



# MSA Safety Equipment Catalogue

Volume 3 - South East Asia

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## MSA-U® Training Center



### What is MSA-U?

MSA-U is a feature-rich online training center that offers courses anytime, anywhere to maximise the users' competencies on MSA products, product technologies, and safety industry standards. [www.msasafety.com/msau](http://www.msasafety.com/msau)

### Benefits

- Complete training, anytime, anywhere
- Easy course navigation
- Link to 'New/Training' from the home page
- Select certificates achieved, from the home page
- From the home page, view courses you accessed
- Immediate feedback on test performance
- Detailed training reports available for managers
- Receive feedback on incorrect test answers
- [www.msasafety.com/msau](http://www.msasafety.com/msau)



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# MSA - The Safety Company

MSA is the world's leading manufacturer of high-quality Safety Products and Gas Detection System Solutions, protecting people throughout the world for over a century.

With manufacturing operations on five continents and with more than 40 locations worldwide, MSA serves customers in more than 140 countries. All MSA products meet local and international standards.

## Always there for you



With MSA's worldwide presence we deliver the right safety solution to the right place, at the right time, supported by highly skilled personnel at local MSA offices.

More than 5,000 MSA associates are at work throughout the world to ensure that you always get the best safety solution. We are always ready to assist you in choosing the right option and to help you purchase the right equipment. Whatever information and advice you require on our products and services, we are always there for you. Simply contact the MSA affiliate or distributor near you.

## Our Values



Our mission is to see to it that men and women may work in safety and that they, their families and their communities may live in health throughout the world.

MSA is an organization fully committed to protecting the health and safety of our customers, and we spend countless hours developing, testing, and evaluating our products to ensure we achieve our goals.

MSA's values are the foundation of our company culture. Our seven core values define who we are and what makes us truly stand apart.

**Integrity – Customer Focus – Speed & Agility – Innovation & Change  
Diversity & Inclusion – Teamwork – Engagement**

## Our Quality

There's a reason MSA is known worldwide as "The Safety Company." It's because we harness precision engineering to craft the highest-quality safety products possible so people across the world are able to work in the safest environments possible.

We believe that concepting, designing, and building the best safety solutions means we must look beyond the bottom line. For starters, we invest more resources in safety research and engineering than any other company in our industry.

We're proud of the work we do and we stand behind every product we make. Because we know people rely on us to protect their health and well-being. We work hard to earn the trust of our customers. As we often say at MSA, we make the world safer – one person at a time.





Supplied Air Respirators  
Air Purifying Respirators



MSA has you covered for all your Respiratory needs. From state of the art SCBA equipment to Air Purifying Respirators, you can rely on MSA to supply you with everything you need.

MSA's Self-Contained Breathing Apparatus (SCBA) systems are designed for long life and low maintenance. To meet every application and budget our SCBA's can be configured according to individual requirements.

Toxic materials can enter the body in many ways, and the respiratory system presents the quickest and most direct avenue of entry.

In Air Purifying Respirators the inhaled air is drawn through a filtering media which removes the nominated contaminants.

MSA's range of respirators provides various styles for wearer comfort, while a broad selection of filters ensures protection for most hazards.

## Supplied Air Respirators

### G1 SCBA **NEW**

Introducing the **MSA G1 SCBA**: The most comfortable, streamlined, balanced, configurable and customisable SCBA MSA's ever produced.



#### Optional Head-Up-Display

- LEDs, located in demand valve, display pressure, system and alarm status unobtrusively and without work interruption
- Signals delivered through the line to the demand valve and continue to the inside of the mask through light pipes
- Cost intensive electronics are kept out of the mask, which reduces its price and makes cleaning easier
- The entire team has access to top-grade technology, while each firefighter can still maintain his or her own personal mask for added hygiene.



#### State of the Art Harness

- Comfortable padding
- Extremely robust cover fabric to withstand repeated exposure to flame and heat (EN approved)
- Robust adjustment buckles made from cast steel
- Protection tunnels for lines with reflective features
- Integrated stand-by support for demand valve



#### Control Module

- Combined digital and analog pressure reading
- Intuitive interface displays essential information by default allowing the user to concentrate on his job
- Other data is available with a touch of a button



#### Low Profile Face Mask

- Open port technology for free breathing when in stand-by (demand valve not attached)
- Huge field of vision for unobstructed view
- Low profile for less snagging and improved weight distribution
- Independent of electronic options to minimize costs for individual mask ownership and up keep
- All components easily accessible and interchangeable for easy maintenance and cleaning
- Available in 3 sizes
- Choice of classic rubber or modern fabric harness



