



Science.
Applied to Life.™



3M™ Adflo™ Powered Air Purifying Respirator Systems

**Comfort and protection
you can build on.**

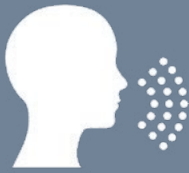
 **Speedglas™**

Refreshing news for a challenging world.

Whether you are a welder or a safety manager, the need for eye and face protection is well known when it comes to welding. But other hazards – like welding fumes – are not as well known and can possibly result in illness weeks, months or years later. It's all of these hazards, together, that inspired 3M to create the 3M™ Adflo™ Powered Air Purifying Respirator (PAPR), one of the most popular PAPR respirators for welding.

No matter what your work environment is like, there is an Adflo™ PAPR system available to give you the view, light weight, comfort and protection you need.

Violations of the OSHA Respiratory Protection Standard is the 4th most frequently cited workplace violation¹



Fabricated metal product manufacturing ranks 2nd in OSHA respiratory protection citations²



Did you know OSHA and ACGIH® have different limits on manganese exposure?

Levels of Permissible Manganese Exposure

OSHA Permissible Exposure Limit
5.0
mg/m³



ACGIH® Threshold Limit Value®
0.02
mg/m³

Learn more at: [3M.com/respmanganese](https://www.3m.com/respmanganese)



1. Source: <https://www.osha.gov/oshstats/commonstats.html>

2. Source: https://www.osha.gov/pls/imis/industryprofile.stand?p_esize=&p_stand=Total&p_state=FEFederal&p_type=3



Why Choose a PAPR? Consider this checklist.

✓ Easier, more comfortable breathing

A PAPR system uses a blower instead of lung power to draw air through the filter. This delivers comfort your employees will want to wear.

✓ Integrated protection from the neck up

The various components of a 3M PAPR system are designed to work together as a single unit – combining respiratory, eye, face and in certain cases head protection that can be customized for almost any work environment.

✓ Options for limited facial hair

With some respirator systems, beards and heavy sideburns can be a problem, compromising the seal of certain facepieces. 3M offers PAPR systems with headtops designed to accommodate limited facial hair, simplifying protection for more of your employees.

✓ Increased productivity

Switching gears is easy with a helmet that's up for multiple tasks. With integrated protection offered by 3M PAPR systems, workers can go from welding to grinding without removing, locating or foregoing their PPE.

✓ Reduced risk of eye injury

Integrated face shields on certain headtops for 3M PAPR systems help protect eyes and faces from debris, sparks and other hazards. At the same time, they offer excellent optical clarity and a wide field of vision, making it easier to stay out of harm's way.

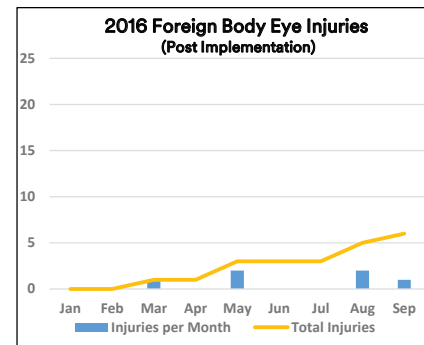
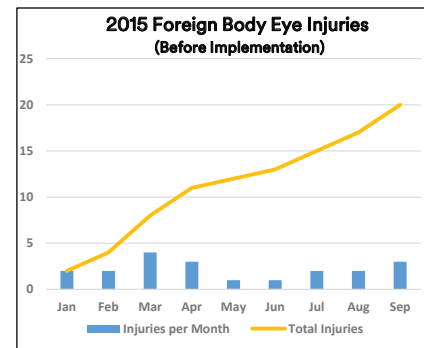
Reducing eye and face injuries: A case in point.

At FreightCar America, foreign eye injuries decreased approximately 77% year-on-year in areas that implemented 3M™ Adflo™ Powered Air Purifying Respirator Protection Systems.

When Environmental Health & Safety Director, Russ Lazzell, came on board at FreightCar in 2012, he discovered what he thought was a higher than normal number of eye injuries.

Further investigation found that many of the eye injuries were caused by foreign bodies, and not the result of direct impacts during the working process. High eye injury rates often result in higher worker compensation claims and lost time costs from worker treatment and recovery off the job.

