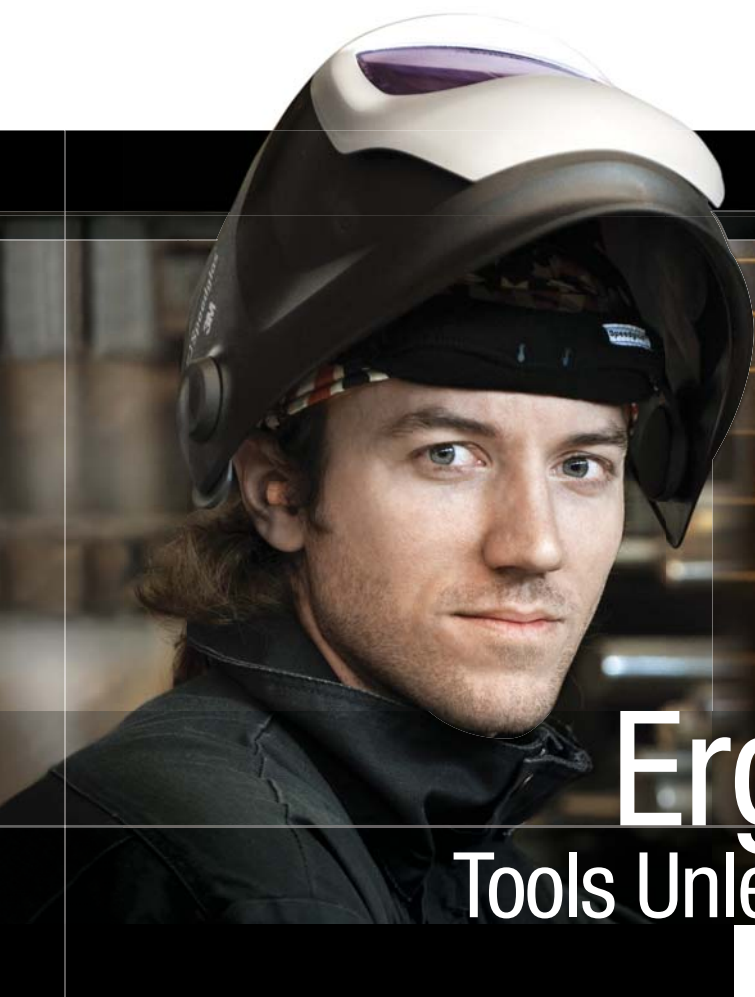


3M™ Speedglas™ Welding Safety
Product Catalogue 2011



 **Speedglas™**



Ergonomic
Tools Unleash Your Peerless
Performance

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 dealers, 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 shields 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.



VISIT US AT WWW.SPEEDGLAS.COM

FOLLOW US ON [facebook](#)

Eye, Face and Head protection

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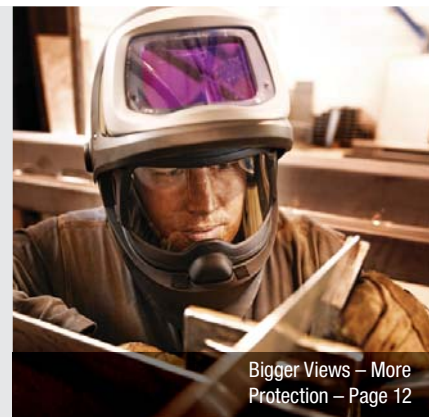
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The-Top-Of-Its-Class
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Our Lightest Welding
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Ergonomics Are Our Passion, And Your Lifeline

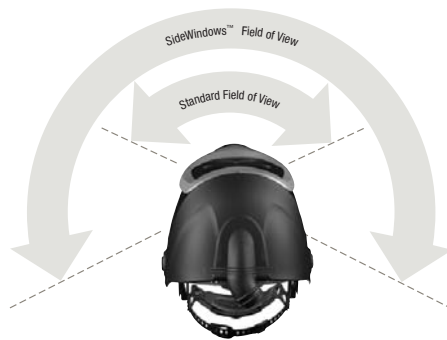
More than 35 years ago, we went to the shipyards of Sweden to observe welders. They blindly struck arcs as they continually nodded their shields down. They got accidentally flashed by other welders — or even themselves. We asked, “What if ... welders could always see, even with their shields down?”

Since then, we’ve been systematically addressing every welding ergonomic challenge you face.



Unprecedented Vision:

We started with being the first to introduce a popular 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:

Eliminate “tunnel vision”...try a 3M™ Speedglas™ Welding Shield with SideWindows and see what you're missing!



“Breathable” Shields:

With aerodynamic vents that allow stale, exhaled air to freely exit the shield.



Welding Shield Design:

Space-age shields made for rough environments.



Lung 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™ 9100 Series Welding Shields 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.

We offer you one of the world's most comprehensive lines of safety equipment for eye, face, head, hearing and respiratory protection. For example: 3M developed the first disposable, lightweight, effective "dust mask" in 1961. 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™ SafeWaze™ 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 still haven't experienced the new innovations from 3M Speedglas, call your local dealer 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!



Bigger
Views & More
Protection

Experience the Future of Welding Protection!

Your patience has been rewarded with three new 3M™ Speedglas™ Welding Shields, offering flip-up function and/or respiratory protection. Each model also has all of the features of the top-of-its-class 3M™ Speedglas™ 9100 Series Welding Shields.



3M™ Speedglas™
9100 Air Welding Shield

3M™ Speedglas™
9100 Welding Shield

3M™ Speedglas™
9100 FX Welding Shield

3M™ Speedglas™
9100 FX Air Welding Shield

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

- Superior comfort.
- Increased balance and stability.
- Excellent optics and bigger views.
- Increased coverage of ears and sides of neck.
- New flip-up welding shield with clear protective visor.
- New respiratory welding shield options.

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

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

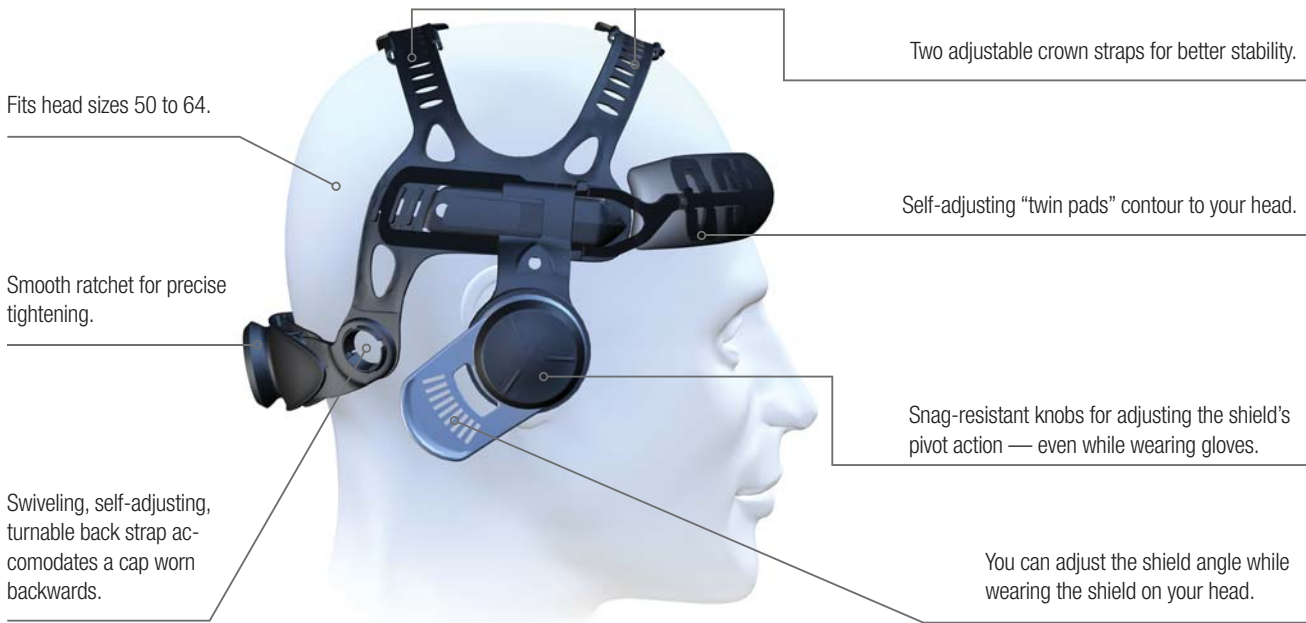


High-comfort Headband

The headband that shapes to your head

All Welding Shields in the 3M™ Speedglas™ 9100 Series 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 actually makes a person feel fatigued. The 9100 Series

Headband specifically avoids these vulnerable areas. And it provides multiple adjustment combinations so you can “tailor” the shield to fit your personal preferences and comfort settings. Less pressure — and a perfectly-adjusted, personal fit — means more comfort, all day long.



More comfortable when raised

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

“Parking” position

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



Excellent Optics, Bigger Views

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

- The 3M™ Speedglas™ 9100XX Filter is 30% larger than any other Speedglas welding filter.
- Seven dark shades, including 9–3 (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.

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

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



The tack welding comfort mode uses a shade 5 light state.

Conforms to European Standard 379 for eye protection for welders, as well as other national standards (USA, Canadian, Australian — to name a few).

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™ 9100 Welding Shield

Designed for Ultimate Protection

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



NEW

3M™ Speedglas™ 9100 Air Welding Shield

New Respiratory Welding Shield

All of the benefits of the 9100 Welding Shields can now be used in combination with powered or supplied air respiratory protection. See further details of respirator compatibility on page 47.

Speedglas 9100 Series Welding Filters with superior optical performance for continuous viewing comfort.

Meets the requirements of mechanical resistance to high speed particles according to EN 175 class B.

SideWindows: Shade 5 filters that widen your field of vision.

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

The all-new face seal readily follows the contours of both the shield and your face.

High-comfort Speedglas 9100 Headband.

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



Airflow: The middle channel keeps the filter virtually fogfree, while two side channels provide smoothly distributed air to the area of your mouth and nose.

Extended protection:

A flame-resistant headcover (used in this application) and an ear/neck protection are available as accessories.



NEW

3M™ Speedglas™ 9100 FX Welding Shield

Wider Field of View with Flip-Up Front

Introducing the Speedglas 9100 FX Welding Shields, a flip-up combination of an auto-darkening welding shield and a protective visor. Not only is the viewing area larger

compared to previous models, we totally redesigned the geometry of the shield for a wider field of view in all directions.

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

The big, 17 x 10 cm clear protective visor is curved, increasing your peripheral vision.

Exhaled air is channelled out via side exhaust vents.

SideWindows: Shade 5 filters that widen your field of vision.

High-comfort Speedglas 9100 Headband.

Meets the requirements of mechanical resistance to high speed particles according to EN 175:B and at extremes of temperatures, -5°C to +55°C, per EN 166:BT.



A spark- and spatter-resistant fabric head cover is standard on all Speedglas 9100 FX Series Welding Shields.



NEW

3M™ Speedglas™ 9100 FX Air Welding Shield

Improved Respiratory Protection – TH3!

For constant TH3-rated respiratory protection and excellent vision in a flip-up model, meet the new 3M™ Speedglas™ 9100 FX Air Welding Shield. It readily connects both

powered and supplied air respirator systems. See further details of respirator compatibility on page 47.

Meets the requirements of mechanical resistance to high speed particles according to EN 175:B and at extremes of temperatures, -5°C to +55°C, per EN 166:BT.

SideWindows: Shade 5 filters that widen your field of vision.

Improved respiratory protection — TH3. Reduced inward leakage means better breathing air quality.

High-comfort Speedglas 9100 Headband.

The breathing tube is attached to the headband instead of the shield.

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



To achieve its high level of respiratory protection, air is supplied directly to the breathing zone. A diffuser spreads out the airflow for your maximum comfort.



A quick lift of the silver front and you get a big, 17x10 cm, clear view — perfect for precision grinding in low light conditions, while maintaining respiratory protection.



“I forget I’m
Wearing it”

3M™ Speedglas™ SL Welding Shield

When Your #1 Priority is Super Light

At a mere 360 grams — including its auto-darkening filter — the 3M™ Speedglas™ SL Welding Shield is 25% lighter than any other Speedglas model.



reddot design award
winner 2007



product design award
2008

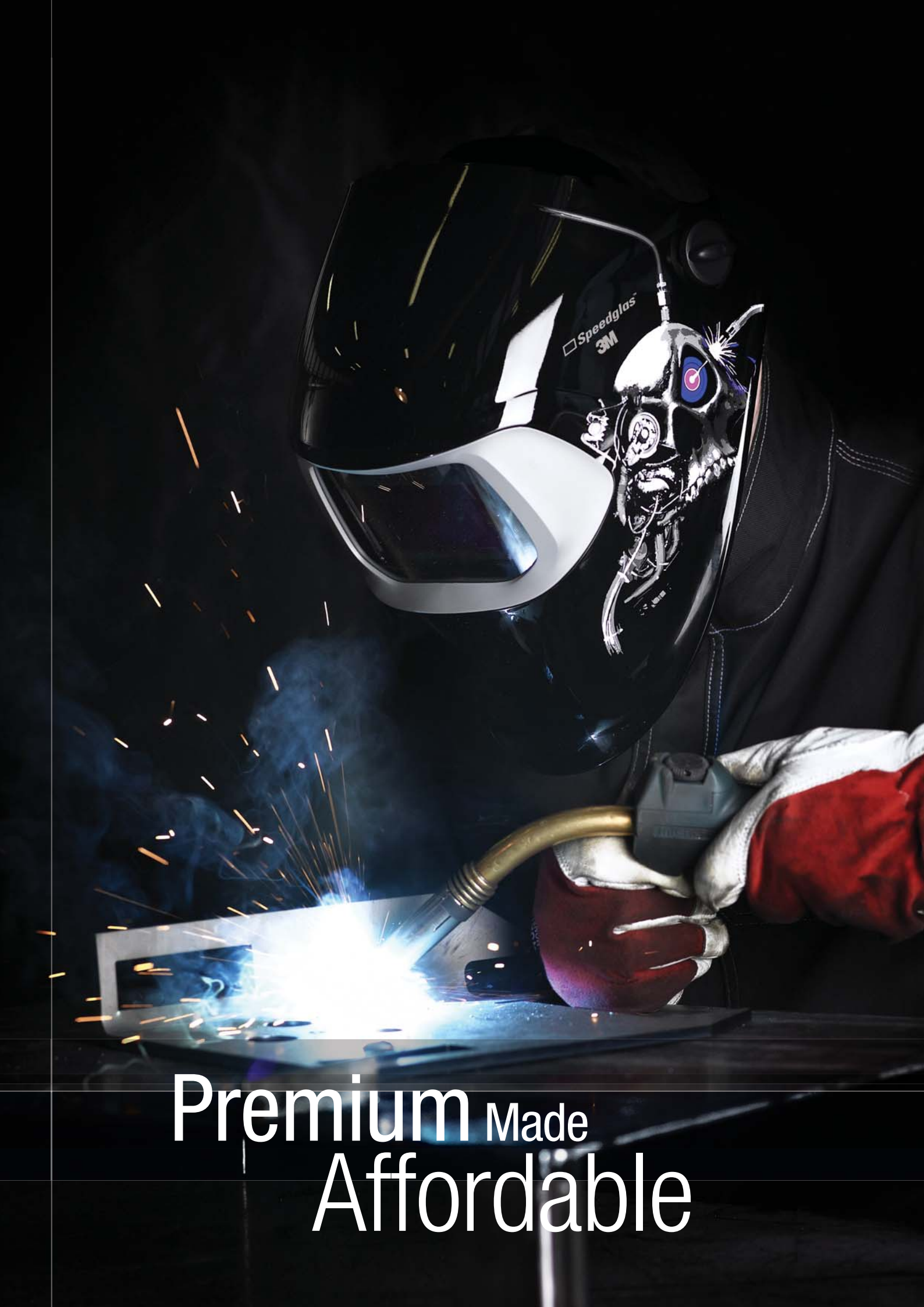


Quick and light, perfect for fast tasks

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

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





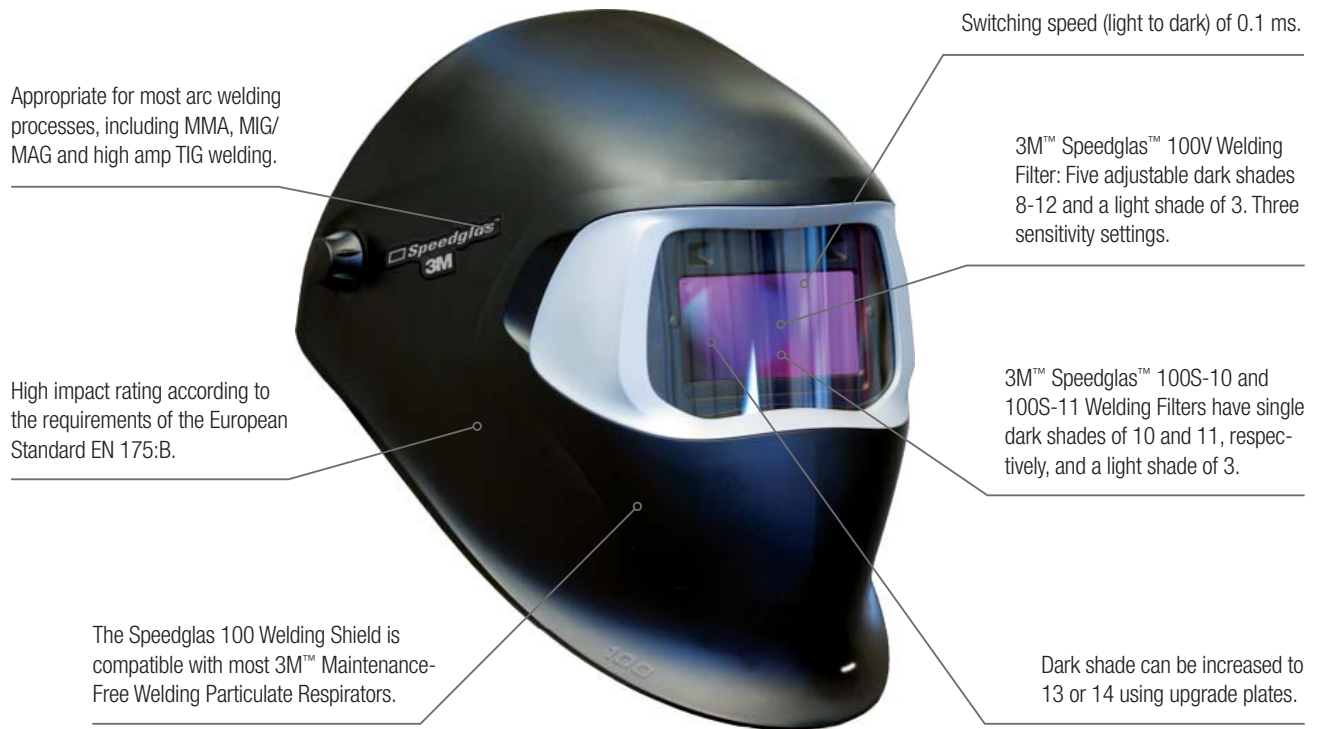
Premium Made
Affordable

3M™ Speedglas™ 100 Welding Shield Series

High-End Features, Low-End Price

Speedglas 100 Series Welding Shields allow you to take advantage of excellent optical quality and reliable light-to-dark switching at a highly affordable price.

