-7	46
07-0012-00RS	70-0716-1773-5	46
07-0012-00SE	70-0715-6481-2	46
07-0012-00SJ	70-0715-6482-0	46
07-0012-00SR	70-0715-6483-8	46
07-0012-00TW	70-0715-3394-0	46
07-0012-00WP	70-0715-6480-4	46
07-0012-00XT	70-0716-1774-3	46
07-0012-10BL	70-0715-3370-0	46
07-0012-11BL	70-0715-3371-8	46
07-0012-31AH	70-0715-3377-5	46
07-0012-31AP	70-0715-3408-8	46
07-0012-31BL	70-0715-3372-6	46
07-0012-31BL-HA	70-0715-6463-0	49
07-0012-31BL-HH	70-0715-6464-8	49

Part No	3M ID No	Page
07-0012-31BY	70071617750	46
07-0012-31BZ	70-0715-3373-4	46
07-0012-31IH	70-0716-1777-6	46
07-0012-31RD	70-0716-1779-2	46
07-0012-31RS	70-0716-1781-8	46
07-0012-31SE	70-0715-6474-7	46
07-0012-31SJ	70-0715-6476-2	46
07-0012-31SR	70-0715-6478-8	46
07-0012-31TW	70-0715-3378-3	46
07-0012-31WP	70-0715-6472-1	46
07-0012-31XT	70-0716-1783-4	46
07-0014-00NR	70-0715-6465-5	49
07-0024-02	70-0715-3410-4	46-47, 57, 59
07-0200-51	70-0715-3382-5	46
07-0200-52	70-0715-3383-3	46
07-0200-53	70-0715-3384-1	46
07-0212-00SV	70-0715-3385-8	46
07-0212-01BL	70-0715-3386-6	46
07-0212-03BM	70-0715-3437-7	46
07-0212-04CH	70-0716-2141-4	46
07-0680-00	70-0715-3409-6	46
14-0099-28	70-0712-7538-5	57
14-0099-29	70-0712-7539-3	57
14-0099-32	70-0712-7540-1	57
14-0099-32SW	70-0712-7541-9	57
14-0099-35	70-0712-7543-5	57
14-0099-35SW	70-0712-7546-8	57
15-0099-05	70-0712-6840-6	51
15-0099-06	70-0712-6841-4	51
15-0099-08	70-0712-6842-2	51
15-0099-08N6	70-0712-6843-0	51
15-0099-10	70-0712-6844-8	51
15-0099-11	70-0712-7501-3	51
15-0099-16	70-0712-6845-5	51
15-0099-21	70-0715-1777-8	51
15-0009-99X02	70-0712-6847-1	51
15-0099-99X06	70-0712-6848-9	51
15-0299-99x02	70-0715-4461-6	51
15-0299-99X06	70-0715-4462-4	51
15-0299-99X36	70-0715-4463-2	51
15-0499-99X02	70-0716-0817-1	51
15-0499-99X06	70-0716-0818-9	51
15-1099-01	70-0712-6857-0	51
15-1099-07	70-0712-6846-3	51
15-1099-81	70-0712-6858-8	51
15-1699-35	70-0712-7481-8	57

