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MSA

The Safety Company

MSA-U® Online Training Center

MSA-U offers over 120 free online programs that cover MSA products, MSA product technologies, general industry safety standards, and more. Our comprehensive training materials are updated regularly and are available in a variety of formats, including videos, interactive animations, slide presentations, and podcasts.

it's all about U

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- MSA product training videos & presentations.
- White papers, application solutions, & safety industry standards.
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- Learn at your own pace.
- Track your progress.
- Receive a Certificate of Completion for each course passed.

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MSA-U empowers you to:

- Create study groups.
- Develop your group's curriculum.
- Invite other students to join your group.
- Request customized content for your group.
- Review progress reports for your group's students.*

Register Today!

Visit http://msau.msanet.com.

Questions?

E-mail msau@msanet.com for help.

*Base functionality (individual testing and tracking) is FREE. Fees are applicable to the following additional features:
- Group-specific training: $49/course/year
- Group-specific testing: $29/test/year
- Group-specific record-keeping: $19/person/year

Questions or Comments?
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Table of Contents

95+ Years of Products, Service and Expertise

MSA offers more than safety

Promoting Protection is Part of our History

Mine Safety Appliances Company was founded in 1914 by two mining engineers who designed or improved safety, rescue and protective gear. MSA has continued to help protect people from hazards great and small, and today helps protect millions of workers in many industries worldwide. MSA has sold gas masks for military use since World War I. We have always understood the demands placed on crucial protective equipment in extremely hazardous conditions. MSA historically and steadfastly has helped first responders before, during, and after emergencies, from small house fires to multiple explosions at chemical plants, from hazardous materials spills to hurricanes.

MSA makes and markets respiratory protection, gas-and-flame-detection instruments, head, eye, face, and hearing protection, fire and police helmets, fall protection, thermal imaging cameras, ballistic protection, and mining, emergency, and specialty equipment via a national network of trained distributors, product specialists and knowledgeable contacts. MSA has been a global company for decades, protecting millions of people around the world. What have we done for YOU lately?

MSA Offers More than Safety on the Job

Great Products

MSA began making high-quality safety products in 1914. Technology enhances our innovation in product development, with computer-aided design and the latest rapid prototyping capability.. MSA responds quickly as your needs change. Within most product groups is a wide selection of models, sizes, colors, materials, options, accessories and prices. Many components of MSA products are formulated, machined, tooled or molded in-house from raw materials, allowing for greater manufacturing control as well as quality assurance. MSA processes are certified as meeting ISO 9001-2000 quality assurance requirements of the International Standard Organization (ISO).

Great Plans for the Future

MSA continues to enhance our operations and expand/ improve our product lines by acquiring companies and/or new capabilities to better serve our customers. In 2002, MSA began manufacturing specialized helmets for military and law-enforcement use, and in 2004 added passive and electronic hearing protection. In 2005, MSA created a new ballistic protection product line, offering ballistic vests to protect law enforcement and military personnel.

Great People and Resources

Your personalized MSA service starts with a trained MSA-authorized distributor near you and the largest team of field representatives in the safety industry. They understand your hazards and the regulations with which you must comply, and will help to analyze your safety requirements and recommend solutions. MSA-authorized distributors are knowledgeable, well-trained and proficient at providing the services you need and also can assist in training your in-house trainer. Training your employees properly in the use, care and maintenance of our products is easy with MSA University, our on-line application for 24/7 training. See pages 189–190 for a partial list of available programs. New programs are being added regularly.

MSA's website includes on-line product information offering the basics of most products in this printed catalog, plus links to PDF versions of printed literature and other materials that you can print yourself. Go to **www.MSAnet.com.** To send us an e-mail message, use **info@MSAnet.com**.

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Customer Service

Award-Winning Customer Service

Every customer wants it. Every good business has it.

Our multiple-award-winning Customer Service Center (CSC) proves that MSA strives for continuous improvement in customer satisfaction. Every year brings positive changes: better-trained representatives with more advanced computer programs, resulting in improved service and faster solutions. Each Customer Service Rep's computer workstation can simultaneously handle a variety of applications, and an automated call distributor monitors and routes call flow to ensure peak performance. The CSC continues to look for ways to improve our relationship with customers via input from sales personnel and field customers themselves. We're aiming for TOTAL customer satisfaction!

Ask us the name of your nearest authorized MSA distributor, who can:
- Place your orders
- Obtain prices and quotes
- Provide product information and technical assistance
- Check delivery and expedite shipments
- Order catalogs and product literature
- Obtain return authorizations

Great International Sales

MSA's international sales capabilities start with MSA Sales Representatives who assist in choosing the right products for your applications and local approvals. Our extensive network of distributors, representatives and MSA-affiliate companies covers most major cities worldwide. Highly-trained international customer service representatives guide your export orders from placement to delivery. MSA uses all major air and ocean freight forwarders and courier services due to their ability to consolidate multiple orders and minimize freight expenses. Our CSRs understand international inspections, certifications, licensing and other customs issues necessary for successful importation.

To contact MSA International or to find the MSA affiliate company or distributor nearest you, please contact MSA International:

Toll-free in the U.S.:	1-800-MSA-7777
Outside the U.S.:	(+1) 724-776-8626
FAX:	(+1) 724-741-1553
Email:	International@MSAnet.com

To reach our Customer Service Center:

Toll-free:	1-800-MSA-2222
	1-800-MSA-5555 (after-hours emergencies)
FAX:	1-800-967-0398
MSA Voice Mail System:	1-800-759-6423
Mailing Address:	Customer Service Center
	MSA Corporate Center
	1000 Cranberry Woods Dr.
	Cranberry Twp, PA 16066

At MSA, we are connected to our customers

New Yorkers use a lot of water, about a billion gallons a day. It's piped into the city through tunnels from reservoirs in upstate New York. Construction of a new tunnel began in 1970, eleven years before Jason Jonker was born.

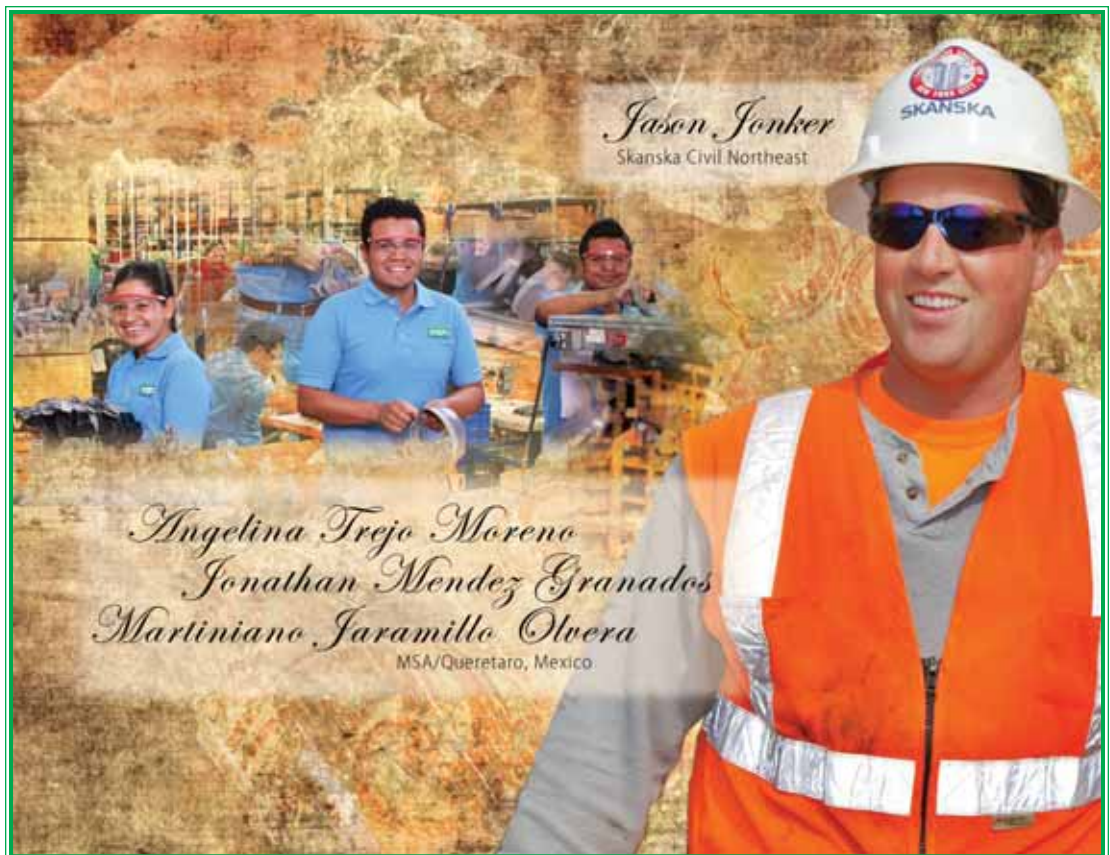Thanks to his V-Gard® Protective Cap there's a good chance he'll be around when it's done in 2013.

Jason is helping Skanska, a global civil contractor, build the Croton Water Filtration plant in the Bronx. When it's finished, it will process about 20% of New York City's water supply.

While stripping concrete forms from a newly poured floor, a worker on a scissor lift bumped an unsecured Z-beam.

The 50-pound beam fell and struck the back of Jason's helmet.

"He needed a few stitches," said Michael Caterina, Skanska's Site Safety Manager, "but the hard hat absorbed much of the blunt force, lessening the severity of the injury."

Skanska has one of the best safety records in the world. Angelina, Jonathon, and Martiniano make suspensions that help industrial helmets absorb impact forces.

Jason Jonker
Skanska Civil Northeast

**Angelina Trejo Moreno
Jonathan Mendez Granados
Martiniano Jaramillo Olvera**
MSA/Queretaro, Mexico

Juan Zamora (left) and Stephanie Green didn't think of themselves as detectives until Zamora found a diamond and ruby ring in an OptimAir® TL Powered Respirator hood box. He and Green set in motion a cross-country investigation that ended happily in MSA/Jacksonville.

Zamora suspected that the ring must have come from MSA's factory in North Carolina. He gave the ring to Green for safekeeping. Green gave it to Plant Management, who gave it to the Respiratory Protection Program Manager, who gave it to MSA's Paul Steiger.

The ring belonged to Naida Drews and was a gift from her sister. Naida hadn't seen it since December when it must have slipped off her finger as she sealed boxes.

Returning the ring had special significance. A group from Hanford visited Jacksonville a few months earlier to discuss ways to improve the OptimAir TL PAPR.

They got to know the MSA associates who make the products they rely on every day.

"It became much more meaningful to them to try to find the owner of the ring," said Mary Faulkner, Quality Manager at MSA Jacksonville, "they actually met many of the associates who worked on the OptimaAir PAPR production line—so it became more personal to them."

**Juan Zamora
Stephanie Green**
Nuclear Chemical Operators
CH2M Hill Plateau Remediation Co.
Hanford, Washington

Naida Drews
Hood Assembler
MSA/Jacksonville

Pete Engelbert
President, Job Safety Associates, LLC

Zane Frund, PhD
Manager of Material Science and Chemical Research
MSA/Headquarters

When it comes to worker safety, Pete Engelbert describes himself as ". . .a fairly detailed person."

When someone asked OSHA if stickers were allowed on protective helmets, OSHA's response was missing an important detail, one that Pete needed to help keep his customers safe.

According to OSHA, stickers were allowed if their adhesive didn't affect the helmet's shell.

But which adhesives were safe? The OSHA letter didn't say. Only the manufacturer knew that.

Or did they? Annette Ryan, MSA Customer Service, searched the product information and came up empty. She forwarded Pete's question to Eric Buzard, MSA Customer Development Manager, who promised an answer within a week.

Eric had similar results and that week turned into nearly a month.

Finally, Zane Frund, PhD., Materials Science Product Engineering Manager, provided the details Pete needed.

"He gave me exact, plain English wording that answered my question," recalled Pete. He added with a chuckle, "To date no other hardhat manufacturer answered that question."

Pete's loyalty to MSA didn't begin with this episode. To learn more about how a Skullgard® Helmet helped kick off his career see *Spotlight on Safety*, Volume 12, Issue 2.
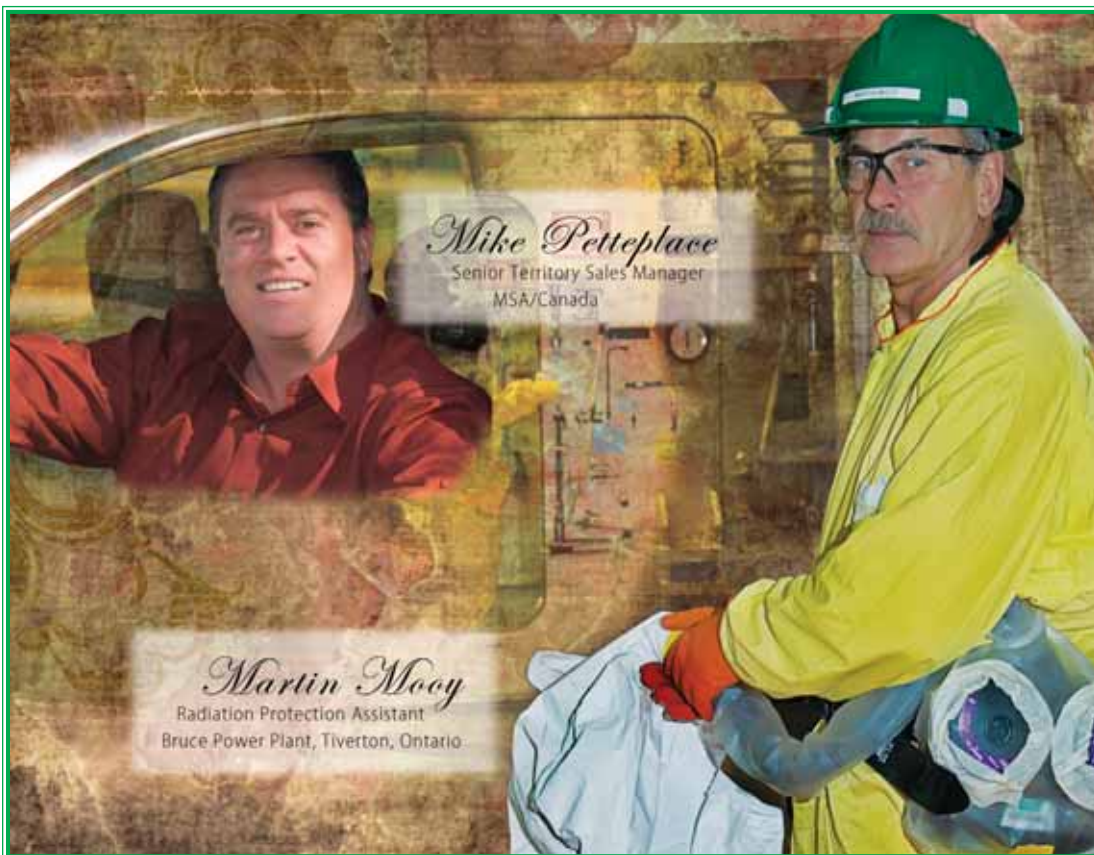
Mike Petteplace
Senior Territory Sales Manager
MSA/Canada

Martin Mooy
Radiation Protection Assistant
Bruce Power Plant, Tiverton, Ontario

Martin Mooy is working to provide energy for a new generation.

The two Bruce Power reactors he is helping to refurbish will provide 1,500 megawatts of clean electricity to power consumers in Ontario for another 25 years and beyond.

As a husband, father and grandfather, Martin knows the importance of working safely and protecting himself from hazards.

Some radioactive particles cannot penetrate skin or even pass through a sheet of paper, but they can be carcinogenic if inhaled or ingested.

That's why sales manager Mike Petteplace recommends the OptimAir® TL Powered Respirator.

"We plan our jobs to keep the radiation dose as low as reasonably achievable," explains Martin. "Personal protective equipment is an important factor in making sure we don't exceed company or regulatory limits for safe exposure."

Mike's dad worked at the Bruce Power plant during original construction in the early 1970s. He's now retired but still talks about it. . . when he's not on the golf course.

All MSA respirators are NIOSH certified

About Respirators

Types of Respirators

Respirators fall under two classifications: **air-purifying** and **air-supplied**.

Air-purifying respirators are used against particulates, gases, and vapors. These are categorized as negative-pressure respirators that use chemical cartridges and/or filters; gas masks; and positive-pressure units such as powered air-purifying respirators (PAPRs). Air-supplied devices rely on a primary air source to deliver a steady flow of respirable air to the user's facepiece. These consist of Self-Contained Breathing Apparatus (SCBA) and air-line devices.

MSA **Air-Purifying Respirators (APRs)** range from low-maintenance half-mask facepieces with cartridges and/or filters to the more complex PAPRs with full- facepieces, or hoods.

- APRs for particulates use filters to capture dusts, mists, and fumes. Filters do not protect against gases or vapors, and generally become less effective as particles accumulate on the filter and plug spaces between the fibers. Filtering APRs require filter replacement when the user finds it difficult to breathe through them.

- Gas and vapor APRs employ chemical cartridges or canisters to remove hazardous gases or vapors from the air. They do not protect against airborne particles. Made to protect against specific gases or vapors, they provide protection only as long as the cartridge's absorbing capacity is not depleted.

The service life of a chemical cartridge depends upon many factors and can be estimated in various ways. Cartridges and canisters require an end-of-service-life indicator (ESLI) or a change schedule, based on objective information or data that will ensure that canisters and cartridges are changed before the end of their useful life. You can access the MSA Cartridge Life Calculator on our website (MSAnet.com). Click Resources, then Tools, then Cartridge Life Calculator.

- Combination APRs, fitted with both particulate filters and gas/vapor cartridges, are worn in atmospheres that contain hazards of both particulates and gases.

Supplied-Air Respirators (SARs), comprise air-line respirators, SCBA, and combination (supplied-air) respirators.

- Air-Line Respirators are used for extended periods in non-IDLH atmospheres. They use an air-line hose to deliver clean breathing air from a stationary source of compressed air for prolonged periods of time. Although comparatively lightweight, air-line respirators can limit users' mobility because of the air-line hose that must be attached.

- Self-Contained Breathing Apparatus (SCBA) have an open-circuit design that provides air rated for 30 to 60 minutes. They consist of a wearable, clean-air supply and a tight-fitting facepiece, and are used for short duration entrance or escape from atmospheres that are or may be IDLH. They offer relatively unrestricted movement.

- Combination SARs are air-line devices used for extended work periods in atmospheres that are or may be IDLH. They have an auxiliary self-contained air cylinder that can be used if the primary air supply fails. The air cylinder can also be used for entry into or escape from IDLH atmospheres, such as confined spaces.

Respirator Selection

All respirators in use must be NIOSH-approved (NIOSH 42 CFR Part 84). Selecting respirators entails knowing what level of respiratory protection employees need, as well as which size respirator is right for any face and facial contours.

Respiratory protective devices vary in design, application, and protective capability. Thus, the user must assess the inhalation hazard and understand the specific use limitations of available equipment to assure proper selection.

If your calculation shows that exposure concentrations exceed recommended limits and engineering/administrative controls do not reduce exposure below the permissible limit, tailor your respiratory protection program to your specific conditions based on:

- Toxicity (TLV or TWA)
- Maximum Expected Concentration
- Oxygen level
- IDLH concentration
- Warning properties (adequate or not)
- Sorbent limitations
- Facepiece fit
- Mobility requirements
- Type of use (routine, escape, or emergency entry)
- OSHA-assigned protection factor of respirator

Questions or Comments?
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Half-Mask Respirators

Completely Latex-Free!

Advantage® 420 Half-Mask Respirator

The innovative Advantage 420 Respirator, the latest addition to MSA's Advantage Respirator family, offers users exceptional comfort and sophisticated design. The Advantage 420 Respirator raises the bar for ease of use, as users can quickly adjust the mask according to their individual needs.

Top 5 reasons why you should purchase the Advantage 420

1. **Patent-pending one-piece UniBond over-mold facepiece** offers stability, comfort, and superior fit. The intelligent design eliminates multiple leak paths and with only three major components, the Advantage 420 significantly reduces the cost of ownership.

2. **AnthroCurve™ II face-seal** adapts perfectly to multi-ethnic head sizes and facial contours. The facepiece design is based upon the new proposed NIOSH fit test panel and provides users in many global regions with excellent fit, and superior comfort.

3. **Patent-pending yoke and harness design** enables quick and easy switch between lock-down and drop-down modes. Drop-down mode allows user to remove facepiece and rest it safely against the chest while maintaining use of head protection. Lock-down harness mode allows the user to lock in a personal fit; respirator can be donned without further adjustments.

4. **Low-profile design integrates extremely well with other personal protective equipment (PPE)**, such as hardhats, eyewear, goggles, and faceshields. Unique, one-piece ComforTop headband and harness assembly eliminates pressure points when head protection is worn.

5. **Comfort and adjustability** with our form-fitting neck buckles and wide straps that eliminate discomfort around the neck, and the adjustable crown strap which adapts to different head sizes.

3-Step Donning Process

Flexible, patent-pending, one-piece easy-don head harness assembly simplifies donning and doffing.

1

Place cradle on head

2

Place facepiece into position and lock down

3

Attach neck buckle

Advantage 420 Respirator

Description	Small	Medium	Large
Advantage 420 Assembly (includes facepiece, head cradle, elastic straps, buckle set, yoke with lever, two (2) inhalation valves, one (1) exhalation valve)	10102182	10102183	10102184

Advantage 420 Respirator Spare Parts and Accessories

10097807	Harness Assembly with Buckles (includes head cradle, elastic straps, and buckle set)
10097883	Maintenance Valve Set (includes one (1) exhalation valve and two (2) inhalation valves)
10097886	Advantage 420 Maintenance Kit (includes harness assembly with buckles, one (1) exhalation valve, and two (2) inhalation valves)
10097810	Yoke with lever
10097881	Lever, package of 5
10097888	Inhalation valve, package of 10
10097891	Exhalation valve, package of 10
10097884	Buckle set, package of 5
10097887	Storage poly bag
468730	Vinyl storage bag with belt loops
809999	Advantage Adapter for threaded cartridges, package of 2
10009971	MSA Confidence Plus Germicidal Cleaner (32 oz.)
697383	Cleaning Towelettes (individually wrapped), package of 100
697444	Bitrex Qualitative Fit-Test Kit
10056424	Advantage Quantitative Fit Test Adapter
10097899	Instruction Manual, CD format

For more information, please see bulletin 1012-36-MC/July 2009.

Half-Mask Respirators

Evolutionary AnthroCurve II Sealing Surface Face Seal

Compared to other half-mask respirators available on the market today, the Advantage 420 Respirator is designed to fit a much broader range of users who have unique facial features and dimensions. Through years of research and facial measurements of different ethnicities, the National Institute of Occupational Safety and Health (NIOSH) has developed a new fit test panel shown here. MSA is proud to say that the Advantage 420 face seal design is based upon this panel.

What it means to you is a higher degree of protection for a larger number of workers!

Face Width (mm)

Old NIOSH Fit Test Panel   New Proposed NIOSH Fit Test Panel
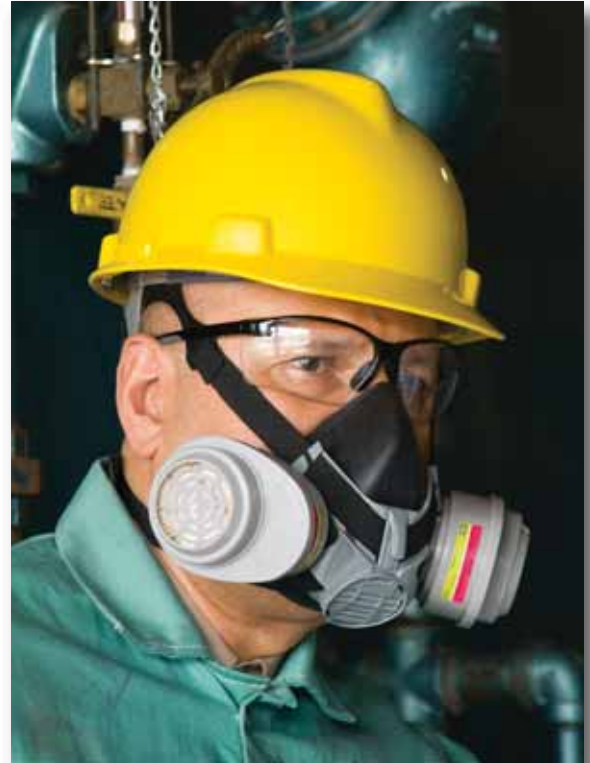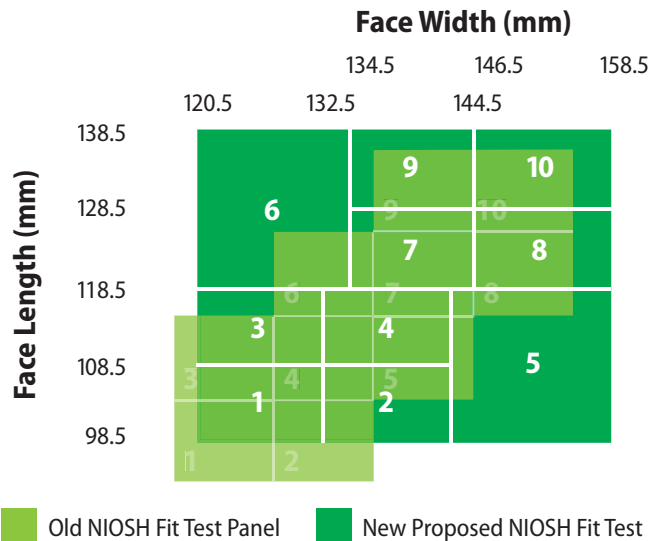
	Features	Benefits
Simplicity	Only three major components	Reduced cost of ownership (fewer parts, ease of maintenance)
	Patent-pending unique harness assembly	Three simple donning steps
	User-friendly drop-down harness option	Allows user to remove facepiece and rest it safely against chest while maintaining use of head protection
	Personal fit lock-down harness option	Provides user with option of locking in a size; respirator can be reused without further adjustments
Comfort	Curved neck buckles	Adds greater comfort and reduces neck abrasion
	Smooth design	ComforTop headband eliminates pressure points on head when head protection is worn
	Multi-ethnic faceseal based on proposed NIOSH fit test panel	Fits a broad range of facial shapes globally
	Wide comfortable straps	Minimizes twisting and retains shape after multiple washings
	Chin cup with built-in moisture release	Reduces slippage of facepiece in hot, humid conditions
	Latex-free	Eliminates latex-related allergic reaction
Safety	UniBond one-piece facepiece made of soft over-molded LIM silicone and rigid nylon	Eliminates multiple leak points and offers excellent stability on user's face
	Textured inner facepiece seal	Maintains secure facepiece fit and reduces slippage
	No loose or dangling straps after donning	Eliminates interference and provides greater visibility
	Indirect exhalation valve	Provides downward path of exhaled humid air; reduces fogging on faceshield lens
Flexibility	Innovative yoke and harness design	Enables quick and easy switch between lock-down and drop-down options
	Low-profile design	Integrates extremely well with other PPE, such as eyewear, goggles, head protection, and faceshields
	Adjustable ComforTop headband and three facepiece sizes	Provides precise adaptation to different head sizes and facial contours
	NIOSH-certified for use with both plastic Advantage bayonet and metal threaded cartridges	Allows respirator customization to meet user preferences

Half-Mask Respirators

Advantage 200 LS with P100 particulate filters

*Advantage 200 LS
with combination chemical cartridges*

Advantage 200 LS Respirator

The Advantage 200 LS Respirator's lighter and softer facepiece is made from a clear blue formulation of thermoplastic rubber to give workers more comfort and stability than ever.

Extensive anthropometric research led to the Advantage 200LS Respirator's unique design. MSA's engineers examined facial form data of over 8,000 people and, with CAD technology, developed the AnthroCurve™ Sealing Surface, which instantly conforms to each wearer's unique facial characteristics.

The unmatched fit and comfort start with a soft, pliable combination of rubber and plastic that provide a virtually customized fit. These are key components in the patented MultiFlex® System that equalizes pressure on the faceseal area, while delivering exceptional stability, so the respirator will not collapse during wear.

Advantage 200 LS (Facepieces only)

Description	2-Piece Neckstrap	Single Neckstrap
Advantage 200 LS, small	815696	815448
Advantage 200 LS, medium	815692	815444
Advantage 200 LS, large	815700	815452

Advantage 200 LS Facepiece with Cartridge

Description	OV-N95 Cartridge	Multigas R95 Cartridge
Advantage 200 LS, small	816943	816701
Advantage 200 LS, medium	816939	816697
Advantage 200 LS, large	816947	816705

See page 15 for bayonet-style filters and cartridges and page 16 for flexible pad-style filters.

For more information, see Bulletin 1012-10.

Comfo Classic® Respirator

The Comfo Classic Respirator features SoftFeel® facepiece material, which is an MSA-exclusive formulation that improves pliability and softness. Like earlier Comfo Respirator models, the Comfo Classic Respirator features a unique face seal design that gives wearers an exceptional fit.

Comfo Classic Facepieces

Material	Color	Small	Medium	Large
SoftFeel Hycar	Black	808075	808074	808076
SoftFeel silicone	Black	808072	808071	808073

See page 16 for threaded filters and cartridges.

Full-Facepiece Respirators

Advantage 3200 Respirator with rubber harness and chemical cartridges

Advantage 3200 Respirator with European-style harness

Advantage 3100 Respirator with rubber harness

Advantage® 3000 Series Respirators

The Advantage 3000 Full-Face Respirator features a wraparound lens combined with a soft, pliable silicone facepiece that provides a total solution to your air-purifying respirator needs.

Its fit technology is based on the proven faceseal of the Ultra Elite Facepiece, which was based on facial measurements from more than 8,000 people.

The Advantage 3200 Respirator uses Advantage cartridges and filters.

The Advantage 3000 Respirator enhances worker performance through a new design that allows even lower breathing resistance and includes a standard nosecup that reduces fogging in low temperatures or high humidity conditions.

In addition, the facepiece lens has a scratch resistant coating and has been engineered to be optically correct, giving you superior visibility and peripheral vision. The Advantage 3000 Respirator meets all performance requirements of ANSI Z87.1 (protective eye and face protection).

Donning the mask is made easier with pre-adjustable rubber straps. With the Advantage 3000 Respirator, you can set the position of the upper straps to receive a consistent fit, time after time. In addition, the preset upper straps prevent uncomfortable snags during donning and doffing, and also provide a tighter, more secure seal. Wearers also can choose the new European-style Advantage harness, which dons like a catcher's mask.

For more information, see Bulletin 1012-10.

Advantage 3200 Facepieces (Twin Port)

Description	Small	Medium	Large
Advantage 3200 Twin Port Respirator, w/rubber harness	10028996	10028995	10028997
Advantage 3200 Twin Port Respirator, w/Advantage European-style harness	10031340	10031309	10031341

See page 15 for bayonet-style filters and cartridges and page 16 for flexible pad-style filters.

Advantage 3100 Facepieces (Single Port)

Description	Small	Medium	Large
Advantage 3100 Single Port Respirator, w/rubber harness	10028999	10028998	10029000
Advantage 3100 Single Port Respirator, w/Advantage European-style harness	10031343	10031342	10031344

See page 15 for bayonet-style filters and cartridges and page 16 for flexible pad-style filters.

Full-Facepiece Respirators

Advantage 4200 Respirator with polyester net head harness and GMA/OV cartridges

polyester net head harness

Kevlar net head harness

rubber head harness

Advantage® 4000 Series Respirator

The new Advantage 4200 Twin Port Full-Face Respirator raises the performance of industrial full-facepiece respirators to a new level. Based on the Advantage 3000 Facepiece, the respirator features a wraparound lens combined with a soft, pliable Hycar or silicone facepiece that provides a total solution to your air-purifying needs.

Its fit technology is based on the proven face seal of the Ultra Elite Facepiece. The Advantage 4200 Respirator uses Advantage cartridges and filters.

In addition, the facepiece lens has scratch-resistant coating and has been engineered to be optically correct, giving you superior visibility and peripheral vision. The Advantage 4200 Respirator also meets the performance requirements of ANSI Z87.1.

The Advantage 4200 Respirator enhances worker performance through a new design that allows low breathing resistance and includes a standard nosecup that reduces fogging in low temperatures or high humidity conditions.

Options include spectacle kits for corrective lenses, cover lens and welders adapter.

Donning the mask is made easier with a comfortable net-type harness with a four-point adjustable suspension. Wearers also can choose pre-adjustable rubber straps.

Advantage 4200 Facepieces (Twin Port)

Description	Small	Medium	Large
Advantage 4200 Twin Port Respirator, w/**polyester net** head harness, Hycar	10083785	10083781	10083789
Advantage 4200 Twin Port Respirator, w/**rubber** head harness, Hycar	10083787	10083783	10083791
Advantage 4200 Twin Port Respirator, w/**Kevlar net** head harness, Hycar	10108570	10108568	10108572
Advantage 4200 Twin Port Respirator, w/**polyester net** head harness, silicone	10083784	10083760	10083788
Advantage 4200 Twin Port Respirator, w/**rubber** head harness, silicone	10083786	10083782	10083790
Advantage 4200 Twin Port Respirator, w/**Kevlar net** head harness, silicone	10108569	10108567	10108571

Note: See page 15 for bayonet-style filters and cartridges and page 16 for flexible pad-style filters.

Advantage 4100 Facepieces (Single Port)

Description	Small	Medium	Large
Advantage 4100 Single Port Respirator, w/**polyester net** head harness, Hycar	10083797	10083793	10083801
Advantage 4100 Single Port Respirator, w/**rubber** head harness, Hycar	10083799	10083795	10083803
Advantage 4100 Twin Port Respirator, w/**Kevlar net** head harness, Hycar	10108576	10108574	10108578
Advantage 4100 Single Port Respirator, w/**polyester net** head harness, silicone	10083796	10083792	10083800
Advantage 4100 Single Port Respirator, w/**rubber** head harness, silicone	10083798	10083794	10083802
Advantage 4100 Twin Port Respirator, w/**Kevlar net** head harness, silicone	10108575	10108573	10108577

Note: The 4100 can be converted for use with filter cartridges by adding the Twin-Cartridge Adapter Assembly P/N 10065328.

Welder's Adapter for Advantage 4200 Respirator

Welder's Accessories

Clip-On Welder's Adapter for Advantage 4200 Twin Port Facepiece; with cover lens, less filter plate	10077063

Full-Facepiece Respirators

Advantage 1000 Respirator with P100 particulate filters

Advantage® 1000 Respirators

The Advantage 1000 Full-Face Respirator features a wraparound flexible lens that offers excellent fit and comfort with increased vision. It weighs 40% less than conventional full-face respirators and uses the same cartridges as the Advantage Family Respirators. The Advantage 1000 Respirator is constructed of super-soft Hycar rubber that provides the feel and comfort of silicone but has better permeation resistance. The facepiece, which is available in three sizes, has a unique inturned lip seal that provides an exceptional seal against a wide range of facial contours. The Advantage 1000 facepiece also features a distinctive, flexible urethane lens that is integrally bonded to the facepiece, eliminating the need for rigid lens retainers that can cause unwanted pressure points.

Standard equipment includes a speaking diaphragm, for clear, short-range communications, and a nosecup, to reduce lens fogging in low temperatures or high-humidity conditions.

Advantage 1000 Facepieces

Description	Small	Medium	Large
Black, with speaking diaphragm and nosecup	805414	805408	805420

See page 15 for bayonet-style filters and cartridges and page 16 for flexible pad-style filters.

Ultra Twin Respirator with GMC cartridges

Ultra-Twin® Respirators

The Ultra-Twin Full-Facepiece Respirator has an inturned lip around the edge for a secure, comfortable seal against the face. A large chin cup makes it easy to position. Five suspension headstraps and roller buckles hold the facepiece in place while minimizing hair entanglement. The wide polycarbonate lens is coated to resist scratching and chemical attack. The lens is held in place by a two-piece lens ring which is color-coded to indicate the size of the facepiece. Uses the full line of threaded cartridges and filters.

Standard equipment includes a speaking diaphragm for clear, short-range communications and a nosecup, to reduce lens fogging in low temperatures or high-humidity conditions.

Ultra-Twin Facepieces

Material	Color	Small	Medium	Large
Hycar	Black	471298	471286	471310
Silicone	Black	480263	480259	480267

See page 16 for threaded filters and cartridges. See page 14 for accessories, and page 17 for fit test kits.

Ultra Elite Respirator with cartridge adapter and P100 particulate filters

Ultra Elite® Twin-Cartridge Respirators

The demand version of the Ultra Elite Facepiece from MSA can be used as a twin-cartridge air-purifying respirator for full-face respiratory protection. The unique lens design provides a high level of peripheral and downward vision. It is available in three sizes and has large adjustment tabs for easy donning and doffing. Choose one of two facepiece materials—SoftFeel® Hycar rubber or silicone—to enhance wearer comfort. A speaking diaphragm in front of the wearer's mouth improves communication so that speech is not blocked. A nosecup reduces lens fogging in low temperatures or high-humidity conditions.

Ultra Elite Facepiece with Twin-Cartridge Adapter

Material	Color	Small	Medium	Large
SoftFeel silicone	Black	10016755	10016756	10016757

Ultra Elite Facepiece less Twin-Cartridge Adapter

Material	Color	Small	Medium	Large
SoftFeel Hycar rubber	Black	493064	493020	493108
SoftFeel silicone	Black	493072	493028	493116

See page 16 for threaded filters and cartridges. See page 14 for accessories, and page 17 for fit test kits.

Note: Ultra Elite Facepieces must be fitted with a Twin-Cartridge Adapter (see p 14) to be used as a twin-cartridge respirator.

Questions or Comments?
www.facebook.com/MSATheSafetyCompany

Facepiece Accessories

Advantage 420 Accessories

Description	Part No.
Storage poly bag	10097887
Vinyl storage bag with belt loops	468730
Advantage Adapter for threaded cartridges, package of 2	809999
Advantage Quantitative Fit Test Adapter	10056424
Instruction Manual, CD Format	10097899

Advantage 200 LS Accessories

Description	Part No.
Advantage Adapter for threaded cartridges, package of 2	809999
Advantage Fit Test Adapter	10056424
Carrying pouch for half-mask respirators	468730

Comfo Classic Accessories

Description	Part No.
QuikChek II Fit-Test Adapter for Comfo Respirators	812022
QuikChek II Replacement Kit with 25 ft of sampling tubing and 25 connectors, clips, and suction cups	803196
Carrying pouch for half-mask respirators	468730

Advantage 3000 Series Accessories

Description	Part No.
Spectacle Kit for Advantage Respirators	10029298
Advantage Fit Test Adapter	10056424
Cover Lens , clear, box of 25	10031542
Cover Lens, smoke-tinted, box of 25	10031543
Black plastic carrying/storage case	D2056734

Advantage 4000 Series Accessories

Description	Part No.
Spectacle Kit for Advantage Respirators	10029298
Advantage Fit Test Adapter, for Advantage 4200 Facepieces	10056424
QuikChek III Fit Test Adapter for Advantage 4100 Facepieces*	805078
Cover Lens, clear, box of 25	10031542
Cover Lens, smoke-tinted, box of 25	10031543
Clip-On Welders Adapter for Advantage 4200 Twin Port Facepiece, with cover lens, less filter plate	10077063
Clip-On Welders Adapter for Advantage 4100 Single Port Facepiece, with cover lens, less filter plate	10065326
Black plastic carrying/storage case	D2056734

*Also requires RD40 Adapter P/N 10065330

Facepiece Accessories

Advantage 1000 Accessories

Description	Part No.
Advantage Fit Test Adapter	10056424
QuickChek Adapter	10006227
Advantage 1000 Cover Lens, clear, box of 25	813832
Clear Lens Shield for Advantage 1000, small	806463
Clear Lens Shield for Advantage 1000, medium/large	806462
Tinted Lens Shield for Advantage 1000, small	806465
Tinted Lens Shield for Advantage 1000, medium/large	806464
Nosecup, black, small	806468
Nosecup, black, medium	806466
Nosecup, black, large	806470
ESP II Communication System for Advantage 1000	10026265
Black plastic carrying/storage case	D2056734
Carrying pouch for Advantage 1000 Respirator, black	817040

Ultra-Twin/Ultravue Accessories

Description	Part No.
Spectacle Kit for Ultra-Twin/Ultravue	454819
QuikChek II Fit-Test Adapter for Ultra-Twin Respirator	812022
QuikChek II Replacement Kit with 25 ft of sampling tubing and 25 connectors, clips, and suction cups	803196
QuikChek IV Adapter for Ultravue/Ultra Elite facepieces with a 1/4-turn quick disconnect, comes with Type H cartridge	817446
Twin-Cartridge Adapter for Ultravue Facepieces	803622
Cover Lens, clear, box of 25	456975
Cover Lens, smoke-tinted, box of 25	480326
Nosecup, black, small	813138
Nosecup, black, medium	813139
Nosecup, black, large	813140
Black plastic carrying/storage case	D2056734

Ultra Elite Accessories

Description	Part No.
Spectacle Kit for Ultra Elite Respirator, side wire support	804638
Spectacle Kit for Ultra Elite Respirator, center support	493581
QuikChek III Fit-Test Adapter for Ultra Elite Respirators	805078
QuikChek IV Adapter for Ultravue/Ultra Elite facepieces with a 1/4-turn quick disconnect, comes with Type H cartridge	817446
Twin-Cartridge Adapter for Ultra Elite Facepieces	803622
Cover Lens, clear, box of 25	491500
Cover Lens, smoke-tinted, box of 25	805456
Black plastic carrying/storage case	D2056734

Bayonet-Style Respirator Cartridges

The Advantage line of particulate, chemical and combination cartridges is NIOSH-certified (to 42 CFR, Part 84) and provides lightweight, low-profile performance. Cartridges fit 200 LS and 420 Half-Mask, 1000, 3000 and 4000 Series Full-Facepiece Advantage Respirators.

MSA Cartridge Description	Re-Order Part Number	Color Coding	OV	CL	SD	CD	HC	HS*	AM	MA	FM	HF	MV	P100	R95	N95	See Notes below
Organic Vapor (GMA)	815355		✓														2,3
Organic Vapor w/N95 Prefilter (GMA)	815355 w/815394 or 816357		✓													✓	2,3
Organic Vapor w/R95 Prefilter (GMA)	815355 w/815397		✓												✓		2,3
Organic Vapor/P100 (GMA)	815362		✓											✓			2,3,4
Acid Gas (GMB)	815356			✓	✓	✓	✓	✓									2
Acid Gas w/N95 Prefilter (GMB)	815356 w/815394 or 816357			✓	✓	✓	✓	✓								✓	2
Acid Gas w/R95 Prefilter (GMB)	815356 w/815397			✓	✓	✓	✓	✓							✓		2
Acid Gas/P100 (GMB)	815363			✓	✓	✓	✓	✓						✓			2,4
Organic Vapor/Acid Gas (GMC)	815357		✓	✓	✓	✓	✓	✓									2,3
Organic Vapor/Acid Gas w/N95 Prefilter (GMC)	815357 w/815394 or 816357		✓	✓	✓	✓	✓	✓								✓	2,3
Organic Vapor/Acid Gas w/R95 Prefilter (GMC)	815357 w/815967		✓	✓	✓	✓	✓	✓							✓		2,3
Organic Vapor/Acid Gas/P100 (GMC)	815364		✓	✓	✓	✓	✓	✓						✓			2,3,4
Ammonia/Methylamine (GMD)	815358								✓	✓							2,3
Ammonia/Methylamine w/N95 Prefilter (GMD)	815358 w/815394 or 816357								✓	✓						✓	2,3
Ammonia/Methylamine w/R95 Prefilter (GMD)	815358 w/815397								✓	✓					✓		2,3
Ammonia/Methylamine/P100 (GMD)	815365								✓	✓				✓			2,3,4
Multigas (GME)	815359		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					2,3
Multigas w/ N95 Prefilter (GME)	815359 w/815394 or 816357		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓	2,3
Multigas w/R95 Prefilter (GME)	815359 w/815397		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓		2,3
Multigas/P100 (GME)	815366		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓			2,3,4
Iodine Vapor/P100 (GMI)	815641		✓											✓			2,4
Chlorine/Mecury Vapor (Mersorb)	815361			✓									✓				2,4
Chlorine/Mecury Vapor w/N95 Prefilter (Mersorb)	815361 w/815394 or 816357			✓									✓			✓	2,4
Chlorine/Mercury Vapor w/ R95 Prefilter (Mersorb)	815361 w/815397			✓									✓		✓		2,4
Chlorine/Mercury Vapor/P100 (Mersorb)	815368			✓									✓	✓			2,4
Low-Profile P100	815369													✓			1,4
N95 Snap-On Prefilter and Cover	815394 Pack of 10 816357 Box of 50 815392 Reusable Snap-On Cover, 2 in a Package																
R95 Snap-On Prefilter and Cover	815397 Box of 20 815401 Reusable Snap-On Cover, 2 in a Package																

Acid Gases column group spans: Chlorine, Sulfur Dioxide, Chlorine Dioxide, Hydrogen Chloride, Hydrogen Sulfide*

Filter Type & Efficiency — See **Definitions** below

WARNING

An appropriate cartridge change-out schedule must be developed by a qualified professional, unless the cartridge/canister utilizes an end-of-service-life indicator. The change-out schedule must take into account all factors that may influence respiratory protection including specific work practices and other conditions unique to the worker's environment. If using against substances having poor warning properties, there is no secondary means of knowing when to replace the cartridges/canister. In such cases, take appropriate additional precautions to prevent overexposure, which may include a more conservative change-out schedule or using an air-supplied respirator or SCBA. Failure to follow this warning can result in serious personal injury or death. As a reference, below is a partial list of substances having poor warning properties:

Acrolein	Hydrogen cyanide	Nitric acid	Phosphorus trichloride
Aniline	Hydrogen selenide	Nitro compounds	Stibine
Arsine	Methanol	Nitrogen oxides	Sulfur chloride
Bromine	Methyl bromide	Nitroglycerin	Urethane or other diisocyanate-containing paints
Carbon monoxide	Methyl chloride	Nitromethane	
Diisocyanates	Methylene chloride	Phosgene	Vinyl chloride
Dimethyl sulfate	Nickel carbonyl	Phosphine	

Definitions

N95-Particulate Filter (95% filter efficiency level) effective against particulate aerosols free of oil; time use restrictions may apply.

R95-Particulate Filter (95% filter efficiency level) effective against all particulate aerosols; time use restrictions may apply.

P100-Particulate Filter (99.97% filter efficiency level) effective against all particulate aerosols.

* *Escape only.*
** *Effective against, but not NIOSH-approved for Iodine Vapor.*

Notes

1. Do not use in atmospheres containing less than 19.5 percent oxygen, in atmospheres containing gases or vapors or in atmospheres immediately dangerous to life and health.
2. Do not use in atmospheres containing less than 19.5 percent oxygen, or in atmospheres immediately dangerous to life and health.
3. Do not wear for protection against organic vapors with poor warning properties or those which generate high heats of reaction with the sorbent material in the cartridge.
4. 99.97 percent efficient against 0.3 micron DOP.

MSA

Threaded Respirator Cartridges

The Comfo line of particulate, chemical and combination cartridges is NIOSH-certified (to 42 CFR, Part 84). Cartridges fit Comfo Classic, Ultra-Twin, Ultra Elite Twin-Cartridge and Duo-Twin Respirators, and certain half-mask and full-face Advantage Respirators with Adapter (P/N 809999).

MSA Cartridge Description	Re-Order Part Number	Color Coding	OV	CL	SD	CD	HC	HS*	AM	MA	FM	HF	MV	P100	R95	N95	See Notes on p. 15
Organic Vapor (GMA)	464031 (10 in pkg.)	black	✓											✓ with R95	✓	✓ with N95	2,3
Organic Vapor/P100 (GMA)	815178 (6 in pkg.)	black/magenta	✓											✓			2,3,4
Organic Vapor/P100 Short Stack (GMA)	815186 (6 in box)	black/magenta	✓											✓			2,3,4
Acid Gas (GMB)	464032 (10 in box)			✓	✓	✓	✓	✓						✓ with R95		✓ with N95	2
Acid Gas/P100 (GMB)	815179 (6 in box)	magenta		✓	✓	✓	✓	✓						✓			2,4
Organic Vapor/Acid Gas (GMC)	464046 (10 in pkg.)	orange	✓	✓	✓	✓	✓	✓						✓ with R95		✓ with N95	2,3
Organic Vapor/Acid Gas/P100 (GMC)	815180 (6 in box)	orange/magenta	✓	✓	✓	✓	✓	✓						✓			2,3,4
Organic Vapor/Acid Gas/P100 Short Stack (GMC)	815188 (6 in box)	orange/magenta	✓	✓	✓	✓	✓	✓						✓			2,3,4
Ammonia/Methylamine (GMD)	464033 (10 in box)	green							✓	✓				✓ with R95		✓ with N95	2,3
Ammonia/Methylamine/P100 (GMD)	815181 (6 in box)	green/magenta							✓	✓				✓			2,3,4
Multigas (GME)	492790 (10 in box)	olive	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓ with R95		✓ with N95	2,3
Multigas/P100 (GME)	815182 (6 in box)	magenta/olive	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓			2,3,4
Iodine Vapor/P100 (GMI)	815184 (6 in box)	magenta/black	✓											✓			2,4
Chlorine/Mecury Vapor (Mersorb)	466204 (10 in box)	olive zigzag		✓									✓	✓ with R95		✓ with N95	2,4
Chlorine/Mercury Vapor/P100 (Mersorb)	815185 (6 in box)	olive zigzag		✓									✓	✓			2,4
P100	815175 (10 in box)	magenta												✓			1,4
Sparkfoe® P100	815176 (10 in box)	magenta hatch												✓			1,4
Low-Profile P100	815177 (10 in box)	magenta												✓			1,4
Stand-alone and cover *N95 and covers required for Comfo Respirators*	816662 N95 (10 in pkg.) 816661 N95 (50 in box) 489353 Reusable snap-on cover (1 in pkg.; 2 req.)	gray														✓	1
Prefilter and Cover N95	816662 N95 (10 in pkg.) 816661 N95 (50 in pkg.) 489353 Reusable snap-on cover (1 in pkg.; 2 req.)	gray														✓	1
Prefilter and Cover R95	816287 R95 (20 in box) 489219 R95 Reusable snap-on cover (1 in pkg.; 2 req.)	gray													✓		1

Acid Gases = Chlorine, Sulfur Dioxide, Chlorine Dioxide, Hydrogen Chloride, Hydrogen Sulfide*

Filter Type & Efficiency — See **Definitions** on previous page

* Escape only.   ** Effective against, but not NIOSH-approved for Iodine Vapor.   Note: See **WARNING** on previous page.

Flexi-Filter® Pads for Advantage Respirators

These low-profile, flexible pads fit well under a welding hood and with other personal protective equipment. They offer great balance and weight distribution for maintaining a good face seal, while their swept-back design provides improved vision and comfort.

Filter Type & Efficiency — See **Definitions** on previous page

MSA Filter Description	Part No.	Color Coding	P100	P95	N95	Notes
Flexi-Filter P100	818342	magenta	✓			1,4
Flexi-Filter P100 w/Nuisance Level OV, Ozone Removal	818343	magenta	✓			1,4
Flexi-Filter P100 w/Nuisance Level AG, HF Removal	818344	magenta	✓			1,4
Flexi-Filter N95	818346	black			✓	1
Flexi-Filter N95 w/Nuisance Level OV Removal	818347	black			✓	1
Flexi-Filter P95	818354	black		✓		1
Flexi-Filter P95 w/Nuisance Level OV Removal	818355	black		✓		1

Threaded Respirator Cartridges for Ultra Filter Respirators

MSA Cartridge Description	Part No.
Round Ultra Filter Cartridge, box 6	10010420
Round Ultra Filter Cartridge, box 50	10010421

Qualitative Fit-Test Kits and Other Accessories

Facepiece Fit-Test Kits

The Occupational Safety and Health Administration (OSHA) requires fit tests to ensure proper fit for workers who use respirators. Quantitative testing methods rely on objective data to determine a proper fit. Qualitative fit-test methods are subjective in nature and rely on the judgment of the test subject.

Bitrex Qualitative Fit-Test Kit

Bitrex QLFT Kit	697444
Replacement Fit-Test Solution	697446
Sensitivity Solution	697445
Replacement Hood	697448
"Using the Qualitative Fit-Test Kit" DVD	697449

Saccharin Qualitative Fit-Test Kit

Saccharin QLFT Kit	697287
Replacement Sensitivity Test Solution	697285
Replacement Fit-Test Solution	697286
Replacement Hood	697448
"Using the Qualitative Fit Test Kit" DVD	697449

Banana Oil Qualitative Fit-Test Kit

MSA's Banana Oil Fit-Test Kit relies on a test subject's ability to detect a 95% pure solution of Isoamyl Acetate (banana oil).

Qualitative Fit-Test Kit	801628
Qualitative Fit-Test Kit, in rugged Pelican case	801629

MSA Confidence Plus® Germicidal Cleaner

Mix with warm water for a germicidal cleaner that is effective against various micro-organisms including immunodeficiency virus Type 1 (HIV-1, associated with AIDS). EPA-approved for use on safety equipment.

Personal Safety Equipment Towelettes

Provides an excellent method for wiping and refreshing respirators, hardhats, and other safety equipment between full cleaning periods.

Cleaning Accessories

Canister with 220 towelettes, 4-1/4" x 6"	697382
Box of 100 individually wrapped towelettes, 7-1/4" x 5"	697383
"The Big Ones," Box of 50 individually wrapped towelettes, 8" x 11"	10022871
MSA Confidence Plus Germicidal Cleaner, 32 oz. bottle	10009971

Advantage Technical Support CD

Instant information about MSA's Advantage 200 LS and 3000 Respirators

Free!

- Single source for care & use information, instruction manuals, fit-testing forms, parts lists and cartridge information
- Enhances your use of MSA's lighter, softer half-mask and optically correct, comfortable full-face respirators

- Convenient, immediate, paperless retrieval
- Easy-to-use, interactive format
- Multi-lingual English/Spanish
- Call MSA Customer Service for your **FREE** copy!

Powered Air-Purifing Respirators (PAPRs)

OptimAir Mask-Mounted PAPR Assembly with Advantage 4100 Facepiece

OptimAir® Mask-Mounted PAPR with Type HE OptiFilter® XL Filter

The OptimAir Mask-Mounted Powered Air-Purifying Respirator (PAPR) is designed for abatement, nuclear, lead and other hazardous particulate environments. The PAPR filters particulates from ambient air and provides a constant flow of respirable air to the Advantage 3100, 4100, Ultravue or Ultra Elite Facepiece. The mask-mounted motor/blower with HEPA filter has a low profile design that enhances user maneuverability and simplifies decontamination.

The PAPR includes a small, lightweight, water-resistant nickel metal hydride (NiMH) battery pack that will operate for eight hours of continuous use. Weighing only 12.5 oz., it measures only 3"x 5"x 1". The low-profile unit fits close to the wearer's body. The sealed battery pack is water-resistant for easy shower decontamination. Another advantage: NiMH batteries do not have the "memory effect" associated with NiCad batteries. The standard Dual-Rate Battery Charger will recharge a fully discharged battery in less than three hours. Metal connectors on cable ends provide a durable and secure fit to the battery and blower housing. NIOSH approved as mask-mounted PAPR and also approved as a negative-pressure APR for egress.

Complete OptimAir Mask-Mounted PAPR Assemblies (with facepiece)

All assemblies include: motor/blower, NiMH battery, dual-rate battery charger, cable, one Type HE OptiFilter XL Cartridge, belt, and choice of Advantage 3100 or 4100 Facepiece.

	Advantage 3100 PAPR		
Head Harness	**Small**	**Medium**	**Large**
with rubber head harness	10095181	10095182	10095183
with Advantage head harness	10095184	10095185	10095186
	Advantage 4100 PAPR		
Material	**Small**	**Medium**	**Large**
Black Silicone, with rubber harness	10095193	10095189	10095197
Black Hycar, with rubber harness	10095194	10095190	10095198
Black Silicone, with polyester net harness	10095191	10095187	10095195
Black Hycar, with polyester net harness	10095192	10095188	10095196

OptimAir Mask-Mounted PAPR Upgrade Kit (less facepiece)

Upgrade Kit includes: motor/blower module, NiMH battery, dual-rate battery charger, cable, one Type HE OptiFilter Cartridge, and belt. Use your present facepiece or order facepiece separately from ordering chart below.

OptimAir Mask-Mounted Upgrade Kit	10095166

Replacement Facepieces

	Advantage 3100		
Description	**Small**	**Medium**	**Large**
with rubber head harness	10028999	10028998	10029000
with Advantage head harness	10031343	10031342	10031344
	Advantage 4100*		
Description	**Small**	**Medium**	**Large**
Black Silicone, with polyester net head harness	10083796	10083792	10083800
Black Hycar, with polyester net head harness	10083797	10083793	10083801

*Also requires RD40 Adapter P/N 10065330

OptiFilter Cartridges for OptimAir Mask-Mounted PAPR

MSA Purifying Element	Purifying Protection Code	Color Code	No. in Box	Part No.
OptiFilter XL, Type HE	HE		20	10042346
OptiFilter XL, Type HE	HE		6	496081

Parts and Accessories

10095162	Battery pack assembly, packaged
10095163	Motor/blower assembly, without cable, packaged
10095164	Cable assembly, packaged
10095165	Charger, packaged
487995	Flow check device
491046	Adapter for flow check device

Battery pack   *Charger*

Powered Air-Purifing Respirators (PAPRs)

OptimAir® TL PAPR

The OptimAir TL PAPR is NIOSH-certified with loose-fitting hoods and a variety of full facepieces to protect against particulates, toxic gases and vapors, or a combination. "Smart" features set flow rates automatically through built-in sensors. Unit offers audible and visual alarms for added worker safety. Audible alarms travel up the breathing tube close to the user's ear.

MSA's OptimAir TL PAPR incorporates a sleek, low-profile design for user comfort never before offered in a PAPR. All components including the motor blower, cartridges and battery are packaged in a single hip-hugging housing. Improved motor blower electronics allow for optimum air flow and filter resistance while the compact and ergonomic battery pack affords lightweight comfort and fit. Flow control sensors are activated by insertion of the cartridges and breathing hose to the blower housing. The unit automatically adjusts for altitude via an internal pressure switch.

Superior design features permit fast, accurate changeout of cartridges, hoods and batteries. Slim, curved PAPR housing helps to minimize fatigue and permits work in tight confined areas. OptimAir TL PAPR kits include motor blower, smart charger, battery, decon belt, and hose.

NOTE: cartridges and other accessories on next page.

NIOSH-Approved

Available with variety of full facepieces and hood materials, styles and configurations including DuPont Tychem SL and QC with single and double bib. A choice of hose connection is also available. Unit has an APF of 1,000 (Assigned Protection Factor) when used with hood or facepiece.

Smart Design Features
- Crush proof breathing tube
- Automatic setting of flow rates
- Audible and visual alarms for low flow indication and low battery voltage
- Less bulk and better weight distribution improves worker efficiency
- Every cartridge has its own sealing gasket

Cartridges and Accessory Options
- P100
- Acid gas/organic vapor plus P100
- Acid gas/ammonia/formaldehyde plus 100
- Comfort waist belt
- Extended life battery
- Shoulder strap

OptimAir TL PAPR with Advantage 4100 Facepiece

OptimAir TL Kits

Kits Include: Motor Blower, Battery, Smart Charger, Breathing Tube and Decon Belt

	with standard battery	with Long Life battery
for Facepieces	10081114	10081115
for Hoods	10081116	10081117

Facepiece Accessories

10065330	RD-40 Inlet assembly, required for all Advantage 4100 facepieces
10049630	Hose for facepiece
10087129	Flow check device for facepiece only

White Hood for OptimAir TL PAPR

Facepieces Only

Advantage 3100 Facepieces Only (Single Port)

Silicone	Small	Medium	Large
Rubber head harness	10028999	10028998	10029000
Advantage head harness	10031343	10031342	10031344

Advantage 4100 Facepieces Only* (Single Port)

Silicone	Small	Medium	Large
Polyester net head harness	10083796	10083792	10083800
Rubber head harness	10083798	10083794	10083802
Kevlar net head harness	10108575	10108573	10108577
Hycar	**Small**	**Medium**	**Large**
Polyester net head harness	10083797	10083793	10083801
Rubber head harness	10083799	10083795	10083803
Kevlar net head harness	10108576	10108574	10108578

Ultra Elite Facepieces

Silicone	Small	Medium	Large
Rubber head harness	493072	493028	493116
Hycar	**Small**	**Medium**	**Large**
Rubber head harness	493064	493020	493108

*Also requires RD40 Adapter P/N 10065330

OptimAir TL Accessories

OptimAir TL Hoods

	Tychem® QC (polyethylene-coated Tyvek)	Tychem® SL (saranex-coated Tyvek)
Single Bib		
4-pack, threaded connector, with suspension	10083329	10083381
20-pack, threaded connector, less suspension	10095739 (white) 10095748 (yellow)	10095741
4-pack, standard, with suspension	10083383	10083385
20-pack, standard, less suspension	10095740	10095742
Double Bib		
4-pack, threaded connector, with suspension	10083330	10083382
20-pack, threaded connector, less suspension	10095743 (white) 10095749 (yellow)	10095745
4-pack, standard, with suspension	10083384	10083386
20-pack, standard, less suspension	10095744	10095746

Note: all hoods are white except where noted.

Hood Suspensions

10103864	20-pack
10078469	1 each

Hoods for use with the OptimAir 6A PAPR

10095747	Single-bib, 20-pack, 6A connector, with suspension
10084820	Single-bib, 4-pack, 6A connector, with suspension

Hood Accessories

10083843	Hose clamp for standard hood, 6-pack
10049631	Hood hose
10082281	Hood hose, extended length
10078469	Suspension only, for Tyvek hood
10083618	Sweatband for hood suspension, 10-pack
10082441	Cover lens for hood, 10-pack
10087130	Flow check device for hood only
10089665	Fastener kit, hood to V-Gard helmet
10082281	Extended length hose

Cartridges

10080455	P100 cartridge (6-pack)
10080454	OV/AG P100 cartridge (6-pack)
10080456	AG, AM, FM, P100 cartridge (6-pack)
10068152	Spark Guard cartridge cover (single unit) (2 req.)

Battery and Charger

10076108	Standard battery for OptimAir TL PAPR
10076110	Standard battery charger for OptimAir TL PAPR
10076109	Long-life battery for OptimAir TL PAPR
10076107	Long-life battery charger for OptimAir TL PAPR

Decon Accessories

10075799	Decon cover for OptimAir TL PAPR, 5-pack, natural
10087152	Decon cover for OptimAir TL PAPR, 5-pack, yellow
10091958	Decon cover for OptimAir TL PAPR, urethane, .12 ml thick, 5-pack, yellow
10078201	Decon belt (backpack buckle)
10074725	Decon belt (cam lock buckle)

Miscellaneous Accessories

10085084	"O" Ring replacement, hose hood, 10-pack
10049623	Comfort belt
10081414	Cartridge receptacle cover
10059112	Shoulder strap for OptimAir TL
10088150	Blower unit only

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Other Accessories

Welder's Adapter for Ultra Elite Facepiece

Kevlar Welder's Hood

Welder's Adapter for Full-Facepiece Respirators

MSA Welder's Adapters are molded of polycarbonate plastic, which has high resistance to impact, heat, and welding splatter. The clip-on adapter attaches to the facepiece by molded-in clips. The integral adapter is attached by removing the facepiece lens and replacing it with the adapter. A large vision area—4-1/2" x 5-1/4"—provides an unobstructed view of work. The Welder's Adapter is supplied with an impact-resistant cover lens; the desired filter plate is ordered separately. Rayfoe™ Filter Plates are available in four standard shades—6, 10, 12, 14.

The heat-resistant Welder's Hood is designed to protect the welder's head, neck, and shoulders from welding splatter and sparks. The Kevlar hood has a rubber seal which fits snugly over the Welder's Adapter. The hood also helps protect cartridges when an air-purifying respirator is used in welding operations.

Welder's Accessories

Clip-On Welder's Adapter for Ultravue and Ultra Twin Facepiece; with cover lens, less filter plate	472859
Clip-On Welder's Adapter for Ultra Elite Facepiece; with cover lens, less filter plate	806482
Clip-On Welder's Adapter for Advantage 4200 Twin Port Facepiece; with cover lens, less filter plate	10077063
Clip-On Welder's Adapter for Advantage 4100 Single Port Facepiece; with cover lens, less filter plate	10065326
Rayfoe Filter Plate, shade 10, heat-treated, 4-1/2 x 5-1/4	38347
Rayfoe Filter Plate, shade 12, heat-treated, 4-1/2 x 5-1/4	38277
Cover Lens	696095
Welder's Hood, Kevlar	486328

Online Response® Respirator Selector

Available on the internet at www.MSAnet.com/response

- Helps identify the proper respirator you need
- Has broadest range of respiratory protective devices available
- Recommends respirators for more than 700 chemical hazards
- Has nearly 3,000 chemical synonyms
- Lists up to 27 categories of respirators, with MUCs
- Is generic in nature

Cartridge Life Expectancy Calculator

Available on the internet at www.MSAnet.com/msanorthamerica

Drag your mouse onto Resources, then Tools, then Cartridge Life Calculator

MSA's interactive web pages help users determine the life expectancy of specific respirator cartridges in various hazardous situations. This information provides guidance for how long a cartridge should be used before it must be replaced.

MSA-U®, MSA's premier online training center, offers a wide range of training and informational materials. Register today at http://msau.msanet.com

Chin-Type Gas Masks

Advantage 4000 Facepiece
(with canister)

Advantage 3100 Facepiece
(with canister)

Ultravue Facepiece
(with canister)

Ultra Elite Facepiece
(with canister)

The Chin-Type Gas Mask is a protective system consisting of a full facepiece and canister. The small, round plastic canister attaches directly to the facepiece. The system is designed to permit downward head movement.

The Chin-Type Gas Mask is designed for respiratory protection against a specific gas or group of gases as indicated by canister identification. See the canister table for specific canister approvals. From a practical standpoint, gas masks are generally suitable for ventilated areas with relatively stable contaminant concentration levels. They should never be used in confined spaces or where oxygen deficiency and high gaseous concentrations may occur. Gas masks may also be used for escape only from atmospheres in which the contaminant concentration does not exceed the maximum use condition of the gas mask.

Facepieces

Whether you choose the Advantage 4000, Advantage 3100, Ultravue or Ultra Elite facepiece, all four are available in three sizes to accommodate a wide range of users. The Advantage 3100 facepiece has a silicone rubber facepiece, while the Advantage 4000, Ultravue and Ultra Elite facepieces are available in a choice of silicone or Hycar rubber. All have a scratch-resistant polycarbonate lens that provides a wide field of vision. Optional lens cover accessories provide even greater scratch resistance. All three facepieces feature a nosecup that helps reduce lens fogging in low temperature conditions or in high-humidity conditions.

Belt-Mounted Version

The belt-mounted version of the Chin-Type Gas Mask allows the wearer to mount the chin-style canister on a support belt. This shifts the weight of the canister to the hip, providing greater comfort for some wearers. The belt-mounted version is also recommended for welding or grinding operations, as the canister can be positioned away from sparks or molten metal. An optional spark cover is available to protect canister from spark damage. The additional parts needed are listed on page 23. See page 21 for Welders Adapters, lenses and protective hood.

Gas Mask Facepieces

Material	Advantage 4100 Facepiece (also requires RD40 Canister Adapter P/N 10065330)		
	Small	Medium	Large
Black silicone, with polyester net head harness	10083796	10083792	10083800
Black Hycar, with polyester net head harness	10083797	10083793	10083801

Harness	Advantage 3100 Single-Port Respirator Facepiece		
	Small	Medium	Large
with Rubber Harness	10028999	10028998	10029000
with Advantage Harness	10031343	10031342	10031344

Material	Ultravue Facepiece			Ultra Elite Facepiece		
	Small	Medium	Large	Small	Medium	Large
Black Silicone	480251	480247	480255	493072	493028	493116
Black Hycar	471218	457126	471230	493064	493020	493108

Replacement Canisters for Chin-Type Gas Masks

MSA Canister Identification	Purifying Protection Code	Color Coding	Approval	Maximum Use Conditions		Gas/Vapors	Part No.
				% Volume	PPM		
Phosphine/Ammonia/Chlorine/P100	PH/AM/CL		TC-14G-0274	0.50% 0.15%	5000 1500	Ammonia and Chlorine Phosphine	10059903*
Organic Vapor/P100	OV		TC-14G-0279	0.50%	5000	Organic Vapors, also effective against organic iodides and iodide vapors	10067469*
Hydrogen Fluoride/Chlorine/P100	HF/CL		TC-14G-0280	0.10%	1000 5000	Hydrogen Fluoride Chlorine	10067491*
Formaldehyde Acid Gas/Chlorine Dioxide/Escape from Hydrogen Sulfide/P100	FM/AG/CD/HS		TC-14G-0282	0.05% 0.50% 0.10%	500 5000 1000	Formaldehyde Acid Gases and Hydrogen Sulfide Chlorine Dioxide	10067470*

* Canister contains a P100-Particulate Filter (99.97% filter efficiency level) against all particulate aerosols.

Storage Cases for Chin-Type Gas Mask

MSA Canister Identification: Phosphine/Ammonia/Chlorine/P100	10075204
MSA Canister Identification: Organic Vapor/P100	10075207
MSA Canister Identification: Hydrogen Fluoride/P100	10075205
MSA Canister Identification: Formaldehyde Acid Gas/Chlorine Dioxide/Escape from Hydrogen Sulfide/P100	10075206
Wall bracket	10071231

Additional Parts for Belt-Mounting

Belt Clip	10068195
Breathing Tube	10068129
PVC Belt	473902
Web Support Belt, uncoated	9961
Polyurethane-coated Nylon Support Belt	492827
Spark Cover	10068152

Respirators for Riot Control

The Millennium Riot Control Mask and the Advantage 1000 Riot Control Mask are NIOSH-approved for protection against CN and CS Riot Control Agents, and P100 particulate efficiency level.

Millennium® Riot Control Gas Mask

A Hycar version of the reliable military-style gas mask (MCU-2/P Mask, used by the U.S. Air Force in Desert Storm) that combines high performance, customized fit, comfort, and cost efficiency.

- Flexible, 1-piece polyurethane lens with wide field of vision is bonded to durable Hycar rubber facepiece
- Dual-canister mount (NATO 40mm thread) allows weapon sighting from either shoulder
- Drinking tube provides connection for fluid ingestion in contaminated atmospheres
- Fully elastic, 6-point head harness promotes easy on/off, easy adjustment, no hair pulling

- Internal nosecup with 2 check valves deflects air from the lens, reduces fogging
- Standard mechanical speaking diaphragm included, or add MSA's optional ESP® II Communications System
- NIOSH -approved (No. TC-14G-0254) for protection against chloroacetophenone (CN), chlorobenzylidene (CS), P100 particulate efficiency level, and particulates

Millennium Riot Control Mask

With nosecup, drinking tube, and clear polycarbonate outsert. Order canisters separately.

Small	10051286
Medium	10051287
Large	10051288

Millennium Riot Control Canisters

Millennium RC Canisters, box of 6	818264

Advantage® 1000 Riot Control Gas Mask

A clean, simplified respirator with Hycar facepiece (based on a proven facepiece design developed for the U.S. Armed Forces) that's up to 40% lighter than conventional full-face respirators and gives high performance, customized fit, comfort, economy, and user acceptance.

- Flexible, 1-piece polyurethane lens with wide field of vision is bonded to durable Hycar rubber facepiece
- Dual-canister mount (bayonet mount) allows weapon sighting from either shoulder
- Fully elastic, 6-point head harness promotes easy on/off, easy adjustment, no hair pulling
- Standard nosecup helps eliminate lens fogging

- Standard mechanical speaking diaphragm included, or add MSA's optional ESP II Communications System
- NIOSH-approved (No. TC-14G-0235) for protection against chloroacetophenone (CN), chlorobenzylidene (CS), P100 particulate efficiency level, and particulates

Advantage 1000 Riot Control Gas Mask

Complete with canister, nosecup, and identification tag.

Small	813860
Medium	813859
Large	813861

Advantage 1000 Riot Control Canisters

Advantage 1000 RC Canisters, box of 6	817590

Millennium and Advantage Accessories

Lens Outsert

Polycarbonate lens outsert snaps into place over Millennium or Advantage 1000 facepiece lens, providing additional impact protection. Tinted outsert helps conceal identity (suitable only when sufficient light exists).

	For Millennium Facepiece		For Advantage 1000 Facepiece	
	Small	Medium/Large	Small	Medium/Large
Clear lens outsert	10008907	10008906	806463	806462
Tinted lens outsert	10008909	10008908	806465	806464

ESP® II Communications System

The ESP II Communications System, a 1-piece, self-contained, electronic speech projection device, allows wearers to speak normally, yet be heard loud and clear.

ESP Communications System for Millennium and Advantage 1000 Facepieces (less battery)	10026265

Other Accessories

Gas Mask Pouch, Military Style	10034184
Black Nylon Bag	817040
Advantage 1000/Millennium Spectacle Kit	816137

Questions or Comments?
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Respirators for Homeland Security

Millennium® CBRN Gas Mask

The NIOSH government CBRN standard for full-facepiece gas masks was issued on March 7, 2003. After extensive testing to that standard, MSA's Millennium CBRN Gas Mask was first to receive NIOSH certification as "compliant against CBRN". A Hycar version of the reliable military-style gas mask (MCU-2/P Mask, used by U.S. Air Force in Desert Storm) that combines high performance, customized fit, comfort and cost efficiency.

- Flexible, 1-piece polyurethane lens with wide field of vision is bonded to durable Hycar rubber facepiece.
- Dual-canister mount allows weapon sighting from either shoulder
- Drinking tube provides connection for fluid ingestion in contaminated atmospheres
- Fully elastic, 6-point head harness promotes easy on/off and adjustment, with no hair pulling
- Internal nose cup with 2 check valves, deflects air from the lens, reduces fogging

- CBRN canister containing a P100 filter to remove aerosols, radionuclides, and solid particulates, and an impregnated activated carbon bed to adsorb (filter out) gases and vapors.
- Standard mechanical speaking diaphragm included, or add MSA's optional ESP II Communications System
- NIOSH-approved (No. TC-14G-0270) for protection at a CBRN Cap 1 rating

Millennium CBRN Mask

With nosecup, drinking tube, and clear polycarbonate outsert. Order canisters separately.

Small	10051286
Medium	10051287
Large	10051288

Millennium CBRN Canisters

Millennium CBRN Canister	10046570

For Millennium Gas Mask accessories, see p. 24.

Ultra Elite® CBRN Gas Mask

Safety
- Super-soft black Hycar rubber exceeds the CBRN permeation requirements
- Large lens with 83% unimpeded vision
- Centrally located inlet port for secure, comfortable fit and feel
- Centrally located mechanical speaking diaphragm for clear communications
- Optional ClearCommand® Amplifier for increased communication capabilities

Simplicity
- Available with a 5-point rubber or SpeeD-ON head harness
- Identical sealing surfaces for both SCBA and Gas Mask facepieces—eliminating the need for redundant fit testing
- Simplified respiratory protection training program

Reliability
- The Ultra Elite facepiece is fire-service proven, with over a decade of trusted use
- MSA has been making gas masks since World War I
- Largest supplier of gas masks to the law enforcement market

Ultra Elite CBRN Gas Mask

Size	with rubber Head Harness	with SpeeD-On Head Harness
Small	10052776	10052780
Medium	10052781	10052779
Large	10052778	10052777

Canisters & Cartridges

MSA CBRN Canister	10046570

Responder™ CBRN PAPR (Powered Air-Purifying Respirator)

A belt-mounted powered air-purifying respirator with choice of 2 proven tight-fitting facepieces in 3 sizes. The motor/blower provides constant air flow of a minimum 115 lpm to the facepiece via the breathing tube. Can be used with CBRN cartridge or with the OptiFilter XL or PAPR GME Multigas HE cartridge for tactical operations.