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



Performance made simple

The easy-to-use Speedglas 100 model is the ideal auto-darkening shield for the occasional welder. Hobby welders, farmers, DIY types, and maintenance and construction workers can all benefit from the ability to always clearly see with their welding protection in place. In addition to the black/silver shield, we offer a series of stunning graphic shields — each with a unique personality.





Image is
Everything

Make a Visual Impact

3M™ Speedglas™ 100 Graphic Welding Shields

Speedglas 100 Welding Shields deliver impressive protection and performance with distinctive graphic designs — all with a specific identity.



Mechanical Skull



Trojan Warrior



Chrome



Tribal



Blaze



Aces High

Female Graphic Edition

Inspired by women welders, 3M is launching 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 shield.

Designed by Ergonomidesign



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 shield. The skull and flowers engage in visual interplay as one becomes the other, and vice-versa.

Designed by Ergonomidesign



Steel Eyes

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

Designed by Ergonomidesign

3M™ Speedglas™ 9000 Welding Shield

Our Classic Welding Shield



The Speedglas 9000 Shield is still available with 3M™ Speedglas™ 9002D Welding Filter. (Previous variable shade models 9002V and 9002X Filters and Speedglas FlexView Welding Shield are now replaced by the 3M™ Speedglas™ 9100 Series Welding Shields and Filters. See page 6 for more details of our new 9100 product line.)

- Available as complete welding shield with Speedglas 9002D Welding Filter, which has dual dark shades 9 and 11. The Speedglas 9002V and 9002X Filters can still be ordered separately.
- Proprietary Speedglas SideWindows option.
- Exclusive shield exhaust vents.

3M™ Speedglas™ 9000 ProTop Welding Shield

For Overhead Hazards

The key to the Speedglas 9000 ProTop Welding Shield is the innovative pivot mechanism that connects the welding shield to its safety helmet. The mechanism keeps the shield close to the helmet at all times, for excellent balance and reduced strain on your neck muscles.

- Available with Speedglas 9002 Series welding filters, variable shade 93 or dual shade 9/11.
- Speedglas SideWindows option.
- Exclusive shield exhaust vents.



3M™ Speedglas™ ProTop Welding Shield with Safety Helmet has a special low profile design with minimal projections, so it is less likely to snag on surrounding obstacles. The flat front of the safety helmet features a short brim, so the welding shield can be close-to-the-face for optimum viewing.



NEW

Safety Helmet Option for 3M™ Speedglas™ Welding Shields

Welders working in areas with overhead hazards can now benefit from the new safety helmet options for 3M™ Speedglas™ 9100, 3M™ Speedglas™ 100 and 3M™ Speedglas™ SL Welding Shields.

The 3M™ Peltor™ G3001 Safety Helmet is made from in high quality UV-stabilised, ABS-plastic. One of the lightest safety helmets on the market, the Peltor G3001 Helmet has top ratings for absorbing and distributing the forces of fallen objects.

Can also fit other types of safety helmets!

Using our new safety helmet adapter, you can easily fit the industry's most popular safety helmets with the Speedglas 9100 Welding Shield. See the Safety Helmet Adapter Compatibility list (at right).



Safety Helmet Adapter Compatibility for 3M™ Speedglas™ 9100 Welding Shield

- 3M™ Peltor™ G22
- 3M™ Peltor™ G3001
- MSA V-gard®
- 3M™ 1465 Balance
- Centurion® Vulcan™
- Schubert® BEN™ and BOP™ series
- Protector® HC 43 Tuffmaster™
- Unisafe® TA560 UniLite™ ABS
- 3M™ 2000/2010

For safety helmets not manufactured by 3M: Tests have been made to ensure that our Safety Helmet Adapter for Speedglas 9100 Welding Shield will fit the safety helmets listed in this table. 3M does not control future changes made to safety helmets not manufactured by 3M. All trademarks, service marks, product names, and company names cited here are the property of their respective owners.



Safety helmet adapter for 3M™ Speedglas™ 9100 Welding Shield. Part No 19 71 35



3M™ Speedglas™ 9100 Welding Shield with safety helmet adapter and 3M™ Peltor™ G3001 Safety Helmet. A Uvicator is built into the Peltor G3001 Helmet. When the helmet is new the Uvicator is red, as UV-radiation takes its toll on the plastic, the red Uvicator gradually fades out. When the red has faded away completely, it is time to replace the helmet.

3M™ Adflo™ Powered Air Respirator

Cooler, cleaner and more comfortable welding

With its smart, compact design, the award-winning 3M™ Adflo™ Powered Air Respirator is specially designed to meet your welding needs. Its continuous airflow provides filtered air that takes much of the heat and sweat out of welding. By using the Adflo respirator, you get both increased protection and comfort all day long.

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

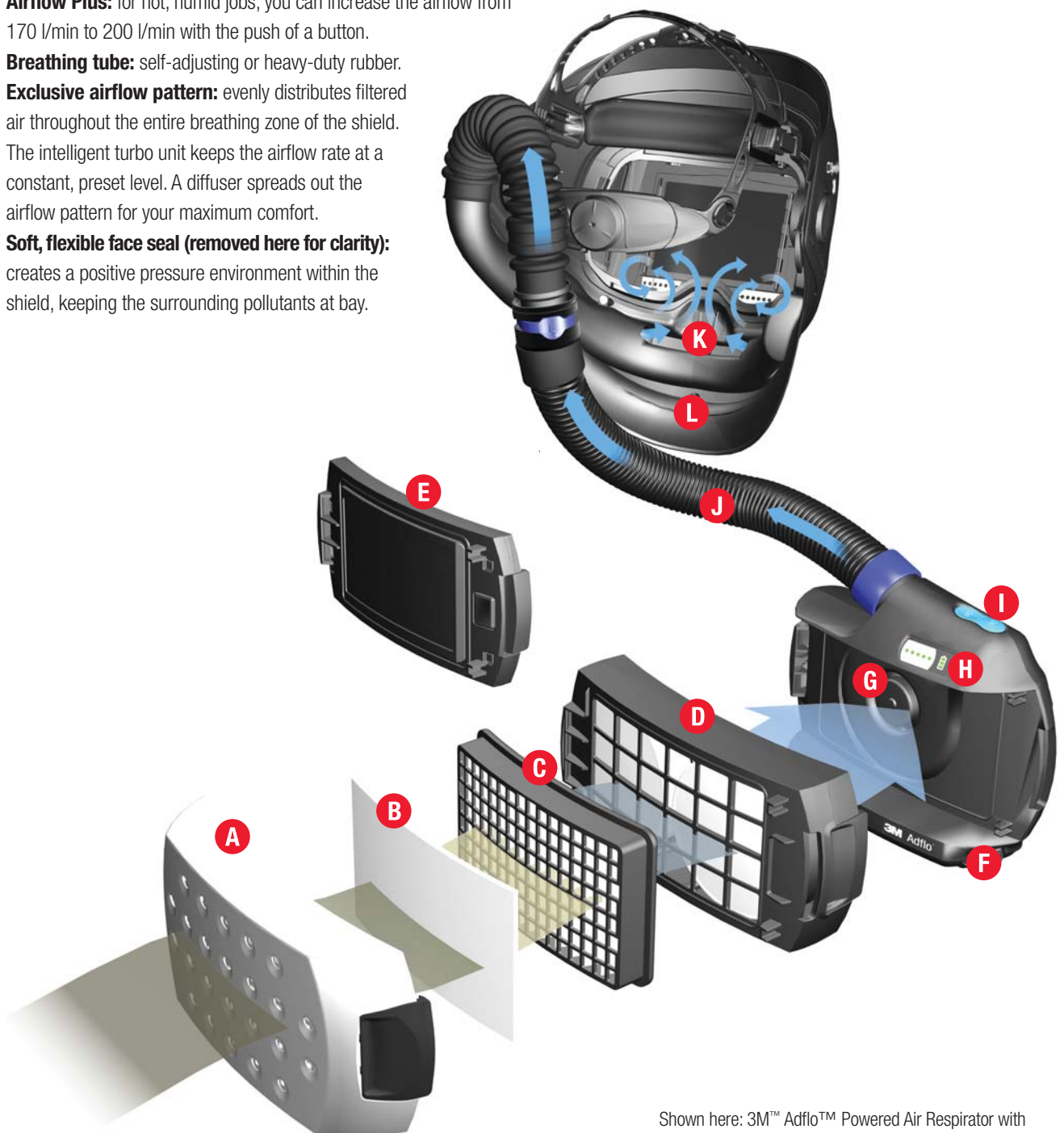


Constant flow of clean air

The airflow is always a constant nominal rate of 170 litres per minute, regardless of the battery's charge or the particle loading of the filter. For hot, humid jobs, you can increase the airflow to 200 litres per minute by simply pushing the ON button a second time.



- A Filter cover:** holds the user-replaceable spark arrestor, which reduces the risk of filter fires.
- B Prefilter:** increases the service life of the particle filter.
- C Particle filter:** high efficiency particulate filtration.
- D Gas filter:** (A1B1E1 or A2) captures organic, inorganic and acid gases and vapours. Gas filters sold separately.
- E Odour filter:** removes unpleasant smells (not needed if a gas filter is installed); sold separately.
- F NiMH battery:** fully charges in four hours. Expected operating time is 8 hours with new particle filter and new, fully-charged battery.
- G Brushless motor:** with an average life three times longer than conventional motors.
- H Filter Indicator:** indicates the status of the particle filter.
- I Airflow Plus:** for hot, humid jobs, you can increase the airflow from 170 l/min to 200 l/min with the push of a button.
- J Breathing tube:** self-adjusting or heavy-duty rubber.
- K Exclusive airflow pattern:** evenly distributes filtered air throughout the entire breathing zone of the shield. The intelligent turbo unit keeps the airflow rate at a constant, preset level. A diffuser spreads out the airflow pattern for your maximum comfort.
- L Soft, flexible face seal (removed here for clarity):** creates a positive pressure environment within the shield, keeping the surrounding pollutants at bay.



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



“It’s Like My Own
Private Oasis”

Complete Respiratory Systems



3M™ Speedglas™ 9100 Air Welding Shield with 3M™ Adflo™ Respirator

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

Part no*:

— Speedglas 9100 Air Welding Shield with Adflo Respirator with particle filter:

56 66 05 with Speedglas 9100V Welding Filter, variable shade 5,8, 9–13.

56 66 15 with Speedglas 9100X Welding Filter, variable shade 5, 8, 9–13.

56 66 25 with Speedglas 9100XX Welding Filter, variable shade 5, 8, 9–13.



3M™ Speedglas™ 9100 FX Air Welding Shield with 3M™ Adflo™ Respirator

Welding shield with auto-darkening welding filter and a 17 x 10 cm clear visor for weld preparations. Excellent for low-light conditions and continuous eye, face and respiratory protection.

Part no*:

— Speedglas 9100 FX Air Welding Shield with Adflo Respirator with particle filter:

54 66 05 with Speedglas 9100V Welding Filter, variable shade 5, 8, 9–13.

54 66 15 with Speedglas 9100X Welding Filter, variable shade 5, 8, 9–13.

54 66 25 with Speedglas 9100XX Welding Filter, variable shade 5, 8, 9–13.



3M™ Speedglas™ Protective Visors with 3M™ Adflo™ Respirator

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

Part no*:

— Speedglas Protective Visor with Adflo Respirator with particle filter:

89 90 20 with visor in polycarbonate.

89 90 21 with visor in acetate (solvent resistant).

89 90 25 with visor in polycarbonate, shade 5.

* For gas protection add any of these part numbers to your order: 83 72 42 for gas filter A1B1E1, or 83 75 42 for gas filter A2.

These filters require a breathing tube with silencer (83 40 08) and the heavy-duty battery (83 76 21).

AVAILABLE SOON IN SELECTED COUNTRIES

3M™ Speedglas™ SG-300 Powered Air Respirator

Compact, Lightweight and Economic

The 3M™ Speedglas™ SG-300 is a new powered air respirator for welders only needing protection from particles and a reduction in nuisance levels* of certain gases.

Steady airflow

The respirator has intelligent electronics that maintain the factory-calibrated airflow at a steady nominal 190 litres per minute, even as the battery discharges or the filter becomes loaded with particulates.

Intelligent controls

LED and audible alarms both signal when either the battery charge or airflow is low: for example, if the filter is fully loaded with particles. The battery's LED lights indicate its charge status. The standard, lightweight, lithium-ion battery quickly charges and has no memory effect or heavy metals. It can be easily removed for charging. Intelligent chargers help maintain the optimum battery performance.

* "Nuisance-level" refers to concentrations below the Occupational Exposure Limit (OEL). For concentrations at or above OELs, consult your 3M distributor for options using the 3M™ Adflo™ Respirator or 3M™ Fresh-air C Supplied Air Regulator.



Straightforward, minimal maintenance

All maintenance can be done by hand. The battery, filter and pre-filter can all be changed quickly and easily by hand.

- The belt and the respirator have smooth surfaces with facilitating fast wipe downs for easier cleaning.
- A window on the respirator allows instant identification of the installed filter.
- Durable brushless motor for superior reliability
- For welding and grinding a spark arrestor reduces the risk that sparks and other hot materials will come in contact with the filter and motor.



The 3M™ Speedglas™ SG-300 Respirator is compatible with three types of welding shields, shown here with the classic 3M™ Speedglas™ 9000 Welding Shield and the optional flame-resistant hood.



Ordering information

Part no:

— SG-314E Respirator, with leather belt, breathing tube QRS and economy battery:

Option 3M™ Speedglas™ 9100 Air Welding Shield, on page 51.

Option 3M™ Speedglas™ 9100 FX Air Welding Shield, on page 52.

Option 3M™ Speedglas™ 9000 Welding Shield, on page 53.

3M™ Fresh-air™ C Supplied Air Regulator

Lightweight System Delivers Maximum Airflows

For welding environments where supplied air respiratory protection is needed, the 3M™ Fresh-air C Regulator can be used with any of the 3M™ Speedglas™ 9100 Series Welding Shields or 3M™ Speedglas™ Protective Visors. The lightweight, belt-mounted regulator allows you to adjust the airflow, making the Fresh-air C Regulator ideal for hot or strenuous work.

Quick Connections

The belt-mounted regulator connects to an approved air hose with a quick release connector system.

The airline supply must be air of breathable quality meeting the requirement of EN 12021.

Oil mist, water vapour, or non-toxic, unpleasant odours in the air supply can be removed with an air cleaning station, such as the 3M™ ACU1 and 3M™ ACU-2 filtration systems.

The Fresh-air C system conforms to relevant European standard EN 14594 for supplied air respirators*.

* Some of our old welding shield models are approved to EN 270 (see technical specification on page 58–59).



Complete Respiratory Systems

3M™ Speedglas™ 9100 Air Welding Shield with 3M™ Fresh-air C Regulator



AVAILABLE MAY 2011

Welding Shield with auto-darkening welding filter combined with a supplied air regulator.

Part no:

– Speedglas 9100 Air Welding Shield with complete Fresh-air C Regulator:

56 88 05 with Speedglas 9100V Welding Filter.

56 88 15 with Speedglas 9100X Welding Filter.

56 88 25 with Speedglas 9100XX Welding Filter.

3M™ Speedglas™ 9100 FX Air Welding Shield with 3M™ Fresh-air C Regulator



AVAILABLE MAY 2011

Welding shield with auto-darkening welding filter and a 17 x 10 cm clear visor for weld preparations. Excellent for low-light conditions and continuous eye, face and respiratory protection.

Part no:

– Speedglas 9100 FX Air Welding Shield with complete Fresh-air C Regulator:

54 88 80 with Speedglas 9100V Welding Filter.

54 88 70 with Speedglas 9100X Welding Filter.

54 88 25 with Speedglas 9100XX Welding Filter.

3M™ Speedglas™ Protective Visors with 3M™ Fresh-air C Regulator



For non-welding manufacturing processes requiring eye, face and respiratory protection, the Fresh-air C Regulator is also available as a system with a clear protective visor.

Part no:

– Speedglas Protective Visor with complete Fresh-air C Regulator:

89 91 00 with visor in polycarbonate.

89 91 01 with visor in acetate (solvent resistant).

89 91 35 visor in polycarbonate, DIN 5 for Fresh-air C Regulator.

(Regulator must be ordered separately; see Parts Directory.)

Frequently Asked Questions about Welding Fumes

1) Which respirator do I need when welding stainless steel?