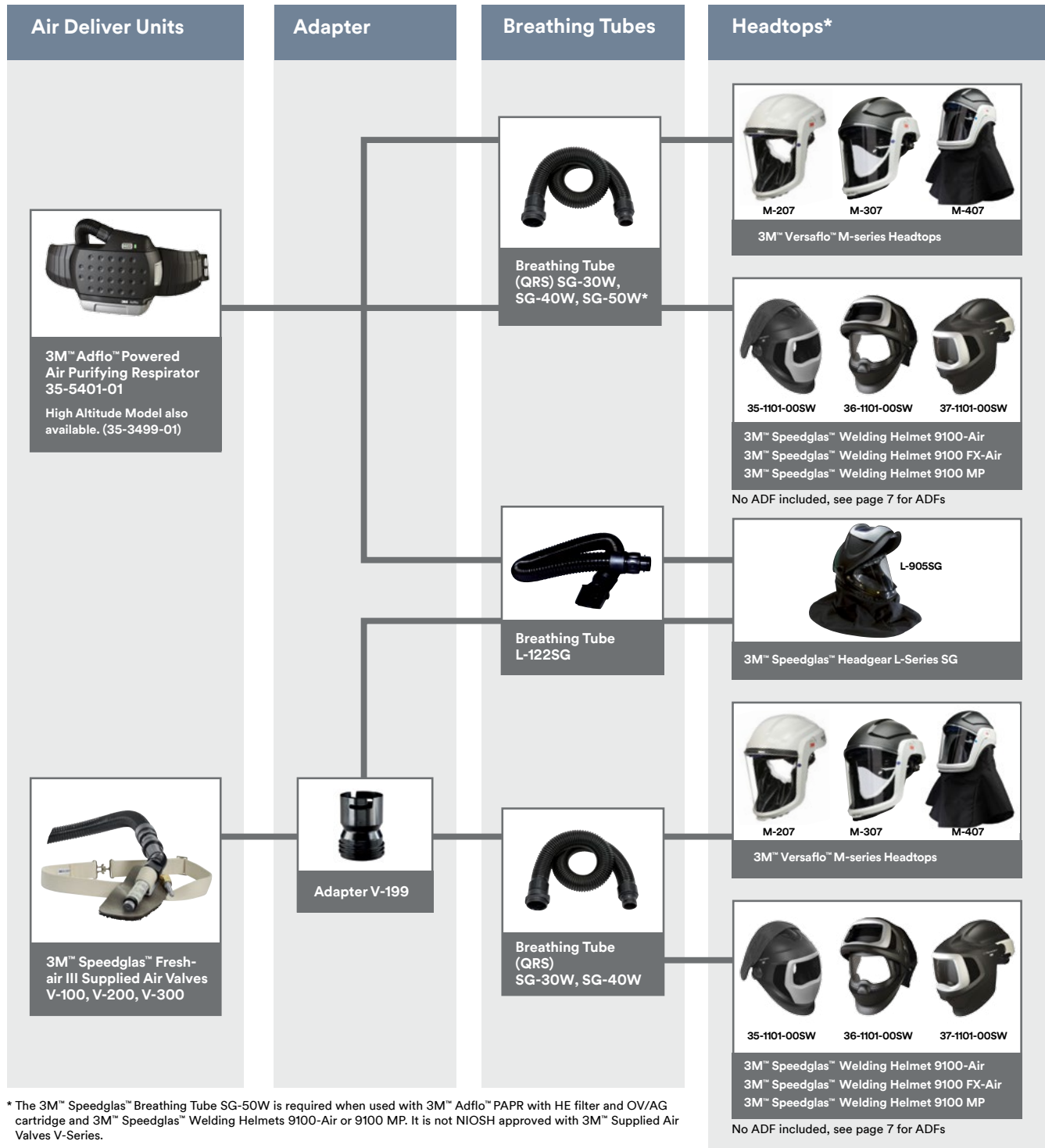
To get a copy of the full case study, go to 3m.com/heavymfgppe, or ask your 3M Speedglas representative.



Compatibility of Air Delivery Units and Headtops

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

The SG-40W breathing tube is an option for more demanding conditions and also comes standard with complete systems that include the 3M™ Speedglas™ Welding Helmet 9100 MP. The SG-50W breathing tube is utilized with the 3M™ Adflo™ PAPR HE/OV-AG systems.



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

An adaptable system that helps save money

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

- A Filter cover:** holds the user-replaceable spark arrestor (not shown below).
- B Prefilter:** designed to help increase the service life of the particle filter.
- C HE particle filter:** high efficiency particulate filtration.
- D Li-ion battery:** charges to 80% capacity in approx. 3 hours and to 100% capacity in approx. 6.5 hours, depending on its residual charge. Approximate operating time up to 12 hours with a new particle filter and new, fully charged battery.
- E Filter/Battery Indicator:** indicates the loading status of the particle filter and remaining battery life.
- F Breathing tube:** breathing tubes available to fit all Speedglas welding helmet models.
- G Airflow pattern:** evenly distributes filtered air throughout the entire breathing zone of the helmet. The intelligent PAPR unit is designed to help keep the airflow at a constant preset level.
- H Nuisance odor pad assembly:** optional accessory which helps reduce nuisance odors*. Must be used with HE particle filter and must not be used alone or in combination with the OV/AG cartridge. Nuisance odor pad assemblies are sold separately.
- I OV/AG cartridge:** OV/AG cartridge captures certain organic vapors and acid gases. OV/AG cartridges are sold separately.



