

Frequently Asked Questions about Hexavalent Chromium and Manganese

Hexavalent Chromium (CrVI) is a form of the metal chromium that rarely occurs naturally and is most commonly produced by industrial processes. Hexavalent chromium fume is generated when performing “hot work” such as welding on stainless steel or other alloys containing chrome.

As chrome-containing welding fume forms, it oxidizes into trivalent or hexavalent species. The hexavalent form is far more toxic than the metallic or hexavalent forms. Hexavalent Chromium is often referred to as Hex Chrom, Hex Chrome, Chromium 6, Hexa Chrom, Cr(VI), or HexChrome.

Manganese is a grey-white metal resembling iron. Manganese is used extensively in steel and other metal alloys to promote hardness and reduce cracking. Most steel welding electrodes also contain manganese. Unlike hexavalent chrome, all species of manganese oxide welding fume are presumed to be of equal toxicity.

Overexposure to manganese fume has been linked to a neurological disorder that resembles Parkinson’s Disease. Symptoms may include weakness/lethargy, speech and psychological disturbances, paralysis, and tremors.

To help reduce the risk of adverse health effects caused by exposures to airborne materials such as Cr(VI) and manganese, the United States Occupational Safety and Health Administration (OSHA) has established permissible exposure limits (PELs). In addition, the American Conference of Governmental Industrial Hygienists (ACGIH) sets threshold limit values (TLVs®) which are exposure guidelines.

Watch our webinar on YouTube/3MSpeedglas!

Manganese Hazards for Welders



rey, CIH
eel Service Specialist

Standards, Regulations and Enforcement Cr(VI)

On February 28th, 2006 (OSHA) published the final Hexavalent Chromium (CrVI) Standard. There are three versions of the standard: General Industry (1910.1026), Construction (1910.1126), and Shipyards (1515.1026). The requirements of each standard are very similar. The OSHA PEL for all industries is 5 micrograms per cubic meter of air ($5 \mu\text{g}/\text{m}^3$), reduced from $52 \mu\text{g}/\text{m}^3$. The PEL is a time weighted average (TWA) for an 8-hour workday and 40-hour workweek. The action level, or the level where many of the requirements of the standard such as medical surveillance may be required, is $2.5 \mu\text{g}/\text{m}^3$.

A copy of this instructional manual can be found at: www.osha.gov/OshDoc/Directive_pdf/CPL_02-02-076.pdf

Manganese

The current OSHA PEL for manganese is 5 milligrams per cubic meter of air ($5 \text{ mg}/\text{m}^3$). This PEL is based on a “total” particle size sampling method which includes particles much larger than those produced by welding processes. OSHA has had the same exposure limit for manganese since 1971. The ACGIH TLV for manganese is an 8-hour TWA limit of $0.02 \text{ mg}/\text{m}^3$ respirable size fraction and $0.1 \text{ mg}/\text{m}^3$ for the inhalable size fraction. The respirable fraction is the smallest size fraction (10 microns and smaller) a relevant category for fume particles.



Respiratory Protection for Cr(VI) and Manganese Exposure

In many cases, changes in manufacturing processes and engineering controls alone can't reduce exposure levels to below the occupational exposure limits (OELs). In such cases, it may be appropriate to use respiratory protection.

For any particular application, an array of respirator types that provide an appropriate level of protection are available. The cost of these respirators may vary from around \$1 for a basic negative-pressure, disposable, filtering facepiece to \$2,000 or more for a powered or supplied-air system.

Respirators should be selected based on results from air sampling and the necessary assigned protection factor (APF) as established within OSHA 29 CFR 1910.134. OSHA requires employers to implement a written respiratory protection program when respiratory protection is used. Elements of the written program include respirator selection, use, care and maintenance, medical evaluation, training, and fit testing.

Summary

Cr(VI) and Manganese are found in many manufacturing processes. As a precaution, review MSDS sheets for materials containing these substances in manufacturing processes. If there are questions regarding the air quality, it may be a good idea to discuss the option of air sampling with an industrial hygienist to better determine the levels of contaminants within a given process.

If the air sampling results indicate exposure levels above the occupational exposure limit (either PEL or TLV, whichever the employer is using), changes to manufacturing processes, use of other engineering controls or PPE may be suitable choices to reduce employee exposures to acceptable levels.

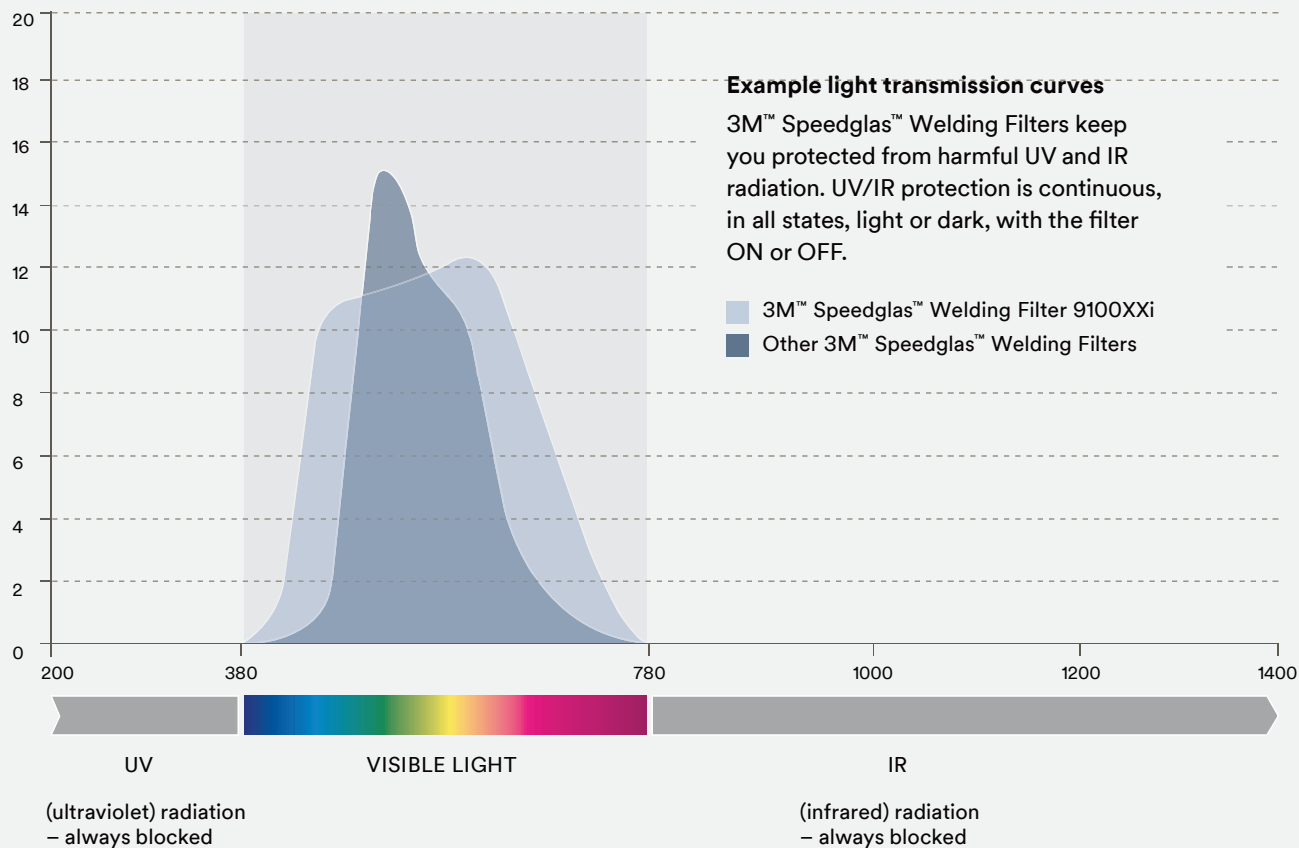
Further questions regarding this article or selection of respiratory protection may be directed to 3M PSD Technical Service at

1-800-243-4630

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

Welding process	Current in amperes A																												
	1.5	6	10	20	30	40	60	70	100	125	150	175	200	225	250	300	350	400	450	500	600	700	800	900	1000				
Shielded Metal Arc							10						12			14													
Gas Metal Arc Welding							11						12			14													
Gas Tungsten Arc Welding	10						12						14																
Air Carbon Arc Cutting	12																				14								
Plasma Arc Welding	6-8			10						12												14							
Plasma Arc Cutting	9																12			14									
Carbon Arc Welding	14																												
	1.5	6	10	15	30	40	60	70	100	125	150	175	200	225	250	300	350	400	450	500	600	700	800	900	1000				
The table recommends best dark shade of welding filter for various working applications. According to the conditions of use, the next greater or the next smaller scale number can be used.																													

Transmittance (%)



Parts directory

3M™ Speedglas™ Welding Helmets (non-respiratory models)

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3M™ Speedglas™ Respiratory Protection

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3M™ Headtops for Respiratory Protection

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Easy upgrade to the latest helmet systems!

Still using an older welding system? Did you know you can easily upgrade your current 3M™ Adflo™ Powered Air Respirator System with one of our new premium welding helmets, without buying a new respirator? Below you will find a list of various upgrade kits within our top-of-the-line 3M™ Speedglas™ W Helmet Series 9100. These welding helmets feature the QRS type of breathing tube (Quick Release Swivel), which enables one-handed connection and release. To protect your new helmet system from scratches, we include a special Speedglas bag for free when ordering any of the upgrade kits.



Part No – all with welding helmet, breathing tube and carry bag:

36-1101-00SW	Speedglas welding helmet 9100 FX-Air, without welding filter
36-1101-10SW	Speedglas welding helmet 9100 FX-Air, with 9100V filter
36-1101-20SW	Speedglas welding helmet 9100 FX-Air, with 9100X filter
36-1101-30SW	Speedglas welding helmet 9100 FX-Air, with 9100XX filter
35-1101-00SW	Speedglas welding helmet 9100-Air, without welding filter
35-1101-10SW	Speedglas welding helmet 9100-Air, with 9100V filter
35-1101-20SW	Speedglas welding helmet 9100-Air, with 9100X filter
35-1101-30SW	Speedglas welding helmet 9100-Air, with 9100XX filter
35-1101-30iSW	Speedglas welding helmet 9100-Air, with 9100XXi filter
37-1101-00SW	Speedglas welding helmet 9100MP, without welding filter
37-1101-10SW	Speedglas welding helmet 9100MP, with 9100V filter
37-1101-20SW	Speedglas welding helmet 9100MP, with 9100X filter
37-1101-30SW	Speedglas welding helmet 9100MP, with 9100XX filter

vitalize your welding respirator!

If you are using an older 3M™ Adflo™ Powered Air Respirator, you can easily upgrade to a new level of performance, incorporating a Li-ion battery, making the respirator almost 20% lighter in weight. As a special offer we include a free set of both particle filter and pre-filters. Regular replacement of the pre-filter extends the life of the particle filter, saving money while also increasing the battery run-time.

Read more about the new Adflo respirator on **page 24** visit www.3M.com/workersafety



Part no Adflo upgrade kit:

35-1099-17 Li-ion standard battery pack with charger, particle filter and set of pre-filters.



3M™ Speedglas™ Welding Filter Kit 9100XXi

Your window to a new world of more realistic color and detail – to help you weld, grind and see your finish. Keep compatible with Speedglas welding helmets 9100, 9100-Air and 9100-QR.

Learn more about the new Speedglas welding filter on 3M.com/speedglasxxi



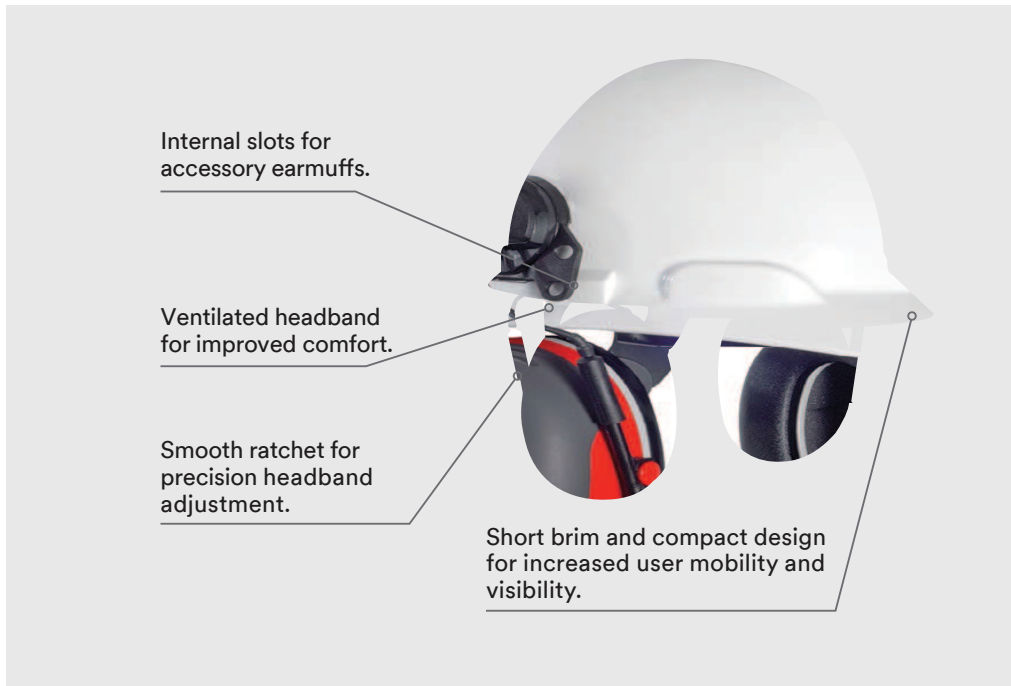
Part No.

06-0000-30i-KIT Welding filter 9100XXi with new silver front



Head and hearing protection

The 3M™ Speedglas™ Quick Release (QR) Rail allows you to attach a Speedglas auto-darkening welding helmet to many of the industry's most popular hard hats. 3M offers a complete welding helmet system including the 3M™ Hard hat H-701. The H-701 is a full-featured hard hat capable of accepting 3M integrated eyewear and earmuffs in addition to the 3M™ Speedglas™ Welding Helmet 9100-QR.