When welding stainless steel with MIG or MMAW, the welding fumes often contains particles of chromium and nickel, of which chromium is the more toxic. A powered air respirator with particle filter offers you excellent protection in this application. TIG welding does not usually emit much welding fume but creates large quantities of ozone gas: read more under point 6. Plasma cutting and plasma welding give rise to high temperatures, which can emit damaging oxides of nitrogen: read more under point 7.

2) Do I really need respiratory protection when welding ordinary steel?

Although welding fumes from normal steel is not one of the more hazardous types, it is far from good for your health. Among other things, it contains particles of iron oxide, which can cause siderosis (chronic inflammation of the lungs). When welding with MIG/MAG or stick, there are heavy fume emissions, meaning that both a respirator and good ventilation in the workplace are necessary. When welding ordinary steel, a powered air respirator with particle filter is recommended.

3) What sort of respirator is needed when welding surface-treated material?

When welding surface-treated material, a number of hazardous pollutants can be released. When welding galvanised steel, zinc oxide particles are released. These can cause zinc ague, also known as fume fever. If you weld painted material you should be especially careful, as many paints can give off very hazardous air pollutants. When welding galvanised steel or material painted with lead primer, it is recommended that you use a powered air respirator with a particle filter and an odour filter to minimise unpleasant smells. If the material is painted with two component paint or insulated with polyurethane, you should always contact a Safety Engineer. There is a large risk that you will be exposed to isocyanates, which are very hazardous to inhale and difficult to detect. In these cases it is recommended that a supplied air respirator is used.

4) What respiratory protection do I need in restricted areas?

If you are welding in restricted or semi-ventilated areas — where there is a potential for build up of higher levels of contaminant and/or a reduction in oxygen levels — a supplied



air respirator is suggested, regardless of welding method. With a supplied air respirator, providing breathable quality air, you can be confident of getting sufficient oxygen, as well as high levels of protection against gas and particulate contaminants. Powered or supplied air respirators are never to be used in atmospheres immediately dangerous to life or health (IDLH). Always ask a Safety Engineer if you are unsure!

5) Do shielding gases and alloyed electrodes affect my working environment?

When welding with MIG and TIG, the noble gases argon and helium are used as shielding gases. Neither argon nor helium is considered hazardous, but they can displace oxygen in unventilated areas. In such cases, a supplied air respirator is required. When welding with MAG, carbon dioxide, or a mixture of carbon dioxide and a noble gas, is used as a shielding gas. Since parts of the shielding gas can be converted into carbon monoxide when the gas reaches the air, large quantities of carbon monoxide can form around the welding arc. Carbon monoxide cannot be filtered away. If the ventilation is bad, the oxygen level must be monitored and a supplied air respirator used. Alloyed electrodes are common when welding with MAG. The alloys often contain manganese or silicates. This means that large quantities of manganese oxide and silicates are diffused into the surrounding air when you are welding. A powered air respirator with particle filter usually offers sufficient protection against alloy particles.

6) When does ozone form?

When welding aluminium not only are particles of aluminium oxide produced but ozone gas is formed by the action of the UV radiation from the arc breaking down molecular oxygen. Ozone is also produced when welding stainless steel with TIG. Eventually ozone will be converted back to oxygen, a process that is speeded up when the ozone comes into contact with solid surfaces. Ozone cannot be filtered from the atmosphere but relies on being converted back to oxygen. At low ozone concentrations the use of a powered air respirator with particulate filter reduces the amount of ozone reaching the welder. This is achieved by the fact that the particle filter (because of its large surface area) and the breathing tube to the welding shield help to catalyse the conversion of ozone back to normal oxygen. At higher concentrations the inclusion of a gas filter would add an additional large surface of carbon granules on which a further reduction of ozone takes place.

7) What are nitrogen gases?

Nitrogen dioxide and nitric oxide are examples of nitrogen gases that are formed when you weld with high amperage and high temperatures. Nitrous gases are formed by a reaction in the air between nitrogen and oxygen and are hazardous to inhale in high concentrations, e.g. when welding in confined, poorly ventilated areas. It is recommended that a supplied air respirator is used in such cases.




















A General Guide to Respiratory Protection

3M offers a wide range of personal respiratory protection, providing unequalled comfort and protection in the toughest conditions.

- P Powered air respirator with particle filter, page 22.
- A B E Powered air respirator with A1B1E1 gas filter, page 22.
- C Supplied air regulator, page 28.

How to use this guide:

Identify the material to be welded and the welding process to be used. The concentration levels of the pollutants are affected by the ventilation conditions in the workplace. Choose the appropriate description of the working environment to determine the most suitable type of respiratory protection.*

Material to be welded	Welding method	Ventilation conditions of your working environment			
		Good environment, with forced ventilation	Limited ventilation	Restricted space	Classified as IDLH
Aluminium	MIG 	P	P / P + A B E	C	Powered and supplied air respirators must never be used in atmospheres Immediately Dangerous to Life or Health (IDLH). Always consult your Safety Engineer.
	TIG 	P	P / P + A B E	C	
	STICK WELDING 	P	P / P + A B E	C	
Stainless steel	MIG 	P	P / P + A B E	C	
	TIG 	P	P / P + A B E	C	
	STICK WELDING 	P	□ / P + A B E	C	
	PLASMA (Welding and Cutting)	□	P + A B E / C	C	
Steel not coated or painted	MIG/MAG 	P	P	C	
	STICK WELDING 	P	P	C	
	PLASMA (Welding and Cutting)	P	P / C	C	
Steel painted (lead based paints)	MIG/MAG 	P	P	C	
	STICK WELDING 	P	P	C	
	PLASMA (Welding and Cutting)	P	P / C	C	
Steel galvanised	MIG/MAG 	P	P	C	
	STICK WELDING 	P	P	C	
	PLASMA (Welding and Cutting)	P	P / C	C	
Steel coated with 2-component paints or insulated with 2-part polyurethanes (risk of isocyanates)	MIG/MAG 	C	C	C	
	STICK WELDING 	C	C	C	
	PLASMA (Welding and Cutting)	C	C	C	
Material cleaned with trichloroethylene	MIG 	C	C	C	
	TIG 	C	C	C	
	STICK WELDING 	C	C	C	
	PLASMA (Welding and Cutting)	C	C	C	

* 3M accepts no liability for the incorrect choice of respiratory protective equipment. This chart is only an outline. It is designed to help focus on the most appropriate respirators in the 3M range for particular applications. It should not be used as the only means of selecting a respirator. Details regarding performance and limitations are set out on the respirator packaging and user instructions.

Respiratory Filter Guide

Code Type of filter

E	Acid gases.
A	Organic gases, boiling point >65 °C.
AX	Organic gases, boiling point <65 °C.
P	Particle filter.
B	Inorganic gases.

Remarks

H =	The chemical can be absorbed through the skin.
K =	The chemical can be cancer-inducing.
S =	The chemical can be a sensitizer.

- Argon and helium are inert gases which are not generally absorbed by canister type filters. These gases are not in themselves hazardous but can displace oxygen from the air when present in confined spaces.
- Ozone is not readily filtered by absorption type filters. However, ozone reverts back to normal oxygen upon contact with solid surfaces. The use of Speedglas Welding Shield or Protective Visor with Adflo Respirator (particle filtration) will reduce ozone exposure. (For further information please contact 3M Technical Service at your local 3M office.)
- Chemical constituents of a welding fume with very low Occupational Exposure Limits can pose special hazards and are sometimes best protected against by using a Supplied Air Regulator System. If in doubt, always seek professional advice from your Safety Engineer.

Occupational Exposure Limits (OELs) are given in each individual country's national safety requirements.

Get information for the UK on www.hse.gov.uk

Suggested Filter Type				
Chemical	Particle	Gas	Supplied Air	Remarks
Aluminium	P			
Argon			Supplied Air	1
Beryllium	P		Supplied Air	K, S 3
Bromine		B		
Cadmium	P			K
Carbon Dioxide			Supplied Air	
Carbon Monoxide			Supplied Air	
Chlorine		B		H
Chlorine Dioxide		B		
Chromium Hexavalent	P			K
Chromium Trivalent	P			
Copper	P			
Fluorides	P			
Fluorine			Supplied Air	
Helium			Supplied Air	1
Isocyanates			Supplied Air	S
Hydrogen Chloride		B	Supplied Air	3
Hydrogen Cyanide		B	Supplied Air	H3
Hydrogen Fluoride		B	Supplied Air	3
Hydrogen Sulphide		B		
Iron Oxide	P			
Lead	P			
Magnesium	P			
Manganese	P			
Nickel	P			S
Nitrogen Dioxide			Supplied Air	
Nitric Oxide			Supplied Air	
Ozone	P	ABE		2
Phosgene			Supplied Air	3
Phosphine			Supplied Air	
Silicon Dioxide	P			
Sulphur Dioxide		E		
Trichloroethylene		A		K
Vanadium Oxide	P			
White Spirit		A		
Zinc	P			
Zinc Chloride	P			
Zinc Oxide	P			

How ADFs Work



Before:

With the shield 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 and safe inspection of the weld pool, as well as preparation for the next weld.

Eye protection that increases your performance

The key to remember with 3M™ Speedglas Auto Darkening Welding Filters (or ADFs) is consistency. They enable constant, comfortable vision. They provide constant protection from ultraviolet and infrared (UV/IR) radiation. And they consistently auto-switch from clear to dark, and back again, in just the way you want.

Awkward made easier

Speedglas Welding Filters also eliminate the neck-strain of “shield flipping,” while greatly increasing the accuracy of electrode placement. This, in turn, reduces the need for grinding and rework. In addition, you can get into tight, cramped spaces with your eye and face protection already in place. The filters’ constant, clear views make even extremely awkward welds a lot easier.

How fast does a 3M™ Speedglas™ Welding Shield 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 ADFs. Not only can you

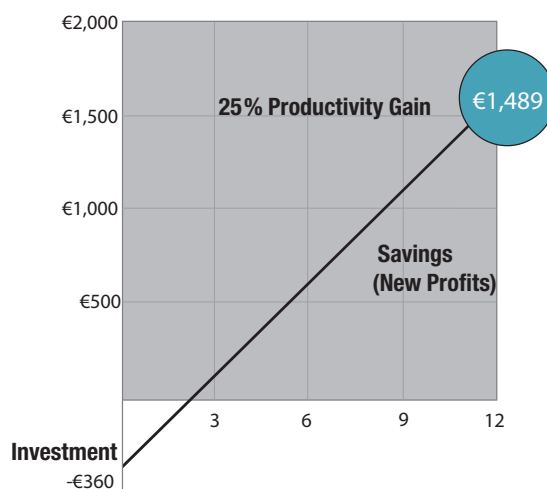
work faster when you can always see, but you move more efficiently, placing electrodes more precisely.

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

For example:

Productivity gains are, of course, dependent on the application. A welder doing lots of tack welds will have much greater productivity gains than a welder doing long seam welds. With that said, this example uses a conservative 25% gain in productivity.

If a welder is only welding 4 hours per day and is paid € per hour, the welding shield will pay for itself in three months. In one year, the productivity gain will be €1.489 in savings (also known as new profits).

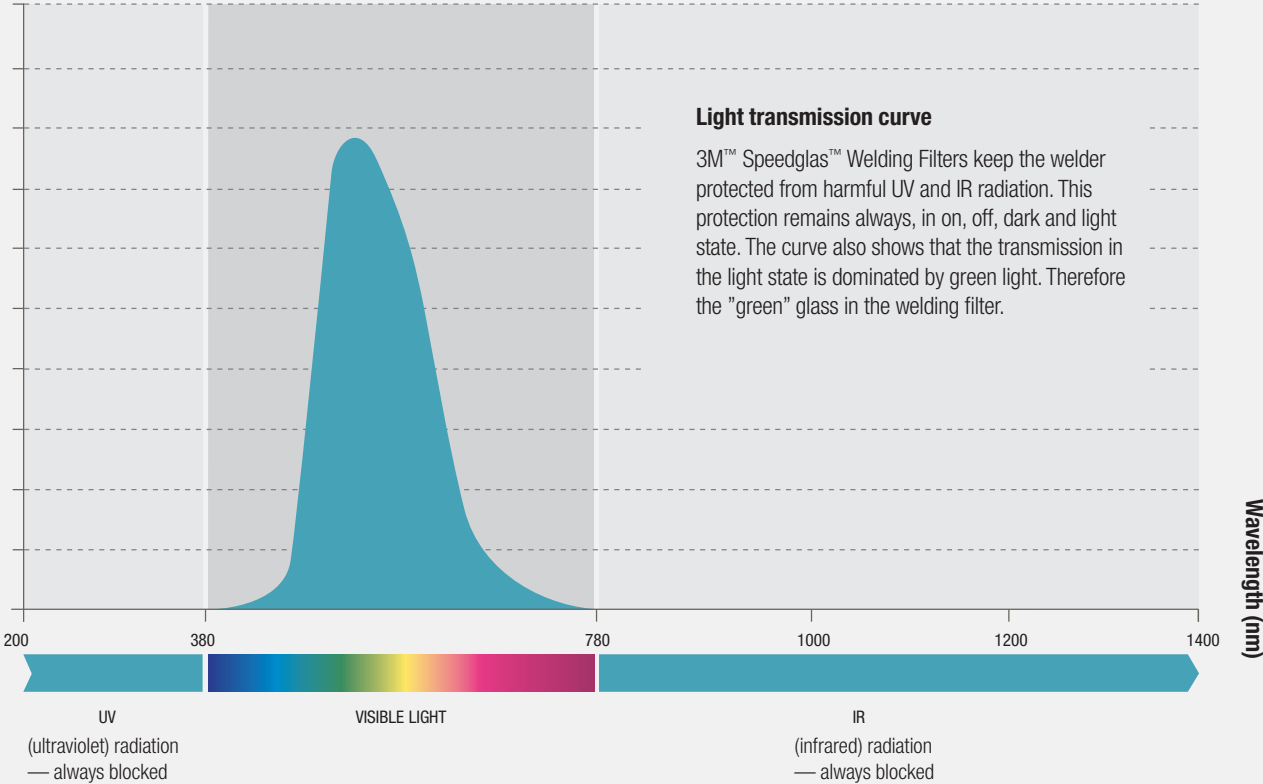


Recommended shade numbers according to EN 379:2003

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

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 (%)



CE Approvals and European Standards

In Europe, all personal protective equipment (PPE) must be CE marked and in compliance with the PPE Directive 89/686/EEC before they can be placed on the market. The PPE must also be in compliance with applicable, national, harmonized standards that ensure that the basic safety requirements in the PPE Directive are met.

European classification of eye and face protection

Welding shields incorporating protective filters are covered by the standards EN 175, EN 166 and EN 169 (passive filters) or EN 379 (auto-darkening filters). The protective visors are covered by EN 166. In EN 175 and EN 166, the PPE is classified according to its mechanical strength: increased robustness (S) or resistance to high speed particles (F or B).

In EN 166, it is optional to complement the classification for mechanical strength with the letter (T) for extremes of temperatures (-5° C and +55° C). In addition there are classifications regarding field of use: “9” for protection against splashes of molten metals and penetration of hot solids; “3” for protection against liquids (droplets or splashes); and “8” for protection from electric arcs due to a short circuit in electrical equipment. For the standards EN 166 and EN 379, optical quality of the welding filter or face shield are classified from 1 to 3, where 1 is the best. For passive welding filters and visors, there is only one classification of optical class. For auto-darkening welding filters, there are four parts of the classification: optical class/diffusion of light/ variations in luminous transmittance/ angle dependence.

Grinding and mechanical strength

The mechanical strength of all 3M™ Speedglas™ 9100 Series Welding Shields are approved to EN 175 class “B,” while 3M™ Speedglas™ 9000 Welding Shields with SideWindows are approved to EN 175 class “F.” Therefore, if you need the SideWindows option and you use your Speedglas shield for grinding, 3M strongly recommends the choice



Classification of mechanical strength

Class S	Increased robustness (drop ball test 5,1 m/s).
Class F	Resistance to high speed particles at low energy impact (45 m/s).
Class B	Resistance to high speed particles at medium energy impact (120 m/s).
Class T	The letter “T” indicates that the test for resistance to high speed particle was conducted at extremes of temperature (-5° and +55°C) (optional).

Note: Products classified in class B are not made to give total protection under all possible circumstances, e.g. when using grinding wheels/grinding machines.

of Speedglas 9100 or Speedglas 9100 FX Welding Shields with SideWindows over the older Speedglas 9000 models with SideWindows. You can find the classification for our products in the technical data table on page 60. For more details on European Standards, or to purchase European Standards, contact your National Standards Institute

European standards for powered air respirators

The European standard for a complete powered air filtering device incorporating a face shield or visor is EN 12941.

There is no separate classification for particle filters (P) in the standard EN 12941 as the particle filter is part of the system classification. Standard EN 12941 defines three classes of performance (TH1, TH2 and TH3). The numbers define the level of performance (inward leakage) and the pull strength of the breathing tubes and couplings within the classification. Inward leakage for classification TH1 is maximum 10%, for TH2 maximum 2% and for TH3 maximum 0.2%.

Gas filters have letters and colour codes that indicate which gases the filter provides protection against, as defined by the standard EN 12941. For example: “A” for organic, “B” for inorganic, and “E” for acid gases. For powered air filtering respirators, the capacity of a gas filter is determined by testing the unit at its airflow rate. The gas filter’s numbers indicate its capacity: “1” for low capacity, “2” for medium capacity, or “3” for high capacity. For example, one of the gas filters available for the 3M™ Adflo™ Respirator is classified as A1B1E1.



European standards for supplied air respirators

The 3M™ Fresh-air™ C Regulator, with compatible 3M™ Speedglas™ Welding Shields or 3M™ Speedglas™ Protective Visors, are approved to EN 14 954*, confirming an inward leakage of less than 0,5%. The apparatus is not self-contained and the airline supply must be air of breathable quality meeting the requirements in EN 12021. The maximum approved length of the supplied airline is 50 meters.