- Protects wearers for up to 8 hours under many hazardous conditions
- First CBRN-approved PAPR with a tight-fitting facepiece

- Choice of 2 proven positive-pressure facepieces, the MSA Millennium and the MSA Ultra Elite

- Choice of CBRN cartridge or multi-gas / particulate chemical cartridges for non-CBRN use

MSA's Responder CBRN PAPR system is ideal for military and special operations personnel who need non-IDLH respiratory protection for an extended period of time.

Industry trusted, with over 50,000 units fielded in various U.S. military programs, the C420 Motor-Blower is ideal for filtering contaminants from ambient air and providing a constant airflow of at least 115 lpm to the user's facepiece, providing a twenty times greater OSHA assigned protection factor than APR.

The Responder CBRN PAPR is available with 2 batteries that have the ability to be "hot-swapped" during warm environment use. The Lithium-Sulfur Dioxide mission battery has an 8 hour run-time. The Nickel Metal Hydride rechargeable battery has a 4 hour run-time. The motor / blower will not interfere with radio communications as it is EMI shielded to MIL-STD-461C.

The Responder CBRN PAPR comes complete with the motor-blower, belt, airflow indicator and breathing tube.

Responder CBRN PAPR Complete Systems

You must choose Responder CBRN PAPR Kit, facepiece, and cartridge for complete system.

Responder CBRN PAPR Kits (less facepiece and cartridge)

Part No.	Description
B-60141-030	Responder CBRN PAPR Kit with 30" Breathing Tube, LiSO$_2$ Battery
B-60141-036	Responder CBRN PAPR Kit with 36" Breathing Tube, LiSO$_2$ Battery
B-60170-030	Responder CBRN PAPR Kit with 30" Breathing Tube, NiMH Battery
B-60170-036	Responder CBRN PAPR Kit with 36" Breathing Tube, NiMH Battery

Gas Mask Facepieces with Head Harness (less cartridge)

Facepiece	Material	Head Harness	Size		
			Small	Medium	Large
Millennium	Hycar	6-point elastic	10051286	10051287	10051288
Ultra Elite	Hycar	rubber	10052776	10052781	10052778
Ultra Elite	Hycar	SpeeD-ON	10052780	10052779	10052777

Cartridges

Part No.	Description
10046570	CBRN Canister, each
496081	OptiFilter XL cartridge, 6 pack
10072237	PAPR GME Multigas HE cartridge, each

Accessories for Responder CBRN PAPR

Part No.	Description
B-20040-001	NiMH Rechargeable Kit (2 NiMH Batteries, Charger & Cap)
S-20036	NiMH Rechargeable Battery Pack
B-20090-001	NiMH Rapid Battery Charger
M-20020	LiSO$_2$ Mission Battery
B-30060-001	NiMH Rechargeable Battery Cap Assembly
S-30019	Web Belt Assembly
B-10079-001	PAPR Carrying Case

About the CBRN PAPR Standard

NIOSH released a CBRN standard for powered air-purifying respirators (PAPRs) in October 2006. NIOSH conducted product testing and issued approvals to MSA's Responder CBRN PAPR, which was the first PAPR to pass the NIOSH requirements.

Safe Escape™ CBRN 15-minute Escape Respirator

NIOSH CBRN Certified!

Safe Escape Respirator in Hextreme Case

When escaping from CBRN agents, every second counts. Depend on the Safe Escape Hood from MSA. The hood gives your employees the protection they need to escape from a terrorist situation safely, quickly and easily — whether they work in high-profile office environments, for government agencies or embassies, or as law enforcement or first responders. The MSA Safe Escape Hood is the equipment of choice for today's diverse workforce.

Engineered for Maximum Performance

Manufactured with a high-performance laminate material, the hood is designed to provide you with the latest in head and neck coverage with respiratory protection against CBRN agents. The soft, high-stretch rubber neck seal conforms to irregular neck contours, allowing a secure fit on a wide variety of users. Its unique sized nosecup helps reduce lens fogging and carbon dioxide buildup by directing airflow inside the hood.

The Safe Escape Hood canister features a high-efficiency particulate filter and activated carbon to combat aerosols, gasses and vapors. In fact, the canister used in the hood contains 50% more carbon than similar canisters used by the U.S. military.

Designed for Comfort

In addition to designing the hood for maximum protection, MSA also took into account the comfort factor. A user who is potentially under stress requires ease of donning and use. The large lens and translucent hood allow better visibility, face recognition and help reduce claustrophobia. The nose cup allows communication superior to that of conventional devices, which require wearers to breathe through a mouth bit. With the integrated nose cup, wearers can breathe and speak normally to provide potentially life-saving communications. The hood also features cradle-type self-adjusting head straps that allow for quick, no assistance donning in the event of an emergency.

Carrying the Safe Escape Respirator

Safe Escape Respirator

Safe Escape Respirator in Hextreme Case, Standard	
Universal SIze	10073702
Safe Escape Respirator in Hextreme Case, Tactical Version	
Universal SIze	10073923
Trainer Version of Safe Escape Respirator	
Universal SIze	10073703
Accessories	
Safe Escape Respirator Sizing Kit	10066681
Optional carrying straps and harness kit	10068310
DVD Training video for Safe Escape Respirator	10068013

Note: The only difference between the standard and tactical versions is the outside labeling on Hextreme Case.

A Guide to Air-Line Systems

Description

Type C Supplied-Air Respirators, more commonly referred to as air-line respirators, are designed to provide long-duration respiratory protection.

They generally consist of a full-facepiece or half-mask facepiece connected by an air-supply hose to an air source (either a compressor or bank of large air cylinders). When connected to the air source, the respirator delivers a supply of respirable air to the user.

Accessory equipment, such as pressure regulators, pressure relief valves, carbon monoxide monitors and filters for air compressors, may be necessary to ensure that the air is at the proper pressure and quality for breathing. Air quality must be Quality Verification Level Grade D or better as defined in ANSI Standard Z-86.1-1973 (Compressed Gas Association Specification G-7.1 Commodity Specification for Air).

Current air-line systems fall into two categories: **Pressure-Demand** and **Constant Flow**. The difference between the two is how the air is supplied.

Pressure-demand systems deliver air only when the user necessitates it. Thus, pressure-demand devices afford greater breathing efficiency.

In contrast, with a constant flow device, air flow to the respirator is continuous. However, because the air flow is continuous, constant flow air-line systems are generally used only with a compressor for a virtually unlimited air supply.

Type C Supplied-Air Respirators are approved by the National Institute for Occupational Safety and Health (NIOSH) for use in atmospheres not immediately dangerous to life and health (IDLH) or from which the wearer can escape without wearing the respirator.

"Not immediately dangerous to life and health" means any hazardous atmosphere which may produce physical discomfort immediately, chronic poisoning after repeated exposure, or acute adverse physiological symptoms after prolonged exposure. (42 CFR, Part 84 subpart A, 84.2(x)).

This limitation is necessary because the air-line respirator depends entirely on an air supply not carried by the wearer. Therefore, if the air hose were severed or crimped, or the air compressor failed, the air supply to the wearer would be shut off. The wearer would be without respiratory protection and might not be able to safely escape from an IDLH atmosphere.

Another limitation of air-line respirators is that the air-supply hose limits the wearer to a fixed distance from the air source. As an air-line respirator user, it is your responsibility to supply the respirator with breathable air—Grade D or better. The following pages show complete hook-ups of various air-line systems, both pressure-demand and constant flow, from the air source to the respirator. The following information is a guide designed to aid you in hooking up your own air-line system.

Pressure-Demand Air-Line Respirators PD

Pressure-Demand Air-Line Respirators are designed to maintain a slight positive pressure of air inside the facepiece whether the wearer is inhaling or exhaling. This helps prevent contaminants from seeping in around the facepiece, even if there should be small breaks in the face-to-facepiece seal.

Pressure-Demand Air-Line Respirators are designed specifically for non-IDLH toxic atmospheres. The exception is if the respirator is equipped with an egress cylinder of air to use during escape.

Pressure-Demand Air-Line Units require an air supply from an uncontaminated compressed-air source as stipulated in General Industry Safety and Health Regulations, Part 1910.134 (OSHA) with the delivered air conforming to at least Grade D of ANSI Standard Z86.1.

A common air source for pressure-demand systems is a cylinder of air (or bank of large air cylinders) which can be set up in remote sites that might otherwise be impossible to reach with a large stationary compressor.

Another air source option for pressure-demand respirators is a cylinder cascade system. A cascade system consists of several air cylinders joined together in a bank by means of coupler tees. Generally, the banks consist of three or more cylinders of either 244 cubic-feet or 330 cubic-feet-capacity. One or more workers can breathe from a cascade system.

If using a compressed air or a compressor system, each respirator generally requires 1.5 cfm per person and needs to maintain the inlet (working) pressure specified in the respirator instruction manual.

At a normal rate of consumption, a three-cylinder bank used with a pressure-demand unit will provide between 12 to 16.5 man-hours of air, depending on cylinder capacity.

MSA Pressure-Demand Air-Line Units Include:

PremAire® Cadet Respirator
(for non-IDLH atmospheres)

PremAire® Cadet Escape Respirator
• with Escape Cylinder
(for egress from IDLH atmospheres)

PremAire® Air-Line Respirator System:
• with Escape Cylinder
(for egress from IDLH atmospheres)
• with Vortex Tube
(for suit-cooling applications)
• with Dual-Supply
(to eliminate additional hose lengths)

Constant Flow Air-Line Respirators CF

Constant Flow Air-Line Respirators also maintain a slight positive pressure of air inside the facepiece whether the wearer is inhaling or exhaling. This helps prevent contaminants from seeping in around the facepiece, even if there should be small breaks in the face-to-facepiece seal.

Constant Flow Air-Line Respirators maintain air flow at all times, rather than only on demand. Because of this, constant flow units almost always use a compressor as their air source. A constant flow unit would quickly exhaust the air from a cylinder or cascade system.

There are two types of Constant Flow Air-Line Respirators: one uses a tight-fitting facepiece; the other, a loose-fitting hood or helmet. Inlet air pressure must be able to maintain at least 4 cfm for a tight-fitting facepiece and 6 cfm for a loose-fitting hood.

The inlet pressure for Constant Flow Air-Line Respirators varies between 10-15 psig for low pressure systems and 35-40 psig for high pressure systems.

For Constant Flow Air-Line Hoods, the inlet pressure usually ranges between 10-15 psig and 85-100 psig, depending on the type. Also, depending on the inlet pressure, the length of approved air-supply hose for these systems is usually between 8-50 feet for low-pressure systems and 8-300 feet for high-pressure systems. Consult the instruction manual for your respirator to determine the specific inlet pressure and hose length.

MSA Constant Flow Respirators with Loose-Fitting Hoods Include:
• Versa-Hood™ Air-Supplied Hood

MSA Constant Flow Respirators with Tight-Fitting Facepieces Include:
• Constant Flow Air-Line Respirator
• Constant Flow Duo-Twin™ Air-Line Respirator
• Constant Flow Duo-Flo™ Air-Line Respirator
• Abrasi-Blast™ Supplied-Air Respirator

PremAire® Cadet Supplied-Air Respirator ⓟⒹ

The PremAire Cadet Respirator is a pressure-demand, Type-C, supplied-air respirator with a mask-mounted regulator that responds quickly to wearer's changing breathing requirements. The respirator can serve as a basic air-supplied device, or it can be easily upgraded to the versatile, state-of-the-art PremAire System. Designed for a variety of applications, PremAire Cadet Respirators can be used in non-IDLH (Immediately Dangerous to Life or Health) environments only. Operating inlet pressure is 60-100 psig. NIOSH approved.

Facepieces

MSA offers choice of two facepieces, the proven Ultra Elite Facepiece or the new industrial Advantage 4000 Facepiece for the PremAire Cadet Respirator. Choose from three facepiece sizes (small, medium, or large) in either Hycar or silicone rubber. Nosecups are available in two sizes, standard and large.

The **Ultra Elite Facepiece** features:

Ultra Elite Facepiece

- A one-way check valve preventing exhaled air from entering the mask-mounted regulator
- A rugged polycarbonate lens with scratch-resistant coating
- A mechanical speaking diaphragm for short-range communications
- Five adjustable rubber straps for exceptional head comfort, security, and safety
- Optional heat-resistant Kevlar net-style head harness

PremAire Cadet Kits *NEW!*

These PremAire Cadet Respirator K its include PremAire Cadet Respirator with Advantage 4000 Facepiece (medium size,Hycar Rubber, polyester net head harness) with Push-To-Connect FireHawk MMR, nylon belt assembly, listed quick disconnect for connecting respirator to air-supply hose, neoprene air supply hose 50-foot section complete with corresponding plug to attach air-supply hose to air source.

Description	Part No.
PremAire Cadet Air-Line Respirator with Foster Steel quick-disconnects, neoprene air supply hose 50-foot section with Foster Steel Plug	10108493
PremAire Cadet Air-Line Respirator with Snap-Tite Aluminum quick disconnects, neoprene air supply hose 50-foot section with Snap -Tite Aluminum Steel Plug	10108594
PremAire® Cadet Air-Line Respirator with TransportAire™ Portable Air-Supply Assembly: kit includes a PremAire Cadet Respirator with an Advantage 4000 Facepiece (medium size, Hycar™ Rubber, polyester net head harness) with Push-To-Connect FireHawk® MMR and nylon belt assembly, Snap-Tite Quick Disconnect and a low-pressure TransportAire Portable Air Supply with 30-minute carbon fiber c ylinder, and eight-foot coiled nylon air supply hose.	10108495

Ultra Elite Facepieces, with nosecup, Push-To-Connect Adapter

	Rubber Head Harness		SpeeD-ON® Head Harness	
	Hycar	*silicone*	*Hycar*	*silicone*
Small	10037650	10043417	10043419	10043430
Medium	10037648	10043413	10043415	10043416
Large	10037652	10043431	10043433	10043434

The **Advantage 4000 Facepiece** features:

- Available adapters to convert the Advantage Facepiece to a Twin-Cartridge Respirator (using Advantage Cartridges) or an RD40 Facepiece
- A one-way check valve preventing exhaled air from entering the mask-mounted regulator
- A rugged polycarbonate lens with scratch-resistant coating

Advantage 4000 Facepiece

- Four-point silicone head harness for exceptional comfort and security
- Optional polyester net or Kevlar net head harness

Advantage 4000 Facepieces, with nosecup, Push-To-Connect Adapter

	Rubber Head Harness		Polyester Net Head Harness		Kevlar Net Head Harness	
	Hycar	*silicone*	*Hycar*	*silicone*	Hycar	Silicone
Small	10075911	10075910	10075915	10075914	10108547	10108545
Medium	10075905	10075904	10075909	10075908	10108561	10108549
Large	10075917	10075916	10075921	10075920	10108565	10108563

Complete Assemblies

All listed configurations include: Ultra Elite facepiece (medium size, Hycar, rubber head harness) or Advantage 4000 facepiece (medium size, Hycar, polyester net head harness) with Push-To-Connect Firehawk MMR and nylon belt assembly.

Hose	Fittings	Ultra Elite Facepiece	Advantage 4000 Facepiece
30" IP (intermediate pressure)	None	10054790	10081100
30" IP (intermediate pressure)	Snap-Tite AL	10054793	10081098
42" IP (intermediate pressure)	None	10054791	10081171
42" IP (intermediate pressure)	Snap-Tite AL	10054792	10081099

Note: See page 44 to order quick-disconnects for use with the PremAire and PremAire Cadet Systems (column 2 for the plug and column 5 for the socket assembly).

PremAire® Cadet Escape Respirator PD

Combination Supplied-Air Respirator with Escape Cylinder

Size, Simplicity, and Economy

The PremAire Cadet Escape Respirator is designed to be versatile, comfortable, and affordable. A streamlined new design offers a first-stage regulator and cylinder valve within one assembly, creating a very small size and profile that is less likely to snag when working in tight places.

Low-profile escape cylinders can be worn on either the right or left hip. The Ultra Elite Pressure-Demand Facepiece or Advantage 4000 Facepiece with APR conversion capability offer choice of sizes and nose cups. The Firehawk® MMR Regulator let users choose

from Push-To-Connect (PTC) or Slide-To-Connect (STC) attachments. All regulators feature a bypass and a choice of solid cover or purge.

The economical PremAire Cadet Supplied-Air Respirator with Escape Cylinder is a cost-effective respiratory protection solution for many industries. For ordering ease and flexibility, these systems will be sold as part-numbered kits or through MSA's Assemble-To-Order (ATO) System. The PremAire Cadet Supplied-Air Respirator with Escape Cylinder is NIOSH-approved as a combination supplied-air respirator and self-contained breathing apparatus.

Facepieces

MSA offers choice of two facepieces, the proven Ultra Elite Facepiece or the new industrial Advantage 4000 Facepiece for the PremAire Cadet Respirator. Choose from three facepiece sizes (small, medium, or large) in either Hycar or silicone rubber. Nosecups are available in two sizes, standard and large.

The **Ultra Elite Facepiece** features:
- A one-way check valve preventing exhaled air from entering the mask-mounted regulator
- A rugged polycarbonate lens with scratch-resistant coating
- A mechanical speaking diaphragm for short-range communications
- Five adjustable rubber straps for exceptional head comfort, security, and safety
- Optional heat-resistant Kevlar net-style head harness

Ultra Elite Facepiece

Features and Benefits

- New one-piece first-stage regulator and cylinder valve;
  - *Combination cylinder valve and first stage pressure reducer*
  - *Very small size and profile*
  - *Regulator uses many of same parts as MSA FireHawk SCBA*
- Regulator body protects cylinder gauge — no need for rubber gauge guard, reduces size!
- Choice of cylinder hip placement allows workers freedom and versatility
- Two harness materials:
  - *Standard Nylon-ideal for chemical resistance*
  - *Kevlar-ideal in high heat environments or in areas with potential for sparks*
- Two attachments for keeping cylinder secure on belt
  - *Sturdy metal cylinder support bands*
  - *Nylon or Kevlar cylinder bags available for carbon fiber cylinders*
- Shoulder support strap incorporates hose keeper; regulator hose stays in place close to body, reduces chance of snagging
- Bracket/holder for second stage pressure regulator

Ultra Elite Facepieces, with nosecup, Push-To-Connect Adapter

	Rubber Head Harness		SpeeD-ON® Head Harness	
	Hycar	*silicone*	*Hycar*	*silicone*
Small	10037650	10043417	10043419	10043430
Medium	10037648	10043413	10043415	10043416
Large	10037652	10043431	10043433	10043434

The **Advantage 4000 Facepiece** features:
- Available adapters to convert the Advantage Facepiece to a Twin-Cartridge Respirator (using Advantage Cartridges) or an RD40 Facepiece
- A one-way check valve preventing exhaled air from entering the mask-mounted regulator
- A rugged polycarbonate lens with scratch-resistant coating
- Four-point silicone head harness for exceptional comfort and security
- Optional polyester net or Kevlar net head harness

Advantage 4000 Facepiece

Advantage 4000 Facepieces, with nosecup, Push-To-Connect Adapter

	Rubber Head Harness		Polyester Net Head Harness		Kevlar Net Head Harness	
	Hycar	*silicone*	*Hycar*	*silicone*	*Hycar*	*Silicone*
Small	10075911	10075910	10075915	10075914	10108547	10108545
Medium	10075905	10075904	10075909	10075908	10108561	10108549
Large	10075917	10075916	10075921	10075920	10108565	10108563

Approvals

The PremAire Cadet Escape respirator is approved by the National Institute for Occupational Safety and Health (NIOSH) as an Open-Circuit, Pressure-Demand, Escape, Self-Contained Breathing Apparatus or Combination, Open-Circuit, Pressure-Demand, Escape, Self-Contained Breathing Apparatus and Type C, Supplied-Air Respirator (TC-13F-542,543,544,545). The respirator is approved for use at temperatures above -25°F. The compressed-air container shall be fully charged with air meeting the requirements of CGA C-7.1 Grade D or higher quality. When supplied with respirable air through an air supply hose; the air supply pressure range shall be 70-90 psig, the hose length shall be 8-300 feet, and the air supply shall meet the requirements of CGA C-7.1 Grade D or higher quality.

PremAire Cadet Escape Respirators

	Cylinder	Harness/Carrier	Facepiece	Fitting	Case
10087895	5 Minute Aluminum	Nylon Strap	None	None	None
10087897	10 Minute Aluminum	Nylon Strap	None	None	None
10092034	5 Minute Aluminum	Nylon Strap	Advantage 4000, Hycar, Net Head Harness	Hansen, Brass	None
10092036	10 Minute Aluminum	Nylon Strap	Advantage 4000, Hycar, Net Head Harness	Hansen Brass	None
10093986	5 Minute Aluminum	Nylon Strap	Ultra Elite, Hycar, Rubber Head Harness	None	Hard case
10093987	10 Minute Aluminum	Nylon Strap	Ultra Elite, Hycar, Rubber Head Harness	None	Hard Case
10093988	5 Minute Aluminum	Nylon Strap	Advantage 4000, Hycar, Rubber Head Harness	None	Hard Case

PremAire Cadet Escape Respirator Kits

The PremAire Cadet Escape Respirator Kits below include a PremAire Cadet Escape Respirator with an Advantage 4000 Facepiece (medium size, Hycar Rubber, polyester net head harness) with Push-To-Connect FireHawk MMR and nylon harness, aluminum cylinder, and the listed quick disconnect for connecting the respirator to the air supply hose, a 50-foot section of neoprene air supply hose complete with the corresponding plug to attach the air supply hose to your air source

NEW!

10108496	PremAire Cadet Escape Air-Line Respirator, 5-minute aluminum egress cylinder, with Hansen Brass Quick Disconnects, 50 foot section of neoprene air supply hose with Hansen Brass Plug.
10108592	PremAire Cadet Escape Air-Line Respirator, 10-minute aluminum egress cylinder, with Hansen Brass Quick Disconnects, one 50 foot section of neoprene air supply hose with Hansen Brass Plug.

The Assemble-To-Order System

Thousands of possible combinations let workers select just the right PremAire Cadet Escape Respirator for the job. The ATO System works by allowing users to create their own part numbers. Each digit of an ATO part number will represent a specific component, so that the entire part number represents a finished respirator built exactly to the desired specifications. Advantages of the ATO System include: you get the exact model of PremAire you need; no special orders, because all orders are customized; fresher cylinders from our continually rotated inventory; simplified ordering process; and timely delivery.

PremAire Cadet Combination Supplied-Air Respirator System with Escape Cylinder Assemble-To Order Matrix

Type		Carrier & Harness Type		Pad Option		Escape Cylinder		MMR Regulator		Facepiece		Nosecup		Head Harness		Quick Disconnect		Case	
PC	PremAire Cadet Escape	1	Nylon, strap carrier, standard	0	None	A	5-minute aluminum	A	Firehawk, Push-To-Connect, solid cover	A	None	0	None	0	None	0	None	0	None
		2	Kevlar, strap carrier, standard	1	Shoulder	B	10-minute aluminum	C	Firehawk, Slide, solid cover	B	Ultra Elite, Hycar, small	1	Ultra Elite, medium	1	Ultra Elite Rubber	A	Snap-Tite, aluminum	1	Hard plastic case
		3	Nylon, bag carrier, standard			C	5-minute carbon			C	Ultra Elite, Hycar, medium	2	Ultra Elite, large	2	Ultra Elite SpeeD-ON	B	Snap-Tite, stainless steel		
		4	Kevlar, bag carrier, standard			D	10-minute carbon		Firehawk slide regulators not compatible with Advantage 4000 facepiece	D	Ultra Elite, Hycar, large			3	Advantage 4000 Rubber	C	Snap-Tite, brass		
						E	15-minute carbon			E	Ultra Elite, silicone, small		Nosecup standard with Advantage 4000 facepiece	4	Advantage 4000 Poly Net	D	Hansen, stainless steel		
			Aluminum escape cylinders are not compatible with bag carriers							F	Ultra Elite, silicone, medium			5	Advantage 4000 Kevlar	E	Hansen, brass		
										G	Ultra Elite, silicone, large					F	Foster, steel		
										H	Advantage 4000, Hycar, small					G	Foster, stainless steel		
										J	Advantage 4000, Hycar, medium					H	Foster, brass		
										K	Advantage 4000, Hycar, large					J	Snap-Tite, locking, aluminum		
										L	Advantage 4000, silicone, small					K	Snap-Tite, locking, stainless steel		
										M	Advantage 4000, silicone, medium					M	Snap-Tite, locking, brass		
										N	Advantage 4000, silicone, large					N	Foster, locking, stainless steel		
																P	Cejn, chrome		

A- | PC | | | | | | | | | | | Part Number | | | | Quantity

PremAire® Air-Supplied Respirator System PD

PremAire System with Escape Cylinder

The PremAire Supplied-Air Respirator System is one of the most advanced air-line respirators available. Designed to provide the utmost in versatility, the modular system allows users to order the respirator configured for their specific application.

A lightweight mask-mounted regulator provides high air flow and responds quickly to changing breathing requirements.

The basic PremAire Respirator includes the patented manifold and can be upgraded with any of the three following options:

1. an Escape Cylinder that permits emergency escape from Immediately Dangerous to Life and Health (IDLH) atmospheres. (Please see Note 2 below ordering information.)
2. a Dual-Supply option that lets workers connect from one pressurized continuous air source to another without losing continuity of air flow.
3. a Vortex Tube option that delivers whole-body temperature control for added worker comfort.

The PremAire Respirator is a full-face, pressure-demand, Type-C supplied-air respirator with a patented waist-mounted manifold.

In addition to the flexibility offered by the manifold, the PremAire Supplied Air Respirator System is available with the Firehawk® Mask-Mounted regulator (MMR).

Fully Configured PremAire Manifold

This revolutionary 2nd-stage regulator, offered in push-to-connect (PTC) and slide-to-connect (STC) versions, combines user-friendly connections and unbeatable care and maintenance. The Ultra Elite Pressure-Demand Facepiece or the Advantage 4000 Facepiece with APR conversion capability offer choice of sizes and nosecups. The Firehawk® MMR Regulator lets users choose from Push-To-Connect (PTC) or Slide-To-Connect (STC) attachments. All regulators feature a bypass and choice of solid cover or purge. For more information, please reference Bulletin 0114-20 or call MSA Customer Service at 1-800-MSA-2222.

Traditional MSA Part Numbers

See the following page for Assemble-To-Order information. For customers who require faster delivery, the most popular PremAire system combinations can still be ordered with a traditional MSA part number. These assemblies come with a medium Hycar Ultra Elite Facepiece and nosecup with rubber harness. For these assemblies, Quick-Disconnects must be ordered separately (see p. 42; you need a male plug with female 1/4" NPT (column 2), and a female socket assembly (column 5).

Complete Assemblies with Firehawk STC Regulator

Complete Assembly w/ Firehawk STC, 5-minute 3AL aluminum cylinder, right-hip model, with case	10045164
Complete Assembly w/ Firehawk STC, 10-minute 3AL aluminum cylinder, right-hip model, with case	10045165

PremAire System User's Guide

The PremAire System User's Guide provides a comprehensive core instruction manual covering the basic PremAire Supplied-Air Respirator, plus four sub-manuals covering each of the PremAire System options (escape cylinder, Duo-Twin, dual-supply and (vortex tube.) The User's Guide also includes an illustrated parts list, a quick-reference chart showing the various PremAire Respirator configurations available, and a hard-cover binder with tab pages to house and organize these materials.

All these manuals are available on our website: www.MSAnet.com

MSA-U®, MSA's premier online training center, offers a wide range of training and informational materials. Register today at http://msau.msanet.com

Replacement PremAire Respirator Facepieces

Ultra Elite® Facepieces for Firehawk PTC MMR

With nosecup. Non-NFPA.	Small	Medium	Large
Hycar, with rubber head harness	10037650	10037648	10037652
Hycar, with EZ-Don head harness	10037651	10037649	10037653
Hycar, with SpeeD-ON head harness	10043419	10043415	10043433
Silicone, with rubber head harness	10043417	10043413	10043431
Silicone , with EZ-Don head harness	10043418	10043414	10043432
Silicone , with SpeeD-ON head harness	10043430	10043416	10043434

Ultra Elite Facepieces for Firehawk STC MMR

With nosecup. Non-NFPA.	Small	Medium	Large
Hycar, with rubber head harness	—	10039982	—
Silicone, with rubber head harness	—	10039983	—

Advantage® 4000 Facepieces for Firehawk PTC MMR

With nosecup. Non-NFPA.	Small	Medium	Large
Hycar, with rubber head harness	10075911	10075905	10075917
Hycar, with net head harness	10075915	10075909	10075921
Silicone, with rubber head harness	10075910	10075904	10075916
Silicone, with net head harness	10075914	10075908	10075920

Questions or Comments?
www.facebook.com/MSATheSafetyCompany

PremAire Supplied-Air Respirator System Assemble-To-Order Matrix

Type		Belt Assembly		Escape Cylinders		Dual-Supply		MMR Regulator		Facepiece Type		Facepiece		Facepiece Size		Nosecup		Head Harness		Quick-Disconnect *		Case	
PS	PremAire System	1	Nylon	0	None	0	None	E	Firehawk STC 30" Solid Cover	0	None	0	None	0	None	0	None (only if you have no FCPC)	0	None	A	None	0	None
		2	Urethane	1	5-Min Right Hip Carbon Fiber	1	8" Hose less QD	F	Firehawk STC 42" Solid Cover	1	Non-NFPA	1	Ultra Elite, Hycar	S	Small			1	Ultra Elite, Rubber	B	Snap-Tite Aluminum	1	Hard Case
		3	Nomex	2	5-Min Left Hip Carbon Fiber	2	15" Hose less QD	G	Firehawk PTC 30" Solid Cover	2	NFPA	2	Ultra Elite, Silicone	M	Medium	1	Ultra Elite, Medium	2	Ultra Elite, EZ Don, Small	C	Snap-Tite SST		
				3	5-Min Right Hip Aluminum			H	Firehawk PTC 42" Solid Cover			E	Advantage 4000, Hycar	L	Large	2	Ultra Elite, Large	3	Ultra Elite, EZ Don, Medium	D	Snap-Tite Brass		
				4	5-Min Left Hip Aluminum			J	Firehawk STC 30" No Bypass			F	Advantage 4000, Silicone					4	Ultra Elite, EZ Don, Large	E	Hansen SST		
				5	10-Min Right Hip Carbon Fiber			K	Firehawk STC 42" No Bypass									5	Ultra Elite, SpeeD-ON	F	Hansen Brass		
				6	10-Min Left Hip Carbon Fiber			L	Firehawk PTC 30" No Bypass									6	Advantage 4000 Rubber	G	Foster Steel		
				7	10-Min Right Hip Aluminum			M	Firehawk PTC 42" No Bypass									7	Advantage 4000 Poly Net	H	Foster SST		
				8	10-Min Left Hip Aluminum													8	Advantage 4000 Kevlar Net	I	Foster Brass		
																				J	Cejn Chrome		

Facepiece Type: NFPA Facepiece is Ultra Elite

Note: FireHawk slide regulators not compatible with Advantage 4000 facepiece.

Note: Nosecup is standard with the Advantage 4000 facepiece.

Note: If you have selected the Dual-Supply option, you will need two of the same Quick-Disconnects. Just put one letter in the part number to indicate your selection, but when you calculate the price of your system, make sure you include a price for each Quick-Disconnect.

Note: Must choose No Bypass option when ordering PremAire less an escape cylinder

C	—	PS										Quantity
		Part Number										

*Note: This matrix must only be used for ordering complete PremAire Systems. This matrix cannot be used for ordering individual components (i.e., facepieces, escape cylinders, etc.). Please order components separately using their standard MSA part number.

‡**For applications strictly limited to non-IDLH atmospheres, NIOSH requires that the respirator system be configured without a bypass on the Fire Hawk Mask-Mounted Regulator (MMR). Please contact MSA Customer Service for more information.**

* Unit requires use of a quick-disconnect for connection to air-line to maintain approval. All quick-disconnects listed are non-locking except for the Cejn chrome (J).

Note: See page 44 for air-line hoses.

Escape Cylinder Kit (for rt hip)

Vortex Tube Kit

Dual-Supply Kit

Air-Line Filter Kit

PremAire System Upgrade Kits

Escape Cylinder Kits

Includes carrier assembly, 1st stage regulator, hose and cylinder

Kit with Fully-wound Carbon Fiber, Five-minute Cylinder, for Right Hip	800696
Kit with Fully-wound Carbon Fiber, Five-minute Cylinder, for Left Hip	800694
Kit with Fully-wound Carbon Fiber, Ten-minute Cylinder, for Right Hip	800697
Kit with Fully-wound Carbon Fiber, Ten-minute Cylinder, for Left Hip	800695

Vortex Tube Kits

Kit with 6" Hose, Cool-Only Version	800706
Kit with 6" Hose, Warm/Cool Version	800710
Kit with 12" Hose, Cool-Only Version	801012
Kit with 12" Hose, Warm/Cool Version	801014

Dual-Supply Kit

Includes 8-inch extension hose, less quick-disconnect assembly	800044
Includes 15-inch extension hose, less quick-disconnect assembly	800986

PremAire Air-Line Filter Kit

Filter Kit	811940
Replacement filter element and gasket	811984

Duo-Twin™ Respirators and Duo-Flo™ Respirators CF

Above: Duo-Twin Respirator with Advantage 4000 Facepiece
Below: Ultravue Duo-Twin Plug

Duo-Twin Respirator

The Duo-Twin Respirator comes in a Constant-Flow version; Constant-Flow respirators are normally used where an ample air supply is available, such as that provided by an air compressor. The MSA Duo-Twin Respirator features an air-purifying cartridges, which also protect against a variety of contaminants. If the air supply should ever fail on the Constant-Flow unit, the user is automatically protected by the air-purifying cartridge.

This product is popular in the pharmaceutical, chemical, petrochemical, and nuclear industries. This MSA respirator should not be used in atmospheres containing less than 19.5% oxygen. NIOSH approved.

Duo-Twin Respirator

Complete Assembly*

Complete with facepiece, breathing tube, adapter assembly/regulator, web belt and Foster steel plug and socket assembly.

Constant Flow Duo-Twin Respirator with Advantage 4000 Facepiece	10105705
Constant Flow Duo-Twin Respirator with Ultravue Facepiece	484087

Duo-Twin Plug for Ultravue Facepiece

Allows conversion of an Ultravue Duo-Twin Facepiece to a Twin-Cartridge Respirator.

Duo-Twin Plug	486637

* Cartridges must be ordered separately. See pages 15–16 for ordering information.

Constant-Flow Duo-Flo Respirator

Ultra Filter P100 cartridge

Duo-Flo Respirator

The Duo-Flo Respirator comes in a Constant-Flow version; Constant-Flow Respirators are normally used where an ample air supply is available, such as that provided by an air compressor. Duo-Flo Respirators use the MSA Ultra Filter, a compact round filter cartridge that has a large effective filter area to provide low-breathing resisting. This cartridge has a P100 classification. Duo-Flo Respirators are popular in the pharmaceutical, chemical, petrochemical, and nuclear industries. This MSA respirator should not be used in atmospheres containing less than 19.5% oxygen. NIOSH approved.

Duo-Flo Respirators

Complete Assemblies (one P100 Ultra Filter is included)

Constant Flow Duo-Flo Respirator w/full-face Ultravue Facepiece	466095
Constant Flow Duo-Flo Respirator w/full-face Advantage 4000 Facepiece	10091952

Replacement Cartridges for Duo-Flo Respirators

Round Ultra FIlter Cartridge, box of 6	10010420
Round Ultra Filter Cartridge, box of 50	10010421

Abrasi-Blast™ Supplied-Air Respirator CF

The Abrasi-Blast Respirator provides respiratory and upper body protection for workers in shipbuilding, the construction industry, utilities, and other applications where blasting with abrasives is performed.

A complete Abrasi-Blast Respirator is made up of a hood, facepiece with lens housing, breathing tube, cover lens cartridge assembly, flow-control device, approved air-supply hose, and support belt. Users can choose between a standard Constant Flow Advantage 4000 Facepiece, a Duo-Flo Advantage 4000 Facepiece (designed to handle both air-supplied and air-purifying—particulate only—modes of operation) or an Ultravue Facepiece.

During blasting operations, the lens of the Abrasi-Blast Respirator is protected by 2 to 4 flat glass cover lenses mounted in a special foam material. Each cover lens is removed by integral pull tabs when it becomes so abraded that vision is reduced. There is no need to stop to change lenses, as is necessary with most conventional blasting hoods. Approved by NIOSH.

For more complete information, see Bulletins 0112-37 and 0112-41.

Complete Assemblies with Advantage 4000 Facepiece   *NEW!*

(Includes hood, medium facepiece with net head harness (10089910), lens housing, one lens cartridge (three 0.12" untempered glass cover lenses per cartridge), breathing tube (470734), web belt (9961), and adjustable Snap-Tite (AL) valve connector with socket assembly). Order air supply hose separately.

Hood Style	Flow-Control Device	Complete Assembly
Waist	35-40	10089177
Shoulder	35-40	10089210

Complete Assemblies with Duo-Flo Constant Flow Advantage 4000 Facepiece   *NEW!*

(Includes hood, medium facepiece with net head harness (10089910), lens housing, one lens cartridge (three 0.12" untempered glass cover lenses per cartridge), breathing tube (457158), web belt (9961), and adjustable Snap-Tite (AL) valve connector with socket assembly).

Hood Style	Flow-Control Device	Complete Assembly
Waist	35-40	10116961
Shoulder	35-40	10116962

Complete Assemblies with Ultravue Facepiece

Includes one lens cartridge consisting of four 0.06-inch untempered glass cover lenses, flow control device, Snap-Tite aluminum quick-disconnect fitting, valve-connector body, facepiece (medium) with dual exhalation valves and lens housing, breathing tube, web belt, and air-hose connector.

	Hypalon Hood with Collar	
Inlet Pressure Range	Waist-Length	Shoulder-Length
10-15 psi	468716	468720
35-40 psi	468718	468722
Abrasi-Blast Duo-Flo	478116	478117

Note: Assemblies can be specially ordered with different options.

Lens Cartridges (12 cartridges per carton)

Part No.	Lens Descriprion	Recommended Use
473798	0.09" thick,untempered, 3 per cartridge	Medium blasting
473800	0.09" thick, tempered, 3 per cartridge	Medium blasting
10013407	0.12" thick, untempered, laminated, 1 per cartridge	Heavy blasting
473802	0.12" thick, untempered, laminated, 2 per cartridge	Heavy blasting
481742	0.12" thick, untempered, laminated, 3 per cartridge	Heavy blasting

Constant Flow Air-Line Respirator CF

Constant Flow Air-Line Respirator with Advantage 4000 Facepiece

Constant Flow Air-Line Respirator with Ultra Elite Facepiece

Constant Flow Air-Line Respirator with Ulltravue Facepiece

Constant Flow Air-Line Respirator with Comfo Facepiece

Constant Flow Air-Line Respirator with Welder's Comfo Facepiece

Constant Flow Air-Line Respirators are designed to maintain a slight positive pressure of air inside the facepiece, whether the wearer is inhaling or exhaling. This helps to prevent contaminants from seeping in around the facepiece, even if there should be small breaks in the face-to-facepiece seal. The complete respirator assembly is available with Advantage 4000, Ultravue or Ultra Elite Full Facepiece, Comfo Half-Mask Facepiece, or Comfo Welder's Facepiece; breathing tube; web support belt; and air-flow control valve with quick-disconnect assembly. The Constant Flow Respirator is used in non-IDLH environments. NIOSH approved.

For more complete information, see Bulletin 0112-38.

Complete Assemblies

Choose facepiece, control valve, and quick-disconnect assembly. Comes with breathing tube and a web support belt. For optional PVC belt, see Accessories on page 45.

Quick-Disconnect	Advantage 4000 Facepiece	Ultra Elite Facepiece	Ultravue Facepiece	Comfo Facepiece	Welder's Comfo Facepiece
High-Pressure Control Valve (35-40 psig inlet pressure for 8-300 ft of hose)					
Snap-Tite aluminum	10088132	810829	460863	460865	460862
Foster steel	10088134	810831	461717	480466	480600
Hansen brass	10088136	†	486258	†	†
CEJN Locking chrome-plated brass	10088135	810832	480629	480631	480671
Low-Pressure Control Valve (10-15 psig inlet pressure for 8-50 ft of hose)					
Snap-Tite aluminum	10088107	806775	463300	463302	463281
Foster steel	10088109	806776	480472	480474	480468
Hansen brass	10088121	806779	484836	484837	†
CEJN Locking chrome-plated brass	10088110	806777	480637	480639	480645

Note: Facepieces can also be ordered in silicone instead of Hycar rubber. Three sizes of facepieces are available. For belts, MSA Air-Supply Hose and other accessories, see pages 44–45.
For separate quick-disconnect plugs and sockets, see page 42. See pages 40–41 for typical Pressure Demand Air-Line and Constant Flow ir-Line Systems setup.

† Available by special order only. High-pressure control valves are also available with the following special order quick-disconnects: Snap-Tite brass or stainless steel, Foster brass, and Hansen brass, or stainless steel. Low-pressure control valves also available with: Snap-Tite brass or stainless steel, Foster brass, and Hansen brass. Please call your nearest MSA distributor for complete ordering information.

Constant Flow Air-Line Respirator Kits   *NEW!*

These Constant Flow Air-Line Respirator Kits include a Constant Flow Air-Line Respirator with an Advantage 4000 Facepiece (medium size,Hycar Rubber, polyester net head harness) with a High or Low Pressure Flow Control Valve, breathing tube and nylon belt assembly, the listed quick disconnect for connecting the respirator to the air supply hose, a 50 foot section of neoprene air supply hose complete with the corresponding plug to attach the air supply hose to your air source.

Constant Flow Air-Line Respirator, Low Pressure Control Valve, with Foster Steel quick disconnects, 50 foot section of neoprene air supply hose with Foster Steel Plug	10108494
Constant Flow Air-Line Respirator, High Pressure Control Valve, with Foster Steel quick disconnects, 50 foot section of neoprene air supply hose with Foster Steel Plug	10108593

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Versa-Hood™ Air-Supplied Hood CF

The Versa-Hood Air-Supplied Hood is an inexpensive hood respirator which may be used anywhere a Type-C air-supplied hood is required. This versatile hood is available in two lengths (shoulder- and waist-length) and two materials (Tyvek and Saranex). All Versa-Hood respirators can be used with either a plant air system or personal air compressor.

When head protection is needed, a special three-point Velcro system secures the hood to an MSA V-Gard Cap. The hood suspensions (basic or ratchet versions) are easily adjustable and stable, minimizing the need for a chin strap. The hood is designed to be disposable, thus eliminating the need for cleaning, and a twin-lens system extends the life of the hood. MSA also offers a package of ten replacement lenses. An air-distribution system keeps the lens fog-free. NIOSH certified. For more complete information, see Data Sheet 01-02-01.

Versa-Hood Assembly and 3⁄8-inch Hose System with Direct Connectors
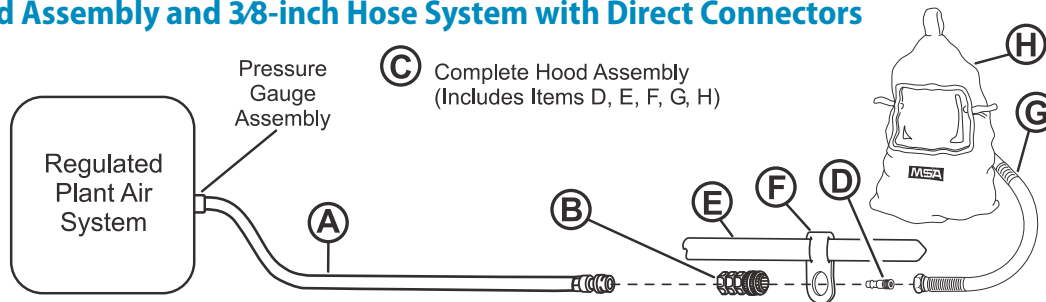
Versa-Hood Assembly and 3⁄8-inch Hose System w/Direct Connectors

Air-Supply Hose– see page 44 (A)	
Socket assembly for 3/8-inch hose system (B) - Snap-Tite	455019
Socket assembly for 3/8-inch hose system (B) - Foster	467044
Complete Hood Assembly (C) (with Tyvek Hood), shoulder length, Snap-Tite aluminum plug	484689
Complete Hood Assembly (C) (with Tyvek Hood), shoulder length, Foster steel plug	484690
Complete Hood Assembly (C) (with Tyvek Hood), waist length, Snap-Tite aluminum plug	484693
Complete Hood Assembly (C) (with Tyvek Hood), waist length, Foster steel plug	484694

Hood Assembly Components

Male plug, Snap-Tite (D)	66273
Male plug, Foster	56549
Hood hose (1/4-inch NPT) (G)	482702
Shoulder-length Tyvek hood (H)	482612
Waist-length Tyvek hood	482610
Belt holder (F)	482618
PVC support belt (E)	473902

Note: This Versa Hood Assembly would typically require a compressor that puts out between 10 to 12 cfm per person at 10 to 40 psi. Required inlet pressure is based on airline hose length.

Versa-Hood Assembly and 3⁄8-inch Hose System with Adjustable Valve Connectors
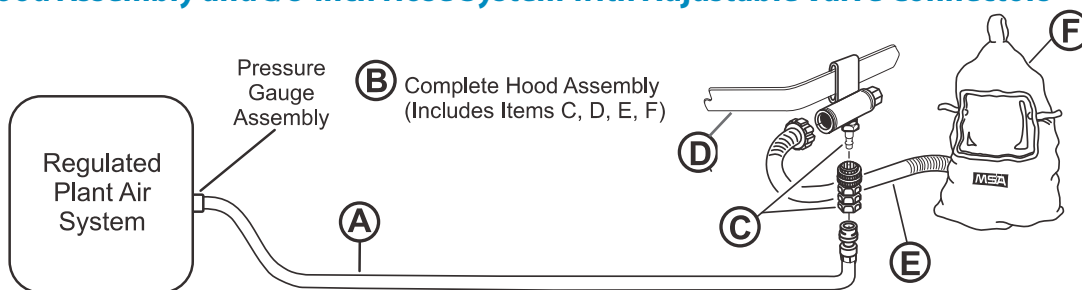
Please call your nearest MSA Distributor for complete ordering information

For airline hose, please see page 44

Versa-Hood Assembly and 3⁄8-inch Hose System with Adjustable Valve Connectors
(requires a compressor output of 10 to 12 cfm per person at 55 to 60 psi)

Air-Supply Hose– see page 44 (A)		
Complete Hood Assembly (B) (with Tyvek Hood)	**Shoulder Length**	**Waist Length**
Adj. valve connector w/ Snap-Tite Quick-Disconnect	482823	482827
Adj. valve connector w/ Foster Quick-Disconnect	482824	482828
Cool-only vortex less Quick-Disconnect	494425	494427
Warm/cool vortex less Quick-Disconnect	495782	—

Hood Assembly Components

Adj. valve connector for 3/8-in hose system, Foster (C)	471814
Adj. valve connector for 3/8-in hose system, Snap-Tite	460814
Hood hose w/ coupling nut for adj. valve connector (E)	482703
Shoulder-length Tyvek hood (F)	482612
Waist-length Tyvek hood	482610
PVC support belt (D)	473902

Vortex Tube Assemblies - for use with plant air systems ONLY

Warm/Cool vortex, less Quick-Disconnect (requires 25 cfm at an inlet pressure between 85 to 120 psi based on hose length)	495701
Cool only vortex, less Quick-Disconnect (requires 15 cfm at an inlet pressure between 75 to 90 psi)	494392

Portable Air Supply Systems

Industrial Air Cart

Provides air for up to four pressure-demand air-line respirators

The Industrial Air Cart permits up to 4 NIOSH approved air-line respirators to be connected to 2 one-hour 4,500 psig breathing apparatus cylinders (not included).

Features:
- Two-wheel poly powder-coated cart, two sets of double-cylinder straps, air-line hose rack and adjustable pull handle.
- A 5,500 psig pressure regulator reduces the 4,500 psig cylinder air to the proper air-line respirator inlet pressure.
- Low-pressure cylinder alarm whistle.
- An outlet pressure gauge operates in 0-125 psig range.
- Four-outlet manifold is available with 4 outlet fitting options.

Cart Weight and Dimensions

Size: 35" H x 21" W x 15.25" D
Unit weight: 38.5 pounds without cylinders

For more complete information, see Bulletin 0114-28.

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Industrial Air Cart

Part No.	Description
10107537	Industrial Air Cart equipped with union adapters
10107779	Industrial Air Cart equipped with Snap-Tite Aluminum Quick Disconnects
10107780	Industrial Air Cart equipped with Foster Steel Quick Disconnects
10107811	Industrial Air Cart equipped with Hansen Brass Quick Disconnects

Technical Rescue Cart

Provides air for up to four pressure-demand air-line respirators and unique rescue tools that are used by the Fire Service and HazMat Teams

The Technical Rescue Cart is a steel cart with a color-designated control panel that allows one side of the panel to be used for primary respirator breathing air and one side for tool/ secondary air requirements. Two 1-hour cylinders are used to provide air for respirators. High-pressure cascade (fire truck) cylinder air is used to operate pneumatic tools. The standard features of the Technical Rescue Cart make it a unique and very versatile air cart for the fire service and HazMat industries.

Features:

Breathing Air Segment includes:
- Two-wheeled, poly-coated steel cart, two sets of double-cylinder straps, air-line hose rack and adjustable pull handle
- Low-pressure cylinder bell alarm
- Four-outlet manifold—available with four outlet fitting options

Tooling Air Segment includes:
- CGA-347 fitting to attach to an auxiliary remote high-pressure air source
- Low-pressure pneumatic alarm whistle
- Four-outlet manifold with Quick Disconnects

Cart Weight and Dimensions

Size: 35" H x 21" W x 15" D
Unit weight: 54.5 pounds without cylinders

For more complete information, see Bulletin 0114-28.

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Technical Rescue Cart

Part No.	Description
10107535	Technical Rescue Cart equipped with union adapters
10107818	Technical Rescue Cart equipped with Snap-Tite Aluminum Quick Disconnects
10107820	Technical Rescue Cart equipped with Foster Steel Quick Disconnects
10107819	Technical Rescue Cart equipped with Hansen Brass Quick Disconnects

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TranportAire System: Low-Pressure Configuration

PortAire System with cart

Air Supply Hose

MSA carbon-wrapped cylinders

The TransportAire™ System

The TransportAire System is available in two versions: one for high-pressure cylinders and one for low-pressure cylinders. Both versions consist of an impact-resistant handle with urethane-coated nylon straps that fit around a standard MSA SCBA air cylinder (purchased separately), a regulator, and a regulator-to-hose adapter. An Audi-Larm device is provided standard on the high-pressure system and is available as an option for the low-pressure system. Both systems are designed for use with MSA supplied-air respirators equipped with a dual-supply option.

A major advantage of the dual-supply option is improved mobility; workers need not remain tethered to a single air-supply hose throughout a work period.

The PortAire® System

The PortAire System holds two standard SCBA air cylinders to provide firefighters, industrial personnel, confined-space workers, and others with a portable, compressed-air source any time an air-line device is required.

Designed for use with MSA pressure-demand supplied-air respirators, including dual-purpose self-contained breathing apparatus (SCBA), the PortAire System consists of a compact air-pressure regulating system housed in a lightweight, yet durable, anodized aluminum frame.

TransportAire Portable Air-Supply System—Low-Pressure

TransportAire Assembly complete with Cylinder Carrier, Regulator, and Regulator-to-hose Adapter	816693

Option

Low-Pressure Audi-Larm Assembly	85078

TransportAire Portable Air-Supply System—High-Pressure

TransportAire Assembly complete with Cylinder Carrier, Regulator and Regulator-to-hose Adapter, and High-Pressure Audi-Larm	812217

Air Supply Hose*

8-ft Coiled Nylon Hose	491513

PortAire Portable Air-Supply System

PortAire Portable Air-Supply System with Audi-Larm low-pressure warning device, high-pressure regulator, and carrying frame with air-supply hose* retainer (cylinders and air-line hose not included)	807052
Quick-Fill Kit	807053
Wheeled Cart for PortAire Portable Air-Supply System	10017089

Cylinders

Cylinder Type	NIOSH service life rating	Pressure	Weight (empty)	Part No.
L-30* Carbon-Wrapped	30-minute	2216 psig	8 lb. 0 oz.	807586
L-30+* Carbon-Wrapped	30-minute	3000 psig	9 lb. 8 oz.	816115
H-30* Carbon-Wrapped	30-minute	4500 psig	7 lb. 4 oz.	807587
H-45* Carbon-Wrapped	45-minute	4500 psig	0 lb. 7 oz.	807570
H-45 Low-Profile* Carbon-Wrapped	45-minute	4500 psig	9 lb. 10 oz.	10035644
H-60* Carbon-Wrapped	60-minute	4500 psig	11 lb. 12 oz.	807588
Fiberglass Hoop-Wound	30-minute	2216 psig	13 lb. 0 oz.	469619
Aluminum	30-minute	2216 psig	18lb. 0 oz.	809872

All weights shown are approximate.
*These cylinders are capable of custom options.

Typical Air-Line Systems: Pressure Demand System

E1

E 2

E3

Optional Locking
Quick-Disconnects

Sealing tape required on all
pipe threads. Begin at second
thread and wrap 1 to
1 1/2 turns clockwise.

PD

* 2400 psig Cascade System   Select One Outlet Connection:
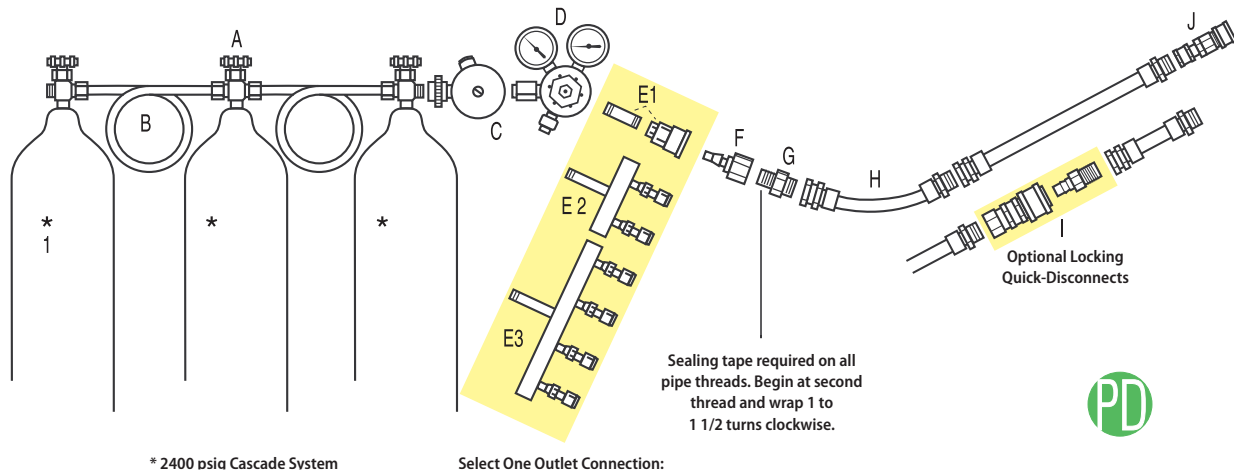
Note: DO NOT use teflon sealing tape on straight threaded connections with O-ring seals.
Note: Cascade cylinders are not normally used with a constant-flow system due to excessive air usage—one large (300 cu ft) cylinder would last one working person only about 15 minutes. Therefore, using cascade cylinders with a pressure-demand system is recommended.

Pressure Demand System

1*	Air Cylinder — NOT SUPPLIED BY MSA	**(F)**	Male Plug with Female 1/4" NPT—P/N varies with type (See pg. 42)
(A)	Air Tee Block — **P/N 68850** or **P/N 10081206** (See pg. 45)		
(B)	Air Pigtail — **P/N 68851** or **P/N 10081205** (See pg. 45)	**(G)**	Union Adapter—(See pg. 42)
(C)	Audi-Larm Warning Device — **P/N 85078** or **P/N 492307** (See pg. 45)	**(H)**	MSA Air-Supply Hose—P/N varies with type (See pg. 44)
(D)	Air-Cylinder Pressure Regulator — **P/N 68858** or **P/N 633352** (See pg.45)		
(E1)	**Outlet Connections:** Female Socket—P/N varies with type (See pg.42) Nipple—1/4" x 1/4" NPT—(needed only w/Female Socket) **P/N 459867**	**(I)**	Optional Locking Quick-Disconnect Assemblies for interconnecting lengths of MSA air-supply hose CEJN Locking Quick-Disconnect Assembly (Chrome) **P/N 479009** Snap-Tite Locking Quick-Disconnect Assembly (Aluminum) **P/N 479010**
(E2)	**2-Outlet Manifold:** Foster Steel **P/N 84416** Snap-Tite Aluminum **P/N 486053** (See pg. 45)		
(E3)	**4-Outlet Manifold:** Foster Steel **P/N 47370** Snap-Tite Aluminum **P/N 93931** (See pg. 45)	**(J)**	Female Socket Assembly—P/N varies with type (See pg. 42)

Optional Locking Quick-Disconnects

Select One Outlet Connection:
G1, G2, or G3

CF

Constant Flow System

1*	Plant Air Compressor—NOT SUPPLIED BY MSA		(H)	Male Plug with Male 1/4" NPT (See pg. 42–Col. 4)	
(A)	Outlet Fitting for System—Varies with system				
(B)	Nipple (1/2" x 1/2" x 1-1/2" NPT)–**P/N 68833**		(I)	Union Adapter (See pg. 42–Col. 3)	
(C)	Air-Line Filter–**P/N 81857**				
(E)	Pressure Regulator–**P/N 66716**		(J)	MSA Air-Supply Hose–P/N varies with type (See pg. 45)	
(F)	**Outlet Connections:** Bushing (1/2" M x 1/4" F)–**P/N 625528 :**		(K)	Optional Locking Quick-Disconnect Assemblies for interconnecting lengths of MSA air-supply hose CEJN Locking Quick-Disconnect Assembly (Chrome) **P/N 479009** Snap-Tite Locking Quick-Disconnect Assembly (Aluminum) **P/N 479010**	
(G1)	Female Socket–P/N varies with type (See pg. 42–Col. 1) Nipple–1/4" x 1/4" NPT–(needed only w/Female Socket) **P/N 459867**				
(G2)	2-Outlet Manifold: Foster Steel **P/N 84416** Snap-Tite Aluminum **P/N 486053** (See pg. 45)		(L)	Female Socket Assembly–P/N varies with type (See pg. 42–Col. 5)	

Quick-Disconnects for Air-Line Respirators and Air-Supplied Hoods

Quick-disconnect assemblies connect air-supply hoses to the manifold and to the air source. If you want to use a quick-disconnect to interconnect lengths of air supply hose, you must use a locking-type quick disconnect—specifically, the locking quick disconnects listed in the yellow box at the bottom of this page. For more complete information, see the Pocket Guide to Air-Line Systems (Bulletin 0114-14-MC).

Quick-Disconnects and Adapters — AL-Aluminum; S-Steel; SST-Stainless Steel; BR-Brass

QUICK-DISCONNECT TYPE	Interchangeability	1 Female Socket 1/4" NPT	2 Male Plug w/Female 1/4" NPT	3 Union Adapter 1/4" NPT x 3/4" UNF	4 Male Plug w/Male 1/4" NPT (used when connecting Inlet Pressure Gauge)	5* Female Socket Assy. (used to connect Air-Supply Hose to Male Plug on Respirator)
Snap-Tite (AL)	C	66272	66274	69542	66273	455019
Snap-Tite (SST)	C	629673	629672	808358	629671	471778
Snap-Tite (BR)	C	630305	630307	69542	630306	471777
Hansen (SST)	A	628768	628208	808358	473502	471779
Hansen (BR)	D	630311	630313	69542	630312	471501
Foster (S)	B	628770	55716	69542	56549	467044
Foster (SST)	B	636459	636460	808358	———	801016
Foster (BR)	A	629980	629981	69542	473501	470194
Schrader (S)	B	See Foster(S)	See Foster(S)	See Foster(S)	See Foster(S)	See Foster(S)
CEJN Locking (Chrome-Plated—BR)	E	631870	479026	69542	479020	479001
CEJN Locking (Chrome)	E	———	479026	69542	479020	476956
Snap-Tite Locking (AL)	F	———	479027	69542	———	479032
Snap-Tite Locking (SST)	F	———	479028	808358	479022	479033
Snap-Tite Locking (BR)	F	———	479029	69542	479023	479034
Foster Locking (SST)	D	636473	637851	808358	———	800805

† Fittings with the same letter code are interchangeable.   * Socket assy consists of socket from column 1 and brass union adapter P/N 69541 (¾" female x ¼" npt male). Exception: All SST fittings have SST Union P/N 808360.

Locking Quick-Disconnects

Locking quick-disconnects must be used to interconnect lengths of MSA Air-Supply Hose. For most systems, you can use up to 12 sections of hose to make up the maximum length.

CEJN Locking Quick-Disconnect Assembly, Socket and Plug (Chrome)	479009
CEJN Locking Female Quick-Disconnect Socket (Chrome)	476956
CEJN Locking Male (w/ Male 3/4" NPT) Quick-Disconnect Plug (Chrome)	476955
Snap-Tite Locking Quick-Disconnect Assembly, Socket and Plug (AL)	479010
Snap-Tite Locking Female Quick-Disconnect Socket (AL)	479032
Snap-Tite Locking Male (w/ Male 3/4" NPT) Quick-Disconnect Plug (AL)	479015
Snap-Tite Locking Quick-Disconnect Assembly, Socket and Plug (SST)	479011
Snap-Tite Locking Female Quick-Disconnect Socket (SST)	479033
Snap-Tite Locking Male (w/ Male 3/4" NPT) Quick-Disconnect Plug (SST)	479016

CEJN Quick-Disconnect Socket & Plug Assembly

CEJN Q-D Socket   CEJN Q-D Plug

Snap-Tite Quick-Disconnect Socket & Plug Assembly

Snap-Tite Q-D Socket   Snap-Tite Q-D Plug
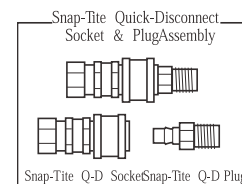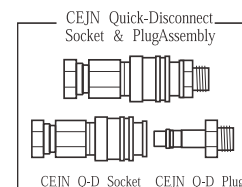
A Pocket Guide to Air-Line Systems

This pocket-size booklet shows complete hook-ups of the various MSA air-line systems, both constant flow and pressure demand, from the air source to the respirator connection. Below each illustration, the individual parts of the system are identified by title and part number. The reader is then referred to other pages in the guide for more information about the specific MSA components. To order your copy, request Bulletin 0114-14-MC.

A POCKET GUIDE TO AIR-LINE SYSTEMS

MSA

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Air-Line Respirator Accessories

NEW!

Breathing Air Distribution System Filtration Box

The Breathing Air Distribution System filtration box is housed in a rugged polymer case. It is equipped with three-stage filtration, a pressure regulator, a four-outlet manifold and a continuous flow 115 VAC carbon monoxide monitor. The filtration box may be used in a portable or stationary position.

Features
- Two models of filtration boxes are available – one box provides 50 cubic feet of air per minute and a second provides 100 cubic feet of air per minute.

Three-stage filter:
- First-stage particulate/ bulk liquid separation filter element
  – Filter Change Indicator changes from green to red color
  – Removes 95% of bulk particulates and liquids at 5 microns
  – Auto drain removes liquids from bowl
- Second-stage oil-coalescing and ultra-fine particulate filter element
  – Filter Change Indicator changes from green to red color
  – Removes oil and particulates to 99.99% at 0.01 micron
  – Auto drain removes liquids from bowl
- Third-stage activated charcoal filter element
  – Filter Change Indicator changes from green to red color
  – Removes organic vapors, odors and tastes
- Pressure regulator and gauge operate in 1-125 psi range.
- Four-outlet manifold – available with four outlet fitting options.
- Carbon monoxide monitor continuously monitors for carbon monoxide in the breathing air. The monitor operates on 115 VAC and has two 9 VDC batteries for the carbon monoxide sensor and to act as back-up in the event of an AC power failure.
- Protective case is constructed of a corrosion-resistant polymer.

Portable Grade-D filtration system provides breathing air for up to four air-line respirators

Filtration Box Dimensions and Weight

50 CFM Filtration Box
Size: 23.5" L X 16.75" H X 8.5" D
Unit weight: 24.6 pounds
Maximum air flow:
50 scfm @ 110 psi

100 CFM Filtration Box
Size: 26.25" L X 20.75" H X 9" D
Unit weight: 38.8 pounds
Maximum air flow:
100 scfm @ 110 psi

See Bulletin 0112-39 for further information.

Filtration Boxes

For use in the United States (Carbon monoxide monitor set at 10 ppm)	For use in Canada (Carbon monoxide monitor set at 5 ppm)	Description
10107538	10113347	50 CFM Filtration Box four-outlet, carbon monoxide monitor, with union adapters
10107814	10113349	50 CFM Filtration Box four-outlet, carbon monoxide monitor, with Snap-Tite aluminum quick disconnects
10107812	10113348	50 CFM Filtration Box four-outlet, carbon monoxide monitor, with Foster Steel quick disconnects
10107813	10113346	50 CFM Filtration Box four-outlet, carbon monoxide monitor, with Hansen Brass quick disconnects
10107539	10113345	100 CFM Filtration Box four-outlet, carbon monoxide monitor, with union adapters
10107816	10113343	100 CFM Filtration Box four-outlet, carbon monoxide monitor, with Snap-Tite aluminum quick disconnects
10107817	10113342	100 CFM Filtration Box four-outlet, carbon monoxide monitor, with Foster Steel quick disconnects
10107815	10113344	100 CFM Filtration Box four-outlet, carbon monoxide monitor, with Hansen Brass quick disconnects

Other Replacement Parts and Accessories

Part No.	Description
10108138	Upright support bracket, 50 and 100 CFM units
10107741	Remote audible alarm with mounted visual strobe and guard, includes 50 ft. cable and 9-12 VDC
10107527	Calibration Kit (for U.S. models), 20 ppm CO, zero air, regulator and case, 17-liter size
10107526	Calibration Kit (for Canadian models), 10 ppm CO, zero air, regulator and case, 17-liter size
10116617	Calibration Gas, 20 ppm CO
10116618	Calibration Gas, 10 ppm CO
10116619	Calibration Gas, 0 ppm CO

Breathing Air Distribution Supply Hoses (1/2 inch I.D.) for inlet ports
From plant air system to filtration box

Part No.	Description
10113330	Hose, 50 feet, Industrial Interchange Connections, 1/2 inch NPT male and female
10113341	Hose, 100 feet, Industrial Interchange Connections, 1/2 inch NPT male and female
10113328	Quick-Disconnect Socket, Hansen Industrial, 1/2 inch male NPT
10113329	Quick-Disconnect Plug, Hansen Industrial, 1/2 inch male NPT

Filter Change Kits

Description	50 CFM	100 CFM
Filter Change Kit, First Stage	10107545	10107541
Filter Change Kit, Second Stage	10107546	10107542
Filter Change Kit, Third Stage	10107544	10107543

Air-Line Respirator Accessories

NEW!

Breathing Air Distribution System— Point of Attachment Box

The Breathing Air Distribution System point of attachment box is housed in a rugged polymer case. It is equipped with one-stage filtration, a pressure regulator and a four-outlet manifold. The point of attachment box may be use in a portable or stationary position.

Features
One-stage filter:
- First-stage particulate/bulk liquid separation filter element
  - Filter Change Indicator changes from green to red color
  - Removes 95% of bulk particulate and liquids @ 5 microns
- Pressure regulator and gauge operate in a 1-125 psi range
- Four-outlet manifold – available with four outlet fitting options
- Protective case is constructed of a corrosion-resistant polymer

Portable Grade-D filtration system provides breathing air for up to four air-line respirators

Point of Attachment Dimensions and Weight
Size: 23.5" L X 16.75" H X 8.5" D
Unit weight: 24.6 pounds
Maximum air flow: 50 scfm @ 110 psi

See Bulletin 0112-40 for further information.

Breathing Air Distribution System—Point of Attachment Box

Part No.	Description
10107536	Point of Attachment Box, four-outlet, with union adapters
10107822	Point of Attachment Box, four-outlet, with Snap-Tite aluminum quick disconnects
10107823	Point of Attachment Box, four-outlet, with Foster Steel quick disconnects
10107821	Point of Attachment Box, four-outlet, with Hansen Brass quick disconnects

Replacement Parts and Accessories

Part No.	Description
10107545	Filter Change Kit

Approved Air-Supply Hose

MSA 3/8-inch ID Air-Supply Hose is available in smooth, reinforced, lightweight polyvinylchloride (PVC); chemical-resistant black neoprene; or smooth, coiled nylon. Must be used with respirators in this section to maintain NIOSH certifications. Quick-Disconnects are sold separately (see p. 42).

Air-Supply Hose

Material	Hose Coupling	100ft	50ft	25ft	15ft	8ft
Neoprene	Brass	—	455022	455021	455020	481071
Neoprene	Stainless Steel	—	481080	481079	481078	481077
PVC	Brass	484225	471513	471512	471511	481051
PVC	Stainless Steel	—	481060	481059	481058	481057
Coiled Nylon	Brass	—	474043*	491515*	491514*	491513*

* Recommended usable length, 4-25 ft.

Air-Supply Hose Temperature Ranges

Neoprene	*PVC*	*Nylon*
-25° to 212°F	32° to 120°F	0° to 160°F

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Cascade System Accessories

The following components are used to assemble a 2400 psi cascade system, which consists of a bank of respirable-air cylinders (user-supplied) that supply a flow of air to pressure-demand air-supplied respirators. Air-supply hoses are listed separately at right.

Cascade System Accessories	
Audi-Larm™ Warning Device, low-pressure (CGA 346), 0–3000 psig	85078
Audi-Larm™ Warning Device, high-pressure (CGA 347), 0–5500 psig	492307
Air Coupler Tee – low-pressure CGA 346, 0–3000 psig	68850
Air Coupler Tee - high pressure CGA 347, 0-5500 psig	10081206
Air Pigtail – low-pressure CGA 346, 0–3000 psig	68851
Air Pigtail - high pressure CGA 347, 0-5500 psig	10081205
Air Cylinder Pressure Regulator, dual-gauge, 0-3000 psig	68858
High-Pressure Air Cylinder Regulator, dual-gauge, 0-5500 psig	633352
Male Air-supply Hose Adapter for Foster Quick-Disconnects (for PVC hose)	55716
Union Adapter (required to attach male plug)	69542

Manifolds

Required when using multiple (2–4) respirators from a single air source; some of these manifolds have quick-disconnect assemblies with automatic shut-off outlets. Note: Gauge required when greater than 10' between airline point of connection and the regulator.

Manifolds			
No. of Outlets	Foster Quick-Disconnect	Snap Tite Quick-Disconnect	less Quick Disconnect
4	47370	486053	488914
2	84416	93931	84418

Support Belts

MSA PVC belts are easy to decontaminate. If decontamination is not a factor, users may opt for an uncoated nylon web belt.

Support Belts	
Polyurethane-coated Nylon Support Belt, black	492827
PVC Support Belt, clear	473902
Web Support Belt (uncoated)	9961

Inlet Pressure Gauge

MSA offers an inlet pressure gauge that enables a user to check pressure at the inlet of the MSA Air-Supply Hose, thereby assuring that air pressure is within the certified range. The gauge is supplied with Quick-Disconnect fittings.

Inlet Pressure Gauge			
w/ Snap-Tite fitting	w/ Foster or Schrader fitting	w/ Hansen fitting	less Quick-Disconnect**
476734	476735	476737	492586

**See Column 4 plug and Column 3 union on page 42.

Pressure Regulator

MSA's pressure regulator is used with a plant air compressor system to reduce compressor pressure to the desired operating pressure. The regulator maintains pressure on the outlet side until readjusted for use with inlet pressure of up to 125 psig.

Pressure Regulator	
Pressure Regulator	66716

Air-line Filter

The MSA air-line filter removes a minimum of 99% of 0.3 micron and larger particulates, including dusts, mists, fumes, smoke, and petroleum vapors. Caution: It does not remove carbon monoxide. The air-line filter can be used at inlet pressures up to 125 psig. The pressure drop is one psig at a maximum rated air flow of 25 cfm.

Air-Line FIlter	
Air-line Filter - with 1/2" NPT female inlet and outlet	81857
Air-line Filter - with 3/4"-16 straight threads	488041
Replacement Filter Kit	484923

TransAire® 5, TransAire® 10, and Custom Air V® Escape Respirators

Quick Escape from IDLH Atmospheres

When you need to bail out quickly, the TransAire 5 and TransAire 10 Escape Respirators deliver a consistent air supply at 40 lpm (liters per minute). This standard-flow rate makes for a smooth escape in normal aerobic escape applications. The TransAire 10 Escape Respirator is pressurized to 3000 psig, and the TransAire 5 Escape Respirator is pressurized to 2216 psig. The compact units employ aluminum cylinders that can withstand exposure to temperatures from 0° to 160°F. Despite their durability, the units are extremely lightweight.

The Custom Air V Escape Respirator is designed with a high flow rate and meets stringent air flow requirements for extremely aerobic escape applications. It provides a five-minute, constant air flow at 72 lpm and is available with either an aluminum or a carbon fiber cylinder.

TransAire and Custom Air V Complete Assemblies

TransAire 5 Escape Respirator complete (includes aluminum cylinder, carrier, hood tube, hood assembly)	10008292
TransAire 5 Escape Respirator complete, less air (includes aluminum cylinder, carrier, hood tube, hood assembly)	10066739
TransAire 10 Escape Respirator complete (includes aluminum cylinder, carrier, hood tube, hood assembly)	10008293
TransAire 10 Escape Respirator complete (includes fully-wound carbon fiber cylinder, carrier, hood tube, hood assembly)	10083327
TransAire 10 Escape Respirator complete, less air (includes aluminum cylinder, carrier, hood tube, hood assembly)	10066740
Custom Air V Escape Respirator complete (includes fully-wound carbon fiber cylinder, carrier, hood tube, hood assembly)	484353
Custom Air V Escape Respirator complete (includes aluminum cylinder, hood tube, hood assembly)	802197

Accessories

Single-unit wall-mounting case	696192
Two-unit wall-mounting case	696193
Single unit carrying case, yellow polyethylene, with handle, for all escape respirators	10012530

Two unit and single unit wall mounting case - chemical resistant ABS plastic case resist weathering, moisture, and corrosion to ensure escape respirators stay in ready-to-use condition.

Single unit carrying case

AirHawk® II Industrial Air Mask

Industrial SCBA with enhanced options to fit many budgets.

The new AirHawk II Air Mask is built upon MSA's established AirHawk MMR Air Mask and is a lightweight, durable, and economical SCBA for many industrial IDLH (immediately dangerous to life or health) applications. This SCBA fits any budget by keeping its lower-cost options while offering many new choices not offered with any other industrial air mask. In addition, the AirHawk II Air Mask is available in both low-pressure and high-pressure versions.

MSA's AirHawk II Air Mask is a pressure-demand apparatus designed to maintain a slight positive air pressure inside the facepiece during inhalation and exhalation. Positive pressure helps to prevent contaminants from seeping in and around the facepiece, even if small breaks in the face-to-facepiece seal should occur. The AirHawk II Air Mask is built from six major components: facepiece, carrier and harness assembly, cylinder, first-stage regulator, mask-mounted regulator, and End-of-Service-Time-Indicator (EOSTI).

Facepiece

MSA offers you the choice of two facepieces, the proven Ultra Elite Facepiece or new industrial Advantage 4000 Facepiece for the AirHawk II Air Mask. Choose from three facepiece sizes (small, medium or large) in either Hycar Rubber or silicone rubber. Nosecups are available in two sizes, standard and large.

The Ultra Elite Facepiece features:

• a one-way check valve preventing exhaled air from entering the mask-mounted regulator
• a molded polycarbonate lens
• a mechanical speaking diaphragm for short-range communications
• five adjustable rubber straps for exceptional head comfort, security, and safety
• optional heat-resistant Kevlar hairnet-style head harness

Ultra Elite Facepiece

The Advantage 4000 Facepiece features:

• adapters to convert the Advantage Facepiece to a Twin-Cartridge Respirator (using Advantage Cartridges) or an RD40 Facepiece
• a one-way check valve preventing exhaled air from entering the mask-mounted regulator
• a molded polycarbonate lens
• four-point silicone head harness for exceptional comfort and security
• optional polyester net head harness

Advantage 4000 Facepiece

Airframe Carrier and Harness Assembly

MSA's durable AirFrame Carrier and Harness assembly comes standard with large side handles and a central attachment point to pull workers to safety in rescue scenarios. The AirFrame Carrier and Harness distributes the SCBA's weight over the user's hips for comfort and stability. The composite backplate is made of glass fiber-reinforced thermoset plastic and is ergonomically designed with a spine strain relief. Key com-ponents are detachable without special tools.