3M™ PELTOR™ Earmuffs X-Series

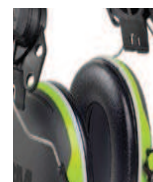
PELTOR™

Featured accessory to 3M™ Speedglas™ Welding Helmet 9100 MP and other Speedglas welding helmets combined with 3M™ Hard hats.

- New ear cushion foam technology for an effective acoustic seal and reliable protection
- Streamlined cups without compromising attenuation
- Lightweight dual mold cups with maximum space inside to help minimize heat and moisture build-up
- Integrated design for more robustness
- Color-coded for ease of selection
- Easy to clean



3M™ PELTOR™
Earmuffs X2
NRR: 24dB*



3M™ PELTOR™
Earmuffs X4
NRR: 25dB*



3M™ PELTOR™
Earmuffs X5
NRR: 31dB*

* For further attenuation information please visit www.3M.com/workersafety

3M™ Speedglas™ Welding Helmets – sorted by features

	3M™ Speedglas™ Welding Helmet 9100							
	3M™ Speedglas™ Welding Helmet 9100-Air							
	3M™ Speedglas™ Welding Helmet 9100-QR							
	3M™ Speedglas™ Welding Helmet 9100 FX							
	3M™ Speedglas™ Welding Helmet 9100 FX-Air							 
	3M™ Speedglas™ Welding Helmet 9100 FX (with hard hat)							
	3M™ Speedglas™ Welding Helmet 9100 MP							 
	3M™ Speedglas™ Welding Helmet SL							
	3M™ Speedglas™ Welding Helmet 100							
	3M™ Speedglas™ Welding Helmet 100-QR							



Eye & face
protection



Side windows



Hearing
protection**



Exhaust vents



Respiratory
system



Graphics option



Head protection



Auto-on



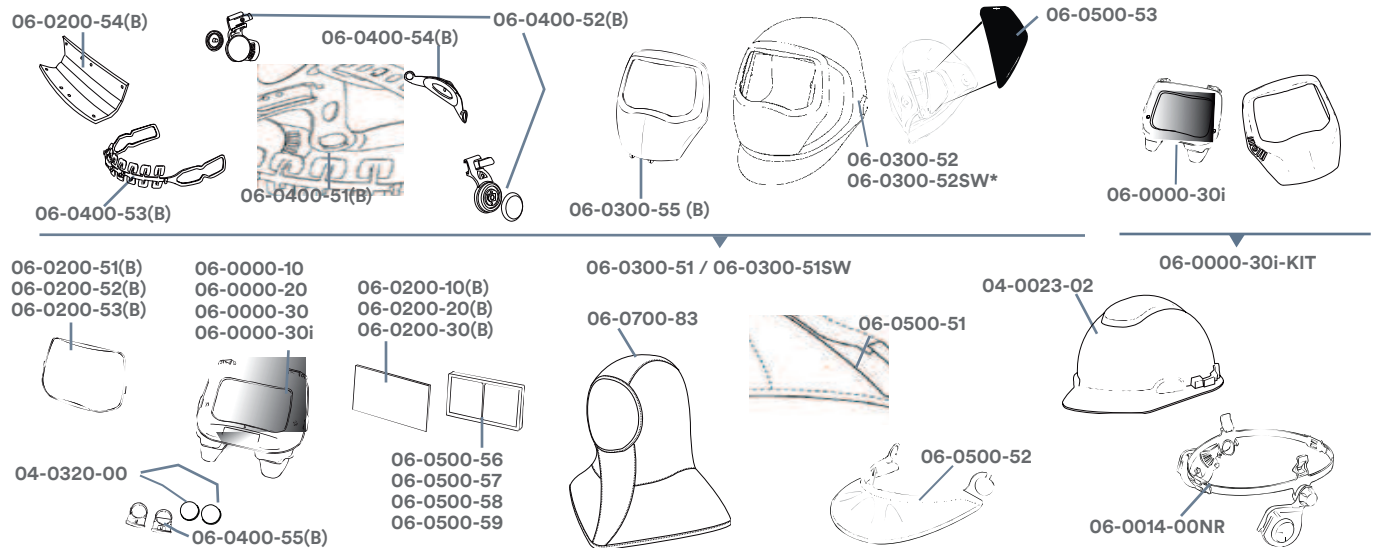
Flip-up

* Only in combination with 3M™ Speedglas™ Welding Filter 9100XXi ** 3M™ PELTOR™ Hearing Protection available as accessories, see each welding helmet parts list.

3M™ Speedglas™ Welding Helmet 9100



Part No	Description	Part No	Description	Part No	Description
06-0100-10	Speedglas welding helmet 9100 with welding filter 9100V	06-0100-20	Speedglas welding helmet 9100 with welding filter 9100X	06-0100-30HASW	Speedglas welding helmet 9100, with side windows, hard hat adapter and welding filter 9100XX, without hard hat
06-0100-10HASW	Speedglas welding helmet 9100, with side windows, hard hat adapter and welding filter 9100V, without hard hat	06-0100-20HASW	Speedglas welding helmet 9100, with side windows, hard hat adapter and welding filter 9100X, without hard hat	06-0100-30HHSW	Speedglas welding helmet 9100 with side windows, hard hat and welding filter 9100XX
06-0100-10HHSW	Speedglas welding helmet 9100 with side windows, hard hat and welding filter 9100V	06-0100-20SW	Speedglas welding helmet 9100 with side windows and welding filter 9100X	06-0100-30SW	Speedglas welding helmet 9100 with side windows and welding filter 9100XX
06-0100-10SW	Speedglas welding helmet 9100 with side windows and welding filter 9100V	06-0100-30	Speedglas welding helmet 9100 with welding filter 9100XX	06-0100-30iSW	Speedglas welding helmet 9100 with side windows and welding filter kit 9100XXi



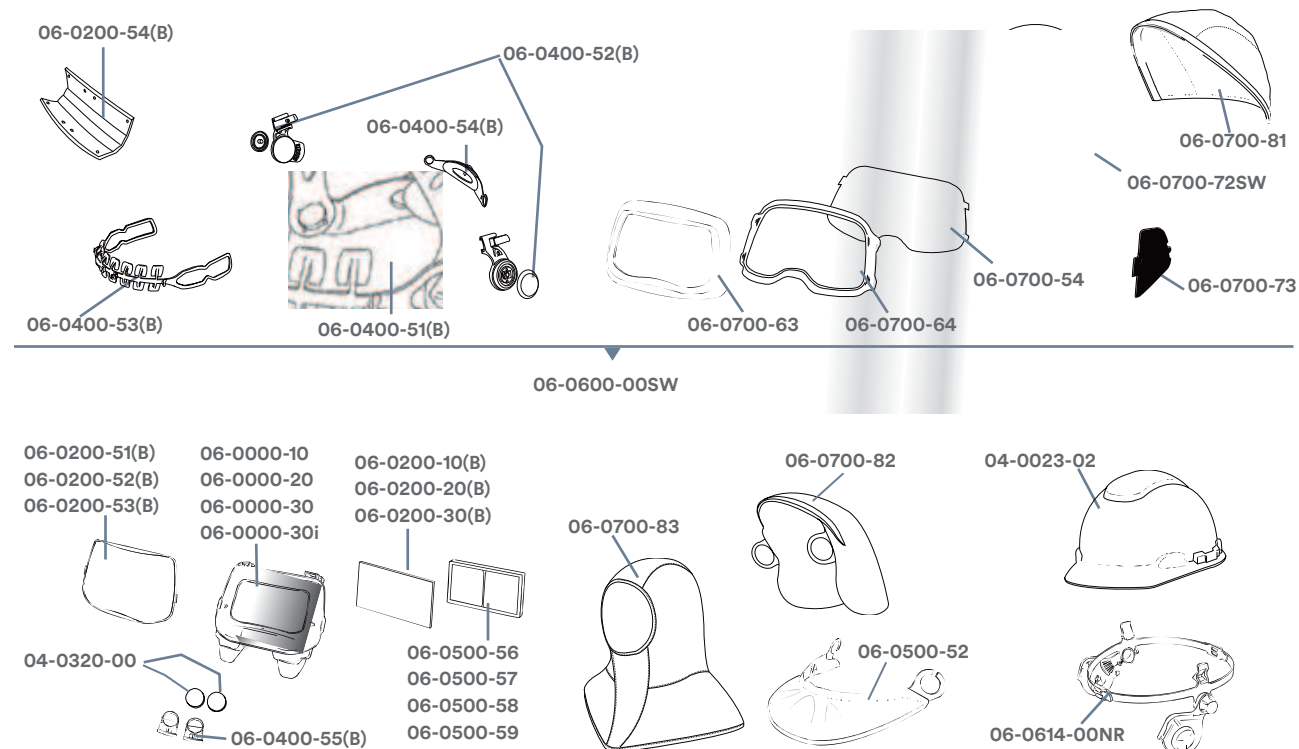
Accessories and consumables

Part No	Description	Part No	Description	Part No	Description
04-0023-02	Hard hat H-701, white	06-0200-53	Outside protection plate high temperature, 10/case	06-0300-55-B	Part no 06-0300-55, 5/case
04-0320-00	Batteries , 2/case	06-0200-53-B	Part no 06-0200-53, 50/case	06-0400-51	Headband incl assembled parts
06-0000-10	Speedglas welding filter 9100V	06-0200-54	Comfort sweatband, 3/case	06-0400-51-B	Part no 06-0400-51, 5/case
06-0000-20	Speedglas welding filter 9100X	06-0200-54-B	Comfort sweatband, 12/case	06-0400-52	Pivot mechanism headband, left and right
06-0000-30	Speedglas welding filter 9100XX	06-0201-10	Starter kit 9100V, incl 5 outside protection plates, 2 inside protection plates and 1 sweatband	06-0400-52-B	Part no 06-0400-52, 5/case
06-0000-30i	Speedglas welding filter 9100XXi	06-0201-20	Starter kit 9100X, incl 5 outside protection plates, 2 inside protection plates and 1 sweatband	06-0400-53	Headband front part
06-000030iKIT	Speedglas welding filter kit 9100XXi, (filter and silver front)	06-0201-30	Starter kit 9100XX, incl 5 outside protection plates, 2 inside protection plates and 1 sweatband	06-0400-53-B	Part no 06-0400-53, 5/case
06-0014-00NR	9100 hardhat adapter for with assembly parts, without hard hat	06-0300-51	Welding helmet without side windows, with headband and silver front panel	06-0400-54	Headband back part
06-0200-10	Inside protection plate 9100V, 5/ case	06-0300-51SW	Welding helmet with side windows, headband and silver front panel	06-0400-54-B	Part no 06-0400-54, 5/case
06-0200-10-B	Part no 06-0200-10, 25/case	06-0300-52	Welding helmet without side windows, without headband	06-0400-55	Battery holder 9100, 2/case
06-0200-20	Inside protection plate 9100X, 5/ case	06-030052SW*	Welding helmet with side windows, without headband	06-0400-55-B	Part no 06-0400-55, 10/case
06-0200-20-B	Part no 06-0200-20, 25/case	06-0300-55	Silver front panel 9100	06-0500-51	Extended coverage, Crown
06-0200-30	Inside protection plate 9100XX, 5/ case			06-0500-52	Extended coverage, Ear & Neck
06-0200-30-B	Part no 06-0200-30, 25/case			06-0500-53	SideWindow cover plates, 2/case
06-0200-51	Outside protection plate standard, 10/case			06-0500-56	Magnification plate 15x
06-0200-51-B	Part no 06-0200-51, 50/case			06-0500-57	Magnification plate 20x
06-0200-52	Outside protection plate scratch resistant, 10/case			06-0500-58	Magnification plate 25x
06-0200-52-B	Part no 06-0200-52, 50/case			06-0500-59	Magnification plate 30x

3M™ Speedglas™ Welding Helmet 9100 FX



Part No	Description	Part No	Description	Part No	Description
06-0600-10SW	Speedglas welding helmet 9100 FX with welding filter 9100V	06-0600-10HHSW	Speedglas welding helmet 9100 FX with hard hat and welding filter 9100V	06-0600-20SW	Speedglas welding helmet 9100 FX with welding filter 9100XX
06-0600-20SW	Speedglas welding helmet 9100 FX with welding filter 9100XX	06-0600-20HHSW	Speedglas welding helmet 9100 FX with hard hat and welding filter 9100XX		
06-0600-30SW	Speedglas welding helmet 9100 FX with welding filter 9100XX				