* EN 270 has been replaced by EN 14594 and new systems will be approved to EN 14954.



Parts Directory

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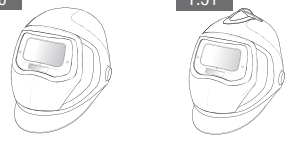

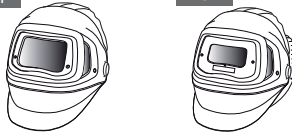






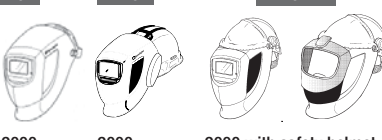
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3M™ Speedglas™ Welding Shields

— Product Overview

The 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.

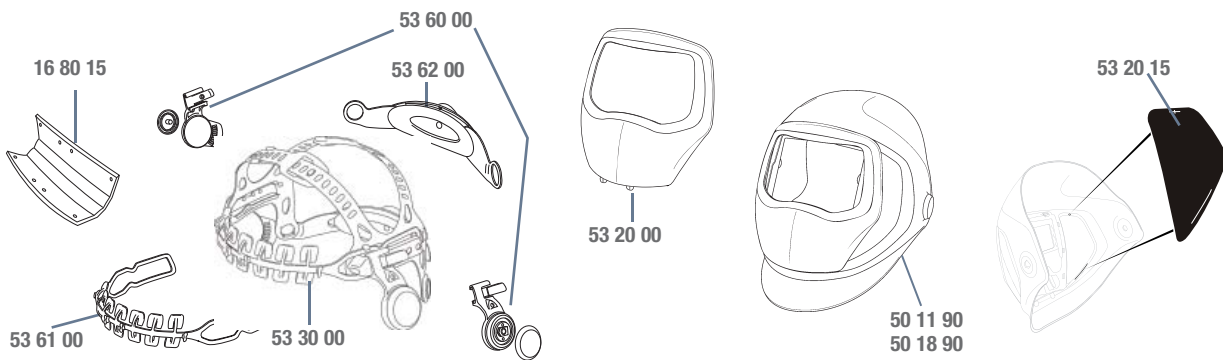
Today, there is a great family of Speedglas welding shields, each model with its specific series of welding filters:

Welding Shields	Auto-Darkening Welding Filters	Accessories
<p>P.40 P.51</p>  <p>3M™ Speedglas™ 9100 Welding Shield 3M™ Speedglas™ 9100 Air Welding Shield</p>	 <p>9100V 9100X 9100XX</p> <p>3M™ Speedglas™ 9100 Series Welding Filters</p>	<p>Every welder is different, and each day a welder's tasks can change. As owner of a Speedglas welding helmet, you have a variety of accessories available to maximize your protection and comfort.</p> <p>The following pages list virtually all of the Speedglas replacement parts and available accessories.</p>
<p>P.41 P.52</p>  <p>3M™ Speedglas™ 9100 FX Welding Shield 3M™ Speedglas™ 9100 FX Air Welding Shield</p>	 <p>3M™ Speedglas™ SL Welding Filter</p>	
<p>P.44</p>  <p>3M™ Speedglas™ SL Welding Shield</p>	 <p>100-10 100-11 100V</p> <p>3M™ Speedglas™ 100 Series Welding Filters</p>	
<p>P.43</p>  <p>3M™ Speedglas™ 100 Welding Shield</p>	 <p>9002D 9002V 9002X</p> <p>3M™ Speedglas™ 9002 Series Welding Filters</p>	
<p>P.45 P.46 P.54</p>  <p>9000 9000 ProTop 9000 with safety helmet for respirators</p> <p>3M™ Speedglas™ 9000 Series Welding Shields</p> <p><small>Speedglas 9100, 9100 Air, 9100 FX and 9100 FX Air Welding Shields replaces the Speedglas 9000 and 9000 FlexView Welding Shields. Accessories and spare parts for 9000 series available for 3-5 years.</small></p>		

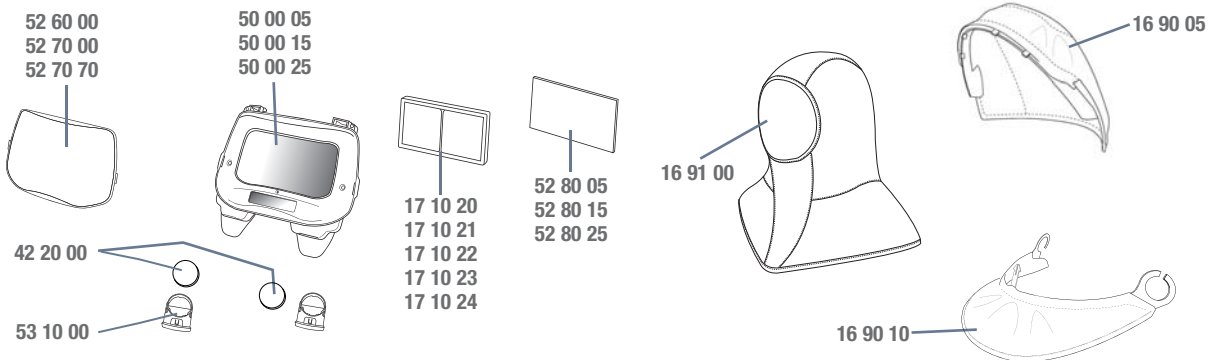
3M™ Speedglas™ 9100 Welding Shield



Part No	Description	Part No	Description	Part No	Description
50 11 05	Speedglas 9100 Welding Shield without SideWindows, with 9100V Filter.	50 11 25	Speedglas 9100 Welding Shield without SideWindows, with 9100XX Filter.	50 18 15	Speedglas 9100 Welding Shield with SideWindows and 9100X Filter.
50 11 15	Speedglas 9100 Welding Shield without SideWindows, with 9100X Filter.	50 18 05	Speedglas 9100 Welding Shield with SideWindows and 9100V Filter.	50 18 25	Speedglas 9100 Welding Shield with SideWindows and 9100XX Filter.



50 11 00 / 50 18 00



Accessories and spare parts

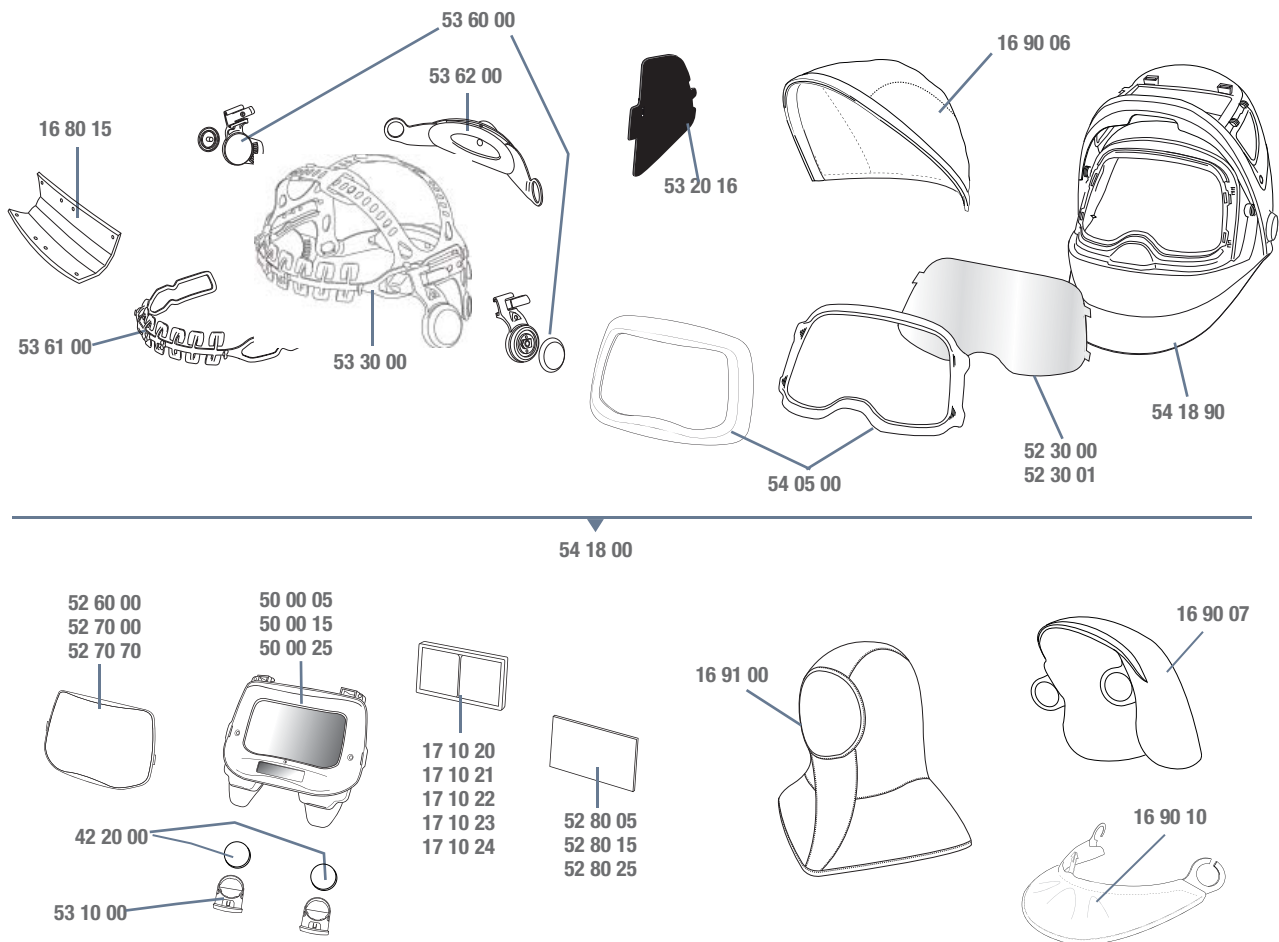
Part No	Description	Part No	Description	Part No	Description
16 80 15	Comfort sweatband, pkg of 3.	50 11 00	9100 Welding Shield without SideWindows, with headband.	52 80 15	Inner cover plate for 9100X Filter, pkg of 5. Plate marking 117x61.
16 90 05	Head protection, black.	50 11 90	9100 Welding Shield without SideWindows, without headband.	52 80 25	Inner cover plate for 9100XX Filter, pkg of 5. Plate marking 117x77.
16 90 10	Neck protection, black.	50 18 00	9100 Welding Shield with SideWindows and headband.	53 10 00	Battery holder, pkg of 2.
16 91 00	Hood, black/grey.	50 18 90*	9100 Welding Shield with SideWindows, without headband.	53 20 00	Heat-reflecting silver front.
17 10 20	Magnifying lens 1.0.	52 60 00	Outer protection plate standard, pkg of 10.	53 20 15*	SideWindows cover plate, 2 pairs.
17 10 21	Magnifying lens 1.5.	52 70 00	Outer protection plate extra scratch resistant, pkg of 10.	53 30 00	Speedglas 9100 headband with assembly parts.
17 10 22	Magnifying lens 2.0.	52 70 70	Outer protection plate heat resistant pkg of 10.	53 60 00	Pivot mechanism, left and right.
17 10 23	Magnifying lens 2.5.	52 80 05	Inner cover plate for 9100V Filter, pkg of 5. Plate marking 117x50.	53 61 00	Headband front part.
17 10 24	Magnifying lens 3.0.			53 62 00	Headband back part.
42 20 00	Battery, pkg of 2.				
50 00 05	Speedglas 9100V Welding Filter, variable shade 5, 8, 9–13.				
50 00 15	Speedglas 9100X Welding Filter, variable shade 5, 8, 9–13.				
50 00 25	Speedglas 9100XX Welding Filter, variable shade 5, 8, 9–13.				

* Please use Part No 50 18 90 when ordering replacement SideWindows.

3M™ Speedglas™ 9100 FX Welding Shield



Part No	Description	Part No	Description	Part No	Description
54 18 05	Speedglas 9100 FX Welding Shield with SideWindows and 9100V Filter.	54 18 15	Speedglas 9100 FX Welding Shield with SideWindows and 9100X Filter.	54 18 25	Speedglas 9100 FX Welding Shield with SideWindows and 9100XX Filter.



Accessories and spare parts

Part No	Description	Part No	Description	Part No	Description
16 80 15	Comfort sweatband, pkg of 3.	52 30 00	Visor plate standard, pkg of 5.	53 30 00	Speedglas 9100 Series Headband, with assembly parts.
16 90 06	Head protection (small).	52 30 01	Visor plate anti-fog, pkg of 5.	53 60 00	Pivot mechanism, left and right.
16 90 07	Neck protection (large).	52 60 00	Outer protection plate, standard, pkg of 10.	53 61 00	Headband front part.
16 91 00	Hood, black/grey.	52 70 00	Outer protection plate, extra scratch resistant, pkg of 10.	53 62 00	Headband back part.
17 10 20	Magnifying lens 1.0.	52 70 70	Outer protection plate, heat resistant pkg of 10.	54 18 00	Speedglas 9100 FX shield, without welding filter, with headband.
17 10 21	Magnifying lens 1.5.	52 80 05	Inner cover plate for 9100V Filter, pkg of 5. Plate marking 117x50.	54 18 90	Speedglas 9100 FX shield, without welding filter, without headband.
17 10 22	Magnifying lens 2.0.	52 80 15	Inner cover plate for 9100X Filter, pkg of 5. Plate marking 117x61.	54 05 00	Front cover kit.
17 10 23	Magnifying lens 2.5.	52 80 25	Inner cover plate for 9100XX Filter, pkg of 5. Plate marking 117x77.		
17 10 24	Magnifying lens 3.0.	53 10 00	Battery holder, pkg of 2.		
42 20 00	Battery, pkg of 2.	53 20 16	SideWindows cover plate, 2 pairs.		
50 00 05	Speedglas 9100V Welding Filter, variable shade 5, 8, 9-13.				
50 00 15	Speedglas 9100X Welding Filter, variable shade 5, 8, 9-13.				
50 00 25	Speedglas 9100XX Welding Filter, variable shade 5, 8, 9-13.				

Featured Accessories

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



16 91 00



16 90 06
16 90 07

16 90 10



95 44 10



16 90 05

16 90 10

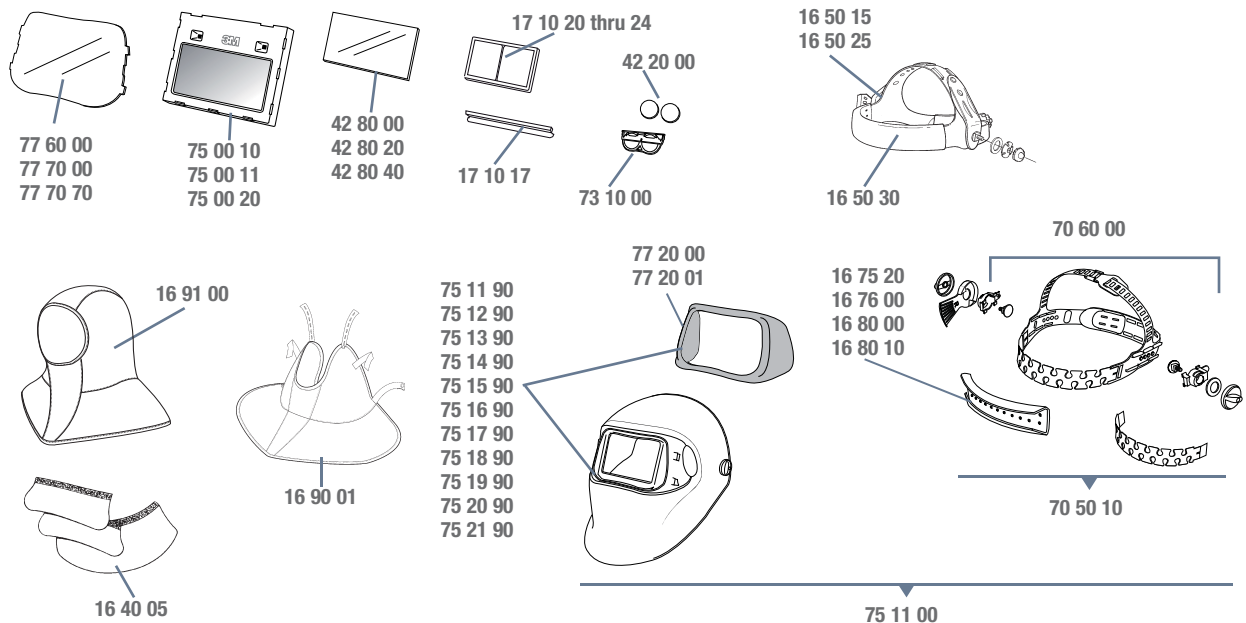
Ordering Information for Additional Coverage Products	3M™ Speedglas™ 9000 Series Welding Shields	3M™ Speedglas™ SL / 100 Welding Shields	3M™ Speedglas™ 9100 / 9100 Air Welding Shields	3M™ Speedglas™ 9100 FX / 9100 FX Air Welding Shields
Head protection	Part No 16 40 09		Part No 16 90 05	Part No 16 90 07 (large) Part No 16 90 06 (small)
Colour Approval	Black/Grey EN ISO 11611		Black EN ISO 11611	Black (covered by EN 175)
Neck protection		Part No 16 90 01		Part No 16 90 10
Colour Approval		Black/Grey EN ISO 11611		Black EN ISO 11611
Hood			Part No 16 91 00	
Colour Approval			Black/grey EN ISO 11611	
Welding cap			Part No 95 44 10	
Colour Material			Black Cotton	

3M™ Speedglas™ 100 Series Welding Shields



75 13 20

Part No	Description	Part No	Description	Part No	Description
75 11 10	Speedglas 100 Welding Shield Black with 100S-10 Filter.	75 14 20	Speedglas 100 Welding Shield Chrome with 100V Filter.	75 19 20	Speedglas 100 Welding Shield Skull Jewels with 100V Filter.
75 11 11	Speedglas 100 Welding Shield Black with 100S-11 Filter.	75 15 20	Speedglas 100 Welding Shield Mechanical skull with 100V Filter.	75 20 20	Speedglas 100 Welding Shield Wild 'n' Pink with 100V Filter.
75 11 20	Speedglas 100 Welding Shield Black with 100V Filter.	75 16 20	Speedglas 100 Welding Shield Trojan Warrior with 100V Filter.	75 21 20	Speedglas 100 Welding Shield Steel Eyes with 100V Filter.
75 12 20	Speedglas 100 Welding Shield Blaze, with 100V Filter.	75 17 20	Speedglas 100 Welding Shield Aces high with 100V Filter.		
75 13 20	Speedglas 100 Welding Shield Tribal with 100V Filter.	75 18 20	Speedglas 100 Welding Shield Steel Rose with 100V Filter.		See page 19 for additional photos of the graphic welding shields.