The assembly's harness components are available in nylon or high-strength Kevlar. Shoulder straps feature easy-to-release friction buckles to positively retain pull straps. A center-pull waist belt system is also incorporated into its design. This harness also provides optional shoulder pads, lumbar pad, and chest strap, making this unit the most comfortable industrial air mask on the market today.

The cylinder band is available in nylon or Kevlar and is secured by an adjustable nylon buckle, allowing the band to retain various cylinder sizes. An optional open-form stainless steel cylinder band provides rapid drop-in cylinder replacement, eliminating webbing adjustments and clips.

Cylinders

MSA offers a choice of three low-pressure (2216 psig) 30-minute-rated cylinders for use with this SCBA. Choose carbon-wrapped, fiberglass hoop-wound, or all-aluminum construction cylinders. High-pressure (4500 psig) carbon-wrapped cylinders are available in 30-, 45- or 60-minute durations.

First-Stage Regulator

The PR-14 Regulator is designed with the fewest number of parts in the industry, with Teflon- coated anodized valve bodies to minimize internal component friction and maximize service life. The PR-14 Regulator has only 14 replaceable parts and can be maintained without special tools.

Mask-Mounted Regulator

The second-stage Firehawk Regulator features a slide-to-connect (S-T-C) or push-to-connect (P-T-C) regulator attachment to meet the widest preference ranges. An integrated shut-off prevents cylinder air loss when disconnecting the second-stage regulator from the facepiece. The FireHawk Regulator has only 22 replaceable parts and can be maintained without special tools.

EOSTI

MSA's Audi-Larm™ Audible Alarm is an air-actuated continuously-ringing warning bell that automatically sounds when the air-supply cylinder reaches 25% of its rated service life.

Options

• Optional air-line port, designed to accept an air-line connection from an independent air source
• Optional wireless Heads-Up Display provides the user with the remaining volume of cylinder air through four colored LEDs
• Optional Rapid Intervention Crew (RIC) System enables quick refilling (less than a minute) of an SCBA cylinder from a mobile compressor or cascade system, or you can also transfill between two SCBA wearers
• Optional Emergency Egress Rescue Belt, integral to the SCBA waist belt, features a Kevlar line (50 ft. or 75 ft.) and rappelling hardware
• Optional shoulder-mounted Quick-Fill System EBS accessory offers SCBA cylinder refill from a mobile compressor or cascade system and also allows transfilling between two SCBA wearers
• Optional ICM Tx Integrated PASS/HUD Transmitter features the Personal Alert Safety System (PASS) and the HUD Transmitter combined within a single housing

AirHawk® II Industrial Air Mask

AirHawk II SCBA – Low Pressure

Comes with nylon harness with chest strap, low pressure (2216 psig)

Facepiece	Cylinder	Hard Case	No Case
Ultra Elite, medium Hycar, **rubber** head harness	Aluminum - 30 minutes	10095800	10095801
Ultra Elite, medium Hycar, **Speed-On** head harness	L30 Stealth carbon cylinder (30 minutes)	10095802	10095803
Adv 4000, medium Hycar, **polyester net** head harness	Aluminum - 30 minutes	10095804	Call
Adv 4000, medium Hycar, **rubber** head harness	Aluminum - 30 minutes	Call	10095805
Adv 4000, medium Hycar, **polyester net** head harness	L30 Stealth carbon cylinder (30 minutes)	10095806	10095807
No facepiece	No cylinder	Call	10116783

AirHawk II SCBA – High Pressure

Comes with harness, high pressure (4500 psig)

Facepiece	Harness Carrier	Cylinder	Hard Case	No Case
Ultra Elite, medium Hycar, **Speed-On** head harness	Kevlar with chest strap	45" Carbon Low Profile	10116452	Call
Adv 4000, medium Hycar, **polyester net** head harness	Nylon with chest strap	45" Carbon Low Profile	10116453	Call
Adv 4000, medium Hycar, **polyester net** head harness	Nylon without chest strap	45" Carbon	Call	10116454
Adv 4000, medium Hycar, **rubber** head harness	Nylon without chest strap	30" Carbon	Call	10116781
No facepiece	Nylon with chest strap	No cylinder	Call	10116782

Storage Cabinets

Single unit wall mounting case. Chemical resistant ABS plastic case resists weathering, moisture, and corrosion to ensure SCBA stay in ready-to-use condition.

Storage Cabinets

10052744	Single case for SCBA's supplied with LP30, HP45, HP60 and low profile cylinders
10052745	Single case for SCBA's supplied with H30 cylinders only

Training is available 24/7 at
MSA-U® Online Training.
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Questions or Comments?
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How to Order SCBA: Get the Exact Model You Need
The Assemble-To-Order System

MSA's Assemble-To-Order System (ATO) will make ordering the right mask easier and faster than ever. Instead of choosing from a handful of complete Air Mask assemblies, users can order a custom-made Air Mask with every option exactly as desired. Contact MSA Customer Service Center for details.

AirHawk® II Industrial Air Mask Assemble-To-Order (ATO) Matrix

SCBA Type
- A2L — 2216 AirHawk II Air Mask
- A2H — 4500 AirHawk II Air Mask

Carrier/Harness Assembly
- A — AirFrame, Nylon Harness, Fabric Band, Plastic Buckle, Double Pull
- B — AirFrame, Nylon Harness, Fabric Band, Plastic Buckle, Double Pull, W/Chest Strap
- C — AirFrame, Nylon Harness, Steel Band, Plastic Buckle, Double Pull
- D — AirFrame, Nylon Harness, Steel Band, Plastic Buckle, Double Pull, W/Chest Strap
- E — AirFrame, Kevlar Harness, Fabric Band, Plastic Buckle, Double Pull
- F — AirFrame, Kevlar Harness, Fabric Band, Plastic Buckle, Double Pull, W/Chest Strap
- G — AirFrame, Kevlar Harness, Steel Band, Plastic Buckle, Double Pull
- H — AirFrame, Kevlar Harness, Steel Band, Plastic Buckle, Double Pull, W/Chest Strap
- J — AirFrame, Reflective Kevlar Harness, Steel Band, Metal Buckle, Single Pull
- K — AirFrame, Reflective Kevlar Harness, Steel Band, Metal Buckle, Double Pull
- L — AirFrame, Reflective Kevlar Harness, Steel Band, Metal Buckle, Single Pull, W/Chest Strap
- M — AirFrame, Reflective Kevlar Harness, Steel Band, Metal Buckle, Double Pull, W/Chest Strap

Options J and L can only be chosen if a rescue belt option is selected.

Lumbar Pad/Rescue Belt
- 0 — None
- 1 — Shoulder Pad
- 2 — Standard Lumbar Pad
- 3 — Shoulder & Standard Lumbar Pad
- 4 — Swiveling Lumbar Pad
- 5 — Shoulder & Swiveling Lumber Pad
- A — Rescue Belt, Standard, 50 Ft. Rope
- B — Rescue Belt, Standard, 75 Ft. Rope
- C — Recue Belt, Long, 50 Ft. Rope
- D — Rescue Belt, Long, 75 Ft. Rope
- E — Rescue Belt, Swiveling, Standard, 50 Ft. Rope
- F — Rescue Belt, Swiveling, Standard, 75 Ft. Rope
- G — Rescue Belt, Swiveling, Long, 50 Ft. Rope
- H — Rescue Belt, Swiveling, Long, 75 Ft. Rope
- J — Rescue Belt, Mid-Size, 50 Ft. Rope
- K — Rescue Belt, Mid-Size, 75 Ft. Rope
- L — Rescue Belt, Swiveling, Mid-Size, 50 Ft. Rope
- M — Rescue Belt, Swiveling, Mid-Size, 75 Ft. Rope

Cylinder
- 0 — None
- 1 — 3AL Aluminum
- 2 — Hoop-Wound
- 3 — 30' Carbon
- 4 — 3AL Aluminum, less air
- 5 — Hoop-Wound, less air
- 6 — 30' Carbon, less air
- 0 — None
- 1 — 30' Carbon
- 2 — 45' Carbon
- 3 — 45' Carbon Low-Profile
- 4 — 60' Carbon
- 5 — 30' Carbon less air
- 6 — 45' Carbon less air
- 7 — 45' Carbon Low-Profile less air
- 8 — 60' Carbon less air

MMR Regulator Type
- A — Firehawk PTC, single hose, solid cover
- B — Firehawk PTC, QC, solid cover,
- C — Firehawk STC, single hose, solid cover
- D — Firehawk STC, QC, solid cover
- S — Firehawk PTC, threaded hose, solid cover
- T — Firehawk, STC, threaded hose, solid cover

Firehawk slide regulators not compatible with Advantage 4000 Facepieces

Air-Line Options
- 0 — None
- 1 — Snap-Tite Aluminum
- 2 — Hansen SST
- 3 — Hansen Brass
- 4 — Foster Steel
- 5 — Snap-Tite Locking Aluminum
- 6 — Foster SST

Cannot use Air-Line Option if Rescue Belt is chosen.

Emergency Breathing System
- 0 — None
- 1 — Quick-Fill Shoulder Mounted
- 2 — ExtendAire (EBS) with Dual Quick Connect Shoulder Mounted
- 3 — Quick Fill & ExtendAire (EBS) with Dual Quick Connect

Facepiece
- A — None
- B — Ultra Elite, Hycar, Small
- C — Ultra Elite, Hycar, Medium
- D — Ultra Elite, Hycar, Large
- E — Ultra Elite, Silicone, Small
- F — Ultra Elite, Silicone, Medium
- G — Ultra Elite, Silicone, Large
- H — Advantage 4000, Hycar, Small
- J — Advantage 4000, Hycar, Medium
- K — Advantage 4000, Hycar, Large
- L — Advantage 4000, Silicone, Small
- M — Advantage 4000, Silicone, Medium
- N — Advantage 4000, Silicone, Large

Nosecup
- 0 — None
- 1 — Medium
- 2 — Large

Nosecup standard with Advantage 4000 Facepiece is selected.

Head Harness
- 0 — None
- 1 — Ultra Elite, rubber, less neck strap
- 2 — Ultra Elite, SpeeD-ON less neck strap
- 3 — Ultra Elite, rubber, with neck strap
- 4 — Ultra Elite, SpeeD-ON with neck strap
- 5 — Advantage 4000, rubber
- 6 — Advantage 4000, poly net
- 7 — Advantage 4000, Kevlar net

Neckstrap not available with Advantage 4000 Facepiece

Communications
- A — None
- B — Clear-Command Ready
- C — Amp
- D — Amp/RI

Communications not compatible with Advantage 4000 Facepiece

Gauge/Integrated PASS
- A — Pressure Gauge
- B — ICM Tx with Heat Sensor
- C — ICM Tx without heat sensor
- D — ICM TxR with heat sensor
- E — ICM TxR without heat sensor
- F — Pressure Gauge with HUD
- G — ICM TX with heat sensor with HUD
- H — ICM TX without heat sensor with HUD
- J — ICM TxR with heat sensor with HUD
- K — ICM TxR without heat sensor with HUD
- L — HUD Only

Case
- 0 — None
- 1 — Hard Case
- 2 — Soft Case

Note: Standard Rescue Belt fits waist sizes up to 54 inches. Long Rescue Belt fits waist sizes up to 74 inches.

Part Number _____ **Quantity** _____

NIOSH Approved.

Non NFPA Compliant.

FireHawk® M7 Air Mask

MSA's **FireHawk M7 Air Mask** represents a true technological achievement in critical personal protection. As firefighters determined the safety requirements that would be needed to meet the NFPA 1981 and 1982–2007-edition standards, MSA's engineering teams began designing the solutions.

The FireHawk M7 Air Mask has seven **life-safety** design components built on a **modular** Air Mask platform, developed to **exceed the new NFPA 2007** requirements and provide firefighters with the highest-quality SCBA currently available.

Designed to meet **NFPA 2007**-edition standard. *Determined to exceed your safety equipment expectations!*

1. TAKING THE HEAT

Although MSA PASS alarms have performed in extreme temperatures for more than a decade, a top priority was to design an alarm that could **really take the heat!** The M7 alarm *(patent pending)* was developed in cooperation with prominent university acoustic experts, resulting in an emitter that exceeds 95 decibels with solid performance at the NFPA 500F test! Once again, giving you that lifesaving edge in the face of danger.

2. VIRTUALLY "BULLET-PROOF" ELECTRONICS

Like an armor shield, the M7 HUD, Power Module, and Control Module are encased in a proprietary high-temperature impact-grade polymer, providing the highest possible protection against impact and water ingress. Electronics enclosures are permanently sonically **welded** to a hermetic standard to ensure a consistent water-tight seal. M7 electronics are virtually **"bullet-proof"** against fire-ground hazards.

3. STRAIGHT-TALK COMMUNICATIONS

We've got you covered with communications, starting with a **high-performance mechanical speech diaphragm**, with performance that exceeds the 2007 NFPA requirements as a stand-alone solution. Backing the mechanical diaphragm is an **electronic amplifier** with an internal facepiece microphone for ultimate clarity. The ClearCommand® Communication System provides clear communication during the most critical times. This Air Mask speaks loud and clear when it comes to communications.

4. FIREGROUND MANAGEMENT

Firefighter accountability systems have never before been as practical, complete, and user-friendly as the MSA **M7 Accountability System**. Based on the ICM TxR Unit introduced in mid-2006, it displays a full array of visual and audible information for up to 100 firefighters within a one-mile-line-of-site—exactly what incident commanders wanted. Record keeping is also made easy by downloading reports. This crown jewel is available only from MSA!

5. EXTENDED PROTECTION

The FireHawk M7 Air Mask is not your typical SCBA. Firefighters need to be prepared for the unexpected, and emergency egress from a 2nd-floor or higher can be impossible without the right safety equipment. That's why the FireHawk M7 Air Mask offers an NFPA-compliant integrated rappelling system, called the Rescue Belt, providing firefighters with one more lifesaving option in the face of danger.

"Above and beyond" protection is also provided with the CBRN FireHawk MMR. The CBRN FireHawk includes a positive-protection Tetraplex™ shield, to prevent contact between chemical warfare agents and the most vulnerable component of regulators, their thin elastomeric diaphragm. Other "air-wash" approaches may pass in laboratory conditions. The Tetraplex shield provides positive protection against all potential conditions.

External hazards are bad enough without having concerns of spreading illness among firefighters through shared-use SCBA. The Ultra Elite® facepiece protects you against user cross-contamination with MSA's inhalation check-valve: a **"must have"** in modern safety equipment.

6. LIGHTWEIGHT AND EASY TO USE

Firefighters already have enough weight to carry and gear to maintain, so MSA engineers set out to lighten the load of components, reduce parts counts, **simplify maintenance**, maximize user comfort, and **modularize** the design. The FireHawk M7 Air Mask has a lightweight polymer backplate, with quick-release harness straps, an error-proof cam-lock cylinder attachment, fast change-out electronic components, a large swiveling lumbar pad, and regulators that will fit in the palm of your hand (**less than 30 parts** for the MMR and 14 for the 1st stage). Our time-tested Ultra Elite facepiece has unbeatable comfort, visibility, communications, cross-contamination protection, fit, and seal.

FireHawk® M7 Air Mask

7. PLATFORM FOR THE FUTURE

The FireHawk M7 Air Mask is designed to accept **future technology upgrades**. Included in every M7 electronics ensemble is a 2.4GHz **personal wireless network**, a network that transmits and receives encrypted information over a short-range on a firefighter's body.

This new wireless feature provides the capability to add on future technology that can provide additional information back to incident command through the FireHawk M7 Accountability System. You never have to worry about radio interference either—we have you covered with a thoroughly-tested RFI shield design that protects against all fireground radio signals. The new FireHawk M7 Air Mask provides you with the best technology today and positions you for well into the future.

Training is available 24/7 at
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FireHawk® M7 Air Mask

How to Order SCBA: Get the Exact Model You Need
The Assemble-To-Order System

MSA's Assemble-To-Order System (ATO) will make ordering the right mask easier and faster than ever. Instead of choosing from a handful of complete Air Mask assemblies, users can order a custom-made Air Mask with every option exactly as desired. Contact MSA Customer Service Center for details.

FireHawk M7 Air Mask Ordering Selection Matrix *(NFPA 1981 and 1982 - 2007 edition compliant, NIOSH 42 CFR Part 84 CBRN certified)*

Air Mask Pressure	Carrier/Harness Assembly	Lumbar Pad/Rescue Belt	Cylinder	MMR Type	Emergency Breathing Support	Facepiece	Nosecup	Head Harness	Electronic Communications	Integrated PASS/Telemetry	Case
L 2216	A Single Pull without chest strap B Single Pull with chest strap C Double Pull without chest strap D Double Pull with chest strap Options A & B can only be chosen if a rescue belt is selected.	0 None 1 Swiveling Lumbar Pad A Rescue Belt – Standard, 50' B Rescue Belt – Mid-Size, 50' C Rescue Belt – Long, 50' D Rescue Belt – Standard, 75' E Rescue Belt – Mid-Size, 75' F Rescue Belt – Long, 75' If choosing a rescue belt, the carrier/harness assembly must be a single pull (options A or B).	0 None 1 3AL Aluminum with air 3 30' Carbon with air 4 3AL Aluminum less air 6 30' Carbon less air 0 None 1 30+ Carbon with air 2 30+ Carbon less air 0 None 1 30' Carbon with air 2 45' Carbon with air 3 45' Carbon Low-Profile with air 4 60' Carbon with air 5 30' Carbon less Air 6 45' Carbon less Air 7 45' Carbon Low-Profile less Air 8 60' Carbon less Air	A CBRN Firehawk STC, threaded B CBRN Firehawk STC, QC C CBRN Firehawk PTC, threaded D CBRN Firehawk PTC, QC If choosing an ExtendAire option, the MMR type must be a QC (option B or D).	0 None 1 Quick-Fill 2 ExtendAire 3 Quick-Fill and Ex-tendAire If choosing an Air Mask Pressure M, M is not compatible with Quick-Fill.	A None B Hycar, Small C Hycar, Medium D Hycar, Large	0 None 1 Medium 2 Large	0 None 2 SpeeD-On less neck strap 4 SpeeD-On with neck strap	A None B Clear-Command Ready with bracket C Clear-Command Amp D Clear-Command Amp/RI	A PASS with thermal alarm activated B PASS without thermal alarm activated C PASS, telemetry and thermal alarm D PASS, telemetry without thermal alarm	0 None 1 Hard Case 2 Soft Case
M 3000											
H 4500											

A-M7 ☐☐☐☐☐☐☐☐☐☐☐☐ ☐☐
Part Number   Quantity

SCBA Key Components

Facepiece Assemblies for FireHawk M7 Air Masks

Ultra Elite Facepiece

Heads-Up Display (HUD)

When you open your Air Mask's cylinder valve, the HUD automatically activates, displaying the cylinder pressure reading in 25% increments.

ClearCommand® Communications System

MSA's ClearCommand Communications System is designed specifically to meet the modern communications needs of firefighters. It features an internally mounted microphone coupled with a large-diameter (50mm) amplified speaker for optimal clarity and volume. Using a proprietary circuit design, the system delivers more than twice the volume of a facepiece alone. Mounted in an "out-of-the-way" position, the ClearCommand System doesn't block vision or mechanical communication. The Ultra Elite's mechanical voicemitter is still fully functional, even with the system installed.

Ultra Elite® Facepiece

The MSA Ultra Elite Facepiece offers an effective combination of comfort and performance.

Designed to provide exceptional peripheral and downward vision, the Ultra Elite Facepiece features a super-soft facepiece texture for a smooth and comfortable fit. It also resists chemical attack and temperature extremes, and withstands rugged day-to-day use without tearing and ripping.

The design of the Ultra Elite Facepiece is based on extensive anthropometric studies of the face-length, temple-width and chin-width data from more than 8,000 individuals. The result is a facepiece that provides improved seals against a wide range of facial contours. To provide a secure, comfortable fit, the facepiece utilizes five adjustable straps with stainless steel, field-replaceable buckles that resist chemical attack. The straps also feature slightly larger adjustment tabs that are easier to manipulate, even with gloves on.

For slip-on convenience, the Ultra Elite Facepiece can be equipped with the SpeeD-ON® Facepiece Harness. Made of flame- and heat-resistant Kevlar Fabric, the harness features a hair-net type, five-point suspension that can be easily and securely adjusted at each point.

Lenses on MSA full facepieces are molded from polycarbonate, and a special super hardcoating provides a tough, durable facepiece lens to resist scratching.

HUD Display

HUD Display (inside view)

Firehawk® MMR

The Firehawk MMR, MSA's mask-mounted regulator assembly, is available with two different attachment systems, the Firehawk MMR truly redefines ease-of-use and ease-of-maintenance, combined with outstanding performance.

The Firehawk second-stage regulator features a unique Slide-To-Connect (STC) attachment system that allows firefighters to hang the regulator on the facepiece in the "ready position," then simply push it into the facepiece when SCBA air is needed. Doffing of the regulator, while wearing gloves, is also easy with two large release buttons that automatically turn-off the flow of air as the regulator is doffed. A dual-swivel feature on the pressure hose provides maximum freedom-of-head movement and the silicone hose material ensures hose flexibility even at very cold temperatures.

In addition to the STC system, MSA also offers a second connection option for the Firehawk Regulator, the Push-to-Connect (PTC). The PTC's Adapter self-centers the Firehawk regulator and the loud dual sound of the regulator engaging onto the facepiece provides you with confidence that the Firehawk PTC is securely attached to your facepiece—an action that takes just seconds, when seconds count!

Maintenance is also a breeze, considering the Firehawk design requires no tools, adhesives, or sealants, and has approximately 70% fewer parts as compared to other regulators on the market. Additionally, there are no internal adjustments required. Any adjustments to the regulator may be accomplished at a single adjustment point through the outlet port of the regulator.

Ease of use and maintenance, combined with outstanding performance, makes the Firehawk MMR clearly the product of choice.

Firehawk PTC Regulator

Ultra Elite M7 Facepiece, SpeeD-ON Head Harness, Nosecup and M7 HUD Bracket					
Firehawk STC			*Firehawk PTC*		
	Standard speaking diaphragm	ClearCommand ready		Standard speaking diaphragm	ClearCommand ready
Small	10084689	10084821	**Small**	10084690	10084822
Medium	10084823	10084825	**Medium**	10084824	10084826
Large	10084827	10084829	**Large**	10084828	10084830

Spare / Replacement M7 HUD

10091446	M7 HUD
10091447	M7 HUD with bracket

SCBA Key Components

Emergency Egress System

Rescue Belt

The M7 Rescue Belt is the first fully integrated NFPA-compliant emergency egress system for the Fire Service. The belt can be integrated into the carrier and harness assembly of the MSA Vulcan or Airframe Carrier and Harness assemblies. A 50 foot or 75 foot Kevlar line with a descender and carabiner is weaved into the belt to allow a trapped fire fighter to escape to either the ground or to a floor below the fire.

The belt is available in three lengths, standard (56 inches), mid-size (66 inches) and long (76 inches).

Rescue Belt

	Standard Size Rescue Belt	Mid-Size Rescue Belt	Long Rescue Belt
50' Kevlar Line	10052766	10071003	10052767
75' Kevlar Line	10052768	10071004	10052769

Carrier & Harness Assembly

FireHawk M7 Carrier and Harness Assembly

The one component of any SCBA that has the most impact on firefighter comfort is the carrier and harness assembly. The FireHawk M7 Carrier and Harness assembly places an emphasis on firefighter comfort while maintaining the robustness and reliability that is expected in the fire service. The carrier comes standard with large side handles and a central attachment point for pulling firefighters to safety in rescue scenarios. The swiveling lumbar pad provides maximum freedom of movement and comfort when crawling or climbing.

The assembly utilizes the proven pieces from previous generations of Air Masks such as the tunneled shoulder straps for hose containment, and tri-bar slides for easy removal/installation of the waist belt and shoulder straps.

All units are equipped with double-pull waist belts and an optional chest strap is available.

FireHawk M7 Carrier and Harness Assemblies

Part No.	Pressure		Chest Strap	Swiveling Lumbar Pad
	Low	High		
10086663	X		Yes	Yes
10086662		X	Yes	Yes
10086664	X		Yes	
10086665		X	Yes	

Accessories

10083134	Replacement FireHawk M7 Lumbar Pad
10012167	Chest Strap

Cylinders

Carbon-Wrapped Cylinders

Carbon-wrapped Cylinders are the lightest SCBA air cylinders ever developed by MSA. They feature a unique outerwrap made of lightweight, high-performance carbon fibers, which reduces cylinder weight by two to six pounds when compared to fiberglass-wrapped cylinders and as much as ten pounds when compared to aluminum cylinders. They are available in five models to accommodate a wide range of applications.

Cylinders for SCBA

Part No.	Cylinder Type (Cylinder & Valve)	NIOSH Service Rating Life	Pressure	Weight** (empty)
807586	L-30* Carbon-Wrapped	30-minute	2216 psig	8 lb – 0 oz.
816115	L-30+* Carbon-Wrapped	30-minute	3000 psig	9 lb – 8 oz.
807587	H-30* Carbon-Wrapped	30-minute	4500 psig	7 lb – 4 oz.
807570	H-45* Carbon-Wrapped	45-minute	4500 psig	9 lb – 7 oz.
10035644	H-45 Low-Profile* Carbon-Wrapped	45-minute	4500 psig	9 lb – 10 oz.
807588	H-60* Carbon-Wrapped	60-minute	4500 psig	11 lb – 12 oz.
469619	Fiberglass Hoop-Wound	30-minute	2216 psig	13 lb. – 0 oz.
809872	Aluminum	30-minute	2216 psig	18 lb. – 0 oz.

These cylinders are capable of custom options.
**All weights shown are approximate.*

For more information see Bulletin 0108-11-MC. See Bulletin 0108-13-MC for information on **custom-logoed cylinders** for your MSA Air Mask.

MSA Accountability System

Accountability is key to every firefighter's safety on a fire scene. MSA's optional Accountability System revolutionizes fireground safety by combining the latest computer software with a high-performance radio module and the field-proven technology of MSA's ICM Tx Integrated PASS.

A new way to monitor vital information

- Each MSA base station can monitor up to 50 firefighters, and you can use multiple base stations on a single computer.
- The FireHawk M7 Air Mask with telemetry transmits to incident command the firefighter's name, team assignment, cylinder pressure, service-time remaining, PASS alarms (motion or manual), thermal alarms, battery status, radio connectivity, and evacuation acknowledgement.

A fireground management system

- Personalized ID tags for each firefighter tell incident command exactly who is on scene.
- An integrated PAR (personnel accountability report) timer helps manage radio calls to each team.
- Incident command can manually add firefighters who are not wearing an SCBA or mutual aid firefighters, so all personnel can be accounted for.

Intuitive and easy to use

- Assign firefighters to teams by clicking on a firefighter's icon and dragging it to another team.
- A volume of critical information is available at a glance of the screen, due to the large number of firefighters that can be displayed and the pictorial format of the information.
- Receive both audible and visual indications of critical events such as PASS alarms or low-pressure alarms.

A two-way evacuation feature

- Incident command is assured that firefighters receive all evacuation messages. When incident command transmits the alarm through the FireHawk M7 Air Mask, they'll know the firefighter received it, because the unit automatically sends a confirmation message to the base station.
- By simply pressing a button on his/her own control module, a firefighter can send a manual confirmation to acknowledge that they have received and understand the critically important evacuation message.
- Firefighters will hear the evacuation alarm on their own personal PASS device. Also, visual indications in the HUD and an icon on the control module will alert the firefighter that it is time to evacuate.
- An individual firefighter, a team of firefighters, or all firefighters can be evacuated with the click of a button.
- Although certain concrete and steel commercial structures can challenge any radio signal, MSA's Accountability System coverage with radio technology provides highly reliable performance for a 1-mile line-of-sight range.
- Due to the spread-spectrum design, it does not interfere with other high-band radio frequency equipment.
- For additional safety, both base station and firefighter modules have an icon message to inform users if a firefighter falls out of radio signal range, so that alternate accountability measures, such as voice radio contact with teammates, can be taken.

Accountability System Base Station Kits

10072240	Accountability Base Station Kit (includes software, magnetic antenna kit, USB cable, wall-mount cable, and 8-24 volt power cable)
10098767	Accountability Base Station Kit (includes software, fixed antenna kit, USB cable, wall mount cable, and 8-24 volt power cable)

MSA's M7 Accountability System revolutionizes fireground safety by combining the latest computer software with a high-performance radio module and the field-proven technology of MSA's ICM TxR Integrated PASS.

Accountability System

10083876	M7 Control Module Reader / M7 ID tag writer
10083875	M7 ID tags
10075756	Antenna kit with magnetic base
10098766	Antenna kit with fixed base
10063880	USB cable
10049410	8-24 volt, power cable
10047342	Wall mount power cable

Field Maintenance and Repair

MSA offers a complete program for maintenance and repair of MSA Air Masks. The program is supported with personalized training tailored to customers' needs and taught in the field by MSA-authorized personnel.

User maintenance covers procedures necessary to conduct general cleaning, inspection, and limited maintenance in accordance with the Occupational Safety and Health Administration (OSHA), National Fire Protection Association (NFPA), and the American National Standards Institute (ANSI) standards.

C.A.R.E. Certified Air Mask Repair Education covers all maintenance for both low- and high-pressure SCBA. Air Mask inspection and maintenance can be performed by MSA or a factory-authorized service center.

Or, individuals can obtain training for C.A.R.E certification from MSA. By having a C.A.R.E-certified technician on staff, fire departments and other facilities with a large number of Air Masks can perform all inspection and maintenance in-house.

- **All repairs and maintenance can be done in the field.**
- **A selection of overhaul kits, spare parts, and tool kits is available.**
- **Users may conduct periodic performance testing using an authorized MSA regulator tester.**

The World Class Air Mask Maintenance Training Program

Certified AirMask Repair Education

Emergency Breathing Systems

The Quick-Fill® System

The patented Quick-Fill System lets MSA Air Mask users refill and transfill air cylinders while the SCBA is worn, without removing the air cylinder—even in IDLH atmospheres. Use this MSA-exclusive option to:

- Fill an SCBA cylinder from a mobile compressor or cascade system in less than a minute.
- Transfill between two cylinders, providing an Emergency Breathing System.
- Extend the air supply over longer durations, using a remote compressed-air source.

Because performance is not affected, MSA Air Masks retain NIOSH certification during use of the Quick-Fill System.

Air Masks compliant to recent NFPA standards have the Quick-Fill URC fitting located at the Audi-Larm warning device. A Quick-Fill hose with a quick-disconnect connects the air source to the adapter for air transfer. See Bulletin 0105-92-MC for a Question & Answer overview of Quick-Fill Systems.

The Quick-Fill System

Replacement Parts for the Quick-Fill System

10111642	Quick-Fill Hose Kit in Pouch, 3-foot emergency transfill hose *New!*
485331	Emergency transfill hose, less Kevlar pouch
10111404	Replacement Pouch for Quick-Fill or ExtendAire II *New!*
485391	Male stainless steel quick-disconnect with SAE-10 thread, complete with dust cover (also for use as a fitting for customized refilling systems)
485392	Female quick-disconnect with SAE-4 thread, complete with dust cover

Quick-Fill Hoses

25-ft lengths are stocked; other "custom lengths" are available on a special material basis. All SAE Fittings are for high-pressure service. Female quick-disconnect fittings have dust covers.

25 ft	12 ft	10 ft	8 ft	6 ft	3 ft	
485332	802690	802689	802688	802687	485331	**FQD x FQD**
487907	802677	802675	802673	802671	492796	**FQD x CGA-347 Outlet**
487909	802685	802683	802681	802679	487427	**FQD x CGA-347 CN**
487906	802704	802703	802702	802701	802705	**FQD x SAE-4**
487908	802678	802676	802674	802672	492797	**FQD x CGA-346 Outlet**
487910	802686	802684	802682	802680	487428	**FQD x CGA-346 CN**

RescueAire™ II Portable Air-Supply System

The RescueAire II Portable Air Supply System is designed to meet the needs of Rapid Intervention Teams (RITs). The system consists of a lightweight Carbon-Wrapped cylinder, Quick-Fill® emergency breathing system, ExtendAire™ emergency breathing system, and an MMR regulator, supported by a flame- and heat-resistant harness. The RescueAire II is a complete system that can provide emergency breathing air for most any victim.

The RescueAire II System is available in both low-pressure (2216 psig) and high-pressure (4500 psig) versions. An optional-use shoulder strap is also provided for hands-free carrying.

RescueAire™ II Portable Air-Supply System

with L-30 cylinder	less cylinder	Low-Pressure (2216 psig)
10100096	10100095	RescueAire II w/Firehawk Responder MMR
10041196	10041198	RescueAire II, Firehawk STC MMR
10041230	10041232	RescueAire II, Firehawk PTC MMR
with H-60 cylinder	**less cylinder**	**High-Pressure (4500 psig)**
10100097	10100094	RescueAire II w/Firehawk Responder MMR
10041195	10041197	RescueAire II, Firehawk STC MMR
10041199	10041231	RescueAire II, Firehawk PTC MMR

The ExtendAire™ System

The ExtendAire System can be used as both an emergency breathing system and a dual-purpose device for MMR SCBA to allow firefighters to quickly and easily connect to an air-line.

The new ExtendAire II offers an integrated rescue hose into the PR14 1st stage regulator with both a male and female quick connect fitting.

The ExtendAire™ System

812958	ExtendAire Air-line Hose with foster plug
812973	40" Rescue Hose
10031798	ExtendAire Upgrade Kit for Threaded Firehawk MMR
10031797	ExtendAire Upgrade Kit for Quick-Connect Firehawk MMR
10105883	ExtendAire II Upgrade Kit for PR14 Regulator

The ExtendAire™ System

The ExtendAire™ II System upgrade

Technical Rescue Cart

The Technical Rescue Cart is a steel cart with a color-designated control panel that allows one side of the panel to be used for primary respirator breathing air and one side for tool/secondary air requirements.

Two 1-hour cylinders are used to provide air for respirators. High-pressure cascade (fire truck) cylinder air is used to operate pneumatic tools.

The standard features of the Technical Rescue Cart make it a unique and very versatile air cart for the fire service and HazMat industries.

Cart Weight and Dimensions
Size: 35" H x 21" W x 15" D
Unit Weight: 54.5 pounds without cylinders

Features

Breathing-Air Segment includes:
- Two-wheeled, poly-coated steel cart, two sets of double-cylinder straps, air-line hose rack and adjustable pull handle
- Low-pressure cylinder bell alarm
- Four-outlet manifold – available with four outlet fitting options

Tooling-Air Segment includes:
- CGA-347 fitting to attach to an auxiliary remote high-pressure air source
- Low-pressure pneumatic alarm whistle
- Four-outlet manifold with Quick Disconnects

NEW!

Technical Rescue Cart

10107535	Technical Rescue Cart equipped with union adapters
10107818	Technical Rescue Cart equipped with Snap-Tite Aluminum Quick Disconnects
10107820	Technical Rescue Cart equipped with Foster Steel Quick Disconnects
10107819	Technical Rescue Cart equipped with Hansen Brass Quick Disconnects

The Technical Rescue Cart is sold without air cylinders. The following MSA cylinders can be used with the cart:
- 60-minute, H-60 carbon-wrapped cylinder
- 45-minute, H-45 carbon-wrapped cylinder
- 30-minute, H-30 carbon-wrapped cylinder

A 60-minute cylinder will provide maximum air supply.

Communication Systems

ClearCommand® HCS Helmet Communication System

The Helmet Communication System from MSA is a state-of-the-art radio interface device which significantly improves the user's ability to receive and send messages even in loud ambient-noise environments. It goes wherever you go. The system consists of a helmet-mounted microphone and ear speaker assembly that weighs 5.3 ounces and easily snaps onto the user's fire helmet's ratchet suspension. The helmet mic/ear speaker assembly connects to a lapel microphone or optional stand-alone PTT (push-to-talk) unit. The lapel microphone and PTT are permanently fitted with a connector for attachment to the specific radio of choice. The Helmet Communication System also offers a plug-in truck communication adapter that can be used by firefighters, along with their helmet microphone assembly, on the way to a fire scene or other incident. Once the firefighter arrives at the scene, the truck system cable is unplugged from the helmet microphone, and the helmet microphone cable end is connected to the user's lapel mic or PTT.

The user of the Helmet Communication System has uninterrupted communication from the time the alarm sounds until the incident is over.

For more complete information, see Bulletin 3639-01-MC.

Helmet Microphone Assembly

10042902	Helmet Microphone Assembly (includes Custom Fitted Flannel Headband Liner)

Features and Benefits

- Incorporates a "noise-eliminating" bone-conduction voice transmitter that virtually eliminates high ambient noise levels.
- Custom user-fitted ear speaker brings all incoming communication directly to the user's ear. No need to lift your lapel mic up to your ear to hear transmission.
- Easily snaps onto the ratchet suspension of fire helmets or industrial-style helmets. The unit can be easily transferred to other users, and no tools are required for removal.
- Can be used over facepiece head harnesses, hoods and liners without losing the quality of the transmission.

- The bone-conduction microphone is made of soft silicone material, which makes it comfortable to wear, with no pressure points.
- The helmet microphone assembly can be reversed on the helmet suspension to position the ear speaker on either ear.
- The helmet mic system, when used with the lapel mic or PTT, is powered by the battery from the radio. No need to replace or re-charge dry cells.
- Special connectors suitable for most common radios are available for the lapel microphone and PTT, which allows users to adapt the system to their existing radios.

- The helmet mic is NFPA-certified which allows its use while fighting fires.
- Intrinsic safety approvals allow the use of the Helmet Communication System in hazardous environments.
- The stand-alone PTT unit is designed for use under hazardous material suits. The large button makes it easy for the user to depress and communicate.
- The helmet mic incorporates a cable keeper which allows for storage of the cable when it's not connected to the lapel mic or PTT.

ClearCommand® Communications System for Ultra Elite Facepieces

MSA's ClearCommand Communications System is designed specifically to meet the modern communications needs of firefighters. Because it's available in two versions, amplifier and amplifier with radio interface, firefighting teams can be properly fitted for the job at hand. Also, the systems are designed for "shared-use" of the amplifier with a unique "bus-bar" arrangement, so individual issue is not required.

The ClearCommand systems feature an internally mounted microphone coupled with a large-diameter (50mm) amplified speaker for optimal clarity and volume. Using a proprietary circuit design, the system delivers more than twice the volume of a facepiece alone. Mounted in an "out-of-the-way" position, the ClearCommand System doesn't block vision or mechanical communication. The Ultra Elite's mechanical voicemitter is still fully functional, even with the system installed.

The radio interface version features the same amplifier as the amp-only version, combined with an ear-speaker for incoming radio messages and a lapel mic assembly for interface with over 100 radios. The lapel mic can be used as a component of the ClearCommand system or as a stand-alone hand mic.

Both the amplifier and radio interface models are intrinsically safe, and meet the applicable requirements of NIOSH and NFPA 1981, 2002 edition.

ClearCommand System Kits

10024074	Amplifier Kit, complete with microphone
10051290	Amplifier Radio Interface Kit, w/ microphone, less PTT
10023055	Microphone Kit, with mounting bracket

Kits for Radio Interface*

Radio Brand	Radio Model	Lapel Mics	Stand-Alone PTT
Bendix-King	LPH; LPI; LPU; LPX; EPH; EPU; MPH; EPV:EPI; GPH	10042938	10045707
E.F. Johnson	LX2442/2443; FM5852; ZX2452/2453, 5850, 5855, 5860, 5861, 5862	10042942	10045711
E.F. Johnson	5100 series-511x,514x,518x,5133		10055501
E.F. Johnson	VIKING CL 500/8560/8565/8561/8566/8570/8571/5870/ 5876/5877/8591/8587, CH-HM91	10042943	10045712
GE Ericsson	Jaguar, 700P, 700PI, 7100P	10068237	
GE Ericsson	KPC, 500P	10042933	10045702
GE Ericsson	Monogram	10042934	10045703
GE Ericsson	MPA; MPD; MTL; TPX; GF (PACUDX), PAPST5	10042932	10045701
GE Ericsson	MRK, PRISM, LPE-200, Erricsson PK1ZGT, LPE50	10042907	10045666
GE Ericsson	PANTHER		
GE Ericsson	PCS, PC2005	10042906	10045665
Icom	A3E, A22, A22E	19582	19583
Icom	IC-2A/AT/E; ICH-2/6/12/16; ICU-2/6/12/16, IC-F11, IC-F11S, IC-F21, IC-F21S,IC-F21BR	10042944	10045713
Icom	IC-F30/40/30LT/40LT	10042946	10045715
Icom	IC-F30GT, IC-F40GT, IC-F30GS, ICF40GS	10058090	10067523
Icom	M88 (Marine radio), IC-F50, IC-F60		10064623
Icom	Side connector ICF4GT,ICF3GS,IC-F3GT,IC-F12S, IC-F22S, IC-F12, IC-F22,IC-F4G-2		10045714
Kenwood	TK 190/280/380/290/390/480/481/2140/3140/290K/ 2180/5210/3180	10042941	10045710
Kenwood	TK-208/220 /240/248/250/260/270/270G/272/308/320/ 340/350/353/360/370/372/373G/430/2160/3160; TH-21/25A/41/45/75/91A/2102/3102; DEMITOSS 9 (JAPAN), FREETALK LINE, TK2100K2/TK3101K, TK2200,TK3200, TK2202, TK-2170/TK3170, TK-3173	10042939	10045708
Kenwood	TK230/330	10042940	10045709
Maxon	PC-50;SP100; SP120; SP130;SP140, Alan HP125/425	10042908	10045667
Maxon	PL1145, PL2245, PL5161, PL5164		10061404
Maxon	SP2000 Series ,SP-2550 SP-2850; SL70W	10042947	10045716
Maxon	SP5000 Series CP-0500 Series	10042948	10045717
Midland	70-145/148/154/245/254	10042951	10045720
Midland	70-153	10042949	10045718
Midland	70-165/166/265/266	10042950	10045719
Midland	70-195/295	10042952	10045721
Motorola	HT1000; JT1000; MT2000 MTX838; MTS2000; MTX2000/8000/9000 Transcrypt Stealth, MTX, GP900, XTS1500,XTS2500,XTS3000,XTS3500,XTS5000, XTS5000R, PTX1200 , PTX3600, PR1500	10042903	10045662
Motorola	270,280,T289,T5100,T5200,T5300,T5320,T5400,T5410,T5420,T5600,T5620,T5700,T5720,T5800,T5820,T6200,T6210, T6220,T6250,T6300T6310,T6320,T6400,T7200,FR50 AND FR60.	10049363	10061630
Motorola	ASTRO; SABER,MX1000,MX2000,MX3000	10042904	10045663

Kits for Radio Interface*

Radio Brand	Radio Model	Lapel Mics	Stand-Alone PTT
Motorola	CP100, SP10,SP21, AXU4100		10059441
Motorola	EX500. EX600	10053716	10057505
Motorola	EXPO; P10/50; HT10	10042924	10045693
Motorola	EXPO; P10/50; HT10	10042924	10045693
Motorola	GP350	10042930	10045699
Motorola	GP350 QD	10042931	10045700
Motorola	HT50/90/440; P100	10042925	10045694
Motorola	HT600, 800, 810, 820 ; MT1000; P200;MTX800/ 900; /900S, MTX800, MTX810,MTX820, MTX900	10042909	10045668
Motorola	HT750, HT1250, HT1550, HT1550-XLS, PRO 5150,PRO 7150, PRO 7350, PRO 7550, PRO 9150, GP328, GP329, GP338, GP339, GP340, GP360, GP680, MTX850, MTX850-LS,MTX8250,MTX8250-LS, MTX950, MTX9250, PTX700, PTX760, PTX780, PR860	10042922	10045691
Motorola	Motorola HT750 QD	10042923	10045692
Motorola	MT500	10042928	10045697
Motorola	MX300/310/320/340/350/360	10042927	10045696
Motorola	MX800; MX840, STX Series	10042920	10045669
Motorola	RADIUS GP300/ P1225; GTX; GTX8250; P110;SP10/50; SPIRIT-111, SP21, AP-73 (ASIAN RADIO), GP-88 (ASIAN RADIO), LTS 2000,GP63,GP68, PRO2150, PRO3150, CT150,CT250,CT250LS,CT450,CT450LS, MTX638 (ASIA & AUSTRALIA) GP-308,GP2000, CP200, CP300, CP150, PR400, EP450	10042905	10045664
Motorola	SABER QD	10042921	10045690
Motorola	Spirit-Pro, MU21CV,MU21CZ,SU21C,XTN Series, XTV2100,XTN446, CLS Series, XV1100, XZ1100, XU2100	10042929	10045698
Motorola	VISAR	10042926	10045695
Relm/SmartCom	MPS; MPV08, MPU08B, WHS150, MPV32, MPU32, Minicom 3200	10042953	10045722
Ritron/Jobcom	JBX151; JMX100/400 Series; RTX150/450; SST SERIES	10042954	10045723
Standard	HX240U/V	10042935	10045704
Standard	HX320	10042936	10045705
Standard	HX-381/482/580T/581T/582T/585T/587T	10042937	10045706
Tekk	T20; T40; T50; T60	10042955	10045724
Uniden	SPH / SPU Series, SPU 454	10042956	10045725
Uniden	SPS310T/320TS	10042957	10045726
Vertex	VX-160,VX-180,VX-210, VX-2R, VX-420, VX-424, VX-427	10058088	
Yaesu-Vertex	FT416/816/11R/41R, FTH2005, 2008,2009,7005,7008,7009	10042958	10045727
Yaesu-Vertex	FT76	10042962	10045779
Yaesu-Vertex	FTH2070	10042960	10045729
Yaesu-Vertex	VX10,VX300, VX400: VXF Series, F10/40/50, FT50R	10042959	10045728
Yaesu-Vertex	VX500, VX510	10042961	10045730
Yaesu-Vertex	VX-600, VX-600UB, VX-600VB, VX-600U, VX-600V, VX-800, VX-900	10058089	10061244

Parts and Accessories

10046087	Dust Cover
10046123	Guard Ring, Tall
10046122	Guard Ring, Short
10046089	Belt Clip Assy, Standard
10046120	Belt Clip Assy, Clothes Pin Type
10046121	O-Ring, Single Pin Connector
10045778	Flannel Head Band Liner

Helmet Mic with Lapel Mic

Helmet Mic with Stand-Alone PTT

SCBA Accessories

APR Adapter

MSA's APR adapter provides firefighters with the versatility they need to perform all tasks at the fire ground with one common facepiece. From fire-fighting to overhaul to homeland security, firefighters can switch from a positive-pressure facepiece to a negative-pressure air-purifying respirator simply by engaging the APR Adapter. The APR Adapter uses MSA's comprehensive family line of air-purifying cartridges; select from the Advantage cartridges or our CBA/RCA canisters to protect against a multitude of airborne contaminants.

The APR Adapter is designed for use in non-IDLH environments and is NIOSH-approved. Contact MSA for more information.

APR Adapters

Firehawk MMR STC Version	Firehawk MMR PTC Version	APR Adapter
10032511	10040052	APR Adapter
10032927	10040055	APR Adapter Individual Kit
10032925	10040054	APR Adapter Truck Kit

Accessories

10037809	Ultra Elite, Anti-Fog Applique (10/pkg)
817590	CBA/RCA Canisters (box of 6)
809858	Replacement Baffle
813341	Replacement Bayonet Cover

Fit Test Adapter Kits

10107229	APR Fit Test Adapter Kit, Slide-to-Connect
10107256	APR Fit Test Adapter Kit, Push-to-Connect

High-Pressure Filling Hose

Provides a convenient means to connect and charge high-pressure air into a high-pressure 4500 psig cylinder.

476105	High-Pressure Filling Hose Assembly

Accessories for Filling Low-Pressure Cylinders

68846	Air Outlet Connection, complete w/ Gauge
68850	Air Coupler Tee
68851	Air Pigtail
476156	Low-Pressure Air-Filling Hose, 5 feet long

Air Coupler Tee
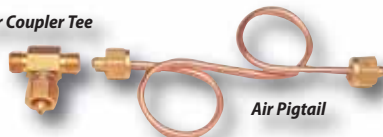
Air Pigtail

Spectacle Kit for Full-Facepiece Respirators

For use by workers who must wear corrective lenses, the Spectacle Kit can be easily inserted into the facepiece. The kit includes a wire support, rubber guide, and pair of metal-frame spectacles. There are two kits for the Ultra Elite

Side-Support Spectacle Kit for Ultra Elite Facepiece

Center-Support Spectacle Kit for Ultra Elite Facepiece

facepiece; one uses a side wire support to hold the lenses in the facepiece, while the other uses a center support to position the unit. Desired adjustment is obtained by moving the spectacles in and out of the rubber guide and up and down the wire support. One size of spectacle frame is used (S-7 shape, 48-mm lens size) with Universal Bridge Corrective Lenses that can be obtained from local sources. The Spectacle Kit can be used with a nosecup.

Spectacle Kits

804638	Ultra Elite Spectacle Kit (side wire support)
493581	Ultra Elite Spectacle Kit (center support)

Nosecups

Molded from a soft rubber compound that is resistant to facial oils, the optional nosecup helps reduce the possibility of lens fogging. The nosecup is particularly effective under conditions of high humidity and/or low temperatures by inhibiting contact of moist exhaled air with the facepiece lens. A nosecup can be easily affixed to the facepiece without tools. Any size nosecup may be installed in any size Ultra Elite Facepiece for a customized, more comfortable fit.

Nosecups

495188	Medium Black Nosecup
495189	Large Black Nosecup

Questions or Comments?
www.facebook.com/MSATheSafetyCompany

Cairns® Fire Helmets

Cairns Fire Helmets: Quality Craftsmanship Since 1836

Since 1836, Cairns has been the original manufacturer of leather firefighting helmets. Today, Cairns leather helmets retain the same authentic look and quality that generation after generation of firefighters have relied upon. And now, these helmets are also made with the added protection necessary for today's standards of safety in the firefighting industry.

Cairns also applies the same tradition of excellence to its newer lines of firefighting helmets. Both traditional and modern designs feature the very best

in contemporary high-tech materials, such as lightweight but durable fiberglass/Kevlar composites and tough, high-temperature thermoplastic.

All helmets are available with many options, including choice of colors, chinstraps, earlap material, etc. Also, a variety of accessories is available to complement Cairns fire helmets. Faceshields, goggles, ear/neck protection, and fronts can all be selected to configure the exact helmet you need.

N6A Houston
(NFPA compliant)

N5A New Yorker
(OSHA compliant)

Cairns® 1044

Classic™ 1000

Cairns® 1010

880 Tradition

Leather Helmets

The original leather helmet, individually hand-crafted to meet today's OSHA and NFPA standards with over 175 years of dependable performance.

Leather Helmet Features & Benefits

- Hand-crafted, 100% leather shell.
- Insurance against fireground damage with Cairns' 5-year shell replacement warranty.
- Non-corroding, high-temperature, glass-filled polymer faceshield/goggle hardware.
- Faceshield wing protectors for extra faceshield reinforcement.
- Nomex chinstrap with one-hand quick release buckle and postman slide allows quick and easy adjustment.

- Choice of Nomex or PBI/Kevlar earlap for increased neck/ear coverage and protection.
- High-temperature foam impact cap increases thermal and impact protection.
- High-temperature impact cap liner resists distortion at high temperatures.
- Comfortable fit for all head sizes between 6-3/8 inches and 8-3/8 inches.
- Large diameter helmet hanger fits on larger hooks and racks.

Traditional Helmets

Traditional style combined with high-tech performance.

Traditional Helmet Features & Benefits

- Cairns exclusive Defender Visor for Cairns 1010 and Cairns 1044 fire helmets.
- Simple rear ratchet height adjustment to fit all head sizes.
- Market-leading 5-year shell replacement warranty.
- Non-corroding, high-temperature-resistant, faceshield/goggle hardware.
- Rugged, high-temperature edge will not melt or drip.

- Easy front headband adjustment for proper SCBA mask fit.
- Headband (6 3/8 to 8 3/8) fits a wide variety of head sizes.
- Durable helmet hanger fits on large hooks and resists bending.
- Minimal parts for lower service cost and easier maintenance.
- Exclusive shell release system for an extra margin of safety
- Unique tube-lock system absorbs the shock of an impact.

For ordering information, replacement parts and accessories, contact your MSA Distributor.

Cairns® Fire Helmets

Invader™ 664

660C Metro®

Structural 360S®

Modern Helmets

Different models for applications such as structural firefighting and EMS/rescue.

Modern Helmet Features & Benefits

- Defender Visor now available on 660C Metro and Invader 664!
- Market-leading 5-year shell replacement warranty.
- Non-corroding, high-temperature-resistant, faceshield/goggle hardware.
- Rugged, high-temperature edge will not melt or drip.
- Easy front headband adjustment for proper SCBA mask fit.
- Simple rear ratchet height adjustment to fit all head sizes.
- Headband (6 3/8 to 8 3/8) fits a wide variety of head sizes.
- Durable helmet hanger fits on large hooks and resists bending.
- Minimal parts for lower service cost and easier maintenance.
- Exclusive shell release system for an extra margin of safety (except 360S and HP3).
- Unique tube-lock system absorbs the shock of an impact (except 360S).

For ordering information, replacement parts and accessories, contact your MSA Distributor.

Rescue 360R

Commando® HP3

Rescue 360R-13

Cairns Rescue Helmets

Rescue Helmets Features & Benefits

- Defender Visor now available on Commando HP3!
- Market-leading 5-year shell replacement warranty.
- Non-corroding, high-temperature-resistant, faceshield/goggle hardware.
- Rugged, high-temperature edge will not melt or drip.
- Easy front headband adjustment for proper SCBA mask fit.
- Simple rear ratchet height adjustment to fit all head sizes.
- Headband (6 3/8 to 8 3/8) fits a wide variety of head sizes.
- Durable helmet hanger fits on large hooks and resists bending.
- Minimal parts for lower service cost and easier maintenance.

For ordering information, replacement parts and accessories, contact your MSA Distributor.

Cairns® Fire Helmets

Defender® Visor for Cairns Traditional and Modern Helmets

MSA's Defender Visor for Cairns 1010 and 1044 Traditional Helmets and 660C Metro, Invader 664, and Commando HP3 Modern Helmets offers eye protection from dust, dirt, and grit. Sleek and attractive construction allows for fast, easy raising and lowering of your visor even with gloved hands. Visor stays clean inside your helmet until needed for eye protection during overhaul and non-IDLH search-and-recovery. The Defender Visor exclusive integral design is retractable for the ultimate in compact convenience. Standard clear and amber Tuffshield visor options are NFPA-compliant.

If you're looking for a new Cairns Traditional or Modern Helmet, or if you've thought about replacing your existing impact cap, consider the streamlined advantage of the new NFPA-compliant MSA Defender Visor. Cairns Traditional and Modern Helmets offer the perfect combination of durability and performance in lightweight, high-performance designs. Cairns once again integrates the latest technological advances expected by firefighters.

New Cairns 1010 and 1044 Helmet assemblies or 660C Metro, Invader 664, and Commando HP3 Helmets incorporating the Defender Visor may be ordered through Traditional or Modern Helmets Assemble-To-Order Matrices. A user-installable upgrade kit (includes new impact cap) lets you install the Defender Visor yourself.

Features and Benefits

- Available on Cairns 1010/1044 Traditional and 660C Metro, Invader 664, and Commando HP3 Modern Helmets
- Standard clear and amber Tuffshield visors are compliant with NFPA 1971; all Defender Visors meet ANSI Z87.1+ Standard
- Retractable eyewear system that's ready when you need it
- Available with new helmets or as user-upgrade kit
- Quick-disconnect for fast lens change-out without tools
- Never lose or misplace your goggles again
- Optically correct lens eliminates peripheral distortion
- Now compliant as primary eye protection!

Standard 1010 Defender Configurations

1010DS	Includes Standard Flannel Cushion Liner, Yellow Nomex Earlap, Silk-Screened 6" Eagle Front Holder and Clear Defender Visor
1010DD	Includes Leather Cushion Liner, Flannel Crown Pad, PBI/Kevlar Earlap, Carved 6" Eagle Front Holder and Clear Defender Visor
1010TS	Includes Standard Flannel Cushion Liner, Yellow Nomex Earlap, Silk-Screened 6" Eagle Front Holder and Tuffshield Defender Visor
1010TD	Includes Leather Cushion Liner, Flannel Crown Pad, PBI/Kevlar Earlap, Carved 6" Eagle Front Holder and Tuffshield Defender Visor

Standard 1044 Defender Configurations

1044DS	Includes Standard Flannel Cushion Liner, Yellow Nomex Earlap, Silk-Screened 6" Eagle Front Holder and Clear Defender Visor
1044DD	Includes Leather Cushion Liner, Flannel Crown Pad, PBI/Kevlar Earlap, Carved 6" Eagle Front Holder and Clear Defender Visor
1044TS	Includes Standard Flannel Cushion Liner, Yellow Nomex Earlap, Silk-Screened 6" Eagle Front Holder and Tuffshield Defender Visor
1044TD	Includes Leather Cushion Liner, Flannel Crown Pad, PBI/Kevlar Earlap, Carved 6" Eagle Front Holder and Tuffshield Defender Visor

Standard Fronts

Made with your choice of high-gloss patent leather or dull-finish genuine leather reinforced with a high-temperature, shrink-resistant back layer and sewn with high-temperature, fire-retardant Nomex thread.

The Choice Is Yours!

Standard fronts offer over 27 million possible configurations! Design your own standard front by choosing from the options and then indicating your preferences by calling 1-877-MSA-FIRE to place your order.

Crash Fire Rescue (CFR) Proximity System

- Easy to don and doff, this CFR System is compliant with NFPA 1971-2007.
- Designed and approved for use with the Metro 660C, Invader 664, Cairns 1010 and Cairns 1044 Fire Helmets, it will not interfere with the SCBA while in use.
- Components consist of an aluminized PBI/Kevlar layer, vapor barrier and inner layer.

Understanding Environmental Surveillance

Battery-powered, direct-reading instruments are classified as two groups—single-gas instruments or multiple-gas instruments—typically monitoring one or a combination of the following atmospheric conditions:

1. oxygen deficiency or enrichment;

2. the presence of combustible gas; and

3. the presence of certain toxic gases.

Depending on the capabilities of the instrument, monitoring can be conducted simultaneously for oxygen and combustible gas, or for oxygen, combustible gas and toxic gases. These devices are commonly referred to as 2-in-1, 3-in-1, 4-in-1 or 5-in-1 alarms.

No matter which type of instrument is used to check environmental gas concentrations, regular monitoring should be performed because a contaminant's level of combustibility or toxicity might increase even if it initially appears to be low or non-existent. In addition, oxygen deficiency can occur unexpectedly.

Atmospheric Composition

To determine the composition of an atmosphere, reliable instruments should be used to draw air samples. If possible, do not open the entry portal to the confined space before this step has been completed. Sudden changes in atmospheric composition within the confined space could cause violent reactions, or dilute the contaminants in the confined space, giving a false low initial gas concentration.

When testing permit-required spaces for acceptable entry conditions, always test in the following order:
1. oxygen content
2. flammable gases and vapors
3. potential toxic air contaminants

Figure 1

Comprehensive testing should be conducted in various locations within the work area. Some gases are heavier than air, and tend to collect at the bottom of a confined space. Others are lighter, and are usually in higher concentrations near the top of the confined space. Still others are the same molecular weight as air, so they can be found in varying concentrations throughout the space. This is why test samples should be drawn at the top, middle and bottom of the space to pinpoint varying concentrations of gases or vapors (see **Figure 1**).

The results of the atmospheric testing will have a direct impact on the selection of protective equipment necessary for the tasks in the area. It may also dictate the duration of worker exposure to the environment of the space, or whether an entry will be made at all. Substance-specific detectors should be used whenever actual contaminants have been identified.

Figure 2

Figure 3

Combustible Gases

In order for combustion to occur, there must be three elements:
1. fuel
2. oxygen to support combustion
3. heat or a source of ignition

This is known as the fire triangle, but if you remove any one of the legs, combustion will not occur (see **Figure 2**).

The percentage of combustible gas in the air is important, too. For example, a manhole filled with fresh air is gradually filled by a leak of combustible gas such as methane or natural gas, mixing with the fresh air. As the ratio of gas to air changes, the sample passes through three ranges: lean, explosive and rich (see Figure 3). In the lean range, there isn't enough gas in the air to burn. On the other hand, the rich range has too much gas and not enough air. However, the explosive range has just the right combination of gas and air to form an explosive mixture. Care must be taken, however, when a mixture is too rich, because dilution with fresh air could bring the mixture into the flammable or explosive range. An analogy is the automobile that won't start on a cold morning (a lean atmosphere because the liquid gasoline has not vaporized sufficiently), but can be flooded with too much gasoline (a rich atmosphere with too much vaporization). Eventually, when the right mixture of gas and air finally exists (explosive), the car starts.

How Combustible Gas Monitors Work

To understand how portable combustible gas detection instruments work, it is first important to understand what is meant by the Lower Explosive Limit (LEL) and Upper Explosive Limit (UEL). When certain proportions of combustible vapors are mixed with air and a source of ignition is present, an explosion can occur. The range of concentrations over which this reaction can occur is called the explosive range. This range includes all concentrations in which a flash will occur or a flame will travel if the mixture is ignited (see **Figure 3**). The lowest percentage at which this can happen is the LEL; the highest percentage is the UEL.

Most combustible instruments display gas concentrations as a percentage of the LEL. Some models have gas readouts as a percentage by volume and others display both percent of LEL and percent combustible gas by volume. What's the difference? For example, the LEL of methane (the major component in natural gas) is 5 percent by volume, and the UEL is 15 percent by volume. If we slowly fill a room with methane, when the concentration reaches 2.5 percent by volume, it is 50 percent of the LEL; at 5 percent by volume it is 100 percent of the LEL. Between 5 and 15 percent by volume, a spark could set off an explosion.
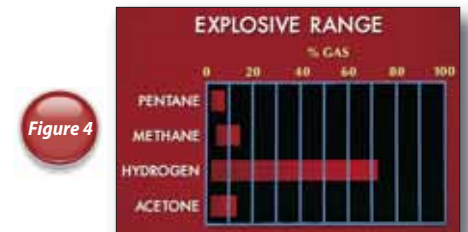
Figure 4

Different gases need different percent by volume concentrations to reach 100 percent of the LEL (see **Figure 4**). Pentane, for example, has an LEL of 1.5 percent. Instruments that measure in percent of the LEL are easy to use because, regardless of the gas, you are most concerned with how close the concentration is to the LEL.

Single-Gas Monitors for Oxygen Deficiency

Oxygen indicators measure atmospheric concentrations of oxygen. Concentrations are generally measured over a range of 0 to 25 percent oxygen in air, with readings being displayed on either digital readout or an analog meter.

Oxygen indicators are calibrated with uncontaminated fresh air containing a minimum of 20.8 percent oxygen. With some models, an alarm is activated when oxygen levels drop below 19.5 percent.

Single-Gas Monitors for Combustible Gases

Figure 5

Single-gas instruments for monitoring combustible gases and vapors are generally calibrated on pentane and are designed for general-purpose monitoring of hydrocarbon vapors. Such instruments operate by the catalytic action of a heated platinum filament in contact with combustible gases (see **Figure 5**). The filament is heated to operating temperature by an electric current. When the gas sample contacts the heated filament, combustion on its surface raises the temperature in proportion to the quantity of combustibles in the sample. A Wheatstone bridge circuit, incorporating the filament as one arm, measures the change in electrical resistance due to the temperature increases. This change indicates the percentage of combustible gas present in the sample.

Single-Gas Monitors for Toxic Gases

Compact, battery-powered devices can be used to measure levels of such gases as carbon monoxide (CO) or hydrogen sulfide (H_2S), depending on the model selected. Toxic gas monitors use electrochemical cells (see **Figure 6**). If the gas of interest enters the cell, the reaction produces a current output proportional to the amount of gas in the sample. With these instruments, audible and visible alarms sound if the gas concentration exceeds a preset level. These devices are well suited for use in confined spaces containing motors or engines, which can generate large quantities of CO, as well as in sewers, waste treatment plants and "sour crude" processing stations which tend to have hazardous volumes of H_2S.

Figure 6
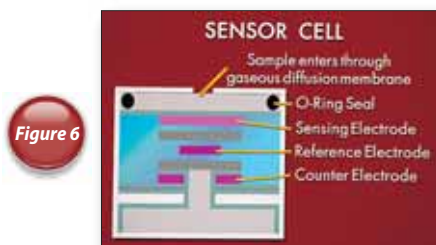
Multiple-Gas Monitors for Oxygen and Combustible Gas

In applications where it is necessary to determine oxygen and combustible gas levels simultaneously, 2-in-1 diffusion-type devices can be used. Sensors measure 0 to 100 percent of the LEL and oxygen from 0 to 25 percent. Remote sampling requires either a pump module or an aspirator bulb adapter.

Multiple-Gas Monitors for Oxygen, Combustible and Toxic Gases

Toxic gases and vapors, which can be inhaled or absorbed through the skin, are frequently found in confined spaces. Sometimes, these atmospheric hazards can also displace oxygen and may incapacitate the body's ability to maintain respiration. Some toxic gases and vapors can also cause long-term physical damage to the body in cases of repeated exposure.

A number of instruments are available to assist in detecting toxic gas. Pocket-size monitors operate by diffusion or an aspirator bulb. Larger instruments with built-in pumps draw samples from the immediate area or from outside the confined space work area when used with sampling lines.

Diffusion-type instruments are available for simultaneously measuring the LEL of combustible gases, oxygen levels and toxic levels (in parts per million) of H_2S, CO and other toxic gases. Alarms also alert the user to low and high oxygen levels. Remote sampling pump adapters are available to convert these diffusion-type instruments into pump-style instruments.
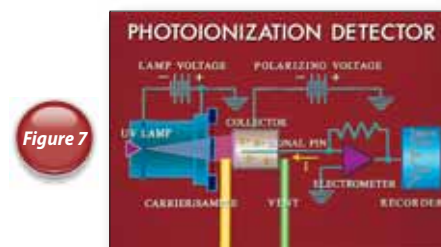
Figure 7

Photoionization Devices for Toxic Gases and Vapors

A photoionization detector, featuring microprocessor technology, uses ultraviolet light to ionize molecules of chemical substances in a gaseous or vaporous state (see **Figure 7**). A real-time digital readout allows the user to make an immediate determination of gas and vapor concentrations. Depending upon calibration input, gas and vapors are measured over a 0.1 to 10,000 ppm scale. Some instruments automatically compensate for signal loss due to humidity, which is inherent in all PID detectors.

Detector Tube Sampling Systems

Detector tube-type devices are recommended for conducting quick evaluations of potential hazards that cannot otherwise be measured. With detector tubes, a known volume of air is drawn through the tube, using a manually operated or battery-powered sampling pump. If gas or vapor is present in the air, chemically treated granules in the tube are stained a different color. By measuring the length of the color stain within the tube, users can determine concentration levels.

Most tubes available today are made of glass, have break-off tips, and are filled with treated chemical granules. They generally have a shelf life of 24 to 30 months.

One type of pump frequently used with a detector tube is a compact, bellows-type device. Accurate and repeatable sample flows can be assured by a shaft that guides the bellows during compression. Some models feature an end-of-stroke indicator that lets the user know when a full air sample has been drawn. Models with an integral stroke counter eliminate the tedious recording of multiple pump strokes.

Calibration

To ensure the accuracy of all monitoring and detection equipment, calibration should be performed regularly. If the instrument reading differs significantly from the values of the known standard, the instrument should not be used until it has been adjusted or, if necessary, repaired.

ALTAIR® 5 Multigas Detector

The new MSA Altair 5 Multigas Detector raises the bar to higher levels of detection:

- 6-gas capability lets you test for more hazards in less time
- More than 18 preprogrammed languages are suitable for global applications
- High-resolution, crisp color display option incorporates intuitive user-interface
- Patented PulseCheck® Pump is integrated to ensure optimum pump performance
- Lithium-ion rechargeable battery provides enough runtime to cover double shifts
- 2-year comprehensive warranty for standard models helps to protect your investment

A call for help when you need one

Ideal for confined space applications or when working alone, exclusive MotionAlert™ feature, when enabled, activates a "man down" alarm if no motion is detected for 30 seconds. Exclusive InstantAlert™ feature allows users o manually activate an audible alarm to alert those nearby to potentially dangerous situations.

Easy to understand & operate

Using a portable gas detector should never be a challenge! The intuitive menu-driven display and three large, tactile buttons make operation easy – even while wearing gloves. Numerous customization options fit many budgets and experience levels, from personal monitoring and confined space pre-entry checks to industrial hygiene use.

Reliable sensors

MSA's miniature catalytic combustion sensors will reliably detect up to 100% LEL of combustible gases, including many solvents. Our IR sensors deliver stable readings in environments with challenging temperature and humidity conditions. MSA's high-performing electrochemical duo-tox hydrogen sulfide/carbon monoxide sensor offers an additional sensing option. Many other toxic sensor choices are available, including ammonia, chlorine, hydrogen cyanide, phosphine, and sulfur dioxide.

Calibration, simplified

The MSA Galaxy® Automated Test System provides for easy calibration and record keeping, while MSA Link™ Data Transfer Software quickly transfers stored information to a connected PC.

This unit could be the most rugged instrument you'll ever use

- Comfortable to use – ergonomically designed rubber over-molded housing provides superior grip
- Water and dust resistant – IP65-rated
- Unsurpassed durability – survives a six-foot drop test

Options

- High-resolution color or monochrome display screen
- Integral pump or diffusion option
- Rechargeable lithium-ion or alkaline battery options
- 18-language display capability
- Expanded e-chem sensor options
- IR sensor options

ALTAIR® 5 Multigas Detector

ALTAIR 5 Multigas Detector with data logging, integral pump, rechargeable battery pack, charger, calibration cap, tubing, CD manual

UL	ANZ	CSA	
Industrial Kits - includes monochrome display, integral pump, 10 ft sampling line, 1 ft probe			
10094739	10094959	10094929	ALTAIR 5 Multigas Detector (LEL, O_2, H_2S)
10094740	10094960	10094930	ALTAIR 5 Multigas Detector (LEL, O_2, CO, H_2S)
10094901	10094961	10094931	ALTAIR 5 Multigas Detector (LEL, O_2, H_2S, SO_2)
10094902	10094962	10094932	ALTAIR 5 Multigas Detector (LEL, O_2, CO, H_2S, SO_2)
Deluxe Kits - includes color display, integral pump, 10 ft sampling line, 1 ft probe			
10094909	10094969	10094939	ALTAIR 5 Multigas Detector (LEL, O_2, H_2S)
10094910	10094970	10094940	ALTAIR 5 Multigas Detector (LEL, O_2, CO, H_2S)
10094911	10094981	10094941	ALTAIR 5 Multigas Detector (LEL, O_2, H_2S, SO_2)
10094912	10094982	10094942	ALTAIR 5 Multigas Detector (LEL, O_2, CO, H_2S, SO_2)
Economy Kits - includes monochrome display, integral pump			
10094919	10094989	10094949	ALTAIR 5 Multigas Detector (LEL, O_2, H_2S)
10094920	10094990	10094950	ALTAIR 5 Multigas Detector (LEL, O_2, CO, H_2S)
10094921	10094991	10094951	ALTAIR 5 Multigas Detector (LEL, O_2, H_2S, SO_2)
10094922	10094992	10094952	ALTAIR 5 Multigas Detector (LEL, O_2, CO, H_2S, SO_2)

Calibration Gas

10045035	58L Quad gas mix RP 60 ppm CO, 20 ppm H_2S, 15% O_2, 1.45% CH_4
10048280	34L Econocal Quad gas 60 ppm CO, 20 ppm H_2S, 15% O_2, 1.45% CH_4
711070	34L (10 ppm SO_2, balance air)

Accessories

10082834	USB IR receiver
10088099	MSA Link Software CD

For more accessories, please refer to page 72.

See pages 86–91 for calibration accessories.

Specifications

Gas	Range	Resolution
LEL	0–100%	1%
O_2	0–25% vol	0.1% vol
CO	0–999 ppm	1 ppm
H_2S	0–200 ppm	1 ppm
SO_2	0-20 ppm	0.1ppm
Cl_2	0-20 ppm	0.1ppm
NH_3	0-100 ppm	0.5ppm
PH_3	0-5 ppm	0.1ppm
HCN	0-30 ppm	0.1ppm
ClO_2	0-1 ppm	0.01ppm
NO_2	0-20 ppm	0.1ppm

Questions or Comments?
www.facebook.com/MSATheSafetyCompany

ALTAIR 5 Multigas Detector Assemble-to-Order (ATO) Options

- To create your instrument configuration, select the instrument option code and mark them in the boxes to the right.

1. Instrument Type

All ALTAIR 5 Multigas Detectors come standard with data logging, MotionAlert™ and InstantAlert™ features. Choose your instrument type, equipped with internal pump or diffusion. The monochrome full-graphic display is standard; a high-resolution crystal-clear color display with logo customization is optional.

Instrument Type	Code	Selection
Pumped with monchrome display	A	
Pumped with color display	B	
Diffusion with monchrome display	E	
Diffusion with color display	F	

2. Combustible Sensor

Choose your combustible sensor calibration. To select 0-100% LEL pentane, please choose **L**; for 0-5% Vol methane choose **M**. For 0-100% LEL hydrogen choose **Y**. For no combustible sensor, select **0** for none.

Combustible Sensor Options	Code	Selection
None	0	
0-100% LEL pentane	L	
0-5% Vol methane	M	
0-100% LEL hydrogen	Y	

3. Oxygen Sensor

To have an oxygen sensor installed in your new ALTAIR 5 Multigas Detector, please select **1**. For no oxygen sensor, please select **0**.

Oxygen Sensor Options	Code	Selection
None	0	
0-25% Vol	1	

4. Toxic Sensor 1 & 2

To configure your new ALTAIR 5 Multigas Detector for your application, choose **1** for both CO and H_2S sensors; for no toxic sensor, enter **0**. Must select **0** or **3** if hydrogen (Y) is selected in Matrix 2.

Toxic Sensor 1 & 2 Options	Code	Selection
None	0	
0-999 ppm CO and 0-200 ppm H_2S	1	
0-999 ppm CO	2	
0-200 ppm H_2S	3	

5. Toxic Sensor 3

Choose your additional toxic sensor for the ALTAIR 5 Multigas Detector. Cl_2, ClO_2 and NH_3 only available as pumped instruments. PH_3 not available if hydrogen (Y) is selected in Matrix 2 or if H_2S is selected in Matrix 4.

Check for availabilty

Toxic 3 Sensor Options	Code	Selection
None	0	
SO_2 0-20 ppm	A	
Cl_2 0-20 ppm	B	
NO_2 0-50 ppm	C	
NH_3 0-50 ppm	D	
PH_3 0-5 ppm	E	
HCN 0-30 ppm	F*	
ClO_2 0-1.00 ppm	G	

6. Advanced Sensor

Add your IR sensor option to complete your sensor suite in your ALTAIR 5 Multigas detector. Combustible sensors are not available with CSA approvals.

Check for availabilty

Advanced Sensor Options		Code	Selection
None		0	
CO_2	0-10%Vol	B	
CO_2	0-50%Vol	C	
Butane	0-25% Vol	D	
Propane	0-100% LEL	F	
Butane	0-100% Vol	G*	
Propane	0-100% LEL	H	
Methane	0-25%Vol	K	

7. Rechargeable Battery Pack and Power Supply

Select the correct power supply for your region. Add an instrument cradle to firmly secure your instrument while charging on the shelf or on a fire truck. A charging cradle is required for European and Australian versions (approvals).

Rechargeable Pack & Power Supply	Code	Selection
None	0	
North American pack with power supply	N	
ATEX pack & power supply with cradle	E	
ANZ pack & power supply with cradle	A	
North American pack & power supply with cradle	M	
Global with global power supply	G	

8. Replaceable Battery Pack

If an alkaline pack is required, choose **1**. Not available for IR versions.