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

*Nuisance odor refers to concentrations of organic vapors not exceeding the OSHA permissible exposure limit (PEL) or applicable occupational exposure limits, whichever is lower.

These welding helmets and faceshields are also available as complete systems with 3M™ Speedglas™ Fresh-air III Supplied Air Regulator (for reference, see full line product catalog).

Technical Specification	3M™ Adflo™ Powered Air Purifying Respirator
Airflow (approx.)	7.2 CFM (205 l/min)
Filters / Cartridges / Nuisance Odor ¹	HE particle filter, OV/AG cartridge, nuisance odor pad assembly accessory
Weight (approx.)	3.3 pounds (1490 grams); Weight includes blower, belt and battery, no breathing tube
Battery Charging time (approx.) Operating hours (approx.) ²	Lithium-ion 3 hours (80% capacity); 6.5 hours (100% capacity) HE: up to 12 hours. HE + OV/AG: up to 5.5 hours. (Run times will vary at higher altitudes)
Belt Optional extension	Leather, 30-45 in. +26 in.
Temperature range Operation Storage	23°F to 131°F -4°F to 131°F
Approval respiratory protection	APF 25 (L-905SG is APF 1000)

1) Nuisance odor refers to concentrations of organic vapors not exceeding the OSHA permissible exposure limit (PEL) or applicable occupational exposure limits, whichever is lower.
2) Run times are with new, fully-charged batteries and new filters/cartridges.

3M™ Speedglas™ Welding Helmet 9100-Air

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



Speedglas welding helmet 9100-Air with Adflo PAPR with HE filter:
35-1101-00SW system with no auto-darkening filter.
35-1101-10SW system with Speedglas welding filter 9100V.
35-1101-20SW system with Speedglas welding filter 9100X.
35-1101-30SW system with Speedglas welding filter 9100XX.
35-1101-30iSW system with Speedglas welding filter 9100XXi.



3M™ Speedglas™ Welding Helmet 9100 FX-Air

A flip-up combination of an auto-darkening welding helmet and an approx. 8 in. x 4.25 in. clear visor for weld preparations. Excellent for low-light conditions and eye, face and respiratory protection.



Speedglas welding helmet 9100 FX-Air with Adflo PAPR with HE filter:
36-1101-00SW system with no auto-darkening filter.
36-1101-10SW system with Speedglas welding filter 9100V.
36-1101-20SW system with Speedglas welding filter 9100X.
36-1101-30SW system with Speedglas welding filter 9100XX.
36-1101-30iSW system with Speedglas welding filter 9100XXi.



3M™ Speedglas™ Welding Helmet 9100 MP

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



Speedglas welding helmet 9100 MP with Adflo PAPR with HE filter:
37-1101-00SW system with no auto-darkening filter.
37-1101-10SW system with Speedglas welding filter 9100V.
37-1101-20SW system with Speedglas welding filter 9100X.
37-1101-30SW system with Speedglas welding filter 9100XX.
37-1101-30iSW system with Speedglas welding filter 9100XXi.



Your choice of auto-darkening filters (ADF)

The 3M™ Speedglas™ Welding Filter Series 9100 continues 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 can reduce eye strain and help improve the quality of every weld.



06-0000-30i
3M™ Speedglas™ Auto-Darkening Filter 9100XXi
See your welds in a new light.
73×107 mm viewing area
Weight: 7 ounces



06-0000-30
3M™ Speedglas™ Auto-Darkening Filter 9100XX
73×107 mm viewing area
Weight: 7 ounces



06-0000-20
3M™ Speedglas™ Auto-Darkening Filter 9100X
54×107 mm viewing area
Weight: 6.34 ounces



06-0000-10
3M™ Speedglas™ Auto-Darkening Filter 9100V
45×93 mm viewing area
Weight: 5.64 ounces

3M™ Adflo™ Turbo Assembly with High Altitude Compensation

For welders working at higher altitudes there is a special respirator version to adjust for changes in air density. With HE filter, it can be used at altitudes up to approx. 10,000 ft (3000 meters) and with OV/AG cartridge, it can be used at altitudes up to approx. 5,000 ft (1500 meters).

Based on the need to increase the fan speed at increased elevations to maintain the minimum design airflow, users of the new Adflo high altitude turbo assembly may experience a slight reduction in overall run time. Typical decreases in run time* will be approx. 5% for every 3300 feet (1000 meters) of increased elevation above sea level.