Accessories and spare parts

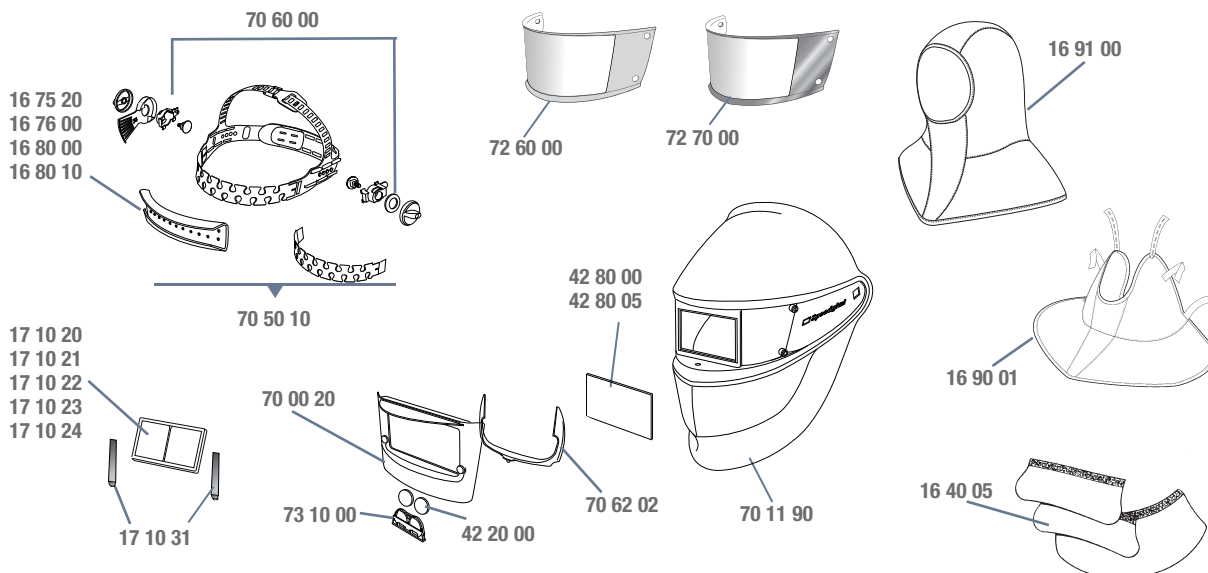
Part No	Description	Part No	Description	Part No	Description
16 40 05	Ear and neck protection in leather.	70 50 10	Comfort Headband with assembly parts.	75 16 90	Welding shield Trojan Warrior, without welding filter, without headband.
16 50 15	Headband with assembly parts.	70 60 00	Assembly parts for headband.	75 17 90	Welding shield Aces High, without welding filter, without headband.
16 50 25	Headband 1 UL with assembly parts.	73 10 00	Battery cover.	75 18 90	Welding shield Steel Rose, without welding filter, without headband.
16 60 30	Assembly parts for headband.	75 00 10	Speedglas 100S-10 Welding Filter, single shade 10.	75 19 90	Welding shield Skull Jewels, without welding filter, without headband.
16 75 20	Sweatband, towelling purple, pkg of 2.	75 00 11	Speedglas 100S-11 Welding Filter, single shade 11.	75 20 90	Welding shield Wild n' Pink, without welding filter, without headband.
16 76 00	Sweatband, towelling purple, pkg of 20.	75 00 20	Speedglas 100V Welding Filter, variable shade 8-12.	75 21 90	Welding shield Steel Eyes, without welding filter, without headband.
16 80 00	Sweatband, leather.	75 11 00	Welding shield black, without welding filter with headband.	77 20 00	Front frame, silver.
16 80 10	Sweatband, fleecy cotton.	75 11 90	Welding shield black, without welding filter, without headband.	77 20 01	Front frame, black.
16 90 01	Neck protection, black/grey.	75 12 90	Welding shield Blaze, without welding filter, without headband.	77 60 00	Outer protection plate, standard, pkg of 10.
16 91 00	Hood black/grey	75 13 90	Welding shield Tribal, without welding filter, without headband.	77 70 00	Outer protection plate, scratch resistant, pkg of 10.
17 10 17	Holder for magnifier.	75 14 90	Welding shield Chrome, without welding filter, without headband.	77 70 70	Outer protection plate, heat resistant, pkg of 10.
17 10 20	Magnifying lens 1.0.	75 15 90	Welding shield Mechanical skull, without welding filter, without headband.		
17 10 21	Magnifying lens 1.5.				
17 10 22	Magnifying lens 2.0.				
17 10 23	Magnifying lens 2.5.				
17 10 24	Magnifying lens 3.0.				
42 20 00	Battery, pkg of 2.				
42 80 00	Inner cover plate, pkg of 5. Plate marking 42 02 00.				
42 80 20	Inner cover plate, +1 shade, pkg of 5.				
42 80 40	Inner cover plate, +2 shade, pkg of 5.				

3M™ Speedglas™ SL Welding Shield



70 11 20

Part No	Description	Part No	Description	Part No	Description
16 40 05	Ear and neck protection in leather (3 parts).	17 10 24	Magnifying lens 3.0.	70 62 02	Filter locking frame, pkg of 2.
16 75 20	Sweatband, towelling, purple, pkg of 2.	17 10 31	Holder for magnifier.	72 60 00	Outer protection plate, standard, pkg of 5. Plate marking 030226.
16 76 00	Sweatband, towelling, pkg of 20.	42 20 00	Battery, pkg of 2.	72 70 00	Outer protection plate, scratch resistant, pkg of 5. Plate marking 030248.
16 80 00	Sweatband, leather.	42 80 00	Inner cover plate (42 x 91 mm), pkg of 5. Plate marking 42 02 00.	73 10 00	Battery cover.
16 80 10	Sweatband, fleecy cotton.	42 80 05	42 80 00, pkg Of 200.		
16 90 01	Neck protection black/grey.	70 00 20	Speedglas SL Welding Filter, variable shade 8-12.		
16 91 00	Hood black/grey.	70 11 20	Speedglas SL Welding Shield. with welding filter, variable shade 8-12.		
17 10 20	Magnifying lens 1.0.	70 11 90	Welding shield, without headband.		
17 10 21	Magnifying lens 1.5.	70 50 10	Headband with assembly parts.		
17 10 22	Magnifying lens 2.0.	70 60 00	Assembly parts for headband.		
17 10 23	Magnifying lens 2.5.				
17 10 24	Magnifying lens 3.0.				

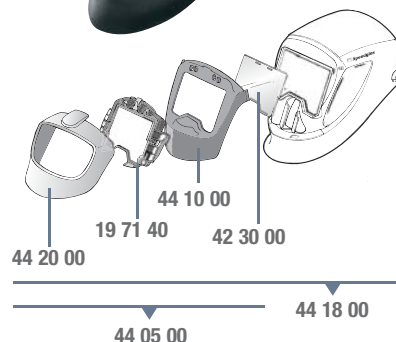


3M™ Speedglas™ 9000 FlexView Welding Shield



Spare parts*

Part No	Description	Part No	Description
19 71 40	Holder for welding filter.	44 18 00	Speedglas 9000 FlexView Welding Shield with SideWindows, without welding filter.
19 71 41	Locking wedge kit (holder welding filter).	44 20 00	Heatreflecting front, silver.
42 30 00	Protective visor plate, pkg of 10.		
44 05 00	Speedglas FlexView Conversion Kit.		
44 10 00	Middle shield, black.		



3M™ Speedglas™ 9000 / Utility Welding Shields

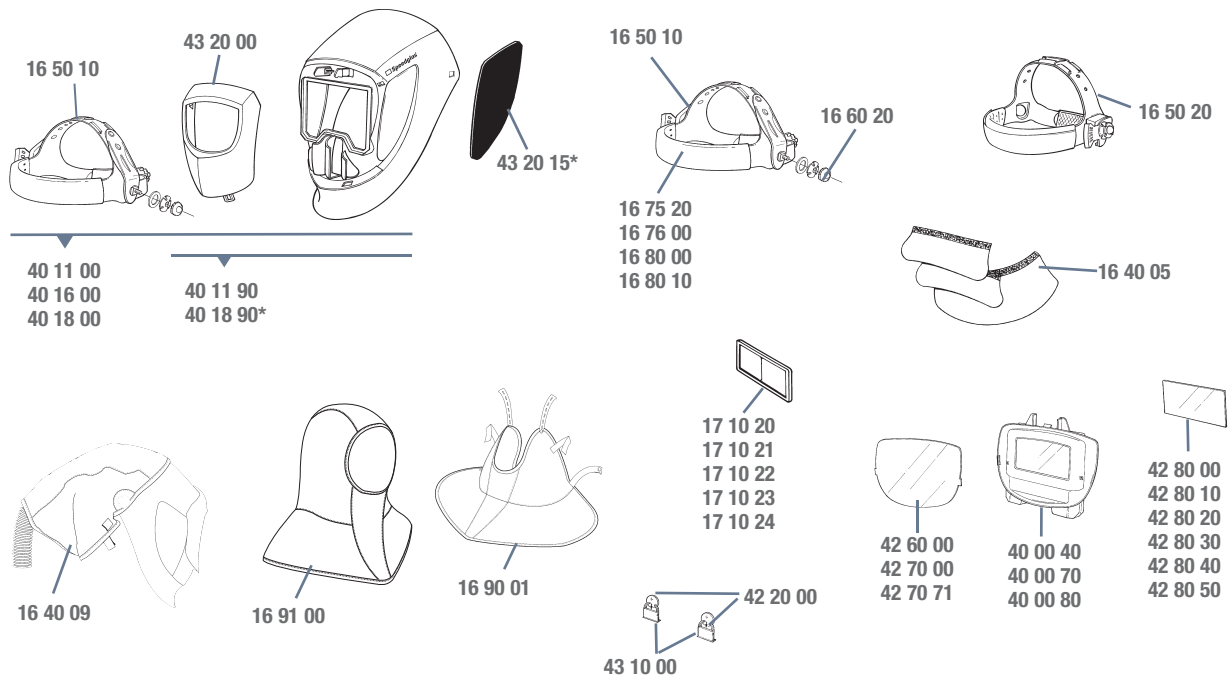


40 11 40
40 18 40

Accessories and spare parts**

Part No	Description	Part No	Description	Part No	Description
16 40 05	Ear and neck protection in leather.	40 11 40	9000 Welding Shield, without SideWindows, with 9002D Filter and headband.	42 70 71	Outer protection plate, heat resistant, pkg of 10. Plate marking 42 01 70.
16 40 09	Head protection, black/grey.	40 11 90	9000 Welding Shield, without SideWindows, without headband, without filter.	42 80 00	Inner cover plate (42x91 mm) for 9002D/9002V Filters, pkg of 5. Plate marking 42 02 00.
16 50 10	Headband with assembly parts.	40 16 00	9000 Welding Shield, with headband 1 UL, with SideWindows, without filter.	42 80 10	Inner cover plate (53x103 mm) for 9002X/9000XF Filters, pkg of 5. Plate marking 42 02 10.
16 50 20	Headband 1 UL with assembly parts.	40 18 00	9000 Welding Shield, with SideWindows, with headband, without filter.	42 80 20	Inner cover plate, +1 Shade for 9002D/9002V Filters, pkg of 5.
16 60 20	Assembly parts for headband.	40 18 40	9000 Welding Shield with SideWindows, with Speedglas 9002D Filter, dual shade 9/11.	42 80 30	Inner cover plate, +1 Shade for 9002X/9000XF Filters, pkg of 5.
16 75 20	Sweatband towelling, pkg of 2.	40 18 90*	9000 Welding Shield with SideWindows, without headband, without filter.	42 80 40	Inner cover plate, +2 Shade for 9002D/9002V Filters, pkg of 5.
16 76 00	Sweatband towelling, pkg of 20.	42 20 00	Battery, pkg of 2.	42 80 50	Inner cover plate, +2 Shade for 9002X/9000XF Filters, pkg of 5.
16 80 00	Sweatband, leather.	42 60 00	Outer protection plate, standard, pkg of 10. Plate marking 42 01 50.	43 10 00	Battery cover, pkg of 2.
16 80 10	Sweatband, fleecy cotton, pkg of 2.	42 70 00	Outer protection plate, scratch resistant, pkg of 10. Plate marking 42 01 00.	43 20 00	Heat-reflecting front, silver.
16 90 01	Neck protection, black/grey.			43 20 15*	SideWindows cover plate (sticker), 5 pairs.
16 91 00	Hood black/grey.				
17 10 15	Holder for magnifying lens				
17 10 20	Magnifying lens 1.0.				
17 10 21	Magnifying lens 1.5.				
17 10 22	Magnifying lens 2.0.				
17 10 23	Magnifying lens 2.5.				
17 10 24	Magnifying lens 3.0.				
40 00 40	Speedglas 9002D Welding Filter.				
40 00 70	Speedglas 9002V Welding Filter,.				
40 00 80	Speedglas 9002X Welding Filter.				
40 11 00	9000 Welding Shield, without SideWindows, without filter, with headband.				

* Please use Part No 40 18 90 when new SideWindows are required.



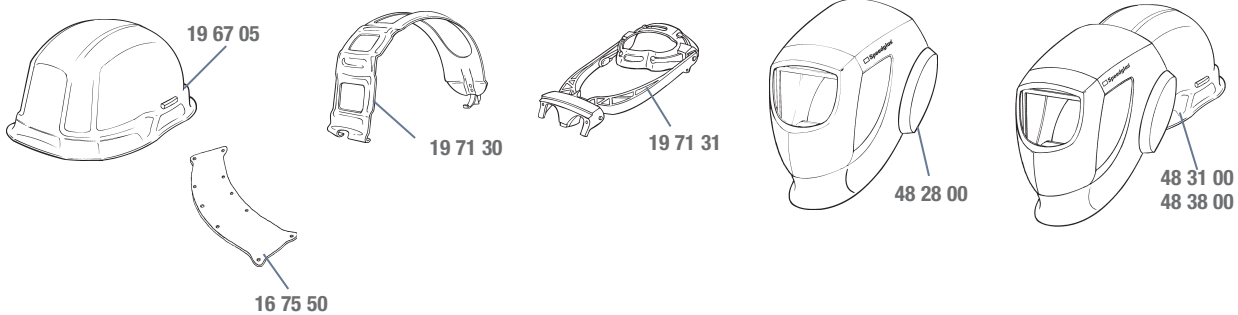
** Speedglas 9100, 9100 Air, 9100 FX and 9100 FX Air Welding Shields replaces the Speedglas 9000 and 9000 FlexView Welding Shields. Accessories and spare parts will remain for 3–5 years.

3M™ Speedglas™ 9000 ProTop Welding Shield with Safety Helmet



48 38 70
48 38 80

Part No	Description	Part No	Description
16 75 50	Sweatband, pkg of 2.	48 31 00	ProTop Welding Shield without SideWindows, without welding filter.
19 67 05	Safety helmet, white – other colours upon request.	48 38 00	ProTop Welding Shield with SideWindows, without welding filter.
19 71 30	Safety helmet assembly parts.	48 38 70	ProTop Welding Shield with SideWindows and 9002V Filter.
19 71 31	Welding shield mechanism parts.	48 38 80	ProTop Welding Shield with SideWindows and 9002X Filter.
48 28 00	ProTop Welding Shield, with SideWindows, without safety helmet, without welding filter.		