Replaceable Batteries	Code	Selection
None	0	
Replaceable battery pack	1	

9. Sample Lines

MSA's quality sampling lines offer high speed and convenience using our quick-connect fittings. If conductive material is required, contact MSA. Sampling lines and probes should only be used with pumped instruments.

Sample Line Options	Code	Selection
None	0	
10 ft. polyurethane	1	
25 ft. polyurethane	2	
10 ft. Teflon	3	
25 ft. Teflon	4	
3 ft. polyurethane coiled	5	

10. Sample Probes

MSA's sampling probes are durable and easy to use. Built-in water stop provides additional protection from dirt and debris whenever the tip is dipped under water.

Sample Probe Options	Code	Selection
None	0	
1 ft. straight	1	
3 ft. straight	2	
8 in. stick	3	

11. Packaging

For a red carrying case, choose **R**; for black, choose **E**; for standard carton packaging, choose **0**.

Packaging Options	Code	Selection
Standard carton	0	
Black economy	E	
Red economy	R	

12. Approval Label

Choose the applicable approval label for your area. For the USA, choose **U**; for Europe, choose **E**; for Canada, choose **C**; for Australia, choose **A**.

Approval Label Options	Code	Selection
UL (US)	U	
ATEX (Europe)	E	
CSA (Canada)	C	
ANZ (Australia)	A	

13. Logo Express

Upon startup, the ALTAIR 5 Multigas Detector will display your company logo or other information. Be sure to select color display for this option. To add your company logo, choose **L** and upload your logo to the web address which will be sent automatically to you via email. Your order with customized logo cannot be processed without uploading your logo.

Logo Express Options	Code	Selection
None	0	
Logo Express	L	

Your Model Part Number

Please write in numbers from selections above in appropriate boxes and contact your Safety Products Distributor to place your order.

Selection … 1 2 3 4 5 6 7 8 9 10 11 12 13

A-ALT5- ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

ALTAIR 4X Multigas Detector

ALTAIR 4X Multigas Detector – charcoal

ALTAIR 4X Multigas Detector – phosphorescent

MSA'S New ALTAIR 4X Multigas Detector is driven by the most advanced technology available in any portable gas detector. Its design breakthroughs improve performance and ensure the ALTAIR 4X Detector outlasts the competition:

- Full three-year warranty
- Four-year sensor life
- Lower cost of ownership
- IP67 rating
- End-of-sensor-life warning
- 24-hour run time
- Withstands 20-foot drop
- Fast, high-performing MSA XCell™ sensors

Exclusive Safety Features Unique to Gas Detection:

- MotionAlert™ feature signals "man down"
- InstantAlert™ feature allows user to manually activate alarms.

Specifications

Gas	Range	Resolution
LEL	0–100%	1%
O_2	0–30% vol	0.1% vol
CO	0–1999 ppm	1 ppm
H_2S	0–200 ppm	1 ppm

ALTAIR 4X Multigas Detector

ALTAIR 4X Multigas Detector with North American approval, quick-start card, data logging, charger, calibration cap and tubing, CD manual. MotionAlert feature is now included as standard on all detectors.

Part No.	Description
10107602	ALTAIR 4X Multigas Detector (LEL, O_2, CO, H_2S) Charcoal
10110443	ALTAIR 4X Multigas Detector (LEL, O_2, CO) Charcoal
10110444	ALTAIR 4X Multigas Detector (LEL, O_2) Charcoal
10107603	ALTAIR 4X Multigas Detector(Detector (LEL, O_2, CO, H_2S) Phosphorescent
10110445	ALTAIR 4X Multigas Detector (LEL, O_2, CO) Phosphorescent
10110446	ALTAIR 4X Multigas Detector (LEL, O_2) Phosphorescent

Sensors/Spare Parts

10106729	Sensor Kit, XCell O_2
10106725	Sensor Kit, XCell CO/H_2S two-tox
10106723	Sensor Kit, XCell H_2S
10106724	Sensor Kit, XCell CO
10110030	Front housing with integrated dust filters (Charcoal)
10110029	Front housing with integrated dust filters (Phosphorescent)
10106621	Main board with battery pack
10110061	LCD frame assembly (frame, LCD, zebra strips, screws)
10110062	Sensors gasket, Phillips screws (4x), self-tapping (2x)
10106623	CD manual, ALTAIR 4X Multigas Detector

Accessories

10069894	Stainless steel suspender clip
10046528	Universal Pump Probe (UL)
10088099	MSA Link™ Software CD-ROM
10082834	JetEye IR Adapter with USB connector
10050333	Hand aspirator assembly

Calibration Accessories

467895	Regulator 0.25 lpm Model RP
10048280	34L quad gas mix (1.45% CH_4, 15% O_2, 60 ppm CO, 20 ppm H_2S)
10089321	Calibration assembly (cap, tube, connector)
10045035	58L quad gas mix (1.45% CH_4, 15% O_2, 60 ppm CO, 20 ppm H_2S)

Power Supply

10086639	Charging cradle components
10087913	North American power supply
10092233	Charging cradle assembly
10095774	Vehicle charger
10111212	5-Unit multi-unit charger North American plug
10111214	10-Unit multi-unit charger North American plug

Questions or Comments?
www.facebook.com/MSATheSafetyCompany

ALTAIR 4X Multigas Detector Assemble-to-Order (ATO) Options

To create your instrument configuration, select your instrument option codes and mark them in the boxes to the right.

			Code	Selection
A. **Instrument Type**	The Altair 4X Multigas Detector comes standard with MSA's new XCell Sensors and MotionAlert feature to indicate 'man-down'.	**Instrument Type** Altair 4X w/ XCell Sensors and MotionAlert feature	 X	**Selection**
B. **Combustible Sensor**	Choose your combustible sensor calibration. To select 0-100% LEL pentane, please choose L, for 0-5% Vol methane, choose M. For no combustible sensor, select 0 for none.	**Combustible Sensor** None LEL 1-100% pentane 0-5% Vol methane	 0 L M	**Selection**
C. **Oxygen Sensor**	To have an oxygen sensor installed in your new ALTAIR 4X Multigas Detector, please select 1. For no oxygen sensor, please select 0.	**Oxygen Sensor Options** None 0-30% Vol	 0 2	**Selection**
D. **Toxic Sensor**	To configure your new ALTAIR 4X Multigas Detector choose 0 for no toxic sensor. Choose A for both CO and H_2S sensors, choose B for CO, or C for H_2S.	**Toxic Sensor Options** None 0-1999 ppm CO and 0-200 ppm H2S 0-1999 ppm CO 0-200 ppm H2S	 0 A B C	**Selection**
E. **Power Supply**	Select the correct power supply for your region. Add an instrument cradle to firmly secure your instrument while charging on the shelf or in a vehicle.	**Power Supply Options** None North American European with cradle Australian with cradle North American with cradle Global	 0 N E A M G	**Selection**
F. **Approval Label**	Choose the applicable approval label for your area. For Europe choose E, for North America choose C, and for Australia choose A.	**Approval Label Options** Europe ATEX North America CSA (Canada pending) Australia	 E C A	**Selection**
G. **Extended Warranty**	MSA includes a full 3-year warranty on the Altair 4X Multigas Detector, which includes sensors, battery and electronics. Choose 1 for an additional year (four years total).	**Extended Warranty Options** Three years standard warranty Extended warranty (four years total)	 0 1	**Selection**
H. **Packaging**	To order bulk packaging for up to 10 units, choose 1 (one instrument version per package); to order the standard single unit carton choose 0.	**Packaging** Single carton 10-unit bulk package	 0 1	**Selection**
I. **Color Case Option**		**Color Case Option** Standard Charcoal Phosphorescent (Glow-in-the-Dark)	 0 1	**Selection**

Your Model Part Number   Please write in numbers from selections above in appropriate boxes and contact your Safety Products Distributor to place your order.

Selection …
         A   B   C   D   E   F   G   H   I

A-ALT4X- [X]–[ ]–[ ]–[ ]–[ ]–[ ]–[ ]–[ ]–[ ]

ALTAIR 4 QuickCheck Station

The Altair 4 QuickCheck Station performs bump and function tests in less than one minute, significantly trimming daily required preparation time for large Altair 4 Multigas Detector fleets. Keeps costs down with less up-front hardware expense and calibration gas.

ALTAIR 4 QuickCheck Station

10101519	ALTAIR 4 QuickCheck Station, 50% tolerance range
10101552	ALTAIR 4 QuickCheck Station, 20% tolerance range
10075893	Regulator
10101085	Cylinder holder assembly
10049410	Car charger

SIRIUS® PID Multigas Detector

The Sirius Multigas Detector unit with PID Sensor gives users all they are looking for in a reliable, easy-to-use, durable package to detect volatile organic compounds, while measuring for combustible, toxic and oxygen deficient atmospheres.

Tremendous Flexibility—One PID and four gases in one instrument allows for detection of hundreds of chemicals.

Reliable PID Performance—MSA's own proprietary PID sensor design (patent-pending) provides users with excellent PID performance including humidity resistance, stable zero readings, and fast response and clear times to enable users to get their jobs done dependably.

User-Friendly Software—Easy-to-use software allows users to focus on their tasks at hand!

Superior, Proprietary PID Sensor Design—Reduces maintenance time and cost.

Flexible Configurations—This design combines two instruments into one the Sirius unit can be used with or without the PID sensor mode.

Loud, Attention-Grabbing Alarm—The Sirius Multigas Detector provides outstanding alarms to clearly warn users of a hazardous situation. A piercing alarm horn, resonating through a specially designed horn chamber, is designed into the Sirius unit to give users an audible warning in the event of an alarm condition. Multidirectional bright LED lights give users visible warning of alarm conditions that can be easily seen from any direction the Sirius unit is facing. A "Safe LED" light gives users confidence the unit is actively detecting gas by flashing every 15 seconds.

Interchangeable Lithium-ion and Alkaline Battery Packs—Allows for quick battery turn to keep users continually charged and ready to take action.

Easy Calibration and Compatibility with Galaxy Automated Test System—One-button calibration makes calibration simple for any user. Intelligent software frees users from complicated calibration adjustments.

Long-Term Storage Kit—Provides all the tools necessary to keep the Sirius Multigas Detector running if the unit has not been frequently used.

For accessories, please refer to page 73.

See pages 86–91 for calibration accessories.

Sirius Multigas Detector Kits (LEL)	Part #	10.6 eV	LEL	02	CO	H2S	Li Ion	Alka Bat	10 ft line	1 ft probe	Ret Line	Bl Boot	Cor Jac	Cal Kit	Data Log	Blk Cas	Std Cap	Lamp Cl Kit
Deluxe LEL 4-Gas Lithium Ion PID	10051141	•	•	•	•	•	•		•	•	•	•	•	•		•	•	
Deluxe LEL 3-Gas H2S Lithium Ion PID	10051142	•	•	•		•	•		•	•	•	•	•	•		•	•	
Deluxe LEL 3-Gas CO Lithium Ion PID	10051143	•	•	•	•		•		•	•	•	•	•	•		•	•	
Deluxe LEL 4-Gas Lithium Ion PID Datalog	10051144	•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	
Deluxe LEL 4-Gas Lithium Ion PID less bt/jac	10051117	•	•	•	•	•	•		•	•	•			•		•	•	•
Industrial LEL 4-Gas Lithium Ion PID	10051146	•	•	•	•	•	•		•	•	•	•	•				•	
Industrial LEL 3-Gas H2S Lithium Ion PID	10051147	•	•	•		•	•		•	•	•	•	•				•	
Industrial LEL 3-Gas CO Lithium Ion PID	10051148	•	•	•	•		•		•	•	•	•	•				•	
Industrial LEL 4-Gas Lithium Ion PID no jackt	10051149	•	•	•	•	•	•		•	•	•	•					•	
Industrial LEL 4-Gas Lithium Ion PID with cal	10051150	•	•	•	•	•	•		•	•	•	•		•	•	•	•	
Economy LEL 4-Gas Alkaline PID	10051151	•	•	•	•	•		•									•	
Economy LEL 3-Gas H2S Alkaline PID	10051152	•	•	•		•		•									•	
Economy LEL 3-Gas CO Alkaline PID	10051153	•	•	•	•			•									•	
Economy LEL 4-Gas Lithium Ion PID	10051154	•	•	•	•	•	•										•	
Sirius Multigas Detector Kits (CH₄)																		
Deluxe CH4 4-Gas Lithium Ion PID	10051177	•	•	•	•	•	•		•	•	•	•	•	•		•	•	
Deluxe CH4 3-Gas H2S Lithium Ion PID	10051178	•	•	•		•	•		•	•	•	•	•	•		•	•	
Deluxe CH4 3-Gas CO Lithium Ion PID	10051179	•	•	•	•		•		•	•	•	•	•	•		•	•	
Deluxe CH4 4-Gas Lithium Ion PID Datalog	10052511	•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•
Industrial CH4 4-Gas Lithium Ion PID	10051181	•	•	•	•	•	•		•	•	•	•	•				•	
Industrial CH4 3-Gas H2S Lithium Ion PID	10051182	•	•	•		•	•		•	•	•	•	•				•	
Industrial CH4 3-Gas CO Lithium Ion PID	10051183	•	•	•	•		•		•	•	•	•	•				•	
Industrial CH4 4-Gas Lithium Ion PID no jac	10051184	•	•	•	•	•	•		•	•	•	•					•	
Economy CH4 4-Gas Alkaline PID	10051185	•	•	•	•	•		•									•	
Economy CH4 3-Gas H2S Alkaline PID	10051186	•	•	•		•		•									•	
Economy CH4 3-Gas CO Alkaline PID	10051187	•	•	•	•			•									•	
Economy CH4 4-Gas Lithium Ion PID	10051188	•	•	•	•	•	•										•	

Sirius PID Multigas Detector Assemble-to-Order (ATO) Options

• To create your instrument configuration, select the instrument option code and mark them in the boxes to the right.

		Code	Selection
A. **Photoionization Detector Lamp Option**	To choose the standard 10.6 eV lamp for most VOC's, choose selection A. For the low energy 9.8 eV lamp with the most VOC discrimination, enter selection B.	**PID Lamp**	
		None	0
		PID with 10.6 eV Lamp(0-2000 ppm)	A
		PID with 9.8 eV Lamp	B

		Code	Selection
B. **Combustible Sensor Option**	To choose to have your MSA 20L combustible sensor reading set to be displayed as 0-100% LEL, enter selection "L". For a display of 0-5% methane, enter an "M".	**Combustible Sensor**	
		None	0
		0-100% LEL	L
		0-5% Methane	M

		Code	Selection
C. **Oxygen Sensor Options**	To choose to have an oxygen sensor installed in your new Sirius Multigas Detector, enter selection 1. For no oxygen sensor, enter a "0".	**Oxygen Sensor**	
		None	0
		Oxygen (0-25%)	1

		Code	Selection
D. **Carbon Monoxide Sensor Option**	To choose to have a carbon monoxide sensor installed in your new Sirius Multigas Detector, enter selection 1. For no carbon monoxide sensor, enter a "0".	**Carbon Monoxide Sensor**	
		None	0
		Carbon Monoxide (0-500 ppm)	1

		Code	Selection
E. **Hydrogen Sulfide Sensor Option**	To choose to have a hydrogen sulfide sensor installed in your new Sirius Multigas Detector, enter selection 1. For no hydrogen sulfide sensor, enter a "0".	**Hydrogen Sulfide Sensor**	
		None	0
		Hydrogen Sulfide (0-100 ppm)	1

		Code	Selection
F. **Battery Pack & Charger Options**	You may choose between MSA's lithium ion battery pack which includes a standard lithium ion battery charger, or the convenience of an alkaline battery pack. You may also choose to have both battery pack types included with your new Sirius Multigas Detector.	**Battery Pack/Charger**	
		None	0
		Lithium ion, includes charger & cord	A
		Replaceable alkaline	B
		Both Lithium ion and replaceable alkaline battery packs	C

		Code	Selection
G. **Vehicle Charger Option**	If you would like to order the vehicle charger for your new Sirius Multigas Detector, enter selection 1.	**Vehicle Charger**	
		None	0
		Vehicle Charger	1

		Code	Selection
H. **Sampling Lines**	MSA's Quick-Connect sampling lines are of the highest quality materials, guaranteed to provide accurate sampling concentrations. Sirius Multigas Detector sampling lines all includes a Quick-Connect air-line fitting for easy attachment and tight seal. For sampling jet fuel, enter selection 3 for the 10' teflon sampling line option, or selection 4 for the 25' sampling line option.	**Sampling Lines**	
		None	0
		10-foot polyurethane	1
		25-foot polyurethane	2
		10-foot teflon (for jet fuel sampling)	3
		25-foot teflon (for jet fuel sampling)	4
		3-foot polyurethane coiled	5

		Code	Selection
I. **Sampling Probes**	MSA's sampling probes are durable & comfortable to use. The built in Water-Stop filter ensures that your sampling system is not contaminated with dirt and debris if the probe tip is dipped in water. You must order a probe if you order a sampling line, as we strongly recommend that you operate the instrument with this filter in place.	**Sampling Probes**	
		None	0
		1-foot Probe	1
		3-foot Probe	2
		8-inch Probe	3

		Code	Selection
J. **Carrying Attachments**	While a high-strength stainless steel D-Ring is offered with this instrument at no extra charge, there are three other options for handling the instrument: the retractable carrying line for use with the D-Ring, the shoulder harness and the wrist harness to be used on the user's arm with a Level A suit.	**Carrying Attachments**	
		None	0
		Retractable Carrying Line with Belt Clip	1
		Shoulder Harness	2
		Wrist Harness	3

		Code	Selection
K. **Instrument Jackets and Boots**	To offer the highest level of of instrument protection, you may choose a protective black rubber boot and harness, or a cordura jacket. You may also order both options by choosing selection C.	**Instrument Jacket/Boot**	
		None	0
		Black Boot with Harness	B
		Cordura Jacket with Harness	C
		Black Boot, Cordura Jacket and Harness	D

		Code	Selection
L. **Calibration Kits**	You may choose one of two calibration options for your Sirius Multigas Detector. The fixed-flow .25 lpm regulator includes a multigas calibration cylinder and also an isobutylene calibration gas cylinder if a PID selection is chosen. You may also order just the isobutylene calibration kit with gas cylinder.	**Calibration Kits**	
		None	0
		Econo-Cal Fixed-Flow Regulator Calibration Kit (includes multigas and isobutylene cylinders)	1
		Model RP Fixed-Flow Regulator Calibration Kit (includes multigas and isobutylene cylinders)	2
		Isobutylene Calibration Kit (includes gas cylinder)	3

		Code	Selection
M. **Data Communications Kit**	If you need to track the readings and operations of your Sirius Multigas Detector, consider ordering the instrument with the optional built-in datalogging module. The option also provides TWA and STEL capabilities.	**Data Communications**	
		None	0
		Data Link Module	1
		Data Link Module and Software Kit	2

		Code	Selection
N. **Packaging**	Your new Sirius Multigas Detector may be protected by a standard black plastic case, or by a black premium field case. You may also choose the option of a long-term storage kit case for emergency response, large enough to hold the Sirius Multigas Detector, calibration cylinders, spare sensors, spare PID lamp and lithium ion battery pack with charger, spare alkaline battery pack, lamp cleaning kit and simple-to-read and understand refresher instructions.	**Packaging**	
		Standard shipping carton	0
		Standard black PVC case	1
		Premium black field case	2
		Long-term storage kit case	4
		Long-term storage kit basic includes PID lamp, add $180 each sensor	5

		Code	Selection
O. **PID Lamp Cap**	The standard easy-access lamp cap is included with your Sirius Multigas Detector at no extra charge. You may also choose a tamper-proof lamp cap.	**PID Lamp Cap**	
		None	0
		Standard easy-access lamp cap	S
		Alternative tamper-proof lamp cap	T

Your Model Part Number Please write in numbers from selections above in appropriate boxes and contact your Safety Products Distributor to place your order.

Selection …

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O

A-SIRIUS-

ALTAIR 5 Multigas Detector Accessories

Battery Packs	Part No.
Battery pack assembly, rechargeable	10090521
Alkaline battery pack (includes belt clip)	10083507
Battery pack, rechargeable, IR	10088522
Belt Clip	**Part No.**
Belt clip replacement kit	10094830
Datalogging	**Part No.**
USB IR receiver	10082834
MSA Link Software CD	10088099
Sampling Accessories	**Part No.**
Sample Line, with quick disconnect, 10-foot PU	10040665
Sample Line, with quick disconnect, 25-foot PU	10040664
Sample Line, with quick disconnect, 10-foot teflon	10049058
Sample Line, with quick disconnect, 25-foot teflon	10049057
Sample Line, with quick disconnect, 3-foot PU coiled	10040667
Probe, 1-foot	10042621
Probe, 3-foot	10042622
Probe, 8-inch	10040589
Replacement Sensors	**Part No.**
Combustible Sensor	10089116
0-25% Vol. O_2	10089163
CO/H_2S duo-tox sensor	10089117
0–20 ppm Sulphur Dioxide (SO_2)	10080223
Sensors replacement kit (CO/H_2S duo-tox, O_2, combustible)	10095052
Accessories	**Part No.**
Filter cover assembly	10083591
Maintenance kit (filters, o-ring,screws)	10094829
Shoulder strap	474555

ALTAIR 4X Multigas Detector Accessories

Calibration Accessories	Part No.
Regulator 0.25 lpm Model RP	467895
34L quad gas mix (1.45% CH_4, 15% O_2, 60 ppm CO, 20 ppm H_2S)	10048280
Calibration assembly(cap, tube, connector)	10089321
58L quad gas mix (1.45% CH_4, 15% O_2, 60 ppm CO, 20 ppm H_2S)	10045035
Power Supply	**Part No.**
Charging cradle components	10086639
North American power supply	10087913
Charging cradle assembly	10092233
Vehicle charger	10095774
5-Unit multi-unit charger NA plug	10111212
10-Unit multi-unit charger NA plug	10111214
Accessories	**Part No.**
Stainless steel suspender clip	10069894
Universal Pump Probe (UL)	10046528
MSA Link™ Software CD-ROM	10088099
JetEye IR Adapter with USB connector	10082834
Hand aspirator assembly	10050333
Sensors / Spare Parts	**Part No.**
Kit, XCell Ex combustible sensor	10106722
Kit, XCell O_2 sensor	10106729
Kit, XCell CO/H_2S two-tox sensor	10106725
Kit, XCell H_2S sensor	10106723
Kit, XCell CO sensor	10106724
Front housing with integrated dust filters (Charcoal)	10110030
Front housing with integrated dust filters (Phosphorescent)	10110029
Main board with battery pack	10106621
LCD frame assembly (frame, LCD, zebra strips, screws)	10110061
Sensors gasket, Phillips screws (4x), self-tapping (2x)	10110062
CD manual, ALTAIR 4X Multigas Detector	10106623

ALTAIR 4 Multigas Detector Accessories

Power Supply	Part No.
North American power supply	10087913
Sensors	**Part No.**
Combustible sensor	10089116
O_2 sensor	10089163
CO/H_2S duo-tox sensor	10089117
Sensors replacement kit (CO-H_2S duo-tox, O_2, combustible)	10089118
Datalogging	**Part No.**
JetEye IR adapter with USB connector	10082834
MSA Link Software CD	10088099
Accessories	**Part No.**
Spare filters, sensors gasket, phillips screws (4x)	10088976
Stainless steel suspender clip	10069894
Hand aspirator assembly	10050333

Sirius Multigas Detector Accessories

Battery Packs	Part No.
Standard Rechargeable Lithium Ion Battery Pack	10050347
Lithium Ion Battery Charger, consists of power supply and charge adapter	10052512
Replaceable Alkaline Battery Pack	10049412
Replaceable Alkaline Battery Pack less door	10049098
Vehicle Charger (includes charge adapter)	10052513
Sampling Accessories	**Part No.**
Sampling Line w/Quick-Connect, 10' polyurethane	10040665
Sampling Line with Quick-Connect, 25' polyurethane	10040664
Sampling Line with Quick-Connect, 10' teflon	10049058
Sampling Line with Quick-Connect, 25' teflon	10049057
Sampling Line with Quick-Connect, 3' polyurethane coiled	10040667
Probe, 1-foot	10042621
Probe, 3-foot	10042622
Probe, 8-inch	10040589
Protective Jackets, Boots and Carrying Attachments	**Part No.**
Black Rubber Boot (includes harness)	10052514
Cordura Jacket (includes harness)	10050122
Shoulder Harness only	474555
Retractable Carrying Line with Belt Clip	10050976
Wrist Harness	10051803
Long-Term Storage Kit	**Part No.**
Includes 4-Gas PID, Lithium Ion and Alkaline Battery Packs, Vehicle Charger, 10' sampling line w/1' probe, retractable carrying line w/belt clip, Cordura jacket & black boot, Econo-Cal kit, Data Link w/software, 4 replacement sensors & PID Lamp, lamp cleaning kit, standard lamp cover & case	10051176
Replacement Lamps and Sensors	**Part No.**
10.6 eV Lamp	10049692
9.8 eV Lamp	10052298
4 Sensor Kit (LEL, O_2, CO, H_2S)	10051717
Combustible Sensor (both LEL and CH_4)	10049808
Oxygen	10049806
Carbon Monoxide	10049804
Hydrogen Sulfide	10049805
Long-Term Storage Oxygen Sensor (hermetically sealed for 2-year storage)	10049807
Accessories	**Part No.**
Disposable Ionization Chamber	10047463
Lamp Cleaning Kit	10049691
Filter Replacement Kit with O rings and replacement dust filters	10049680
Standard Lamp Cover	10050841
Tamper-Proof Lamp Cover	10050750
Sirius Multigas Detector Screwdriver	636913
Sirius Multigas Detector Instructional CD Rom	10054667
Sirius Multigas Detector Instructional Video	10050856
Instruction Manual	10048887
Carrying Cases	**Part No.**
Standard Black Plastic Case	710948
Premium Black Field Case w/foam insert	10052515
Standard Red Plastic Case	10020541
Long-Term Storage Kit Case with labeled foam insert	10051539

Solaris and Solaris Alkaline Multigas Detector Accessories

Sensors	Part No.
Replacement CO Sensor	10046944
Replacement H_2S Sensor	10046945
Replacement 0_2 Sensor	10046946
Replacement Combustible Sensor	10046947
Carrying Cases	**Part No.**
Cordura Jacket (Orange)	10049053
Cordura Jacket (Black w/velcro jacket)	10054586
Cordura Jacket for Solaris Alkaline	10070855
Leather Case	10064766
Replacement Parts	**Part No.**
Calibration Cap	10044994
Horn Chamber Protective Insert	10046042
Horn Cap Repair Kit	10068059
Sampling Accessories	**Part No.**
Universal Pump Probe, UL Approval	10046528
Universal Pump Probe, MSHA Approval	10047595
Universal Pump Probe, CSA Approval	10055576
Solaris Aspirator Assembly	10050333
Datalogging	**Part No.**
USB Infrared reader	10082834
MSALink Datalogging Software Only	10088099
Operational Videos	**Part No.**
Solaris Overview - VHS	10049318
Solaris Overview - CD ROM	10049319
Replacement instruction manual, CD ROM	10048654
Replacement Instruction Manual, paper copy	10046201
Power Supply	**Part No.**
Charger Cradle Assembly	10048185
North American Power Supply	10047342
Global Power Supply	10047343
Vehicle Charger	10049410
Multi-unit Power Survey	10069498
Multi-unit Charge Station (no cradles)	10069856
Multi-unit Charge Station (with cradles)	10069857

Orion Multigas Detector Accessories

Battery Packs & Chargers	Part No.
Rechargeable NiMH	10087243
NiMH battery charger	10020551
Alkaline	10031092
Vehicle charger	10034276
Battery pack jack cover	10030910
Replacement Sensors	**Part No.**
Combustible	10024247
Oxygen	10025940
Carbon Monoxide	711306
Hydrogen Sulfide	711307
Sampling Accessories	**Part No.**
Sample line, 3-foot coiled	10018118
Sample line, 5-foot coiled	710465
Sample line, 10-foot	497333
Sample line, 15-foot	497334
Sample line, 25-foot	497335
Probe, 1-foot	800332
Probe, 3-foot	800333
Protective Jackets	**Part No.**
Orange Cordura	10020486
Black Leather	10020485
Belt Clips	**Part No.**
Swivel Belt Loop Kit	710962
Protective Boots	**Part No.**
Black Rubber	10022036
Red Rubber (for Fire Service)	10025665
Video	**Part No.**
Care and Use Video	10020489

ALTAIR Pro Single-Gas Detector

The ALTAIR Pro Single-Gas Detector has a wide range of features, including simple intuitive operation, small rugged design, and dependable technology that is there when you need it. These innovative toxic gas and oxygen detectors are based upon the design of the popular ALTAIR Single-Gas Detector, but with added features and functionality.

- Tough rubberized housing
- One-button operation
- Accurately measures the gas concentration or percent oxygen
- Displays information on a large, clear, backlit LCD
- Superior dust and water protection (rated IP67 except O_2-R)
- Event-logging and data-logging
- Excellent impact resistance

Some of the available ALTAIR Gas Detectors

- Versions available for CO, H_2S, O_2, NH_3, Cl_2, ClO_2, NO_2, SO_2, HCN and PH_3
- Great RFI performance
- Adjustable alarm set points are offered for LOW, HIGH, TWA and STEL
- Alarms are indicated by flashing LEDs, an audible alarm, and an internal vibrating alarm.
- Replaceable battery and sensor
- MSA Link™ Software displays logs, adjusts alarm set points, and disables/activates options

The ALTAIR Pro Single-Gas Detector will provide worry-free performance and stand up to the roughest handling in even the toughest industrial environments. The sensors and battery can easily be replaced to keep the unit performing for years. The ALTAIR Pro Single-Gas Detector is designed and built with MSA's superior quality and is part of the MSA STELLAR® Series, which features a varied selection of single-gas and multigas instruments.

Altair Pro Single-Gas Detectors

Instrument Type	Part No.	Low Alarm	High Alarm	STEL	TWA
Oxygen (O_2)	10074137	19.50%	23.00%	N/A	N/A
Carbon Monoxide (CO)	10074135	25 ppm	100 ppm	100 ppm	25 ppm
Carbon Monoxide (CO) Fire	10076723	25 ppm	100 ppm	100 ppm	25 ppm
Carbon Monoxide (CO) Steel	10076724	75 ppm	200 ppm	200 ppm	75 ppm
Hydrogen Sulfide (H_2S)	10074136	10 ppm	15 ppm	15 ppm	10 ppm
Hydrogen Cyanide (HCN)	10076729	4.5 ppm	10 ppm	10 ppm	4.7 ppm
Chlorine (CL_2)	10076716	0.5 ppm	1.0 ppm	1.0 ppm	0.5 ppm
Chlorine Dioxide (CLO_2)	10076717	0.1 ppm	0.3 ppm	0.3 ppm	0.1 ppm
Sulfur Dioxide (SO_2)	10076736	2.0 ppm	5.0 ppm	5.0 ppm	2.0 ppm
Nitrogen Dioxide (NO_2)	10076731	2.0 ppm	5.0 ppm	5.0 ppm	2.0 ppm
Ammonia (NH_3)	10076730	25 ppm	50 ppm	35 ppm	25 ppm
Phosphine (PH_3)	10076735	0.3 ppm	1.0 ppm	1.0 ppm	0.3 ppm
Oxygen Remote (O_2-R)	10076733	19.50%	23.00%	N/A	N/A
Alternate Set Point Models	**Part No.**	**Low Alarm**	**High Alarm**	**STEL**	**TWA**
Oxygen (O_2)	10076732	18.00%	19.50%	N/A	N/A
Carbon Monoxide (CO)	10076718	30 ppm	60 ppm	60 ppm	30 ppm
Carbon Monoxide (CO)	10076719	35 ppm	100 ppm	100 ppm	35 ppm
Carbon Monoxide (CO)	10076720	35 ppm	400 ppm	400 ppm	35 ppm
Carbon Monoxide (CO)	10076721	50 ppm	200 ppm	200 ppm	50 ppm
Carbon Monoxide (CO)	10076722	100 ppm	300 ppm	300 ppm	100 ppm
Carbon Monoxide (CO) Steel	10080532	75 ppm	200 ppm	200 ppm	35 ppm
Hydrogen Sulfide (H_2S)	10076728	10 ppm	20 ppm	20 ppm	10 ppm
Hydrogen Sulfide (H_2S)	10076725	5 ppm	10 ppm	10 ppm	5 ppm
Hydrogen Sulfide (H_2S)	10076727	8 ppm	12 ppm	12 ppm	8 ppm
Hydrogen Sulfide (H_2S)	10076726	7 ppm	14 ppm	14 ppm	7 ppm

Accessories and Parts

467895	Regulator, 0.25 lpm	10069894	Clip, stainless steel	10040002	Clip, suspender (standard)
10030325	Tubing, 16" (do not use with NH_3, Cl_2, and ClO_2)	10041105	Cellphone clip	10082834	JetEye IR USB adapter
10080534	Tubing, 16" Teflon-lined (NH_3, Cl_2, and ClO_2)	10041107	Lanyard clip	10088099	MSA Link software CD-ROM
10074132	3V CR2 battery	10073346	Hardhat clip		

Questions or Comments?
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ALTAIR Maintenance-Free Single-Gas Detector

The ALTAIR Single-Gas Detector features sensor options for carbon monoxide, hydrogen sulfide and oxygen and will operate for **over** two years maintenance free. This long lifespan, coupled with the unit's high performance, results in one of the most cost-effective single-gas detectors on the market. Advanced design offers superior dust and water protection and high resistance to RFI. Rubberized housing and one-button operation provide the durability and ease of use users expect from MSA instruments.

Durability Features
- Hard polycarbonate case, encapsulated in a thick rubberized shell
- Extremely resistant to drops and impacts
- Rated to IP67 protection levels for dust/water ingress

Alarm System

The triple-alarm system featuring two bright flashing LEDs, a piercing audible alarm, and a vibrating alarm ensures that no alarm condition goes unnoticed.
- 95 dB audible alarm (distinct sounds for High and Low alarms)
- Dual LEDs positioned to be seen from all angles
- Standard vibrating alarm and standard event logging

Warranty
Two years or 18 hours of alarm (1080 minutes)

Accessories and Parts

710882	Cylinder, 60 ppm CO
473180	Cylinder, 300 ppm CO
467897	Cylinder, 40 ppm H_2S, RP
711062	Cylinder, 40 ppm H_2S, Econo-Cal
467895	Regulator, 0.25 lpm
10040002	Clip, suspender (standard)
10069894	Clip, stainless steel
10041105	Cellphone clip
10041107	Lanyard kit
710946	FiveStar® Link® with IR (for event log)
10030325	Tubing, 16"
10073346	Hardhat clip

Altair Single-Gas Detectors

Instrument Type	Part No.	Low Alarm	High Alarm
Carbon Monoxide (CO)	10092522	25 ppm	100 ppm
Hydrogen Sulfide (H_2S)	10092521	10 ppm	15 ppm
Oxygen (O_2)	10092523	19.5% Vol	23% Vol
Alternate Set Point Models	**Part No.**	**Low Alarm**	**High Alarm**
Carbon Monoxide (CO)	10071334	30 ppm	60 ppm
Carbon Monoxide (CO)	10071335	35 ppm	100 ppm
Carbon Monoxide (CO)	10071336	35 ppm	400 ppm
Carbon Monoxide (CO)	10071337	50 ppm	200 ppm
Carbon Monoxide (CO)	10071338	100 ppm	300 ppm
Hydrogen Sulfide (H_2S)	10071340	10 ppm	20 ppm
Hydrogen Sulfide (H_2S)	10071361	5 ppm	10 ppm
Hydrogen Sulfide (H_2S)	10071362	8 ppm	12 ppm
Hydrogen Sulfide (H_2S)	10071363	7 ppm	14 ppm
Oxygen (O_2)	10071364	19.5% Vol	18% Vol

ALTAIR QuickCheck™ Station

- Fast, easy bump tests
- Maintenance free
- Checks instrument's visual, audible, and vibrating alarms
- Easy-to-understand LEDs show tests in progress and pass/fail status
- Compatible with most ALTAIR and ALTAIR Pro Detectors

ALTAIR® QuickCheck Station

Manual Regulator	Automatic Regulator	Gas Type
10076692	10076704	$O_2/CO/H_2S/SO_2/NO_2$
10076701	10076713	CI_2/CIO_2
10076695	10076707	NH_3
10076698	10076710	HCN

Replacement and Accessory Parts

10047342	North American Power Supply
10049410	Vehicle Power Supply
10077384	Regulator Tubing
10077385	Front Housing Assembly
10075893	Automatic Gas Regulator
467895	Manual Regulator
710386	Single Cylinder Holder

Combustible Gas Detectors

Gascope Combustible Gas Indicator

Explosimeter Combustible Gas Indicator

Gascope® Combustible Gas Indicators and Tankscope® Combustible Gas Indicator, Model 62T

Gascope Combustible Gas Indicators are portable instruments for use in detecting, measuring, and pinpointing leaks of combustible gases and vapors. Each unit is easily carried with integral neck and waist straps, leaving hands free for climbing, operating the instrument, or carrying additional equipment.

Three Gascope Combustible Gas Indicator models are available. The Model 60 is designed for use by gas utility companies in routine testing for methane-in-air concentrations in manholes, sewers, curb boxes, and other street openings. The Model 62S, also suitable for use by gas utility companies, is designed for reading 0–100% LEL methane-in-air and 0–100% by volume methane-in-air. The Model 62 is for general industrial use and is designed for reading 0–100% LEL pentane-in-air. For more complete information, see Data Sheet 08-01-04.

The Tankscope Combustible Gas Indicator, Model 62T, is a portable instrument specifically designed to detect combustible gas leaks in inerted shipboard oil holds. Based on the highly successful Gascope Combustible Gas Indicator, the portable Tankscope Indicator has an easy-to-read analog display and is very simple to use.

Approvals

Gascope Combustible Gas Indicators are listed by MET for use in Class I, Division 1, Groups C and D hazardous locations defined by the National Electric Code.

Explosimeter® Combustible Gas Indicator

The Explosimeter Combustible Gas Indicator detects and measures concentrations of combustible gases or vapors in the air. The instrument can be used in the immediate environment or, with sampling lines and probes, it can draw samples from remote areas. The unit is housed in a cast aluminum case. For more complete information, see Data Sheet 08-00-03.

Approvals

Model 2A is listed by Underwriters' Laboratories (UL) for use in hazardous locations as defined by the National Electrical Code. UL approval is for Class I, Group D, Divisions 1 and 2; and Class I, Groups A, B and C, Division 2 (Division 1 excluded), hazardous atmospheres.

Gascope/Tankscope Indicators

Complete with carrying straps and batteries, less sampling line.

Utility Model 60	465475
Model 62	465681
Utility Model 62S	468410
Model 62T, Tankscope	711258

Explosimeter Combustible Gas Indicator

Comes complete with carrying straps, less sampling line.

Description	Applications	Part No.
Model 2A	General testing for combustible gases or vapors in the air	89220

Ventilation Smoke Tube Kits

MSA's Ventilation Smoke Tube Kits are for use where controlled generation of a visible smoke is desired in order to determine the velocity of slow-moving air currents and establish their direction and flow patterns in shafts, mines and tunnels. They can also be used in commercial buildings and industrial processing plants to determine velocity and flow patterns of heating, ventilating, and air-conditioning systems. For more complete information, see Data Sheet 08-00-20.

Ventilation Smoke Tube Kits

Ventilation Smoke Kit, including aspirator bulb, two rubber plugs, and six smoke-producing tubes contained in plastic carrying case	458481
Ventilation Smoke Kit, including aspirator bulb, six tube caps, and two glass smoke-producing tubes contained in plastic carrying case	5607
Ventilation smoke tubes, box of 12	458480
Glass smoke tubes, box of 10	5645

Detector Tube Pumps

Kwik-Draw® Detector Tube Pumps

MSA's Kwik-Draw and Kwik-Draw Deluxe Pumps can be used with an assortment of MSA's detector tubes to spot-test atmospheres for a wide variety of toxic substances. They are designed for one-hand operation and consistent delivery of a sample draw volume of 100 milliliters (ml).

Kwik-Draw Detector Tube Pumps

488543	Kwik-Draw Basic Pump, with remote sampling adapter and carrying pouch
487500	Kwik-Draw Deluxe Pump, with remote sampling adapter, carrying pouch and end-of-stroke indicator
Accessories	
73067	Sampling line, 10 ft
73068	Sampling line, 25 ft
73069	Sampling line, 50 ft
87970	Remote Sampling Adapter, required for above sampling line
488780	Solvent-Resistant Sampling Line, 25 ft, with reel
488872	Tube Holder, required for 488780 line above

Gas-Tester™ II H Detector Tube Pump

The Gas-Tester II H Pump is set for action by compressing the bellows. A pump stroke is started by pressing the release button. When the sample (100ml) is drawn through the tube, the end-of-stroke indicator changes color. An accurate measurement is obtained because the sample draw procedure itself is controlled only by the specifications of the pump and the flow resistance of the detector tube.

Gas-Tester II H Detector Tube Pump

696944	Gas Tester II H Detector Tube Pump

Detector Tube Handbook

Detector Tube Handbook

813929	Detector Tube Handbook

Detector Tubes

Detector Tube Industry Action Sets

Agricultural Set
4 x Phosphine
2 x Sulfur Dioxide
4 x Methyl Bromide
2 x Hydrogen Cyanide

Pulp & Paper Set
3 x Chlorine Dioxide
2 x Sulfur Dioxide
3 x Hydrogen Sulfide
2 x Chlorine
2 x Ozone

Indoor Air Quality Set
2 x Carbon Monoxide
2 x Carbon Dioxide
2 x Formaldehyde
2 x Ozone
2 x H_2O (relative humidity)

Pharmaceutical Set
3 x Acetic Acid
3 x Aromatic HC
3 x Qualitest
3 x Hydrogen Cyanide

Petroleum Set
2 x Hydrogen Sulfide
2 x Carbon Monoxide
2 x Qualitest
4 x Benzene
2 x Hexane

Synthetics Manufacturing Set
2 x Toluene
4 x Qualitest
2 x Ethanol
2 x Vinyl Chloride
2 x Trichloroethylene

Semiconductor Sets

Chemical Vapor Deposition Process
3 x Ammonia tubes
3 x CO_2 tubes
3 x Nitrous fumes tubes
3 x H_2S tubes

Etching Process
4 x Ammonia tubes
4 x Chlorine tubes
4 x Hydrogen Chloride tubes

Epitaxy Process
3 x CO tubes
3 x Hydrogen Chloride tubes
3 x Phosphine tubes
3 x Phosgene tubes

Crystal Growth Process
6 x Phosgene tubes
6 x Phosphine tubes

Note: All sets are boxes of 12 tubes.

Detector Tube Industry Action Sets

Agricultural Set	655864
Pulp and Paper Set	655868
Indoor Air Quality Set	710981
Pharmaceutical Set	655869
Petroleum Set	655865
Synthetics Manufacturing Set	655866
Chemical Vapor Deposition Process Set	655933
Etching Process Set	655934
Epitaxy Process Set	655935
Crystal Growth Process Set	655931

Chemical Warfare Agent Detector Tubes

Detect a wide range of nerve, blister, blood, and choking agents.

- Quick, simple to use, easy to interpret results
- Can be used with MSA's full line of pumps
- "Go/No Go" style
- All sold in boxes of 10 tubes
- Important: Sold only in the U.S.

Chemical Warfare Agent Detector Tubes

10007654	Nerve (Sarin, VX, GA, GD, etc.)
10007653	Blister (Mustard Gas)
10007650	Blister (Lewisite)
10007652	Blister (variety, including Mustard Gas)
10007651	Blood and Choking (CG, DP, AC, CK)

Single CWA Tube Sampler

Chemical Warfare Agent Detector Tube Kit

Chemical Warfare Agent Kit samples one CWA tube at a time.

Chemical Warfare Agent Detector Tube Kits

10044998	Single CWA Tube Sampler with Kwik-Draw Pump

CO Detector Tube Card

Carbon Monoxide Detector Tube Cards

CO Detector Tube Cards

481954	CO Detector Tube Cards, box of 20

Questions or Comments?
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Substance Measured	Detector Tube applicable	Part No. (1 box of 10 tubes)	Measuring range (ppm)	Threshold Limit Value 1998 ACGIH (ppm)
Acetaldehyde	Formaldehyde-0.1	497649	5–50	25 (ceiling)
Acetic Acid	Acetic Acid-1	804138	1–80	10
Acetone	Acetone-100	804141	100-10,000	500
	Qualitest QL	497665	n/a	
Acetylene dichloride, cis and trans (1,2 Dichloroethylene)	Trichloroethane-5	487343	10–500	200
	Qualitest QL	497665	n/a	
Acetylene tetrabromide (1,1,2,2-Tetrabromoethane)	Trichloroethane-5	487343	5–200	1
	Qualitest QL	497665	n/a	
Acetylene tetrachloride (1,1,2,2-Tetrachloroethane)	Trichloroethane-5	487343	50–1000	1
	Qualitest QL	497665	n/a	
Ammonia	NH3–2	804405	2–500	25
	NH3–20	800300	20–1000	
	NH3–0.1%	804406	0.1–10 Vol.-%	
n-Amyl chloride (1-Chloropentane)	Trichloroethane-5	487343	5–550	–
Arsine	AsH3	10072098	0.05–1	–
Benzene	Aromatic HC	804132	5–500	.5
	C6H6-1	807024	1–100	
	C6H6-5	804411	5–100	
	Qualitest QL	497665	n/a	
	C6H6-0.5	655837*	0.5–10	
Bromine	C12-0.2	803944	0.2–3	0.1
Bromobenzene	Aromatic HC	804132	30–720	–
Bromoethane (Ethyl bromide)	Trichloroethane-5	487343	15–400	5
Bromoform (Tribromomethane)	Trichloroethane-5	487343	7–200	0.5
Bromomethane (Methyl bromide)	Trichloroethane-5	487343	20–270	1
1,3-Butadiene	Ethylene-50	804428	100–1200	2
	Qualitest QL	497665	n/a	
n-Butane	Propane-200	804418	200–3800	800
	Qualitest QL	497665	n/a	
n-Butanol (Butyl Alcohol)	Ethanol-100	804136	100–3900	50 (ceiling)
sec. Butanol (sec-Butyl Alcohol)	Ethanol-100	804136	300–5100	100
1-Butene (1-Butylene)	Ethylene-50	804428	100–5000	–
	Qualitest QL	497665	n/a	
2-Butylene, cis and trans (2-Butylene)	Ethylene-50	804428	200–5000	–
	Qualitest QL	497665	n/a	
Butyl Alcohol (n-Butanol)	Ethanol-100	804136	100–3900	50 (ceiling)
sec-Butyl Alcohol (sec-Butanol)	Ethanol-100	804136	300–5100	100
n-Butylamine	Triethylamine-5	804134	2–28	5 (ceiling)
iso-Butylamine	Triethylamine-5	804134	3–36	–
sec-Butylamine	Triethylamine-5	804134	2–18	–
t-Butylamine	Triethylamine-5	804134	2–14	–
n-Butylchloride (1-Chlorobutane)	Trichloroethane-5	487343	5–170	–
	Qualitest QL	497665	n/a	
1-Butylene (1-Butene)	Ethylene-50	804428	100–5000	–
	Qualitest QL	497665	n/a	
2-Butylene (2-Butene, cis and trans)	Ethylene-50	804428	200–5000	–
	Qualitest QL	497665	n/a	
n-Butyl mercaptan	Ethylmercaptan-0.5	804589	1.5–15	0.5
t-Butyl mercaptan	Ethylmercaptan-0.5	804589	0.8–5	–
Carbon Dioxide	CO2-100	497606	100–3000	5000
	CO2-0.1%	487333	0.1–7.0 Vol.-%	
	CO2-1%	804419	1–20 Vol.-%	
Carbon Disulfide	CS2-2	492514	2–300	10
	Qualitest QL	497665	n/a	
Carbon Monoxide	CO-0.001 %	804421	0.001–0.3 Vol.-%	25
	CO-5	803943	5–1000	
	CO-10	487334	10–3000	
	CO-3000	815507	3000–70000	
	CO-0.1%	804423	0.1–1.0 Vol.-%	
	CO-0.3%	487335	0.3–7.0 Vol.-%	
	CO-10/color	47134	10–1000	
	(special orifice assembly for CO-10/color)	497652		
	Qualitest QL	497665	n/a	
Chlorine	Cl2-0.2	803944	0.2–30	0.5
	ClO2-0.05	804133	1–46	
	Cl2-50	655862	50–500	

*includes scrubber tubes for Benzene specificity

Substance Measured	Detector Tube applicable	Part No. (1 box of 10 tubes)	Measuring range (ppm)	Threshold Limit Value 1998 ACGIH (ppm)
Chlorine dioxide	ClO2-0.05	804133	0.05–15	0.1
Chlorobenzene	Aromatic HC	804132	40–610	10
Chlorobromomethane	Trichloroethane-5	487343	5–180	200
1-Chlorobutane (n-Butylchloride)	Trichloroethane-5	487343	5–170	–
	Qualitest QL	497665	n/a	
Chloroethane(Ethyl chloride)	Trichloroethane-5	487343	50–800	100
Chloroethylene (Vinyl chloride)	VC-1	803950	1–70	5
	Trichloroethane-5	487343	20–550	
Chloroform (Trichloromethane)	Trichloroethane-5	487343	8–100	10
1-Chloropentane (n-Amylchloride)	Trichloroethane-5	487343	5–550	–
1-Chloropropane (l-Propylchloride)	Trichloroethane-5	487343	5–220	–
2-Chloropropane (2-Propylchloride)	Trichloroethane-5	487343	8–1700	–
Cycloheptane	Hexane-20	497664	80–3300	–
Cyclohexane	Hexane-20	497664	20–3400	300
	Qualitest QL	497665	n/a	
Cyclohexylamine	Triethylamine-5	804134	7–38	10
Cyclooctane	Hexane-20	497664	20–2100	–
Cyclopentane	Hexane-20	497664	80–2700	600
n-Decane	Hexane-20	497664	50–500	–
1,2-Dibromoethane (Ethylene dibromide)	Trichloroethane-5	487343	25–700	–
Dibromomethane (Methylene dibromide)	Trichloroethane-5	487343	9–200	–
1,1-Dichloroethane (Ethylidene chloride)	Trichloroethane-5	487343	8–300	100
1,2-Dichloroethane (Ethylene dichloride)	CH_2Cl_2-50	804416	30–720	10
1,1-Dichloroethylene (Vinylidene chloride)	Trichloroethane-5	487343	10–600	5
1,2-Dichloroethylene (Acetylene dichloride, cis and trans)	Trichloroethane-5	487343	10–500	200
Dichloromethane (Methylene chloride)	CH_2Cl_2-50	804416	50–1000	50
1,2-Dichloropropane (Propylene dichloride)	Trichloroethane-5	487343	5–440	75
1,3-Dichloropropane (Trimethylene dichloride)	Trichloroethane-5	487343	5–220	–
Diesel Oil	Qualitest QL	497665	n/a	
Diethylamine	Triethylamine-5	804134	3–27	5
Dimethylamine	Triethylamine-5	804134	3–27	5
2,2-Dimethylbutane	Hexane-20	497664	100–4900	–
Ethanol (Ethyl Alcohol)	Ethanol-100	804136	100–6000	1000
	Qualitest QL	497665	n/a	
Ethene (Ethylene)	Ethylene-50	804428	50–5000	–
	Qualitest QL	497665	n/a	
Ethyl Alcohol (Ethanol)	Ethanol-100	804136	100–6000	1000
	Qualitest QL	497665	n/a	
Ethylamine	Triethylamine-5	804134	4–55	5
Ethyl benzene	Tol.-5	803947	5–1800	100
Ethyl bromide (Bromoethane)	Trichloroethane-5	487343	15–400	5
Ethyl chloride (Chloroethane)	Trichloroethane-5	487343	50–8000	100
Ethylenediamine	Triethylamine-5	804134	5–27	10
Ethylene dibromide (1,2-Dibromoethane)	Trichloroethane-5	487343	25–700	–
Ethylene dichloride (1,2-Dichloroethane)	CH_2Cl_2-50	804416	30–720	10
Ethylidene chloride (1,1-Dichloroethane)	Trichloroethane-5	487343	8–300	100
Ethyl mercaptan	Ethylmercaptan-0.5	804589	0.5–80	0.5
Formaldehyde	Formaldehyde-0.1	497649	0.1–55	0.3 (ceiling)
Formic Acid	Qualitest QL	497665	n/a	5
	Acetic Acid-1	804138	2–160	
Furfuryl alcohol	Phenol-1	813778	on request	10
Gasoline	Gasoline-30	492870	30–6000	300
	Qualitest QL	497665	n/a	
n-Heptane	Hexane-20	497664	20–2600	400
n-Hexane	Hexane-20	497664	20–3200	50
Hydrogen Chloride	HCl-1	803948	1–30	5 (ceiling)
	Qualitest QL	497665	n/a	
Hydrogen Cyanide	HCN-2	803945	2–50	4.7 (ceiling)
Hydrogen Fluoride	HF-1	804142	1–50	3 (ceiling)

Substance Measured	Detector Tube applicable	Part No. (1 box of 10 tubes)	Measuring range (ppm)	Threshold Limit Value 1998 ACGIH (ppm)
Hydrogen Sulfide	H$_2$S-1	487339	1–200	10
	H$_2$S-100	487340	0100–4000	
	H$_2$S-0.1%	655932	0.1–4 Vol. %	
	Qualitest QL	497665	n/a	
Isobutane (Methylpropane)	Propane-200	804418	200–4200	–
Isobutanol (Isobutyl Alcohol, 2-Methylpropyl Alcohol)	Ethanol-100	804136	100–2900	50
Isobutene (Isobutylene, Methylpropene)	Ethylene-50	804428	400–2600	–
Iso-Butylamine	Triethylamine-5	804134	3–36	–
Isobutylene (Isobutene, Methylpropene)	Ethylene-50	804428	400–2600	–
Isobutyl Alcohol (Isobutanol, 2-Methylpropyl Alcohol)	Ethanol-100	804136	150–2900	50
Isobutyl Methyl Ketone	MEK-50	813334	50–6500	–
Iso Octane	Hexane-20	497664	100–3000	–
Isopropanol (Isopropyl Alcohol, 2-Propanol)	Ethanol-100	804136	200–5000	400
	Qualitest QL	497665	n/a	
Isopropyl Alcohol (Isopropanol, 2-Propanol)	Ethanol-100	804136	200–5000	400
	Qualitest QL	497665	n/a	
Isopropylamine	Triethylamine-5	804134	5–30	5
Isopropyl mercaptan	Ethylmercaptan-0.5	804589	0.5–5.5	–
Kerosene	Qualitest QL	497665	n/a	–
Ketones	Qualitest QL	497665	n/a	–
Liquified Petroleum Gases	Gasoline-30	492870	Semiquantitative	–
	Qualitest QL	497665	n/a	
Mercury	Hg–0.1 mg/m^3	497663	0.1–0.8 mg/m^3 (0.01–0.08 ppm)	0.025 mg/m^3 (inorganic)
Methane	Natural Gas	655789	Semiquant. 5000+	–
Methanol (Methyl Alcohol)	Ethanol-100	804136	100–2350	200
Methyl Alcohol (Methanol)	Ethanol-100	804136	100–2350	200
Methylamine	Triethylamine-5	804134	4–55	5
Methyl benzene (Toluene)	Tol.-5	803947	5–1000	50
Methyl bromide (Bromomethane)	Trichloroethane-5	487343	9–200	5
	MeBr-200	710544	200–8000 ppm	
	MeBr-2	710391	2–100 ppm	
2-Methyl butane	Hexane-20	497664	50–3000	–
Methyl chloroform (1,1,1-Trichloroethane)	Trichloroethane-5	487343	5–1500	350
	Qualitest QL	497665	n/a	
Methylcyclohexane	Hexane-20	497664	80–4900	400
Methylcyclopentane	Hexane-20	497664	150–3700	–
Methylene chloride (Dichloromethane)	CH$_2$Cl$_2$-50	804416	50–1000	50
Methylene dibromide (Dibromomethane)	Trichloroethane-5	487343	9–200	–
Methyl Ethyl Ketone (MEK)	MEK-50	813334	50–4000	200
	Qualitest QL	497665	n/a	
Methyl mercaptan	Ethylmercaptan-0.5	804589	0.5–5	0.5
2-Methyl pentane	Hexane-20	497664	150–4500	–
3-Methyl pentane	Hexane-20	497664	100–3700	–
Methylpropane (Isobutane)	Propane-200	804418	200–4200	–
Methylpropene (Isobutylene, Isobutene)	Ethylene-50	804428	400–2600	–
2-Methylpropyl Alcohol (Isobutanol, Isobutyl Alcohol)	Ethanol-100	804136	150–2900	50
Nitrogen Dioxide	NO$_2$-0.5	487341	0.5–50	3
	NO$_2$-2	804435	2–140	
Nitrous Fumes	Nitr.-0.5	487336	0.5–50	–
	Nitr.-2	804425	2–140	
	Nitr.-10	803946	10–300	
	Nitr.-50	804426	50–3000	
n-Nonane	Hexane-20	497664	50–2800	200
n-Octane	Hexane-20	497664	50–3000	300
Ozone	Ozone-0.05	804140	0.05–5	0.05 (ceiling)
Pentachloroethane	Trichloroethane-5	487343	10–300	–
n-Pentane	Hexane-20	497664	50–3900	600
	Qualitest QL	497665	n/a	

Substance Measured	Detector Tube applicable	Part No. (1 box of 10 tubes)	Measuring range (ppm)	Threshold Limit Value 1998 ACGIH (ppm)
Perchloroethylene (Tetrachloroethylene)	Per-5	804429	5–200	25
	Per-10	487337	10–500	
	Qualitest QL	497665	n/a	
Phenol	Phenol-1	813778	1–25	5
	Qualitest QL	497665	n/a	
Phosgene	Phosgene-0.1	803949	0.1–20	0.1
Phosphine	PH$_3$-0.05	497101	0.05–3	0.3
	PH$_3$-0 1	485680	0.1–100	
	PH$_3$-50	489119	50–2000	
Propane	Propane-200	804418	200–4000	2500
	Qualitest QL	497665	n/a	
n-Propanol (Propyl Alcohol)	Ethanol-100	804136	100–3000	200
	Qualitest QL	497665	n/a	
2-Propanol (Isopropanol, Isopropyl Alcohol)	Ethanol-100	804136	200–5000	400
	Qualitest QL	497665	n/a	
Propene (Propylene)	Ethylene-50	804428	20–5000	–
	Qualitest QL	497665	n/a	
Propyl Alcohol (n-Propanol)	Ethanol-100	804136	100-3000	200
	Qualitest QL	497665	n/a	
n-Propylamine	Triethylamine-5	804134	2–28	–
1-Propylchloride (1-Chloropropane)	Trichloroethane-5	487343	5–220	–
2-Propylchloride (2-Chloropropane)	Trichloroethane-5	487343	8–1700	–
Propylene (Propene)	Ethylene-50	804428	20–5000	–
	Qualitest QL	497665	n/a	
Propylene dichloride (1,2-Dichloropropane)	Trichloroethane-5	487343	5–440	75
n-Propyl mercaptan	Ethylmercaptan-0.5	804589	0.7–8.0	–
Styrene	Styrene-10	804135	10–300	20
	Qualitest QL	497665	n/a	
Sulfur Dioxide	SO$_2$-1	487338	0.5–25	2
	SO$_2$-5	497662	5–120	
	SO$_2$-100	497661	100–4000	
Sulfur Hexaflouride decomposition products	SF$_6$ Decomposition Products	804433	0.5–15	1000
1,1,2,2-Tetrabromoethane (Acetylene tetrabromide)	Trichloroethane-5	487343	5–200	1
1,1,2,2-Tetrachloroethane	Trichloroethane-5	487343	50–1000	1
Tetrachloroethylene (Perchloroethylene)	Per-5	804429	5–200	25
	Per-10	487337	10–500	
	Qualitest QL	497665	n/a	
Tetrahydrofuran	Ethanol-100	804136	Semi-quant	200
Toluene (Methyl benzene)	Tol.-5	803947	5–1000	50
	Qualitest QL	497665	n/a	
Tribromomethane (Bromoform)	Trichloroethane-5	487343	7–200	0.5
1,1,1-Trichloroethane (Methyl chloroform)	Trichloroethane-5	487343	5–1500	350
	Qualitest QL	497665	n/a	
1,1,2-Trichloroethane (Vinyltrichloride)	Trichloroethane-5	487343	10–170	10
Trichloroethene (Trichloroethylene)	Tri-5	487342	5–250	50
Trichloroethylene (Trichloroethene)	Tri-5	487342	5–250	50
Trichloromethane (Chloroform)	Trichloroethane-5	487343	8–100	10
1,2,3-Trichloropropane	Trichloroethane-5	487343	10–1200	10
Triethylamine	Triethylamine-5	804134	5–30	1
Trimethylamine	Triethylamine-5	804134	5–30	5
Trimethylene dichloride (1,3-Dichloropropane)	Trichloroethane-5	487343	5–220	–
2,2,4-Trimethylpentane	Hexane-20	497664	100–3000	–
Vinyl Chloride (Chloroethylene)	VC-1	803950	1–70	5
	Qualitest QL	497665	n/a	
Vinylidene chloride (1,1-Dichloroethylene)	Trichloroethane-5	487343	10–600	5
Vinyltrichloride (1,1,2-Trichloroethane)	Trichloroethane-5	487343	10–170	10
Water Vapor	H$_2$O-10	655863	10–100% RH	–
0-Xylene (1,2-Xylene)	Tol.-5	803947	5–2500	100
	Qualitest QL	497665	n/a	
m-Xylene (1,3-Xylene)	Tol.-5	803947	5–2500	100

HAZMATCAD™ and HAZMATCAD Plus
Hazardous Material Chemical Agent Detectors

HAZMATCAD Detector

The HAZMATCAD Hazardous Material Chemical Agent Detector is a handheld instrument that detects and classifies Chemical Warfare Agents (CWA). When compared to other technologies, the HAZMATCAD Detector offers more capabilities and greater reliability at a lower cost.

Features
- Compact, light-weight and portable
- Self-diagnostic check during rapid warm-up
- Alphanumeric display with LED alarms
- Dual-Mode SAW Operation—Fast or High Sensitivity
- Operates between 8 and 12 hours on rechargeable Li-Ion batteries
- Vapor-diffusion check source verifies system performance
- Unit can be hand-carried or worn on belt
- RS-232 and IrDA communication ports; stores up to 8 hours of data
- Inlet design protects against dust and particulates

HAZMATCAD Plus Detector

The HAZMATCAD Plus Detector detects for Chemical Warfare Agents (CWA) and selected Toxic Industrial Chemicals (TICs). It is a portable instrument designed for one-hand operation. It is very easy to operate and requires limited training for effective use.

Features
- Self-diagnostic check during rapid warm-up
- Alphanumeric display with LED alarms
- Dual-Mode SAW Operation – Fast or High Sensitivity
- Electrochemical Cells – Real time analysis
- Operates between 8 and 12 hours on rechargeable Li-Ion batteries
- Vapor-diffusion check source verifies system performance
- RS-232 and IrDA communication ports; stores up to 8 hours of data
- Inlet design protects against dust and particulates

HAZMATCAD Detector Kits

Kits include: HAZMATCAD Detector; battery charger; belt clip; two Sony rechargeable batteries; hard, water-resistant carrying case; operating manual; vapor check source

Part No.	Instrument	Chemical Agents Detected
10055094	HAZMATCAD Detector	Nerve and Blister
10055095	HAZMATCAD Detector	Nerve, Blister and Hydrogen Cyanide
10055096	HAZMATCAD Detector	Nerve, Blister and Phosgene
10055097	HAZMATCAD Plus Detector	Nerve and Blister agents and TICs (phosgene, hydrogen cyanide, halogen and hydride gas)

HazMat Response Kit

The HazMat Response Detector Tube Kit can be used by firefighters, HazMat Response Teams and other workers to help classify unknown chemical gases and vapors at accident or spill sites. A Quad-Port Sampler allows four chemical classes to be tested simultaneously. The portable kit contains 12 types of Detector Tubes (each with sufficient tubes for 10 complete tests), a Kwik-Draw Pump to draw the sample through the tubes, the multiple tube holder and a convenient, easy-to-follow interpretation guide.

Features & Benefits
- Quickly classifies unknown chemical gases and vapors
- Quad-Port Sampler allows simultaneous testing with four detector tubes, meaning less time in IDLH atmosphere
- Flow-limiting orifices ensure even sample flow
- Portable and easy to handle
- Includes simple interpretation guide

HazMat Response Kit

807472	Includes 12 types of detector tubes, multiple tube holder, Kwik-Draw Pump and interpretation guide

SafeSite® Multi-Threat Detection System

SAFEMTX Multi-Threat Detector

SAFECOM Command Center

HAZMATCAD Plus Detector with SAFECONNECT Belt-Bridge

Sirius PID Multigas Detector with SAFECONNECT Belt-Bridge

The SAFESITE Multi-Threat Detection System simultaneously monitors and wirelessly communicates six potential threats: CWAs, VOCs, TICs, gamma radiation, combustible gas and oxygen deficiency.

The SAFESITE System combines state-of-the-art detection technology with advanced wireless communication capabilities to provide superior preventative and counter-measure solutions for:

- Homeland Security
- Emergency Response
- Public Events
- Building Protection
- Mass Transportation Centers
- Perimeter Monitoring
- Hazardous Response
- Port Surveillance
- Confined Space Monitoring

SAFESITE System components consist of the SAFEMTX™ Multi-Threat Detector, the SAFECOM™ Command Center and SAFECONNECT™ Belt-Bridge with SIRIUS® Wireless Interface or HAZMATCAD Interface and SAFECONFIG™ Software. The system can be installed permanently (wired or wireless) for continual monitoring or deployed as a portable system.

Through the SAFECOM Command Center, alarms are identified with both visual and audible alarms. Alarms can then be acknowledged and silenced, detectors can be enabled and disabled, event logs and event log history can be viewed, plus units can be customized to suit the specific deployment scenario.

SAFESITE is fully compatible with ADASHI First Responder Software. SAFESITE threat information will appear in the ADASHI PC interface. ADASHI software capabilities include plume modeling and weather information for comprehensive event information and threat management.

ADAHSI First Responder Software helps emergency responders manage, communicate and respond to dangerous incidents.

PC Connection

Threat	Technology	Benefit
Chemical warfare agents	Surface acoustic wave (SAW)	Low false positives and false alarms, differentiates nerve & blister agents
Gamma radiation	Cadmium zinc telluride (CZT)	Sensitive with adjustable threshold and 2 ranges. (0-100 mR/hr, 0.1 mR/hr resolution & 0-1000 mR/hr, 1 mR/hr resolution)
Volatile organic compounds	Photo-ionization (PID)	10.6 eV lamp provides ppm readings for broadband toxics and VOC detection
Toxic industrial chemicals	Electrochemical	Detects many specific toxic gases such as chlorine, ammonia, hydrogen cyanide and hydrogen chloride
Oxygen deficiency/enrichment	Electrochemical	Oxygen monitoring for confined space
Combustible gas	Catalytic bead	Wide range detection for hydrocarbons

1 Threat Readings – scrolling readings of up to 16 MTX Detectors per channel. Unit is identified by large icon to the left of the readings. In alarm condition, display snaps to unit in alarm.

2 MTX Icons – identify number of units enabled in current network. Users may view specific unit reading by double-clicking on icon.

3 Map – option for map view or uploaded image view.

4 Signal Strength – communication status from SAFEMTX™ Detector to SAFECOM™ Command Center.

5 Power – status of battery life of SAFEMTX Detectors.

6 System Status – alerts user to alarm, warning or fault within a particular system.

7 Action Buttons – allow user to select address, cycle units, acknowledge alarms and enable or disable units from the system.

Questions or Comments? www.facebook.com/MSATheSafetyCompany

BIOSENSOR™ 2200R Biological Agent Detector

The new BIOSENSOR 2200R Biological Agent Detector from MSA is a handheld, portable, on-site instrument for rapid detection, analysis, and identification of biological agents. Unique bioassay technology offers excellent sensitivity and low false positives while offering ease of use during white powder response calls. This highly accurate detection method provides rapid measurement of biohazards such as anthrax, ricin, botulism, SEB, and plague.

Exclusive five minute time-to-answer allows first responders to make informed critical decisions more rapidly than any other biological agent detector. The BIOSENSOR 2200R employs dynamic surface generation, a patent pending type of immunoassay detection technology. This technology offers significant advantages over other field-based assay methods by combining the benefits of both the free solution and lateral flow types. The result is more rapid analysis, a user-friendly format, and detector stability within a wide range of climates.

Both wet and dry samples may be tested and results are displayed with a simple red (target present) or green (no target present) indication. As tests are nondestructive, samples may be retained as evidence. Single-test, disposable cartridges with on-board reagents have a 12-month shelf life. This instrument is permanently housed in a sturdy, lightweight Pelican case.

Instrument Features and Benefits
- 5 minute time-to-answer
- Uses positive and negative control cartridges
- Battery-operated with ability to run 50 tests on a single charge
- Fully deconable housing; IP67 rated
- Visual and audible alarms provide clear indication of status
- Extremely easy to use with a training time of one hour
- Integrated RFID (radio frequency identification) for automatic cartridge recognition

Targets
- Anthrax/ricin duplex—one test, two agents
- Ricin
- Botulism*
- Smallpox*
- Cholera*
- Anthrax
- SEB (staphylococcal enterotoxin B)
- Plague*
- Tularemia*
- West Nile virus*

*additional agents in development

BIOSENSOR 2200R Biological Agent Detector

10084834	MSA BIOSENSOR 2200R Biological Agent Detector Kit*, includes carry case, charger, cartridge starter kit (10084758), instruction manual, and quick start guide.

BIOSENSOR Cartridge Plans

10084758	MSA BIOSENSOR cartridge starter kit includes 3 Anthrax/Ricin dual kits**, 1 Anthrax, 1 Ricin, 3 positive control, 2 negative control cartridges, and 2 wet sample kits
10084753	MSA BIOSENSOR Low volume cartridge plan includes 6 Anthrax/Ricin dual kits**, 2 Anthrax, 2 Ricin, 6 positive control, 2 negative control cartridges, and 2 wet sample kits
10084754	MSA BIOSENSOR Medium volume cartridge plan includes 24 Anthrax/Ricin dual kits**, 6 Anthrax, 6 Ricin, 24 positive control, 6 negative control cartridges, and 4 wet sample kits
10084755	MSA BIOSENSOR High volume cartridge plan includes 60 Anthrax/Ricin dual kits**, 8 Anthrax, 8 Ricin, 60 positive control, 8 negative control cartridges, and 6 wet sample kits.

* Extended warranties available.

** Each biohazard cartridge test kit includes a dry sample kit.
Please contact your local MSA rep for more information.

Calibration

Galaxy® Automated Test System

Extremely Easy to Use
- Standard web browser accessibility for data retrieval and reporting
- Industry-standard memory card available for simple data retention
- System does not require a computer or network interface
- Works without the touch of a single button
- Minimal training needed

Versatile and Expandable
- Up to 10 systems can be interconnected
- Instrument charging option available
- Optional battery pack available for remote use

Durable, Innovative Design
- Wireless- or wired-network interface available
- Inventive system door also functions as dust cover
- Guaranteed to work in the harshest environments
- In-line gas cylinder holster available; keeps the work area clean and orderly

Value-Driven Performance
- All-inclusive, 2-year warranty
- High quality, cost-effective solution
- Very low total cost of ownership

Galaxy System Kits

	ALTAIR 5/5X Pumped	ALTAIR 5 Diffusion	ALTAIR 4/4X	Solaris	Sirius	ALTAIR
Basic Standalone Kit						
Basic System	10090589	10090552	10089964	10061051	10061050	10078252
Standard Standalone Kit (Includes Regulator)						
Standard System	10090603	10090618	10089998	10061783	10061810	10078253
Standard System + Charging	10090600	10090615	10089995	10061784	10061811	—
Standard System + Cylinder Holder	10090602	10090617	10089997	10061785	10061812	10078254
Standard System + Charging, Cylinder Holder	10090601	10090616	10089996	10061786	10061813	—
Smart Standalone Kit (Includes Regulator, Memory Card)						
Smart System	10090594	10090583	10089969	10061787	10061814	10078255
Smart System + Charging	10090590	10090579	10089965	10061788	10061815	—
Smart System + Cylinder Holder	10090593	10090582	10089968	10061789	10061816	10078256
Smart System + Charging, Cylinder Holder	10090592	10090581	10089967	10061790	10061817	—
Portable Kits (Includes Regulator, Battery Pack)						
Portable System	10090599	10090588	10089994	10061802	10061818	10078257
Portable System + Memory Card, Cylinder Holder	10090598	10090587	10089993	10061801	10061819	10078258
Wired Network Kits (Includes Regulator, Wired Ethernet Access)						
Wired Network System	10090608	10090623	10090003	10061803	10061820	10078259
Wired Network System + Charging, Cylinder Holder	10090607	10090622	10090002	10061804	10061821	—

Accessories

710288	Demand Flow Regulator
10047342	North American Power Supply
10047343	Global Power Supply

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Assemble-to-Order (ATO) System: You Make the Choices

The ATO System makes it easy to "custom order" the Galaxy Automated Test System, configured exactly the way you want it. You can choose from an extensive line of base components and accessories. See the ATO chart below to make your selections.

Galaxy Automated Test System Assemble-to-Order (ATO) Options

	Test Stand Options	Code
A. Test Stand Instrument Type Each Galaxy test stand has a dedicated instrument type. Up to 10 specific systems can be mixed and matched; however, different instruments types will not work in the same test stand. Solaris Instruments must have datalogging installed to operate with the Galaxy test stand. *Note: The Altair Galaxy test stand should only be used with CO, H_2S and O_2 versions of the Altair and Altair Pro Single-Gas Detectors.* *Note: Choose Altair 5 Diffusion Galaxy for a diffusion Altair 5 gas detector. Choose Altair 5 Pumped Galaxy for a pumped Altair 5 gas detector.* *Note: Choose Altair 5 Pumped Galaxy for use with Altair 5IR instruments.*	Solaris, Solaris with ALkaline Battery Sirius Altair/Altair Pro Altair 4 Altair 5 Diffusion Altair 5 Pumped	A B D F G H
B. Calibration Cylinders The Solaris and Altair Galaxy test stand, by default, will operate with 1 calibration gas cylinder. The Sirius Galaxy test stand, by default, will operate with 2 calibration gas cylinders. If your system configuration requires 3 cylinders for calibration, select option "1". *Note: Choose option 1 for any Altair 5 instruments that will require use of more than 1 calibration gas. This would include certain exotic gases like SO_2, NH_3, Cl_2 and also non-CO_2 versions of the Altair 5IR gas detector.* *Note: Not available for ClO_2 or % Vol Combustible.*	**Calibration Cylinder Options** No Yes	**Code** 0 1
C. Regulator At least 1 demand flow regulator is required for either the Solaris, Orion or Altair Galaxy Test Stands. At least 2 demand flow regulators are required for the Sirius Galaxy Test Stand. The number of regulators you need equals the number of gas cylinders required for an instruments calibration.	**Regulator Options** 1 Regulator 2 Regulators 3 Regulators None	**Code** 1 2 3 0
D. Cylinder Holder The number of cylinder holders should match the number of gas cylinders required for an instruments calibration. Included in this option is the ability to order either 1, 2, or 3 cylinder holders. *Note: For Cl_2 and NH_3 please order 3 cylinder holders and ensure that the exotic gas goes into cylinder holder 3, furthest to the left.*	**Cylinder Holder Options** 1 Cylinder Holder 2 Cylinder Holders 3 Cylinder Holders None	**Code** 1 2 3 0
E. Instrument Charging If you'd like to have your new Galaxy system installed with the ability to charge your instrument, select "1" for this option. (Requires instrument with rechargeable batteries). *Not compatible with Solaris with alkaline batteries, ALTAIR, and ALTAIR Pro instruments.*	**Charging Options** No Yes	**Code** 0 1
F. Power Supply A power supply is required to power each Galaxy test stand. The global power supply comes with several international plug outlet configurations for countries outside of North America, for this option select "G". Select the battery pack option "B" for locations (includes North American supply) where AC power may not be easily accessible. If you choose the instrument charging option, the battery pack option is not available.	**Power Supply Options** North American Supply Global Supply Battery Pack & North American Supply Battery Pack & Global Supply Battery Pack & Australian Supply	**Code** N G B X Y
G. Memory Card If you'd like to have a removable memory card installed in your new Galaxy System, select option "1". A memory card reading device is required to read the memory card, this must be entered as a different line item on your order. Only 1 memory card is needed per Galaxy System.	**Memory Card Options** No Yes	**Code** 0 1
H. Network Interface Module For wired (ethernet) connectivity to your internal network, select option "A". The location where the Galaxy will be installed must have the capability for this option to operate properly. Only 1 network interface module is needed per Galaxy system.	**Network Interface Module Options** None Wired Web Interface	**Code** 0 A

Your Model Part Number

Please write in numbers from selections above in appropriate boxes and contact your Safety Products Distributor to place your order.