# Product Index

Part No	3M ID No	Page	Part No	3M ID No	Page
15-1699-35SW	70-0712-7482-6	57	25-5802-30SW	70-0716-0765-2	54
15-5401-01	70-0712-6859-6	51	256-02-00	70-0708-4407-4	53
15-5401-02SG	70-0715-1659-8	51, 58	256-02-01	70-0708-8426-0	53
16-0099-27	70-0712-7457-8	59	26-0099-28	70-0716-0682-9	56
16-0099-28	70-0712-7458-6	59	26-0099-35SW	70-0716-0681-1	56
16-0099-29	70-0712-7459-4	59	26-0400-55	70-0716-0683-7	56
16-0099-30	70-0712-7460-2	45-48, 57, 59	26-1101-00SW	70-0716-0672-0	56
16-0099-32	70-0712-7461-0	59	26-1101-10SW	70-0716-0666-2	56
16-0099-35	70-0712-7462-8	59	26-1101-20SW	70-0716-0667-0	56
16-0300-99X05	70-0712-7463-6	59	26-1101-30SW	70-0716-0668-8	56
16-0705-SGV	70-0715-1660-6	58	26-3301-00SW	70-0716-0673-8	56
16-0705-SGX	70-0715-1661-4	58	26-3301-10SW	70-0716-0669-6	56
16-0705-SGXX	70-0715-1662-2	58	26-3301-20SW	70-0716-0670-4	56
16-0905-SGV	70-0715-1663-0	58	26-3301-30SW	70-0716-0671-2	56
16-0905-SGX	70-0715-1664-8	58	26-5702-10SW	70-0716-0675-3	56
16-0905-SGXX	70-0715-1665-5	58	26-5702-20SW	70-0716-0676-1	56
16-1101-40	70-0712-6838-0	59	26-5702-30SW	70-0716-0677-9	56
16-3301-40	70-0712-6839-8	59	26-5802-10SW	70-0716-0678-7	56
18-0099-16	70-0712-7123-6	52	26-5802-20SW	70-0716-0679-5	56
18-0099-40	70-0712-7105-3	52	26-5802-30SW	70-0716-0680-3	56
18-0099-41	70-0712-7106-1	52	27-0099-28	70-0716-2157-0	55
18-0099-42	70-0712-7107-9	52	27-0099-35SW	70-0716-2156-2	55
18-0099-43	70-0712-7108-7	52	27-0099-52	70-0716-2158-8	55
18-0099-44	70-0712-7109-5	52	27-0099-53	70-0716-2159-6	55
18-0099-45	70-0712-7110-3	52	27-0099-63	70-0716-2160-4	55
18-0099-55	70-0712-7116-0	52	27-0099-68	70-0716-2161-2	55
18-0099-63	70-0712-7117-8	52	27-0099-72	70-0716-2162-0	55
18-0099-68	70-0712-7301-8	46-48, 57	27-0099-84	70-0716-2163-8	55
19-0099-63	70-0715-3438-5	52	27-0099-85	70-0716-2174-5	55
25-0099-28	70-0716-0767-8	54	27-1101-00SW	70-0716-2149-7	55
25-0099-35SW	70-0716-0766-0	54	27-1101-10SW	70-0716-2146-3	55
25-0400-55	70-0716-0768-6	54	27-1101-20SW	70-0716-2147-1	55
25-1101-00SW	70-0716-0758-7	54	27-1101-30SW	70-0716-2148-9	55
25-1101-10SW	70-0716-0752-0	54	27-5702-00SWSR	70-0716-2173-7	55
25-1101-20SW	70-0716-0753-8	54	27-5702-10SW	70-0716-2150-5	55
25-1101-30SW	70-0716-0754-6	54	27-5702-20SW	70-0716-2151-3	55
25-3301-00SW	70-0716-0759-5	54	27-5702-30SW	70-0716-2152-1	55
25-3301-10SW	70-0716-0755-3	54	27-5902-10SW	70-0716-2153-9	55
25-3301-20SW	70-0716-0756-1	54	27-5902-20SW	70-0716-2154-7	55
25-3301-30SW	70-0716-0757-9	54	27-5902-30SW	70-0716-2155-4	55
25-5401-01	70-0716-0674-6	51	529-04-48	70-0708-8880-8	53
25-5702-10SW	70-0716-0760-3	54	529-04-49	78-8124-0012-1	53
25-5702-20SW	70-0716-0761-1	54	529-04-50	78-8124-0013-9	53
25-5702-30SW	70-0716-0762-9	54	529-05-20	78-8124-0016-2	53
25-5802-10SW	70-0716-0763-7	54			
25-5802-20SW	70-0716-0764-5	54			

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