Safety Helmet Options for 3M™ Speedglas™ 9100 / 100 / SL Welding Shields

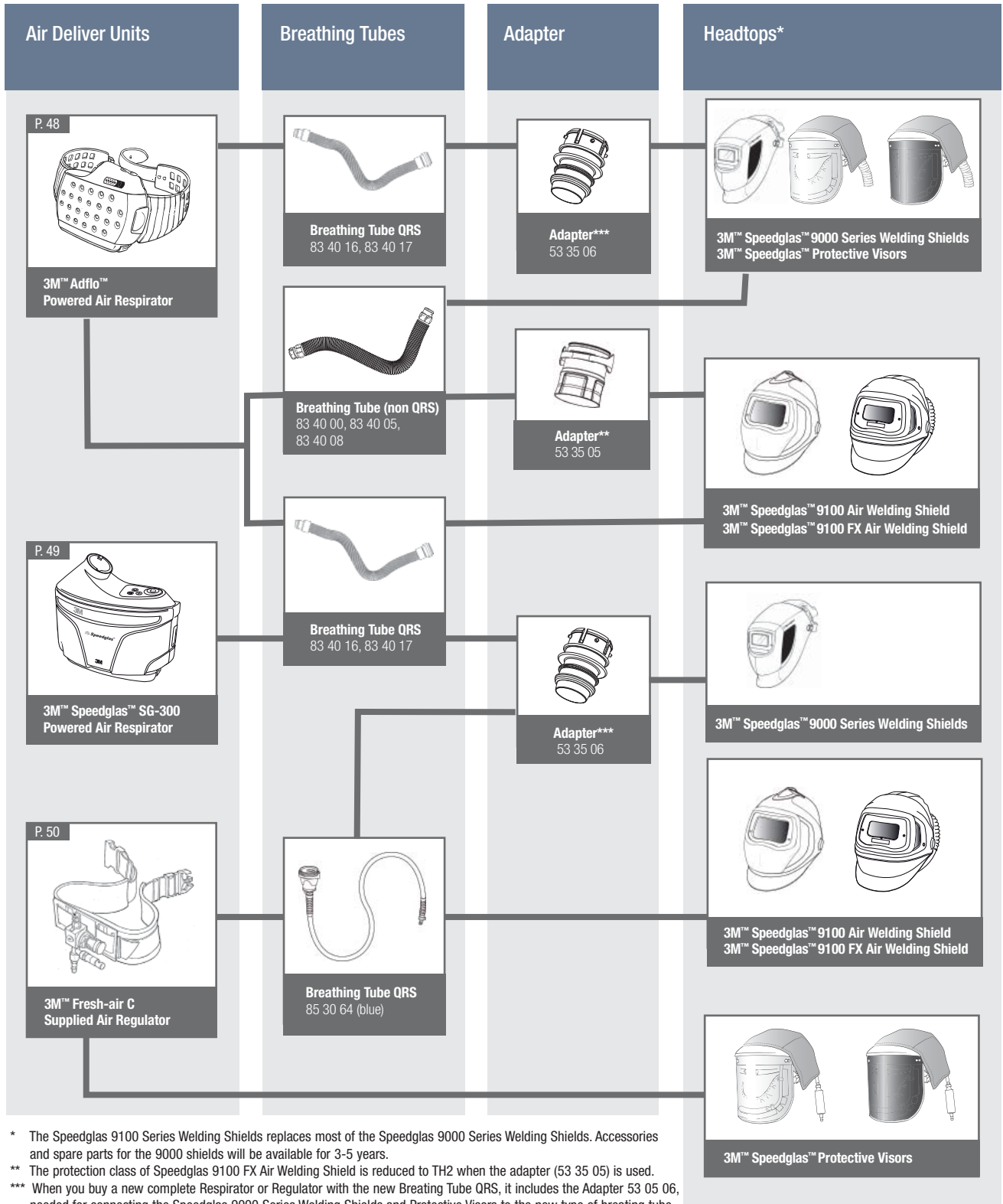


Part No	Description	Part No	Description	Part No	Description
19 71 34	Speedyloop for Speedglas 100 and Speedglas SL welding shields with safety helmet assembly parts.	58 38 15	Speedglas 9100 Welding Shield with 3M Peltor G3001 Safety Helmet, with 9100X Welding Filter.	78 33 20	Speedglas SL Welding Shield with 3M Peltor G3001 Safety Helmet, with SL Welding Filter.
19 71 35	Speedyloop for Speedglas 9100 welding shield with safety helmet assembly parts.	58 38 25	Speedglas 9100 Welding Shield with 3M Peltor G3001 Safety Helmet, with 9100XX Welding Filter.	G3001NUV-VI	3M Peltor G3001 Safety Helmet
58 38 05	Speedglas 9100 Welding Shield with 3M Peltor G3001 Safety Helmet, with 9100V Welding Filter.	78 31 20	Speedglas 100 Welding Shield with 3M Peltor G3001 Safety Helmet, with 100V Welding Filter.		

Compatibility of Air Delivery Units and Headtops

The new Speedglas 9100 Series Welding Shields feature the QRS Breathing Tube (Quick Release Swivel), which enables one-handed connection and release. Old type of Adflo Breathing Tubes (not QRS) can be used by adding the 9100

shield adapter (53 35 05). The new type of QRS Breathing Tubes are also approved for Speedglas 9000 Welding Shield and Protective Visors by adding a specific shield adapter (53 35 06).

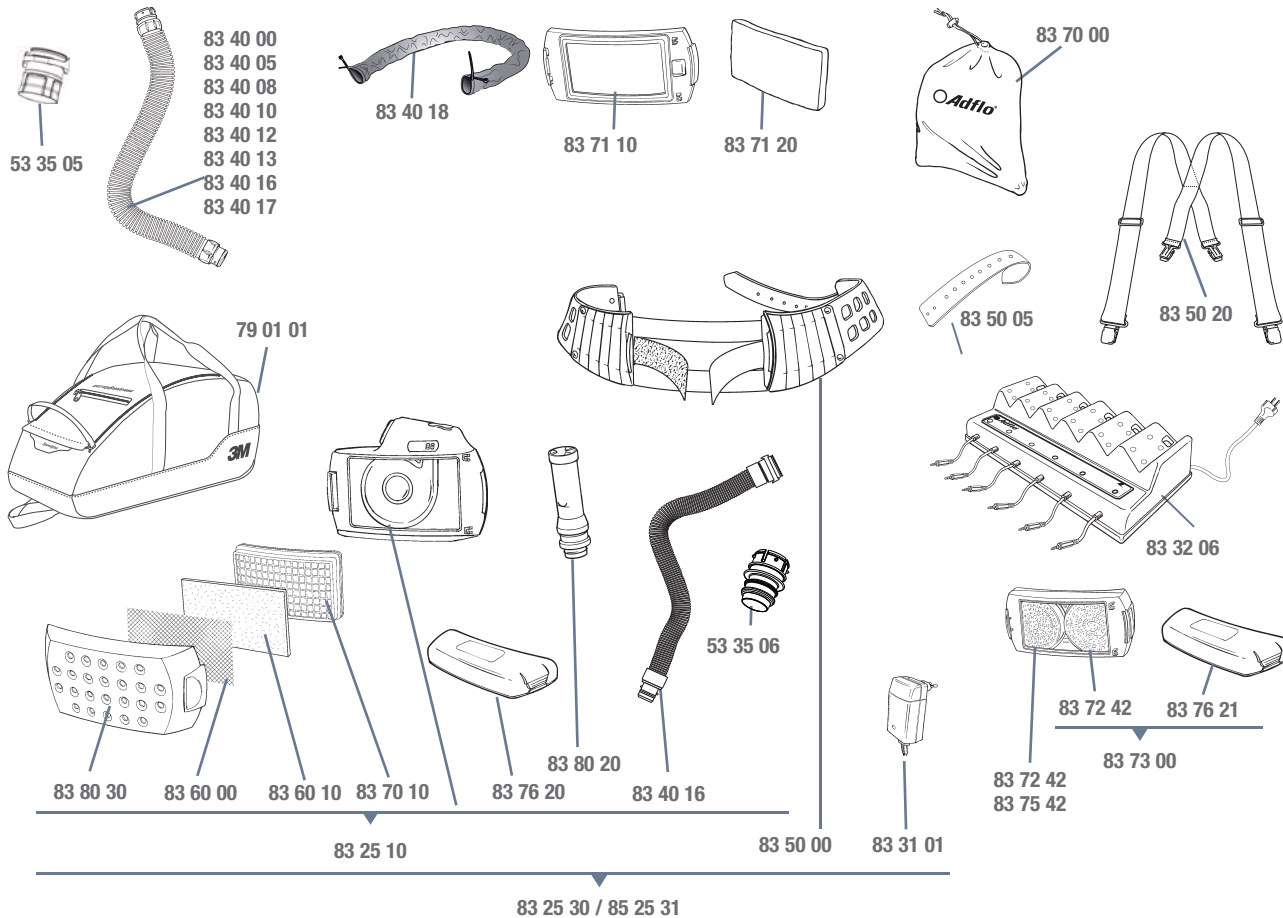


* The Speedglas 9100 Series Welding Shields replaces most of the Speedglas 9000 Series Welding Shields. Accessories and spare parts for the 9000 shields will be available for 3-5 years.
 ** The protection class of Speedglas 9100 FX Air Welding Shield is reduced to TH2 when the adapter (53 35 05) is used.
 *** When you buy a new complete Respirator or Regulator with the new Breathing Tube QRS, it includes the Adapter 53 05 06, needed for connecting the Speedglas 9000 Series Welding Shields and Protective Visors to the new type of breathing tube.

3M™ Adflo™ Powered Air Respirator



Part No	Description	Part No	Description	Part No	Description
83 25 10	Adflo Respirator with self-adjusting breathing tube QRS, adapter (53 35 06), airflow indicator, prefilter, spark arrester, particle filter and battery.	83 25 30	Adflo Respirator with self-adjusting breathing tube QRS, breathing tube adapter, airflow indicator, prefilter, spark arrester, particle filter, battery, belt and charger.	83 25 31	Adflo Respirator as in 83 25 30, but with heavy-duty battery.



Accessories and spare parts

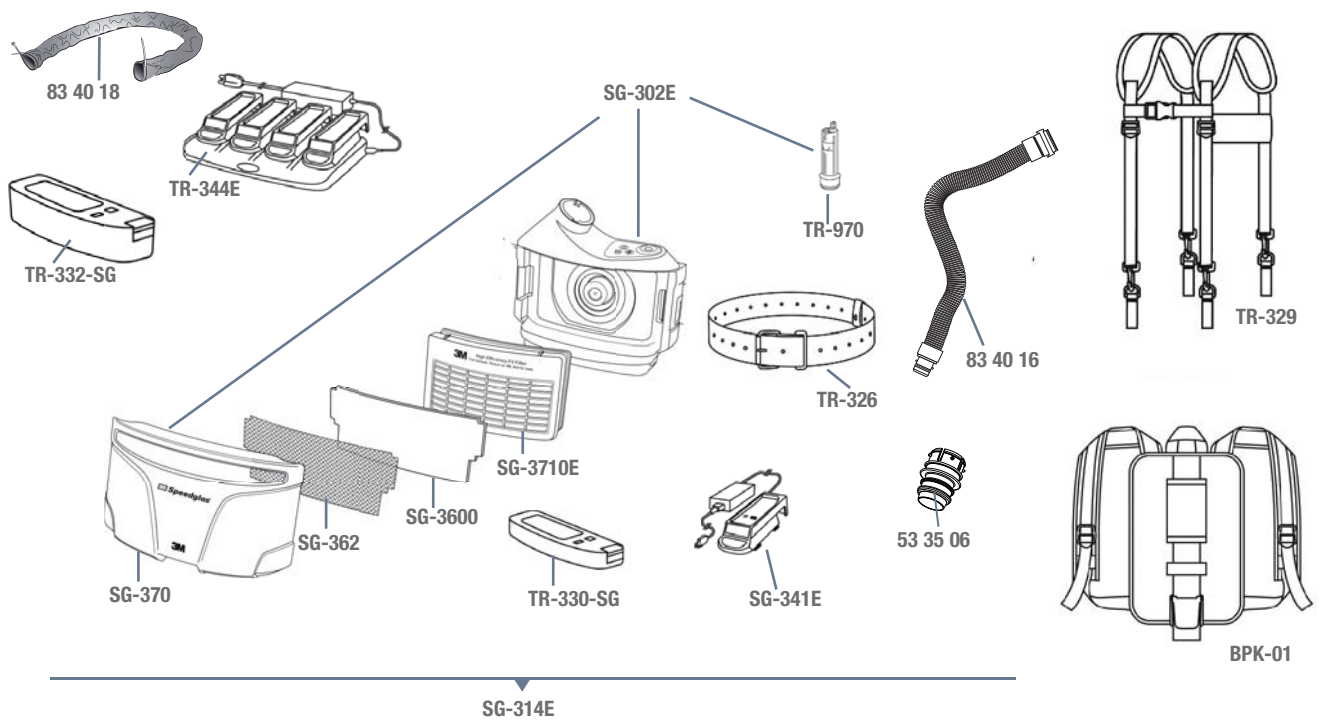
Part No	Description	Part No	Description	Part No	Description
53 35 05	Adapter for non-QRS breathing tubes when using Speedglas 9100 Series welding shields.	83 40 12	Breathing tube, double length, non-QRS.	83 60 10	Prefilter, pkg of 5.
53 35 06	Adapter for QRS breathing tubes when using Speedglas 9000 Series welding shields.	83 40 13	Breathing tube, lightweight, triple length, non-QRS.	83 60 80	Prefilter, pkg of 80.
79 01 01	Product carry bag.	83 40 16	Breathing tube, self-adjusting (52,5 to 85 cm), with QRS connection.	83 70 00	Storage bag.
83 31 01	Battery charger.	83 40 17	Breathing tube, heavy-duty rubber, with QRS connection.	83 70 10	Particle filter P SL.
83 32 06	6-station battery charger kit.	83 40 18	Flame resistant breathing tube cover.	83 70 20	Particle filter P SL, pkg of 20.
83 40 00	Breathing tube, lightweight, non-QRS.	83 45 00	Gasket for non-QRS breathing tubes, not shown, pkg of 5.	83 70 80	Particle filter P SL, pkg of 80.
83 40 03	Replaced by 83 40 18.	83 50 00	Belt.	83 71 10	Odour filter.
83 40 05	Breathing, heavy-duty rubber, non-QRS.	83 50 05	Front part, belt.	83 71 20	Odour filter pad.
83 40 08	Breathing tube with silencer, non-QRS..	83 50 10	Quick connection for belt (not shown).	83 72 42	Gas filter A1B1E1.
83 40 10	Breathing tube, lightweight, 25 cm longer, non-QRS.	83 50 20	Braces.	83 73 00	Gas filter kit: A1B1E1 filter and Heavy-Duty battery.
		83 60 00	Spark arrester.	83 75 42	Gas filter A2.
				83 76 20	Battery (standard).
				83 76 21	Battery Heavy-Duty.
				83 80 20	Airflow indicator.
				83 80 30	Filter cover.

3M™ Speedglas™ SG-300 Powered Air Respirator



Accessories and spare parts 3M™ Speedglas™ SG-300 Powered Air Respirator

Part No	Description	Part No	Description	Part No	Description
53 35 06	Adapter for QRS breathing tubes when using Speedglas 9000 Series welding shields.	SG-314E	SG-300 Respirator, with belt, breathing tube QRS and economy battery.	SG-3710E-10	Particle filter, pkg of 10.
83 40 16	Breathing tube QRS, self-adjusting .	SG-341E	Single station battery charger kit.	SG-3800E	Particle / odour filter.
83 40 18	Flame resistant breathing tube cover.	SG-362	Spark arrestor.	TR-326	Leather belt.
BPK-01	Back-pack harness.	SG-370	Filter cover.	TR-329	Braces.
SG-302E	Turbo without belt, with filter cover and airflow indicator.	SG-3600	Prefilter, pkg of 10.	TR-330-SG	Economy battery.
		SG-3710E	Particle filter.	TR-332-SG	High-capacity battery.
				TR-344E	4-station battery charger kit.
				TR-970	Airflow indicator.



Carry bag for 3M™ Speedglas™ Respirator Systems



This exclusive carry bag is included for free when buying a complete 3M™ Adflo™ Powered Air Respirator with a new 3M™ Speedglas™ 9100 FX Air Welding Shield.

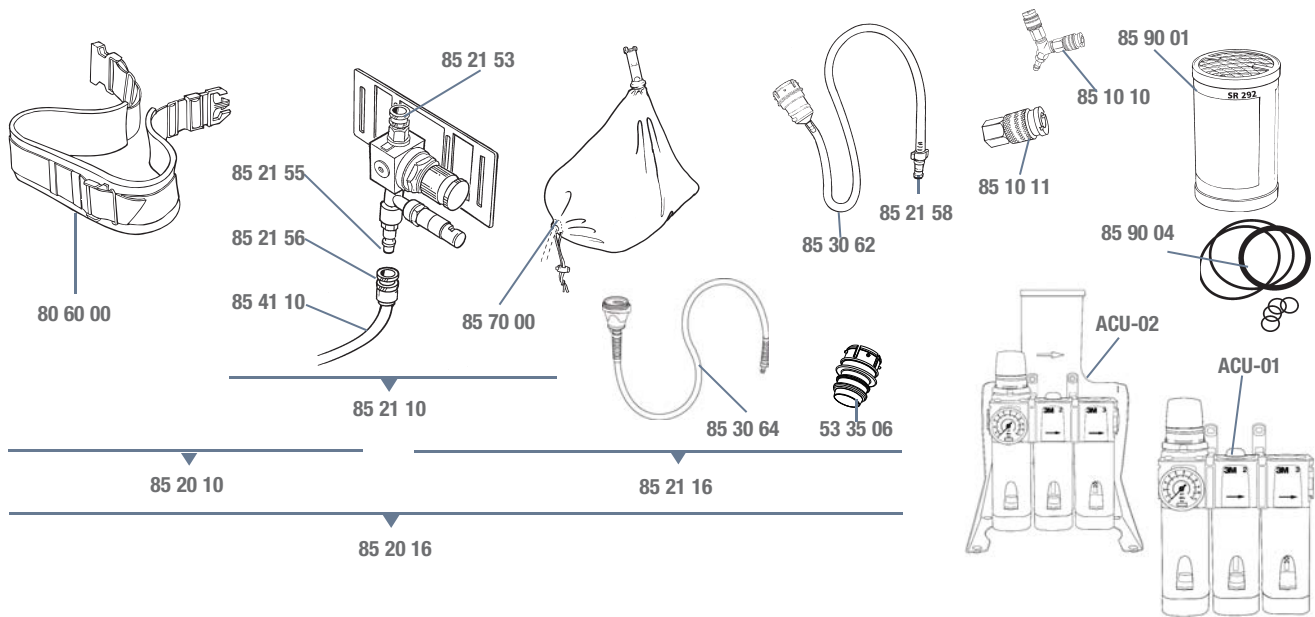
The bag can also be used to carry any other 3M™ Speedglas™ Respirator System with welding shield.

To buy the carry bag as a separate item, use part no 79 01 01.