Selection … A – B – C – D – E – F – G – H – **0** – **0**

A-GALAXY- [ ]–[ ]–[ ]–[ ]–[ ]–[ ]–[ ]–[ ]–**0**–**0**

Regulators

Gas Miser® Demand Regulator: The Intelligent Regulator

Gas Miser Model RP

Gas Miser Model BD-20

The Gas Miser Regulator is the most advanced, yet simple-to-use calibration gas delivery system available. Made of nickel-plated brass and polished aluminum (especially important for reactive gases), the Gas Miser Regulator can supply gas flow from 0.1 lpm to 3.0 lpm. But that's only the beginning. The Model RP, Universal regulator is designed for use with any MSA Model RP Calibration Cylinder including chlorine and ammonia. The Gas Miser Regulator features an automatic ON/OFF valve that releases gas only on demand. So only the amount of gas needed to calibrate your MSA instrument is delivered accurately. When the calibration is complete, the Gas Miser Regulator shuts off automatically. And, for user convenience, the regulator can stay connected to the cylinder where it remains in a ready state—making it ideal for such fixed installations as work benches and calibration stations.

The Gas Miser Regulator also eliminates the need to change regulators to accommodate different instruments or flow rates. It's not only intelligent, it's cost-efficient. Supplied with calibration tubing and special fitting.

 * A Universal Gas Miser Regulator for gases including reactive gases is available for Model RP cylinders —
   P/N 10034391

Model RP Combination Regulators

Two regulators in one. Trigger activation allows a bump test or calibration check in the "SQUEEZE" mode or fixed-flow calibration in the up or "LOCKED" position. Designed for use with all Model RP and Econo-Cal calibration cylinders. Supplied with calibration tubing and special fitting.

Gas Miser® Manifold

The Gas Miser Manifold is not only a cylinder holder but it also incorporates a 4-station "bump test" or calibration manifold. It works with Model RP and Econo-Cal cylinders and Gas Miser regulator on any pumped or aspirated instrument. The manifold will supply the correct amount of gas required and will bump test or calibrate up to four instruments simultaneously. Gas Miser regulator sold separately.

Regulators

.25/1.5 LPM Flow Control

Model RP Cylinder .25 lpm*	467895
Model RP Cylinder 1.5 lpm	467896

Gas Miser Demand Regulator

Model RP, Universal	10034391
Model BD-20, with CGA 590 fitting	710289

Model RP Combination Regulator

Model RP Combination Regulator, .25 lpm	711175
Model RP Combination Regulator, 1.5 lpm	711174

Gas Miser Manifold

4-station Manifold	710274

Model RP Calibration Check Kits

Check Kit, Model RP, with 1.5 lpm regulator—complete	477150
Check Kit, Model RP, with 0.25 lpm regulator—complete	477149

* Can be used with chlorine and ammonia; replaces P/N 809945.

Model RP Calibration Check Kits

.25/1.5 LPM Flow Control Model RP

Model RP Check Kits consist of a regulating valve which includes a gauge to measure container pressure, an adapter hose, sensor adapter (where applicable), instructions, and a case fitted with room for two Model RP cylinders of calibration check gas.

Calibration Gas

Calibration Gas

Each MSA Calibration Gas Cylinder is shipped with an individual copy of a material safety data sheet (MSDS) and an individual copy of a certificate of analysis.

MSA certifies that the gas mixture in calibration gas cylinders was prepared gravimetrically, using NIST traceable weights. The lot number and nominal value of the gas constituents in percent by volume, percent by mass, PPM, or volume are specified on the cylinder. The uncertainty statement of the specified nominal value is also listed.

Model RP and Model R Calibration Cylinders—Non-Reactive Gases, Steel Cylinder, 100 Liters

Gas Fill	Gas Mixture	Background	100 LTRS 1000 PSI Model RP	19 LTRS 300 PSI Model R	34 LTRS 500 PSI Econo-Cal
Air	air zero (THC < 1 ppm)	—	801050	—	—
Carbon Monoxide	400 ppm carbon monoxide	air	806255	—	—
	300 ppm carbon monoxide	air	473180	461769	—
	200 ppm carbon monoxide	air	809243	—	—
	100 ppm carbon monoxide	air	809242	—	—
	50 ppm carbon monoxide	air	809241	—	—
	100 ppm carbon monoxide	nitrogen	806734	—	—
Hydrogen	0.8% hydrogen	air	803102	—	—
Isobutylene	100 ppm isobutylene	air	494450	—	10048279
Methane	2.5% methane	air	491041	459942	—
	6.6% methane	nitrogen	801049	—	—
Oxygen	20.8% oxygen	nitrogen	479857	468248	—
	5.0% oxygen	nitrogen	493580	476302	—
Nitrogen	100% nitrogen	—	481317	—	—
Nitrous Oxide	100 ppm nitrous oxide	nitrogen	806736	—	—
Pentane	0.75% pentane (50% LEL)	air	804532	—	—
Propane	0.6% propane	air	493579	—	—
Combination Gas Cylinders	0.35% pentane, 19.0% oxygen, 100 ppm carbon monoxide	nitrogen	10007047	—	—
	0.6% propane, 15% oxygen, 60 ppm carbon monoxide	nitrogen	801051	—	—
	1.45% methane, 300 ppm carbon monoxide, 15% oxygen	nitrogen	10010162	—	—
	2.5% methane, 60 ppm carbon monoxide, 15% oxygen	nitrogen	813718	—	—
	2.5% methane, 300 ppm carbon monoxide, 15% oxygen	nitrogen	10040791	—	—
	1.45% methane, 15% oxygen	nitrogen	478192	—	—

Model RP

Model RP Cylinder
Contents: Pressure 1000 psig; approximately 100 liters at atmospheric pressure
Size: 13-3⁄4" x 3"
Weight: 2 lb 13 oz
Material: Steel

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Calibration Gas

Model RP and Econo-Cal Calibration Cylinders—Reactive Gases, Aluminum Cylinders, 58 & 34 Liters

			58 LTRS 500 PSI	34 LTRS 500 PSI
Gas Fill	Gas Mixture	Background	Model RP	Econo-Cal
Ammonia	25 ppm ammonia	nitrogen	814866	711078
Chlorine	10 ppm chlorine	nitrogen	806740	711066
	2 ppm chlorine	nitrogen	710331	711082
Hydrogen Sulfide	40 ppm hydrogen sulfide	nitrogen	467897	711062
	15 ppm hydrogen sulfide	nitrogen	806253	711064
	10 ppm hydrogen sulfide	nitrogen	467898	711060
Nitric Oxide	50 ppm nitric oxide	nitrogen	812144	711074
Nitrogen Dioxide	10 ppm nitrogen dioxide	air	808977	711068
Phosphine	0.5 ppm phosphine	nitrogen	710533	711088
Hydrogen Chloride	40 ppm hydrogen chloride	nitrogen	710210	—
Hydrogen Cyanide	10 ppm hydrogen cyanide	nitrogen	809351	711072
Sulfur Dioxide	10 ppm sulfur dioxide	air	808978	711070
Combination Gas Cylinders	1.45% methane, 15% oxygen, 300 ppm carbon monoxide, 10 ppm hydrogen sulfide	nitrogen	804770	711058
	1.45% methane, 15% oxygen, 20 ppm hydrogen sulfide	nitrogen	10048788	10048790
	1.45% methane, 15% oxygen, 300 ppm carbon monoxide, 2.5% carbon dioxide	nitrogen	—	10058023
	1.45% methane, 15% oxygen, 60 ppm carbon monoxide, 20 ppm hydrogen sulfide	nitrogen	10045035	10048280
	1.45% methane, 15% oxygen, 10 ppm hydrogen sulfide	nitrogen	804769	711056
	2.5% methane, 15% oxygen, 300 ppm carbon monoxide, 10 ppm hydrogen sulfide	nitrogen	813720	711076
	2.5% methane, 15% oxygen, 60 ppm carbon monoxide, 20 ppm hydrogen sulfide	nitrogen	10048890	10048981
	2.5% methane, 15% oxygen, 20 ppm hydrogen sulfide	nitrogen	10048889	10048888
	1.45% methane, 15% oxygen, 10 ppm hydrogen sulfide, 300 ppm carbon monoxide, 2.5% carbon dioxide	nitrogen	10050744	10058022
	0.35% pentane, 19% oxygen, 100 ppm carbon monoxide, 35 ppm hydrogen sulfide	nitrogen	10007049	—
	1.45% methane, 15% oxygen, 300 ppm carbon monoxide, 2.5% carbon dioxide	nitrogen	10058021	

Note: Reactive gases have an expiration date listed on each cylinder. This is to ensure the highest quality and accuracy for instrument calibration. Most cylinders have an expiration date of 12 months. Check with MSA Customer Service for the exact shelf life of a particular calibration cylinder.

Model RP   **Econo-Cal**

Model RP Cylinder
Contents: Pressure 500 psig; approximately 58 liters at atmospheric pressure
Size: 3-1/2" dia. x 14-1/2" high
Weight: 1 lb 11 oz
Material: Aluminum

Econo-Cal Cylinder
Contents: Pressure 500 psig; approximately 34 liters at atmospheric pressure
Size: 2-3/4" dia. x 11-1/4" high
Weight: 1 lb 1 oz
Material: Aluminum

Model RP Calibration Cylinder—Steel, 100% Methane

Contents:	Pressure 1000 psig; approximately 58 liters of pure methane with odorant added to smell like natural gas in all commercial gas lines	
Size: 8-1/2" x 3"	**Weight:** 1 lb 13 oz	**Material:** Steel
Gas Fill	**Gas Mixture**	**Part No.**
Methane	100% Methane	711014

Model BD-20 Calibration Cylinders

Contents:	Pressure 2200 psig; approximately 552 liters (20 cu ft) of gas at atmospheric pressure		
Size: 25" x 4-1/4"	**Weight:** 10 lb 9 oz	**Material:** Steel	
Gas Fill	**Gas Mixture**	**Background**	**Part No.**
Methane	2.5% Methane, 15% Oxygen, 60 ppm Carbon Monoxide,	Nitrogen	710566
	1.45% Methane, 15% Oxygen, 60 ppm Carbon Monoxide	Nitrogen	710565
Air, zero	Air, zero, THC<1 ppm	—	710776

Model BD-20 Calibration Cylinders

Questions or Comments?
www.facebook.com/MSATheSafetyCompany

Calibration Gas

Squirt Gas Bump Tester

Squirt Gas Bump Test Kit, less cylinder, but with required fittings and adapters, complete with instructions	813411

Cylinders for Squirt Gas

Instrument	Squirt Gas Cylinder	Combustible		Oxygen	Carbon Monoxide	Hydrogen Sulfide	Isobuty-lene	Balance
		Methane	Pentane Simulant					
Explosimeter	815307	2.5%	See cylinder	—	—	—	—	Air
Gasport	814350	2.5%	—	15% O_2	60 ppm CO	—	—	Nitrogen
Gasport	814349	2.5%	—	15% O_2	300 ppm CO	35 ppm H_2S	—	Nitrogen
Passport, FiveStar	814497	1.3%	50% LEL	15% O_2	60 ppm CO	—	—	Nitrogen
Passport, FiveStar	814559	1.3%	50% LEL	15% O_2	300 ppm CO	35 ppm H_2S	—	Nitrogen
MiniCO** Responder	814978	—	—	—	60 ppm CO	—	—	Air
MiniH2S*Responder	814979	—	—	—	—	35 ppm H_2S	—	Nitrogen
MicroGard**	815308	1.3%	52% LEL	15% O_2	—	—	—	Nitrogen
Passport PID II	815704	—	—	—	—	—	100 ppm	Air

* Shelf life item. See note page 90.   ** Requires calibration adapter.

Contents: Pressure 155 psig; approximately 11 liters at 70°F

Cylinder Holders

Single Portable Cylinder Holder

The Single Portable Cylinder Holder is designed for use with all MSA Model R and Model RP cylinders. It fits neatly on a workbench or shelf, and its unique design ensures that the calibration cylinder (with the regulator attached) always stays where you put it.

Double Cylinder Holder, Wall-Mounted

The Wall-Mounted Double Cylinder-Holder holds all MSA Model R and Model RP cylinders. A molded base and holding straps keep the cylinders securely in position, yet both cylinders and/or regulators can be easily changed. The holder is ideal for field station calibrations and can be easily mounted for workbench applications.

Cylinder Holders

Single Cylinder Holder, 6" wide x 13" long x 4" high	710386
Double Cylinder Holder, 17" high, 10" wide, 3^1/$_2$" deep at base	710483

Calibration Cylinders Are Recyclable!

MSA has affiliated with the Association of Retarded Citizens, Butler County—a nonprofit organization that employs mentally retarded citizens—and established a Cylinder Recycling Center. The calibration cylinders are not refilled, but salvaged for scrap. All money generated from selling the scrap cylinders is placed in the ARC operating fund for salaries and operating costs.

Calibration cylinders are considered hazardous unless the cylinders are empty. MSA has developed special devalving tools that will ensure the cylinder is empty and render the cylinder non-fillable. For your convenience, MSA also offers a specially pre-addressed shipping box (also recyclable) which helps you pay the lowest shipping costs available.

The MSA Recycling Center limits the return of calibration cylinders to MSA-logoed cylinders only. Non-MSA cylinders will be rejected. Contact the Customer Service Center for additional details at 1-800-MSA-2222.
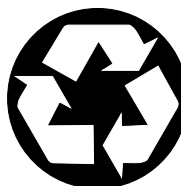
Recycling Accessories

Devalving Tool, Model "RP" & Econo-Cal Cylinders	711228
Devalving Tool, Model "R" cylinders	711229
Shipping Box, Special, Pre-addressed	711227

Standards for Industrial Head Protection

ANSI/ISEA Z89.1-2009 and CSA Z94.1-2005

ANSI/ISEA Z89.1-2009 and CSA Z94.1-2005 are voluntary industry standards that establish the types and classes of industrial helmets and provide performance and testing requirements for these helmets. ANSI/ISEA Z89.1-2009 is a revision of the standard covering industrial head protection; this revision supplants the 2003 revision. CSA Z94.1-2005 is a revision of the standard covering industrial head protection used in Canada; this revision supplants the 1992 revision. These standards include specifications for helmets designed to offer protection from top and/or lateral impact.

The three classes included in these standards indicate the helmet's electrical insulation rating:

Class E (Electrical) – Helmets intended to reduce the danger of exposure to high-voltage electrical conductors, proof-tested at 20,000 volts

Class G (General) – Helmets intended to reduce the danger of exposure to low-voltage electrical conductors, proof-tested at 2,200 volts

Class C (Conductive) – Helmets do not provide protection from electrical conductors

The test requirements for Industrial Head Protection per ANSI/ISEA Z89.1-2009 and CSA Z94.1-2005 are separated by helmet type: Type I helmets protect the wearer from top impact, while Type II helmets protect the wearer from top and lateral impact. The test requirements for ANSI/ISEA Z89.1-2009 and CSA Z94.1-2005 are available from the Industrial Safety Equipment Association and www.CSA.ca, respectively.

Standards for Industrial Head Protection

2009 Additions to ANSI/ISEA Z89.1-2009

Three non-mandatory tests have been added to the updated ANSI/ISEA Z89.1 standard. Manufacturers who want to claim one or more of these features can test their helmets according to the new procedures and mark their product accordingly. These tests are as follows:

1 – Reverse Donning [⟲]

In order for a helmet to be worn in reverse or a swing ratchet suspension to be used in a helmet, that particular helmet must be marked with the "double-arrowed circle" to indicate that it meets the new ANSI/ISEA Z89.1-2009 non-mandatory reverse donning test.

2 – Lower Temperature [LT]

The traditional low temperature test for a helmet is -18°C or 0°F. Helmets that meet ANSI Z89.1 requirements for LOWER temperatures (-30°C or -22°F) can be marked with "LT" by the manufacturer.

3 – High-Visibility [HV]

Helmets that meet the non-mandatory requirements for high-visibility, including special tests for Chromaticity and Luminescence for added visibility, can be marked with "HV" by the manufacturer.

All MSA helmets have been tested per the mandatory and non-mandatory ANSI/ISEA Z89.1-2009 and CSA Z94.1-2005 requirements. MSA offerings include:

MSA Helmet	Standard(s)	Type	Class	⟲/LT/HV
V-Gard Cap/Hat	ANSI/ISEA Z89.1-2009 CSA Z94.1-2005	Type I	Class E	⟲/LT/HV
V-Gard 500 Vented Cap	ANSI/ISEA Z89.1-2009	Type I	Class C	⟲/LT/HV
V-Gard 500 Non-Vented Cap	ANSI/ISEA Z89.1-2009	Type I	Class E	⟲/LT/HV
SmoothDome Cap	ANSI/ISEA Z89.1-2009 CSA Z94.1-2005	Type I	Class E	⟲/LT/HV
Topgard Cap/Hat	ANSI/ISEA Z89.1-2009 CSA Z94.1-2005	Type I	Class E	⟲/LT/HV
Thermalgard Cap	ANSI/ISEA Z89.1-2009 CSA Z94.1-2005	Type I	Class G	⟲/LT/HV
Skullgard Cap/Hat	ANSI/ISEA Z89.1-2009	Type I	Class G	⟲/LT/HV
Super-V Cap *	ANSI/ISEA Z89.1-2009	Type I	Class E	LT/HV
	CSA Z94.1-2005	Type II	Class E	LT/HV
Vanguard Cap **	ANSI/ISEA Z89.1-2009 CSA Z94.1-2005	Type II	Class E	LT/HV
Comfo Cap	ANSI/ISEA Z89.1-2009	Type I	Class G	LT

*Super-V Cap meets all applicable requirements for a Type II helmet as outlined in CSA Z94.1-2005 and a Type I helmet as outlined in ANSI/ISEA Z89.1-2009.

**Vanguard Cap meets all applicable requirements for a Type II helmet as outlined in CSA Z94.1-2005 and ANSI/ISEA Z89.1-2009.

V-Gard® Protective Hats and Caps

CAPS

white	blue	yellow	orange	red
green	gray	hi-viz orange	hi-viz yellow-green	bright lime green
dark blue	gold	robin's egg blue	brown	silver
tan	black	light buff	purple	pink

HATS

white	blue	yellow	orange	red
green	gray	hi-viz orange	hi-viz yellow-green	bright lime green

V-Gard Protective Hats and Caps

Classification:	Type I
Application	General Purpose
Shell Material:	Polyethylene
Available Styles:	Slotted Cap; Non-Slotted Full Brim Hat
Sizes:	Small (6 – 7$\frac{1}{8}$"); Standard (6$\frac{1}{2}$ – 8"); Large (7– 6$\frac{1}{2}$")
Standards:	ANSI/ISEA Z89.1-2009 (Class E); CSA Z94.1-2005 (Class E)
Certification:	Third-party by SEI
Customization:	Imprinting and striping available

NOTE: Small and Large V-Gard Caps are NOT CSA-certified. Standard-size V-Gard Caps and Hats are CSA-certified when assembled with MSA's Fas-Trac or 1-Touch Suspension ONLY.

Customize to Make it Yours!

MSA Logo Express can customize your helmets with your company logo and choice of reflective striping. For more information, see p. 98.

For Cap & Hat Accessories, see pp. 107-116

Our **Hard Hat Accessories Compatibility Chart** can help you select the right MSA accessories to customize your cap or hat. For more information, see pp. 107–108.

V-Gard Complete Assemblies

Color	Small V-Gard Slotted Cap		Standard V-Gard Slotted Cap			Large V-Gard Slotted Cap		V-Gard Hat Non-Slotted		
	w/ Staz-On Suspension	w/ Fas-Trac Suspension	w/ Staz-On Suspension	w/ 1-Touch Suspension*	w/ Fas-Trac Suspension*	w/ Staz-On Suspension	w/ Fas-Trac Suspension	w/ Staz-On Suspension	w/ 1-Touch Suspension*	w/ Fas-Trac Suspension*
White	466354	477477	463942	10057441	475358	473284	477482	454733	10058321	475369
Blue	466355	477478	463943	10057442	475359	476928	477483	454732	10058320	475368
Yellow	466356	477479	463944	10057443	475360	473285	477484	454730	10058318	475366
Orange	•	•	463945	10057444	475361	•	*See Note*	454734	10058322	496075
Red	•	•	463947	10057446	475363	•	•	454736	10058324	475371
Green	•	•	463946	10057445	475362	•	•	454735	10058323	475370
Gray (navy)	•	•	463948	10057447	475364	•	•	454731	10058319	475367
Hi-Viz® Orange**	•	489368	488148	10057420	488146	•	489364	489360	10058326	10021292
Hi-Viz Yellow-Green**	•	•	•	10061514	10061512	•	•	•	10061516	10061515
Bright Lime Green	•	•	815558	•	815565	•	•	815562	•	815570
Dark (Canadian) Blue	•	•	•	•	802972	•	•	•	•	802975
Gold	•	•	464852	•	475365	•	•	•	•	•
Robin's Egg Blue	•	•	463111	•	495853	•	•	•	•	•
Brown	•	•	464658	•	495854	•	•	•	•	•
Silver	•	•	484340	•	495855	•	•	•	•	•
Tan	•	•	461180	•	•	•	•	•	•	•
Black	•	•	475235	•	492559	•	•	•	•	•
Light Buff	•	•	478237	•	495856	•	•	•	•	•
Purple	•	•	488398	•	495858	•	•	•	•	•
Pink	•	•	•	•	495862	•	•	•	•	•
Special V-Gard Assemblies										
Hi-Viz® Orange w/Yellow-Green Stripe**	•	•	•	10102195	10102193	•	•	•	•	•
Hi-Viz® Yellow-Green w/Red-Orange Stripe**	•	•	•	10102234	10102233	•	•	•	•	•
Hi-Viz® Yellow-Green w/Silver Stripe**	•	•	•	10102196	10102194	•	•	•	•	•
White, w/Lamp Bracket & Cord Holder (Class C)	•	•	460018	•	•	•	•	460069	•	815009
White, w/American Flag	•	•	474159	•	•	•	•	•	•	•

V-Gard Assembly with Swing-Ratchet Suspension

White standard-size V-Gard Cap, w/Swing-Ratchet Suspension	10004689

* Certified to CSA.

** V-Gard Cap/Hat meets the voluntary standard for hi-visibility as prescribed by ANSI/ISEA Z89.1-2009. Look for the official hi-visibility marking [HV] on the helmet's ANSI label.

⚠ WARNING

Do not mix suspension and helmet sizes. Make sure the sizes match (example: standard-size suspension with standard-size helmet). Use only MSA suspensions in an MSA helmet. Failure to comply with the above will reduce the energy-absorbing ability of the protective helmet, which can result in serious injury or death.

V-Gard Protective Hats and Caps

MSA V-Gard® Hat and Cap Assemble-To-Order Matrix

		Option	Code	Selection
4 Country	Choose the country to which your order will be shipped.	United States	1	
		Canada	2	
5 Item Quantity	Choose your helmet order quantity.	20	A	
		60	C	
		100+	E	
6 Helmet Type	Choose the style of your helmet.	V-Gard Hat (Std Size)	A	
		V-Gard Cap (Std Size)	B	
7 Shell Color/ Design	Choose your helmet color.	White	A	
		Blue	B	
		Yellow	C	
		Red	D	
		Orange	E	
		Green	F	
		Hi-Viz™ Orange	H	
		Hi-Viz Yellow-Green	K	
8 Suspension Type	Choose your helmet suspension. **NOTE:** If "A" is chosen, the assembly is NOT CSA-certified.	Staz-On® Suspension (Pin-Lock)	A	
		Fas-Trac® Suspension (Ratchet)	B	
9-13 Logo Option	Choose your type of logo. New: MSA does not have this logo on file. Repeat: MSA has this logo on file w/ BL#. **NOTE:** For #10-13, enter "0" to select no logo for that specific location.	New	1	
		Repeat	2	
		Location(s):):		
		10) Front BL#	1	
		11) Back BL#	2	
		12) Left BL#	3	
		13) Right BL#	4	
14 Stripe Option	Choose size and color of stripe(s). **NOTE:** Sizes are in inches.	None	0	
		½ x 26 Silver	C	
		¾ x 20 Silver	D	
		1 x 4 Silver	F	
		1 x 4 Red	H	
15 Stripe Reflectivity	Choose the reflectivity of the stripe(s): Choose "0" if no stripes are to appear anywhere on the helmet (#14 is "0"). If #14 is C or F or H, code 1 must be used.	None	0	
		100 Candle Power	1	
		500 Candle Power	2	
16 Stripe Quantity	Choose the quantity of stripes: Choose "0" if no stripes are to appear anywhere on the helmet (#14 is "0"). If #14 is C or D, code 1 must be used.	None	0	
		One Stripe	1	
		Two Stripes	2	
		Three Stripes	3	
		Four Stripes	4	
17-20 Stripe Location(s)	Choose your stripe locations. **NOTE:** For #17-20, enter "0" if there is not a stripe in that particular location; otherwise, enter the corresponding number (1 through 4).	*Location(s):*		
		17) Front	1	
		18) Back	2	
		19) Left	3	
		20) Right	4	

For more options, please consult: MSA24 Network via www.MSAnet.com, MSA Logo Express® Service bulletin #0617-03-MC via www.MSAnet.com, or MSA Customer Service at 1.800.MSA.2222.

Your Model Number

Please write numbers from selections above in the appropriate boxes below and contact your Safety Products Distributor to place your order.

Selection...	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A-VGD-																	

Questions or Comments? www.facebook.com/MSATheSafetyCompany

V-Gard Protective Hats and Caps

Replacement Suspensions for V-Gard Caps and Hats

Fas-Trac (Ratchet) Suspension

Fas-Trac® Suspension

Small (6–7 1/8)	492567
Standard (6 1/2–8)	10087220
Large (7–8 1/2)	492568

1-Touch Suspension

1-Touch® Suspension

For standard size V-Gard Cap or Hat (6 1/2–8)	10061123
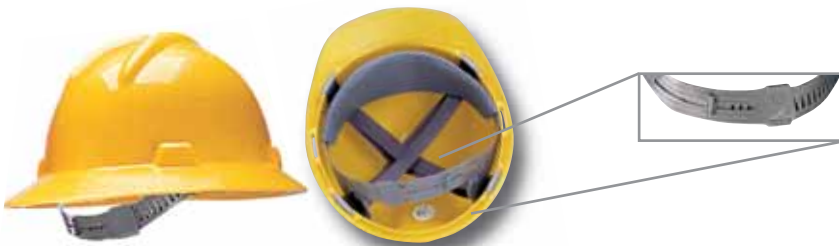
Staz-On (Pin-Lock) Suspension

Staz-On® Suspension

Small (6–7 1/8)	467386
Standard (6 1/2–8)	10087218
Large (7–8 1/2)	492566

Swing-Ratchet Suspension

Swing-Ratchet Suspension

Swing-Ratchet for standard size V-Gard Cap or Hat (6 1/2–7 5/8)	816645

Logo Express® Service for MSA Helmets

Customize to Make it Yours!

Custom Imprinting and Striping

A variety of MSA helmets can be customized with your logo, slogan, or striping. You can select the colors and the areas to be imprinted based on available options per our guidelines. MSA uses both single and multi-color imprinting techniques to provide a choice of up to four colors.

Image 2000℠

MSA offers the Image 2000 Service, which uses a photographic process to reproduce images. Available on white MSA helmets only.

Ordering Information

A minimum quantity of 20 custom-imprinted caps or hats (of the same size and model) is required for initial and repeat orders.

See Bulletin ID 0617-03-MC for more information.

If you have any questions, please call your local
MSA distributor or MSA Logo Express
1-800-MSA-LOGO (1-800-672-5646).
More details are also
on our LogoExpress Web site:
www.MSAnet.com/logoexpress

NFL V-Gard® Protective Caps

NFL V-Gard Slotted Caps

Come individually packaged in a display box!

Classification:	Type I
Application:	General Purpose
Shell Material:	Polyethylene
Available Styles:	Slotted Cap
Sizes:	Standard ($6^1/_2$ – 8")
Standards:	ANSI/ISEA Z89.1-2009 (Class E); CSA Z94.1-2005 (Class E)
Certification:	Third-party by SEI

"Six-Pack" Steelers V-Gard Assemblies

V-Card Cap *(Standard Size)*	Part No.
Black Steelers "Six-Pack" V-Gard Cap	10102205
Gold Steelers "Six-Pack" V-Gard Cap	10102206

New Style NFL V-Gard Assemblies

V-Card Cap *(Standard Size)*	Part No.	V-Card Cap *(Standard Size)*	Part No.	V-Card Cap *(Standard Size)*	Part No.	V-Card Cap *(Standard Size)*	Part No.
Arizona Cardinals	10098024	Dallas Cowboys	10098072	Miami Dolphins	10098080	Pittsburgh Steelers	10098088
Atlanta Falcons	10098025	Denver Broncos	10098073	Minnesota Vikings	10098081	San Diego Chargers	10098089
Baltimore Ravens	10098026	Detroit Lions	10098074	New England Patriots	10098082	San Francisco 49ers	10098090
Buffalo Bills	10098027	Green Bay Packers	10098075	New Orleans Saints	10098083	Seattle Seahawks	10098091
Carolina Panthers	10098028	Houston Texans	10098076	New York Giants	10098084	St. Louis Rams	10098092
Chicago Bears	10098029	Indianapolis Colts	10098077	New York Jets	10098085	Tampa Bay Buccaneers	10098093
Cincinnati Bengals	10098030	Jacksonville Jaguars	10098078	Oakland Raiders	10098086	Tennessee Titans	10098094
Cleveland Browns	10098071	Kansas City Chiefs	10098079	Philadelphia Eagles	10098087	Washington Redskins	10098095

More Options!   NFL V-Gard Caps   NOTE: These styles are not packaged in a display box.
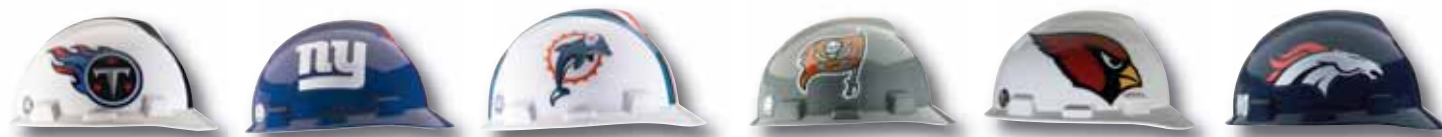
NFL V-Gard Assemblies

V-Card Cap *(Standard Size)*	Part No.	V-Card Cap *(Standard Size)*	Part No.	V-Card Cap *(Standard Size)*	Part No.	V-Card Cap *(Standard Size)*	Part No.
Arizona Cardinals	818384	Dallas Cowboys	818392	Miami Dolphins	818399	Pittsburgh Steelers	818407
Atlanta Falcons	818385	Denver Broncos	818393	Minnesota Vikings	818400	San Diego Chargers	818408
Baltimore Ravens	818386	Detroit Lions	818394	New England Patriots	818401	San Francisco 49ers	818409
Buffalo Bills	818387	Green Bay Packers	818395	New Orleans Saints	818402	Seattle Seahawks	818410
Carolina Panthers	818388	Houston Texans	10031348	New York Giants	818403	St. Louis Rams	818411
Chicago Bears	818389	Indianapolis Colts	818396	New York Jets	818404	Tampa Bay Buccaneers	818412
Cincinnati Bengals	818390	Jacksonville Jaguars	818397	Oakland Raiders	818405	Tennessee Titans	818413
Cleveland Browns	818391	Kansas City Chiefs	818398	Philadelphia Eagles	818406	Washington Redskins	818414

Freedom Series™ V-Gard Protective Caps and Hats

P/N 10052945 (Cap)   P/N 10071157 (Hat)

P/N 10052947 (Cap)   P/N 10071159 (Hat)

P/N 10103908 (Cap)   P/N 10104254 (Hat)

P/N 10079479

P/N 10050611

American Freedom Series Assemblies

Full Decoration	V-Card Cap *(Standard Size)*	V-Card Hat *(Standard Size)*
American Eagle	10079479	•
American Stars and Stripes	10052945	10071157
American Flag with 2 Eagles	10052947	10071159
Camouflage	10103908	10104254
Dual American Flag	10050611	•

Canadian Freedom Series Assemblies

Full Decoration	V-Card Cap *(Standard Size)*	V-Card Hat *(Standard Size)*
White with Red Maple Leaf	10050613	10082234
Black with Red Maple Leaf	10082233	10082235
Camouflage w/Canadian Flag on front*	10104925	•

* not pictured

P/N 10082233 (Cap)   P/N 10082235 (Hat)

P/N 10050613 (Cap)   P/N 10082234 (Hat)

Classification:	Type I
Application:	General Purpose
Shell Material:	Polyethylene
Available Styles:	Slotted Cap; Non-Slotted Full Brim Hat
Sizes:	Standard ($6^{1}/_{2}$ – 8")
Standards:	ANSI/ISEA Z89.1-2009 (Class E); CSA Z94.1-2005 (Class E)
Certification:	Third-party by SEI
Customization:	Imprinting available

Customize to Make it Yours!

MSA Logo Express can customize your helmets with your company logo and choice of reflective striping. For more information, see p. 98.

For Cap & Hat Accessories, see pp. 107-116

Our **Hard Hat Accessories Compatibility Chart** can help you select the right MSA accessories to customize your cap or hat. For more information, see pp. 107–108.

Questions or Comments?
www.facebook.com/MSATheSafetyCompany

Specialty V-Gard Protective Caps

P/N 10101535

P/N 10101854

P/N 10092015

P/N 10102180

V-Gard Caps with "Painted Look" Finish

Classification:	Type I
Application:	General Purpose
Shell Material:	Polyethylene
Available Styles:	Slotted Cap
Sizes:	Standard ($6^1/_2$ – 8")
Standards:	ANSI/ISEA Z89.1-2009 (Class E); CSA Z94.1-2005 (Class E)
Certification:	Third-party by SEI
Customization:	Imprinting available

Specialty Helmets

Full Decoration	V-Gard Cap with Fas-Trac
Rally Cap	10101535
Metallic Gold	10101854
Black Fire	10092015
Extreme Hi-Viz Cap*	10102180

* Extreme Hi-Viz Cap meets the high-visibility requirements of ANSI/ISEA 107.

V-Gard 500 Caps: Vented and Non-Vented Styles

P/N 10034023

4-Point Fas-Trac Suspension   *6-Point Fas-Trac Suspension*

Vented V-Gard 500 Caps provide cooling vents for improved air circulation and comfort, the **Non-Vented V-Gard 500 500 Caps** provide users with dielectric head protection.

Classification:	Type I
Application:	General Purpose
Shell Material:	Polyethylene
Available Styles:	Slotted Cap
Sizes:	Standard ($6^1/_2$ – 8")
Standards:	ANSI/ISEA Z89.1-2009 (Vented - Class C; Non-Vented - Class E)
Certification:	Third-party by SEI
Customization:	Imprinting and striping available

V-Gard 500 Cap Assemblies

Color	Style	4-Point Fas-Trac *(Standard Size)*	6-Point Fas-Trac *(Standard Size)*
White	Vented	10034018	10034027
Blue	Vented	10034019	10034028
Yellow	Vented	10034020	10034029
Red	Vented	10034022	10034031
Green	Vented	10034023	10034032
Hi-Viz Orange*	Vented	10034026	10034035
Hi-Viz Yellow-Green*	Vented	10074819	10074820
White	Non-Vented	10034088	10034097

* V-Gard 500 Cap meets the voluntary standard for hi-visibility as prescribed by ANSI/ISEA Z89.1-2009. Look for the official hi-visibility marking [HV] on the helmet's ANSI label.

Replacement Suspensions

4-Point Fas-Trac Suspension ($6^1/_2$–8)	10034966
6-Point Fas-Trac Suspension ($6^1/_2$–8)	10034967

SmoothDome™ Protective Caps

P/N 10074071

Classification:	Type I
Application:	General Purpose; Welding
Shell Material:	Polyethylene
Available Styles:	Slotted Cap
Sizes:	Standard (6^1/$_2$ – 8")

Standards:	ANSI/ISEA Z89.1-2009 (Class E); CSA Z94.1-2005 (Class E)
Certification:	Third-party by SEI
Customization:	Imprinting and striping available

SmoothDome Cap Assemblies

Color	4-Point Fas-Trac *(Standard Size)*	6-Point Fas-Trac *(Standard Size)*
White	10074067	10084078
Blue	10074068	10084079
Yellow	10074069	10084080
Orange	10074070	10084081
Red	10074071	10084082
Green	10074072	10084083
Gray	10074073	10084084
Hi-Viz Orange*	10074077	10084088
Hi-Viz Yellow-Green*	10074084	10084095
Hi-Viz Orange w/Yellow-Green Stripe*	10095987	10095988
Hi-Viz Yellow-Green w/Orange Stripe*	10095989	10095990
Hi-Viz Orange w/Silver Stripe*	10096141	•
Hi-Viz Yellow-Green w/Silver Stripe*	10096142	•

Replacement Suspension

4-Point Fas-Trac Suspension	10087220
6-Point Fas-Trac Suspension	10092163
Swing-Ratchet Suspension	816645

4-point Fas-Trac Suspension

6-point Fas-Trac Suspension

Swing-Ratchet Suspension

* SmoothDome Cap meets the voluntary standard for hi-visibility as prescribed by ANSI/ISEA Z89.1-2009. Look for the official hi-visibility marking [HV] on the helmet's ANSI label.

Topgard® Protective Caps and Hats

P/N 475380

Classification:	Type I
Application:	General Purpose; Elevated Temperature*
Shell Material:	Polycarbonate
Available Styles:	Slotted Cap; Non-Slotted Full Brim Hat

Sizes:	Standard (6^1/$_2$ – 8")
Standards:	ANSI/ISEA Z89.1-2009 (Class E); CSA Z94.1-2005 (Class E)
Certification:	Third-party by SEI
Customization:	Imprinting and striping available

* Topgard Caps and Hats can withstand radiant heat loads up to but not exceeding 275°F.

Topgard Assemblies

	Topgard Slotted Cap		Topgard Non-slotted Hat	
Color	w/ 1-Touch	w/ Fas-Trac	w/ 1-Touch	w/ Fas-Trac
White	454728	475385	454719	475393
Yellow	454721	475378	454712	475387
Gray	454722	475379	454713	•
Blue	454723	475380	•	•
Orange	454725	475382	•	•
Green	454726	475383	•	•
Red	454727	475384	•	•
Bright Orange	•	804396	•	804397
White w/lamp bracket and cord holder	448914	•	•	•

Replacement Suspensions

1-Touch Suspension (6^1/$_2$–8)	10061127
Fas-Trac Suspension (6^1/$_2$–8)	473333
Swing-Ratchet Suspension (6^1/$_2$–7^5/$_8$)	816648

P/N 475387

1-Touch Suspension

Fas-Trac Suspension

Swing-Ratchet Suspension

Questions or Comments?
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Thermalgard® Protective Caps

P/N 486961

Classification:	Type I	Sizes:	Standard (6$^1/_2$ – 8")
Application:	General Purpose; Welding; Elevated Temperature*	Standards:	ANSI/ISEA Z89.1-2009 (Class G); CSA Z94.1-2005 (Class G)
Shell Material:	Glass-reinforced Nylon	Certification:	Third-party by SEI
Available Styles:	Slotted Cap	Customization:	Imprinting and striping available

* Thermalgard Caps can withstand radiant heat loads up to but not exceeding 350°F.

Thermalgard Assemblies

Color	w/ 1-Touch	w/ Fas-Trac
Yellow	486964	486959
White	486965	486960
Red	•	486961
Orange	486967	486962
Blue	486968	486963
Bright Orange	800359	800360
Green	487399	814343
Steel Gray	•	10095325

Replacement Suspensions

1-Touch Suspension (6$^1/_2$–8)	10061127
Fas-Trac Suspension (6$^1/_2$–8)	473333
Swing-Ratchet Suspension (6$^1/_2$–7$^5/_8$)	816648

1-Touch Suspension

Swing-Ratchet Suspension

Fas-Trac Suspension

Thermal-E® Protective Caps

P/N 10100625

Classification:	Type I	Sizes:	Standard (6$^1/_2$ – 8")
Application:	General Purpose; Welding; Elevated Temperature*	Standards:	ANSI/ISEA Z89.1-2009 (Class E); CSA Z94.1-2005 (Class E)
Shell Material:	Polyetherimide	Certification:	Third-party by SEI
Available Styles:	Slotted Cap	Customization:	Imprinting and striping available

* Thermal-E Caps and Hats can withstand radiant heat loads up to but not exceeding 500°F.

Thermal-E Assemblies

Color	w/ Fas-Trac
White	10100626
Yellow	10100625
Red	10100627
Dark Gray	10100629
Orange	10100628

Replacement Suspension

Fas-Trac Suspension (6$^1/_2$–8) for Thermal-E Cap **ONLY**	10075541

Fas-Trac Suspension

⚠ WARNING

Use only MSA's Fas-Trac Suspension designed for Thermal-E Helmets. Use of any other suspension will reduce the energy-absorbing ability of the protective helmet, which can result in serious injury or death.

For Cap & Hat Accessories, See pp. 107–116

Our **Hard Hat Accessories Compatibility Chart** can help you select the right MSA accessories to customize your cap or hat. For more information, see pp. 107–108.

Customize to Make it Yours!

MSA can customize your helmets with your company logo and choice of reflective striping. For more information, see p. 98.

Skullgard® Protective Caps and Hats

P/N 475395

P/N 475407

Classification:	Type I
Application:	General Purpose; Elevated Temperature*
Shell Material:	Phenolic
Available Styles:	Non-Slotted Cap; Non-Slotted Full Brim Hat

Sizes:	Small (6 – 7$^1/_8$") Standard (6$^1/_2$ – 8") Large (7 – 8$^1/_2$")
Standards:	ANSI/ISEA Z89.1-2009 (Class G)
Certification:	Third-party by SEI
Customization:	Imprinting and striping available

* Skullgard Caps and Hats can withstand radiant heat loads up to but not exceeding 350ºF.

Skullgard Assemblies

	Skullgard Cap			Skullgard Hat	
	w/ Staz-On	**w/ Fas-Trac**	**w/ Swing-Ratchet**	**w/ Staz-On**	**w/ Fas-Trac**
Natural Tan	454617	475395	816651	454664	475407
White	454618	475396	•	454665	475408
Yellow	454619	475397	•	454666	•
Red	454620	•	•	•	•
Green	454621	•	•	454668	•
Grey	454622	•	•	•	•
Blue	454623	•	•	•	•
Orange	454626	•	•	454673	•
Hi-Viz Red-Orange*	458702	•	•	•	•

* Skullgard Cap meets the voluntary standard for hi-visibility as prescribed by ANSI/ISEA Z89.1-2009. Look for the official hi-visibility marking [HV] on the helmet's ANSI label.

1-Touch Suspension

Fas-Trac Suspension

Staz-On Suspension

Swing-Ratchet Suspension

Alternative Skullgard Assemblies

Large Skullgard Cap with Staz-On suspension, natural tan	82018
Large Skullgard Cap with Fas-Trac suspension, natural tan	475405
Standard Skullgard Cap with Staz-On suspension, **lamp bracket and cord holder**, natural tan	460409
Skullgard Hat with Staz-On suspension, **lamp bracket and cord holder,** natural tan	460389
Skullgard Cap with Fas-Trac suspension, welder's lugs, natural tan	482002

Replacement Suspensions

Size	Staz-On	Fas-Trac	Swing-Ratchet	1-Touch
Std (6$^1/_2$–8)	454231	473334	816654 (6$^1/_2$–7$^5/_8$)	10061128
Large (7–8$^1/_2$)	468096	478454	•	•

For Cap & Hat Accessories, See pp. 107-116

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Super-V™ Protective Caps

P/N C217095

P/N C217097

Classification:	Type II (CSA); Type I (ANSI)
Application:	Lateral Protection
Shell Material:	Polyethylene
Available Styles:	Slotted Cap w/ Foam Liner
Sizes:	Standard ($6^1/_2$ – 8")

Standards:	ANSI/ISEA Z89.1-2009 (Class E); CSA Z94.1-2005 (Class E)
Certification:	Third-party by SEI
Customization:	Imprinting and striping available

Super-V Assemblies

Color	w/ Fas-Trac
White	C217091
Yellow	C217093
Red	C217095
Orange	C217094
Blue	C217092
Navy Gray	C217097
Hi-Viz Orange*	C217100
Green	C217096
Gold	C217098
Black	C217140
Silver	C217099

Replacement Suspension

Fas-Trac Suspension for Super-V Caps only ($6^1/_2$-8)	818276

Fas-Trac Suspension

*   Super-V Cap meets the voluntary standard for hi-visibility as prescribed by ANSI/ISEA Z89.1-2009. Look for the official hi-visibility marking [HV] on the helmet's ANSI label.

Vanguard™ Protective Caps

P/N 804946

Classification:	Type II
Application:	Lateral Protection
Shell Material:	Polyethylene
Available Styles:	Slotted Cap w/ Foam Liner
Sizes:	Standard ($6^1/_2$ – 8")

Standards:	ANSI/ISEA Z89.1-2009 (Class E); CSA Z94.1-2005 (Class E)
Certification:	Third-party by SEI
Customization:	Imprinting and striping available

Vanguard Assemblies

Color	w/ Fas-Trac
White	804940
Yellow	804939
Red	804944
Hi-Viz Orange*	804947
Blue	804946

* Vanguard Cap meets the voluntary standard for hi-visibility as prescribed by ANSI/ISEA Z89.1-2009. Look for the official hi-visibility marking [HV] on the helmet's ANSI label.

Replacement Suspension

Fas-Trac Suspension for Vanguard Caps only ($6^1/_2$–8)	804631

Fas-Trac Suspension

⚠ WARNING

Use only MSA's Fas-Trac Suspension designed for Vanguard Helmets. Use of any other suspension will reduce the energy-absorbing ability of the protective helmet, which can result in serious personal injury or death.

For Cap & Hat Accessories, see pp. 107-116

Our **Hard Hat Accessories Compatibility Chart** can help you select the right MSA accessories to customize your cap or hat. For more information, see pp. 107–108.

Customize to Make it Yours!

MSA can customize your helmets with your company logo and choice of reflective striping. For more information, see p. 98.

Comfo Cap® Protective Caps

P/N 475336

Classification:	Type I	Standards:	ANSI/ISEA Z89.1-2009 (Class G)
Application:	Mining		
Shell Material:	Polycarbonate	Certification:	Third-party by SEI
Available Styles:	Non-Slotted Cap	Customization:	Imprinting and striping available
Sizes:	Standard (6^1/$_2$ – 8")		

Comfo Cap Assemblies

Color	w/ Staz-On	w/ Fas-Trac
White	91522	475336
Blue	91586	•
Yellow	91585	•
Orange	91589	•
Red	91590	•
Green	91584	•
Black	82769	•

Replacement Suspensions

Staz-On Suspension (6^1/$_2$ – 8)	454231
1-Touch Suspension (6^1/$_2$ – 8)	10061128
Fas-Trac Suspension (6^1/$_2$ – 8)	473334

Staz-On Suspension   *1-Touch Suspension*   *Fas-Trac Suspension*

Bump Caps

P/N 10033650

Bump Cap suspension

Classification:	Non-Impact	Available Styles:	Non-Slotted Cap w/ Plastic Suspension
Application:	Pest Control; Meter Reading; Food/Beverage Processing; Meat Packing; Auto Repair	Sizes:	Standard (6^1/$_2$ – 8")
		Standards:	None
		Customization:	Imprinting and striping available
Shell Material:	Polyethylene		

Bump Cap Assemblies

Color	w/ Plastic Suspension
Blue	10033650
Yellow	10033651
White	10033652
Red	10033653
Orange	10033654
Green	10033655

⚠ WARNING

Bump Caps are NOT safety helmets and do NOT meet OSHA nor ANSI requirements for head protection. DO NOT USE as sport safety helmet. DO NOT USE when ANSI-compliant head protection is required or needed.

For Cap & Hat Accessories, See pp. 107–116

Our **Hard Hat Accessories Compatibility Chart** can help you select the right MSA accessories to customize your cap or hat. For more information, see pp. 107–

Customize to Make it Yours!

MSA can customize your helmets with your company logo and choice of reflective striping. For more information, see p. 98.

MSA Hard Hat Accessories Compatibility Chart

Customer Service Center: 1-800-MSA-2222 • Website: www.MSAnet.com

Product	Part No.	V-Gard® Slotted Cap	V-Gard Non-Slotted Hat	SmoothDome® Slotted Cap	V-Gard 500 Slotted Cap	Topgard® Slotted Cap	Topgard Non-Slotted Hat	Thermal-E™/Thermalgard® Slotted Cap	Skullgard® Non-Slotted Cap	Skullgard Non-Slotted Hat	Vanguard™ Slotted Cap	Super-V®/Large V-Gard Slotted Cap	Bump Cap
Faceshield Frames (visor not included)													
Defender®+ Faceshield Frame with lockdown	10021614*	●		●									
Defender+ Faceshield Frame without lockdown	10021616	●		●									
Defender+ Faceshield Frame with lockdown	10021615				●	●							
Tempgard® Defender+ Faceshield Frame for elevated temperatures, w/o lockdown	10031191	●			●	●		●					
Defender+ Easy Release Frame with lockdown (black)	10080783			●	●								
Defender+ Easy Release Frame with lockdown (black)	10080784					●		●					
Slot adapter (for Defender+ Easy Release frame)	10090221	●		●	●	●		●				●	
Defender+ Frame with Instant Release attachment, without lockdown	10037098**	●		●	●	●		●					
Defender+ Universal Foldback Faceshield Frame (dielectric [plastic] for cap)	10016742			●							●	●	●
Defender+ Universal Foldback Faceshield Frame (dielectric [plastic] for hat)	10005383*		●				●		●				
Defender+ Universal Foldback Faceshield Frame (metal for cap)	488160	●		●		●		●					
Defender+ Universal Foldback Faceshield Frame (metal for hat)	488159		●							●			
Defender+ Universal Foldback Faceshield Frame (metal)	10079072								●				
Welding Attachments													
Lugs only, for instant release slotted caps	468771	●		●	●	●		●				●	
Lugs only, for instant release non-slotted caps	48733								●				
Instant Release (metal) and lugs for slotted caps	485460	●		●	●	●		●				●	
Instant Release (metal with stop) and lugs for non-slotted caps	91385								●		●		
Adapter for Welding Helmets and Sparkgards for slotted caps	488525	●		●	●	●		●				●	
EC Adapter Kit for slotted caps (positive positioning type)	806211	●		●	●	●		●				●	
Hearing Accessories													
Sound Control™ HPE for slotted caps	10061272	●		●	●	●		●			●	●	
Sound Control EXC for slotted caps	10061230	●		●	●	●		●			●	●	
Sound Control XLS for slotted caps	10061535	●		●	●	●		●			●	●	
Sound Blocker™ 26 (for use with Defender+ Faceshield Frames ONLY)	10026398	●		●	●	●		●	●				
Sound Blocker 26 for non-slotted caps	10022021								●				
Soprano™ Muff for hats	10034487		●				●			●			
left/RIGHT™, LOW, white for slotted caps	10087439	●		●	●	●		●			●	●	
left/RIGHT, MED, blue for slotted caps	10087429	●		●	●	●		●			●	●	
left/RIGHT, HIGH, yellow for slotted caps	10087422	●		●	●	●		●			●	●	

*Meets CSA Z94.3.

** For use with welding shields

MSA Hard Hat Accessories Compatibility Chart

Customer Service Center: 1-800-MSA-2222 • Website: www.MSAnet.com

MSA — The Safety Company

Product	Part No.	V-Gard® Slotted Cap	V-Gard Non-Slotted Hat	SmoothDome® Slotted Cap	V-Gard 500 Slotted Cap	Topgard® Slotted Cap	Topgard Non-Slotted Hat	Thermal-E™/Thermalgard® Slotted Cap	Skullgard® Non-Slotted Cap	Skullgard Non-Slotted Hat	Vanguard™ Slotted Cap	Super-V®/Large V-Gard Slotted Cap	Bump Cap
Seasonal Accessories													
Sunshade, Hi Viz yellow-green fabric with reflective striping	10098032	●	●	●	●	●	●	●			●	●	●
Sunshade, Hi Viz orange fabric with reflective striping	10098031	●	●	●	●	●	●	●			●	●	●
Sun Shield	69290			●									
Sun Shield	697410		●										
Sun Shield	10039114				●								
Sun Shield	697373	●											
Stretch Winter Liner	695350	●		●		●		●				●	
Regular Zero Hood® Liner	86092	●	●	●	●	●	●	●			●	●	●
Extended-neck Zero Hood Liner	88587	●	●	●	●	●	●	●			●	●	●
Flame-retardant Zero Hood Liner	802439	●	●	●	●	●	●	●	●	●	●	●	●
Flame-resistant Zero Hood Liner (w/ velcro closure)	696473	●	●	●	●	●	●	●	●	●	●	●	●
Zero Hood Liner (w/ zipper)	10087241	●	●	●	●	●	●	●	●	●	●	●	●
Custom Terri-band Sweatband (single)	10068911	●	●	●	●	●	●	●	●	●	●	●	●
Standard Winter Liner	697117	●	●	●	●	●	●	●	●	●	●	●	●
Economy Liner	697116	●	●	●	●	●	●	●	●	●	●	●	●
Knit Cap Liner	34929	●	●	●	●	●	●	●	●	●	●	●	●
Custom Terri-band Sweatband (pkg of 10)	696688	●	●	●	●	●	●	●	●	●	●	●	
Necessities													
Chinstrap, 2-pt, 3/4" cotton webbing, attaches to shell	81329	●	●	●	●	●	●	●			●	●	
Chinstrap, 2-pt, 3/4" cotton webbing, attaches to suspension	81390	●	●	●	●	●	●	●			●	●	
Chinstrap, 2-pt, 3/4" polyester webbing, attaches to shell	88128	●	●	●	●	●	●	●			●	●	
Chinstrap, 2-pt, 3/4" polyester webbing, attaches to suspension	81391	●	●	●	●	●	●	●	●	●	●	●	
Chinstrap, 2-pt, 3/4" Nomex® webbing, attaches to shell	10102191*	●	●	●	●	●	●	●	●	●	●	●	
Chinstrap, 3-pt, 3/4" nylon webbing, for Vanguard helmets only	804629										●	●	
Goggle Retainer for caps (excludes goggles)	459458	●		●	●	●		●	●		●	●	
Goggle Retainer for hats (excludes goggles)	449895		●				●			●		●	
Medical Information Carrier System (pkg of 10) – English/Spanish	1001393	●	●	●	●	●	●	●	●	●	●	●	
Versalite helmet light with 2 AA alkaline batteries	679259†						●	●	●	●	●	●	●
Stealthlite helmet light	697261‡					●	●	●	●	●	●	●	●
Light holder for slotted cap	814322	●		●	●	●		●			●	●	●

*For elevated temperatures.
†Versalite helmet light does not include, but requires, slot adapter to work in helmet slots.
‡Stealthlite helmet light does not include, but requires, batteries and a slot adapter to work in helmet slots.

Standards for Eye and Face Protection

ANSI/ISEA Z87.1-2010 in Effect

In early 2010, the American National Standards Institute (ANSI), in conjunction with International Safety Equipment Association (ISEA) issued a revised edition of the American National Standard for Occupational and Educational Personal Eye and Face Protection Devices (ANSI/ISEA Z87.1-2010). The revised standard focused on helping users of eye and face protectors select products designed for specific hazards.

Type of Mark	Description	Marking for Complete Device (no replaceable parts)	Other Information
General	Plano	Z87	
Impact Rated	Impact Rated Plano	Z87+	
Lens Type	Welding	W and Shade Number	Shades range from 1.3 to 14; autodarkening cannot be marked anything lower than Shade 7.
	UV Filter	U and Scale Number	Scale ranges from 2 to 6, with lenses marked as "U6" providing the highest protection from far and near UV.
	Visible Light Filter	L and Scale Number	Scale ranges from 1.3 to 10, with lower numbers providing greater transmittance.
	IR Filter	R and Scale Number	Scale ranges from 1.3 to 10.
	Variable Tint	V	Variable tint lenses are those which darken or fade automatically (excludes autodarkening welding lenses).
	Special Purpose	S	Special purpose lenses are any lenses designed for special applications that do not fall into any of the other categories.
Use	Splash/Droplet	D3	
	Dust	D4	
	Fine Dust	D5	

Reference: ANSI/ISEA Z87.1-2010 Standard.

Some changes include:
- There is no longer a "basic impact" designation. Products that meet the general requirements, but do not meet the impact rated requirements are marked "Z87." Products that meet both the general and impact rated requirements are designated as "impact" and are marked "Z87+."
- Lens markings have changed. Markings now identify the type of hazard the product protects against, such as splash/droplet, dust, fine dust, UV, IR and others. See the table above for additional information.
- Spectacles with thin temples must have side shields if they do not pass the continuous lateral (side) coverage requirements.

- Under the former standard, the definition of "faceshield" included this sentence: "Faceshields shall be used only in conjunction with spectacles and/or goggles." The revised standard removed this sentence from the definition. Even though this wording has been removed, MSA will continue to recommend that safety glasses or goggles with an impact rating (Z87+) always be worn under all faceshields. Additionally, MSA continues to recommend the use of only impact rated protectors where such protection is needed.
- Product compliance markings are required for all claims on goggles against dust, fine dust, droplet and splash hazards.
- Under the revised standard, users have the right to request and receive a copy of the manufacturer's ANSI/ISEA Z87.1-2010 test results.

Check out product videos! www.MSAnet.com/MSATV
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Accessories for Protective Caps and Hats

Frames for Faceshields

Easy Release Frame with visor and XLS Hearing Protection

Defender®+ and Defender+ Easy Release Faceshield Frames

- Front drip-edge splash protection
- Multiple stop positions
- Long-lasting, O-ring, pivot-joint design
- Easy-in, easy-out visor replacement
- Cap lockdown clip option available (V-Gard, Topgard, Thermalgard and SmoothDome Caps only)

Defender+ Faceshield Frames for Slotted Caps (excludes visor)

Defender+ Faceshield Frame for V-Gard and SmoothDome Caps, with lockdown clip	10021614*
Non-locking Defender+ Faceshield Frame for most MSA slotted caps	10021616
Non-locking Defender+ frame for slotted caps	10037098
Defender+ Faceshield Frame for Topgard Caps, with lockdown clip	10021615
Tempgard® Defender+ Faceshield Frame, for elevated temperatures	10031191

Defender+ Easy Release Faceshield Frames (excludes visor)

Must be used with any model MSA ear muffs for slotted caps or the slot adapter (listed below)	
Defender+ Easy Release Frame for most MSA slotted caps, with lockdown clip, black	10080783
Defender+ Easy Release Frame for Topgard Cap, with lockdown clip, black	10080784
Slot adapter, attaches Easy Release Frame directly to cap (without ear muffs)	10090221

*Meets CSA Z94.3.

Approvals

All MSA Faceshield Assemblies and Visors meet or exceed applicable requirements of ANSI/ISEA Z87.1.

MSA Hard Hat Accessories Compatibility Chart!

Our **Compatibility Chart** can help you select the right MSA accessories to customize your cap or hat. For more information, see pp. 107–108.

⚠ CAUTION

All faceshield assemblies must be worn with eye protection that meets ANSI/ISEA Z87.1 impact protector requirements.

The Defender+ Easy Release is designed so the faceshield frame can be easily removed without having to take off the helmet

Defender+ Frame for slotted caps, shown without visor

Defender+ Frame, Sound Blocker 26 Muff Assembly, shown with visor

Accessories for Protective Caps and Hats

Frames and Headgear for Faceshields

Plastic Defender+ Foldback Faceshield Frame (Cap)

Plastic Defender+ Foldback Faceshield Frame (Hat)

Metal Defender+ Foldback Faceshield Frames (Cap)

Defender® + Foldback Universal Faceshield Frames

Foldback Faceshield Frames are available in plastic (dielectric) and metal for MSA caps and hats. These frames can be used with slotted or non-slotted helmets. Visor not included.

For caps, plastic (dielectric)	10016742
For hats, plastic (dielectric)	10005383*
For caps, metal	488160
For hats, metal	488159
For Skullgard Cap only, metal	10079072

*Meets CSA Z94.3.

⚠ WARNING

Do not use metal Universal Foldback Faceshield Frames in electrical applications. Failure to follow this warning can result in serious injury or death.

Defender+ Headgear with Faceshield and Chinguard

Defender+ Headgear with Ratchet and Extended High-Temp Sparkgard

Defender+ Headgear for Faceshields

For use where no hardhat is required. Defender+ Headgear for Faceshields are available in three versions and all adjust to head sizes 6 1/2 to 8. The extended elevated temperature Sparkgard is for use in temperatures up to 250°F. Visors and chin protectors not included.

Approvals

All MSA Headgear for faceshields meet the applicable requirements of ANSI/ISEA Z87.1.

⚠ CAUTION

All headgear for faceshields must be worn with eye protection that meets ANSI/ISEA Z87.1 impact requirements.

Defender+ Headgear, standard Sparkgard, pin-lock suspension	10021610
Defender+ Headgear, standard Sparkgard, ratchet suspension	10021611*
Defender+ Headgear, extended elevated-temperature Sparkgard, ratchet suspension	10021612

*Meets CSA Z94.3.

Accessories for Protective Caps and Hats

Visors, Chinguards, Nitrometers

MSA Visors

Choose from a wide variety of visors that fit MSA faceshield frames. **MSA visors are manufactured for use ONLY on MSA frames and assemblies in order to comply with ANSI/ISEA Z87.1-2010.**

Visors should always be worn with eye protection, such as goggles or spectacles, that meet ANSI/ISEA Z87.1-2010 impact protector requirements. Visors should be inspected frequently and replaced immediately if worn, scratched, or damaged in any way. Selection of proper models for specific hazards and communication of all instructions, precautions, and limitations to the wearer is the responsibility of user safety specialists, who are also responsible to see that they are strictly observed. Failure to comply with any of the above could result in serious injury or death.

Approvals

Except as noted, MSA visors meet the general and impact protector requirements of ANSI/ISEA Z87.1-2010.

⚠WARNING

Visors that meet only the general protector requirements of ANSI/ISEA Z87.1-2010 should never be used where an impact protector is required. A hazard assessment should always be done before using protectors that meet only general protector requirements.

⚠ CAUTION

Clean visor with mild soap and water only. Cleaning dry or with coarse cloth will scratch the visor.

⚠WARNING

Do not use MSA visors for welding, elevated temperature applications, or for protection against other infrared radiation sources unless the MSA visor is approved for such applications. Do not use for sports, simulated war games, paintball games, or similar activities. A pitted or scratched visor reduces eye protection and vision. Inspect routinely and replace worn or damaged parts immediately. Do not alter or modify this product. Do not use near open flame. Failure to follow these warnings can result in permanent impairment of sight, other serious personal injury, or death.

Polycarbonate Visors	Size (inches)	Part No.
Clear (Molded)	9.5 x 19.5 x .07	10063106
Clear (Formed)	7.88 x 15.76 x .04	488131
Clear (Formed)	7.88 x 15.76 x .06	488132
Clear (Flat)	7.75 x 15.5 x .04	10017934*
Clear (Formed)	9.47 x 18.94 x .06	488138
Clear (Formed)	5.75 x 15.76 x .06	491908
Clear (Fog-free)	7.75 x 15.76 x .06	802337
Propionate Visors (Molded) All propionate visors meet ANSI/ISEA Z87.1-2010 general protector requirements ONLY.	Size (inches)	Part No.
Clear	8 x 15.5 x .06	10109107
Dark Green	8 x 15.5 x .06	10109109
Dark Green	9.5 x 19.5 x .06	10109113
Shade 3 (Green)	8 x 15.5 x .06	10086996
Shade 5 (Green)	8 x 15.5 x .06	10005882

Nitrometer Visors and Chin Protectors

Visors	Size (inches)	Part No.
Clear polycarbonate (Formed)	5.75 x 15.76 x .04	488126
Clear polycarbonate (Formed, Fog-free)	7.75 x 18.94 x .06	494916
Shade 5 (Green) propionate – **ANSI/ISEA Z87.1-2010 general protector requirements ONLY** (Molded, must be worn with chin protector)	6.5 x 15.5 x .06	10005881
Chin Protectors (for use w/Nitrometer Visors)		Part No.
Clear polycarbonate		10022241
Black polypropylene		10022242
Black polycarbonate (use ONLY with P/N 10005881)		10013631
Wire Screen Visors All wire screen visors meet ANSI/ISEA Z87.1-2010 general protector requirements ONLY	Size (inches)	Part No.
Plastic edge, 20 mesh (not for use in elevated temperatures)	6.35 x 15.72	476356
Aluminum edge, 20 mesh (flat, not for use in areas where splash may occur)	7.96 x 17.44	457409
Arc Shield Visor Assembly Arc shield visor assembly meets ANSI/ISEA Z87.1-2010 general protector requirements ONLY.	Size (inches)	Part No.
For protection from electric arcing. Call for protection level. Meets ANSI/ISEA Z87.1 and NFPA 70E 2009, Classes 1 & 2.		
Tinted (light green/brown) complete with chin protector, 11 Cal – propionate (Molded)	7.25 x 20.5 x .07 **	10063107
Elevated-Temperature Visors	Size (inches)	Part No.
Clear polycarbonate, with gold coating (Molded)	9.5 x 19.5 x .07	10005879
Medium Green polycarbonate with gold coating (Molded)	9.5 x 19.5 x .07	10005880

*Meets CSA Z94.3.
** Size includes chin protector, as the visor must be worn with the chin protector.

Accessories for Protective Caps and Hats

Welding Adapter Kits
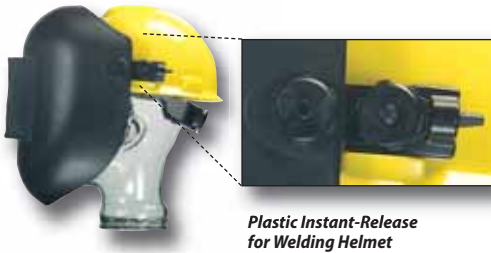
Plastic Instant-Release for Welding Helmet
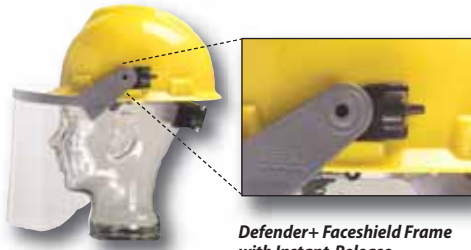
Defender+ Faceshield Frame with Instant-Release
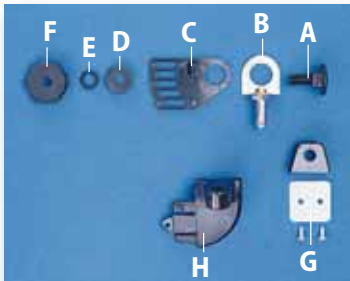
Adapter Kits for Welding Shields and Defender+ Assembly

Kits permit the easy attachment of Welding Shields and Sparkgard Faceshields with visors to MSA's helmets.

Welding Adapter Kits

Standard Adapter for Welding Helmets and Sparkgards	488525
EC Adapter Kit (positive positioning type)	806211
Sparkgard only	456568

Plastic Instant-Release Attachment*

Quick Disconnnect Kit, welder's adapter, with lugs	10036456

Note: Cannot be used on Vented Advance Caps.

Defender+ Frame with Instant-Release Attachment

Defender+ frame for slotted cap, without lock-down	10037098

Metal Instant-Release Attachment

Instant-Release and lugs for slotted caps (A, B, C, D, E, F, H)	485460
Lugs only, for instant-release slotted caps (H)	468771
Lugs only, for instant-release non-slotted caps (G)	48733

EC Adapter (left) and Sparkgard (right)—use plastic or metal Instant-Release with Sparkgard

Metal Instant-Release Attachment

Welding Shields and Accessories

MSA's thermal plastic welding shields protect workers eyes and face from infrared burns, flying sparks, hot metal spatter and chips encountered in welding operations. The nylon welding shields come in a variety of styles.

For shade 5 IR welding visors, see p. 112.
For shade 5 IR welding spectacles, see p. 123.

Sightgard Welding Plates

Polycarbonate Plates

Meet ANSI/ISEA Z87.1

Plate Size (in.)	Shade	Part No.
2 x 4$^1/_4$	5	791923
2 x 4$^1/_4$	10	791928
2 x 4$^1/_4$	12	791930
4$^1/_2$ x 5$^1/_4$	10	38347
4$^1/_2$ x 5$^1/_4$	12	38277

Polycarbonate Cover/Back Plates

Plate Size (in.)	Shade	Part No.
2 x 4$^1/_4$	clear	791933
4$^1/_2$ x 5$^1/_4$	clear	696095

Welding Shields—Fronts Only

Less headgear and attachments

Plate Size 2" x 4$^1/_4$"	Part No.
Non-coated black, slim-line, lift front	695943
Non-coated black, full-curved, lift front	695946
Plate Size 4$^1/_2$" x 5$^1/_4$"	**Part No.**
Coated silver, slim-line, fixed front	695888

Accessories for Protective Caps and Hats

Seasonal

Yellow-Green SunShade

Orange SunShade

SunShade Hard Hat Accessory

MSA's SunShades not only help to protect wearer's ears and neck from sun and heat, but also enhance worker visibility with contrasting color band and reflective striping. Fit most hats and caps. Features include:

- Breathable, high-visibility mesh fabric
- Choice of high-visibility yellow-lime or orange colors
- Hat clips help to keep SunShade from falling or rotating
- Point-of-sale packaging and scannable UPC-A barcode

SunShade, Yellow-Green, with reflective striping	10098032
SunShade, Orange, with reflective striping	10098031

V-Gard Sun Shield

Topgard Sun Shield

Sun Shields

Our Sun Shield extends the brim all the way around to help protect wearer's ears and neck from sun's rays. Made of polyurethane (front portion is Lexan, smoke tint).

Sun Shield for Standard V-Gard Caps only	697290
Sun Shield for V-Gard Hats only	697410
Sun Shield for V-Gard 500 Caps only	10039114
Sun Shield for Topgard Caps only	697373

Terri-Band Sweatband

Custom Terri-Band Sweatband

Custom design fits all MSA helmets. Washable, with plastic snaps.

Custom Terri-Band Sweatband (single)	10068911
Custom Terri-Band Sweatband (pkg of 10)	696688

MSA Hard Hat Accessories Compatibility Chart!

Our **Compatibility Chart** can help you select the right MSA accessories to customize your cap or hat. For more information, see pp. 107–108.

Questions or Comments?
www.facebook.com/MSATheSafetyCompany

Accessories for Protective Caps and Hats

Necessities

Stealthlite & Light Holder for Slotted Caps

VersaLight Helmet Light

Helmet Lights

MSA offers two helmet lights that fit into our special cap adapters. Both of the lights are FM and CSA-approved for intrinsic safety, and are non-incendive.

VersaLite Helmet Light with 2 AA alkaline batteries	697259*
Stealthlite Helmet Light (batteries not included)	697261**
Light holder for slotted Cap—no metal parts	814322

*Versalite helmet light does not include, but requires, slot adapter to work in helmet slots.
**Stealthlite helmet light does not include, but requires, batteries and a slot adapter to work in helmet slots.

P/N 88128

P/N 10102191

P/N 81391

Chinstraps

Chinstrap, 2-pt, 3/4" cotton webbing, attaches to shell	81329
Chinstrap, 2-pt, 3/4" cotton webbing, attaches to suspension	81390
Chinstrap, 2-pt, 3/4" polyester webbing, attaches to shell	88128
Chinstrap, 2-pt, 3/4" polyester webbing, attaches to suspension	81391
Chinstrap, 2-pt, 3/4" Nomex® webbing, attaches to shell	10102191*
Chinstrap, 3-pt, 3/4" nylon webbing, for Vanguard helmets only	804629

*For elevated temperatures.

Medical Information Carrier System (inside view)

Medical Information Carrier System (outside view)

Helmet Information Labels

Medical Information Carrier System

This simple hardhat accessory provides crucial, lifesaving information in the event of a medical crisis on the job.

Medical Information Carrier System (pkg of 10) – English/Spanish	10013393

In-Service Helmet Label

Add this label to the inside of your helmet. Complete the information with the date that your helmet was first used in order to track the shell's service life. MSA recommends that you replace the shell every 5 years and the suspension every 12 months.

In-Service Helmet Label (sheet of 25)	804358

In-Service Helmet Label sheet

MSA Hard Hat Accessories Compatibility Chart!

Our **Compatibility Chart** can help you select the right MSA accessories to customize your cap or hat. For more information, see pp. 107–108.

Hearing Protection

Passive Helmet-Mounted Hearing Protectors

Hearing Protection for Caps and Hats

Third-party tested in accordance with ANSI S3.19-1974, CSA Class A and EN352-3.
Note: Cap model noise reduction ratings listed below are for medium V-Gard Helmets only.

EXC cap model   *HPE cap model*   *XLS cap model*

Sound Control Cap Models

Sound Control Cap Models	
HPE cap model, complete with brackets (NRR 27)	10061272
EXC cap model, complete with brackets (NRR 25)	10061230
XLS cap model, complete with brackets (NRR 23)	10061535

left/RIGHT Cap Models

left/RIGHT Cap Models

unique design/BETTER FIT

Each cup is specifically designed for the left or right ear in order to conform to your head:
- Adjust individually to ear angle
- Raise and lower muffs independently

left/RIGHT Cap Models	
left/RIGHT, LOW, White (NRR 21)	10087439
left/RIGHT, MEDIUM, Blue (NRR 25)	10087429
left/RIGHT, HIGH, Yellow (NRR 28)	10087422

Sound Blocker™ 26 Hearing Protection (NRR 26)

Sound Blocker Cap Models	
Sound Blocker 26 cap model for Defender Faceshield Frame	10026398
Sound Blocker 26 cap model for Non-Slotted Caps	10022021

Soprano™ Muff for Hats (NRR 25)

The addition of the Soprano Muff reduces the helmet rating to Class C.