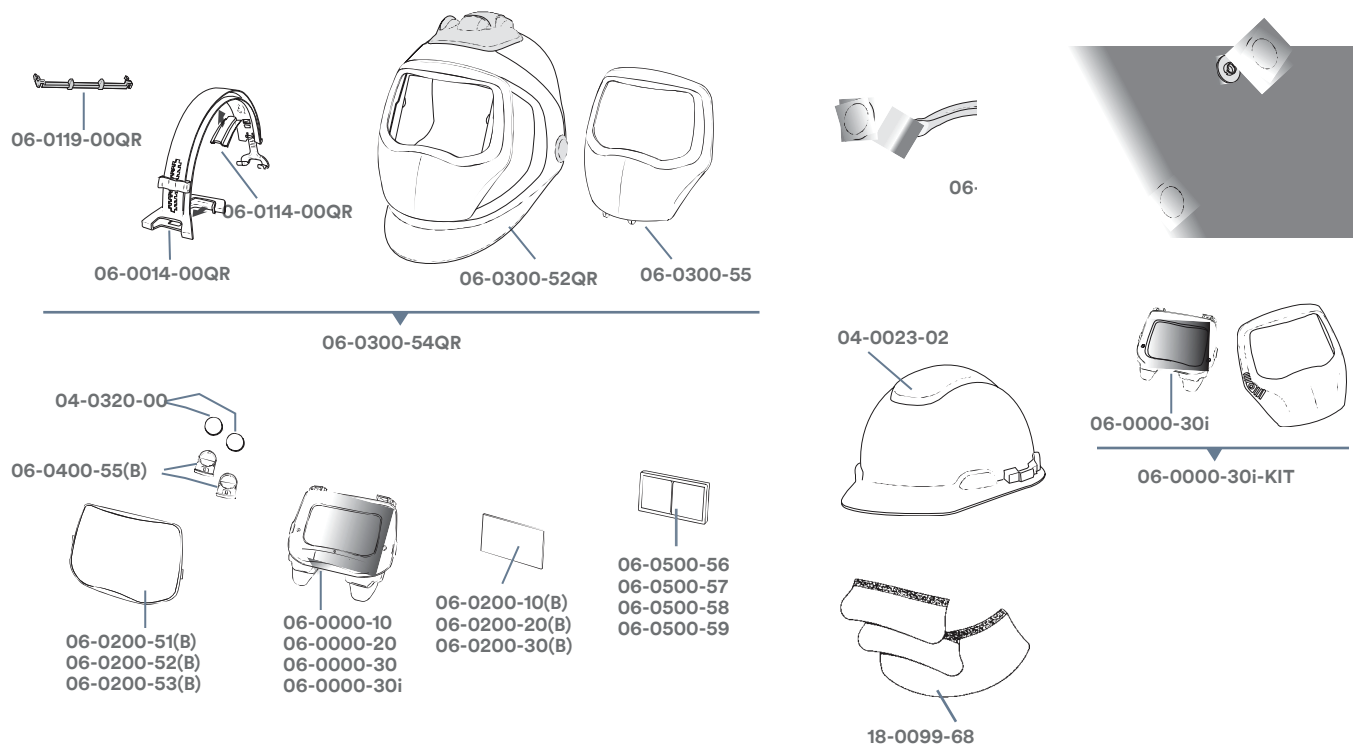
Accessories and consumables

Part No	Description	Part No	Description	Part No	Description
04-0023-02	Hard hat H-701R, white	06-0200-52-B	Part no 06-0200-52, 50/case	06-0600-00SW	Speedglas helmet 9100FX with side windows, without welding filter, with headband
04-0320-00	Batteries 2/case	06-0200-53	Outside protection plate high temperature, 10/case	06-0700-54	Wide-view clear grinding visor, anti-fog, 5/case
06-0000-10	Speedglas welding filter 9100V	06-0200-53-B	Part no 06-0200-53, 50/case	06-0700-63	Front panel, chrome
06-0000-20	Speedglas welding filter 9100X	06-0200-54	Comfort sweatband, 3/case	06-0700-64	Wide-view clear grinding visor frame, black
06-0000-30	Speedglas welding filter 9100XX	06-0200-54-B	Comfort sweatband, 12/case	06-0700-72SW	Welding helmet 9100FX with side windows, without headband, without welding filter
06-0000-30i	Speedglas welding filter 9100XXi	06-0400-51	Headband incl assembled parts	06-0700-73	SideWindow cover plates, 2/case
06-0014-00NR	Hard hat adapter for Speedglas welding helmet 9100 FX with assembly parts, without hard hat	06-0400-51-B	Part no 06-0400-51, 5/case	06-0700-81	Standard headcover, crown, black
06-0200-10	Inside protection plate 9100V, 5/case	06-0400-52	Pivot mechanism headband, left and right	06-0700-82	Extended headcover, head and neck
06-0200-10-B	Part no 06-0200-10, 25/case	06-0400-52-B	Part no 06-0400-52, 5/case		
06-0200-20	Inside protection plate 9100X, 5/case	06-0400-53	Headband front part		
06-0200-20-B	Part no 06-0200-20, 25/case	06-0400-53-B	Part no 06-0400-53, 5/case		
06-0200-30	Inside protection plate 9100XX, 5/case	06-0400-54	Headband back part		
06-0200-30-B	Part no 06-0200-30, 25/case	06-0400-54-B	Part no 06-0400-54, 5/case		
06-0200-51	Outside protection plate standard, 10/case	06-0400-55	Battery holder 9100, 2/case		
06-0200-51-B	Part no 06-0200-51, 50/case	06-0400-55-B	Part no 06-0400-55, 10/case		
06-0200-52	Outside protection plate scratch resistant, 10/case	06-0500-52	Extended coverage, ear and neck		
		06-0500-56	Magnification plate 15x		
		06-0500-57	Magnification plate 20x		
		06-0500-58	Magnification plate 25x		
		06-0500-59	Magnification plate 30x		

3M™ Speedglas™ Welding Helmet 9100-QR



Part No	Description	Part No	Description	Part No	Description
06-0100-10QR	Speedglas welding helmet 9100-QR with 9100V welding filter and 3M Hard Hat H-701	06-0100-20QR	Speedglas welding helmet 9100-QR with 9100X welding filter and 3M Hard Hat H-701	06-0100-30QR	Speedglas welding helmet 9100-QR with 9100XX welding filter and 3M Hard Hat H-701



Accessories and consumables

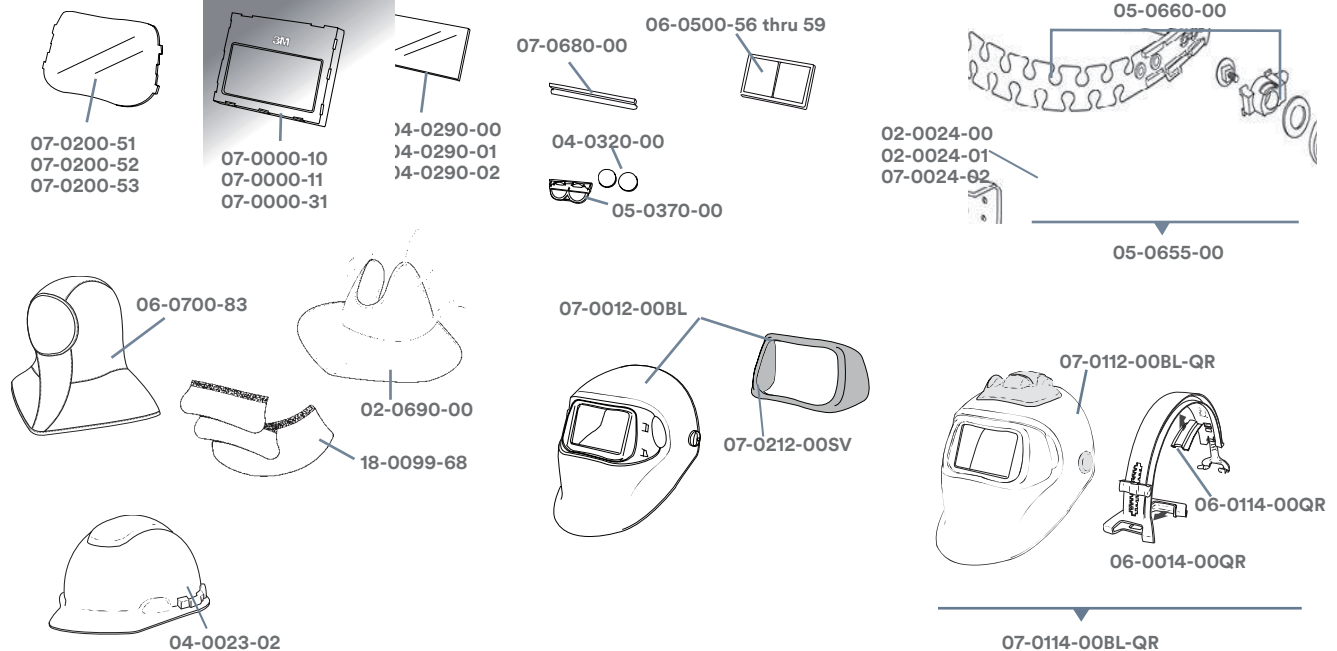
Part No	Description	Part No	Description	Part No	Description
04-0023-02	3M hard hat H-701R, white (unvented)	06-0200-52-B	Part no 06-0200-52, 50/case	06-0300-54QR	Welding helmet 9100-QR with quick release rail, without welding filter, without hard hat
04-0320-00	Batteries 2/case	06-0200-53	Outside protection plate high temperature, 10/case	06-0300-55	Silver front panel 9100
06-0000-10	Speedglas welding filter 9100V	06-0200-53-B	Part no 06-0200-53, 50/case		
06-0000-20	Speedglas welding filter 9100X	06-0400-55	Battery holder 9100, 2/case		
06-0000-30	Speedglas welding filter 9100XX	06-0400-55-B	Part no 06-0400-55, 10/case		
06-0000-30i	Speedglas welding filter 9100XXi	06-0500-56	Magnification plate 15x		
06-0200-10	Inside protection plate 9100V, 5/case	06-0500-57	Magnification plate 20x		
06-0200-10-B	Part no 06-0200-10, 25/case	06-0500-58	Magnification plate 25x		
06-0200-20	Inside protection plate 9100X, 5/case	06-0500-59	Magnification plate 30x		
06-0200-20-B	Part no 06-0200-20, 25/case	18-0099-68	Ear and neck protection in leather		
06-0200-30	Inside protection plate 9100XX, 5/case	06-0014-00QR	Quick release rail for hard hat		
06-0200-30-B	Part no 06-0200-30, 25/case	06-0114-00QR	Rail retention parts		
06-0200-51	Outside protection plate standard, 10/case	06-0116-00QR	Pivot cover plate kit		
06-0200-51-B	Part no 06-0200-51, 50/case	06-0118-00QR	Distance bar when using welding filters 9100X/9100XX/9100XXi		
06-0200-52	Outside protection plate scratch resistant, 10/case	06-0300-52QR	Welding helmet 9100-QR without quick release rail, without welding filter, without hard hat		

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



Part No	Description	Part No	Description	Part No	Description
07-0012-10BL	Speedglas welding helmet 100 Black with welding filter 100S-10	07-0012-31BZ	Speedglas welding helmet 100 Blazed*	07-0012-31SJ	Speedglas welding helmet 100 Skull Jewels*
07-0012-11BL	Speedglas welding helmet 100 Black with welding filter 100S-11	07-0012-31FC	Speedglas welding helmet 100 Future Combatant*	07-0012-31SR	Speedglas welding helmet 100 Steel Rose*
07-0012-31AH	Speedglas welding helmet 100 Aces High*	07-0012-31IH	Speedglas welding helmet 100 Ice Hot*	07-0012-31TB	Speedglas welding helmet 100 Tribute*
07-0012-31BL	Speedglas welding helmet 100 Black*	07-0012-31RD	Speedglas welding helmet 100 Razor Dragon*	07-0012-31TW	Speedglas welding helmet 100 Trojan Warrior*
07-0012-31BLQR	Speedglas welding helmet 100-QR with 3M hard hat H-701*	07-0012-31RS	Speedglas welding helmet 100 Raging Skull*	07-0012-31WP	Speedglas welding helmet 100 Wild-N-Pink*
07-0012-31BY	Speedglas welding helmet 100 Boneyard*	07-0012-31SE	Speedglas welding helmet 100 Steel Eyes*	07-0012-31XT	Speedglas welding helmet 100 Xterminator*

* With Speedglas welding filter 100V



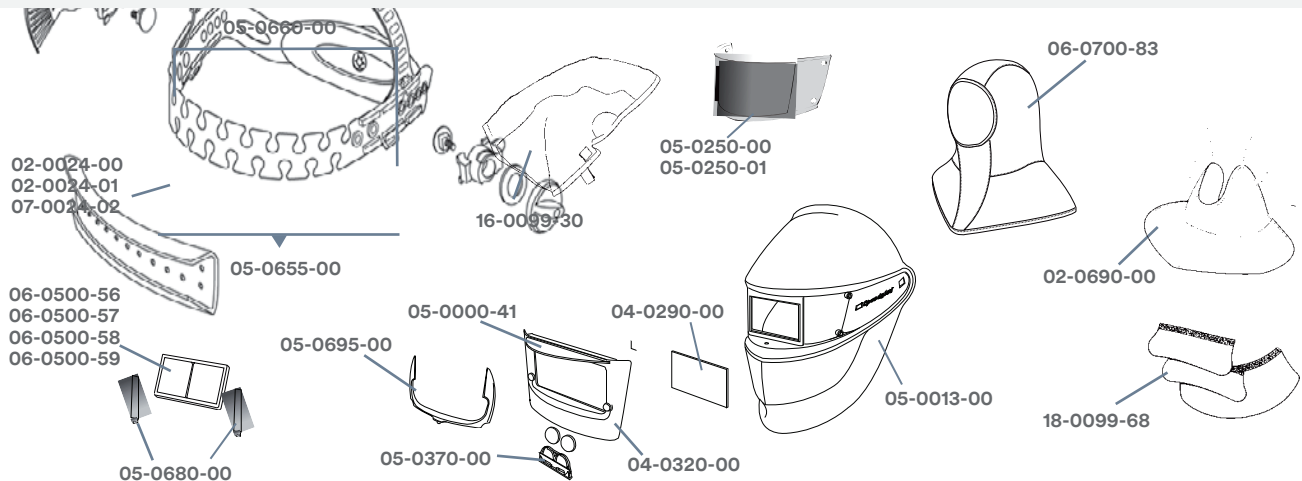
Accessories and consumables

Part No	Description	Part No	Description	Part No	Description
02-0024-00	Sweatband, cotton fleece with padding	06-0500-58	Magnification plate 25x	07-0200-53	Outside protection plate, high temperature, 10/case
02-0024-01	Sweatband, leather	06-0500-59	Magnification plate 30x	07-0212-00SV	Silver front frame 100
02-0690-00	Throat protection, black/grey	06-0700-83	Full hood, black/grey	07-0680-00	Holder for magnifier, 2/case
04-0023-02	3M hard hat H-701R (unvented)	07-0000-10	Speedglas welding filter 100S-10, shade 10	18-0099-68	Throat and side protector, leather
04-0290-00	Inside protection plate, 5/case	07-0000-11	Speedglas welding filter 100S-11, shade 11	06-0014-00QR	Quick release rail for hard hat
04-0290-01	Inside protection plate, +1 shade, 5/case	07-0000-31	Speedglas welding filter 100V, shade 8-12	06-0114-00QR	Rubber friction pads for quick release rail
04-0290-02	Inside protection plate, +2 shade, 5/case	07-0012-00BL	Welding helmet black, without welding filter, without headband	07-0112-00BL-QR	Welding helmet 100-QR without quick release rail, without welding filter, without hard hat
04-0320-00	Battery, 2/case	07-0024-02	Sweatband, fleece, 2/case	07-0114-00BL-QR	Welding helmet 100-QR with quick release rail, without welding filter, without hard hat
05-0370-00	Battery cover	07-0200-51	Outside protection plate, standard, 10/case		
05-0655-00	Comfort headband with assembly parts	07-0200-52	Outside protection plate, scratch resistant, 10/case		
05-0660-00	Assembly parts for headband				
06-0500-56	Magnification plate 15x				
06-0500-57	Magnification plate 20x				