3M™ Fresh-air™ C Supplied Air Regulator



Part No	Description	Part No	Description	Part No	Description
85 20 10	Fresh-air C Regulator, without belt, without breathing tube.	85 21 10	Fresh-air C Regulator with storage bag, without belt, without breathing tube.	85 21 16	Fresh-air C Regulator with breathing tube QRS (85 30 64) and storage bag, without belt.
85 20 16	Fresh-air C Regulator with breathing tube QRS (85 30 64), comfort belt and storage bag.				



Accessories and spare parts

Part No	Description	Part No	Description	Part No	Description
53 35 06	Adapter for QRS breathing tubes when using Speedglas 9000 Series welding shields.	85 21 56	Quick connection CEJN 342.		Other lengths according to quotation.
80 60 00	Comfort belt.	85 21 58	Spare part nipple breathing tube CEJN 220 1/4.	85 70 00	Storage bag.
85 10 10	Y-coupling SR49/SR79.	85 30 62	Breathing tube (transparent) with nipple, without QRS Connection.	85 90 01	Filter element 292 SR49/SR79.
85 10 11	Coupling SR49.	85 30 64	Breathing tube (blue) with nipple and QRS Connection.	85 90 04	Gasket kit SR49/SR79 Housing.
85 21 53	Quick connection CEJN 2201/4.	85 41 10	Approved air supply tube 10 m green.	ACU-01	3M Aircare Filtration System (wall mounted).
85 21 55	Nipple regulator CEJN 342.			ACU-02	3M Aircare Filtration System (stand alone).



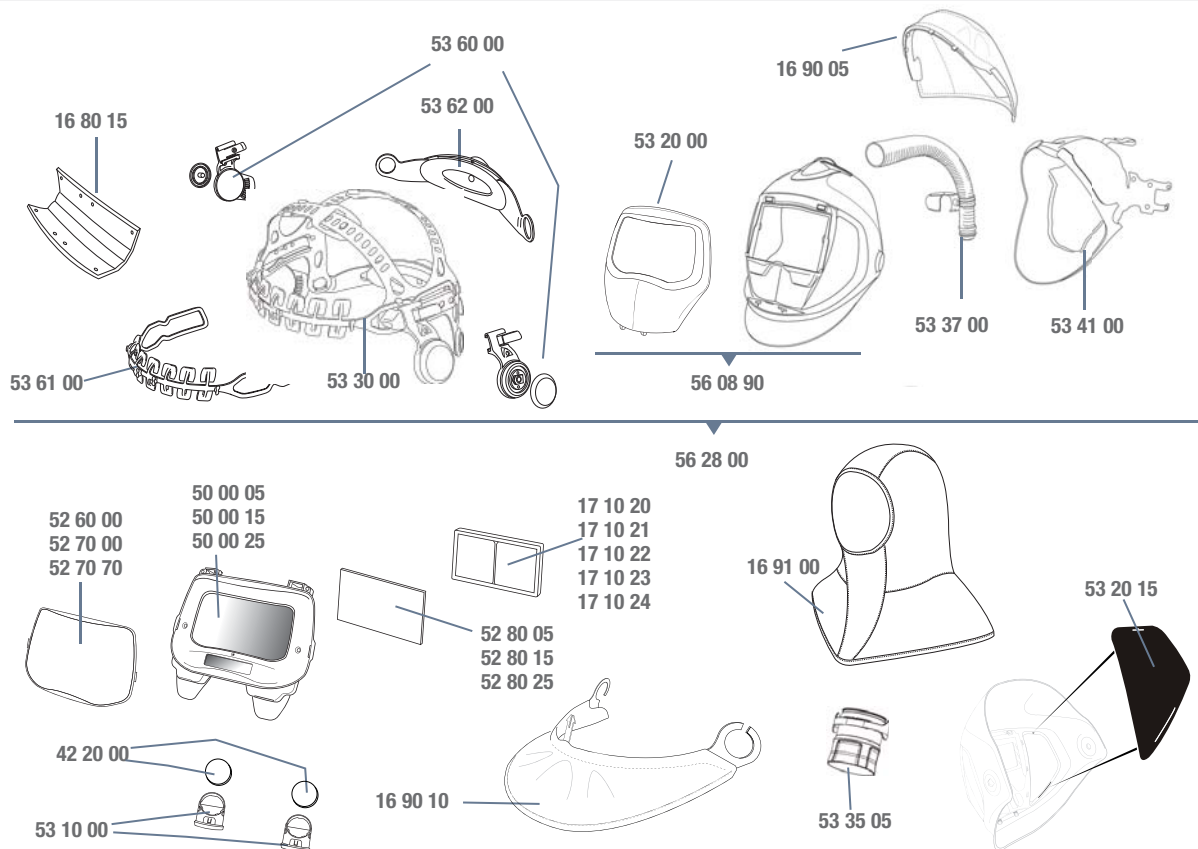
The blue breathing tube!

There is a new type of supplied air breathing tube, named Breathing Tube QRS. QRS stands for Quick Release Swivel, which enables one-handed connection and release. Part No 85 30 64.

3M™ Speedglas™ 9100 Air Welding Shield for Respiratory Protection



Part No	Description	Part No	Description	Part No	Description
56 66 00	Speedglas 9100 Air Welding Shield without welding filter, with Adflo Respirator.	56 66 25	Speedglas 9100 Air Welding Shield with 9100XX Filter, with Adflo Respirator.	56 88 15	Speedglas 9100 Air Welding Shield with 9100XX Filter, with Fresh-air C Regulator.
56 66 05	Speedglas 9100 Air Welding Shield with 9100V Filter, with Adflo Respirator.	56 88 00	Speedglas 9100 Air Welding Shield without welding filter, with Fresh-air C Regulator.	56 88 25	Speedglas 9100 Air Welding Shield with 9100XX Filter, with Fresh-air C Regulator.
56 66 15	Speedglas 9100 Air Welding Shield with 9100X Filter, with Adflo Respirator.	56 88 05	Speedglas 9100 Air Welding Shield with 9100V Filter, with Fresh-air C Regulator.		



Accessories and spare parts

Part No	Description	Part No	Description	Part No	Description
16 80 15	Comfort sweatband, pkg of 3.	52 70 00	Outer protection plate, extra scratch resistant, pkg of 10.	53 30 00	Speedglas 9100 Headband with assembly parts.
16 90 05	Head protection, black.	52 70 70	Outer protection plate, heat resistant pkg of 10.	53 37 00	Air duct.
16 90 10	Neck protection, black.	52 80 05	Inner cover plate for 9100V Filter, pkg of 5. Plate marking 117x50.	53 41 00	Face seal.
16 91 00	Hood, black/grey.	52 80 15	Inner cover plate for 9100X Filter, pkg of 5. Plate marking 117x61.	53 60 00	Pivot mechanism, left and right.
17 10 20	Magnifying lens 1.0.	52 80 25	Inner cover plate for 9100XX Filter, pkg of 5. Plate marking 117x77.	53 61 00	Headband front part.
17 10 21	Magnifying lens 1.5.	53 35 05	Welding shield adapter when using old type of breathing tube (non-QRS).	53 62 00	Headband back part.
17 10 22	Magnifying lens 2.0.	53 10 00	Battery holder, pkg of 2.	56 08 90	9100 Air Welding Shield without headband, without air duct, without face seal, without filter.
17 10 23	Magnifying lens 2.5.	53 20 00	Heat-reflecting silver front.	56 28 00	9100 Air Welding Shield, without welding filter.
17 10 24	Magnifying lens 3.0.	53 20 15*	SideWindows cover plate, 2 pairs.		
42 20 00	Battery, pkg of 2.				
50 00 05	Speedglas 9100V Welding Filter.				
50 00 15	Speedglas 9100X Welding Filter.				
50 00 25	Speedglas 9100XX Welding Filter.				
52 60 00	Outer protection plate, standard, pkg of 10.				

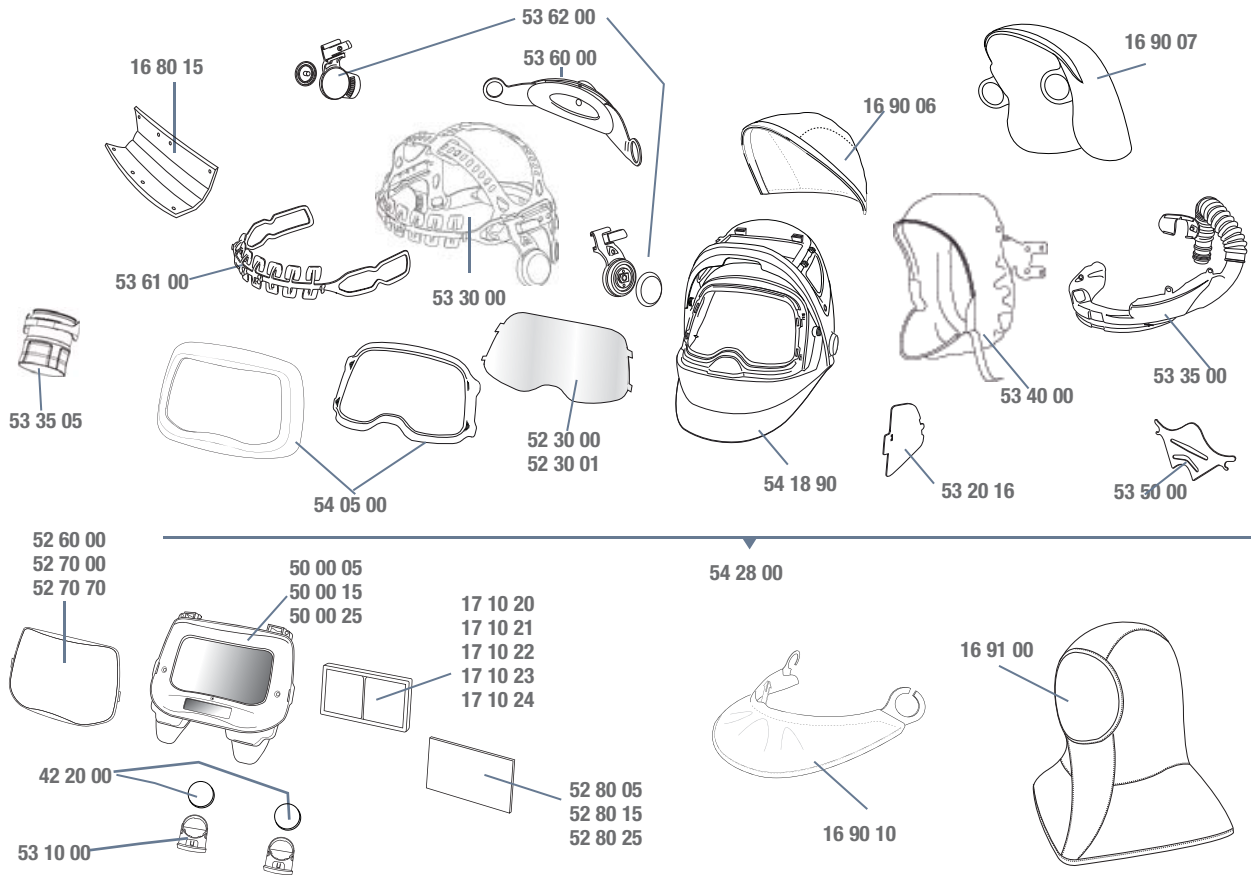
* Please use Part No 56 08 90 when new SideWindows are required.

3M™ Speedglas™ 9100 FX Air Welding Shield for Respiratory Protection



Part No	Description	Part No	Description	Part No	Description
54 66 00	Speedglas 9100 FX Air Welding Shield, without welding filter, with Adflo Respirator.	54 66 25*	Speedglas 9100 FX Air Welding Shield with 9100XX Filter, with Adflo Respirator.	54 88 15	Speedglas 9100 FX Air Welding Shield with 9100X Filter, with Fresh-air C Regulator.
54 66 05*	Speedglas 9100 FX Air Welding Shield with 9100V Filter, with Adflo Respirator.	54 88 00	Speedglas 9100 FX Air Welding Shield, without welding filter, with Fresh-air C Regulator.	54 88 25	Speedglas 9100 FX Air Welding Shield with 9100XX Filter, with Fresh-air C Regulator.
54 66 15*	Speedglas 9100 FX Air Welding Shield with 9100X Filter, with Adflo Respirator.	54 88 05	Speedglas 9100 FX Air Welding Shield with 9100V Filter, with Fresh-air C Regulator.		

*With bag (79 01 01)



Accessories and spare parts

Part No	Description	Part No	Description	Part No	Description
16 80 15	Comfort sweatband, pkg of 3.	52 60 00	Outer protection plate, standard, pkg of 10.	53 35 05	Adapter for non-QRS breathing tubes when using Speedglas 9100 Series welding shields.
16 90 06	Head protection, (small).	52 70 00	Outer protection plate, extra scratch resistant, pkg of 10.	53 35 00	Air duct.
16 90 07	Neck protection, (large).	52 70 70	Outer protection plate, heat resistant, pkg of 10.	53 40 00	Face seal.
16 91 00	Hood, black/grey.	52 80 05	Inner cover plate for 9100V Filter, pkg of 5. Plate marking 117x50.	53 50 00	Air deflector.
17 10 20	Magnifying lens 1.0.	52 80 15	Inner cover plate for 9100X Filter, pkg of 5. Plate marking 117x61.	53 60 00	Pivot mechanism, left and right.
17 10 21	Magnifying lens 1.5.	52 80 25	Inner cover plate for 9100XX Filter, pkg of 5. Plate marking 117x77.	53 61 00	Headband, front part.
17 10 22	Magnifying lens 2.0.	53 10 00	Battery holder, pkg of 2.	53 62 00	Headband, back part.
17 10 23	Magnifying lens 2.5.	53 20 16	SideWindows cover plate, 2 pairs.	54 18 90	Speedglas 9100 FX Air Welding Shield, without filter, without face seal, without air duct, without headband.
17 10 24	Magnifying lens 3.0.	53 30 00	Speedglas 9100 Series Headband, with assembly parts.	54 28 00	Speedglas 9100 FX Air Welding Shield without welding filter, with headband.
42 20 00	Battery, pkg of 2.			54 05 00	Front cover kit.
50 00 05	Speedglas 9100V Welding Filter.				
50 00 15	Speedglas 9100X Welding Filter.				
50 00 25	Speedglas 9100XX Welding Filter.				
52 30 00	Visor plate, standard, pkg of 5.				
52 30 01	Visor plate, anti-fog, pkg of 5.				

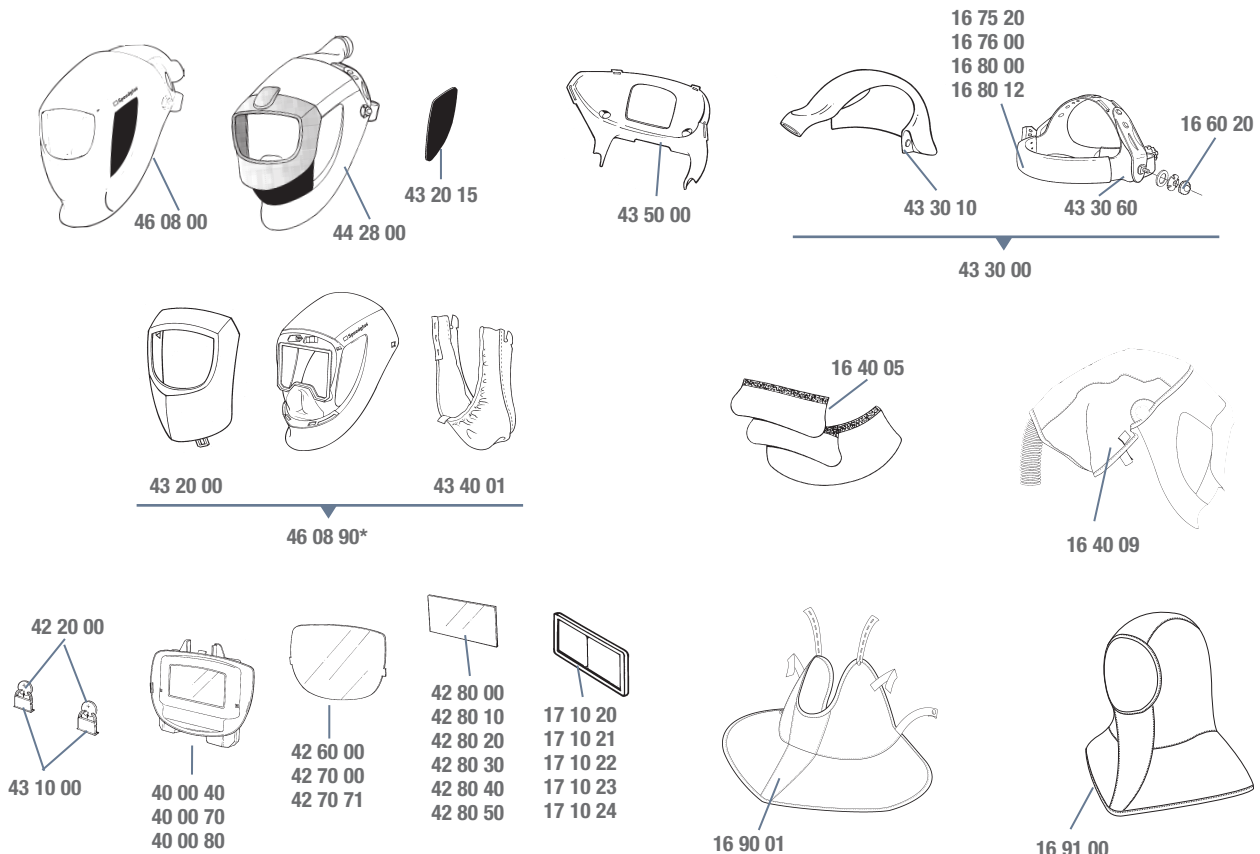
3M™ Speedglas™ 9000 Series Welding Shields for Respiratory Protection



Accessories and spare parts*

Part No	Description	Part No	Description	Part No	Description
16 40 05	Ear and neck protection in leather.	42 60 00	Outer protection plate, standard, pkg of 10. Plate marking 42 01 50.	43 10 00	Battery cover, pkg of 2.
16 40 09	Head protection.	42 70 00	Outer protection plate, scratch resistant, pkg of 10. Plate marking 42 01 00.	43 20 00	Heat-reflecting, front silver.
16 60 20	Assembly parts for headband.	42 70 71	Outer protection plate, heat resistant, pkg of 10. Plate marking 42 01 70.	43 20 15*	SideWindows cover plate (sticker), 5 pairs.
16 75 20	Sweatband, towelling, pkg of 2.	42 80 00	Inner cover plate (42x91 mm) for 9002D/9002V Filters, pkg of 5. Plate marking 42 02 00.	43 30 00	Headband with air duct.
16 76 00	Sweatband, towelling, pkg of 20.	42 80 10	Inner cover plate (53x103 mm) for 9002X/9000XF Filters, pkg of 5. Plate marking 42 02 10.	43 30 10	Air duct.
16 80 00	Sweatband, leather.	42 80 20	Inner cover plate, +1 Shade, for 9002D/9002V Filters, pkg of 5.	43 30 60	Headband without air duct.
16 80 12	Sweatband, fleecy cotton, pkg of 2.	42 80 30	Inner cover plate, +1 Shade, for 9002X/9000XF Filters, pkg of 5.	43 40 01	Face seal.
16 90 01	Neck protection black/grey.	42 80 40	Inner cover plate, +2 Shade, for 9002D/9002V Filters, pkg of 5.	43 50 00	Air spreader.
16 91 00	Hood black/grey.	42 80 50	Inner cover plate, +2 Shade, for 9002X/9000XF Filters, pkg of 5.	44 28 00	9000 FlexView Welding Shield for respiratory protection, without filter.
17 10 20	Magnifying lens 1.0.			46 08 00	9000 Welding Shield for respiratory protection, without welding filter.
17 10 21	Magnifying lens 1.5.			46 08 90*	9000 Welding Shield without headband, without airduct.
17 10 22	Magnifying lens 2.0.			80 31 10	Tightening kit for Speedglas 9000 Welding Shield, not shown.
17 10 23	Magnifying lens 2.5.				
17 10 24	Magnifying lens 3.0.				
40 00 40	Speedglas 9002D Welding Filter, dual shade 9/11.				
40 00 70	Speedglas 9002V Welding Filter, variable shade 9-13.				
40 00 80	Speedglas 9002X Welding Filter, variable shade 9-13.				
42 20 00	Battery, pkg of 2.				