Soprano Muff	
Soprano Muff Kit for full-brim Hats	10034487

Hearing Protection

Passive Hearing Protection Headband Models

SOUND CONTROL®

P/N 10087436

P/N 10087399

P/N 10087426

left/RIGHT Earmuffs

unique design/BETTER FIT

Each cup is specifically designed for the left or right ear in order to conform to your head:
- Adjust individually to ear angle
- Raise and lower muffs independently

left/RIGHT Earmuffs

10087436	left/RIGHT, LOW, White, headband model (NRR 21)
10092878	Hygiene kit, left/RIGHT, LOW
10087426	left/RIGHT, MEDIUM, Blue, headband model (NRR 25)
10092879	Hygiene kit, left/RIGHT, MEDIUM
10087399	left/RIGHT, HIGH, Yellow, headband model (NRR 28)
10092880	Hygiene kit, left/RIGHT, HIGH

P/N 10061271

P/N 10061229

HPE Headband Model Muff (NRR 26)

HPE Headband Model Muff

10061271	HPE headband model
10061291	Hygiene kit, complete with cushions and inserts

EXC Headband Model Muff (NRR 24)

EXC Headband Model Muff

10061229	EXC headband model
10061292	Hygiene kit, complete with cushions and inserts

P/N 10061273

Economuff™ Multi-Position Earmuff

NRR as worn:
- Over-the-Head (NRR 24)
- Behind-the-Head (NRR 23)
- Under-the-Chin (NRR 23)

Economuff Multi-Position Earmuff

10061273	Economuff Multi-Position Earmuff

P/N 10004291

Economuff™ Earmuff (NRR 20)

Extremely lightweight at just 8.0 ounces

Economuff Earmuff

10004291	Economuff Earmuff

MSA TV ▶ Check out product videos!
www.MSAnet.com/MSATV

MSA

Hearing Protection

Passive Hearing Protection Headband Models

P/N 1005607

P/N 10009332

P/N 10009333

P/N 10003344

Tri-Seal™ Reusable Silicone Ear Plugs (NRR 25)

Tri-Seal Reusable Silicone Ear Plugs	
10005607	Corded, dispenser box of 100 individually packaged pairs

FormFit™ Round Disposable Foam Ear Plugs (NRR 29)

FormFit Round Disposable Foam Ear Plugs	
10009332	Round, corded, dispenser box of 200 pairs
10009333	Round, non-corded, dispenser box of 200 pairs

Comfort Band™ Hearing Protector (NRR 23)

Comfort Band Hearing Protector	
10003344	Each, must order in multiples of 20

Electronic Hearing Protection Headband Models

Guarding people against the daily hazards of noise is of paramount concern in countless industries. The challenge is to balance personal attenuation devices with comfort and the ability of communication and listening to music, so that workers will wear their hearing protectors all the time. With over 40 years of experience, MSA now offers a new wide range of hearing protectors with built-in electronics—from basic functions to high-specification communication devices. All products are comfortable hearing protectors, designed to prevent you from feeling isolated, thereby encouragaing you to use them and so protecting your hearing for the rest of your life. Noise Reduction Rating (NRR) is third-party tested in accordance with ANSI S3.19-1974 and EN352-3. Also meets CSA Z94.2.

CutOff Pro Headband Model

CutOff Pro Headband Model (NRR – 24dB)

Built-in level dependent function protects without your feeling isolated
- Lets through speech and other harmless sounds while protecting you from harmful noise
- Battery life of 1000 hours
- Amplification of weak sounds
- Auxilliary input for connection of external devices

FM Pro Headband Model (NRR – 24dB)

Built-in radio receiver—stereo
- Scan stations automatically
- Memory for last selected station and volume
- Automatically switches off to save batteries
- Battery life of 120–140 hours

FM Pro Headband Model

CutOff Pro Headband Model	
Battery Life (approx. hours): 1000	
Headband model (stereo)	10061278
Hygiene Kit	10061293

FM Pro Headband Model	
Battery Life (approx. hours): 120–140	
Headband model (stereo)	10061280
Hygiene Kit	10061293

Downlead for Pro Line	
Hands Free, 2.5 mm Stereo Plug	10062072

Pro Line of Electronic Hearing Protection
The line features advanced electronics with a very good price-to-performance ratio.
Built-in features, such as FM and CutOff are optional.

Hearing Protection

Electronic Helmet-Mounted Hearing Protectors

Electronic Hearing Protection for Caps and Hats

With over 40 years of experience, MSA now offers cap-mounted hearing protectors with built-in electronics. These are comfortable hearing protectors, designed to prevent you from feeling isolated, thereby encouragaing you to use them and so protecting your hearing for the rest of your life. Noise Reduction Rating (NRR) is third-party tested in accordance with ANSI S3.19-1974 and EN352-3. Also meets CSA Z94.2.

Connect-by-Cable Cap Model

Connect-By-Cable (NRR – 23dB)

A comfortable hearing protector equipped with a hard-wired lead (3.5 mm) and boom microphone.

- The standard Connect-by-Cable model comes with a hard-wired cable for connection to an MSA ClearCommand Push-To-Talk, or lapel microphone (No noise cancelling)
- Noise-cancelling boom microphone permits two-way communication with minimal interference from background noise
- Muffs come with a hard-wired 3.5 mm cable adapter

Connect-By-Cable

Connect-by-Cable slotted cap model	10064516
Hygiene Kit	10061293

Effective noise attenuation and amplification at the same time

Cap & Hat Accessories Compatibility Chart!

Our **Hard Hat Accessories Compatibility Chart** can help you select the right MSA accessories to customize your cap or hat.
For more information, see pp. 107–108.

Hearing Protection

Electronic Hearing Protection Headband Models

Supreme Pro™ Muff

Provides optimum protection with high amplification, AUX input and watertight battery compartment. Both earmuffs are shaped to suit both right-handed and left-handed shots.

- Two separate, well-shielded microphones for optimum stereo effect and location of sound direction
- High amplification and natural sound reproduction without "chopping"
- Around 600 hours battery life with two standard AAA batteries
- AUX input for connecting external audio sources, such as a radio. Lead with 3.5 mm mono jack plug included

Supreme Pro	
Supreme Pro headband model (NRR – 18dB)	10061285
Supreme Pro neckband model (NRR – 19dB)	10079966
Hygiene Kit	10061294

Supreme Pro-X Muff

Our top model just got better with high amplification, AUX input, and fully waterproof microphones and battery compartments. Slim design cups for both right-handed and left-handed shooters.

- Two separate, waterproof microphones with excellent sound quality and perfect directional hearing
- Removable headband made with exclusive functional material
- High amplification and a natural realistic sound
- 600 hours battery life with two each standard AAA batteries
- AUX-inlet (3, 5mm for hunting radio, dog tracking devices, CD players)
- Monocable included
- Tested to IP 67
- 5-year warranty on electronics

Supreme Pro-X headband model

Supreme Pro X	
Supreme Pro-X headband model (NRR – 18dB)	10082167
Supreme Pro-X neckband model (NRR – 19dB)	10082166

Supreme Pro-X neckband model

Sightgard® Line of Protective Eyewear

Compliance Made Easy with Sightgard Protective Eyewear

Variety is the key to compliance. The MSA Sightgard line offers many styles, lenses and features. **Additionally, MSA Sightgard safety glasses and goggles listed in this catalog are compliant with the general and impact protector requirements of ANSI/ISEA Z87.1-2010. Many are also compliant with CSA Z94.3, and/or are listed by CSA International as certified.**

Choosing the Proper Lens

The Lens Color Reference Chart shown here lists the benefits and uses for common lenses and tints.

LENS COLOR/TINTS	USE
Amber	Good for low-light conditions, especially at dawn/dusk and on foggy days. Increases contrast and enhances detail. Ideal lens for operations requiring optimum contrast of similar or small objects.
Clear	General purpose lens for indoor use, or outdoor use in low-light conditions. Provides maximum light transmission with impact protection.
Light or Dark Brown	Enhances perception in changing light and shadow. Good for low light conditions. Great-looking on most skin tones.
Gradient	Allows easy transition from inside to outside with same pair of glasses. Ideal for use while driving.
Gray	Most popular lens tint for outdoor use. Protects against visible glare without color degradation. Good choice for outdoor work, such as construction and landscaping.
Indoor/Outdoor Mirror	Offers the same benefits as light mirror, but also allows easy transition from inside to outside with same pair of glasses. Ideal lens for occupations such as forklift drivers, dock workers, and truck drivers.
Light Mirror	Reduces glare and bright sunlight by reflecting light away from the lens. Enhances contrast without color degradation. Good general purpose lens for outdoor use.
Polarized	Reduces intense sun glare reflected off shiny surfaces such as snow, water, sand and pavement. Improves contrast and depth perception. Great for outdoor use.
Rich Mirror	Superior glare reduction with heavy mirroring. Great lens for outdoor use in full sun conditions—favored by outdoor workers such as roofers, landscapers and builders.
Shade 5 IR	Protects against low to medium IR radiation up to Shade 5. Good choice for metal pouring, gas soldering, cutting and brazing operations.
Vermillion	Alleviates eye strain and fatigue by reducing glare caused by fluorescent and halogen lighting. Enhances contrast by absorbing all colors equally. Good choice for inspection operations or assembly work.

New Packaging Makes Selecting Eyewear *Easy!*

We've redesigned MSA Sightgard Protective Eyewear packaging to make product selection and display easier than ever:

- Each pair of MSA Sightgard safety glasses and goggles is sealed in its own package to protect against damage and to retain maximum anti-fog effectiveness
- Features listed to help select the proper eyewear for the job

- Updated graphics clearly identify package contents and feature the product as the "hero"
- Large, sturdy hang hole for peg displays
- UPC barcodes for point-of-sale transactions and inventory tracking

- Standards compliance listed on front and back of package
- Cleaning recommendations included to help maintain product
- All product information provided in English, French and Spanish

new packaging labels

Sightgard® Line of Protective Eyewear

Safety Glasses

NEW!

Adder Copper™

- Serpentine hinges
- Removable browguard
- Soft rubber nose bridge and temple tips
- Anti-scratch coating

Clear	10106377

Arctic™

- Lightweight
- Tuff Stuff™ Anti-Scratch Coating
- Full side coverage
- Blue mirror lens offers 99.999% UV protection

PN 10008179 only

Clear	697514
Gray	697515
Blue Mirror	10008179

Mini Arctic™

- Tuff Stuff™ Anti-scratch Coating
- Designed for slender faces
- Close-fitting design

Clear	10106378

Arctic Elite™

- Anti-fog coating
- Rubber tipped temples
- Rubber nose bridge

PN 10059671 only

Clear	10038845
Gray	10038846
Indoor/outdoor (I/O) Mirror	10059671

Aurora™

- 7-base curve lens
- Anti-fog coating
- Ratchet temple adjustment

Clear	10026005
Gray	10026006

Aurora

- 7-base curve blue mirrored lens
- Tuff Stuff™ anti-scratch coating
- 99.999% UV protection

Blue Mirror	10026008

Blockz™

NEW!

- Sliding temple adjustment
- Tuff Stuff™ Anti-scratch Coating
- Anti-fog coating

Clear	10106379

Blockz VM™

NEW!

- Lens color increases contrast
- Tuff Stuff™ Anti-scratch Coating
- Anti-fog coating

Vermillion	10106380

Clearvue®

- Fits over most prescription lenses
- Shade 5 IR lens
- Anti-fog coating

Shade 5 IR	10012847

Discovery™ II

NEW!

- Tuff Stuff™ Anti-scratch Coating
- Lightweight and flexible
- Soft rubber nose bridge
- Meet CSA Z94.3

Clear	10106382

Easyflex™

- Tuff Stuff™ Anti-scratch Coating
- Temples and frame flex for comfortable fit

Clear	10070917
Gray	10070918
Sky Orange Mirror	10070921

Easyflex

- Amber lens increases contrast
- Tuff Stuff™ Anti-scratch Coating
- Temples and frame flex for comfortable fit

Amber	10070919

Sightgard® Line of Protective Eyewear

Espresso™

- 99.999% UV protection
- Tight-wrapping design
- Soft rubber nosepads
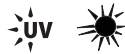
Brown Polarzied	10106383

Feather Fit™ Gray

- 99.999% UV protection
- Rubber flange nosepiece
- Rubber temple grips

Gray	10106384

Impression™ II

- Vertical and horizontal temple adjustments
- Anti-fog coating
- Extended side coverage

Clear	10008177

Luxor™

- Single wrap style lens
- Tuff Stuff™ Anti-scratch Coating
- Horizontal temple adjustment
- Meet CSA Z94.3

Clear	697516
Gray	697517

Nuevo Wrap™

- 99.999% UV protection
- Stylish comfort
- Anti-fog coating
- Meet CSA Z94.3

Gray	10106385

Plant Visitor

- Fits over most prescription lenses
- Integral, vented side shields
- Meet CSA Z94.3

Clear	10027944
Clear, Box of 10	697500
Clear, Box of 144	10008174

Pyrenees™

- Full side protection
- Anti-fog coating
- Dual-injected soft tip temples
- Amber lens increases contrast
- Meet CSA Z94.3

Clear	10033718
Gray	10033719
Amber	10033740

Pyrenees Mag™

- Bifocal lens
- Anti-fog coating
- Flexible nose bridge
- Meet CSA Z94.3

Clear, 1.5 magnification	10068832
Clear, 2.0 magnification	10065847

NEW!

Racer™ Red

- Rich red mirrored lens
- 99.999% UV protection
- Anti-fog coating

Sky Red Mirror	10106381

Rx Overglasses

- Fits over most prescription lenses
- Anti-fog coating
- Horizontal and vertical temple adjustment

Clear	10008175
Gray	10012855

Sierra™

- Vented browguard
- Anti-fog coating
- Meet CSA Z94.3

PN 697505 only

Clear (teal frame)	697505
Gray (black frame)	10010572
Clear (blue frame)	10018662

Sierra

- Tuff Stuff™ Anti-scratch Coating
- Integral side protection
- Adjustable temples
- Meet CSA Z94.3

Clear (black frame)	697550
Gray (black frame)	10010570

Sightgard® Line of Protective Eyewear

Vista™

- Tuff-Stuff™ Anti-scratch Coating
- Lightweight single lens
- Adjustable lens

PN 10070916 only

Clear	10070914
Indoor/outdoor (I/O) Mirror	10070916

Voyager™

- Single wrap style lens
- No metal parts
- Meet CSA Z94.3

PN 10065849 only   *PN 10065850 only*

Clear	10065849
Gray	10065850

NEW!

Yellow Jacket™

- Amber gradient wrap style lens
- 99.999% UV protection
- Great for indoor or outdoor
- Meet CSA Z94.3

Gradient Amber	10106386

Questions or Comments?
www.facebook.com/MSATheSafetyCompany

Safety Goggles

Flexi-Chem™ iV

- Acetate lens for chemical resistance
- Splash and impact resistant
- Indirect vent
- Anti-fog coating
- Meets CSA Z94.3

Clear	10106281

Vault™

- Modern styling
- Tuff Stuff™ Anti-scratch Coating
- Splash and impact resistant
- Indirect vent
- Anti-fog coating
- Meets CSA Z94.3

Clear	10106282

Clearvue® 200

- Anti-fog coating
- Splash and impact resistant
- Indirect vent
- Meets CSA Z94.3

Clear	10029693

Sightgard® NV

- Tuff Stuff™ Anti-scratch Coating
- Splash and impact resistant
- Non-vented
- Anti-fog coating
- Meets CSA Z94.3

Clear	10106268

Sightgard® P

- Tuff Stuff™ Anti-scratch Coating
- Impact resistant
- Perforated vent
- Meets CSA Z94.3

Clear	10106269

Sightgard® iV

- Tuff Stuff™ Anti-scratch Coating
- Splash and impact resistant
- Indirect vent
- Anti-fog coating
- Meets CSA Z94.3

Clear	10106270

Goggle Retainers

Sturdy neoprene-rubber accessory can be used with any protective cap or hat. Retains goggle on headwear when not in use and holds goggle securely when worn for eye protection. **MSA goggle retainers are manufactured for use ONLY with MSA goggles in order to comply with ANSI/ISEA Z87.1-2010.**

Goggle Retainers	
Goggle Retainer, for caps	459458
Goggle Retainer, for hats	449895

Sightgard Accessories

Deluxe Lanyard

Standard Lanyard

Lanyards

- Holds eyewear securely
- Standard model clips into holes in eyewear temple ends
- Deluxe model fits over temple ends

Deluxe eyewear lanyard (pk/12)	10020871
Standard eyewear lanyard (pk/12)	10020872

Deluxe Eyewear Pouch

- Black nylon spectacle case fits MSA protective eyewear
- Nylon webbing belt loops
- Hook-and-loop closure

Deluxe eyewear pouch	10034943

Eyewear Display Unit

- High-quality display revolves easily
- Holds 24 pairs of eyewear
- Includes mirror

Revolving eyewear display unit, less glasses	697518

Cleaning Accessories

4 oz. Fogpruf™ Cleaner Refill	13016
Pre-Moistened Towelettes (box of 100)	10022087

MSA Logo Eyewear Program
How it Works

Want to customize your Sightgard Protective Eyewear with a company logo or design for a truly distinctive look? Check out the following guidelines to get started, and then call MSA Customer Support at 1-800-MSA-2222 for prompt assistance with your customized order.

Your company logo here!

Minimum Order Quantity (MOQ)	1,440 eyewear pairs per logo/model/order.
Shipment	MSA will not hold stock of customized eyewear. The entire MOQ will be shipped upon receipt of payment by MSA. Expedited delivery is available with some models. The customer is responsible for air freight costs when requesting expedited delivery.
Lead Time	Lead time is 75 – 90 days from the date the order is placed with MSA.
Logo/Design Submission	The logo/design graphic file can be sent as an e-mail attachment. (Do not embed graphic in e-mail.) Acceptable file formats include **ONLY**: .tif, .gif and .jpg. **NOTE**: pdf formats are not acceptable.
Other Considerations	• MSA will place the order upon written customer approval of a picture of the eyewear with its logo/design, or the actual eyewear model with its logo/design, as preferred by customer. • Logos/designs cannot be applied to product packaging.

Questions or Comments?
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Safety Vests, Cones, and First Aid

Class II Safety Vest

- Meets ANSI Class II Vest requirements for traffic up to 50 MPH
- Unique integral back pocket storage for when vest is not in use
- Horizonal and vertical stripes fpr excellent visibility even when bending
- Popular high-viz lime green color stands out better around orange traffic barriers
- UPC-A barcode for retail sale

ANSI Class II Safety Vest, order in multiples of 4	10053455

High Visibility Safety Vest

- One size fits all to accommodate most wearers
- Hook and loop closures keep vest closed
- Elastic straps automatically adjust to waistline
- UPC-A barcode for retail sale

High-Visibility Safety Vest, order in multiples of 12	818040

Reflective Safety Vest

- Reflective stripes provide increased visibility
- Hook and loop closures keep vest closed
- Elastic straps automatically adjust to waistline
- UPC-A barcode for retail sale

Reflective Safety Vest, order in multiples of 12	817890

Safety Cones

- Available in 12", 18" or 28" sizes
- One-piece mold helps prevent cracking
- UPC-A barcode for retail sale

12-inch cones, order in multiples of 20	10073426
18-inch cones, order in multiples of 10	10073425
28-inch cones, order in multiples of 6	10073424

All-Purpose First Aid Kit

- Portable kit with 20 unique emergency response items
- Latex-free kit contents
- Includes instant cold compress
- UPC-A barcode for retail sale

All-Purpose First Aid Kit	10068529

160-Piece First Aid Kit

- Meets ANSI Z308.1-2009 Standard requirements for Type II First Aid Kit
- Dispenser tray helps keep contents organized
- Includes major wound bandage and instant cold pack
- UPC-A barcode for retail sale

160-Piece First Aid Kit	10049585

Approvals and Standards

What is OSHA?

OSHA (Occupational Safety and Health Administration) rules and regulations are enforceable by law. Non-compliance with OSHA rules and regulations can result in stiff penalties and abatement periods.

OSHA REGULATIONS UNDER TITLE 29 OF THE CODE OF FEDERAL REGULATIONS

OSHA's Occupational Safety and Health Standards for General Industry

Subpart D, Walking/Working Surfaces
- Fixed Ladders, Ladder Safety Devices _____1910.27 (d) (5)
- Safety Requirements for Scaffolding, Boatswain's Chairs_____1910.28 (j) (4)

Subpart F
- Powered Platforms and Building Maintenance_____1910.66
- Personal Fall Arrest Systems _____1910.66, Appendix C

Subpart R
- Agricultural Operations_____1910.267
- Telecommunications_____1910.268
- Electric Power Generation, Transmission and Distribution_____1910.269

OSHA's Safety and Health Standards for Construction

Subpart E, Personal Protective Equipment
- Safety Belts, Lifelines and Lanyards _____1926.104
- Safety Requirements for Scaffolding, Boatswain's Chairs_____1926.105

Subpart L, Scaffolding
- Boatswain's Chairs_____1926.450–454
- Aerial Lift Platforms_____1926.453 (b) (2) (v)

Subpart M, Fall Protection
- Scope, Application and Definitions _____1926.500
- Duty to Have Fall Protection _____1926.501
- Scope, Application and Definitions _____1926.502
- Duty to Have Fall Protection _____1926.503

Subpart R, Scaffolding
- Fall Protection_____1926.750

Subpart M, Ladders _____1926.1053

What is ANSI?

ANSI (American National Standards Institute) is a voluntary standardization system and does not possess the ability to enforce its standards. ANSI facilitates development of national standards by establishing consensus among manufacturers and consumers. Many of OSHA's regulations are adopted from ANSI standards.

ANSI Z359 STANDARD FOR PERSONAL FALL ARREST

The ANSI Z359 Accredited Standards Committee completed work on a new series of fall protection standards that became effective on November 24, 2007. The new standards replace the previous ANSI Z359.1-1992(R1999) and include:

- ANSI Z359.0-2007 _____Definitions
- ANSI Z359.1-2007 _____Fall Arrest Systems, Subsystems and Components
- ANSI Z359.2-2007 _____Minimum Requirements for a Comprehensive, Managed Fall Protection Program
- ANSI Z359.3-2007 _____Work Positioning and Travel Restriction Systems, Subsystems and Components
- ANSI Z359.4-2007 _____Assisted-Rescue and Self-Rescue Systems, Subsystems and Components
- ANSI Z359.6 _____Specifications and Design Requirements for Active Fall Protection Systems
- ANSI Z359.12 _____Connecting Components for Personal Fall Arrest Systems
- ANSI Z359.13 _____Personal Energy Absorbers and Energy Absorbing Lanyards

What is CSA?

The Canadian Standards Association (CSA) Technical Committee Z259 sets standards for fall protection equipment and practices. The CSA Certification and Test Division is responsible for testing and certifying products to the CSA Z259 product standards. Other certification organizations, including the Safety Equipment Institute, also certify fall protection equipment to the CSA Z259 standards. Products that are certified to the Z259 fall protection standards carry compliance markings of the certifying agency, for example: (SEI) or *CSEI*. All Canadian Provinces and Territories require that fall protection equipment must be certified by a recognized third-party organization in compliance with Canadian standards (or meet equivalent levels of protection approved by the legislative authority).

CANADIAN STANDARDS UNDER THE CSA Z259 FALL PROTECTION SERIES

- CAN/CSA Z259.10-06_____Full Body Harnesses
- CAN/CSA Z259.11-05_____Energy Absorbers and Lanyards
- CAN/CSA Z259.12-01_____Connecting Components for Personal Fall Arrest Systems
- CAN/CSA Z259.13-04_____Design of Active Fall Protection Systems
- CAN/CSA Z259.16-04_____Design of Active Fall Protection Systems
- CAN/CSA Z259.2.1-1998 _____Fall Arresters, Vertical Lifelines and Rails
- CAN/CSA Z259.2.2-1999 _____Self-Retracting Devices for Personal Fall Arrest Systems
- CAN/CSA Z259.2.3-1999 _____Descent Control Devices

Our commitment to you...

the MSA Fall Protection Promise

MSA promises to replace any MSA harness and/or textile lanyard FREE of charge if a user falls while properly using our product. If the fall occurs while using an MSA mechanical device, we will re-certify the device FREE of charge.

MSA believes it is important to provide high quality products and recognize safe work practices.

Products should be returned with a signed copy of the accident report to:

MSA
Attn: Fall Protection Product Line Manager
1100 Cranberry Woods Drive
Cranberry Twp, PA 16066-5204

Questions or Comments?
www.facebook.com/MSATheSafetyCompany

Attachment points

Fall arrest systems are an assembly of components and subsystems, including the necessary connectors, used to arrest the user in a fall from a working height and suspend the user until rescue can be effected.

Suspension Systems permit workers to sit and work safely while elevated. The system is designed to raise or lower, and support a worker at an elevated work station. This system alone cannot be relied upon to provide proper fall arrest protection.

Restraint Systems are an assembly of components and subsystems, including the necessary connectors, used to: (a) stabilize and partially support the user at an elevated work location and allow free use of both hands; (b) restrict the user's motion so as to prevent reaching a location where a fall hazard exists.

Personnel-Riding Systems provide a quick means of raising a user out of, or lowering a worker into, a working environment. The system supports full body weight for a short period of time, but should not be used for suspension. A retrieval system by itself may not provide all the protection a worker requires. Fall arrest and/or restraint systems may also be required.

Need it NOW? Call MSA!

Need it NOW! is our fall protection delivery program that's designed to get you the products you need, when you need them — *NOW!*

Two tiers of priority shipping are offered under the *Need it NOW!* delivery program:

• **Tier I** includes MSA's most popular products. Tier I delivery offers **same day or next-day shipping**, with **over 100 product choices!**

• **Tier II** delivery offers **shipping within 5 days**, with **over 400 product choices!**

Products included in this program are identified by the following symbols:

- • Symbols with a 1 denote Tier I product status   **1** **1**
- • Symbols with a 2 denote Tier II product status   **2** **2**
- • **Black** symbols denote that the maximum order quantity for priority shipping is 100 units   **1** **2**
- • **Red** symbols denote that the maximum order quantity for priority shipping is 50 units   **1** **2**

Visit our website at www.msanet.com
to view complete program terms and conditions.

Harness Sizing

EVOTECH™ Full-Body Harness

NEW!
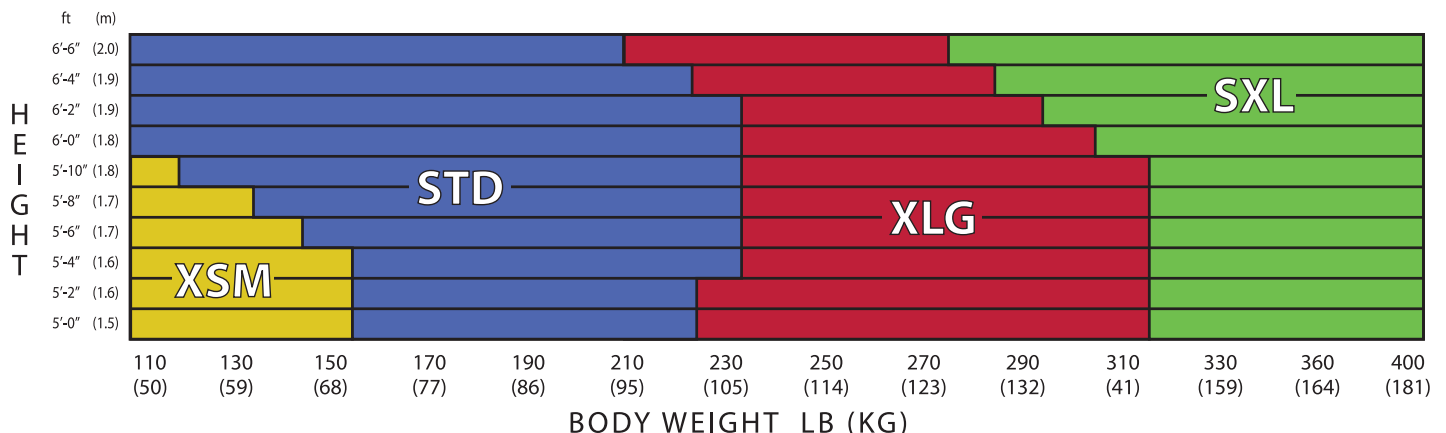
MSA's new EVOTECH Full-Body Harness offers the latest design features that improve user comfort, ease of use, durability, and user safety.

Comfort

Breathable padding with moisture-wicking material keeps users cooler

No binding edge on shoulder padding—prevents neck chafing

Patent-pending leg strap design keeps leg straps in place, increasing mobility and comfort

Leg strap padding provides additional comfort during work positioning and personnel riding activities

Patented variable width sub-pelvic webbing provides 50% more surface area for improved weight distribution, improving comfort during work positioning and personnel riding applications

Approvals

- OSHA
- ANSI Z359.1/ANSI A10.32
- CSA Z259.10-06

Ease of Use

Patent-pending web management system provides means of storing excess webbing

Available with Qwik-Fit™ Buckle hardware on chest and leg straps; includes slotted mating buckles for easier connection

Available with Tongue Buckle hardware on leg straps

Dual-color webbing—red pattern on outside, black on inside—simplifies harness donning and promotes easy identification of twisted webbing

Added Safety

- Reflective piping integrated into harness webbing increases visibility in low-light environments
- Available with Suspension Trauma Safety Step to improve post-fall comfort and help to prevent suspension trauma
- Available with Medical ID kit—provides vital medical information to potential rescuers/emergency personnel in the event of medical emergencies

Durability

- Web finials prevent fraying on web ends
- NanoSphere® coating on webbing repels dirt, grease, moisture, etc.
- Covered label pack protects labels from environment

RFID Enabled
RFID chip provides easy means of tracking and inspecting product

Positionable Lanyard clip

3-position back D-ring allows users to determine optimal lanyard connection position

Patent-pending single-hand torso adjustment buckles simplify harness adjustment

Questions or Comments?
www.facebook.com/MSATheSafetyCompany

Part Number	Back	Back, Chest	Back, Chest, Hips	Back, Hips	Standard	X-Large	Quick-Connect (leg)	Tongue Buckle	Qwik-Fit (leg)	Quick-Connect (chest)	Qwik-Fit (chest)	None (pad)	Shoulder	Shoulder & Leg	None (acc)	Safety Step	OSHA/ANSI/CSA
10105889	•				•				•		•	•			•		•
10105890	•					•			•		•	•			•		•
10105931 (1)	•				•			•		•			•		•		•
10105932 (2)	•					•		•		•			•		•		•
10105933 (1)				•	•			•		•			•		•		•
10105935 (2)				•		•		•		•			•		•		•
10105936		•			•			•		•			•		•		•
10105939		•				•		•		•			•		•		•
10105940 (1)	•				•		•			•			•		•		•
10105941 (2)	•					•	•			•			•		•		•
10105942 (1)				•	•		•			•			•		•		•
10105943 (2)				•		•	•			•			•		•		•
10105944		•			•		•			•			•		•		•
10105945		•				•	•			•			•		•		•
10105946				•	•		•			•			•		•		•
10105947				•		•	•			•			•		•		•
10105948		•			•		•			•				•	•		•
10105949		•				•	•			•				•	•		•
10105950				•	•		•			•				•	•		•
10105951				•		•	•			•				•	•		•
10105952		•			•			•		•				•	•		•
10105953		•				•		•		•				•	•		•
10105954				•	•			•		•				•	•		•
10105955				•		•		•		•				•	•		•
10105956	•				•			•			•		•		•		•
10105957	•					•		•			•		•		•		•
10105958				•	•			•			•		•		•		•
10105959				•		•		•			•		•		•		•
10105960				•	•		•			•				•	•	•	•
10105961				•		•	•			•				•	•	•	•

EVOTECH Full-Body Harness Assemble-To-Order Matrix

Approval	Style of Harness	D-Ring Configuration	Color	Size	Leg Strap Type	D-Ring Type	Chest Strap Type	Back Connection Type	Padding	Accessories
A ANSI OSHA C CSA	1 Vest Style	1 Back 2 Back, Chest 3 Back, Chest, Hips 4 Back, Chest, Hips, Shoulders 5 Back, Hips 6 Back, Chest, Shoulders 7 Back, Shoulders 8 Back, Hips, Shoulders	1 Red	1 SM 2 STD 3 XL 4 SXL	1 Quick Connect 2 Tongue Buckle 3 Qwik-Fit	1 Steel	1 Quick Connect 2 Qwik-Fit	0 D-ring only 1 Sure-Stop Shock Absorber 2 Dorsal Extension	0 None 1 Shoulder Pad 2 Leg Pads 3 Shoulder & Leg Pads	0 None 1 Safety Step 2 Medical ID Kit 3 Safety Step, Medical ID Kit

Part Number: AEVO 1 1 1 0   Quantity

• Products ordered using the ATO system are non-returnable.

TechnaCurv® Full Body Harness

TechnaCurv Harness
Part No. 10053000

The **TechnaCurv Full Body Harness** was designed with your comfort in mind. Features include:

- Curvilinear Comfort System
- Visco-elastic shoulder padding
- Innovative web design

- 400 pound capacity
- Secure-Fit buckles
- Sorbtek fabric on shoulder and sub-pelvic pads
- Integral load indicator

- Meets ANSI Z359.1-2007, ANSI A10.32, all applicable OSHA regulations, and is CSA certified to Z259.10-06

In addition to the features above, the TechnaCurv harness is designed with downward adjusting torso straps on most models to ease adjustment. This is also the first harness on the market that allows you to order exactly the options you want, and only the options you want, through our Assemble-to-Order process. All these features combine to provide you with one of the most comfortable, versatile, unique, and safe harnesses available today.

Part No.	SIZE				STYLE		PADDING		CHEST BUCKLE		LEG BUCKLES			D-RINGS				STANDARDS
	XSM	STD	XLG	SXL	Vestype	Pullover	Shoulder	Sub-Pelvic	Qwik-Fit	Secure-Fit	Secure-Fit	Tongue	Qwik-Fit	Back	Chest	Hip	Shoulder	OSHA/ANSI/CSA
10041517 [2]		X			X				X				X	1	0	0	0	X
10041518		X				X							X	1	0	0	0	X
10041519			X		X				X				X	1	0	0	0	X
10041590			X			X							X	1	0	0	0	X
10041591 [1]		X			X				X			X		1	0	0	0	X
10041592 [1]			X		X				X			X		1	0	0	0	X
10041593		X				X						X		1	0	0	0	X
10041594			X			X						X		1	0	0	0	X
10041595 [1]		X			X				X			X		1	0	2	0	X
10041596			X		X				X			X		1	0	2	0	X
10041597		X				X						X		1	0	2	0	X
10041598			X			X						X		1	0	2	0	X
10041599 [1]		X			X		X		X			X		1	0	0	0	X
10041600			X		X		X		X			X		1	0	0	0	X
10041601		X				X	X					X		1	0	0	0	X
10041602			X			X	X					X		1	0	0	0	X
10041603 [2]		X			X				X			X		1	0	2	0	X
10041604			X		X				X			X		1	0	2	0	X
10041605		X				X						X		1	0	2	0	X
10041606			X			X						X		1	0	2	0	X
10041607 [1]		X			X				X			X		1	1	2	0	X
10041608			X		X				X			X		1	1	2	0	X
10041609 [1]		X				X						X		1	1	2	0	X
10041610			X			X						X		1	1	2	0	X
10041611 [2]		X			X		X		X			X		1	1	2	0	X
10041612			X		X		X		X			X		1	1	2	0	X
10041613		X				X	X					X		1	1	2	0	X
10041614			X			X	X					X		1	1	2	0	X
10041615 [2]		X			X		X	X	X		X			1	1	2	0	X
10041616			X		X		X	X	X		X			1	1	2	0	X
10041617		X				X	X	X			X			1	1	2	0	X
10041618			X			X	X	X			X			1	1	2	0	X
10043354		X			X				X				X	1	0	0	2	X
10043355			X		X				X				X	1	0	0	2	X
10043691		X			X						X	X		1	0	0	2	X
10043692			X		X						X	X		1	0	0	2	X
10072081	X				X				X				X	1	0	0	0	X
10072082		X			X				X				X	1	0	0	0	X
10072083	X				X				X				X	1	0	0	0	X
10073051	X				X				X				X	1	0	0	2	X
10073052				X	X				X				X	1	0	0	2	X

Questions or Comments?
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TechnaCurv Construction Harness with Belt
Part No. 10054403

TechnaCurv Construction Harnesses offer all of the exciting features of the TechnaCurv Harness with the added flexibility of incorporating a tool belt. There are two construction harnesses to choose from:
- With integral belt that includes a dual-durometer back pad for superior comfort
- With Belt Loops for total flexibility of adding any belt of your choice
- Optional bright green (Hi-Viz) webbing for greater visibility

Note: Webbing does not meet the requirements for high-visibility clothing as defined in OSHA and ANSI.

Part No.	SIZE				WEBBING		CHEST BUCKLE		LEG BUCKLES			BELT LOOPS		D-RINGS		STANDARDS
	XSM	STD	XLG	SXL	Green/Black	Red/Black	Secure-Fit	Qwik-Fit	Secure-Fit	Tongue	Qwik-Fit	w/o Belt	w/integral Belt	Back	Hip	OSHA/ANSI/CSA
10053001		X				X		X			X	X		1	0	X
10053002		X				X	X				X	X		1	0	X
10053003		X				X		X		X		X		1	0	X
10053004		X				X	X			X		X		1	0	X
10053005		X				X	X		X			X		1	0	X
10053006		X				X		X			X	X		1	2	X
10053007		X				X	X				X	X		1	2	X
10053008		X				X		X		X		X		1	2	X
10053009		X				X	X			X		X		1	2	X
10053010		X				X	X		X			X		1	2	X
① 10054402		X				X		X		X			X	1	2	X
② 10054403		X				X	X			X			X	1	2	X
10054719		X				X	X		X	X			X	1	2	X
10063653	X				X			X		X			X	1	2	X
10063654		X			X			X		X			X	1	2	X
10063656			X		X			X		X			X	1	2	X
10063657				X	X			X		X			X	1	2	X
10062471				X		X		X		X			X	1	2	X
② 10054720		X				X		X		X			X	1	2	X
10057538		X				X		X		X			X	1	2	X
10062921				X		X	X		X				X	1	2	X
10054762		X				X	X		X				X	1	2	X
10054761			X			X	X			X			X	1	2	X

TechnaCurv Hi-Viz Construction Harness
Part No. 10063654

In addition to the features of the standard TechnaCurv Harness, the **TechnaCurv Tower Harness** model incorporates an integral body belt and removable saddle. The body belt and saddle are constructed using a dual-durometer pad and Sorbtek fabric for ultimate comfort during prolonged work positioning/suspension activities. The body belt and saddle both include two side D-rings and the saddle height is adjustable. Models also include back and front D-rings. Additional options are available as outlined in the chart below.

Part No.	SIZE		STYLE		PADDING		LEG BUCKLES			STANDARDS
	STD	XLG	Pullover	Vestype	Shoulder	Sub-Pelvic	Secure-Fit	Tongue	Qwik-Fit	OSHA/ANSI/CSA
10048342	X		X		X	X	X			X
② 10048344	X			X	X	X	X			X
10048346	X		X		X			X		X
10048348	X			X	X			X		X
10048350	X		X						X	X
10048432	X			X					X	X
10048343		X	X		X	X	X			X
10048345		X		X	X	X	X			X
10048347		X	X		X			X		X
10048349		X		X	X			X		X
10048431		X	X						X	X
10048433		X		X					X	X

TechnaCurv Tower Harness
Part No. 10048342

TechnaCurv Full Body Harness

The **TechnaCurv Picker's Harness** is available with all the exciting features of the TechnaCurv Harness, plus:

- 18" Integral Dorsal D-Extension with velcro closure provides easy access to the Back D-ring
- Dorsal D-Extension available as option 3 under the Dorsal D-option of the Assemble-to-Order Matrix

Part No.	Description	Standards
ANGHN151221331002	TechnaCurv Picker's Harness	OSHA/ANSI

TechnaCurv Picker's Harness
Part No. ANGHN151221331002

TechnaCurv Full Body Harness Assemble-To-Order Matrix

Approval	Style of Harness	D-Ring Configuration	Version	Size	Leg Buckles	D-Ring Type	Chest Strap (Vest Style only)	Dorsal D Options	Padding	Tool Belt	Accessories	Lanyard Clip
N Non-CSA C CSA	1 Vest Style 3 Tower (Vest Style) 5 Tower (Vest Style less Saddle)	1 Back 2 Back, Chest 3 Back, Chest, Hips 4 Back, Chest, Hips, Shoulders 5 Back, Hips 6 Back, Chest, Shoulders 7 Back, Shoulders 8 Back, Hips, Shoulders	1 Red/Black Webbing 2 Green/Black Webbing 3 Orange/Black Webbing	1 XSM 2 STD 3 XLG 4 SXL	1 Secure-Fit 2 Tongue Buckle 3 Qwik-Fit	1 Steel	0 None 1 Secure-Fit 2 Tongue Buckle 3 Qwik-Fit	0 None 1 Integral Dyna-Brake Shock Absorber 2 Integral Sure-stop Shock Absorber 3 18" Integral Dorsal D Extension (Non-Shock Absorbing)	0 None 1 Shoulder 2 Subpelvic 3 Shoulder & Sub-pelvic	0 None 1 Support Straps Only 2 Occidental Leather with Support Straps 3 Occidental Leather/Nylon with Support Straps 4 Modular Belt with Support Straps 5 Tradesman Belt 6 Belt Loops 7 Occidental Leather with Belt Loops 8 Occidental Leather/Nylon with Belt Loops 9 Modular Belt with Belt Loops 10 Tradesman Belt with Belt Loops	0 None 1 Medical ID Kit 2 Medical ID Kit & Safety Step 3 Safety Step	0 None 1 With 1 Attachment 2 With 2 Attachments
	2 Pullover Style 4 Tower (Pullover Style) 6 Tower (Pullover Style less Saddle)	1 Back 2 Back, Chest 3 Back, Chest, Hips 4 Back, Chest, Hips, Shoulders 5 Back, Hips 6 Back, Chest, Shoulders 7 Back, Shoulders 8 Back, Hips, Shoulders										

A-NGH				1		1							Quantity
Part Number													

- Harnesses ordered using the ATO System are non-returnable.
- If a Vest Style Harness with a Chest D-ring is selected, the Secure-Fit Buckle is not available as an option for the Chest Strap.
- All Tower Style Harnesses include a Chest D-ring.
- If the CSA approval option is selected, the Dyna-Brake option is not available as an integral shock absorber.
- Tower Harness Styles include back pad, tool belt and saddle. (Tool Belt options listed in ATO are not available on Tower Harness.)
- Only D-ring Configuration Options 3 and 4 are available on the Tower Harness Style.
- TechnaCurv Construction Harness is not available on ATO.

Questions or Comments?
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Workman® Full Body Harness

The **Workman Harness** provides comfortable protection, due to its lightweight components and durable webbing. The vest-style harness, with optional hip D-Rings for work positioning, fits a wide range of body types and sizes. Color-contrasting thigh and torso straps simplify donning.

- Optimum quality at an economical price
- Comfortable
- Yellow polyester webbing for increased visibility
- Web retainer collars to keep excess webbing neat
- 400 pound capacity
- Integral load indicator

- Choice of Qwik-Fit™ or Tongue-Buckle leg straps for easy adjustment
- Instructions in English, Spanish, and French
- Meets OSHA regulations, ANSI A10.32 & ANSI Z359.1-2007, and is certified to CSA Z259.10-06

The Workman Construction Harness also offers shoulder pads and an integral backpad for added comfort during work positioning and a removable, tongue-buckle tool belt. Meets applicable OSHA regulations, ANSI A10.32, ANSI Z359.1-2007, and is certified to CSA Z259.10-06.

Workman Harness Part No. 10072479

Workman Harness Part No. 10072491

Workman Construction Harness Part No. 10077571

| Part No. | SIZE | | | | CHEST STRAP | LEG BUCKLES | | ATTACHMENT POINTS | | INTEGRAL BACK PAD & TOOL BELT | SHOULDER PADS | STANDARDS | |
	XSM	STD	XLG	SXL	Qwik-Fit	Tongue	Qwik-Fit	Back	Hip			OSHA/ANSI/CSA	
10072478	X				X		X	X				X	Workman Harness
10072479		X			X		X	X				X	
10072480			X		X		X	X				X	
10072481				X	X		X	X				X	
10072482	X				X		X	X	X			X	
10072483		X			X		X	X	X			X	
10072484			X		X		X	X	X			X	
10072485				X	X		X	X	X			X	
10072486	X				X	X		X				X	
10072487		X			X	X		X				X	
10072488			X		X	X		X				X	
10072489				X	X	X		X				X	
10072490	X				X	X		X	X			X	
10072491		X			X	X		X	X			X	
10072492			X		X	X		X	X			X	
10072493				X	X	X		X	X			X	
10072494	X				X	X		X	X	X		X	Workman Construction Harness
10072495		X			X	X		X	X	X		X	
10072496			X		X	X		X	X	X		X	
10072497				X	X	X		X	X	X		X	
10077490	X				X	X		X	X	X	X	X	
10077571		X			X	X		X	X	X	X	X	
10077572			X		X	X		X	X	X	X	X	
10077573				X	X	X		X	X	X	X	X	

FP Pro® Harnesses

The harness is available in cross-chest and vest styles, with optional hip D-rings for work positioning, and fits a wide range of body types and sizes. Color-contrasting thigh and torso straps simplify donning.

Features
- Bright red polyester webbing for high visibility
- Meets all applicable OSHA standards, ANSI A10.32, and ANSI Z359.1-2007
- Lightweight design for increased comfort

| Part No. | SIZE | | STYLE | | LEG BUCKLES | | INTEGRAL BELT & BACK PAD | D-RINGS | | STANDARDS |
	STD	XLG	Cross-Chest	Vest-Style	Tongue	Qwik-Fit		Back	Hip	OSHA/ANSI
415842	X		X			X		1	0	X
415844		X	X			X		1	0	X
415944	X		X			X		1	2	X
415946		X	X			X		1	2	X
415947	X			X		X		1	0	X
415949		X		X		X		1	0	X
415950	X			X		X		1	2	X
415952		X		X		X		1	2	X
10033830	X		X		X			1	0	X
10033831		X	X		X			1	0	X
10033833	X		X		X			1	2	X
10033834		X	X		X			1	2	X
10033836	X			X	X			1	0	X
10033837		X		X	X			1	0	X
10033839	X			X	X			1	2	X
10033840		X		X	X			1	2	X
10043033	X			X	X		X	1	2	X
10057087		X		X	X		X	1	2	X

Other sizes and configurations are available.

FP Pro Harness Cross-Chest Style Part No. 415842

FP Pro Vest-Style Construction Harness with Integral Back Pad & Belt Part No. 10043033

Gravity™ Harnesses

Gravity Harnesses are available in vest and cross-over styles. Gravity Harnesses are suitable for controlled descent, positioning, ladder climbing, rescue, and fall arrest. A variety of options are available to meet your specific needs. All Gravity Harnesses now include a load-indicator to alert you when the harness has been involved in a fall event. All gravity harnesses meet applicable OSHA regulations, ANSI A10.32, ANSI Z359.1-2007, and are CSA certified to Z259.10-06.

400 pound capacity

For Gravity Harnesses with a belt, belt sizing is as follows:

XSM	SML	MED	LGE	XLG
28"– 36"	32"– 40"	36"– 44"	40"– 48"	44"– 52"

Harness Classes as defined in CSA Z259.10-06

Class A: Fall Arrest   Class D: Suspension & Controlled Descent

Class L: Ladder Climbing   Class P: Work Positioning

Class E: Evacuation

Questions or Comments?
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Gravity™ Harnesses

SSH304 Series – Class A

The SSH304 series of Gravity Harnesses are a vest-style design and include a back D-ring and an integral load detector. Additional options are available as outlined in the chart on the next page.

Gravity Harness
Part No. SSH30420000

Class A	SIZE			WEBBING									LEG CONNECTION		Integral Shock-Absorber	STANDARDS
	XSM	STD	XLG	Nylon	Polyester	Kevlar	Orange Reflective	Yellow Reflective	Red/Blue	Blue/Gray	Black	Red/Black	Tongue Buckle	Mating Buckle		OSHA/ANSI/CSA
SSH30420000		X		X					X					X		X
SSH30420001		X		X							X			X		X
SSH30420005		X		X						X				X		X
SSH30420020	X			X					X					X		X
SSH30420028	X			X			X							X		X
SSH30420050			X	X					X					X		X
SSH30420055			X	X						X				X		X
① SSH30420060		X		X					X					X		X
SSH30420061		X		X							X			X		X
SSH30420064		X		X								X		X		X
SSH30420066		X		X				X						X		X
SSH30420070			X	X					X					X		X
SSH30420300		X		X					X					X	X	X
SSH30420305		X		X						X				X	X	X
SSH30420350			X	X					X					X	X	X
SSH30420351			X	X							X			X	X	X
SSH30420355			X	X						X				X	X	X
SSH30420360		X		X					X					X	X	X
SSH30420361		X		X							X			X	X	X
SSH30420366		X		X				X						X	X	X
SSH30425000		X		X					X				X			X
SSH30425050			X	X					X				X			X
SSH30425060	X			X					X				X			X
SSH30425300	X			X					X				X		X	X
SSH30425350			X	X					X				X		X	X
SSH30430004	X				X							X		X		X
SSH30430054		X			X							X		X		X
① SSH30430064	X				X							X		X		X
SSH30430074		X			X							X		X		X
SSH30430304	X				X							X		X	X	X
SSH30430364	X				X							X		X	X	X
SSH30435064	X				X							X	X			X
SSH30435074		X			X							X	X			X
SSH30435364	X				X							X	X		X	X
② SSH30440061	X					X					X			X		X
SSH30440361	X					X					X			X	X	X
SSH30440371			X			X					X			X	X	X
SSH30440021	X					X					X			X		X
SSH30440071			X			X					X			X		X

Gravity Harnesses

Gravity Harness
Part No. SSH30620000

SSH306 Series – Class A, E

The SSH306 series of Gravity Harnesses are a vest-style design and include back and shoulder D-rings as well as mating leg buckles. Harnesses also include an integral load indicator. Additional options are available as outlined in the chart below.

Class A, E	SIZE		WEBBING				Integral Shock-Absorber	STANDARDS
	STD	XLG	Nylon	Polyester	Red/Blue	Red/Black		OSHA/ANSI/CSA
SSH30620000	X		X		X			X
SSH30620050		X	X		X			X
SSH30620060	X		X		X			X
SSH30620300	X		X		X		X	X
SSH30625000	X		X		X			X
SSH30625300	X		X		X		X	X
SSH30630064	X			X		X		X

Gravity Harness
Part No. SSH31420C

SSH314 Series – Class A, L, P

The SSH314 series of Gravity Harnesses are a vest-style design and include back, front, and hip D-rings. This model is offered in a universal size. Harnesses also include an integral load indicator. Additional options are available as outlined in the chart below.

Class A, L, P	WEBBING		LEG CONNECTION		BELT				STANDARDS
	Nylon	Polyester	Tongue Buckle	Mating Buckle	SM	MED	LG	XLG	OSHA/ANSI/CSA
SSH31420B	X			X	X				X
SSH31420C	X			X		X			X
SSH31420D	X			X			X		X
SSH31420D22	X			X			X		X
SSH31420E	X			X				X	X
SSH31425C	X		X			X			X
SSH31425D22	X		X				X		X
SSH31430D22		X		X			X		X
SSH31435D22		X	X				X		X

Gravity Harness
Part No. SSH31535C364

SSH315 Series, Derrick Harness – Class A, D, P

The SSH315 series of Gravity Harnesses are a vest-style design and include back and hip D-rings. This model is offered in a universal size, with tongue buckle leg straps and an integral shock absorber. Harnesses also include an integral load indicator. Additional options are available as outlined in the chart below.

Class A, D, P	WEBBING		BELT					STANDARDS
	Black	Red/Black	SM	MED	LG	XLG	SXL	OSHA/ANSI/CSA
SSH31535B364		X	X					X
SSH31535C364		X		X				X
SSH31535D361	X				X			X
SSH31535D364		X			X			X
SSH31535E364		X				X		X
SSH31535F364		X					X	X

Questions or Comments?
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SSH609 Series, Rigger/Rescue Harness – Class A, L, D, P

The SSH609 series of Gravity Harnesses are a cross-over style design and include back, front, and hip D-rings. This model is offered in black, polyester webbing and mating leg buckles. Harnesses also include an integral load indicator. Additional options are available as outlined in the chart below.

Gravity Harness
Part No. SSH60930001

Class A, L, D, P	SIZE		Integral SA	STANDARDS
	STD	XLG		OSHA/ANSI/CSA
SSH60930001	X			X
SSH60930051		X		X
SSH60930301	X		X	X

Gravity Harness
Part No. SSH70920000

SSH709 Series – Class A

The SSH709 series of Gravity Harnesses are a cross-over style design and include a back D-ring and integral load indicator. Additional options are available as outlined in the chart below.

Class A	SIZE				WEBBING								LEG CONNECTION		Integral Shock-Absorber	STANDARDS	
	XSM	STD	XLG	SXL	Nylon	Polyester	Kevlar	Orange Reflective	Yellow Reflective	Red/Blue	Black	Red/Black	Tongue Buckle	Mating Buckle		OSHA/ANSI	CSA
SSH70920000		X			X					X				X		X	X
SSH70920001		X			X						X			X		X	X
SSH70920006		X			X				X					X		X	X
SSH70920008		X			X			X						X		X	X
SSH70920050			X		X					X				X		X	X
SSH70920056			X		X				X					X		X	X
SSH70920300		X			X					X				X	X	X	X
SSH70920301		X			X						X			X	X	X	X
SSH70920306		X			X				X					X	X	X	X
SSH70920308		X			X			X						X	X	X	X
SSH70920350			X		X					X				X	X	X	X
SSH70920356			X		X				X					X	X	X	X
SSH70920358			X		X			X						X	X	X	X
SSH70925000		X			X					X			X			X	X
SSH70935004		X				X						X	X			X	X
SSH70940001		X					X				X			X		X	X
SSH70940301		X					X				X			X		X	X
10067455	X				X					X			X			X	
10067456				X	X					X			X			X	
10067512			X		X					X			X			X	

Gravity Harnesses

SSH807 Series – Class A, P

The SSH807 series of Gravity Harnesses are a vest-style design and include back and hip D-rings. This model is offered in a universal size with mating leg buckles and an integral load indicator. Additional options are available as outlined in the chart below.

Class A, P	SIZE			STANDARDS
	SM	MED	LG	OSHA/ANSI/CSA
SSH80720B	X			X
SSH80720C		X		X
SSH80720D			X	X

Gravity Harness
Part No. SSH80720C

Gravity Harness
Part No. SSH80920000

SSH809 Series – Class A, L, D, P

The SSH809 series of Gravity Harnesses are a cross-over style design and include back, front, and hip D-rings. Harnesses also include an integral load indicator. Additional options are available as outlined in the chart below.

Class A, L, D, P	SIZE			WEBBING									LEG CONNECTION		Integral Shock-Absorber	STANDARDS
	XSM	STD	XLG	Nylon	Polyester	Kevlar	Orange Reflective	Yellow Reflective	Red/Blue	Blue/Gray	Black	Red/Black	Tongue Buckle	Mating Buckle		OSHA/ANSI/CSA
SSH80920020	X			X					X					X		X
SSH80920021	X			X							X			X		X
SSH80925001		X		X							X		X			X
SSH80920000		X		X					X					X		X
SSH80920001		X		X							X			X		X
SSH80920006		X		X				X						X		X
SSH80920300		X		X					X					X	X	X
SSH80920301		X		X							X			X	X	X
SSH80920305		X		X						X				X	X	X
SSH80920306		X		X				X						X	X	X
SSH80925301		X		X							X		X		X	X
SSH80930004		X				X						X		X		X
SSH80935004		X				X						X	X	X		X
SSH80940301		X					X				X			X	X	X
SSH80920308		X		X			X							X	X	X
SSH80940001		X					X				X			X		X
SSH80920050			X	X					X					X		X
SSH80920051			X	X							X			X		X
SSH80920350			X	X					X					X	X	X
SSH80920351			X	X							X			X	X	X
SSH80925351			X	X							X		X		X	X
SSH80940351			X				X				X			X	X	X
SSH80925050			X	X					X				X			X
SSH80920056			X	X				X						X		X
SSH80920356			X	X				X						X	X	X
SSH80925321	X			X							X		X		X	X
SSH80920008		X		X			X							X		X
SSH80940051		X					X				X			X		X
SSH80925000		X		X					X				X			X

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SSH909 Series – Class A, L, D

The SSH909 series of Gravity Harnesses are a cross-over style design and include back and front D-rings and an integral load indicator. Additional options are available as outlined in the chart below.

Gravity Harness
Part No. SSH90920000

Class A, L, D	SIZE		WEBBING									LEG CONNECTION		Integral Shock-Absorber	STANDARDS
	STD	XLG	Nylon	Polyester	Kevlar	Orange Reflective	Yellow Reflective	Red/Blue	Blue/Gray	Black	Red/Black	Tongue Buckle	Mating Buckle		OSHA/ANSI/CSA
SSH90920306	X		X				X						X	X	X
SSH90920308	X		X			X							X	X	X
SSH90920000	X		X						X				X		X
SSH90920001	X		X							X			X		X
SSH90920300	X		X					X					X	X	X
SSH90920301	X		X							X			X	X	X
SSH90925000	X		X					X				X			X
SSH90925001	X		X							X		X			X
SSH90925300	X		X					X				X		X	X
SSH90930004	X			X							X		X		X
SSH90935004	X			X							X	X			X
SSH90940001	X				X					X			X		X
SSH90920006	X		X				X						X		X
SSH90920355		X	X						X				X	X	X
SSH90920050		X	X					X					X		X
SSH90920350		X	X					X					X	X	X
SSH90920356		X	X				X						X	X	X
SSH90920305	X		X						X				X	X	X

SSH915 Series, Derrick Harness – Class A, L, D

The SSH915 series of Gravity Harnesses are a cross-over style design and include a back, front, and side D-rings. This model is offered in a universal size with a 3″ wide web saddle and tongue buckle leg straps. Harnesses also include an integral load indicator. Additional options are available as outlined in the chart below.

Gravity Harness
Part No. SSH91535C304

Class A, L, D	Integral Shock-Absorber	BELT					STANDARDS
		SM	MED	LG	XLG	SXL	OSHA/ANSI/CSA
SSH91535B304	X	X					X
SSH91535C304	X		X				X
SSH91535D304	X			X			X
SSH91535E304	X				X		X
SSH91535F304	X					X	X
SSH91535B004		X					X
SSH91535C004			X				X
SSH91535D004				X			X
SSH91535E004					X		X
SSH91535F004						X	X

Gravity Harnesses

SSH916 Series, Derrick Harness – Class A, L, D, P

The SSH916 series of Gravity Harnesses are a cross-over style design and include a back, front, and side D-rings. This model is offered in a universal size with a 3" wide web saddle, tongue buckle leg straps, and an additional D-ring attached to the back of the integral, padded belt. Harnesses also include an integral load indicator. Belt size options are available as outlined in the chart below.

Class A, L, D, P	BELT					STANDARDS
	SM	MED	LG	XLG	SXL	OSHA/ANSI/CSA
SSH91635B30438	X					X
SSH91635C30438		X				X
SSH91635D30438			X			X
SSH91635E30438				X		X
SSH91635F30438					X	X

Gravity Harness
Part No. SSH91635C3048

SSH917 Series, Tower Harness – Class A, L, D, P

The SSH917 series of Gravity Harnesses are a cross-over style design and include back, front, and hip D-rings. This model is offered in a universal size with a web saddle and tongue buckle leg straps. Harnesses also include an integral load indicator. Additional options are available as outlined in the chart below.

Class A, L, D, P	LEG CONNECTION				BELT					STANDARDS
	Tongue Buckle	Mating Buckle	Integral SA	Cranked D-Ring	XSM	SM	MED	LG	XLG	OSHA/ANSI/CSA
SSH91725A001	X				X					X
SSH91725D001	X							X		X
SSH91725C001	X						X			X
SSH91725B001	X					X				X
SSH91725E001	X								X	X
SSH91725B301	X		X			X				X
SSH91720C301		X	X				X			X
SSH91725C301	X		X				X			X
SSH91725D301	X		X					X		X
SSH91725E301	X		X						X	X
SSH91720CD21608*		X	X	X				X		X
SSH91720CD23308*		X	X	X			X			X
SSH91720CD25308*		X	X	X			X			X
SSH91720CD25608*		X	X	X				X		X

* Orange webbing

Gravity Harness
Part No. SSH91725C001

Questions or Comments?
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ArcSafe® Harnesses

Vest-Style ArcSafe Harness Part No. 10070439

Cross-Chest ArcSafe Harness Part No. 10070463

The ArcSafe harness is SEI-certified to the requirements of the ASTM F887-05 standard for arc flash protection up to 40 cal/cm² and is designed to meet the needs of utility and maintenance workers.

Additional features

- Nylon web loop attachment points
- Meets all applicable OSHA regulations and ANSI Z359.1-2007 & A10.32 standards
- Certified to CSA Z259.10-06
- Integral load indicator
- 400 pound capacity
- Y-shaped back web loop locator pad provides comfort by moving the webbing away from the wearer's neck

- Color-coded leg and torso straps to simplify donning
- Downward-adjusting torso straps to ease adjustment

Front attachment loops can be tucked away when not in use

ArcSafe Vest-Style Harnesses (for Cross-Chest Style see next page)

All vest-style ArcSafe Harnesses include protective covers over chest strap and torso adjustment hardware.

	SIZE				LEG BUCKLES		ATTACHMENT POINTS			Integral Shock Absorber	Belt Loops	STANDARDS
	XSM	STD	XLG	SXL	Qwik-Fit	Tongue	Hip	Back	Front			OSHA/ANSI/CSA
10070422	X					X	X	X	X			X
10070423		X				X	X	X	X			X
10070424			X			X	X	X	X			X
10070425				X		X	X	X	X			X
10070426	X					X		X				X
10070427		X				X		X				X
10070428			X			X		X				X
10070429				X		X		X				X
10070430	X				X			X				X
10070431		X			X			X				X
10070432			X		X			X				X
10070433				X	X			X				X
10070434	X				X			X		X		X
10070435		X			X			X		X		X
10070436			X		X			X		X		X
10070437				X	X			X		X		X
10070438	X				X		X	X	X			X
10070439		X			X		X	X	X			X
10070440			X		X		X	X	X			X
10070441				X	X		X	X	X			X
10070442	X				X		X	X				X
10070443		X			X		X	X				X
10070444			X		X		X	X				X
10070445				X	X		X	X				X
10070446	X					X		X		X	X	X
10070447		X				X		X		X	X	X
10070448			X			X		X		X	X	X
10070449				X		X		X		X	X	X
10070450	X					X	X	X			X	X
10070451		X				X	X	X			X	X
10070452			X			X	X	X			X	X
10070453				X		X	X	X			X	X

ArcSafe Cross-Chest Harnesses   (for Vest-Style see previous page)

	SIZE				LEG BUCKLES		ATTACHMENT POINTS			Integral Shock Absorber	Belt Loops	Hardware Covers	STANDARDS
	XSM	STD	XLG	SXL	Qwik-Fit	Tongue	Hip	Back	Front				OSHA/ANSI/CSA
10070458	X					X	X	X			X		X
10070459		X				X	X	X			X		X
10070460			X			X	X	X			X		X
10070461				X		X	X	X			X		X
10070462	X					X	X	X	X				X
10070463		X				X	X	X	X				X
10070464			X			X	X	X	X				X
10070465				X		X	X	X	X				X
10070466	X					X	X	X		X			X
10070467		X				X	X	X		X			X
10070468			X			X	X	X		X			X
10070469				X		X	X	X		X			X
10070470	X				X		X	X	X				X
10070471		X			X		X	X	X				X
10070472			X		X		X	X	X				X
10070473				X	X		X	X	X				X
10070474	X					X		X					X
10070475		X				X		X					X
10070476			X			X		X					X
10070477				X		X		X					X
10070478	X					X		X		X	X		X
10070479		X				X		X		X	X		X
10070480			X			X		X		X	X		X
10070481				X		X		X		X	X		X
10060113	X				X			X	X	X			X
10060114		X			X			X	X	X			X
10060115			X		X			X	X	X			X
10060116				X	X			X	X	X			X
10060108	X				X			X	X				X
1 10060110		X			X			X	X				X
10060111			X		X			X	X				X
10060112				X	X			X	X				X
10060104	X				X			X		X			X
10060105		X			X			X		X			X
10060106			X		X			X		X			X
10060107				X	X			X		X			X
10060100	X				X			X					X
10060101		X			X			X					X
10060102			X		X			X					X
10060103				X	X			X					X
10074529	X				X		X	X					X
10074530		X			X		X	X					X
10074561			X		X		X	X					X
10074562				X	X		X	X					X
10074563	X				X		X	X		X			X
10074564		X			X		X	X		X			X
10074565			X		X		X	X		X			X
10074566				X	X		X	X		X			X
10077853		X			X			X	X			X	X
10077855			X		X			X	X			X	X
10082568	X					X	X	X	X			X	X
2 10082569		X				X	X	X	X			X	X
2 10082570			X			X	X	X	X			X	X
10082691				X		X	X	X	X			X	X

Welding Harnesses

Welding Harness
Part No. 10020062

Welding Harness
Part No. 10103216

Welding Harnesses are vest-style harnesses designed for high-heat applications such as welding. All Welding Harnesses are made using Kevlar/Nomex webbing and use mating buckles on the leg and chest straps.

| Part No. | SIZE | | | | LEG BUCKLES | COLOR | | ATTACHMENT POINTS | | STANDARDS | |
	XSM	STD	XLG	SXL	Qwik-Fit	Green	Black	Back	Hip	OSHA/ANSI	CSA
10020067	X				X	X		1	2	X	X
10020062		X			X	X		1	2	X	X
10020066			X		X	X		1	2	X	X
10020065				X	X	X		1	2	X	X
10103213	X				X		X	1	0	X	
10103216		X			X		X	1	0	X	
10103217			X		X		X	1	0	X	
10103218				X	X		X	1	0	X	

Harness Accessories

Lanyard Connector Adapter
Part No. 505318

Shoulder Pads
Part No. 10077489

Shoulder Pad
Part No. 10028444

Double D-ring Extension
Part No. 10043147

Miscellaneous Harness Accessories

A Back pad (P/N 507144) snaps into the hip D-rings of Pullover and Vestype Harnesses and adds additional lower lumbar support while work positioning. Shoulder pad (P/N 10028444) may be snapped around the shoulder straps and under the back D-ring pad of the harness to add comfort.

Part No.	Description
505318	Lanyard Connector Adapter, nylon, 1 D-ring, 18" (Back D-Ring Extension)
507144	Economic Back Support Pad, nylon
10028444	Shoulder pad
10043147	Double D-Ring Extension, 1" nylon web, sewn loop
10071688	Single D-Ring Extension, 1" nylon web, sewn loop
10077489	Shoulder Pads, 1 set
SHW26	Lanyard Clip (Velcro key ring)
10113240	Lanyard Clip (Velcro strap)

Suspension Trauma Safety Step

The Suspension Trauma Safety Step is designed to help workers in a post-fall suspension position avoid the effects of suspension trauma. The Safety Step allows workers to relieve pressure by inserting a foot into one of the step loops and then standing up in the harness. The flexing of leg muscles and release of harness leg strap pressure stimulates blood flow, helping to prevent the onset of suspension trauma. Workers can use a single Safety Step or two Safety Steps (one for each leg) to provide additional support, balance, and comfort.

Part No.	Description
10063431	Suspension Trauma Safety Step with carabiner
10063441	Suspension Trauma Safety Step without carabiner

Shock-Absorbing Lanyards

Energy absorbing lanyards are a component of a personal fall arrest system. They provide a means of connection between the back (dorsal) D-ring of MSA full body harnesses and a qualified anchorage and anchorage connector. The energy absorber keeps fall arrest forces below ANSI and OSHA limits and deceleration distance is controlled to a maximum of 42 inches. The lanyard is available in web, rope, and wire rope configurations with a variety of snaphooks.

Workman Energy-Absorbing Lanyard
Part No. 10072472

Workman Energy-Absorbing Lanyard
Part No. 10072474

Workman Energy-Absorbing Lanyard
Part No. 10073708

Workman Energy-Absorbing Lanyard
Part No. 10072475

Workman Energy-Absorbing Lanyard
Part No. 10076124

Workman Energy-Absorbing Lanyard
Part No. 10072473

Workman® Energy-Absorbing Lanyards

Workman energy-absorbing lanyards are lightweight with a low-profile body. The shock absorber includes a clear, durable protective cover over the labels to increase service life and allow for easy inspection.

Features
- Tear-tape design to keep fall arrest forces below 900 lbf.
- Choice of single or twin-leg configurations
- Choice of adjustable or tie-back configurations
- Models below meet ANSI A10.32 and applicable OSHA regulations. Compliance to ANSI Z359.13 and CSA Z259.11-05 E4 are noted in the table below.

Workman Energy-Absorbing Lanyards

	Part No.	Harness Connection	Anchorage Connection	Twin	Single	Tie-Back	Standards
							CSA Z259.11
1	10072472	LC	LC		X	X	X
1	10072473	LC	(2) LC	X		X	X
1	10072474	LC	LC		X		X
1	10073708	LC	(2) LC	X			X
1	10072475	LC	(2) GL3100	X			X
1	10076124	LC	GL3100		X		X

ArcSafe Lanyard
Part No. 10060139
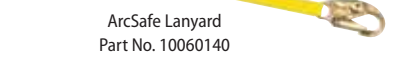
ArcSafe Lanyard
Part No. 10060140

ArcSafe® Lanyards

ArcSafe Lanyards are SEI-certified to the requirements of ASTM F887-05 standard for electrical arc flash protection. ArcSafe Shock-Absorbing Lanyards utilize a tear-tape design to keep fall arrest forces below 900 pounds. Models below meet applicable OSHA requirements and ANSI A10.32. Compliance to ANSI Z359.13, and CSA Z259.11 are noted below. Heavy Worker Lanyards are compliant to OSHA regulations only.

ArcSafe Lanyards

	Part No.	Harness Connection	Anchorage Connection	Twin	Single	Heavy Worker	Standards	
							ANSI Z359.13	CSA Z259.11
1	10060139	hitch loop	36C		X		X	X
1	10060140	hitch loop	36C	X			X	X
	10088256	hitch loop	36CL	X			X	X
	10088255	hitch loop	36C		X	X		
	10088257	hitch loop	36C	X		X		
	10088253	hitch loop	36CL	X		X		

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Part No. 10047084

Part No. 10047085

Part No. 10047086

Part No. 10047087

Part No. 10056762

Part No. 10056763

FP5K™ Tie-Back Shock-Absorbing Lanyard

- Uses the FP5K Carabiner, a Tie-back lanyard connector with a 5000-pound gate strength in any direction and a 1" Gate Opening
- Available in web or cable version
- Web version utilizes Monster-Edge™ Webbing with 12,000-pound minimum breaking strength and increased abrasion resistance
- Utilizes the Sure-Stop Shock Absorber to keep fall arrest forces below 900 lbf
- Available in both single and twin-leg configurations
- Models below meet OSHA regulations. Compliance to ANSI and CSA are noted in the table below.

MONSTER EDGE™ PAT# 5,419,951

FP5K Tie-Back Shock-Absorbing Lanyards

Part No.	Shock-Absorber	Hardware	Length	Type	Heavy Worker	Standards ANSI Z359.13	Standards CSA Z259.11
1 10047084	Sure-Stop	36C/FP5K	6'	Adjustable, Web		X	X
1 10047085	Sure-Stop	36C in center (attaches to back D-Ring)/FP5K each leg	6'	Twin Leg, Adjustable, Web		X	X
10047086	Sure-Stop	36C/FP5K	6'	Fixed, Cable		X	X
10047087	Sure-Stop	36C in center (attaches to back D-Ring)/FP5K each leg	6'	Twin Leg, Fixed, Cable		X	X
10056762	—	LS/FP5K	5'	Adjustable, Web		X	X
10056763	—	LS in center (attaches to back D-Ring)/FP5K each leg	5'	Twin Leg, Adjustable, Web		X	X
10088073	Sure-Stop	36C/FP5K	6'	Adjustable, Web	X		
10088074	Sure-Stop	36C in center/FP5K each leg	6'	Twin Leg, Adjustable, Web	X		
10088075	Sure-Stop	36C/FP5K	6'	Fixed, Cable	X		
10088076	Sure-Stop	36C in center/FP5K each leg	6'	Twin Leg, Fixed, Cable	X		

FP5K Carabiner

5000-pound gate strength in any direction
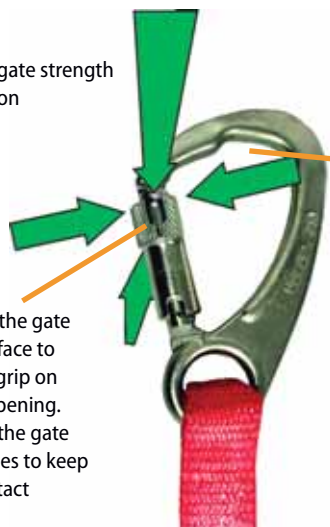
The outer side of the gate has a knurled surface to provide a secure grip on the gate when opening. The inner side of the gate has flattened edges to keep lanyard/gate contact at a minimum.

Specially designed safety recess inside the body of the carabiner provides a place for the lanyard to rest when tied back.

Section of Monster Edge Webbing
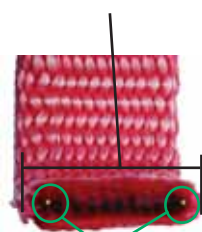
Internal wear indicator

Shock-Absorbing Lanyards

Part No. 10023932

Lightweight, streamlined design

Strong & durable polyester sheath for increased abrasion and UV resistance

Teflon® fabric protector provides water, stain, and mildew resistance

Part No. 10045936

Diamond™ Shock-Absorbing Lanyards and Expanyards

The **Diamond Shock-Absorbing Lanyard** raises the standard for shock-absorbing lanyards with these exciting features:

- Teflon-coated, durable polyester sheath for increased abrasion and UV resistance
- Keeps fall arrest forces below 900 lbf
- Available in a single or twin-leg configuration
- Highly visible deployment tag
- Comfortable, lightweight pouchless design

In addition to the exciting features of the Diamond Lanyard, the **Diamond Expanyard** features:

- Elastic design reduces trip hazards and snag hazards
- 6' Diamond Expanyard contracts to 4.5'

For workers who need 100% continuous connection and are required to transition from a shock-absorbing lanyard to a self-retracting lanyard, the **Diamond Lanyard** with integral D-ring extension offers the versatility you need.

All Diamond Lanyards and Expanyards meet applicable OSHA regulations and ANSI A10.32. Compliance with ANSI Z359.1-2007 and certification to CSA Z259.11-05 E4 are noted in the part number table.

Diamond Shock-Absorbing Lanyards and Expanyards—polyester, single piece construction, fixed length

| | Part No. | Harness Connection | Anchorage Connection | Type | | | D-ring Extension | Length | | | Standards | |
				Expanyard	Single-Leg	Twin-Leg		4.5'	5'	6'	CSA Z259.11-05 E4	ANSI Z359.13-2007
1	10023932	LS	LS		X					X	X	
1	10023933	LS	HL64		X					X	X	
1	10023970	Swivel LS	(2) LS			X				X	X	
1	10023971	Swivel LS	(2) HL64			X				X	X	
	10023936	LS	LS		X				X		X	
	10023937	Swivel LS	(2) LS			X			X		X	
1	10045936	LS	LS	X	X					X	X	
1	10045938	Swivel LS	(2) HL64	X		X				X	X	
1	10047290	Swivel LS	(2) GL3100	X		X				X	X	
	10053012	LS Snap	GL3100		X					X	X	
	10053013	LS Snap	(2) GL3100			X				X	X	
1	10053014	LS Snap	LS Snap	X	X					X	X	
	10053015	LS Snap	GL3100	X	X					X	X	
	10053016	LS Snap	(2) GL3100	X		X				X	X	
1	10088065	36C	36C		X					X		X
	10088066	36C	36CL		X					X		X
1	10088067	36C	36C	X	X					X		X
	10088068	36C	36CL	X	X					X		X
1	10088069	36C	36C			X				X		X
	10088070	36C	36CL			X				X		X
	10088071	36C	36C	X		X				X		X
1	10088072	36C	36CL	X		X				X		X
1	10059837	Swivel LS Snap	(2) GL3100			X	X	X			X	
2	10088077	36C	36CL			X	X	X		X		X
	10035039	Loop	LS		X					X	X	
	10051873	Hitch Loop	RL20	X	X					X	X	
	10062438	RL20	RL20		X					X	X	

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Part No. 10088065

Part No. 10088067

Diamond Lanyard with Integral D-ring Extension
Part No. 10059837

Diamond Lanyard Assemble-To-Order Matrix

Approval		Style of Lanyard		Single/Twin Leg		Anchor Connector		Anchor Connector (2nd Leg – Twin Only)		User Connector		Length	
N	Non-CSA	1	Non-Expanyard	1	Single	01	*option no longer available*	00	None	01	Hitch Loop	0	4.5'
C	CSA	2	Expanyard	2	Twin	02	RL20 Snaphook	01	*option no longer available*	02	*option no longer available*	1	5'
						03	Coated RL20 Snaphook	02	RL20 Snaphook	03	RL20 Snaphook	2	6'
						04	HL64 Snaphook	03	Coated RL20 Snaphook	04	Coated RL20 Snaphook	3	10'
						05	GL3100 Snaphook	04	HL64 Snaphook	05	*option no longer available*		
						06	LS Snaphook	05	GL3100 Snaphook	06	LS Snaphook		
						07	LI Snaphook	06	LS Snaphook	07	LI Snaphook		
						08	AL64 Snaphook	07	LI Snaphook	08	Swivel LS Snap		
						09	FP5K Snaphook	08	AL64 Snaphook	09	10089207 Carabiner		
						10	Sewn Loop	09	FP5K Snaphook	10	SRCA853 Carabiner		
						11	10089207 Carabiner	10	Sewn Loop	11	Sewn Loop		
						12	SRCA853 Carabiner	11	10089207 Carabiner	12	36C Snaphook		
						13	SRCC740 Carabiner	12	SRCA853 Carabiner	13	36CS Snaphook		
						14	SRCA722 Carabiner	13	SRCC740 Carabiner				
						15	36C Snaphook	14	SRCA722 Carabiner				
						16	36CL Snaphook	15	36C Snaphook				
								16	36CL Snaphook				

A-DIA											
Part Number								Quantity			

- Diamond Expanyard is not available in 4.5' or 5' lengths
- Only Diamond Lanyards with 36C, 36CL or 36CS snaphooks or 10089207 carabiner meet ANSI Z359.1-2007
- Lanyards ordered using the ATO System are non-returnable

Climbing with a twin-leg Diamond Shock-Absorbing Lanyard

A Diamond Shock-Absorbing Lanyard used with the SkyLink Horizontal Lifeline

Shock-Absorbing Lanyards

Part No. 10088259

Part No. 10088260
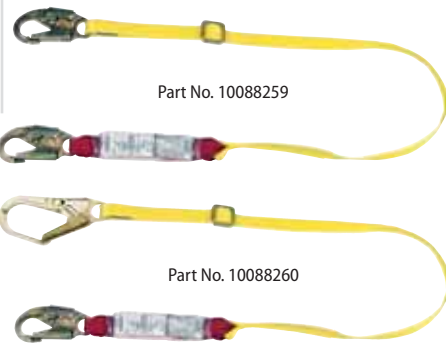
Sure-Stop™ Shock-Absorbing Lanyards

Sure-Stop Shock-Absorbing Lanyards use a tear-tape design to keep fall arrest forces below 900 pounds. Restraint lanyards are offered in adjustable and fixed lengths and are available in your choice of rope, cable, or web. Models below meet applicable OSHA regulatons and ANSI A10.32. Compliance with ANSI Z359.1-2007 and certification to CSA Z259.11-05 E4 are noted in the part number tables.