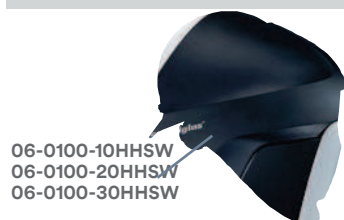
3M™ Speedglas™ Welding Helmet SL



Part No	Description	Part No	Description	Part No	Description
02-0024-00	Sweatband, cotton fleece with padding	05-0250-00	Outside protection plate, 5/ case	06-0500-57	Magnification plate 20x
02-0024-01	Sweatband, leather	05-0250-01	Outside protection plate, scratch resistant, 5/ case	06-0500-58	Magnification plate 25x
02-0690-00	Throat protection black/grey	05-0370-00	Battery holder	06-0500-59	Magnification plate 30x
04-0290-00	Inside protection plate, 5/ case	05-0655-00	Comfort headband with assembly parts	06-0700-83	Full hood, black/grey
04-0320-00	Battery, 2/ case	05-0660-00	Assembly parts for headband	07-0024-02	Sweatband, fleece, black 2/ case
05-0000-41	Welding filter SL, shade 8-12	05-0680-00	Magnifying lens holder	16-0099-30	Headcover, FR Cotton
05-0013-00	Welding helmet, without headband	05-0695-00	Spatter protector	18-0099-68	Throat and side protector, leather
05-0013-41	Welding helmet SL with filter, variable shade 8-12	06-0500-56	Magnification plate 15x		



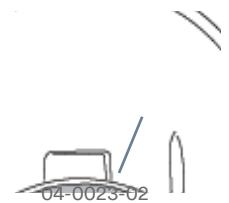
Speedyloop Hard Hat Options for 3M™ Speedglas™ Welding Helmets 9100 / 100



06-0100-10HHSW
06-0100-20HHSW
06-0100-30HHSW



07-0012-31BL-HH
06-0014-00NR
07-0014-00NR (not shown)



04-0023-02

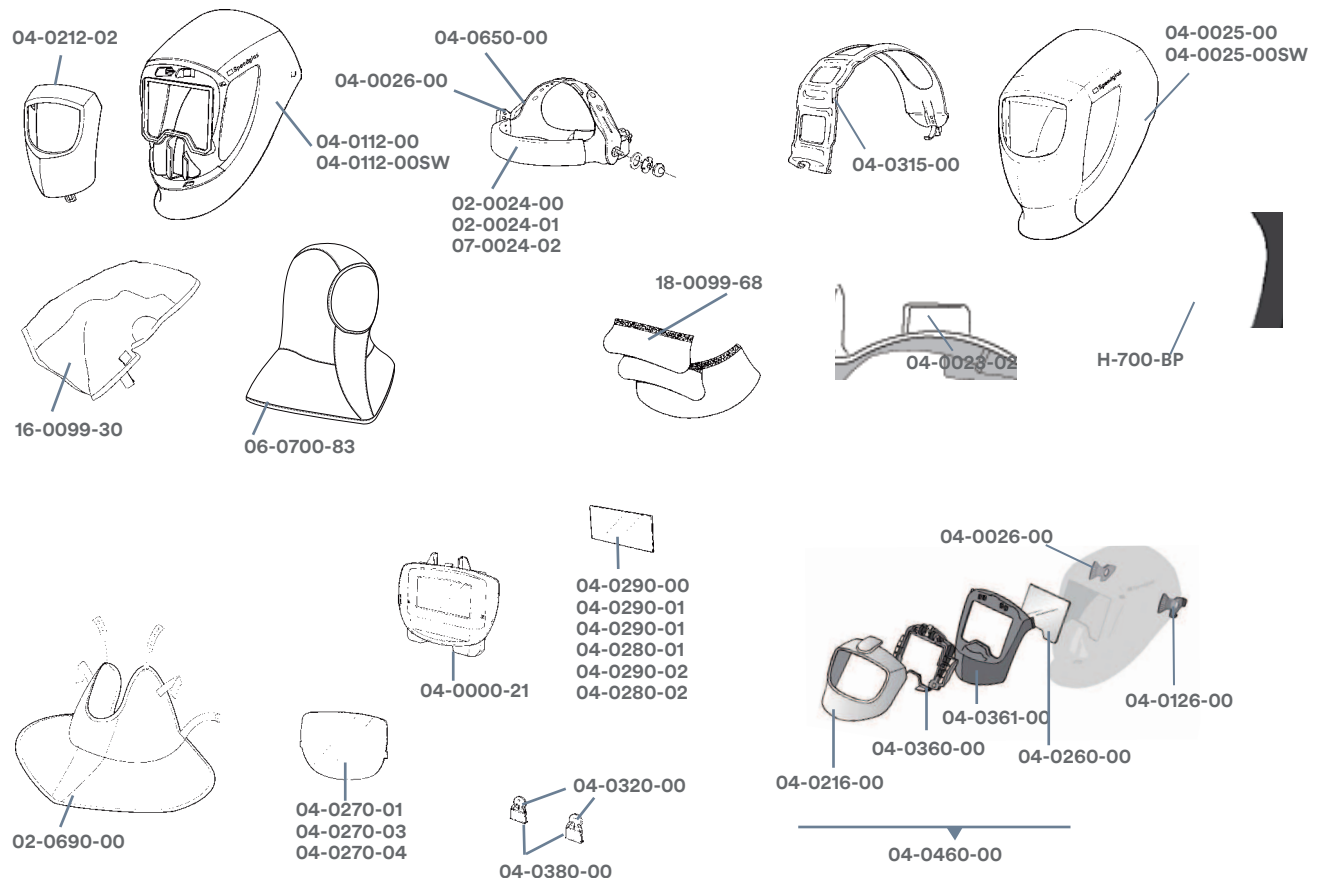
Part No	Description	Part No	Description	Part No	Description
04-0023-02	Hard hat, white	06-0100-20HASW	Speedglas welding helmet 9100 with side windows, hard hat adapter and welding filter 9100X, without hard hat	06-0100-30HHSW	Speedglas welding helmet 9100 with side windows, hard hat and welding filter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

3M™ Speedglas™ Welding Helmet Series 9000



Accessories and consumables*

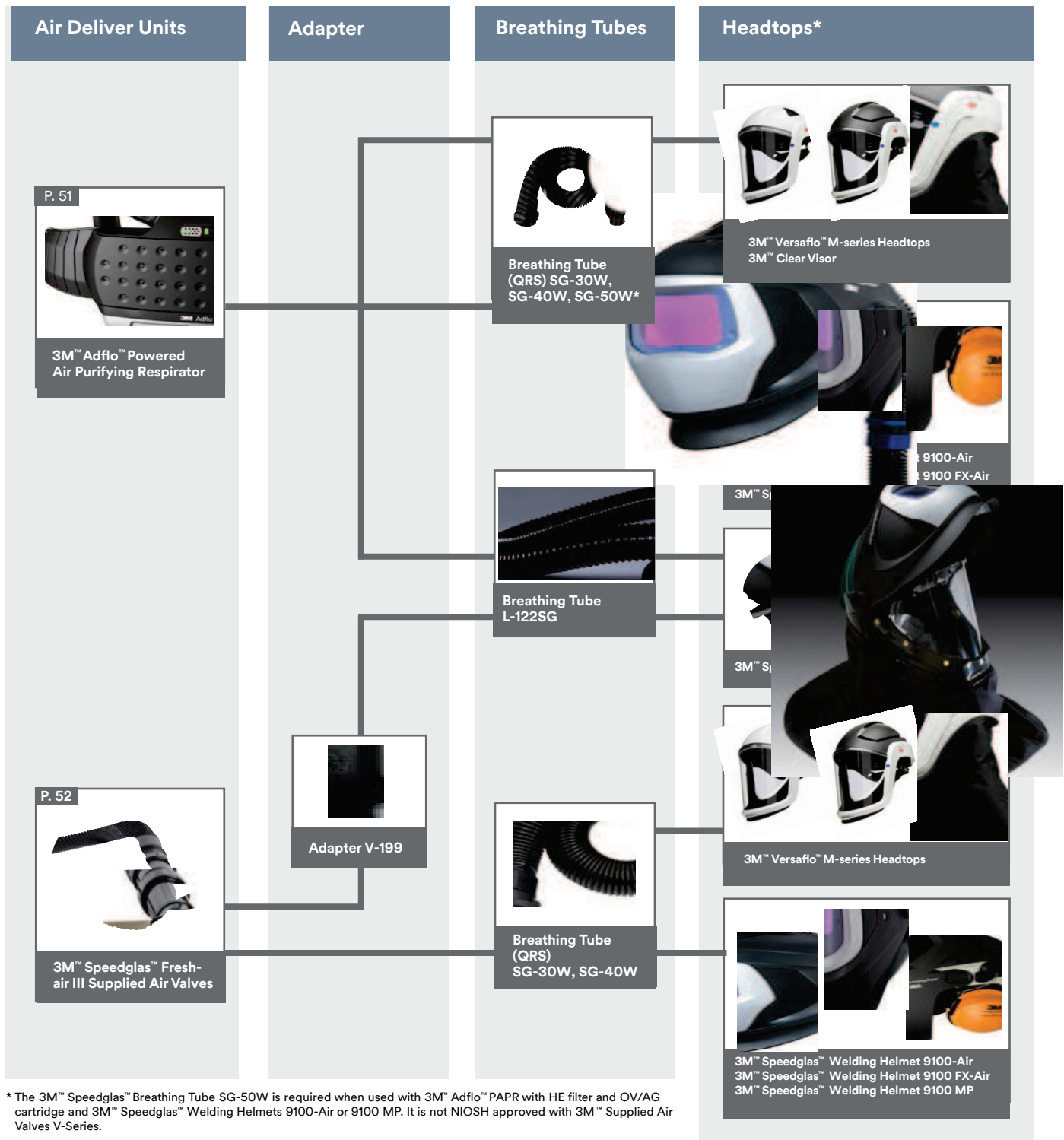
Part No	Description	Part No	Description	Part No	Description
02-0024-00	Sweatband, cotton fleece with padding	04-0126-00	FlexView pivot "S" stop (left), 10/case	04-0290-01	Inside protection plate, +1 shade for welding filters 9002D/9002V, 5/case
02-0024-01	Sweatband, leather	04-0212-02	Speedglas 9000 silver front panel	04-0290-02	Inside protection plate, +2 shade for welding filters 9002D/9002V, 5/case
02-0690-00	Throat protection, black/grey	04-0216-00	Speedglas FlexView silver front panel	04-0315-00	ProTop strap
04-0000-21	Speedglas welding filter 9002X	04-0260-00	Speedglas FlexView protection plate, 10/case	04-0320-00	Battery, 2/case
04-0023-02	Hard hat, white	04-0270-01	Outside protection plate, 10/case	04-0360-00	FlexView welding filter holder
04-0025-00	ProTop welding hood with pivot mechanism and side windows, without hard hat, without welding filter, without strap	04-0270-03	Outside protection plate, scratch resistant, 10/case	04-0361-00	FlexView middle helmet panel, black
04-0025-00SW	ProTop welding hood with pivot mechanism and side windows, without hard hat, without welding filter, without strap	04-0270-04	Outside protection plate, high temperature, 10/case	04-0380-00	Battery holders blue, 2/case
04-0026-00	Headband pivot "S" stop (right), 10/case	04-0280-00	Inside protection plate for welding filters 9002X/9000XF, 5/case	04-0460-00	FlexView replacement kit
04-0112-00	Speedglas welding helmet 9000, inner shell without side windows	04-0280-01	Inside protection plate, +1 shade for welding filters 9002X/9000XF, 5/case	04-0550-00	FlexView locking wedge kit, holder welding filter (not shown)
04-0112-00SW	Speedglas welding helmet 9000, inner shell with side windows	04-0280-02	Inside protection plate, +2 shade for welding filters 9002X/9000XF, 5/case	04-0650-00	Headband with assembly parts
04-0116-00	FlexView welding helmet inner shell without side windows	04-0290-00	Inside protection plate for welding filters 9002D/9002V, 5/case	06-0700-83	Full hood black/grey
04-0116-00SW	FlexView welding helmet inner shell with side windows			07-0024-02	Sweatband fleece, 2/case
				16-0099-30	Headcover, FR cotton
				18-0099-68	Throat and side protector, leather
				H-700-BP	Hard hat replacement brow pad, 20/case