36-1101-00SWHA with
3M™ Speedglas™
9100 FX-Air Welding Helmet,
High Alt, No ADF



37-1101-00SWHA, with
3M™ Speedglas™
9100MP Welding Helmet,
High Alt, No ADF

*Times are based on new battery, filter, cartridge or nuisance odor pad assembly

3M™ Headgear L-Series SG



Benefit from the superior optical performance of a Speedglas auto-darkening welding filter as well as the added safety of an L-series hard hat or helmet and the comfort of continuous airflow.

Helmet L-905SG wideview faceshield and Adflo PAPR with HE filter:

34-0905-SGV with Speedglas welding filter 9100V.

34-0905-SGX with Speedglas welding filter 9100X.

34-0905-SGXX with Speedglas welding filter 9100XX.

Care & Maintenance See User Instructions for Complete Details

Every day welding sparks, heat, fumes, and normal wear-and-tear grind away at your protection equipment. For maximum safety and comfort, make it a regular habit to check your equipment and replace consumables as soon as you detect that they are worn out or risk to reduce your performance.

Part	Typically Replaced	Notes
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.
Inside Protection Plate	Once a month	Regularly clean with a soft cloth and replace if any pits or scratches occur.
Visor Plate	Every two weeks	Replace more often if visibility is reduced.
Sweatband	Once a month	Replace more often if sweatband becomes unhygienic.
Prefilter	Once a week	Regular replacement extends the life of the particle filter, saving money while also helping the battery run-time.
Particle Filter	At least every month	For Adflo respirator, replace when the particle filter indicator becomes red. Otherwise, replace whenever the battery operating time becomes too short, or when "fully loaded" filter triggers low airflow alarm.
Gas Filter	As needed	Replace the gas filter according to your work place requirements. It is not recommended to wait until you sense odors or smells.
Odor Filter	Any time you smell unpleasant odors	Odor filter is not required if gas filter is used.
Spark Arrestor	As needed	Replace if deformed and no longer fits well.
Breathing Tube	If damaged, deformed or leaking any air	To extend the life of the breathing tube, use a tube cover or heavy-duty rubber breathing tube.
Face Seal	At least every 2 months	Replace earlier in really dirty environments or whenever the seal becomes unhygienic.

Important Information: Note that the higher-than-normal levels of pollutants, heat, and sparks will require more frequent replacement of components. Chart assumes minimum 4 hours usage per day. Ordering information for each series of welding helmet can be found in the Parts Directory.

Inspired by your reality

We have a passion for welding and we know the challenges of your profession. It comes naturally for us to share the pride and concern you put into your work to address the ergonomic and safety issues facing you every day. Your thoughts and opinions are the bottom line in our continuous search for innovation. Inspired by your reality, we shape the future of welding so you can get on with the job of shaping yours. Join the welding community at Facebook.com/Speedglas.



Warranty, Service & Replacement

Warranty and repair services are available for tune ups. Register your product and get a free gift.

Keep your systems performing at their full potential with our robust warranties and service plans including:

Refurbishment Repairs Replacement part Advice on how to take care of your safety equipment

- Plastic components including helmet – 90 days
- AdFlo belt unit including battery – 1 year
- 9100 Auto-Darkening Filters – 3 years

Visit 3m.com/SGwarranty to register your product.

⚠WARNING

These products meet the requirements of certain industrial eyewear standards and with some models certain industrial head protection standards. They do not provide complete head, eye and face protection from severe impact and penetration and are not a substitute for good safety practices and engineering controls. **Misuse may result in serious injury or death.** For correct use, see supervisor and User Instructions, or call 3M PSD Technical Service.

⚠WARNING

This product is designed to help protect the wearer's eyes and face from harmful radiation including visible light, ultra-violet radiation (UV), infra-red radiation (IR), sparks and spatter resulting from welding processes. These products must be used only by qualified persons who are properly trained in their use and maintenance. **Misuse may result in permanent eye injury and vision loss.** Always wear ANSI Z87.1 compliant safety spectacles in addition to any welding helmet. For correct use, see supervisor and User Instructions, or call 3M PSD Technical Service in U.S.A at 1-800-243-4630 and in Canada at 1-800-267-4414.



⚠WARNING

These respirators help protect against certain airborne contaminants. Before use, the wearer must read and understand the User Instructions provided as a part of the product packaging. A written respiratory protection program must be implemented meeting all the requirements of OSHA 1910.134 including training, fit testing and medical evaluation. In Canada, CSA standards Z94.4 requirements must be met and/or requirements of the applicable jurisdiction, as appropriate. **Improper use may result in injury, illness or death.** For correct use, see supervisor or User Instructions, or call 3M PSD Technical Service in USA at 1-800-243-4630 and in Canada at 1-800-267-4414.



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3M PSD products are occupational use only.

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