Part No. 10088214

Web Shock-Absorbing Lanyards

Part No.	Harness Connection	Anchorage Connectiom	Type							Standards	
			Single-Leg	Twin-Leg	Tie-Back	Adjustable	Fixed	Expanyard	Heavy Worker	CSA Z259.11-05 E4	ANSI Z359.13-2007
❶ 10088259	36C	36C	X			X					X
❶ 10088260	36C	36CL	X			X					X
10088261	36C	36C	X			X		X			X
10088262	36C	36CL	X			X		X			X
10088265	36C	36C		X		X					X
❶ 10088266	36C	36CL		X		X					X
10088268	36C	36CL		X			X				X
10088267	36C	36C		X			X				X
10088269	Sewn loop	36CL		X			X				X
10088263	36C	36C		X				X			X
10088264	36C	36CL		X				X			X
❶ 10088213	36C	36C	X		X		X				X
❶ 10088214	36C	36C		X	X		X				X
10088215	Sewn loop	36C		X	X		X				X
10088216	Sewn loop	36C	X				X				X
10088217	Sewn loop	36C		X			X				X
10088223*	36C	36C	X			X			X		
10088224*	36C	36CL	X			X			X		
10088225*	36C	36C	X			X		X	X		
10088226*	36C	36CL	X			X		X	X		
10088229*	36C	36C		X		X			X		
10088230*	36C	36CL		X		X			X		
10088231*	36C	36CL		X			X		X		
10088232*	36C	36C		X			X		X		
10088233*	Sewn loop	36CL		X			X		X		
10088227*	36C	36C		X		X		X	X		
10088228*	36C	36CL		X		X		X	X		
10088237*	36C	36C	X		X		X		X		
10088238*	36C	36C		X	X		X		X		
10088239*	Sewn loop	36C		X	X		X		X		
10088240*	Sewn loop	36C	X				X		X		
10088241*	Sewn loop	36C		X			X		X		

* ANSI Z359.1 does not recognize lanyard capacities above 310 pounds. Heavy worker lanyards are compliant to OSHA regulations only.

Part No. SWL40400206LS

Part No. SWL4068703LS

Web Shock-Absorbing Lanyards, continued

Part No.	Type		Material		Harness Connection	Anchorage Connection	Length			Standards	
	Single	Twin	Nylon	Polyester			3'	4'	6'	CSA Z259.11-05 E4	ANSI Z359.13-2007
SPL4048406LS	X			X	LS	LS			X	X	
SWL40400206LI		X	X		LI	LI			X	X	
SWL40400206LS		X	X		LS	LS			X	X	
SWL40400206LLS		X	X		LS	LS			X	X	
SWL40400206LSH		X	X		LS	HL64			X	X	
SWL40400206RM		X	X		RM	RM			X	X	
SWL404002P04LI		X	X		LI	LI		X		X	
SWL404002P06LI		X	X		LI	LI			X	X	
SWL4068104LS	X		X		LS	LS		X		X	
SWL4068703LS	X		X		LS	LS	X			X	
SWL4068704LS	X		X		LS	LS		X		X	
SWL4068706LS	X		X		LS	LS			X	X	
SWL4268706LS	X		X		LS	LS			X	X	
SWLP0635A		X			LS	LS			X	X	

Part No. 10088120

Part No. SCL4067304LS

Cable Shock-Absorbing Lanyards

Part No.	Harness Connection	Anchorage Connection	Type			Length				Standards	
			Single-Leg	Twin-Leg	Heavy Worker	4'	5'	6'	8'	CSA Z259.11-05 E4	ANSI Z359.13-2007
SCL4067304LSTL	LS	LS	X			X				X	
SCL4067304LS	LS	LS	X			X				X	
SCL4067304RM	RM	RM	X			X				X	
SCL4067305LS	LS	LS	X				X			X	
SCL4067306LS	LS	LS	X					X		X	
SCL4067306RM	RM	RM	X					X		X	
SCL4067308LS	LS	LS	X						X	X	
SCL4068104LS	LS	HL64	X			X				X	
SCL4068106LS	LS	HL64	X					X		X	
10088120	36C	36C	X					X			X
10088211	36C	36C		X				X			X
10088212	36C	36CL		X				X			X
10088234*	36C	36C	X		X			X			
10088235*	36C	36C		X	X			X			
10088236*	36C	36CL		X	X			X			

* ANSI Z359.1 does not recognize lanyard capacities above 310 pounds. Heavy worker lanyards are compliant to OSHA regulations only.

Shock-Absorbing Lanyards
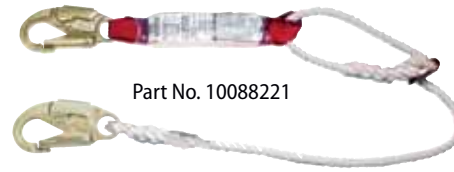
Part No. 10088221

Part No. SNL4048404LS

Rope Shock-Absorbing Lanyards

Part No.	Harness Connection	Anchorage Connection	Web	Type				Length					Standards	
				Single	Twin	Fixed	Adjustable	4'	5'	6'	8'	10'	CSA Z259.11-05 E4	ANSI Z359.1-2007
❷ 10088219	36C	36C	5/8 "	X		X				X				X
10088220	36C	36C	5/8 "		X	X				X				X
10088221	36C	36C	5/8 "	X			X			X				X
SNL4048404LS	LS	LS	5/8 "	X		X		X					X	
SNL4048404RM	RM	RM	5/8 "	X		X		X					X	
SNL4048405LS	LS	LS	5/8 "	X		X			X				X	
SNL4048406LS	LS	LS	5/8 "	X		X				X			X	
SNL4048406RM	RM	RM	5/8 "	X		X				X			X	
SNL4048408LS	LS	LS	5/8 "	X		X					X		X	
SNL4048410LS	LS	LS	5/8 "	X		X						X	X	
SNL4078106LS	HL64	LS	5/8 "	X		X				X			X	
SNL4098604LS	HL2000	LS	5/8 "	X		X		X					X	

Thermatek® Shock-Absorbing Lanyard

Thermatek Lanyards are designed for high-heat applications. This specialized design features a Tuffweld protective cover over the shock-absorber and a Kevlar back-up strap inside the shock-absorbing pouch. Models below meet applicable OSHA regulations. Compliance with ANSI Z359.13-2007 and certification to CSA Z259.11-05 E4 are noted in the part number table. Additional options are available as outlined in the chart below.
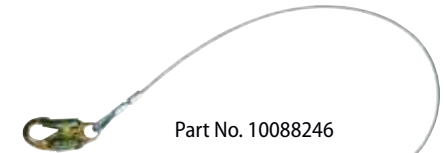
Part No. 10088246

Part No. 10027104

Part No.	Type				Harness Connection	Anchorage Connection	Length			Standards	
	Single	Twin	12' Freefall	Heavy Worker			4'	5'	6'	CSA Z259.11-05 E4	ANSI Z359.13-2007
❷ 10088246	X				36C	36C			X		X
10088248*	X			X	36C	36C			X		
10088247	X		X		36C	36C			X		X
10088252*		X		X	36C	36C			X		
10088250		X			36C	36C			X		X
10027104	X				LS	LS		X		X	
❷ 10023485	X				LS	LS			X		
10026049	X				RL20	RL20			X		
10026048	X		X		LS	LS			X		
10026060	X		X		RL20	RL20			X		

* ANSI Z359.1 does not recognize lanyard capacities above 310 pounds. Heavy worker lanyards are compliant to OSHA regulations only.

Questions or Comments?
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Restraint Lanyards

Restraint lanyards are primarily used for travel restriction (to restrain a worker from reaching a fall hazard) and work positioning (stabilizing a worker at an elevated location) applications. All restraint lanyards meet applicable OSHA regulations. Compliance to ANSI and CSA are noted in the table below.

Part No. 10072499

Web Restraint Lanyards

Part No.	Material Web	Nylon	Polyester	Type Single-Leg	Twin-Leg	Adjust.	Fixed	Harness Connection	Anchorage Connection	Length 2'	3'	4'	5'	6'	CSA Z259.11-05	ANSI Z359.3-2007
505197	1"	X		X			X	RL20	RL20					X	X	
[2] 505204	1"	X		X		X		RL20	RL20					X	X	
505210	1"		X	X			X	RL20	RL20					X	X	
505211	1"		X	X			X	LOOP	RL20					X	X	
[2] 505217	1"	X		X		X		LOOP	RL20					X	X	
10022279	1"		X	X		X		LOOP	RL20				X		X	
10022915	1"		X	X		X		LOOP	HL2000				X		X	
10056762	1"	X		X		X		FP5K	LS				X		X	
[2] 10056763	1"	X			X		X	FP5K	FP5K				X		X	
10072499	1"		X	X		X		LS	LS					X	X	X
SWL3268702LS	1"	X		X			X	LS	LS	X					X	
SWL3268703LS	1"	X		X			X	LS	LS		X				X	
[2] SWL3268704LS	1"	X		X			X	LS	LS			X			X	
SWL3268706LS	1"	X		X			X	LS	LS					X	X	
[2] 10089345	1"	X		X		X		36C	36C					X		X
10089347	1"	X		X		X		LOOP	36C					X		X
[2] 10089346	1"	X		X			X	LOOP	36C					X		X
[2] 505088	1"	X		X		X		HL2000	HL2000					X		
505097	1"	X		X			X	HL2000	HL2000					X		

Part No. SNL3243404LS

Part No. SNL3278106LS
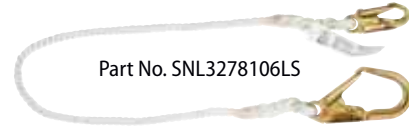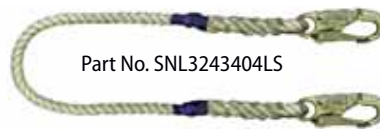
Rope Restraint Lanyards

Part No.	Material Rope	Nylon	Polyester	Type Single	Adjust.	Fixed	Harness Connection	Anchorage Connection	Length 2'	3'	4'	5'	6'	7'	8'	9'	10'	12'	CSA Z259.11-05 E4	ANSI Z359.3-2007
505202	5/8"	X		X	X		RL20	RL20					X						X	
505203	5/8"	X		X		X	RL20	RL20					X						X	
415723	5/8"		X	X	X		RL20	RL20					X						X	
415724	5/8"		X	X		X	RL20	RL20					X						X	
SNL3248402LS	5/8"	X		X		X	LS	LS	X										X	
SNL3248403LS	5/8"	X		X		X	LS	LS		X									X	
SNL3248403RM	5/8"	X		X		X	RM	RM	X										X	
SNL3248403LS	5/8"	X		X		X	LS	LS		X									X	
SNL3248404LS	5/8"	X		X		X	LS	LS			X								X	
SNL3248405LS	5/8"	X		X		X	LS	LS				X							X	
SNL3248405RM	5/8"	X		X		X	RM	RM						X					X	
[2] SNL3248406LS	5/8"	X		X		X	LS	LS					X						X	
SNL3248406RM	5/8"	X		X		X	RM	RM		X									X	
SNL3248407LS	5/8"	X		X		X	LS	LS						X					X	
SNL3248408LS	5/8"	X		X		X	LS	LS							X				X	
SNL3248409LS	5/8"	X		X		X	LS	LS								X			X	
SNL3248410LS	5/8"	X		X		X	LS	LS									X		X	
SNL3248412LS	5/8"	X		X		X	LS	LS										X	X	
SNL3278104LS	5/8"	X		X		X	LS	HL64			X								X	
SNL3278106LS	5/8"	X		X		X	LS	HL64					X						X	
[2] 415108	5/8"	X		X			RL20	RL20					X						X	
505166	5/8"	X				X	HL2000	HL2000					X							

Restraint Lanyards

Cable Restraint Lanyard

| Part No. | Width | Harness Connection | Anchorage Connection | Length | | | Type | Standards | | |
				3'	4'	6'	Fixed	OSHA	ANSI A10.32	CSA
505063	1/4"	HL2000	HL2000			X	X	X	X	
SCL3267304LS	1/4"	LS	LS		X		X	X	X	
SCL3267306LS	1/4"	LS	LS			X	X	X	X	
SCL3267303LS	1/4"	LS	LS	X			X	X	X	
SCL3267306RM	1/4"	LS	LS			X	X	X	X	

Part No. 505063

Rebar Assemblies

Designed for work positioning applications such as tying rebar or constructing concrete forms.

| Part No. | Description | Standards | | |
		OSHA	ANSI A10.32	CSA Z259.11-05
415957	Rebar chain assembly, large snaphook with 2.5" (64mm) gate	X	X	X
1 10107326	Rebar chain assembly, 36CL snaphook with 2.25" (57mm) gate	X	X	
1 10072498	Rebar web assembly, 13" legs, with sliding large snaphook	X	X	X
SCH3187511	Rebar web assembly, 18" legs, with sliding large snaphook	X	X	X

Part No. SCH3187511

Part No. 10107326

Part No. 10072498

Sure-Grab™ Positioning Lanyard

Connects to the user's harness or belt for travel restriction or work positioning applications. Features fast and easy length adjustment. Meets applicable OSHA regulations and ANSI A10.32.

Part No.	Description
2 SNYR537DH306	Sure-Grab positioning lanyard, manual, closed body, c/w 5/8" x 6' blue Static Kernmantle, chrome locking swivel snaphook, right-handed version
SNYL537DH306	Sure-Grab positioning lanyard, manual, closed body, c/w 5/8" x 6' blue Static Kernmantle, chrome locking swivel snaphook, left-handed version

Sure-Grab Positioning Lanyard
Part No. SNYR537DH306

Lineman's Pole Strap

The Lineman's Pole Strap is used to assist a lineman in climbing wooden poles and for work positioning. Meets applicable OSHA regulations and ANSI A10.32.

Part No.	Description
415834	Lineman's polestrap, nylon, adjustable to maximum length of 70"

Lineman's Pole Stap
Part No. 415834

Shock-Absorbing Sub-Assembly Lanyards

Part No. 10088064

| Part No. | Material | | Harness Connection | Anchorage Connection | Heavy Worker | Standards | | | |
	Nylon	Polyester				OSHA	ANSI A10.32	CSA Z259.11-05	ANSI Z359.13
2 SSA4002LS	X		LS	D-Ring		X	X	X	
10088064	X		36C	D-Ring		X			X
10090058	X		36C	D-Ring	X	X			

Questions or Comments?
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Anchorage Connectors

- Have a minimum breaking strength of 5,000 lb.
- Are compatible for use with MSA fall arrest and confined space entry/retrieval components
- Meet ANSI Z359.1-2007, ANSI A10.32 and all applicable OSHA regulations

PointGuard™ Anchorage Connector Strap

The PointGuard Anchorage Connector provides a secure point of attachment for residential and concrete construction applications. When the anchorage connector is no longer needed a worker can simply cut the protruding strap and throw it away.

- Quick and easy to install
- Economical
- Available in 2 models -
  - ■ Residential Construction
    - ❖ Meets all applicable OSHA regulations as well as ANSI A10.32 and ANSI Z359.1
  - ■ Concrete Construction
    - ❖ Includes protective sheath
    - ❖ Meets all applicable OSHA regulations as well as ANSI A10.32 and ANSI Z359.1
- Durable Polyester Webbing with 5,000-pound minimum breaking strength
- 400-pound (182 kg) capacity

PointGuard Concrete Part No. 10042794

PointGuard Residential Part No. 10042792

Part No.	Description
1 10042792	PointGuard residential anchorage connector strap, 3' with D-ring
1 10042794	PointGuard concrete anchorage connector strap, 4' with D-ring
10042793	PointGuard residential anchorage connector strap, 3'
10042795	PointGuard concrete anchorage connector strap, 4'
1 505282	Anchorage connector strap, nylon, 5'
1 10023490	Anchorage connector strap, double D-ring
1 SFP2267503	Double D-Ring Anchorage Connector Strap, 3' length
SFP2267504	Double D-Ring Anchorage Connector Strap, 4' length
1 SFP2267506	Double D-Ring Anchorage Connector Strap, 6' length
505298	Anchorage connector strap, polyester, 5'
10003206	Chain anchorage connector
SSB22040	Boom belt, 1-3/4" nylon webbing, adjustable, one size fits all
1 SFP3267504	Anchorage Cable Sling, 4' length
2 SFP3267506	Anchorage Cable Sling, 6' length
SFP2267402	Suretyman Anchorage Sling, 2' length
SFP2267404	Suretyman Anchorage Sling, 4' length
SFP2267406	Suretyman Anchorage Sling, 6' length
2 505233	Anchorage Connector extension, 5', 36C, O-ring
2 10001620	Anchorage Connector extension, 6', RL20, O-ring
10082683	Anchorage Connector extension, 12', RL20, O-ring
1 10087003	Anchorage Connector extension, 6', FP5K, O-ring
10073847	Anchorage Connector extension, 5', FP5K, O-ring

Anchorage Connector Strap

- Standard 5-ft. length, custom lengths available
- D-ring on one end and a sewn loop on the other end

Anchorage Connector Strap Part No. 505282

Double D-Ring Anchorage Connector Strap

Double D-Ring Anchorage Connector Strap Part No. SFP2267503

Anchorage Connector Chain

- Temporary anchorage connector
- Useful near sharp edges or in high heat environments

Anchorage Connector Chain Part No. 10003206

Boom Belt

- Attaches to boom arm
- Adjustable
- Allows for quick & easy installation

Boom Belt Part No. SSB22040

Anchorage Cable Sling

- Standard lengths of 2', 4', and 6', custom lengths available
- Vinyl Coated
- 1/4" Galvanized Cable

Anchorage Cable Sling Part No. SFP3267504

Suretyman™ Anchorage Sling

Suretyman Anchorage Sling Part No. SFP2267402

- 1" nylon tube webbing sewn into an endless loop
- Available in 2', 4', and 6' lengths
- Can be hitched to an anchorage point using various configurations

Anchorage Connector Extension

- Vinyl coated
- 1/4" galvanized cable

Anchorage Connector Extension Part No. 505233

Anchorage Connectors

- Have a minimum breaking strength of 5,000 lb.
- Are compatible for use with MSA fall arrest and confined space entry/retrieval components
- Meet ANSI Z359.1-2007, ANSI A10.32 and all applicable OSHA regulations

FP Stryder™ Anchorage Connector

FP Stryder
Part No. 10051455

- Easy, single-hand installation
- Low friction wear pads with Teflon allow the FP Stryder Anchorage Connector to glide effortlessly along the beam flange
- Lightweight - only 4.5 pounds
- Integral load indicator alerts user if unit has been exposed to a fall
- Versatile design allows for mounting overhead or at worker's feet
- Vernier adjustability allows for a secure fit and 1/4"adjustment increments
- Easy to use, push button adjustment - no pins to be lost!
- 2 models available to fit most beam sizes
  - ■ Standard version fits beam flange widths from 4" to 14"
  - ■ XL version fits beam flange widths from 14" to 24"
- 400-pound working capacity

Part No.	Description
1 10051455	FP Stryder Anchorage Connector, Standard version, fits beam flange widths from 4"- 14"
10051456	FP Stryder XL Anchorage Connector, XL version, fits beam flange widths from 14"- 24"
10051457	FP Stryder Anchorage Connector Kit, containing one complete Standard version FP Stryder, one XL adjustment bar, one carrying case, and one adjuster button replacement kit
506682	BeamGrip for beams with flange width: 3.94" to 5.64" flange thickness: .205" to .659"
415171	BeamGrip for beams with flange width: 5.525" to 8.07" flange thickness: .36" to 1.09"
415172	BeamGrip for beams with flange width: 8.06" to 10.475" flange thickness: .56" to .935"
415173	BeamGrip for beams with flange width: 10.265" to 12.8" flange thickness: .605" to 1.25"
506643	D-Ring insert for BeamGrip
506673	Swivel D-Ring
10072789	506682 BeamGrip with swivel D-Ring
506266	BeamGlide Trolley, removable model
506252	BeamGlide Trolley, permanent model
506379	Trolley End Stops (pair)
2 10016468	Permanent roof anchor, 2" x 4"
10017593	Permanent roof anchor, 2" x 6"
10017594	Permanent roof anchor, 2" x 8"
10017595	Permanent roof anchor, 2" x 10"
10017596	Permanent roof anchor, 2" x 12"
2 416068	Temporary roof anchor, 3-pack
1 506632	D-plate anchorage connector, zinc-plated steel
506669	D-plate with 8 x 8 galvanized back plate
506672	D-plate with 8 x 8 aluminum back plate
1 10003213	Bolt D-Ring with hole only
10062597	Single bolt anchor
1 10102686	Workman reusable roof anchor

BeamGrip™

- Attaches to I-beam flange— no tools required
- Optional D-ring insert (P/N 506643) and/or swivel D-ring (P/N 506673) can provide anchorage connection for one or two persons (D-rings sold separately)

BeamGrip
Part No. 506682,
shown with Part No. 506643
and Part No. 506673

BeamGlide™ Trolley

- Provides horizontal mobility— keeps anchorage connector directly overhead
- Sizing to fit all beams

BeamGlide Trolley
Removable Model
Part No. 506266

Roof Anchors

- All steel construction
- Fit all pitches of roof trusses or rafters
- Easy to install without special tools

Temporary Roof Anchors
Part No. 416068

Permanent Roof Anchor
Part No. 10016468

D-Plate Anchorage Connector

- Provides permanent anchorage point
- Bolts to beams or columns
- Also available with 8"x 8" back-plate made of black anodized aluminum or galvanized steel for attachment to concrete walls

D-Plate Anchorage Connector
Part No. 506632

Bolt D-ring with Hole

- Permanent anchorage connector
- Attaches to bottom of I-beam flange, user supplies bolt
- Designed for horizontal installation

Bolt D-ring with Hole
Part No. 10003213

Single Bolt Anchor

Single Bolt Anchor
Part No. 10062597

- Permanent anchorage connector
- Bolts to vertical columns

Workman Reusable Roof Anchor

- Fits up to a 12 x 12 roof pitch
- Fastens with screws or nails

Workman Reusable Roof Anchor
Part No. 10102686

Questions or Comments?
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Anchorage Connectors

- Have a minimum breaking strength of 5,000 lb.
- Are compatible for use with MSA fall arrest and confined space entry/retrieval components
- Meet ANSI Z359.1-2007, ANSI A10.32 and all applicable OSHA regulations

ManSafe Freestanding Constant Force Post

- Does not attach to the working surface
- Installer will never have to lift more than 55 lbs (25 kg) at any time
- Used on nominally flat roofs up to a maximum pitch of 5 degrees
- Tested and approved for use on concrete, single-ply membrane, asphalt-sanded, asphalt-stone chipped, and steel roof profiles
- Post is omni-directional
- Meets OSHA regulations only

ManSafe Freestanding Post*
Part No.10055719

* Post D-ring (Part No. 10038363) must be purchased separately.

Removable Concrete Anchors

- Quickly and easily removed and reinstalled in another location
- Compact and lightweight
- Durable stainless steel and aluminum construction
- 400 lb capacity
- 2 models: 5,000 lb version (5K) and 10,000 lb (10K) version
- 10,000 lb version can be used to anchor MSA Dyna-Line or Sure-Line Horizontal Lifelines

5K Removable Concrete Anchor
Part No. 10081594

10K Removable Concrete Anchor
Part No. 10081570

Part No.	Description
10055717	ManSafe Freestanding Constant Force Post, 440 lbs (200 kg)
10055718	ManSafe Freestanding Constant Force Post, 660 lbs (300 kg)
10055719	ManSafe Freestanding Constant Force Post, 880 lbs (400 kg)
10055716	220 lb (100 kg) Upgrade kit for ManSafe Freestanding Constant Force Post
10038363	Post D-ring for ManSafe Freestanding Constant Force Post
10081594	5K removable concrete anchor
10081570	10K removable concrete anchor
SFPRS6000	Rail-Slider, steel, galvanized, for 80 - 136 # rail, used on train/crane type rail, [carabiner required - sold separately (see below)]
10030608	Rail-Slider, steel, galvanized, for 141 # rail, used on train/crane type rail, [carabiner required - sold separately (see below)]
10002820	Large hook with strap

Rail-Slider™

- Provides fall protection during horizontal movement on railway bridges
- Quick and easy installation
- 2 sizes available

Rail-Slider
Part No. SFPRS6000

Large Hook with Strap

- Large 2-1/2" throat-opening hook with integral strap and D-ring
- Compatible with all MSA lanyards and vertical lifelines

Large Hook with Strap
Part No. 10002820

Carabiners

Part No. 506259   Part No. 10089205   Part No. SRCA722   Part No. SRCC643

Part No. 506572   Part No. 10089207   Part No. SRCA853   Part No. SRCA613

Part No. 506308   Part No. 10089209   Part No. SRCC740   Part No. SRCC642

MSA offers a wide variety of carabiners for almost every application. All carabiners have a minimum breaking strength of 5,000 lbs. All carabiners meet applicable OSHA regulations. See chart for additional standards met.

Part No.	Description	Standards CSA Z259.12-2001	ANSI Z359.1-2007
506259	Carabiner, 7/8" (22 mm) gate, twist lock, auto-locking, aluminum		
506572	Carabiner, 7/8" (22 mm) gate, twist lock, auto-locking, steel		
506308	Carabiner, 2" (50 mm) gate, twist lock, auto-locking, steel, with captive eye		
10089205	Carabiner, 9/16" (14 mm) gate, auto-locking, steel, 3,600-lb gate strength	X	X
10089207	Carabiner, 1" (25 mm) gate, auto-locking, steel, 3,600-lb gate strength	X	X
10089209	Carabiner, 2.1" (53 mm) gate, auto-locking, steel, 3,600-lb gate strength	X	X
SRCC413	Carabiner, 9/16" (14 mm) gate, auto-locking, steel	X	
SRCA853	Carabiner, 1" (25 mm) gate, auto-locking, aluminum	X	
SRCC740	Carabiner, 2" (50 mm) gate, auto-locking, steel	X	
SRCC641	Carabiner, large D design, 1.2" (32 mm) gate, screwgate, steel	X	
SRCA613	Carabiner, 3/4" (19 mm) gate, auto-locking, aluminum	X	
SRCC642	Carabiner, 1.2" (52 mm) gate, auto-locking, steel, NFPA	X	
SRCA722	Carabiner, 2.1" (52 mm) gate, auto-locking, aluminum	X	
SRCC643	Carabiner, 1" (25 mm) gate, auto-locking, steel	X	
SRCC734G	Carabiner, 2.1" (52mm) gate, auto-locking, steel		

Fall Protection Kits

Thermatek® Kit

Includes:

- Thermatek Harness, standard size, made of a Kevlar/Nomex blend webbing that is resistant to chemicals, weld splatter, and other high heat exposures.
- Thermatek Shock-Absorbing Lanyard features a burn-resistant Tuffweld protective cover that is superior to Nomex. The Thermatek 12 lanyard model is designed to arrest a freefall up to 12' and keep fall arrest forces below OSHA limits.
- Thermatek Anchorage Connector Strap with Kevlar webbing and stitching has a replaceable wear pad to protect webbing from abrasion.
- Carrying Bag for convenience.
- Meets OSHA, ANSI A10.32

Thermatek Kit	with HL2000 Snaphooks	with RL20 Snaphooks
Kit with Thermatek 6 Lanyard	10026061	10026063
Kit with Thermatek 12 Lanyard	10026062	10026064

Workman Fall Protection Kits

Kits include the Workman Vest-Style Harness, the Workman Shock-Absorbing Lanyard, the PointGuard Anchor Strap, and a duffel bag. Meets OHSA, ANSI A10.32 and CSA.

Workman Fall Protection Kit Part No. 10092166

Part No.	Description
10092166	Workman Fall Protection kit includes STD size Vest-Style Harness with Qwik-Fit Leg Straps; Workman Shock-Absorbing Lanyard, single-leg, adjustable; Pointguard Anchor Strap; duffel bag
10092167	Workman Fall Protection kit includes STD size Vest-Style Harness with Tongue-buckle Leg Straps; Workman Shock-Absorbing Lanyard, single-leg, adjustable; Pointguard Anchor Strap; duffel bag
10092168	Workman Fall Protection kit includes XLG size Vest-Style Harness with Qwik-Fit Leg Straps; Workman Shock-Absorbing Lanyard, single-leg, adjustable; Pointguard Anchor Strap; duffel bag
10092169	Workman Fall Protection kit includes XLG size Vest-Style Harness with Tongue-buckle Leg Straps; Workman Shock-Absorbing Lanyard, single-leg, adjustable; Pointguard Anchor Strap; duffel bag

Workman Aerial Kits

Kits include the Workman Vest-Style Harness, the Workman Shock-Absorbing Lanyard, and a convenient storage bag that can be attached to an aerial lift. Meets OHSA, ANSI A10.32 and CSA.

Part No.	Description
10092170	Workman Aerial Kit includes STD size Vest-Style Harness with Qwik-Fit leg straps; Workman Shock-Absorbing Lanyard, single-leg, adjustable; carry bag
10092191	Workman Aerial Kit includes STD size Vest-Style Harness with Tongue-Buckle leg straps; Workman Shock-Absorbing Lanyard, single-leg, adjustable; carry bag
10092192	Workman Aerial Kit includes XLG size Vest-Style Harness with Qwik-Fit leg straps; Workman Shock-Absorbing Lanyard, single-leg, adjustable; carry bag
10092193	Workman Aerial Kit includes XLG size Vest-Style Harness with Tongue-Buckle leg straps; Workman Shock-Absorbing Lanyard, single-leg, adjustable; carry bag

RCD® (Remote Connect/Disconnect) System

By using the strap tool the user can install the anchorage connector strap to an approved overhead anchorage point. By using the connect/ disconnect tool the user can attach any lifeline with an RL20 snaphook to the overhead anchorage connector strap, use the same tool to remove the lifeline from the overhead anchorage and then to remove the anchorage connector strap.

Part No.	Description
501443	Remote Connect/Disconnect System
505314	Strap Conn Remote Anchor
506507	Pole Telescoping Remote
506509	Tool Remote Anchorage Strap
506589	Tool Remote Connect
506591	Remote Lanyard Knife Tool
506639	Pole Adjustable Modified RCD
506640	Adapter Hastings Pole RCD
506642	Pole Adjust Assembly Unmodified RCD

Anthron Descent Device System

The Anthron Descent Controller is a manually operated descent device. It is most commonly used for suspended work positioning, self evacuation, or rescue operations. Other features include:

- Proper roping/rigging diagrams on the side of the Anthron Descender
- Device can be installed/removed at any point on rope
- Working load of 300 lbs (136 kg)
- System consists of a 7/16" (11mm) rope, Anthron Descender, and two carabiners

Part No.	Description
SDC726050	Anthron system includes: Anthron descender, 2 carabiners, 50 ft rope
SDC726100	Anthron system includes: Anthron descender, 2 carabiners, 100 ft rope
SDC726150	Anthron system includes: Anthron descender, 2 carabiners, 150 ft rope

Anthron Descender

Anthron System in use

Anthron systems and replacement ropes available in lengths of 25-ft increments from 50 ft up to 600 ft

Questions or Comments? www.facebook.com/MSATheSafetyCompany

Roofers' Kits

Workman Roofers' Kit
Part No. 10074476

Workman Roofers' Kit
Part No. 10092958
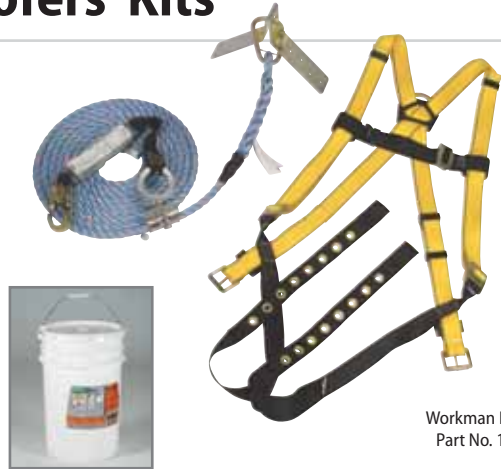
Part No.	Description
10074475	**Roofer's Kit**
Kit Contents (Meets ANSI A10.32, OSHA, and CSA)	
Workman Harness, Vest-Style **STD** size, with Qwik-Fit leg straps	
25' rope lifeline with trailing rope grab	
Roof anchor	
Storage bucket	

Roofer's Kit, Part No. 10074474 same as above with 50' rope lifeline *2*

Part No.	Description
10074584	**Roofer's Kit**
Kit Contents (Meets ANSI A10.32, OSHA, and CSA)	
Workman Harness, Vest-Style **XLG** size, with Qwik-Fit leg straps	
25' rope lifeline with trailing rope grab	
Roof anchor	
Storage bucket	

Roofer's Kit, Part No. 10077583 same as above with 50' rope lifeline

Part No.	Description
10074477	**Roofer's Kit**
Kit Contents (Meets ANSI A10.32, OSHA, and CSA)	
Workman Harness, Vest-Style **STD** size, with tongue-buckle leg straps	
25' rope lifeline with trailing rope grab	
Roof anchor	
Storage bucket	

Roofer's Kit, Part No. 10074476 same as above with 50' rope lifeline *2*

Part No.	Description
10074482	**Roofer's Kit**
Kit Contents (Meets ANSI A10.32, OSHA, and CSA)	
Workman Harness, Vest-Style **XLG** size, with tongue-buckle leg straps	
25' rope lifeline with trailing rope grab	
Roof anchor	
Storage bucket	

Part No.	Description
10074480	**Roofer's Kit**
Kit Contents (Meets ANSI A10.32 and OSHA)	
Workman Harness, Vest-Style **STD** size, with Qwik-Fit leg straps	
25' rope lifeline with manual rope grab	
Storage bag	

Roofer's Kit, Part No. 10074479 same as above with 50' rope lifeline *2*

Part No.	Description
10077588	**Roofer's Kit**
Kit Contents (Meets ANSI A10.32 and OSHA)	
Workman Harness, Vest-Style **XLG** size, with Qwik-Fit leg straps	
25' rope lifeline with manual rope grab	
Storage bag	

Roofer's Kit, Part No. 10077587 same as above with 50' rope lifeline

Part No.	Description
10092959	**Roofer's Kit**
Kit Contents (Meets ANSI A10.32 and OSHA)	
Workman Harness, Vest-Style **STD** size, with tongue-buckle leg straps	
25' rope lifeline with manual rope grab	
Storage bag	

Roofer's Kit, Part No. 10092958 same as above with 50' rope lifeline *2*

Part No.	Description
10077590	**Roofer's Kit**
Kit Contents (Meets ANSI A10.32 and OSHA)	
Workman Harness, Vest-Style **XLG** size, with tongue-buckle leg straps	
25' rope lifeline with manual rope grab	
Storage bag	

Roofer's Kit, Part No. 10077589 same as above with 50' rope lifeline

Roofers' Kits

FP Pro Roofers' Kit
Part No. 416067

Roofer's Kit
Part No. 10055733

Part No.	Description
416067	**Roofer's Kit**
Kit Contents (Meets ANSI Z359.1-2007, OSHA, ANSI A10.32)	
FP Pro Harness, Vest-Style STD size, with Qwik-Fit chest and leg straps, and back D-ring	
Trailing Rope Grab Fall Arrester with Sure-Stop Shock-Absorbing lanyard and 36C snaphook	
50' - 5/8" Rope, polyester/polypropylene, with twist-lock carabiner on one end	
Temporary roof anchor (3)	
Woodscrews, #12 x 2.5" Philips flathead, zinc	
Roofer's Kit Tote Bag	

Part No.	Description
10055733	**Roofer's Kit**
Kit Contents (Meets OSHA and ANSI A10.32)	
FP Pro Harness, Vest-Style STD size, with Qwik-Fit chest and leg straps, and back D-ring	
Manual Rope Grab Fall Arrester with Sure-Stop Shock-Absorbing lanyard and LS snaphook	
50' - 5/8" Rope, polysteel/polyester, with LS snaphook	
Temporary roof anchor (1)	
6 gallon bucket with lid	

Part No.	Description
10063412	**Roofer's Kit**
Kit Contents (Meets ANSI Z359.1-2007, OSHA, ANSI A10.32)	
FP Pro Harness, Vest-Style STD size, with Qwik-Fit chest and leg straps, and back D-ring	
Manual Rope Grab Fall Arrester with Sure-Stop Shock-Absorbing lanyard and LS snaphook	
50' - 5/8" Rope, polysteel/polyester, with LS snaphook	
Temporary roof anchor (3)	
Storage bag	

Roofer's Kit
Part No. 10049751

Part No.	Description
10057104	**Roofer's Kit**
Kit Contents (Meets ANSI Z359.1-2007, OSHA, ANSI A10.32)	
FP Pro Harness, Vest-Style STD size, with Qwik-Fit chest and leg straps, and back D-ring; includes integral Sure-Stop Shock-Absorber with D-ring	
Manual Rope Grab Fall Arrester with Sure-Stop Shock-Absorbing lanyard and manual-lock carabiner	
50' - 5/8" Rope, polysteel/polyester, with LS snaphook	
Temporary roof anchor (3)	
Woodscrews, #12 x 2.5" Philips flathead, zinc	
6 gallon bucket with lid	

Part No.	Description
10049751	**Roofer's Kit**
Kit Contents (Meets OSHA and ANSI A10.32)	
FP Pro Harness, Vest-Style STD size, with Qwik-Fit chest and leg straps, and back D-ring	
Trailing Rope Grab Fall Arrester with Sure-Stop Shock-Absorbing lanyard and LS snaphook	
25' - 5/8" Rope, polysteel/polyester, with LS snaphook	
Temporary roof anchor (1)	
6 gallon bucket with lid	

All FP Pro products are fully compliant with applicable OSHA regulations and ANSI A10.32. Check Part No. tables for additional standards information.

Questions or Comments?
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Roofers' Kit
Part No. 10055061

Roofers' Kit
Part No. SVL1013025

Part No.	Description
10055061	**Roofer's Kit**
Kit Contents (Meets OSHA and ANSI A10.32)	
Gravity Harness, Vest-Style STD size, with Qwik-Fit chest and leg straps, and back D-ring; includes integral Sure-Stop Shock-Absorber with D-ring	
Manual Rope Grab Fall Arrester with manual-lock carabiner	
25' - 5/8" Rope, polysteel/polyester, with LS snaphook	
Temporary roof anchor (3)	
Woodscrews, #12 x 2.5" Philips flathead, zinc	
Roofer's Kit Tote Bag	

Roofer's Kit, Part No. 10055000 same as above with 50' vertical lifeline

Part No.	Description
SVL1013025	**Roofer's Kit**
Kit Contents (Meets OSHA and ANSI A10.32)	
Gravity Harness, Vest-Style STD size, with Qwik-Fit chest and leg straps, and back D-ring	
Manual Rope Grab Fall Arrester with Sure-Stop Shock-Absorbing lanyard and LS snaphook	
25' - 5/8" Rope, polysteel/polyester, with LS snaphook	
6 gallon bucket with lid	

Roofer's Kit, Part No. SVL1013050 same as above with 50' vertical lifeline

Rope Grabs and Vertical Lifelines

Rope Grab Fall Arrester
Part No. 10054077

FP Pro Rope Grab with 3'
Dyna-Brake Lanyard
Part No. 415940

Rope Grabs and Vertical Lifelines

FP Pro Rope Grab

Unique, versatile, lightweight and affordable, the FP Pro Rope Grab features:
• Hands-free operation while ascending or descending
• Ultra-smooth travel action
• Cam and hinge design allows for a quick, easy installation on the rope
• Available with either polyester or polyester/polypropylene blend rope
• Rope Grabs and ropes with 36C snaphook meet ANSI Z359.1-2007

Vertical Lifelines

Part No.	Description	Length
415865	5/8" polyester rope, w/36C Snaphook on one end	25'
1 415869	5/8" polyester rope, w/36C Snaphook on one end	50'
415870	5/8" polyester rope, w/36C Snaphook on one end	75'
2 415871	5/8" polyester rope, w/36C Snaphook on one end	100'
415872	5/8" polyester rope, w/36C Snaphook on one end	150'
415873	5/8" polyester rope, w/36C Snaphook on one end	200'
416048	5/8" polyester/polypropylene rope, w/twist-lock carabiner on one end	25'
2 416049	5/8" polyester/polypropylene rope, w/twist-lock carabiner on one end	50'
416050	5/8" polyester/polypropylene rope, w/twist-lock carabiner on one end	75'
416051	5/8" polyester/polypropylene rope, w/twist-lock carabiner on one end	100'
416052	5/8" polyester/polypropylene rope, w/twist-lock carabiner on one end	150'
416053	5/8" polyester/polypropylene rope, w/twist-lock carabiner on one end	200'

Rope Grabs

Part No.	Description
1 415940	FP Pro Rope Grab with 3' Sure-Stop Lanyard, 36C snaphook
2 415941	Rope Grab with 19" Sure-Stop Lanyard, 36C snaphook
415942	Rope Grab kit with 50'-5/8" rope, polyester, anchorage connector strap
415943	Rope Grab kit with 100'-5/8" rope, polyester, anchorage connector strap
415964	Rope Grab kit with 50'-5/8" rope, polyester/propylene, anchorage connector strap
415965	Rope Grab kit with 100'-5/8" rope, polyester/propylene, nylon anchorage connector strap
1 10054077	Rope Grab fall arrester

SureGrab Rope Grab
Part No. SVLR78LS

Carabiner
Part No. SRCC643

Termination Plate
Part No. SRIW1000

SureStop Vertical
Lifeline

SureGrab™ Rope Grab

The SVLR78 SureGrab device and lifeline is used to provide temporary fall protection on ladders or when climbing vertical structures. This system can also be used to provide a secondary lifeline for suspended positioning systems used by building/structure inspectors, window cleaners, and maintenance personnel. The SureGrab device moves freely up or down an approved 5/8" (16 mm) diameter lifeline. When sudden downward movement occurs, a camming lever is activated arresting the fall. The device can be installed or removed from the lifeline at any point along its length.

Meets and exceeds ANSI Z359.1 and OSHA standards. SureGrab rope grabs are CSA certified.

SureGrab™ Rope Grabs

Part No.	Description
1 SVLR78LS	Rope grab fall arrester, automatic/manual, open body, c/w 1-3/4" x 12" web lanyard, LS snaphook
2 SRIW1000	5/8" Termination Plate
SLLNL672060LS	Lifeline, nylon, white 3-strand, 5/8" x 60-ft (16mm x 20m) with LS snap on one end
SLLNL672100LS	Lifeline, nylon, white 3-strand, 5/8" x 100-ft (16mm x 30.5m) with LS snap on one end
SLLNL672200LS	Lifeline, nylon, white 3-strand, 5/8" x 200-ft (16mm x 61m) with LS snap on one end

Self-Retracting Lanyards

Workman PFL

Web version
(front)

Cable version
(back)

Attaching the snaphook to the integral swivel creates a comfortable, convenient carrying handle.

Workman PFL Lanyard

Features include:

- A field-replaceable lifeline
- A 400-pound working capacity
- No annual factory recertification required
- Integral load indicator
- Integral swivel at PFL/SRL connector
- A durable, engineered thermoplastic housing
- Meets ANSI A10.32 and all applicable OSHA standards. Compliance with ANSI Z359.1-2007 and certification to CSA Z259.2.2 is noted in the part number table.

Workman Web PFL (Personal Fall Limiter)

	Part No.	Description	PFL Connection	Lifeline Connection	CSA Z259.2.2	ANSI Z359.1-2007
1	10093348	Workman PFL, 12' line length	None	LI Snaphook		
1	10093349	Workman PFL, 12' line length	None	LC Snaphook		
1	10093350	Workman PFL, 12' line length	1" Steel Carabiner	LC Snaphook		
2	10093352	Workman PFL, 12' line length	Back D Connector	LC Snaphook		
2	10093353	Workman PFL, 12' line length	1" Steel Carabiner	36C Snaphook		X
1	10093354	Workman PFL, 12' line length	None	36C Snaphook		X
	10093351	Workman PFL, 11' line length	Back D Connector	AL64 Snaphook		
	10093355	Workman PFL, 10' line length	None	LI Snaphook	X	
	10093356	Workman PFL, 10' line length	None	LC Snaphook	X	
2	10093357	Workman PFL, 10' line length	1" Steel Carabiner	LC Snaphook	X	
	10093358	Workman PFL, 10' line length	Back D Connector	LC Snaphook	X	

Standards (columns: CSA Z259.2.2, ANSI Z359.1-2007)

Workman Cable PFL (Personal Fall Limiter)

	Part No.	Description	PFL Connection	Lifeline Connection	CSA Z259.2.2	ANSI Z359.1-2007
	10104708	Workman PFL, 12' line length	None	LI snaphook		
2	10104709	Workman PFL, 12' line length	None	LC Snaphook		
	10104710	Workman PFL, 12' line length	1" Steel Carabiner	LC Snaphook		
	10104791	Workman PFL, 11' line length	Back D Connector	AL64 Snaphook		
2	10104792	Workman PFL, 12' line length	Back D Connector	LC Snaphook		
2	10104793	Workman PFL, 12' line length	1" Steel Carabiner	36C Snaphook		X
1	10104794	Workman PFL, 12' line length	None	36C Snaphook		X
	10104795	Workman PFL, 10' line length	None	LI Snaphook	X	
	10104796	Workman PFL, 10' line length	None	LC Snaphook	X	
	10104797	Workman PFL, 10' line length	1" Steel Carabiner	LC Snaphook	X	
	10104798	Workman PFL, 10' line length	Back D Connector	LC Snaphook	X	

Workman Personal Fall Limiter Assemble-To-Order Matrix

Approvals	Line Length	SRL Connector	Lifeline Connector	Field-Replaceable Line
C CSA & OSHA	06 6' Web	0 None	0 LI Snaphook	N No
A ANSI Z359.1 & OSHA	07 7' Web	1 Back D-ring Connector	1 Swivel Carabiner	Y Yes
O OSHA & ANSI A10.32	08 8' Web	2 1" Aluminum Carabiner	2 1" Aluminum Carabiner	
E EN360: 2002	09 9' Web	3 1" Steel Carabiner	3 1" Steel Carabiner	
	10 10' Web	4 2" Aluminum Carabiner	4 LS Snaphook	
	11 11' Web	5 2" Steel Carabiner	5 AL64 Snaphook	
	12 12' Web	6 36CL Snaphook	6 LC Snaphook	
	07G 7' Cable		7 LS Swivel Snaphook with Load Indicator	
	08G 8' Cable		8 36C Snaphook	
	09G 9' Cable		9 36CSN Snaphook	
	10G 10' Cable		A Triple Lock Carabiner	
	11G 11' Cable		B 36CS Snaphook with Load Indicator	
	12G 12' Cable		C HL64 Snaphook	

A-PFL

Part Number

Quantity

- Products ordered using the ATO System are non-returnable

Self-Retracting Lanyards

Short-Stop® and Sure-Lock™ SRL

- Compact and lightweight
- Fast-acting to minimize fall arrest forces and total fall distance
- 1-3/4" nylon web lifeline
- Meets OSHA and ANSI A10.32

Part No.	Description	Length	SRL Connection	Lifeline Connection
10004277	Short-Stop	10'	None	LI Snaphook
10021840	Short-Stop	10'	SRCC643 carabiner	LI Snaphook
SFP6902001	Sure-Lock	7'	SRCC643 carabiner	LI Snaphook
SFP6902002	Sure-Lock	7'	SRCC643 carabiner	SRCC643 carabiner with swivel
SFP6902008	Sure-Lock	7'	SRCC643 carabiner	Swivel LS Snaphook

Short-Stop SRL
Part No. 10021840

Sure-Lock SRL
Part No. SFP6902002

Aptura® LT30 SRL

The Aptura LT30 SRL features include:

- A durable, engineered high-impact thermoplastic housing to increase service life.
- Rugged, impact-absorbing protective bumpers for added durability.
- A field-replaceable lifeline option. In the event that the webbing should become damaged, this option provides a field-replaceable web lifeline, liminating costly returns to the manufacturer.
- A lightweight design starting at 7.5 pounds, making it one of the lightest 30' SRL's on the market.
- A standard lifeline length of 30'. Available in lengths from 13' to 30' in 1' increments.
- A 400 pound working capacity as a standard feature.
- No annual factory re-certification required due to high-quality construction. This not only reduces the cost of ownership, but also eliminates down time.
- An integral load indicator lets you know when it is time to remove the product from service.
- SRL connector with integral swivel.
- All models meet OSHA and ANSI A10.32. Compliance with ANSI Z359.1 and certification to CSA Z259.2.2 are noted in the table to the right.
- ATO ordering flexibility allows you to order the exact options, and only the options you want.

Aptura LT30
Part No. 10053558

	Part No.	Description	SRL Connection	Lifeline Connection	Standards* CSA Z259.2.2	Standards* ANSI Z359.1-2007
	10050504	Aptura LT30, 30' line length	None	LI Snap	X	
1	10053558	Aptura LT30, 30' line length	None	HL2000	X	
1	10053560	Aptura LT30, 30' line length	1" Steel Carabiner	HL2000	X	
1	10053559	Aptura LT30, 30' line length	1" Steel Carabiner	LS Snap	X	
2	10088386	Aptura LT30, 30' line length	None	36C		X
	10088387	Aptura LT30, 30' line length	1" Steel Carabiner	36C		X
1	10058886	Aptura LT30, 30' line length	None	Swivel LS	X	

Aptura LT Self-Retracting Lanyard Assemble-To-Order Matrix

Approval	Line Length	SRL Connector	Lifeline Connector	Field-Replaceable Line
N Non-CSA C CSA	08 13' 09 14' 10 15' 11 16' 12 17' 13 18' 14 19' 15 20' 16 21' 17 22' 18 23' 19 24' 20 25' 21 26' 22 27' 23 28' 24 29' 25 30'	00 None 01 Back D-ring Connector (P/N 10089205) 02 1" Aluminum Carabiner (P/N SCRA853) 03 1" Steel Carabiner (P/N 10089207) 04 2" Aluminum Carabiner (P/N SRCA722) 05 2" Steel Carabiner (P/N 506308)	00 None (Sewn Loop) 01 HL2000 Snaphook (P/N 10002490) 02 *Option no longer available* 03 RL20 Snaphook (P/N 520603) 04 Swivel RL20 Snaphook(P/N 520691) 05 LI Aluminum Snaphook (P/N 10014393) 06 1" Steel Carabiner (P/N SRCC643) 07 1" Aluminum Carabiner (P/N SRCA853) 08 1" Steel Swivel Carabiner (P/N 10021804) 09 LS Snaphook (P/N SHWSS31690LS) 10 AL64 Snaphook (P/N 10043811) 11 LS Swivel Snaphook (P/N 10053393) 12 LS Swivel Snaphook w/ Load Indicator (P/N 10038740) 13 36C Snaphook (P/N 10088270) 14 36CS Snaphook (P/N 10089159)	0 No 1 Yes

A-APT							Quantity
Part Number							

Note: Products ordered using the ATO System are non-returnable

* Only Aptura SRLs with 36C or 36CS snaphook for the SRL connection *and* no SRL connection, Back D-Ring Connector or 1" Steel Carabiner for the Lifeline connection meet ANSI Z359.1-2007.

Dyna-Lock® SRL's

The MSA Dyna-Lock Self-Retracting Lanyards (SRL) are fast-acting fall arresters that limit free-fall distance, deceleration distance, and fall arrest forces while allowing user freedom of movement. The Dyna-Lock SRL is ideal for climbing applications where vertical mobility is needed. All Dyna-Lock SRLs meet applicable OSHA regulations and ANSI A10.32. See chart below for ANSI Z359.1-2007 and CSA compliance.

Capacity (working load)
For 20' web; 30', 50', 70' and 95' cable Dyna-Lock Models:
- Maximum: 400 lbs (181 kg)
- Minimum: 75 lbs (34 kg)

For 20' cable model:
- Maximum: 310 lbs (140 kg)
- Minimum: 75 lbs (34 kg)

Arrest Force
- 75–310 lbs < 900 lbf (4 kN)
- 311–400 lbs < 1800 lbf (8 kN)

Arrest Distance
- 75–310 lbs < 40 in (101.6 cm)
- 311–400 lbs < 54 in (137 cm)

Dyna-Lock SRL
Part No. 506204

20' Strap Dyna-Lock SRL Part No. 506615

20' Wire Rope Dyna-Lock SRL Part No. 10017931
(310 lbs Maximum Capacity)

Backpacker SRL Part No. 506619

20' Cable Dyna-Lock SRL in use

Dyna-Lock Backpacker SRL in use

	Part No.	Model	Length	Standards	
				CSA Z259.2.2	ANSI Z359.1-2007
1	506202	Galvanized Wire Rope	10M (30')		X
1	506204	Galvanized Wire Rope	16M (50')		X
	506206	Galvanized Wire Rope	22M (70')		X
	506208	Galvanized Wire Rope	30M (95')		X
	506203	Stainless Steel Wire Rope	10M (30')		X
	506205	Stainless Steel Wire Rope	16M (50')		X
	506207	Stainless Steel Wire Rope	22M (70')		X
	506209	Stainless Steel Wire Rope	30M (95')		X
1	506615	Nylon Web	20'		X
1	10017931	Wire Rope Dyna-Lock	20'		X
	506619	Backpacker, Web	20'		
2	10006470	Galvanized Wire Rope	30'	X	
2	10006468	Galvanized Wire Rope	50'	X	
	10006466	Galvanized Wire Rope	70'	X	
	10006464	Galvanized Wire Rope	95'	X	
	10006469	Stainless Steel Wire Rope	30'	X	
	10006467	Stainless Steel Wire Rope	50'	X	
	10006465	Stainless Steel Wire Rope	70'	X	
	10006463	Stainless Steel Wire Rope	95'	X	
	10006447	Nylon Web	20'	X	
2	10017933	Stainless Steel Cable	20'	X	
	10006446	Backpacker, web	20'	X	

Confined Space Equipment

MSA confined space entry/retrieval systems are designed for fall arrest, lifting and lowering, rescue, and work positioning applications. They incorporate an anchorage connector, fall arrest component (Dyna-Lock, Dynevac II, Lynx Rescuer), a personnel and materials handling hoist (Lynx Hoist), and associated hardware to rig the system for use. The systems can be used for leading edge work, maintenance and entry/retrieval from manholes, tank cars, silos, tanks, vaults, pits, vats, and other confined space applications.

Workman® Tripod and Workman Confined Space Entry Kit

Easy To Use
- Simple setup procedure makes the process quick and promotes correct use.
- Legs automatically lock in the open position for added safety.
- A maximum height indicator provides quick and easy identification of the maximum leg extension length.
- Aluminum leg and head design reduces weight, improving portability.

Durable
- An internal leg-locking mechanism prevents accidental disengagement during use and reduces the possibility of damage to the mechanism during use or while in storage.

Versatile
- The leg base support strap also serves as a convenient carrying strap.

Confined Space Entry Kits
- Single part number for simplified ordering
- Lynx Rescuer allows for non-entry rescue of a confined space entrant
- Lynx Hoist designed for lifting, lowering and positioning of personnel and materials
- Carrying bags allow for great portability

Workman Tripod
Part No. 10102002

NEW!

Confined Space Entry Kit
Part No. 10105271

Confined Space Entry Kit
Part No. 10117244

Part No.	CSA Part No.	
2 10102002	10102002	Workman Tripod
2 10105271	10115109	Confined Space Entry Kit with Lynx Hoist and Lynx Rescuer
10117244	10115110	Confined Space Entry Kit with Lynx Rescuer

Replacement parts and accessories	
1015612	Leg base support strap
10089207	Carabiner
506222	Pulley
10011744	Lynx Rescuer
10016569	Side Mount Lynx Hoist
506232	Lynx Rescuer Mounting Bracket
10105656	Tripod duffel bag
507151	Hoist/Rescuer carrying bag

Lynx® Rescuer, Field Resettable Model with Lockout

- Self-Retracting Lanyard with emergency retrieval capabilities
- User is able to reset device from retrieval mode to fall arrest mode
- The easiest, quickest field-reset mechanism on the market

- Same unit can be used in the field and for training situations
- Lock feature with key allows more control over who can reset unit to fall arrest mode
- Confined space entry provides fall arrest and emergency lifting and lowering

- Meets ANSI Z359.1-2007, and all applicable OSHA standards, and CSA part numbers are CSA certified

Lynx Rescuer
Part No. 10011744

Part No.	CSA Part No.	Description
10011744	10023016	50-ft (16m) Self-Retracting Lanyard with Emergency Rescuer, 3/16" diameter stainless steel line. With proper inspection, system may be reused after fall arrest and/or retrieval.
10011745	10023017	95-ft (30m) Self-Retracting Lanyard with Emergency Rescuer, 3/16" diameter stainless steel line. With proper inspection, system may be reused after fall arrest and/or retrieval.

Lynx Personnel/Material Hoist

Lynx Boom Mount Hoist
Part No. 10016683

Lynx Hoist
Part No. 10016569

- Designed for lifting, lowering, and positioning of personnel and materials
- Maximum work load of 310 lbs for personnel and 620 lbs for materials
- Anti-backlash crank handle with a lifting/ lowering speed of 25 ft per minute
- Integral shock absorber
- Load-limiting clutch prevents overloading of hoist
- Emergency drive allows manual bypass of load-limiting clutch for extra lifting capacity in an emergency

- Primary gear backed up by two independent secondary brakes
- Air drive adapter enables powered lifting/ lowering with optional air-powered drive assembly
- Meets ANSI Z359.1-2007, and all applicable OSHA standards

Part No.	Description
10016569	Side mount with emergency drive and air drive adapter, galvanized wire rope, 50'
10016568	Side mount with emergency drive and air drive adapter, galvanized wire rope, 105'
10016683	Boom mount with emergency drive and air drive adapter, galvanized wire rope, 50'
10016682	Boom mount with emergency drive and air drive adapter, galvanized wire rope, 105'
506420	Lynx Hoist air drive assembly

Lynx Tripod Confined Space Entry Kit

The Confined Space Entry Kit with the Lynx Rescuer allows for non-entry rescue of a confined space entrant. A training video and tripod carrying strap are included with the kit.
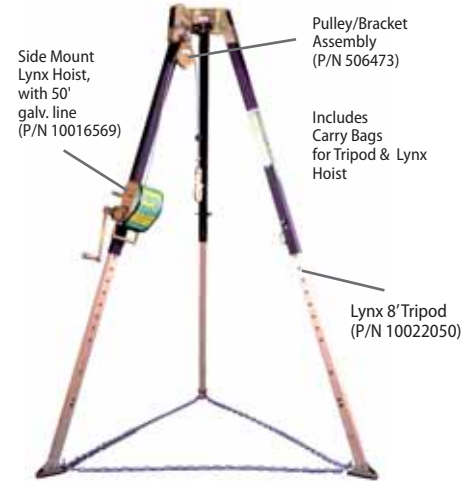
Side Mount Lynx Hoist, with 50' galv. line (P/N 10016569)

Pulley/Bracket Assembly (P/N 506473)

Includes Carry Bags for Tripod & Lynx Hoist

Lynx 8' Tripod (P/N 10022050)

Part No.	Description
10023967	Lynx Confined Space Entry Kit

Folding Davit and Base

The Folding Davit and Base is a portable and economical anchorage connector used where a tripod will not work. Available with a zinc-plated alloy-steel Davit Arm and your choice of zinc-plated carbon steel or stainless steel Davit Base. This lightweight device provides a 24-inch reach and 77-inches of head clearance. It pivots 360-degrees and can readily maneuver personnel and materials between spaces below the deck where it is mounted. The Folding Davit may be carried from base to base and installed in minutes. Meets or exceeds ANSI Z359.1, ANSI A10.32, and applicable OSHA requirements. Mounting brackets and pulleys sold separately.

Column Davit and Base

The Column Davit and Base are used for more permanent conditions where a tripod will not work. Available with a zinc-plated alloy-steel Davit Arm and zinc-plated carbon steel or stainless steel bases. Provides a 30 inch reach and 77 inches of head clearance. May be mounted to horizontal, vertical, and subsurface appropriate anchor points. Pivots 360 degrees. Meets or exceeds applicable OSHA requirements. Mounting brackets and pulleys sold separately.

Bosun Chair

The Bosun Chair is the best method to sit suspended for long durations. The padded seat ensures your comfort during use. The adjustable web assembly ensures security. Designed to be used in conjunction with our Full Body Harnesses, the Bosun Chair, attached to the chest D-ring, will keep the user in the upright position.

Folding Davit Arm
Part No. 506613
Folding Davit base
Part no. 506614

Column Davit Arm
Part No. 506568
Column Davit base
Part No. 506492

Bosun Chair
Part No. SSH3505017

Part No.	Description
506613	Folding davit arm, 24" reach, 77" working height, swivels to extend over work area, folds for ease of transport and storage
506614	Folding davit base
506622	Bracket for mounting 10m (30 ft)/ 16m (50 ft) Dyna-Lock, Dynevac, and Lynx Rescuer to Folding davit
506362	Bracket (same as above), except for 22m (70 ft)/ 30m (95 ft) Dyna-Lock
506568	Column davit arm, 30" reach, 77" working height, boom arm swivels to extend over work area
506492	Surface mounting receptacle for Column davit arm
506232	Bracket for mounting 10m (30 ft)/ 16m (50 ft) Dyna-Lock, Dynevac, and Lynx Rescuer to Column davit, aluminum (requires part no. 506590)
506216	Bracket (same as above), except for 22m (70 ft)/ 30m (95 ft) Dyna-Lock
506590	Bracket for mounting Dyna-Lock or Dynevac to Column davit (requires part no. 506216 or 506232)
506603	Holster to store Boom Mount Hoist when not in use
506668	Vertical davit arm - Ladder Mount
506667	Receptacle for Vertical davit arm - Ladder Mount (bolts to ladder)
415837	Push-Pull davit - Ladder Mount, bolts to ladder and retracts to allow hatch cover to close, extends 60" above hatch when extended
SSH3505017	Bosun Chair, 5" x 16-1/2" padded seat, black nylon straps, 2 carabiners

Ladder Climbing Equipment

SureClimb™ Temporary Cable System

The SureClimb Temporary Ladder Cable System is designed to provide fall protection when climbing or descending ladders or vertical structures up to 300 ft in height. Applications include telecommunications towers, light poles, water towers, hydroelectric towers, stacks, and any other climbable structure. The SureClimb temporary system:

- Uses a 5/16" galvanized steel cable
- Allows for quick and easy attachment to approved ladder or structure
- Includes an integral, adjustable line weight
- Uses a stainless steel fall arrester (ordered separately)
- Meets all applicable OSHA regulations and ANSI standards
- CSA certified

SureClimb™ Permanent Cable System

The SureClimb Permanent Ladder Cable System is designed to provide fall protection when climbing or descending ladders or vertical structures up to 300' in height. Applications include telecommunications towers, light poles, water towers, hydroelectric towers, stacks, and any other climbable structure. The SureClimb permanent system:

- Includes energy-absorbing, galvanized steel top and bottom mounting brackets
- Uses a 5/16" galvanized steel cable
- Incorporates cable guides to minimize cable vibration and wear
- Uses a stainless steel fall arrester (ordered separately)
- Meets all applicable OSHA regulations and ANSI standards
- Is CSA certified and meets ANSI A14.3-1992

50 ft (16 m)	100 ft (30 m)	150 ft (46 m)	200 ft (61 m)	Description
SFPLS353050	SFPLS353100	—	SFPLS353200	Temporary SureClimb System with integral shock absorber Additional lengths available from 50 ft. up to 200 ft. in 50 ft. increments
SFPLS350050	SFPLS350100	SFPLS350150	SFPLS350200	Permanent SureClimb System Additional lengths available from 20 ft. up to 300 ft. in 10 ft. increments

Part No.	Description
10040010	SureClimb Slider (fall arrester) with carabiner (for both temporary and permanent cable systems)
10036032	SureClimb Extension Davit and Base Assembly (for temporary cable system)

SureClimb Temporary System with Integral Shock Absorber Part No. SFPLS353050

SureClimb Permanent Cable System, 50ft Part No. SFPLS350050

SureClimb Slider Part No. 10040010

SureClimb Extension Davit and Base Assembly (for temporary cable system) Part No. 10036032

SureClimb Slider can be attached and removed anywhere along the length of cable
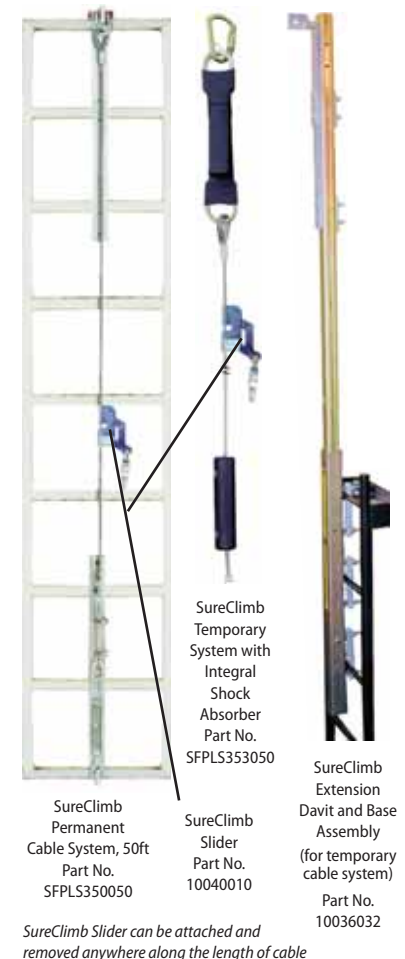
Dyna-Glide® Climbing Protection System

The Dyna-Glide Climbing Protection Systems are used to prevent and/or arrest falls from heights and also enhance the way a climber is able to perform the necessary work. Our systems can be mounted to already-installed ladders, to corners of lattice towers, and to almost any other suitably strong structure your crew needs to climb.

- Limits total fall distance to inches
- Offers components for complete rescue systems
- Allows for vertical and horizontal mobility
- Uses galvanized or stainless steel for corrosion resistance
- Offers your choice of Ladder Rail Combination (LRC) or Rail only
- Provides smooth travel – there's no binding of the fall arrester inside the rail
- Uses detachable, lightweight, stainless steel and aluminum mechanism for hands-free ascent and descent
- Is CSA certified and meets ANSI A14.3-1992

Taken together, the Dyna-Glide System is designed to be installed without modification to the structure and can be assembled with simple hand tools.

LRC Combination (Part No. 506390)
- Rungs incorporate skid-resistant surface
- Can be curved or bent for your specific application
- Constructed of galvanized steel
- Standard length: 7' 4-3/16"
- Standard width: 18"

Fall Arrester (Part No. 506277)
- Mechanical locking mechanism to reduce fall distance
- Permits hands-free ascent and descent
- Constructed of aluminum and stainless steel
- Carabiner not included

For more complete information on the Dyna-Glide System, see the Dyna-Glide Catalog (Bulletin 2300-22-MC).

Part No.	Description
506270	Straight Notched Rail, galvanized, standard length 7' 4-3/16"
506273	Rung Mount Assembly, galvanized
506274	Gated top end stop, stainless steel
506275	Gated bottom end stop, stainless steel
506277	Fall arrester (CSA Part No. 415752)
506282	Mounting base angle corner, galvanized
506283	Mounting angle corner, galvanized
506312	Ungated top end stop, stainless steel
506329	Rail connector, galvanized
506388	Ladder/Rail Combination (LRC) standoff bracket, galvanized, standard length 7' 4-3/16"
506389	LRC standoff bracket, bottom, galvanized
506390	LRC, galvanized (CSA Part No. 10006461)
506391	LRC side rail connector, galvanized

Temporary Horizontal Lifelines

Temporary Synthetic Horizontal Lifelines

Designed for easy installation and removal, these temporary horizontal lifeline systems were created for a wide range of applications. The system may be mounted to any suitable 5,000 lb-rated anchorage. Both systems can be rigged using many standard components, reducing the need for special or "engineered" equipment.

Dyna-Line® HLL
- Highly visible 12-strand red rope will not hockle and minimizes fall distance due to its low stretch properties
- Available in a Single-Worker or Two-Worker system
- Available in lengths up to 200 ft. System comes in a handy bucket for lengths up to 60 ft.
- Meets all OSHA requirements and ANSI A10.32 standards

SureLine™ HLL
- Includes integral energy absorber
- 5/8" black nylon kernmantle rope
- Available in lengths up to 60 ft
- Rated for two workers
- Includes 2 cable anchor slings
- Includes storage bag

Dyna-Line Temporary Horizontal Lifeline for Two Workers Part No. 10013152

Part No.	Description
10013150	Dyna-Line Temporary Horizontal Lifeline for single worker, 30 ft rope
10013151	Dyna-Line Temporary Horizontal Lifeline for single worker, 60 ft rope
10022826	Dyna-Line Temporary Horizontal Lifeline for single worker, 200 ft rope
10013152	Dyna-Line Temporary Horizontal Lifeline for two workers, 30 ft rope*
❶ 10013153	Dyna-Line Temporary Horizontal Lifeline for two workers, 60 ft rope*
10019085	Dyna-Line Temporary Horizontal Lifeline for two workers, 100 ft rope*
10022827	Dyna-Line Temporary Horizontal Lifeline for two workers, 200 ft rope*
SHL1009035BLK	SureLine Temporary Horizontal Lifeline, 35 ft black rope
❷ SHL1009060BLK	SureLine Temporary Horizontal Lifeline, 60 ft black rope

* Dyna-Line Two-Worker system includes 2 polyester anchorage straps.

Dyna-Line Rope HLL Minimum Clearance Required Below Working Surface

Line Length	1-Worker System		2-Worker System	
	6' Lanyard	SRL	6' Lanyard	SRL
10 ft	14'10"	12'5"	15'10"	13'2"
20 ft	15'9"	13'8"	17'2"	14'9"
30 ft	16'10"	15'1"	19'4"	16'6"
40 ft	18'0"	16'4"	21'4"	18'3"
50 ft	19'3"	17'6"	23'2"	20'1"
60 ft	20'6"	18'9"	25'1"	22'

Clearances based on Lifeline 4' above working surface

SureLine Rope HLL Minimum Clearance Required Below Working Surface

Line Length	1-Worker System		2-Worker System	
	6' Lanyard	SRL	6' Lanyard	SRL
10 ft	14'3"	12'5"	14'7"	13'2"
20 ft	15'6"	13'9"	17'	15'
30 ft	17'1"	15'2"	19'4"	16'7"
40 ft	18'6"	16'5"	21'8"	18'4"
50 ft	20'	17'8"	24'2"	20'3"
60 ft	21'5"	19'1"	26'	22'2"

Clearances based on Lifeline 4' above working surface

SureLine Temporary Horizontal Lifeline for Two Workers Part No. SHL1009060BLK

SureLine™ Temporary Cable Horizontal Lifeline

The SureLine temporary Horizontal Lifeline is a lightweight cable system that is suspended between two approved anchor points to provide worker fall protection during horizontal movement. Designed for quick and easy installation at temporary work sites, the SureLine system:

- Includes an integral shock absorber
- Available in 2 models, with or without turnbuckle
- Available in 20 ft, 40 ft, or 60 ft lengths
- Rated for up to 2 people
- Uses a 3/8", 6x36 galvanized cable

- Incorporates a combination clamp/thimble that allows for effortless tensioning of lifeline
- Meets all OSHA requirements and ANSI A10.32 standards.

SureLine Steel Cable System Part No. SHL2009040

Part No.	Description
❷ SHL2009040	Steel Cable Horizontal Lifeline System with turnbuckle, 40 ft (12 m)
❶ SHL2009060	Steel Cable Horizontal Lifeline System with turnbuckle, 60 ft (18 m)
SHL2009040IW	Iron Worker Cable Horizontal Lifeline System without turnbuckle, 40 ft (12 m)
SHL2009060IW	Iron Worker Cable Horizontal Lifeline System without turnbuckle, 60 ft (18 m)

SureLine Cable HLL Minimum Clearance Required Below Working Surface

Line Length	1-Worker System		2-Worker System	
	6' Lanyard	SRL	6' Lanyard	SRL
10 ft	14'1"	12'2"	14'6"	13'2"
20 ft	15'1"	13'1"	16'7"	14'8"
30 ft	16'2"	14'	19'	16'4"
40 ft	17'3"	14'9"	21'	18'
50 ft	18'4"	15'7"	22'7"	19'6"
60 ft	19'5"	16'5"	24'3"	21'4"

Clearances based on Lifeline 4' above working surface

Horizontal Lifeline Stanchions

Standard Model
Part No. 10055659

SL Model
Part No. 10055660

SkyLink® HLL Stanchion

- Accommodates two workers per system
- Lightweight - weighs only 21 pounds, making it easily installed, removed, and handled by 1 person
- No tools required for installation when using pour-in-place anchor, making it easy to install— sets up in minutes!
- Can be used as single point anchor attachment, providing fall protection for workers while installing horizontal lifelines
- Aluminum and steel construction increases durability to ensure long service life
- Offers two installation methods to concrete, a pour-in-place anchor for new construction or concrete expansion bolts for existing construction, providing versatility to meet the requirements of your application
- Folding leg stanchion design makes the stanchion easy to carry and convenient to store
- Meets ANSI A10.32 and OSHA requirements

Designed to support horizontal lifelines in two directions (in-line with D-ring head)

Can be used as single point anchor while connecting lifeline

Part No.	Description
10055659	Skylink Stanchion, Standard model - 44" height (pour-in-place Pigtail or concrete expansion anchors must be ordered separately)
10055660	Skylink Stanchion, SL model - 23" height (pour-in-place Pigtail or concrete expansion anchors must be ordered separately)
10055721	3.25" concrete expansion anchor with nut and washer
10059805	0.5" x 12" pour in place "Pigtail" anchor with washer and vinyl cap
10059806	**Skylink Stanchion Kit** including 2 - Standard stanchions with 60' 2-worker Dyna-Line 10013151 (without anchor straps) and 4 Pigtail anchors
10059807	**Skylink Stanchion Kit** including 2 - Standard stanchions with 60' Sure-Line for Iron Workers (p/n SHL2009060IW), and 4 Pigtail anchors
10059808	**Skylink Stanchion Kit** including 2 - SL stanchions with 60' 2- worker Dyna-Line (p/n 10013153 - without anchor straps) and 4 Pigtail anchors
10059809	**Skylink Stanchion Kit** including 2 - SL stanchions with 60' Sure-Line for Iron Workers (p/n SHL2009060IW), and 4 Pigtail anchors

HLL quickly connects to Stanchion

Jaw clamp screw easily attaches to I-beam flange

D6 HLL Stanchion
for Horizontal Lifeline
Part No. SHLARD6A

D6 HLL Stanchion

The D6 HLL Stanchion is an anchorage connector used for the installation of horizontal lifeline systems. Designed with a jaw clamp screw, D6 HLL Stanchions are easily installed on steel girders or base plates fitted to bridge rail ties to provide a strong stable connection point for the approved horizontal lifeline system.