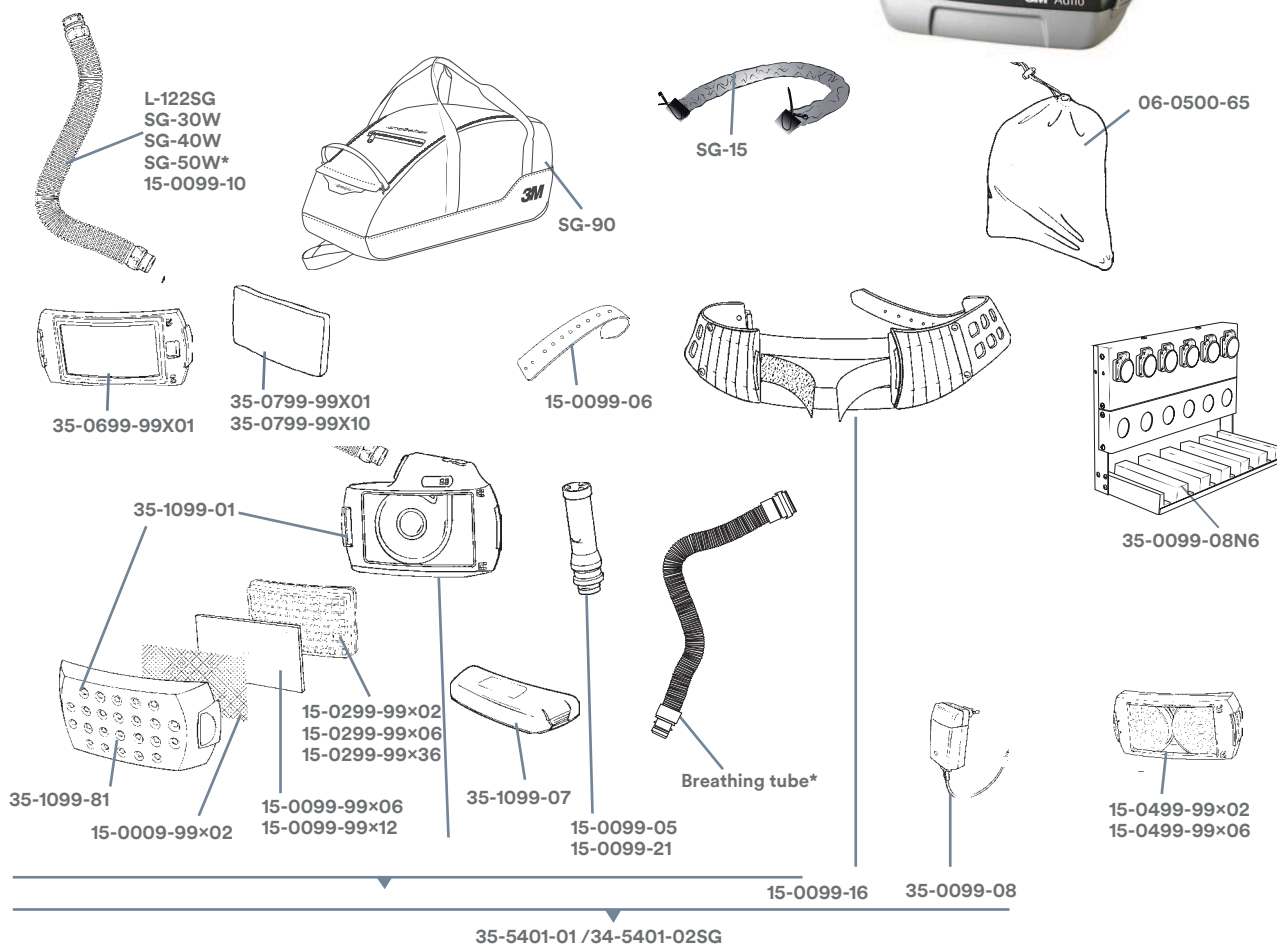
Compatibility of Air Delivery Units and Headtops

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

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



3M™ Adflo™ Powered Air Purifying Respirator



Accessories and consumables

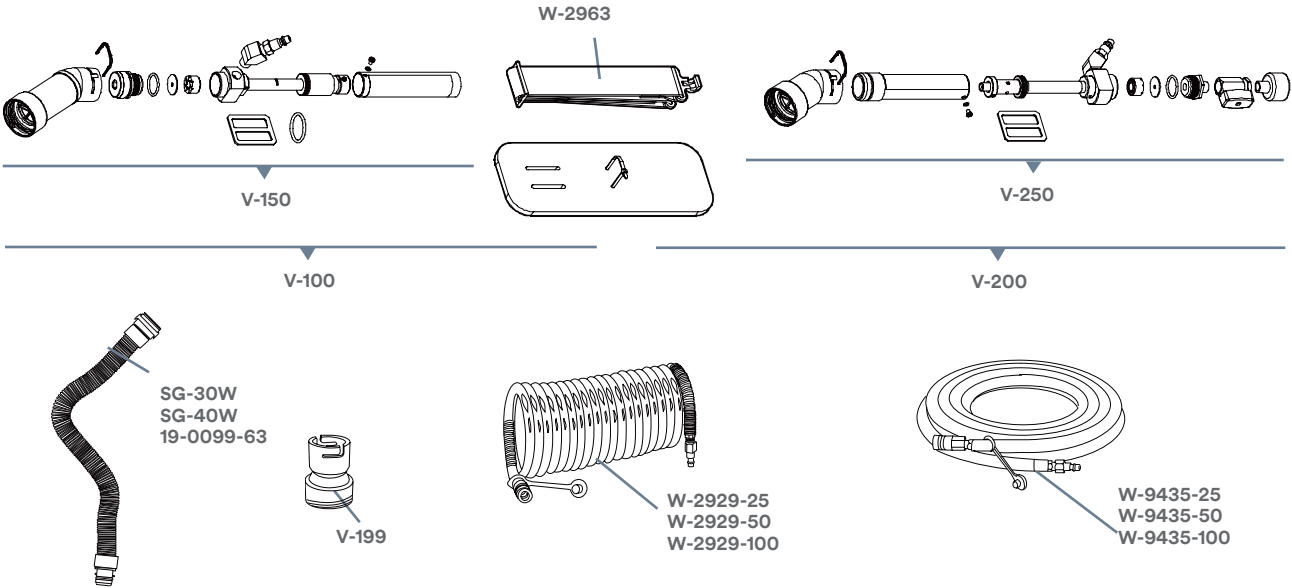
Part No	Description	Part No	Description	Part No	Description
BPK-01	Backpack	(not shown)		35-0099-08	Charger for Li-ion battery
L-122SG	Breathing tube for L-series headgear	15-0099-16	Belt, leather	35-0099-08N6	Docking station for chargers
SG-15	Flame resistant breathing tube cover (replaces 17-0099-54)	15-0099-20	Flow Indicator rubber adapter (not shown)	35-0099-14	Belt connection (not shown)
SG-30W	Breathing tube, self-adjusting, with QRS connection	15-0099-21	Flow Indicator	35-0699-99X01	Nuisance odor filter
SG-40W	Breathing tube, heavy-duty, with QRS connection	15-0099-99X06	Prefilter, 6/c	35-0699-99X01	Nuisance odor filter pad
SG-50W*	Breathing tube, sound-dampening, with QRS connection	15-0099-99X12	Prefilter, 12/c	35-0699-99X01	Nuisance odor filter pad, 10/c
SG-90	Carry bag, black	15-0299-99X06	HE particulate filter, 2/c	35-1099-01	PAPR assembly and filter cover
06-0500-65	Protective bag	15-0299-99X06	HE particulate filter, 6/c	35-1099-07	Battery Li-ion
15-0009-99X02	Spark arrestor, 2/c	15-0299-99X36	HE particulate filter, 36/case	35-1099-81	PAPR filter cover
15-0099-05	Airflow indicator	15-0499-99X02	OV/AG cartridge, 2/case	35-5401-01*	Adflo PAPR with SG-30W self-adjusting breathing tube, airflow indicator, prefilter, spark arrestor, filter cover, HE particulate filter, battery, belt and charger
15-0099-06	Leather belt front extender	15-0499-99X06	OV/AG cartridge, 6/case		
15-0099-08	Charger for NiMH battery	15-1101-99	Battery NiMH		
15-0099-10	Breathing tube assembly (including gasket and o-ring)	15-1101-99	Adflo service kit: HE particulate filters 2/c, prefilters 6/c, spark arrestor 2/c		
15-0099-11	Gasket for non-QRS breathing tubes (not shown)	34-5401-02SG*	Adflo PAPR with L-122SG breathing tube, airflow indicator, prefilter, spark arrestor, filter cover, HE particulate filter, battery, belt and charger		
15-0099-12	Breathing tube rubber o-ring				

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

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



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



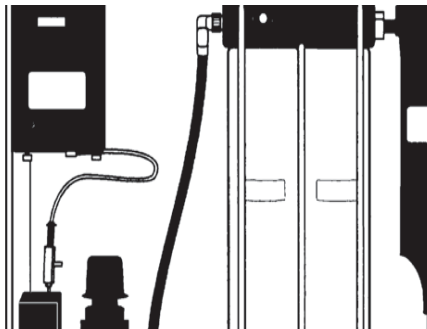
3M™ Speedglas™ Fresh-air II Supplied Air System



Consumables (not shown)

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

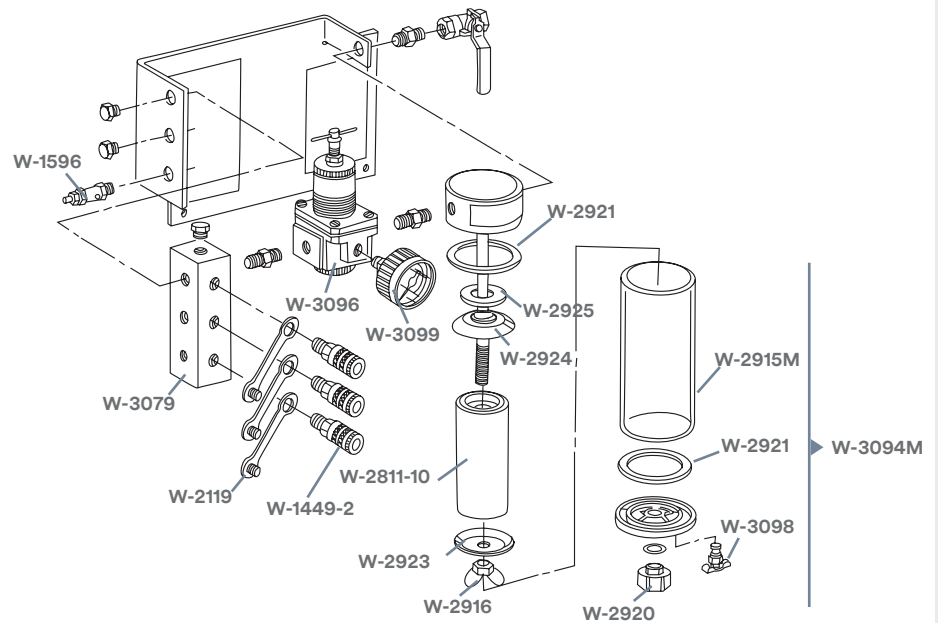
3M™ Compressed Air Filter and Regulator Panels



256-02-00 / 256-02-01



W-2806



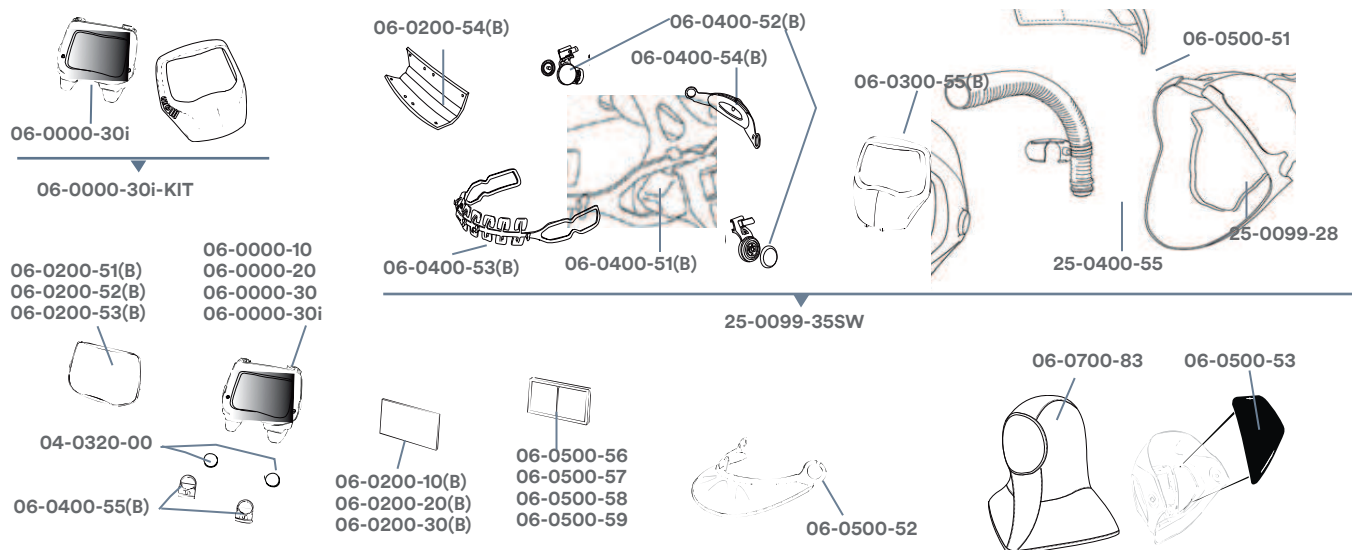
Accessories and consumables

Part No	Description	Part No	Description	Part No	Description
256-02-00	Portable compressed air filter and regulator panel, 50 cfm, 4 outlets, with carbon monoxide filtration and monitor	W-2806	Compressed air filter and regulator panel	W-3096	Air pressure regulator
256-02-01	Portable compressed air and regulator panel, 100 cfm, 8 outlets, with carbon monoxide monitor	W-2808	CO monitor with retrofit kit (not shown)	W-3098	Drain valve
529-04-50	Adapter, 110-120 Volts AC (not shown)	W-2811-10	Filter cartridge, 10/case	W-3099	Air pressure gauge
529-04-48	Calibration kit, large (not shown)	W-2915M	Aluminum filter bowl	W-3182-2	Socket, 3/8 in MPT, 1/4 in body size, schrader, 2/case (not shown)
529-04-49	Calibration kit, small (not shown)	W-2916	Wing nut	W-3281-2	Socket, hansen S23 (3/8 in Male NPT), 2/case (not shown)
529-05-20	Remote alarm and strobe audible (not shown)	W-2920	Nut base		
W-1449-2	Socket, 3/8 in MPT, 1/4 in body size, industrial interchange, 2/case	W-2921	Bowl gasket		
W-1596	Pressure relief valve	W-2923	Cartridge washer		
W-2119	Socket dust cap	W-2924	Air deflector		
		W-2925	Air deflector gasket		
		W-3012	Coalescing filter assembly		
		W-3013-4	High efficiency filter element for W-3012 (not shown), 4/case		
		W-3079	Manifold		
		W-3094M	Filter housing assembly		
		W-3095	Filter housing base (part of W-3094M)		