* Please use Part No 46 08 90 to replace the SideWindows.



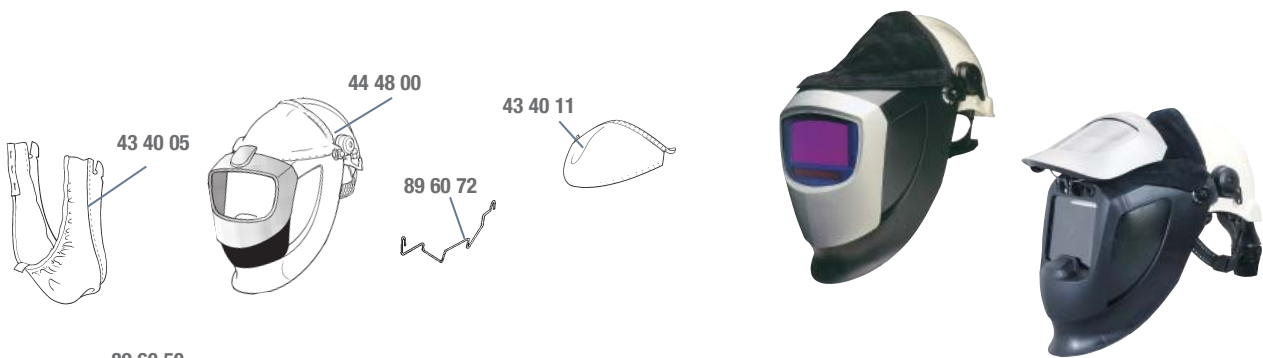
* Speedglas 9100, 9100 Air, 9100 FX and 9100 FX Air Welding Shields replaces the Speedglas 9000 and 9000 FlexView Welding Shields. Accessories and spare parts for 9000 series available for 3-5 years.

3M™ Speedglas™ Constant (passive) Welding Shield



Part No	Description	Part No	Description	Part No	Description
44 28 91	Speedglas FlexView Welding Shield for respiratory protection with passive welding filter, shade 11.	44 38 00	Speedglas FlexView Welding Shield, with passive welding filter, shade 11 and Adflo Respirator.	44 88 00	Speedglas FlexView Welding Shield with passive welding filter, shade 11, safety helmet and Fresh-air C Regulator.
44 30 00	Passive welding filter shade 11 (not shown).	44 48 00	Speedglas FlexView Welding Shield for respiratory protection with safety helmet. (shown below)	44 89 00	Speedglas FlexView Welding Shield with safety helmet and Fresh-air C Regulator, without welding filter.

3M™ Speedglas™ 9000 Series Welding Shields for Respiratory Protection with Safety Helmet



Part No	Description	Part No	Description
19 70 10	Ear muffs for safety helmet with assembly parts.	47 18 00	Speedglas 9000 Welding Shield for respiratory protection with safety helmet, without welding filter.
19 71 01	Fastening details for safety helmet with assembly parts.	89 60 50	Safety helmet with air duct.
43 40 05	Face seal	89 60 72	Fastening details for face seal.
43 40 11	Helmet seal in leather for Speedglas welding shield with safety helmet.		
44 48 00	Speedglas FlexView welding shield for respiratory protection with safety helmet, without welding filter.		

3M™ Protective Visor with 3M™ Adflo™ Respirator



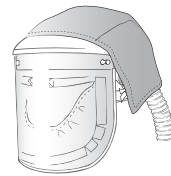
89 90 20

Part No Description

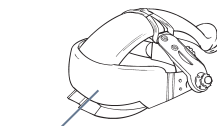
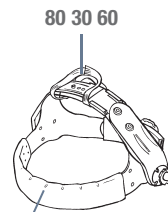
16 40 09	Head protection flame-resistant.
16 80 12	Sweatband.
80 30 10	Headband, with air duct.
80 30 60	Headband, without air duct.
80 40 05	Face seal.
89 10 13	Velcro face seal, pkg of 2.
89 90 20	Protective Visor, clear, polycarbonate with Adflo Respirator.
89 90 21	Protective Visor, clear, acetate with Adflo Respirator.
89 90 25	Protective Visor, DIN 5, polycarbonate, with Adflo Respirator.
89 90 30	Protective Visor, clear polycarbonate.
89 90 31	Protective Visor, clear, acetate.
89 90 35	Protective Visor, DIN 5, polycarbonate, with head protection.
89 90 40	Protective Visor, clear, polycarbonate, with face seal, without brow protection.
89 90 41	Protective Visor, clear, acetate, with face seal, without brow protection.
89 90 45	Protective Visor, DIN 5, polycarbonate, with face seal, without brow protection.
89 90 51	Brow protection.
89 90 60	Protection film, pkg of 5.



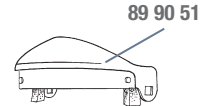
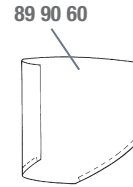
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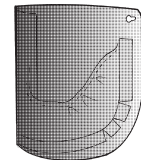
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89 90 31



80 30 10



89 90 40
89 90 41



89 90 45

3M™ Protective Visor with 3M™ Fresh-air C Regulator



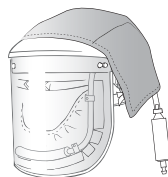
89 91 00

Part No Description

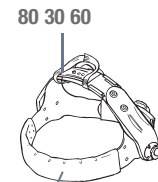
16 40 09	Head protection, flame-resistant.
16 80 12	Sweatband.
80 30 60	Headband, without air duct.
80 40 05	Face seal.
85 30 56	Breathing tube, with nipple, silencer and fastening details.
89 10 13	Velcro face seal, pkg of 2.
89 90 60	Protection film, pkg of 5.
89 91 00	Protective Visor, clear, polycarbonate, with Fresh-air C Regulator.
89 91 01	Protective Visor, clear, acetate, with Fresh-air C Regulator.
89 91 30	Protective Visor, clear, polycarbonate.
89 91 31	Protective Visor, clear, acetate.
89 91 35	Protective Visor, DIN5, polycarbonate, with head protection.
89 91 40	Protective Visor, clear, polycarbonate, with face seal, without brow protection.
89 91 41	Protective Visor, clear, acetate, with face seal, without brow protection.
89 91 45	Protective Visor, DIN 5, polycarbonate, with face seal, without brow protection.
89 91 51	Brow protection.



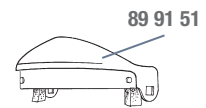
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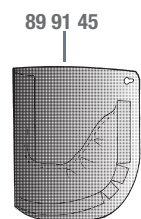
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89 91 31



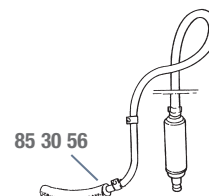
16 80 12



89 91 40
89 91 41



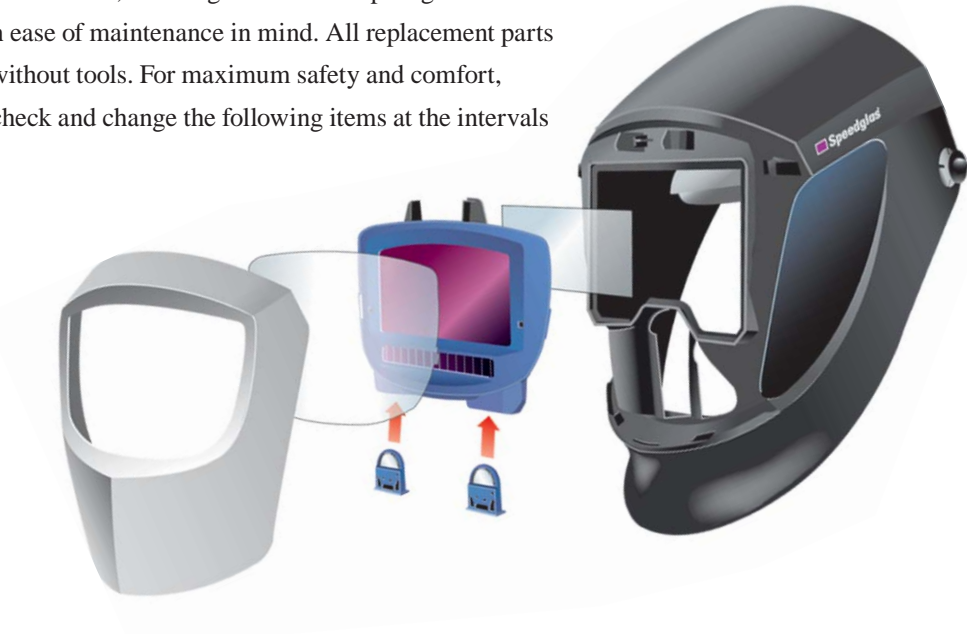
89 91 45



85 30 56

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. All replacement parts can be installed by hand, without tools. For maximum safety and comfort, make it a regular habit to check and change the following items at the intervals recommended below.



System	Component	Typically replaced	Notes
Welding Filters	Outer Protection Plate	Once a week	Replace anytime the plate becomes deeply pitted, scratched or too dirty to clean with soft cloth or lens paper.
Welding Filters	Inner Cover Plate	Once a month	Regularly clean with a soft cloth and replace if any pits or scratches occur.
Welding Shields	Visor Plate	Every two weeks	Replace more often if visibility is reduced.
Welding Shields	Sweatband	Once a month	Replace more often if sweatband becomes unhygienic.
Respirators	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.
Respirators	Particle Filter	At least every month	For Adflo, replace when particle filter indicator becomes red. Otherwise, replace whenever the battery operating time becomes too short, or when "fully loaded" filter triggers low airflow alarm.
Respirators	Gas Filter	At least every 3 or 4 weeks	Immediately replace the gas filter any time you can smell odours while wearing the respirator.
Respirators	Odour filter	Any time you smell unpleasant odours	Odour filter is not required if gas filter is used.
Respirators	Spark arrestor	As needed	Replace if deformed and no longer fitting well.
Respirators	Breathing Tube	If damaged, deformed or leaking any air	To extend the life of breathing tube, use a tube cover or a heavy-duty rubber breathing tube.
Welding Shields with Respirators	Face Seal	At least every 2 months	Replace earlier in really dirty environments or whenever the seal becomes unhygienic.

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 shield can be found in the Parts Directory.

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



Technical Specifications	3M™ Speedglas™ SG-300 Powered Air Respirator	3M™ Adflo™ Powered Air Respirator	3M™ Fresh-air C Supplied Air Regulator
Filters	Particle filter Particle + Odour filter	Particle filter Gas Filter (A1B1E1 or A2) Odour filter	N/A
Airflow	190 l/min (Nominal)	170 l/min (Nominal) 200 l/min (Airflow Plus Mode)	170-280 l/min (Nominal)
Air Pressure Air Quality	N/A N/A	N/A N/A	4–8 bar Breathable supplied air conforming to EN12021
Weight Respirator / Regulator	1 095 g	1 160 g	365 g
Battery Charging time Operating hours*	Li ion Less than 3,5 hours 5–6 hours (Economy, standard) 10–12 hours (High capacity)	NiMH Less than 4 hours 8 hours (Standard), 12 hours (High capacity)	N/A
Belt Optional extension	Leather, 75–130 cm	Leather, 75–115 cm +25 cm	Polypropylene, 76–133 cm
Temperature range Operation Storage	-10 °C to + 55 °C -30 °C to + 50 °C	-5 °C to + 55 °C -20 °C to + 55 °C	-5 °C to + 55 °C -20 °C to + 55 °C

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

3M™ Speedglas™ Welding Shields and Welding Filters

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



	3M™ Speedglas™ 9100 FX and 9100 FX Air Welding Shields			3M™ Speedglas™ 9100 and 9100 Air Welding Shields		
Welding Filter Options	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)	73 x 107 mm	54 x 107 mm	45 x 93 mm	73 x 107 mm	54 x 107 mm	45 x 93 mm
Battery lifetime	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
Safety Helmet options	No			Yes (non air version)		
Classification	1 / 1 / 1 / 2			1 / 1 / 1 / 2		
Dark state	Shade 5, 8, 9–13			Shade 5, 8, 9–13		
Light state	Shade 3			Shade 3		
UV/IR Protection	Shade 13 (permanent)			Shade 13 (permanent)		
Auto ON	No			No		
Switching time, light -dark	0,1 ms (+23° C)			0,1 ms (+23° C)		
Delay (switching time, dark-light)	40–1 300 ms			40–1 300 ms		
SideWindows option	Yes			Yes		
Exhaust vents	Yes (non air version)			Yes (non air version)		
Number of sensors (arc detection)	3			3		
Approvals Eye and Face protection Welding shield Welding filter Protection plates Visor plate	EN175:B EN 379 EN166:BT* EN166:BT*			EN175:B EN 379 EN166:BT* N/A		
Approval Respiratory Protection / NPF** Speedglas SG-300 Respirator Adflo Respirator Fresh-air C Regulator	With Speedglas 9100 FX Air Welding Shield EN 12941 (TH3) / NPF 500 EN 12941 (TH3) / NPF 500 EN 14594 (3B) / NPF 200			with Speedglas 9100 Air Welding Shield EN 12941 (TH2) / NPF 50 EN 12941 (TH2) / NPF 50 EN 14594 (2B) / NPF 50		

* According to the European Standards the mechanical strength (for this product) is classified as B; resistance to high speed particles at medium energy impact (120 m/s).

The letter T indicates that the test for resistance to high speed particle was conducted at extremes of temperatures (-5° to +55°C).

** The nominal protection factor based on laboratory-measured performance data according to European Standards.

The protection factor is assigned by local authorities in each European country and can therefore be different for each country.



	3M™ Speedglas™ SL Welding Shield	3M™ Speedglas™ 9000 Series Welding Shield Shields (with safety helmet)			3M™ Speedglas™ 100 Series Welding Shield		
er	SL Filter	9002X Filter	9002V Filter	9002D Filter	100V Filter	100S Filters	
	N/A	Speedglas 9000 FlexView			N/A	N/A	
	42 x 93 mm	55 x 107 mm	42 x 93 mm		44 x 93 mm		
	1 500 hours	3 000 hours	1 500 hours		1 500 hours		
	No	Yes	No		No		
	No	Yes			Yes		
	1 / 1 / 1 / 2	1 / 1 / 2 / 2	1 / 1 / 1 / 2	1 / 2 / 2 / 3	1 / 2 / 2 / 2		
	Shade 8–12	Shade 9–13		Shade 9/11	Shade 8–12	Shade 10 or 11	
	Shade 3	Shade 3			Shade 3		
	Shade 12 (permanent)	Shade 13 (permanent)			Shade 12 (permanent)		
	Yes	No			No		
	0,1 ms (+23° C)	0,1 ms (+23° C)		0,4 ms (+23° C)	0,1 ms (+23° C)		
	60–250 ms	60–500 ms		100–200 ms	100–250 ms	100 or 200 ms	
	No	Yes			No		
	No	Yes (non air version)			No		
	2	2			2		
	EN 175:F EN 379 EN166:FT N/A	EN 175:B (without SideWindows), EN 175:F (with SideWindows) EN 379, EN 166:BT* EN166:BT (Speedglas 9000 FlexView)				EN 175:B EN 379 EN 166:BT* N/A	
	N/A	with Speedglas 9000 Welding Shield EN12941 (TH2) / NPF 50 EN12941 (TH2) / NPF 50 EN 270 / NPF 200				N/A	

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