Anchorage Bracket also features:
- Constructed of galvanized steel
- Collapsible A-frame for easy transport & storage
- Meets all applicable OSHA regulations & ANSI standards

Part No.	Description
SHLARD6A	D6 HLL Stanchion A-frame design, galvanized steel
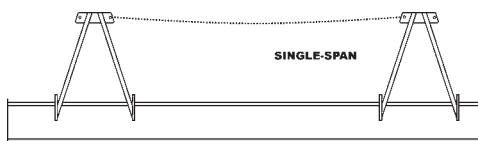
SINGLE-SPAN
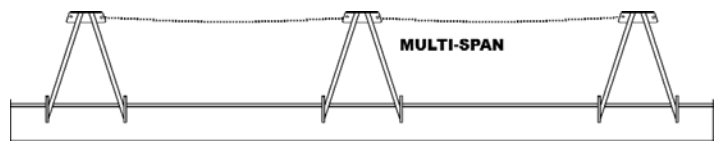
MULTI-SPAN

Permanent Horizontal Lifelines

Horizon® Horizontal Lifeline

The MSA Horizon Horizontal Lifeline anchorage connecting system is designed for portability, versatility, ease of installation, and ease of use. The system may be mounted to existing overhead steel beams or to newly constructed steel structure where overhead anchorage points are not available. Horizontal travel through intermediate supports is achieved without disconnection of the worker's personal fall arrest system. The system may accommodate up to five persons. The unique shock absorber reduces dynamic forces transmitted to the anchorage points. Stanchion system may be installed on the top or bottom flange of an I-beam.

Typical applications include new construction (steel erection), inspection and maintenance operations, loading bays, bridges, overpasses, aircraft hangars, manufacturing, petrochemical, chemical, and food processing plants. Meets OSHA requirements.

Basic Below Beam Mount Sub-System
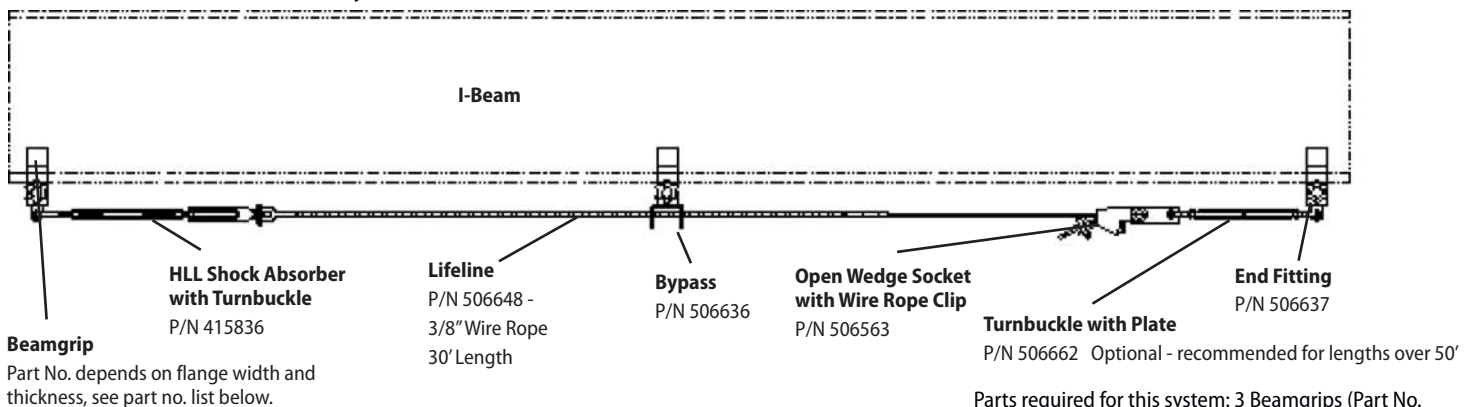
I-Beam

HLL Shock Absorber with Turnbuckle
P/N 415836

Lifeline
P/N 506648 -
3/8" Wire Rope
30' Length

Bypass
P/N 506636

Open Wedge Socket with Wire Rope Clip
P/N 506563

End Fitting
P/N 506637

Turnbuckle with Plate
P/N 506662   Optional - recommended for lengths over 50'

Beamgrip
Part No. depends on flange width and thickness, see part no. list below.

Parts required for this system: 3 Beamgrips (Part No. depends on size of beam flange); 1 - 415836; 1 - 506648 (30'); 1 - 506636; 1 - 506563; 1 - 506662; 2 - 506637

Part No.	Description
506682	Beamgrip for beams with flange width: 3.94" to 5.64", flange thickness: .205" to .659"
415171	Beamgrip for beams with flange width: 5.525" to 8.07", flange thickness: .36" to 1.09"
415172	Beamgrip for beams with flange width: 8.06" to 10.475", flange thickness: .56" to .935"
415173	Beamgrip for beams with flange width: 10.265" to 12.8", flange thickness: .605" to 1.25"
415836	Horizontal lifeline shock absorber
506563	3/8" open wedge socket
506636	Beamgrip bypass fitting
506637	Beamgrip end fitting
506648	3/8" wire rope, galvanized, length must be specified at the time of order
506662	12" turn buckle with plate
506663	Snatch block pulley for 3/8" wire rope
506254	for 1/2" wire rope
506255	for 5/8" wire rope

⚠️WARNING

OSHA regulations state "Horizontal Lifeline Systems shall be designed, installed and used under supervision of a qualified person, as part of a complete fall arrest system, which maintains a safety factor of at least two." A qualified person is defined as "one with a recognized degree or professional certificate and/or extensive knowledge and experience in the subject field, who is capable of design, analysis, evaluation and specifications in the subject work, project or product." MSA can provide a qualified person to design and install a Horizontal Lifeline System. Contact the MSA Engineering Service Department.

Below Beam HLL Kits

Choose from 4 kits.

30 ft kits include
- 2 beamgrips (choose from P/N 415171 or P/N 415172)
- 2 end fittings (P/N 506637)
- Shock absorber (P/N 415836)
- Lifeline (P/N 506648 - 30 ft)
- Open wedge socket (P/N 506563)
- Turnbuckle (P/N 506662)

60 ft kits include
- 3 beamgrips (choose from P/N 415171 or P/N 415172)
- 2 end fittings (P/N 506637)
- Shock absorber (P/N 415836)
- Lifeline (P/N 506648 - 60 ft)
- Open wedge socket (P/N 506563)
- Turnbuckle (P/N 506662)
- Manual Bypass (P/N 506636)

Part No.	Description
10030270	HLL Kit #1, 30' Below Beam system, for I-beams with flange width 5.525"–8.07" and flange thickness .36"–1.09"
10030271	HLL Kit #2, 60' Below Beam system, for I-beams with flange width 5.525"–8.07" and flange thickness .36"–1.09"
10030272	HLL Kit #3, 30' Below Beam system, for I-beams with flange width 8.06"–10.475" and flange thickness .56"–.935"
10030273	HLL Kit #4, 60' Below Beam system, for I-beams with flange width 8.06"–10.475" and flange thickness .56"–.935"

Permanent Horizontal Lifelines

Basic Stanchion Mount Sub-System

Parts required for this system:

(5) Beamgrips – *part no. depends on size of Beam Flange*
(2) 506646
(1) 506647
(1) 506648 – 30'
(1) 506645
(1) 415836
(3) 506665
(1) 506649
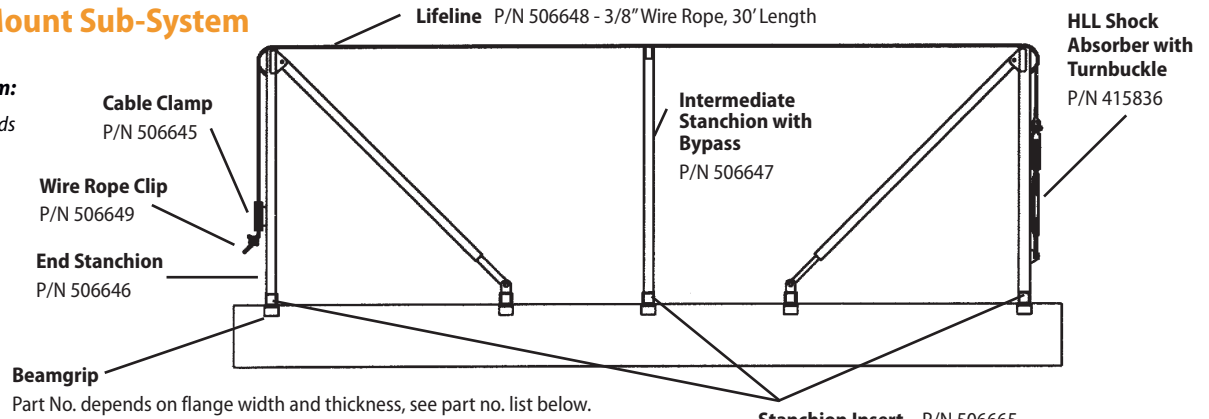
Lifeline P/N 506648 - 3/8" Wire Rope, 30' Length

HLL Shock Absorber with Turnbuckle P/N 415836

Cable Clamp P/N 506645

Intermediate Stanchion with Bypass P/N 506647

Wire Rope Clip P/N 506649

End Stanchion P/N 506646

Beamgrip
Part No. depends on flange width and thickness, see part no. list below.

Stanchion Insert - P/N 506665

Horizon HLL Minimum Clearance Required Below Working Surface				
Line Length	1-Worker System		2-Worker System	
	6' Lanyard	SRL	6' Lanyard	SRL
10 ft	13'4"	5'0"	13'11"	5'4"
20 ft	14'4"	5'6"	14'10"	6'3"
30 ft	15'0"	6'1"	15'7"	6'9"
40 ft	15'9"	6'9"	16'3"	7'5"
50 ft	16'4"	7'3"	16'9"	8'0"
60 ft	16'9"	7'9"	17'5"	8'6"
70 ft	17'5"	8'3"	17'10"	9'0"
80 ft	17'11"	8'9"	18'5"	9'6"
90 ft	18'4"	9'3"	18'11"	10'0"
100 ft	18'9"	9'7"	19'5"	10'5"

Part No.	Description
506682	Beamgrip for beams with flange width: 3.94" to 5.64" flange thickness: .205" to .659"
415171	Beamgrip for beams with flange width: 5.525" to 8.07" flange thickness: .36" to 1.09"
415172	Beamgrip for beams with flange width: 8.06" to 10.475" flange thickness: .56" to .935"
415173	Beamgrip for beams with flange width: 10.265" to 12.8" flange thickness: .605" to 1.25"

Part No.	Description	Part No.	Description
415836	Horizontal lifeline shock absorber	506649	Wire rope clip 3/8"
506645	Cable clamp	506663	Snatch block pulley for 3/8" wire rope
506646	Beamgrip end stanchion	506254	for 1/2" wire rope
506647	Beamgrip bypass stanchion	506255	for 5/8" wire rope
506648	3/8" wire rope*, 30', galvanized	506665	Beamgrip stanchion insert

Stanchion HLL Kits

Choose from 4 kits.

30 ft kits include
- 4 beamgrips (choose from P/N 415171 or P/N 415172)
- 2 end stanchions (P/N 506646)
- 2 stanchion inserts (P/N 506665)
- Lifeline (P/N 506648 - 30 ft)
- Wire rope clip (P/N 506649)
- Cable clamp (P/N 506645)
- Shock absorber with turnbuckle (P/N 415836)

60 ft kits include
- 5 beamgrips (choose from P/N 415171 or P/N 415172)
- 2 end stanchions (P/N 506646)
- 3 stanchion inserts (P/N 506665)
- Lifeline (P/N 506648 - 60 ft)
- Wire rope clip (P/N 506649)
- Cable clamp (P/N 506645)
- Shock absorber with turnbuckle (P/N 415836)
- Intermediate Stanchion with Manual Bypass (P/N 506647)

Part No.	Description
10030274	HLL Kit #5, 30' Stanchion system, for I-beams with flange width 5.525"–8.07" and flange thickness .36"–1.09"
10030275	HLL Kit #6, 60' Stanchion system, for I-beams with flange width 5.525"–8.07" and flange thickness .36"–1.09"
10030276	HLL Kit #7, 30' Stanchion system, for I-beams with flange width 8.06"–10.475" and flange thickness .56"–.935"
10030277	HLL Kit #8, 60' Stanchion system, for I-beams with flange width 8.06"–10.475" and flange thickness .56"–.935"

HLL Kit Component Parts — Beamgrip with attached End Fitting, End Fitting, ByPass, Stanchion Insert, Open Wedge with Socket, Turnbuckle with Plate, HLL Shock Absorber with Turnbuckle, Horizontal Mounted Beamgrip, Vertical Mounted Beamgrip

Questions or Comments?
www.facebook.com/MSATheSafetyCompany
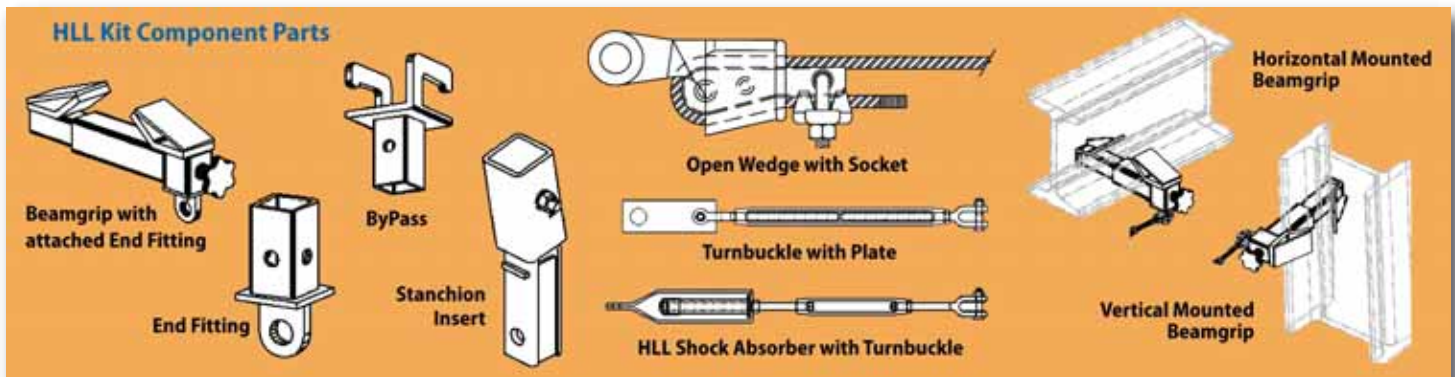
Sure-Rail™ Horizontal Lifeline

The Sure-Rail system is a rigid rail horizontal lifeline system typically used in areas when there is limited clearance below the working surface. The system consists of galvanzied steel 1/2" x 2" x 10' rail sections, a rail trolley, end stops, and various mounting hardware. The rails are anchored to a supporting structurer, while the trolley provides a mobile connection point for the user. The rail sections are affixed to an approved anchorage at 5-ft intervals. End stops prevent accidental detachment of the trolley frm the rail.

In addition, the Sure-Rail system provides:

- Ease of movement (smooth trolley action)
- Little or no deflection in the rail limits fall distance and fall arrest forces on the body
- Designt hat allows for even distribution of fall arrest forces on the body
- Twin-track configuration that allows users to bypass each other without having to disconnect and re-connect

- Spring-loaded end stops for easy insertion/removal of the trolley
- Aluminum trolley with stainless steel wheels
- Support for up to 4 workers on the system simultaneously
- Meets all applicable OSHA regulations

Sure-Rail trolley
Part No. SHLSR0014

Sure-Rail Bolt

Sure-Rail Trolley

Carabiner

20' Cable
Dyna-Lock SRL

Sure-Rail
System

Sure-Rail

Sure-Rail Splice

Sure-Rail
Anti-Slip off Collar

Structural supports, such as the hollow steel shape illustrated here, are not included with the Sure-Rail System. Design and fabrication of structural supports are the responsibility of the purchaser.

Side View

Top View

Sure-Rail Spacer

Sure-Rail Bolt

Custom fabrication of structure is not included in kits.

Sure-Rail Horizontal Lifeline Ordering Information

Part No.	Description
SHLSR00104	Sure-Rail trolley
SHLSR0021000	Sure-Rail, galvanized, predrilled, 1/2" (12mm) x 2" (50mm) x 10 ft (3m)
SHLSR00501	Sure-Rail splice, galvanized, with bars and hardware [required every 10 ft (3m)]
SHLSR00601	Sure-Rail spacer, galvanized [required every 5 ft (1.5m)]
SHLSR00703	Sure-Rail anchorage bolt, galvanized [required every 5 ft (1.5m)]
SHLSR00601	Sure-Rail spacer, galvanized [required every 5 ft (1.5m)]
SHLSR00801	Sure-Rail anti-slip 0ff collar, steel, painted [required at both ends of system]

Sure-Rail Truck/Rail Car Loading Kit (60 ft)

10030601	Sure-Rail truck/rail car loading 60 ft kit
Kit includes	
Qty	**Product (Part. No.)**
6	1/2" x 2" rail (SHLSR0021000)
6	Splice joining hardware (SHLSR00501)
12	Spacers (SHLSR00601)
12	Standard anchorage bolts (SHLSR00703)
2	Anti-slip off collars (SHLSR00801)
1	Sure-Rail trolley (SHLSR00104)
1	Carabiner (SRCC643)

Sure-Rail Truck/Rail Car Loading Kit (80 ft)

10030602	Sure-Rail truck/rail car loading 80 ft kit
Kit includes	
Qty	**Product (Part. No.)**
8	1/2" x 2" rail (SHLSR0021000)
8	Splice joining hardware (SHLSR00501)
16	Spacers (SHLSR00601)
16	Standard anchorage bolts (SHLSR00703)
2	Anti-slip off collars (SHLSR00801)
1	Sure-Rail trolley (SHLSR00104)
1	Carabiner (SRCC643)

Rescue Equipment: FP Rescue™ Pulleys & Components

Part No.
SPPPU8708

Part No.
SPPPU8710

Part No.
SPPPU8720

Part No.
SPPRL4000

Part No.
SMI420560

SuretyMan™ Pulleys

Designed to meet the rigorous standards of the professional rescuer. Built with high grade aluminum side plates and sheaves, oilite bearings, stainless steel bolts, washers, and lock nuts make these some of the best pulleys available. The aluminum side plates swivel and rotate to allow the pulley to be attached anywhere along the rope. The top holes of the side plates are large enough to accept three carabiners. Contain Prusik design (squared corners of the side plates) to provide rope security with a Prusik hitch. Pulleys accept 3/8" (1cm) to 1/2" (1.3 cm) static kernmantle ropes. Side plates are powder coated. Strength: 2" (5 cm) Double 8,100 lb (36 kN), 4" (10 cm) Double 11,200 lb (49 kN).

SuretyMan™ Mini Knot Passing Pulley

The Suretyman Mini Knot Passing Pulley was designed for the professional rescue team concerned with size and weight. The Suretyman Mini Knot Passing Pulley features:
- Ample room for the passing of knots
- Size: 9-1/2" (24 cm) tall, 4" (10 cm) wide, 3" (7.6 cm) deep
- Aluminum sheave
  (that will not score like some of the plastic sheaves)
- Locking pin
- Weight: 1.9 lb (.89 kg)
- Half the size and weight of some of the larger, bulkier knot passing pulleys

SuretyMan™ Edge Roller

The best way to protect your rope from sharp edges and reduce rope friction. High quality construction. The 6" x 10" (15.3 cm x 24.4 cm) base is rubber covered to reduce slippage. The bottom and side plate feature attachment holes for ease of security in any situation. Added slots in the base plate accept tube webbing for security. Two edge rollers are required (sold separately). Two quick links are required (sold separately). Edge roller is 4" (10 cm) tall. Weight: 2.8 lb (1.3 kg).

SuretyMan™ Q-Eight

- Ears/cleat are positioned to make tie off very easy and safe
- Ears/cleat still prevent larks footing (girth hitch)
- Designed for 7/16" (11 mm) diameter rope
  (will work with 1/2" (12 mm) diameter rope)
- Aluminum, anodized gold
- Strength 13,000 lbs (58 kN)
- Weight 8 oz (.24 kg)

SuretyMan™ Rescue Eight

- Designed for rope diameters from 7/16" (11 mm) to 5/8" (16 mm)
- Strength 6,720 lb (30 kN)
- Designed for the fire service, rescue, and police tactical operations
- Available in aluminum or steel
- Weight 1.5 lb (675 g)

SuretyMan™ Rigging Plates

Stealth Riggin Plate: Anchor on the point and the wings will rotate toward the load for a straighter line of pull. Material aluminum. Weight: .46 lb (250g). Strength: 11,000 lb (48 kN). Color: Teal

Stretcher Rigging Plate: Designed to unclutter and organize litter rigging points, reducing the chance of error. Material aluminum. Weight: .74 lb (330g). Strength: 12,200 lb (54 kN). Color: Teal

SuretyMan™ Carabiner

- Traditional large "D" design
- Developed for fire and rescue communities
- Manual locking
- Certified to meet NFPA 1993-1995, Class "G"
- Carbon steel, zinc-plated
- Strength 12,364 lbs (55 kN)
- Weight 11 oz (311g)
- Gate opening 1.2" (32mm)

SuretyMan Q-Eight
Part No.
SRSFFE2120

SuretyMan Rescue Eight, Steel
Part No. SRSF5045

Stealth Rigging Plate
Part No. SRSPR5990

Stretcher Rigging Plate
Part No. SRSPR5980

Part No.	Description
SPPPU8708	SuretyMan Pulley, 2" (5 cm) double, Std/Prusik, orange, aluminum, weight: .83 lb (375 g)
SPPPU8710	SuretyMan Pulley, 4" (10 cm) single, Std/Prusik, yellow, aluminum, weight: 1.2 lb (545 g)
SPPPU8717	SuretyMan Pulley, 4" (10 cm) double, Std/Prusik, orange, aluminum, weight: 1.8 lb (840 g)
SPPPU8720	SuretyMan Mini Knot Passing Pulley, yellow, weight: 1.9 lb (.89 kg)
SPPRL4000	SuretyMan Edge Roller, aluminum, weight: 2.8 lb (1.3 kg) - [two required]
SMI420560	Quick Link 5/16" (8 mm) for use with Suretyman Edge Roller - [two required]
SRSF5077	SuretyMan Rescue Eight, aluminum
SRSFFE2120	SuretyMan Q-Eight
SRSPR5990	SuretyMan Stealth Rigging Plate, aluminum, teal
SRSPR5980	SuretyMan Stretcher Rigging Plate, aluminum, teal
SRCC641	Carabiner, 1.2" (32mm) gate, steel

Rescue Equipment: FP Rescue Ropes
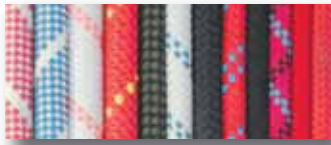
Static Kernmantle Ropes

These ropes are 100% permanent solution dyed color with contrasting marker stripe. Superior flexibility and knotability, provided by a unique double-twist cable core construction, gives superior resistance to abrasion hat is up to four times greater than other static kernmantle ropes. These ropes are designed with load absorbing capabilities to provide additional safety in the event a dynamic force is applied.

Tying a Two-Wrap Prusik Hitch

1.
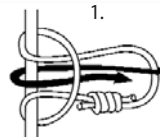
Tying a Three-Wrap Prusik Hitch

2.

3.

Rope Bag #1
Part No. SRB430105

Rope Bag #2
Part No. SRB430201

Part No.	Description
SRP508760050	7/16" (11 mm), nylon, 6,500 lb (2,948 kg), black, 50'
SRP504860SL050	1/2" (12 mm), nylon, 9,100 lb (4,128 kg), white/orange tracer, 50'
SRP508960050	5/8" (16 mm), nylon, 11,400 lb (5,171 kg), black, 50'
SRP530961050	1/2" (12 mm) polyester, 9,100 lb (4,128 kg), red, 50'
SRP510660SL050	3/8" (10 mm), nylon, 5,000 lb (2,269 kg), white/blue tracer, 50'
SRP544000050	7/16" (11 mm), nylon, 6,500 lb (2,722 kg), olive, 50'
SRP504866SL050	1/2" (12 mm), nylon, 9,000 lb (4,083 kg), white/blue tracer, 50'
SRP504863SL050	1/2" (12 mm), nylon, 9,000 lb (4,083 kg), red/white tracer, 50'

Additional lengths are available in 1-foot increments.

Prusik & Accessory Cords

Prusik cords have the same high quality and long wear design as rescue ropes. Size selection should be based upon diameter of the main line. The flexible cord is both strong and highly resistant to abrasion. Prusik cords and accessory cords are identical.

Part No.	Description
SRP500860	8 mm Accessory Cord, nylon. Use with 1/2"-5/8" (1.3cm-1.6cm) main line, black, 3,100 lb (1,406 kg)
SRP500900	9 mm Accessory Cord, nylon. Use with 1/2"-5/8" (1.3cm-1.6cm) main line, 3,600 lb (1,632 kg)
SRP500500050	5 mm Accessory Cord, nylon, 1,275 lb (578 kg) strength, 50'
SRP5020550050	5.5 mm Titian™ Cord, Sprectra Core, nylon, 4,500 lb (2,042 kg) strength, 50'
SRP500700050	7 mm Accessory Cord, nylon. Use with 3/8"-1/2" (1cm-1.3cm) main line, red, 2,600 lb (1,179 kg), 50'

Rope Storage Bags

Rope Storage Bags are made of tough Cordura nylon fabric. Features include a drawstring top, handle/shoulder strap, and carabiner loops at top and bottom. In the bottom of the bag there is an inside loop for the end of the rope, or it can pass through the bottom grommet. Available in orange and black colors.

Part No.	Description
SRB430101	Rope Bag #1, orange, holds 120-ft / 1/2" (36.6m / 12 mm) rope
SRB430105	Rope Bag #1, black, holds 120-ft / 1/2" (36.6m / 12 mm) rope
SRB430201	Rope Bag #2, orange, holds 200-ft / 1/2" (60.1m / 12 mm) rope
SRB430205	Rope Bag #2, black, holds 200-ft / 1/2" (60.1m / 12 mm) rope
SRB430301	Rope Bag #3, orange, holds 300-ft / 1/2" (91.4m / 12 mm) rope
SRB430305	Rope Bag #3, black, holds 300-ft / 1/2" (91.4m / 12 mm) rope
SRB430601	Rope Bag #6, orange, holds 600-ft / 1/2" (182.8m / 12 mm) rope
SRB430605	Rope Bag #6, black, holds 600-ft / 1/2" (182.8m / 12 mm) rope

Rescue Equipment: FP Rescue Tripod

Aluminum Extruded Head Assembly (2) Forged Steel Anchors

Self Locking Head Assembly

Powder-coated Paint Finish

Locking Legs Adjust in 5" (14cm) increments

Leg Security Strap with Adjustable Friction Buckle

Total Weight: 43.5 lbs (20 kg)

Collapsed Storage Size 10" x 61" (25cm x 152 cm)

Non Slip Rubber Pads on Feet
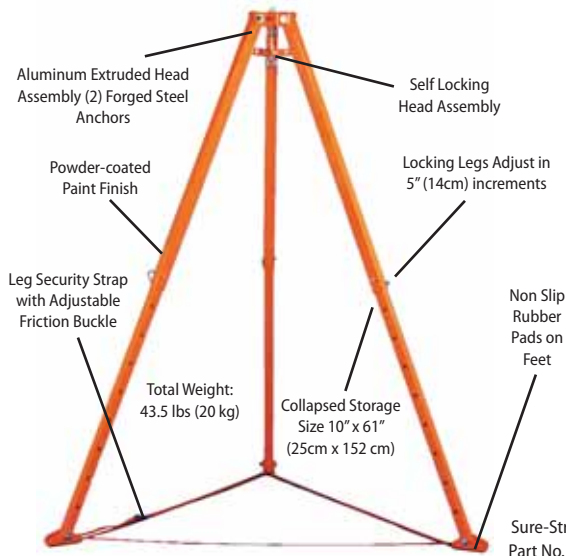
Sure-Strong Work Winch
Part No. SCE1074411200

Sure-Strong Tripod
Part No. SCE107007

Sure-Strong™ Tripods

Sure-Strong Tripods feature:
- Adjustable aluminum legs
- Two forged steel anchor eyes in head assembly
- Head assembly prevents unintentional collapse of tripod
- Legs adjust and lock individually to accommodate variable anchor heights, uneven ground, and compact storage
- Leg security strap prevents legs from spreading in the event of excessive loading
- Available with a cordura nylon storage bag
- Rated for 2 people with a working load of 1,100 lbs

Part No.	Description
SCE107007	Sure-Strong 7-ft (2m) tripod, aluminum, 10,000 lb (48 kN)
SCE107010HD	Sure-Strong 10-ft (3m) tripod, aluminum, 10,000 lb (48 kN)
SCE1074411200	Sure-Strong work winch, 200-ft (61m) galvanized wire rope, with bracket (compatible with Lynx Tripod and Sure-Strong Tripod)

Rescue Equipment: FP Rescue Kits

Carabiner

Right-handed
Ascender
(standard)

SuretyMan
Rescue Utility System
Part No. SRS15200

Anti-Reversing
Double Pulleys

Securing Rope
with Carabiner

Storage
Bag

SuretyMan
7/16" (11mm)
Static Kernmantle
Rope

Carabiner

Left-handed
Ascender
(optional)

SuretyMan™ Rescue Utility System

The SuretyMan Rescue Utility System incorporates all the features professionals have come to expect from a first class rescue system. The system is primarily used for raising and lowering people or equipment in rescue and industrial work access and is ideal for confined space applications.

The SuretyMan Rescue Utility System features:
- Pulleys equipped with a built-in anti-reversing lock
- Only a 10 lb force is required to hold a 220-lb (90 kg) load
- SuretyMan ascender attached to both the operating rope and the user via a securing rope— if the operating rope accidentally releases, the ascender automatically stops the descent
- Rapid deployment
- Virtually maintenance free
- Rated for 2-person load
- Compact and light weight with a standard system weight of 17 lb (7.7 kg)
- Versatile for rescue & access
- Multi-purpose ascent or descent
- Rated capacity of 600 lb (272 kg) for personnel and materials
- Standard rope length of 200 ft (66m) with a maximum rope length of 800 ft (267m)

	Part No.	Description
2	SRS15200	SuretyMan Rescue Utility System (200' length)

PLEASE NOTE:

Due to a 4:1 mechanical advantage, the user should order the Rescue Utility System with 4 times the length of rope necessary for their application. For example, the 200' system listed above provides a 50' working length. A 800' system provides a 200' working length.

Pole
Adapter

Rescue
Utility
System

Remote Hook

Adjustable
Pole

Storage
Bag

Fall Protection Rescue Kit
Part No. 10030025

Fall Protection Rescue Kit

The Fall Protection Rescue kit is designed to be an "out of the bag" rescue system. This kit combines a remote hook and extension pole with a rescue utility system. The remote hook and extension pole allows for remote attachment of a rescue line to a victim. The Rescue Utility System allows a rescuer to raise or lower the victim to safety. This kit should be used with a back-up system (not included).

Fall Protection Rescue Kit includes:
- Adjustable Pole, 6 ft (1.8m) to 12 ft (3.6m) (P/N - SFP675009)
- Pole Adapter (P/N - SCE109001) converts pole to hold remote hook
- Remote Hook (P/N - SRCA401) for remote attachment
- Storage Bag (P/N - SRB675009) for pole and remote hook
- Rescue Utility System (P/N - SRS15200) - raising and lowering system with a 4:1 mechanical advantage

Part No.	Description
10030025	Fall Protection Rescue Kit

PLEASE NOTE:

Due to a 4:1 mechanical advantage, the user should order the Rescue Utility System with 4 times the length of rope necessary for their application.

Basic High Angle Rescue Kits

The Basic High Angle Rescue Kits were designed for the Fire Department planning to assemble a high angle rescue team. A complete high angle rescue system consists of two kits: a Belay System Kit, and a Raising/Lowering System Kit.

Belay System Kit
Part No. 10030023

53" 8 mm Accessory Cords

Storage Bag

1/2" Rope

Anchorage Sling

Carabiners

9 mm Accessory Cord

65" 8 mm Accessory Cords

The Belay System Kit includes:

- 3 large "D" shaped rescue carabiners (P/N SRCC641) - NFPA approved Class G
- 200-ft (61m) 1/2" rope, orange and white (P/N - SRP504860SL) - NFPA approved
- 33-ft (10m) 9mm accessory cord (P/N - SRP500900) for making load- release hitch
- 65" (1.65m) 8mm accessory cord & 53" (1.35m) accessory cord (P/N - SRP500860) make-up the tandem Prusiks
- 6-ft (1.8m) Suretyman anchorage sling (P/N - SFP2267406)
- #3 rope bag, orange (P/N - SRB430301)

Part No.	Description
10030023	Belay System Kit

Pulleys

Raising/Lowering System Kit
Part No. 10030024

1/2" Rope

Storage Bag

Brake Bar Rack

Stealth Rigging Plate

Anchorage Sling

Carabiners

The Raising/Lowering System Kit includes:

- 6 large "D" shaped rescue carabiners (P/N - SRCA641) - NFPA approved Class G
- Stealth rigging plate (P/N - SRSPR5990)
- 200-ft (61m) 1/2" rope, red (P/N - SRP504863SL) - NFPA approved
- 33-ft (10m) 9mm accessory cord (P/N - SRP500900) for making load-release hitch
- 65" (1.65m) 8mm accessory cord & 53" (1.35m) accessory cord (P/N - SRP500860) make-up the tandem Prusiks
- 53" (1.35m) 8mm accessory cord (P/N - SRP500860) for creating the Prusik for connecting the raising system
- 2 Single Pulleys, 4" (100mm) (P/N - SPPPU8710) - Prusik minding pulleys
- Brake Bar Rack (P/N SRS14001) - lowering device is NFPA approved
- 6-ft (1.8m) Suretyman anchorage sling (P/N - SFP2267406)
- #3 rope bag, black (P/N - SRB430305)

Part No.	Description
10030024	Raising/Lowering System Kit

Rescue Equipment: FP Rescue Kits

Emergency Rescue
Bag System

Part No.
SRS323150
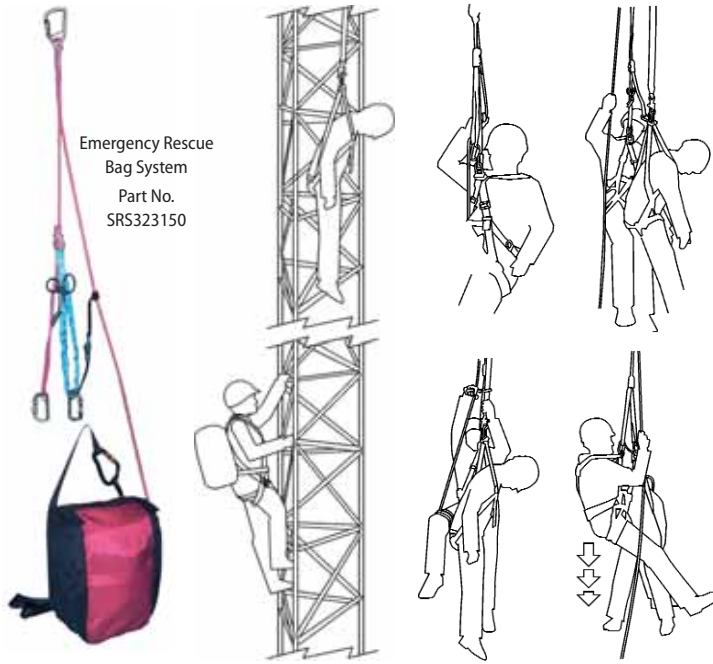
Emergency Rescue Bag System

The Emergency Rescue Bag System is designed for rescue on electrical and communication towers. Developed for use in restrictive environments, this extremely lightweight system was primarily designed for tower rescue; however, the system can be used to perform rescues on almost any vertical structure. The Emergency Rescue Bag System consists of a pre-rigged lowering System that comes in a variety of lengths. The users of this product must receive training by an approved trainer.

Part No.	Description
SRS323150	Emergency Rescue Bag System, 150-ft (45 m) working length
SRS323300	Emergency Rescue Bag System, 300-ft (90 m) working length

PLEASE NOTE:

Due to a 2:1 mechanical advantage, the user should order the Emergency Rescue Bag System with twice the length of rope necessary for their application. For example, the SRS323150 uses 300′ of rope to achieve a 150′ working length. The maximum system available provides a 400′ working length with 800′ of rope.

Rescue System

Rescue System

D
C

A

C

B

D

D

E

B

A

Strength: 5,000 lb (22 kN)

Weight Approx: 2 lb (0.9 kg)
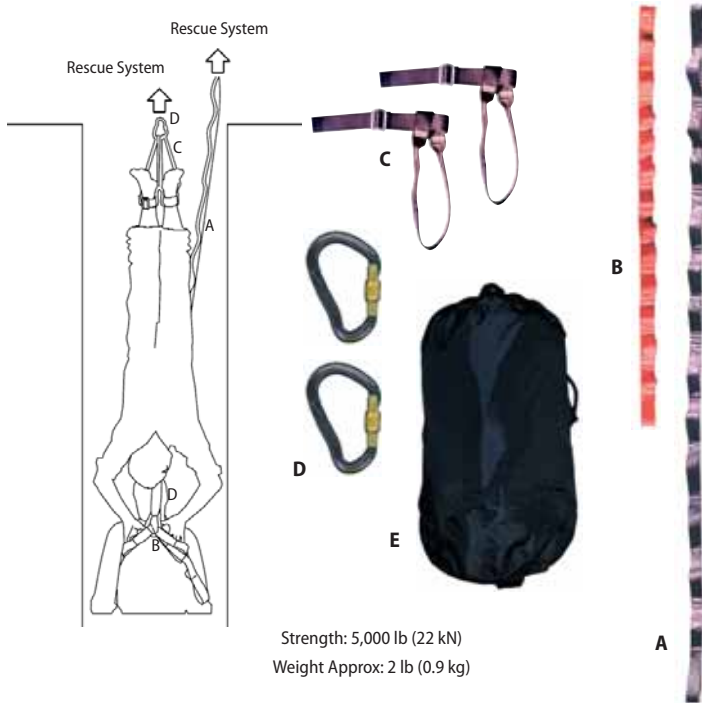
Confined Space/Head First Extraction System

The Confined Space/Head First Extraction System (HFES) is a specialized rescue product designed for those extreme cases where the rescuer has no other option, but to be lowered head first into a confined space to perform a rescue. These cases are rare, but can happen when someone has fallen into a restrictive confined space such as a well or drain system. The system allows the rescuer to be lowered comfortably into a confined space head first, harness the victim, and raise both victim and rescuer out of the confined space. This small, compact sytem can be used with any confined space retrieval equipment such as tripods and davits.

The HFES consists of the following components:
- Adjustable Lifting Strap (A)
- Adjustable Victim Strap (B)
- 1 Pair of Ankle Harnesses (C)
- 2 Carabiners (D)
- Storage Bag (E)

Part No.	Description
SRS3100	Confined space head first extraction system

Bucket Truck Evacuation Kit

The Bucket Truck Evacuation Kit was created to provide all necessary equipment to allow a worker to safely evacuate an aerial bucket that has become inoperative. The kit includes:
- #2 Rope Bag (P/N - SRB430205)
- 10-ft Synthetic Ladder with Swivel Snaphook P/N - SCE405010)
- Boom Anchor Strap (P/N - SSB22040)
- Anthron system (P/N - SDC726075) which includes Anthron device, Carabiners (2), 75-ft (22m) 7/16″ rope

Part No.	Description
SKITSMT001	Bucket Truck Evacuation Kit

Questions or Comments?
www.facebook.com/MSATheSafetyCompany

Escape Kit

The Escape Kit was created as a tool for emergency egress when trapped in an upper floor of a building. This kit is lightweight and easy to use.

Escape Kit includes:
- 2 Suretyman aluminum auto-locking carabiners (P/N - SRCA853)
- 60 ft (18.3 m) 9mm rope (P/N - SRP500900)
- Mini Q-Eight
- Small stuff sack

Carabiner
Escape Kit
Part No. 10030026
9 mm Rope
Mini Q-Eight
Stuff Sack

Part No.	Description
10030026	Escape Kit

SKED Basic Rescue System

Sked Basic Rescue System
Part No. SRSSK200

The best solution for confined space, high angle or technical rescue, and traditional land-based applications, the Sked stretcher is a revolutionary design which provides outstanding patient protection and security. The Sked stretcher comes equipped for horizontal hoisting by helicopter or vertical hoisting in caves or industrial confined spaces. When the patient is secured, the stretcher becomes rigid. The durable plastic provides protection for the patient while allowing extrication through the most demanding confined spaces. The stretcher is rolled for storage in a tough cordura backpack which is included in the system. The system ships at 19 lb (8.6 kg) and comes complete for most applications.

Each Sked Basic Rescue System comes complete with:
- Sked Stretcher
- Cordura backpack/towing harness
- Horizontal lift slings
- Vertical lift sling
- Tow strap
- Removable webbing handles

Part No.	Description
SRSSK200	Sked Basic Rescue System, International orange
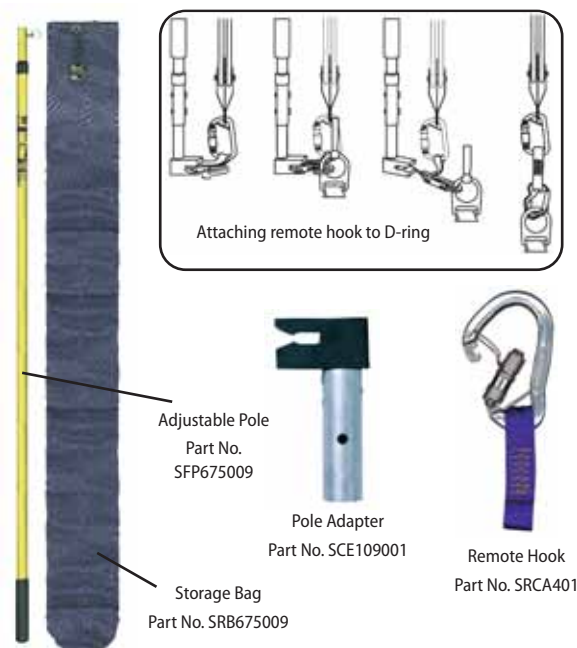
Rescue Pole/Remote Hook

The Rescue Pole/Remote Hook is designed as a rescue tool for the retrieval of a worker suspended in a fall arrest system or for remote rescue access. In most cases, the need for the rescuer to go to the fallen worker (victim) is limited. The Rescue Pole can be used in a wide variety of rescue applications and will serve as an excellent tool to help perform a safer, efficient rescue. The system consists of an adjustable fiberglass pole, pole adapter, and remote hook. A nylon storage bag is optional.

Attaching remote hook to D-ring

Adjustable Pole
Part No.
SFP675009

Pole Adapter
Part No. SCE109001

Remote Hook
Part No. SRCA401

Storage Bag
Part No. SRB675009

Part No.	Description
SFP675009	Adjustable pole, fiberglass 6 ft (1.8m) to 12 ft (3.6m)
SFP675012	Adjustable pole, fiberglass 8 ft (2.4m) to 24 ft (7.3m)
SRCA401	Remote hook, aluminum, with web sling
SCE109001	Pole adapter, aluminum/rubber
SCE109003	Pole adapter, 6 ft (1.8m), aluminum/rubber
SRB675009	Storage bag for FP675-009

Rescue Equipment: Cradles, Ladder & Etrier

Rescue Cradle
Part No.
SRH30701

Rescue Cradle
Part No.
SRH30703

Rescue Ladder
Synthetic Rope
Part No. SCE4000020

Rescue Etrier
Part No. SRS3200

Rescue Cradles

The Rescue Cradle is available in two model types. The SRH30701 model is designed to allow easy placement on a person. Equipped with 4" (10 cm) polyester webbing and 4 - 3" (7.6 cm) D-rings. One size fits all.

The Rescue Cradle, model SRH30703, is designed to be very similar to the SRH30701 model, except it is constructed with 1 - 3/4" (4.4 cm) nylon webbing, 2" (5 cm) attachment ring, and an elastic shoulder strap.

Part No.	Description
SRH30701	Rescue Cradle, 4 D-rings, 4" (10 cm) polyester webbing
SRH30703	Rescue Cradle, 2" attachment ring, 1-3/4" (4.45 cm) nylon webbing

Rescue Ladders

Our Rescue Ladders has synthetic rope with reinforced fiberglass rungs. Applications include: confined space access, theatrical stage rigging, mine access, and many others.

Part No.	Description
SCE400020	Rescue Ladder, synthetic rope, 20 ft (6.1 m)

Rescue Etrier

Etrier is French for a set of ascending web stirrups sewn or tied together. The Etrier is useful for stretcher tendering and other vertical activities including getting over difficult edges. The six-foot loops are reinforced/ stiffened for easier foot placement and abrasion resistance.

Length: 7 ft (2.1 m). Weight: 9 oz (280 g).

Part No.	Description
SRS3200	Rescue Etrier, 1" web, 7 ft (2.1 m)

General Accessories

Hands-Off Chisel Grip
Part No. 10040018

18" Tool Holder
Part No. 507005

Hands-off™ Chisel Grip

The Hands-Off Chisel Grip keeps hands away from the point of contact. The Hands-Off Chisel Grip is ergonomically designed to match the specific shape of the human hand for a comfortable and firm grip. Additional features of this modern design include:

- Permits faster, safer, more accurate work
- Easy adjustment to hold a variety of chisels and stakes up to 1" in diameter
- Vibration-absorbing handle
- Eases awkward hand positioning
- Economical
- Spark resistant

	Part No.	Description
1	10040018	Hands-Off Chisel Grip

Ergonomic Tool Holders

- Holds wrenches, chisels, etc.
- Attach to broom handles and mops for better grip
- Vibration-absorbing design
- Eases awkward hand positioning

	Part No.	Description
2	507005	Tool Holder, 18"
2	507006	Tool Holder, spark resistant, 18"

Calculating Total Fall Distance

Knowing how to calculate Total Fall Distance is just as important as selecting the proper harness, lanyard, anchorage connector, and anchorage point for the specific task to be performed. Total Fall Distance (TFD) is defined as the sum of Freefall Distance (FFD), Deceleration Distance (DD), Harness Effects (HEFF), and Vertical Elongation (VEL). It is also wise to include a Safety Factor (SF) of at least one foot in the formula. Total Fall Distance can be calculated using the following formula:

TFD = FFD + DD + HEFF + VEL + SF

Before we can begin to calculate Total Fall Distance, we first need to define the variables in the formula above.

Freefall Distance (FFD): The vertical distance a worker travels between the onset of a fall until just prior to the point where the Fall Arrest System begins to arrest the fall. Federal OSHA limits this distance to 6′ or less. To keep FFD to a minimum, you should always try to keep your anchor point as far above the back D-ring of the harness as possible.

Deceleration Distance (DD): The vertical distance a worker travels between the activation of the Fall Arrest System and final fall arrest. Federal OSHA limits this distance to 3.5′ or less. The DD that each shock-absorbing fall arrest device will permit is typically stated on the product label.

Harness Effects (HEFF): The stretch of a harness during fall ar rest. This is typically one foot or less for a properly-fitted harness. However, some harnesses use elastic-type webbing that can increase the harness effects to two feet or more.

Vertical Elongation (VEL): The stretch in the lifeline of the Personal Fall Arrest System. Vertical Elongation is measured on the part of the lifeline that is under tension during deceleration and final fall arrest. This variable will change drastically depending upon the type of Fall Arrest System you are using. For example, most shock-absorbing lanyards are designed to have a maximum deceleration distance of 3.5′, which includes the vertical elongation of the lanyard. However, if you are using a rope grab system or a horizontal lifeline, vertical elongation must be calculated based on the stretch of the vertical or horizontal lifelines in those systems. You will need to check the specific manufacturers′ product for exact stretch percentages.

Safety Factor (SF): An additional factor of safety to ensure that you have the required clearance below your work ng surface. This variable should be at least one foot, but can reflect any number with which you feel comfortable.

For illustration purposes, we will use the following equipment:
- Full Body Harness (non-elastic)
- 6′ Shock-Absorbing Lanyard
- Fixed, Rigid Anchorage Connector (such as a D-Plate bolted to a structural I-beam)

In **Figure 1**, we see a worker with a 6′ Shock-Absorbing Lanyard on an elevated platform. In this example, let's assume that his attachment point is 2′ above the back D-ring of the harness. For every 1′ the lanyard attachment point is above the harness back D-ring, 1′ is deducted from the Freefall Distance. For every 1′ that the lanyard attachment point is below the harness back D-ring, 1′ is added to the Freefall Distance (see **Table 1**). In this scenario, if the worker falls, the Freefall Distance (FFD) will equal 4′ since the lanyard attachment point is 2′ above the back D-ring of the harness.
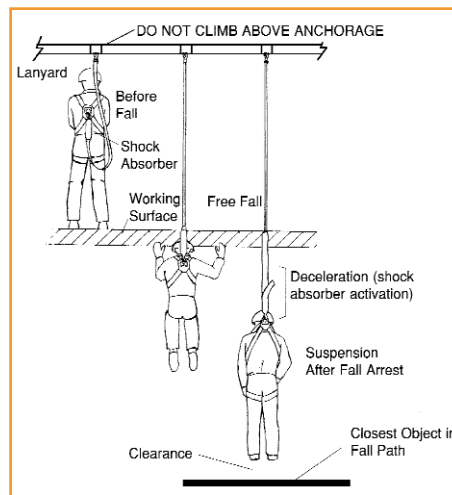
Figure 1.

FreeFall Distance for various Shock-Absorbing Lanyard Lengths and Elevations of Anchorage Connection Point.	Length of Shock-Absorbing Lanyard			
Distance of Anchorage Connection Point Above (+) or Below (-) Harness Fall Arrest D-Ring	**6'**	**5'**	**4'**	**3'**
+3	3	2	1	0
+2	4	3	2	1
+1	5	4	3	2
0	6	5	4	3
-1	7	6	5	4
-2	8	7	6	5
-3	9	8	7	6
-4	10	9	8	
-5	11	10		
-6	12			
	FreeFall Distance			

Table 1.

So, our formula looks like this:
TFD = 4′ + DD + HEFF + VEL + SF

The next variable to consider is Deceleration Distance (DD). Federal OSHA requires that this distance not exceed 3.5′. Since all manufacturers′ product is slightly different, you should read the label on the product you intend to use to determine the maximum deceleration distance of that product. When calculating Total Fall Distance, the maximum deceleration distance that a product will permit should always be used. In our example, the maximum deceleration distance would be 3.5′.
TFD = 4′ + 3.5′ + HEFF + VEL + SF

The Harness Effects variable is relatively constant at less than one foot. This will vary slightly due to the adjustment of the harness, so we generally use one foot to account for these slight differences. However, elastic-type harnesses can have more than one foot of stretch, possibly two feet or more, and that additional

distance must be accounted for in your calculation. In our example, we are using a non-elastic harness to keep our Total Fall Distance to a minimum.
TFD = 4′ + 3.5′ + 1′ + VEL + SF

Most manufacturers design their Shock-Absorbing Lanyards so that the vertical elongation of the lanyard is included in the OSHA mandated 3.5′ maximum deceleration distance. However, if we were using a rope grab or horizontal lifeline, or if you were attaching to a non-rigid anchorage connector, VEL would need to be calculated based on the specifications of those components in your Fall Arrest System. Since we are using a 6′ Shock-Absorbing Lanyard in our example and the VEL is already considered in the lanyard design, we will enter a "0" for the VEL variable.
TFD = 4′ + 3.5′ + 1′ + 0′ + SF

The final variable of the formula is the Safety Factor. It is always a good idea to include at least a 1′ safety factor; however, the safety factor could reflect any number that makes you comfortable with your calculation.

Now we can solve our Total Fall Distance Formula:
TFD = 4′ + 3.5′ + 1′ + 0′ + 1′
TFD = 9.5′

Now we know that if the worker in **Figure 1** would happen to fall, his Total Fall Distance will be 9.5′.

But what does this number really mean?

It means that the clearance between the working surface and the next closest object in the fall path must be at least 9.5′. It is important to remember that Total Fall Distance is not always measured from the working surface to the ground, because sometimes the ground is not the closest object be neath the working platform. If there is any type of obstruction in the fall path of the worker (see **Figure 2**), your available clearance is measured from the working platform to the top of that obstruction. Sometimes these distances can be very short, and a fall protection means other than a 6′ shock-absorbing lanyard is necessary. Total Fall Distance calculations can become more complex than those demonstrated here. The numbers and variables will change depending upon the type of Personal Fall Arrest System used. For example, when calculating Total Fall Distances for Horizontal Lifeline Systems you have additional variables to consider, such as cable deflection and the number of people on the system. The important thing to remember is that calculating Total Fall Distance is just as important as selecting the right product for the job. Forgetting to calculate Total Fall Distance is just as dangerous as forgetting to put on your harness before you begin to perform any work at heights.
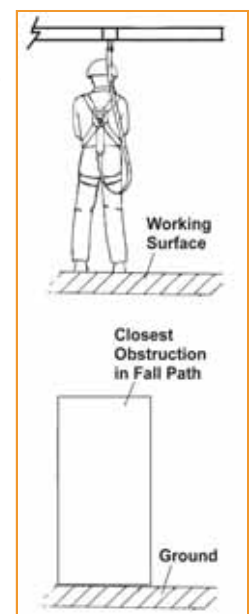
Figure 2.

MSA Training

Learn from the *Experts*

MSA offers the following ANSI Z359 Compliant Fall Protection training courses:

MSA training courses are compliant to the new ANSI Z359 family of fall protection standards and meet *"ANSI Z490.1 2001 Criteria for Accepted practices in Safety, Health, and Environmental Training"*.

Qualified Person Training

This course will train the Qualified Person in the use of all fall protection equipment and systems encountered in work and includes the following;
• Fall protection regulations
• Equipment use, selection and inspection
• Preparing fall hazard surveys
• Developing engineering system standards
• Determining system clearance requirements
• Designing and selecting anchorages
• Designing new and evaluating existing horizontal systems
• Developing written fall protection procedures and rescue procedures
• Determining potential impact forces

Authorized Person Training

This course will train the Authorized Person to inspect, anchor, assemble and use the fall protection in work applications. The Authorized Person training will include the following information;
• Fall hazard recognition
• Fall hazard control methods
• Fall protection regulations
• How to use written fall protection procedures
• Equipment use, selection and inspection
• Fall protection rescue procedures

Administrator Training

This course will train the Fall Protection Program Administrator to have a working knowledge of current fall protection regulations, standards and fall protection equipment and systems. The fall protection program administrator training will include the following:
• Fall protection regulations
• Developing and maintaining a managed fall protection program
• Fall hazard surveys
• Selection and appointment of safety committee personnel
• Fall protection system selection
• Development of approved equipment purchase lists
• Selection and appointment of qualified and competent people
• Development of engineering system standards

Competent Rescue Training

This course will train the Competent Fall Protection Rescuer how to select, inspect, anchor, assemble and use fall protection and rescue equipment in their work applications. The Competent Fall Protection Rescuer training will include the following:
• Fall hazard control methods
• Fall protection and rescue regulations
• Assessment of fall hazards to determine appropriate rescue methods
• Training on suspension trauma
• Equipment use, selection and inspection
• Rescue system assessment
• Development of written fall protection rescue procedures

Authorized Rescuer Training

This course will train the Authorized Fall Protection Rescuer how to select, inspect, anchor, and use fall protection and rescue equipment in their work applications. The Authorized Fall Protection Rescuer training will include the following:
• Fall hazard recognition
• Fall hazard control methods
• Fall protection and rescue regulations
• Training on suspension trauma
• How to use written fall protection and rescue procedures
• Inspection of rescue and fall protection equipment components and systems before use

Other courses available include:
• Competent Person for "Safety-At-Heights"
• Fundamentals of safety at heights
• Competent Person for equipment inspection
• Tower climbing safety
• Confined space entry

HANDS–ON COMPREHENSIVE COURSES

LET US TRAIN YOU AT YOUR FACILITY!

REGISTRATION INFORMATION

We invite you to attend our next training session, which will prove to be a comprehensive and valuable experience. For registration information, please contact the MSA Customer Service Center by phone (1.800.672.222) or by fax (1.800.967.0398), or log onto our web site at www.MSAnet.com.

MSA-U®, MSA's premier online training center, offers a wide range of training and informational materials. **Register today at http://msau.msanet.com**

TRAINING CENTERS BUTLER, PA ENGLEWOOD, CO

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MSA Custom Solutions

Every business is unique, and MSA recognizes that YOUR Fall Protection systems need to be custom-designed and installed to meet YOUR needs.

To help you, we have carefully selected and trained specially qualified contractors, who can personally work with YOU to deliver exactly the services your hazardous situations demand.

These MSA Fall Protection System Integrators are independent organizations throughout North America whose local specialists can provide one or more customized MSA Fall Protection solutions for your business. Your MSA System Integrators will combine their experience and knowledge of practical applications with MSA Fall Protection products to meet your specific needs for any industry, including forestry, construction, oil & gas, petrochemical, mining, manufacturing, utilities, entertainment, and transportation.

Whether you choose complete turnkey services or individual services, you'll receive experienced application and design, fabrication, and installation of whatever MSA Fall Protection systems you need.

For more information call MSA Customer Service Center at 1-800-672-2222 and request the Custom Solutions Catalog (Bulletin #2300-100).

Engineering Services

Registered professional engineers will visit your site to analyze and determine the scope of work. Then they will design and draft engineering drawings, and later, follow up with a construction site review to ensure that your Fall Protection system has been installed as designed.

Installation

Factory-trained and certified installation technicians will execute the design specifications and carry out the manufacturer's instructions. Technicians can also inspect and re-certify an existing MSA Fall Protection system.

Fabrication

Knowledgeable fabricators will build all structural components that are required to support your primary MSA Fall Protection system, from simply connecting brackets that attach to your building columns or beams, to assembling complete free-standing support structures. You can trust that your fabricated components will comply with all applicable governing codes and standards.

Training

High quality training programs at a reasonable cost will be tailored to the unique issues of your industry and installation. MSA's commitment to increasing demands for technical training in Fall Protection, post-fall retrieval, and rescue will be fulfilled at your facility.

Why Choose MSA Custom Solutions?

How? It's easy!

• You get the broadest product range, to ensure the best possible fall hazard solution for your specific application.

• MSA System Integrators work directly for you and are responsive to your project requirements.

• MSA System Integrators offer cost-effective services direct to you, the MSA customer.

• You will benefit from dedicated regional System Integrators as well as nationally prominent organizations that specialize in particular industry applications.

To receive your quotation from MSA CUSTOM SOLUTIONS:

1. Contact your local MSA distributor, MSA Sales Associate, or call our MSA Customer Service at 1-800-672-2222.

2. Your request will be forwarded to the MSA System Integrator, who will contact you about your project's specific requirements.

3. You will receive a written estimate for your ystem.

Ultralight™ Cap Lamp System

MineSpot Cap Lamp System (shown with new battery top and new clip system)

Remote Adapter

Remote Adapter Cover

The state-of-the-art Ultralight Cap Lamp System has the brightest prefocused spotlight available (tungsten halogen) and provides exceptionally brilliant illumination of the work site. It has a long-life Luminator battery and a variety of battery charging equipment available.

The two-inch diameter, state-of-the-art Ultralight Cap Lamp headpiece is made of high-impact polycarbonate and consists of only five major parts:

- A one-piece polycarbonate bezel/lens (glass-laminated lens optional).
- A computer-designed, prefocused bulb/reflector assembly, featuring a high output, tungsten-halogen bulb, accurately positioned in the focal point of the reflector to assure a good spot.
- A plug-in tungsten-halogen bulb emergency escape light.
- A main housing with a printed circuit board for bulb and battery cable connections.
- A three-position switch.

A wire spring keeps the bulb/ reflector assembly properly resting against the lens to reduce vibration and mechanical shock.

The prefocused bulb/reflector assembly eliminates the need for a focusing mechanism. Both the on/off switch and the charging contact are located in the headpiece housing. With only four major parts, inventory, replacement stocks and downtime are minimized.

The tungsten-halogen bulb provides a white, bright light, achieved with little battery power consumption, because tungsten-halogen bulbs are extremely efficient. In fact, more light output is achieved without reduction in bulb life. The light is also softer to miner's eyes.

In addition, the light output is more consistent, providing 85 to 95% of its initial light output, even at 70% of life expectancy. The bulb has a 1.0 amp rating at 4 volts. This lower amperage allows for longer cap lamp use between charges.

The prefocused bulb/reflector assembly efficiently concentrates over 90% of the light into a highly concentrated beam for exceptionally bright illumination of the work site.

Ultralight Specifications

Operating voltage: 4.2 to 3.8

Operating Time: Up to 14 hours (Luminator Plus)

Battery Dimensions: $7^1/_4$" x $5^1/_4$" x $1^1/_2$"

Weight: 4 lb 12 oz

Light Intensity: @ 10 feet (using standard bulb with fully charged battery) = 1450 LUX

Bulb Amperage: 1.0 (nominal)

MineSpot® Luminator® Battery

The MineSpot Luminator Battery is assembled as a complete sealed unit that requires nothing more than routine charging and periodic watering. The battery case is impact-resistant polycarbonate with reinforced bottom corners and molded-in belt loops. The Luminator Battery was designed for low maintenance and long life. Watering is required only every 4–6 weeks. The MineSpot Luminator Battery must be charged after each use.

Approvals and Standards

All MSA Cap Lamps have Mine Safety and Health Administration Certifications (MSHA certification) for use in an atmosphere of methane and air only.

Ultralight Cap Lamp System

Ultralight Cap Lamp, with acid-filled Luminator Plus battery (16 AH)	817172
Ultralight Cap Lamp, with acid-filled Luminator Plus battery (16 AH) and remote power takeoff adapter	817170
Ultralight Headpiece, cable and cover assembly (no battery	484820
Ultralight Headpiece, cable and cover assembly (no battery), with remote power takeoff adapter	813230

MineSpot Luminator Battery

MineSpot Luminator Plus battery (16 AH), with acid	817178
Battery Clip, pack of 10 (for new, taller battery top)	10078291
Screw for Battery Clip (P/N 10078291), pack of 10	10078292
Clips (2 required) for Luminator battery (with old battery top)	817182

Power Builder Charger Stations

Power Builder single-unit, AC	10002436
Power Builder 10-unit	10002439
Circuit Board Module, replacement	10002462
Transformer, replacement	10002464
Leg Assembly Kit (up to 60-station) - inlcudes right and left leg	10002465

Cap Lamp Spare Parts and Accessories

Bulb/Reflector	480374
Bezel/Lens	476705
Cable Assembly	484688
Secondary Bulb	637035
Bezel with glass laminated lens	491869
Swivel Adapter	491870
Comfo-Cap (white), with lamp bracket and cord holder	91522
Battery Pouch, nylon (fits MSA and Koehler)	803100
Remote Adapter with battery top	801581

Adapters for Koehler (Wheat) Cap Lamps and Charging Equipment

Using these adapters will permit you to charge an MSA Ultralight Cap Lamp on Koehler (Wheat) equipment.	
1 Single-unit adapter for use with Wheat single unit slide-on (Mark II) or turnkey (Mark V) chargers	491116

CAUTION: Do not mix cap lamp components from different manufacturer for use in applications where MSHA approval is required.

Service and Repairs

For service on all MSA lighting equipment, call 1-800-MSA-2222 or your local MSA distributor.

Questions or Comments?
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Ultralight Cap Lamp System

Power Builder 10-Unit Charging Stations are stackable. Front only or back-to back. Leg kit shown.

Single-unit Power Builder charger

Power Builder® Charger Stations

MSA offers a variety of charging stations, including an AC single-unit and a 10-unit station. The 10-unit charger can be tabletop mounted, wall mounted, or stacked to convert into a multi-station charger for up to 60 stations.

The Power Builder Charger uses a microprocessor control that is efficient and never needs recalibration. It uses constant current and constant potential charging. No adjustments are required. LED colored lights let you know the condition of the battery at all times. No rectifier is required. The charger is self-contained. All AC chargers can run on 110 or 220 current.

See Bulletin 02-00-01-MC for details on all MSA Cap Lamp Systems and Accessories.
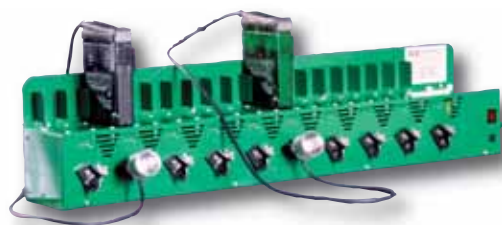
Power Builder 10-Unit Charging Station

Power Builder Charger Stations

Power Builder single-unit, AC	10002436
Power Builder 10-unit	10002439
Circuit Board Module, replacement	10002462
Transformer, replacement	10002464
Leg Assembly Kit (up to 60-station) (includes right and left leg)	10002465

Note: Up to 6 ten-unit chargers can fit on one leg kit. The chargers would be set up back-to-back.

Miscellaneous Mining Equipment

Multipurpose Miner's Pouch

Miner's Support System and Multipurpose Pouch

The Miner's Support System from MSA is a lightweight but sturdy miner's belt that offers comfort, lumbar support, versatility and durability. It enables the miner to carry the cap lamp battery pack, filter self-rescuer, SCSR, tools, etc., on the job. A one-inch reflective strip sewn over a two-inch nylon strap makes the support system highly visible.

For more complete information, see Bulletin 0115-03.

Miscellaneous Mining Equipment

Miner's Support System, small (28–34)	696757
Miner's Support System, medium (34–44)	696758
Miner's Support System, large (44–52)	696759
Multipurpose Miner's Pouch	803100
Multipurpose Miner's Pouch with Velcro closure	804655

W65 Self-Rescuer Respirator

Provides emergency protection against carbon monoxide

The W65 Self-Rescuer Respirator provides emergency respiratory protection against carbon monoxide gas resulting from underground fires or explosions. A one-time-use device for escape purposes only, it provides respiratory protection against carbon monoxide in otherwise respirable air; it should not be used in atmospheres containing less than 19.5 percent oxygen or in atmospheres containing other toxic gases and vapors. Protected by a rugged stainless steel case, it weighs only 2.2 pounds.

Approvals

The W65 Self-Rescuer Respirator is approved by the Mine Safety and Health Administration (MSHA) and the National Institute of Occupational Safety and Health (NIOSH) (Approval No. TC-14G-82) for self-rescue from carbon monoxide. Previously assigned Bureau of Mines Approval No. 14F-76.)

For more complete information, see Data Sheet 10-00-10.

W65 Self-Rescuer with Boot and Holster

W65 Self-Rescuer Respirator Compete Assemblies

W65 Self-Rescuer Respirator, complete in carton	455299
W65 Self-Rescuer Respirator, w/protective boot & neoprene holster	461100

Holster

Adapts Self-Rescuer to belts up to 2-1/2 inches in width.

Leather Holster	455535
Neoprene Holster	460027

Protective Boot

Protective black rubber boot for Self-Rescuer.

Protective Boot	449428

Self-Rescuer Training Model

A special training model, which does not contain chemicals, simplifies training in the use of the W65 Self-Rescuer. After use, it can be cleaned, reassembled, and used again.

Training Model, in red case	455696

Solaris® Multigas Detector with Nitrogen Dioxide Detection

The economical Solaris Multigas Detector provides simultaneous detection of up to 4 of the following gases: CH_4, CO, O_2, and NO_2 or H_2S.

Lightweight: under 8 oz., compact size makes it easy to wear

Durable: case with rubberized armor provides superior protection against liquid and dust ingress

Long-life battery: rechargeable lithium ion battery provides 14+ hours of continuous run time and delivers best-in-class performance in extreme conditions

Galaxy Compatible: compatibility for Galaxy automated test system

Sampling Pump Option: optional powered sampling

pump with extensive contaminant filtering system

Warranty: outstanding 2-year, all-inclusive warranty

Ergonomic design: for maximum comfort

Alarm System: world-class triple alarm system with 100+ decibel audible alarm, multiple high-intensity visual alarm and strong vibrating alarm

Display features: superior display features simultaneous gas concentration display, backlighting for easy reading and alphanumeric message bar for easy use

Calibration Cylinders	Methane Standard 2.5%	15% Oxygen	60 ppm CO	20 ppm H_2S	10 ppm NO_2
RP (58 Liter)					
10048890	•	•	•	•	
10048889	•	•		•	
813718 (100L)	•	•	•		
10058171	•	•	•		•
Econo-Cal (34 Liter)					
10048981	•	•	•	•	
10048888	•	•		•	
10058172	•	•	•		•
10049056	•	•	•		

* To download the Solaris data the MSA data docking module (P/N 10082834) must also be purchased.

MSHA-Approved Solaris Multigas Detector Kits

All kits include a MSHA Approved Solaris with datalogging option* included, calibration cap assembly and instruction manual on CD-rom.

4-Gas (CH_4, O_2, CO, NO_2)	10070963
4-Gas (CH_4, O_2, CO, H_2S)	10070857
3-Gas (CH_4, O_2, CO)	10070859
2-Gas (CH_4, O_2)	10070962

Video Programs

Order programs below online at **www.goavmod.com/MSA.** Available on DVD or as a download.

Title and Comments	Running Time	Year Released
Proper Donning & Use of the **Advantage 420 Respirator**	10 min.	2009
Proper Care & Use of the **Advantage 4000 Full-Face Respirator** *Now available in English, French, and Spanish!*	15 min.	2010
Care and Use of the **A-1000** and **Millennium Gas Mask** *For use by First Responders and Law Enforcement personnel. This program uses and shows cartridges and canisters approved for use prior to 2004, DOES NOT cover specific CBRN canisters.*	24 min.	2003
Proper Care & Use of the **Advantage 1000 Full-Face Respirator**	15 min.	1994
Proper Care & Use of the **Comfo Classic Respirator**	20 min.	1994
Use & Maintenance of the **Ultra-Twin Respirator**	22 min.	1982 (rev. 1995)
Proper Care & Use of the **OptimAir MM PAPR for the Abatement Industries**	24 min.	1993
Overview of **OptimAir TL PAPR**	15 min.	2007
Proper Care & Use of the **Responder Powered Air-Purifying Respirator**	25 min.	2009
Fit Testing MSA Respirators with the **Qualitative Fit Test Kit** *UPDATED!*	10 min.	2010
Proper Care & Use of the **PremAire Supplied-Air Respirator System**	43 min.	1994
Proper Care & Use of the **PremAire Cadet System**	32 min.	1993
Donning & Using the **PremAire Cadet Escape Respirator**	20 min.	2008
Proper Care & Use of the **Hip-Air Apparatus**	28 min.	1992
Proper Care & Use of the **Pressure-Demand Air-Line Respirator**	44 min.	1986
Proper Care & Use of **Constant-Flow Air-Line Respirators**	27 min.	1992
How to Use & Maintain the **Custom Air V Escape Respirator**	18 min.	1988
Proper Care & Use of Your **Response Escape Hood** from MSA	11:15 min.	2002
Proper Care and Use of the **Xtreme Air Mask with HUD/RIC**	40 min.	2003
Proper Care and Use of the **M7 Air Mask**	35 min.	2008
Proper Care and Use of the **M7 Responder Air Mask**—Covers SCBA (35 min.), PAPR (25 min.), and APR (20 min.) options	80 min.	2008
SCBA Rescue Belt *Available on CD only.*	20:00 min.	2004
Proper Care & Use of the **MMR Xtreme Air Mask with the FireHawk MMR and the ICM Unit**	36 min.	2001
FireHawk Disassembly & Reassembly Instructional Program	11:46 min.	2002
Proper Care and Use of the **AirHawk II SCBA**	25 min.	2009
Proper Care and Use of the **Quick-Fill System**	min.	1992
Proper Care & Use of the **Evolution 5000 Thermal Imaging Camera**	30 min.	2002
Proper Care & Use of the **Evolution 5000 Family of TICs**—Covers 5200, 5600, and 5800, each in own 15 min. program.	45 min.	2008
Proper Use of the **Altair 5 Multigas Detector**	20 min.	2009
Proper Use of the **Altair 4X Multigas Detector** *NEW!*	20 min.	2010
Proper Use of the **Altair 4 Multigas Detector**	20 min.	2008
Proper Use of the **Altair 4 QuickCheck System**	10 min.	2009
Proper Care & Use of the **Orion Multigas Monitor**	29 min.	2001
Orion G Multigas and Leak Detector Goose Neck and Coiled Hose Version, Rev.01	15 min.	2003
Proper Care & Use of the **FiveStar Alarm**	31 min.	1997
Proper Care & Use of the **Explosimeter Indicator, Model 2A**	24 min.	1982
Proper Care and Use of the **Pulsar Single-Gas Detector**	8 min.	2001
A Video Guide to **Personal Sampling Techniques**	22 min.	1994
Overview of the **Galaxy Gas Tester**	10 min.	2004
Proper Care & Use of the **EVOTECH Harness** *NEW!*	10 min.	2010
Harnesses—Donning and Doffing Instructions for the Pullover, Vestype, FP Pro and Tradesman Harnesses	—	—
Using the **RCD (Remote Connect/Disconnect) System**	6:30 min.	1998
Assembly and Use of the **Horizon Rebar Anchorage System**	10:22 min.	2000
Davit Systems	9:59 min.	1999
Assembling the **Fall-Rescue Work System**	9:07 min.	1999
Dyna-Line Horizontal Lifelines	—	—
Elements of **Fall Protection**	—	—
Gravity Harnesses—Donning and Doffing Instructions	—	—
Facing the Real Dangers of **Confined Spaces**	28 min.	1993
Workman Tripod Assembly *NEW!*	—	2010
Use of the **Suspension Trauma Safety Step**	15 min.	2008
Proper Care & Use of **MSA Head Protection**	47 min.	1992 (rev. 2005)

Video Programs

Order programs below by **MSA part number** (call MSA Customer Service)

Title and Comments	Running Time	Year Released	VHS Part No.	DVD Part No.
How to Use & Maintain the **PAPR (Powered Air-Purifying Respirator)**	40 min.	1987	696816	CALL
Proper Care and Use of the **AirHawk Air Mask**	36:22 min.	2004	10058407	10058408
Proper Care & Use of the **MMR Xtreme Air Mask**	37 min.	1999	696838	CALL
Proper Care & Use of the **Ultralite II Air Mask** and Inspection and Maintenance Procedures	49 min.	1988	696833	CALL
Proper Care and Use of the **Custom 4500 II Air Mask** and Inspection and Maintenance Procedures	50 min.	1988	696834	CALL
How to Use and Maintain Your **MSA Breathing Apparatus in Cold Weather**	10 min.	1991	696817	CALL
Evolution 5000: An Overview of Thermal Imaging and Advanced Applications	14:00 min.	2004	—	CALL
Overview of the **Solaris Multigas Detector**	15 min.	2003	10049318	CALL
Proper Care & Use of the **Passport PID II Organic Vapor Monitor**	37 min.	1997	711025	CALL
Proper Care & Use of the **Passport Personal Alarm**	42 min.	1994	806094	CALL
Proper Care & Use of the **Gasport Gas Tester**	52 min.	1996	814453	CALL
Proper Care & Use of the **MicroGard Portable Alarm**	35 min.	1991	801135	CALL
Use of the **ProGard Personal Alarm**	7:30 min.	1998	10008990	CALL
An Overview of the **Sirius Multigas Detector**	15:50 min.	2004	10050856	CALL
An Overview of the Care & Use of the **Pulsar+ Gas Detector**	15 min.	2002	10041767	CALL
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