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



Part No	Description	Part No	Description	Part No	Description
35-1101-00SW	Speedglas welding helmet 9100-Air without welding filter with Adflo PAPR and HE filter	35-3301-10SW	Speedglas welding helmet 9100-Air with welding filter 9100V and Adflo PAPR with HE filter and OV/AG cartridge	25-5702-30SW	Speedglas welding helmet 9100-Air with welding filter 9100XX and Fresh-air III SAR, V-100 valve
35-1101-10SW	Speedglas welding helmet 9100-Air with welding filter 9100V and Adflo PAPR with HE filter	35-3301-20SW	Speedglas welding helmet 9100-Air with welding filter 9100X and Adflo PAPR with HE filter and OV/AG cartridge	25-5702-30iSW	Speedglas welding helmet 9100-Air with welding filter 9100XXi and Fresh-air III SAR, V-100 valve
35-1101-20SW	Speedglas welding helmet 9100-Air with welding filter 9100X and Adflo PAPR with HE filter	35-3301-30SW	Speedglas welding helmet 9100-Air with welding filter 9100XX and Adflo PAPR with HE filter and OV/AG cartridge	25-5802-10SW	Speedglas welding helmet 9100-Air with welding filter 9100V and Fresh-air III SAR, V-200 valve
35-1101-30SW	Speedglas welding helmet 9100-Air with welding filter 9100XX and Adflo PAPR with HE filter	25-5702-10SW	Speedglas welding helmet 9100-Air with welding filter 9100V and Fresh-air III SAR, V-100 valve	25-5802-20SW	Speedglas welding helmet 9100-Air with welding filter 9100X and Fresh-air III SAR, V-200 valve
35-1101-30iSW	Speedglas welding helmet 9100-Air with welding filter 9100XXi and Adflo PAPR with HE filter	25-5702-20SW	Speedglas welding helmet 9100-Air with welding filter 9100X and Fresh-air III SAR, V-100 valve	25-5802-30SW	Speedglas welding helmet 9100-Air with welding filter 9100XX and Fresh-air III SAR, V-200 valve
35-3301-00SW	Speedglas welding helmet 9100-Air without welding filter, with Adflo PAPR, HE filter and OV/AG cartridge				



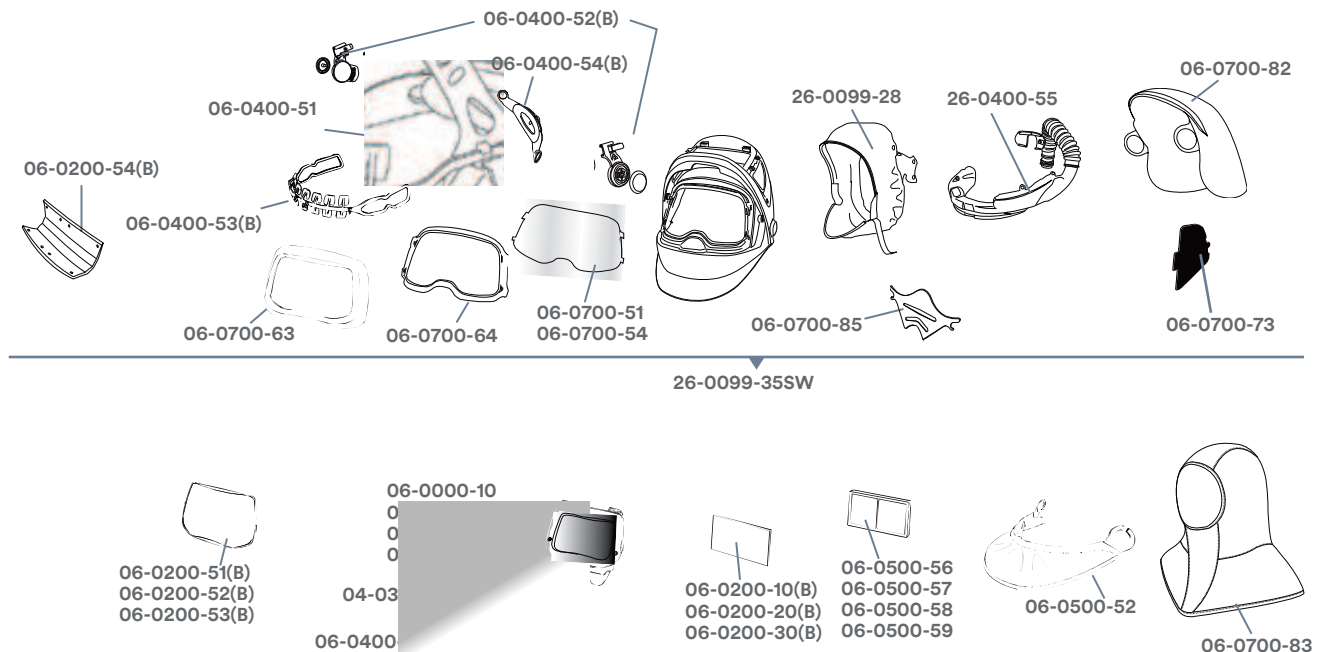
Accessories and consumables

Part No	Description	Part No	Description	Part No	Description
04-0320-00	Battery, 2/case	06-0200-51-B	Part no 06-0200-51, 50/case	06-0400-54	Headband back part
06-0000-10	Welding filter 9100V	06-0200-52	Outside protection plate scratch resistant, 10/case	06-0400-54-B	Part no 06-0400-54, 5/case
06-0000-20	Welding filter 9100X	06-0200-52-B	Part no 06-0200-52, 50/case	06-0400-55	Battery holder 9100, 2/case
06-0000-30	Welding filter 9100XX	06-0200-53	Outside protection plate high temperature, 10/case	06-0400-55-B	Part no 06-0400-55, 10/case
06-0000-30i	Welding filter 9100XXi	06-0200-53-B	Part no 06-0200-53, 50/case	06-0500-51	Extended coverage, crown
06-000030iKIT	Welding filter kit 9100XXi, (filter and silver front)	06-0200-54	Comfort sweatband, 3/case	06-0500-52	Extended coverage, ear and neck
06-0200-10	Inside protection plate 9100V, 5/case	06-0200-54-B	Comfort sweatband, 12/case	06-0500-53	SideWindow cover plates, 2/case
06-0200-10-B	Part no 06-0200-10, 25/case	06-0300-55	Silver front panel	06-0500-56	Magnification plate 15x
06-0200-20	Inside protection plate 9100X, 5/case	06-0300-55-B	Part no 06-0300-55, 5/case	06-0500-57	Magnification plate 20x
06-0200-20-B	Part no 06-0200-20, 25/case	06-0400-51	Headband incl assembled parts	06-0500-58	Magnification plate 25x
06-0200-30	Inside protection plate 9100XX/9100XXi, 5/case	06-0400-51-B	Part no 06-0400-51, 5/case	06-0500-59	Magnification plate 30x
06-0200-30-B	Part no 06-0200-30, 25/case	06-0400-52	Pivot mechanism headband, left and right	06-0700-83	Full hood, black/grey
06-0200-51	Outside protection plate standard, 10/case	06-0400-52-B	Part no 06-0400-52, 5/case	25-0099-28	Face seal
		06-0400-53	Headband front part	25-0099-35SW	Welding helmet 9100-Air, without welding filter
		06-0400-53-B	Part no 06-0400-53, 5/case	25-0400-55	Air duct tube

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



Part No	Description	Part No	Description	Part No	Description
36-1101-00SW	Welding helmet 9100 FX-Air without welding filter with Adflo PAPR and HE filter	36-1101-30SW	Welding helmet 9100 FX-Air with welding filter 9100XX and Adflo PAPR with HE filter	36-3301-20SW	Welding helmet 9100 FX-Air with welding filter 9100X and Adflo PAPR with HE filter and OV/AG cartridge
36-1101-10SW	Welding helmet 9100 FX-Air with welding filter 9100V and Adflo PAPR with HE filter	36-3301-00SW	Welding helmet 9100 FX-Air, without welding filter, with Adflo PAPR, HE filter and OV/AG cartridge	36-3301-30SW	Welding helmet 9100 FX-Air with welding filter 9100XX and Adflo PAPR with HE filter and OV/AG cartridge
36-1101-20SW	Welding helmet 9100 FX-Air with welding filter 9100X and Adflo PAPR with HE filter	36-3301-10SW	Welding helmet 9100 FX-Air with welding filter 9100V and Adflo PAPR with HE filter and OV/AG cartridge		



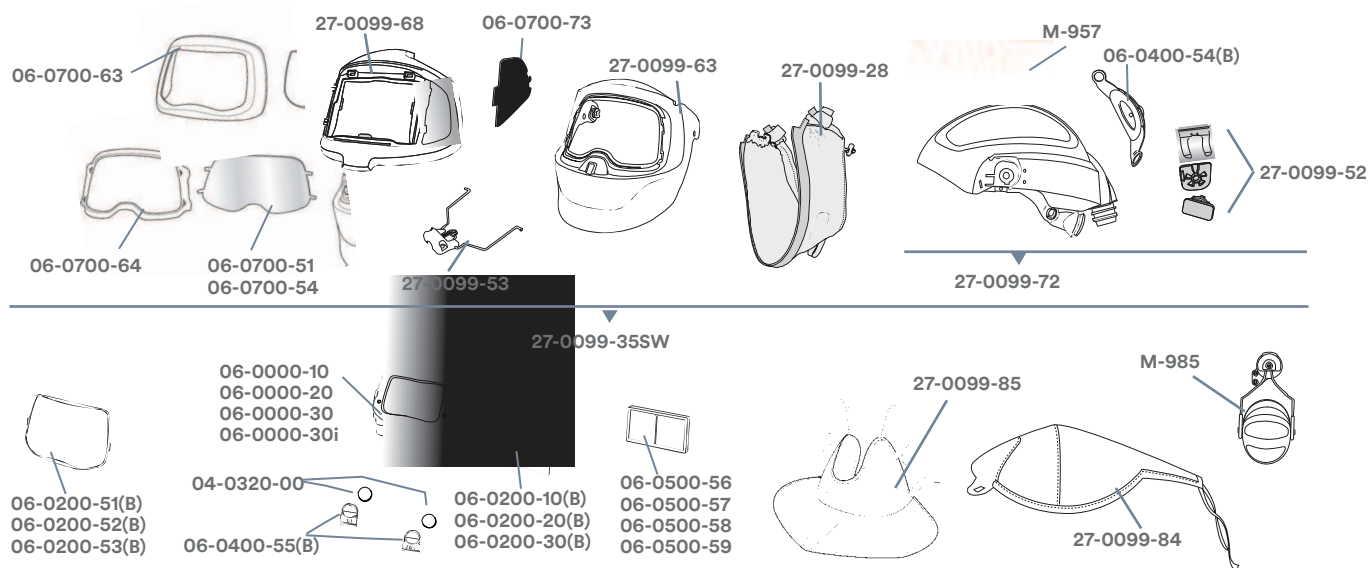
Accessories and consumables

Part No	Description	Part No	Description	Part No	Description
04-0320-00	Battery, 2/case	06-0200-53	Outside protection plate high temperature, 10/case	06-0500-52	Extended coverage, ear and neck
06-0000-10	Welding filter 9100V	06-0200-53-B	Part no 06-0200-53 (bulk), 50/case	06-0500-56	Magnification plate 15x
06-0000-20	Welding filter 9100X	06-0200-54	Comfort sweatband, 3/case	06-0500-57	Magnification plate 20x
06-0000-30	Welding filter 9100XX	06-0200-54-B	Comfort sweatband (bulk), 12/case	06-0500-58	Magnification plate 25x
06-0000-30i	Welding filter 9100XXi	06-0400-51	Headband incl assembled parts	06-0500-59	Magnification plate 30x
06-0200-10	Inside protection plate 9100V, 5/case	06-0400-51-B	Part no 06-0400-51 (bulk), 5/case	06-0700-51	Wide-view clear grinding visor, standard, 5/case
06-0200-10-B	Part no 06-0200-10 (bulk), 25/case	06-0400-52	Pivot mechanism headband, left and right	06-0700-54	Wide-view clear grinding visor, anti-fog, 5/case
06-0200-20	Inside protection plate 9100X, 5/case	06-0400-52-B	Part no 06-0400-52 (bulk), 5/case	06-0700-63	Front panel, chrome
06-0200-20-B	Part no 06-0200-20 (bulk), 25/case	06-0400-53	Headband front part	06-0700-64	Wide-view clear grinding visor frame, black
06-0200-30	Inside protection plate 9100XX and 9100XXi, 5/case	06-0400-53-B	Part no 06-0400-53 (bulk), 5/case	06-0700-73	SideWindow cover plates, 2/case
06-0200-30-B	Part no 06-0200-30 (bulk), 25/case	06-0400-54	Headband back part	06-0700-82	Extended head cover, head and neck
06-0200-51	Outside protection plate standard, 10/case	06-0400-54-B	Part no 06-0400-54 (bulk), 5/case	06-0700-83	Full hood, black/grey
06-0200-51-B	Part no 06-0200-51 (bulk), 50/case	06-0400-55	Battery holder 9100, 2/case	06-0700-85	Air diffuser
06-0200-52	Outside protection plate scratch resistant, 10/case	06-0400-55-B	Part no 06-0400-55 (bulk), 10/case	26-0099-28	Face seal
06-0200-52-B	Part no 06-0200-52 (bulk), 50/case			26-0099-35SW	Welding helmet 9100 FX-Air without welding filter, with headband
				26-0400-55	Duct assembly

3M™ Speedglas™ Welding Helmet 9100 MP



Part No	Description	Part No	Description	Part No	Description
37-1101-00SW	Welding helmet 9100 MP without welding filter, with Adflo PAPR and HE filter	37-5702-00SWSR	Welding helmet 9100 MP without welding filter, with Fresh-air III SAR, V-100SR valve and Schrader fitting	37-5902-10SW	Welding helmet 9100 MP with welding filter 9100V and Fresh-air III SAR, V-300 valve
37-1101-10SW	Welding helmet 9100 MP with welding filter 9100V and Adflo PAPR with HE filter	37-5702-10SW	Welding helmet 9100 MP with welding filter 9100V and Fresh-air III SAR, V-100 valve	37-5902-20SW	Welding helmet 9100 MP with welding filter 9100X and Fresh-air III SAR, V-300 valve
37-1101-20SW	Welding helmet 9100 MP with welding filter 9100X and Adflo PAPR with HE filter	37-5702-20SW	Welding helmet 9100 MP with welding filter 9100X and Fresh-air III SAR, V-100 valve	37-5902-30SW	Welding helmet 9100 MP with welding filter 9100XX and Fresh-air III SAR, V-300 valve
37-1101-30SW	Welding helmet 9100 MP with welding filter 9100XX and Adflo PAPR with HE filter	37-5702-30SW	Welding helmet 9100 MP with welding filter 9100XX and Fresh-air III SAR, V-100 valve		



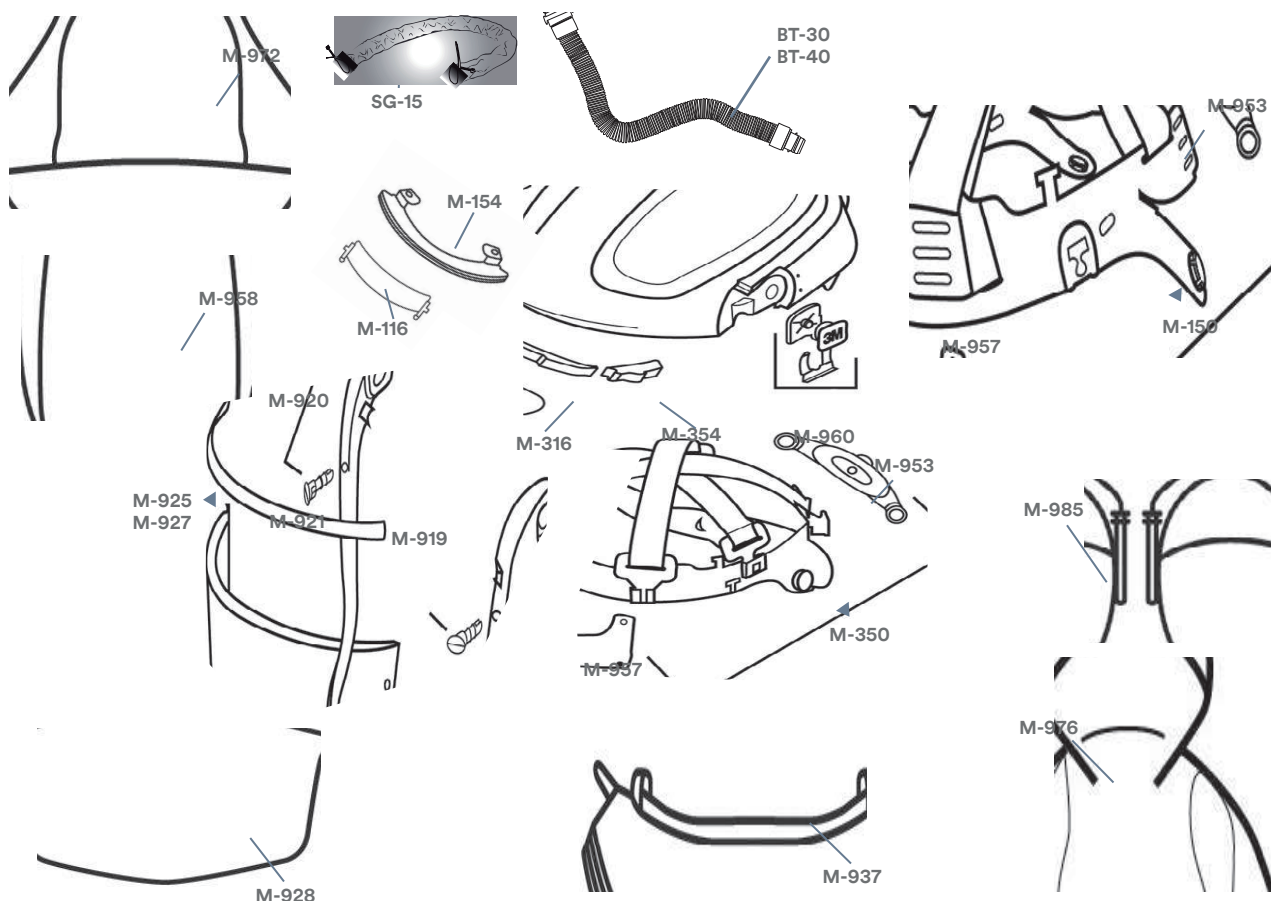
Accessories and consumables

Part No	Description	Part No	Description	Part No	Description
M-350	Versaflo replacement head suspension (not shown above)	06-0200-51-B	Part no 06-0200-51 (bulk), 50/ case	06-0400-55	Battery holder 9100, 2/ case
M-957	Versaflo forehead comfort pad/ sweat pad, 10/ case	06-0200-52	Outside protection plate scratch resistant, 10/ case	06-0400-55-B	Part no 06-0400-55 (bulk), 10/ case
M-985	3M™ PELTOR™ Earmuff Assembly Kit	06-0200-52-B	Part no 06-0200-52 (bulk), 50/ case	06-0700-51	Wide-view clear grinding visor, standard, 5/ case
04-0320-00	Battery, 2/ case	06-0200-53	Outside protection plate high temperature, 10/ case	06-0700-54	Wide-view clear grinding visor, anti-fog, 5/ case
06-0000-10	Welding filter 9100V	06-0200-53-B	Part no 06-0200-53 (bulk), 50/ case	06-0700-63	Front panel, chrome
06-0000-20	Welding filter 9100X	06-0202-10	Starter kit 9100V (for 9100 MP), incl 5 outside protection plates, 2 inside protection plates, and 1 sweat pad	06-0700-64	Wide-view clear grinding visor frame, black
06-0000-30	Welding filter 9100XX	06-0202-20	Starter kit 9100X (for 9100 MP), incl 5 outside protection plates, 2 inside protection plates, and 1 sweat pad	06-0700-73	SideWindow cover plates, 2/ case
06-0000-30i	Welding filter 9100XXi	06-0202-30	Starter kit 9100XX (for 9100 MP), incl 5 outside protection plates, 2 inside protection plates, and 1 sweat pad	27-0099-28	Face seal
06-0200-10	Inside protection plate 9100V, 5/ case	06-0400-54	Headband back part	27-0099-35SW	Welding helmet 9100 MP with hard hat, without welding filter
06-0200-10-B	Part no 06-0200-10 (bulk), 25/ case	06-0400-54-B	Part no 06-0400-54 (bulk), 5/ case	27-0099-52	Pivot kit
06-0200-20	Inside protection plate 9100X, 5/ case			27-0099-53	Flip-up mechanism
06-0200-20-B	Part no 06-0200-20 (bulk), 25/ case			27-0099-63	Inner shield
06-0200-30	Inside protection plate 9100XX/9100XXi, 5/ case			27-0099-68	Outer shield
06-0200-30-B	Part no 06-0200-30 (bulk), 25/ case			27-0099-72	Hard hat incl pivot kit
06-0200-51	Outside protection plate standard, 10/ case			27-0099-84	Radiant heat hard hat cover for 9100 MP helmet
				27-0099-85	Throat and neck coverage
				27-0099-87	Complete neck coverage for 9100MP

3M™ Versaflo™ Headtops M-Series



Part No	Description	Part No	Description	Part No
M-107	Versaflo Faceshield M-107	M-307	Versaflo Helmet M-307	M-40
M-207	Versaflo Faceshield M-207			



Accessories and spare parts

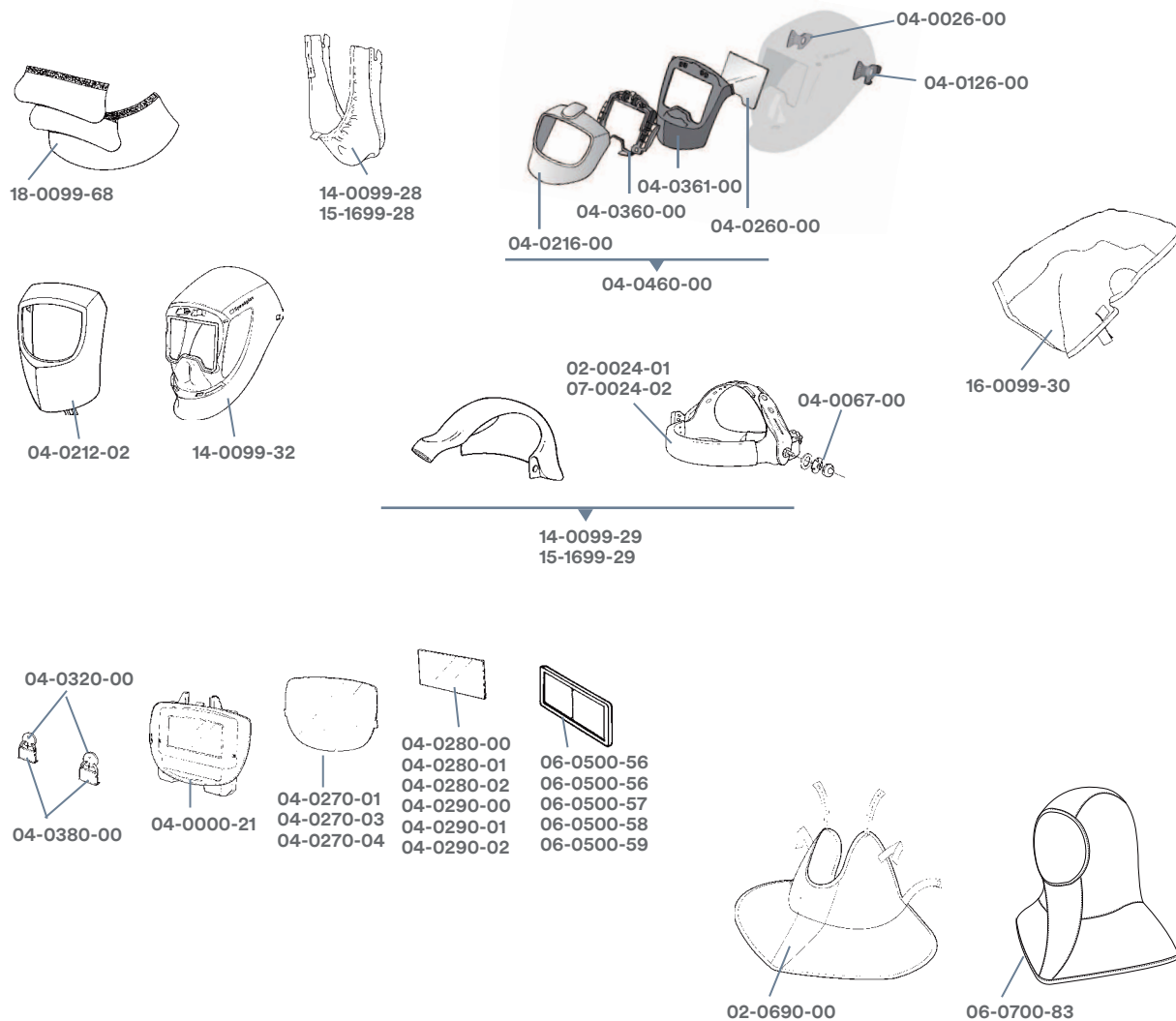
Part No	Description	Part No	Description	Part No	Description
BT-30	Breathing tube, self-adjusting (52,5 to 85 cm), with QRS connection	M-920	Visor frame	M-972	Flame resistant headtop cover
BT-40	Breathing tube, heavy-duty rubber, with QRS connection	M-921	Visor gasket	M-976	Head, neck and shoulder cover
M-116	Airflow deflector (M-107)	M-925	Visor standard (uncoated)	M-985	3M™ PELTOR™ Ear Muffs
M-150	Head suspension (M-107)	M-927	Visor coated	SG-15	Flame resistant breathing tube cover
M-154	Forehead seal (M-107)	M-928	Peel-off visor cover		
M-316	Airflow deflector (M-307)	M-937	Flame resistant facesal		
M-350	Head suspension (M-307)	M-953	Ratchet		
M-354	Forehead seal (M-307)	M-956	Ratchet comfort pad		
M-919	Visor frame buttons	M-957	Sweatband, fleecy cotton, pkg of 2		
		M-958	Chin strap		
		M-960	Pivot kit		

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



Part No	Description	Part No	Description	Part No	Description
02-0024-01	Sweatband, leather	04-0280-01	Inside protection plate, +1 shade, for filters	04-0460-00	FlexView replacement kit
02-0690-00	Throat protection black/grey		9002X/9000XF, 5/case	06-0500-56	Magnification plate 15x
04-0000-21	Speedglas welding filter 9002X, variable shade 9–13	04-0280-02	Inside protection plate, +2 shade, for filters	06-0500-57	Magnification plate 20x
04-0026-00	Headband pivot “S” stop, right, 10/case		9002X/9000XF, 5/case	06-0500-58	Magnification plate 25x
04-0067-00	Assembly parts for headband	04-0290-00	Inside protection plate for filters 9002D/9002V, 5/case	06-0500-59	Magnification plate 30x
04-0126-00	FlexView pivot “S” stop, left, 10/case	04-0290-01	Inside protection plate, +1 shade, for filters	06-0700-83	Full hood black/grey
04-0212-02	Silver front panel		9002D/9002V, 5/case	07-0024-02	Sweatband, fleece, 2/case
04-0270-01	Outside protection plate, standard, 10/case	04-0290-02	Inside protection plate, +2 shade, for filters	14-0099-28	Face seal 9000 HWR
04-0270-03	Outside protection plate, scratch resistant, 10/case		9002D/9002V, 5/case	14-0099-29	Headband assembly 9000 HWR, with air duct
04-0270-04	Outside protection plate, high temperature, 10/case	04-0320-00	Battery, 2/case	14-0099-32	Inner shell 9000 HWR, without air duct
04-0280-00	Inside protection plate, for filters 9002X/9000XF, 5/case	04-0360-00	FlexView welding filter holder	15-1699-28	FlexView HWR faceseal
		04-0361-00	FlexView middle helmet panel, black	15-1699-29	Headband assembly FlexView HWR, with air duct
		04-0380-00	Battery holder blue, 2/case	16-0099-30	Head cover, FR cotton
				18-0099-68	Throat and side protector, leather

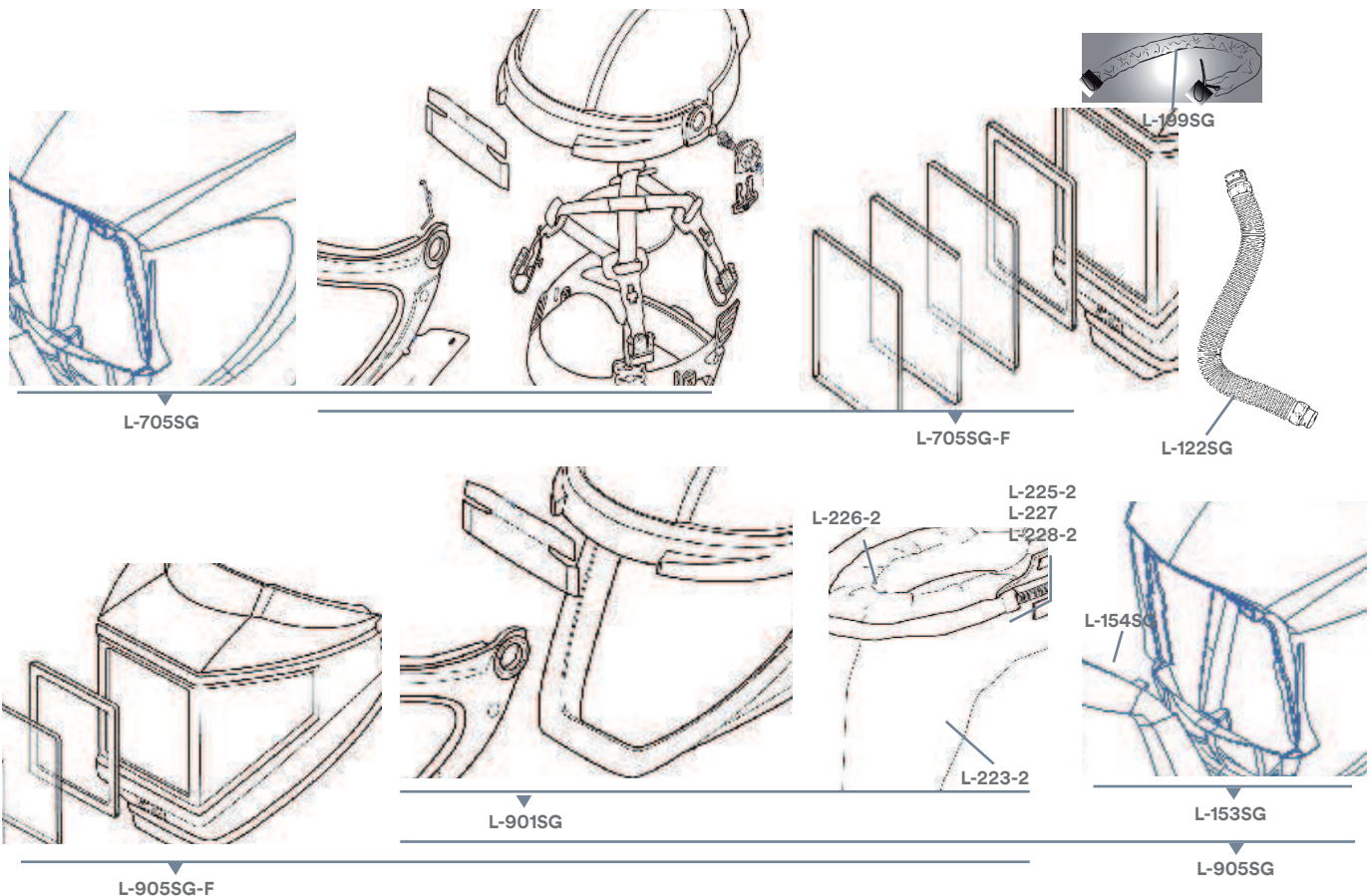
* Please use Part No 14-0099-SW or 15-1699-32SW to replace the side windows.



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



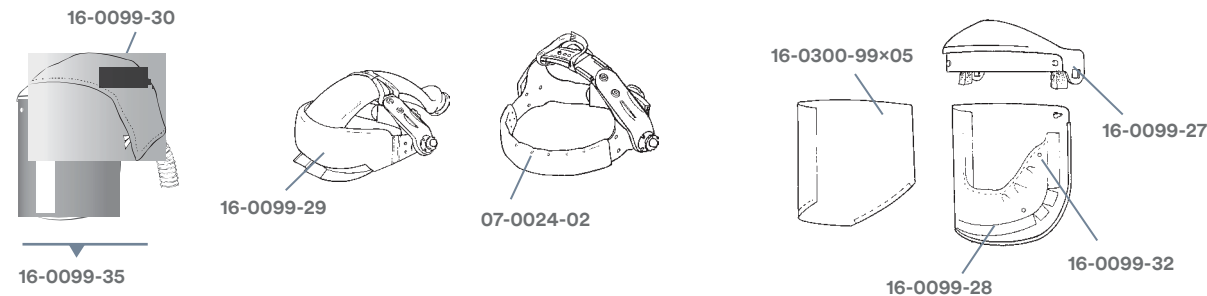
Part No	Description	Part No	Description	Part No	Description
34-0705-SGV	Hard Hat L-705SG wideview faceshield with Speedglas welding filter 9100V and Adflo PAPR with HE filter	34-0705-SGXX	Hard Hat L-705SG wideview faceshield with Speedglas welding filter 9100XX and Adflo PAPR with HE filter	34-0905-SGX	Helmet L-905SG wideview faceshield with Speedglas welding filter 9100X and Adflo PAPR with HE filter
34-0705-SGX	Hard Hat L-705SG wideview faceshield with Speedglas welding filter 9100X and Adflo PAPR with HE filter	34-0905-SGV	Helmet L-905SG wideview faceshield with Speedglas welding filter 9100V and Adflo PAPR with HE filter	34-0905-SGXX	Helmet L-905SG wideview faceshield with Speedglas welding filter 9100XX and Adflo PAPR with HE filter



Accessories and consumables

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

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



Part No	Description	Part No	Description	Part No	Description
07-0024-02	Sweatband, fleece, 2/case	16-0099-30	Headcover, FR cotton	16-0099-35	ClearVisor polycarbonate
16-0099-27	Brow guard	16-0099-32	Clear window with fasteners and face seal, without brow guard	16-0300-99x05	Clear window strip off shielding film, 5/case
16-0099-28	Face seal				
16-0099-29	Face seal and headband assembly with air duct				



Care and Maintenance

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



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

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

Technical Data 3M™ Speedglas™ Welding Helmets and

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



	3M™ Speedglas™ Welding Helmet 9100 MP				3M™ Speedglas™ Welding Helmets 9100 FX and 9100 FX-Air			
3M™ Speedglas™ Welding Filter Options	9100XXi Filter	9100XX Filter	9100X Filter	9100V Filter	9100XXi 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)								
Viewing area (welding filter)	2.8 × 4.2 in. (72×107 mm)	2.8 × 4.2 in. (72×107 mm)	2.1 × 4.2 in. (54×107 mm)	1.8 × 3.7 in. (45×93 mm)	2.8 × 4.2 in. (72×107 mm)	2.8 × 4.2 in. (72×107 mm)	2.1 × 4.2 in. (54×107 mm)	1.8 × 3.7 in. (45×93 mm)
Battery lifetime	1800 hours	2 000 hours	2 500 hours	2 800 hours	1800 hours	2000 hours	2500 hours	2800 hours
Solar cell	No		Yes		No		Yes	
Hard hat options	Yes				Yes (non-air version)			
Classification (per EN 379)*	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	Yes	No			Yes	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			
Side windows option	Yes				Yes			
Exhaust vents	N/A				Yes (non-air version)			
Number of sensors (arc detection)	3				3			
Approvals Head, Eye and Face protection Welding helmet and filter, protection plates Hard Hat	ANSI Z87.1 - 2010 ANSI Z89.1-2009 -Type 1, Class G				ANSI Z87.1 - 2010 N/A			
Approval Respiratory Protection Adflo powered air purifying respirator Fresh-air III supplied air valve	APF 25 APF 25				with Speedglas welding helmet 9100 FX-Air APF 25 APF 25			

* Auto-darkening welding filters have a four-part classification: optical class / diffusion of light / variation on luminous transmittance / angle dependence. Classifications range from 1 (best) to 4 (worst).

** The ratings (good - better - best) above refer to the products listed in this chart and should be seen as general recommendations based on differences in product comfort and fit.

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

Technical Specifications	3M™ Adflo™ Powered Air Purifying Respirator	3M™ Speedglas™ Fresh-air III Supplied Air Regulator
Filters / Cartridges	HE particle filter OV/AG cartridge	N/A
Airflow	7 CFM (200 l/min)	6-15 CFM
Air Pressure Air Quality	N/A N/A	Varies with hose length. See product user instructions. V-100/200: 62–91 psig V-300: 30–63 psig
Weight (approx.) PAPR (with belt and HE filter) / Valve (without pad or belt)	2.6 lbs	V-100: 12.3 oz V-200: 14.8 oz V-300: 9.5 oz
Battery Charging time Operating hours*	NiMH Less than 4 hours 5–6 hours (OV/AG cartridge + HE filter) 8-10 hours (HE filter)	N/A
Belt Optional extension	Leather, 30–45 in. +26 in.	Cotton, up to 53 in.
Temperature range Operation Storage	23°F to 131°F -4°F to 131°F	23°F to 131°F -4°F to 131°F
* Run times are with new, fully-charged batteries and new filters /cartridges.		

Technical Specifications of 3M™ Faceshields and Helmets

Technical Specifications	3M™ Versaflo™ Faceshield M-107	3M™ Versaflo™ Helmet M-207	3M™ Versaflo™ Helmet M-307	3M™ Versaflo™ Helmet M-407
Material Visor Faceseal	Polycarbonate Polyester	Polycarbonate Polyester	Polycarbonate Polyester	Polycarbonate Polyaramid
Approval Eye and Face protection Protective Visor (M-927) Protective Visor (M-925)	ANSI Z87.1-2010 ANSI Z87.1-2010	ANSI Z87.1-2010 ANSI Z87.1-2010	ANSI Z87.1-2010 ANSI Z87.1-2010	ANSI Z87.1-2010 ANSI Z87.1-2010
Approval Head protection Helmet	N/A	EN 397	EN 397	EN 397
Approval Respiratory Protection Adflo powered air respirator Fresh-air III supplied air valve	APF 25 APF 25	APF 25 APF 25	APF 25 APF 25	APF 25 APF 25

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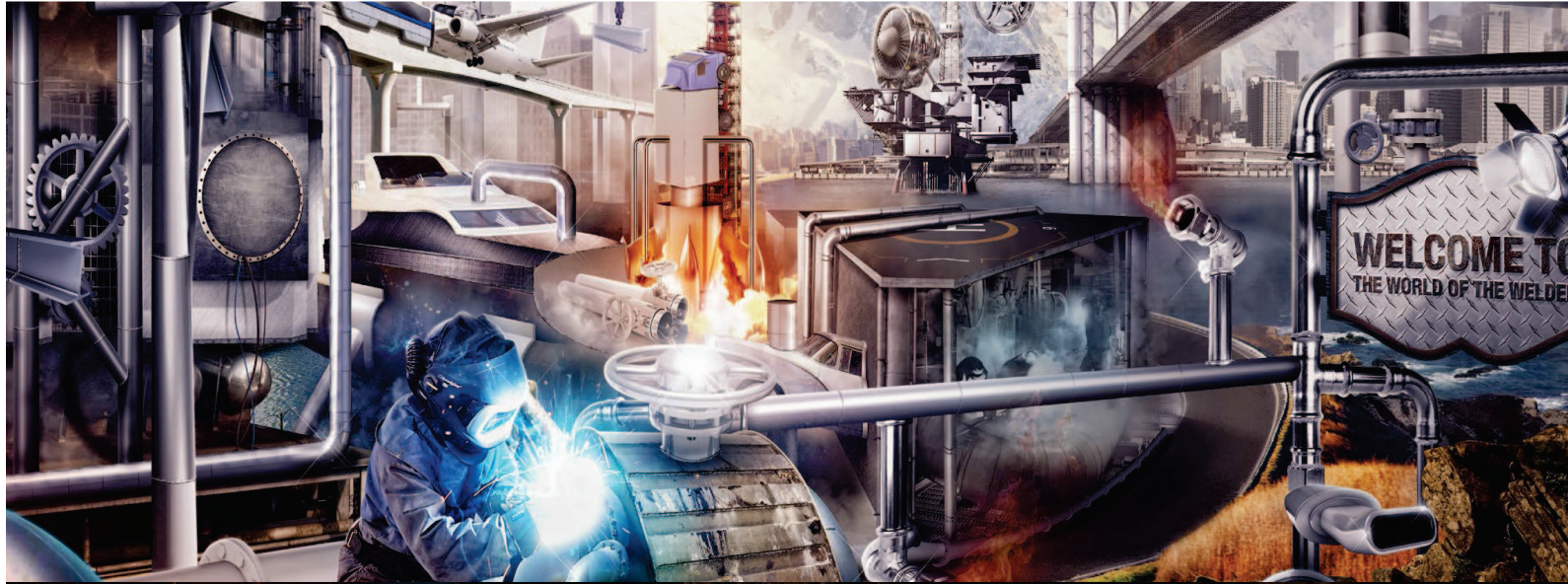
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⚠WARNING

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 proper use, see supervisor, or User Instructions or call 3M OH&ESD 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. Misuse may result in sickness or death. For proper use, see User Instructions, supervisor, or call 3M OH&ESD Technical Service in USA at 1-800-243-4630 and in Canada at 1-800-267-4414.

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Personal Safety Division

3M Welding

3M Center, Building 235-2W-70

St. Paul, MN 55144-1000

USA

Phone 1-800-328-1667

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