#### Optional Voice Projection Speaker

- Integrated microphone picks up voice inside the mask independent of environmental conditions
- High volume and speech intelligibility
- Improves team and training communication



**Central Processing Module**

- Centrally processes all data on the SCBA: motion detection, data distribution to HUD, control module, voice speaker
- Piezo alarm sounders project in all directions
- Built-in RFID reader to log on with personal tag, team assignment or pairing information

**Single Power Supply**

- All components powered with a single power supply
- Simplified battery monitoring and exchanging
- Greater system reliability

**Long-Range Radio**

- Industry-leading telemetry with proven track record
- Low impact monitoring with high accountability
- Operates with alphaBASE and alphaCONTROL 2



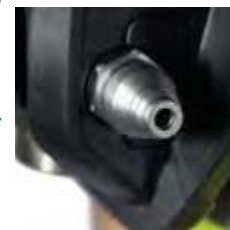
**Advanced Hip Belt Features**

- Swivelling to follow body movement
- Easy to use and robust height adjustment to accommodate different torso lengths



**Buddy Breather 2nd Connection**

- Allows connection to fellow firefighter in case of emergency
- Y-piece connector enables donation of air without breaking recipient's air supply
- Allows for easy connection to airline system
- 1.2 m medium pressure line in pouch on hip



**Optional QuickFill Connection**

- Direct high pressure connection for fast cylinder refill while donned

## G1



The G1 fire service SCBA was designed to integrate all modern SCBA features into a compact and easy-to-operate device. The single power supply drives alarm system and user interface, telemetry radio module, head-up-display (HUD) and voice amplifier. The display provides full benefit without distraction by always displaying exclusive information which is relevant in the given situation.

All G1 versions include swivelling and adjustable hip belt, electronic control unit, telemetry module, lung governed demand valve and buddy breather 2nd connection. The G1 SCBA works exclusively with the G1 mask (please see page 24).

### EN 137: 2006, type 2

PART NO:	Description
10160443	G1 SCBA with demand valve, telemetry
10160444	G1 SCBA with demand valve, telemetry, alphaCLICK
10160445	G1 SCBA with demand valve, telemetry, alphaCLICK, HUD
10160436	G1 SCBA with demand valve, telemetry, alphaCLICK, HUD, voice amplifier
10160437	G1 SCBA with demand valve, telemetry, HUD
10160438	G1 SCBA with demand valve, telemetry, HUD, voice amplifier

Other configurations are available on request.

## Breathing Apparatus

### AirHawk® II Industrial Air Mask



Lightweight, durable and economical, this SCBA is ideal for a variety of industrial-hazard applications. Choose from a variety of options for many of the system's major components including: facepiece; mask-mounted regulator; carrier and harness assembly; cylinder; and end-of-service-time indicator (EOSTI).

#### Features & Benefits

- Lightweight, durable, economical SCBA
- Pressure-demand maintains positive air pressure inside facepiece
- Choice of Ultra Elite or Advantage 4000 Facepiece
- Ergonomic carrier and harness assembly for comfortable, stable wear
- Detachable components for easy maintenance
- Easy-release friction buckles

	Hard Case	No Case	Facepiece	Harness Carrier	Cylinder
AIRHAWK II SCBA LOW-PRESSURE (2216 PSIG)	10095800	10095801	Ultra Elite, medium hycar, rubber head harness	Nylon with chest strap	30-min aluminum
	10095802	10095803	Ultra Elite, medium hycar, Speed-ON Head Harness	Nylon with chest strap	30-min carbon
	10095804	CALL	Adv 4000, medium hycar, polyester net head harness	Nylon with chest strap	30-min aluminum
	CALL	10095805	Adv 4000, medium hycar, rubber head harness	Nylon without chest strap	30-min aluminum
	10095806	10095807	Adv 4000, medium hycar, polyester net head harness	Nylon with chest strap	30-min carbon
	CALL	10116783	No facepiece	Nylon with chest strap	No cylinder
AIRHAWK II SCBA HIGH-PRESSURE (4500 PSIG)	10116452	CALL	Ultra Elite, medium hycar, Speed-ON Head Harness	Kevlar with chest strap	45-min carbon low profile
	10116453	CALL	Adv 4000, medium hycar, polyester net head harness	Nylon with chest strap	45-min carbon low profile
	CALL	10116454	Adv 4000, medium hycar, polyester net head harness	Nylon without chest strap	45-min carbon
	CALL	10116781	Adv 4000, medium hycar, rubber head harness	Nylon without chest strap	30-min carbon
	CALL	10116782	No facepiece	Nylon with chest strap	No cylinder



## MSA SCBA Systems

MSA breathing apparatus systems are completely customisable to meet every application and budget. With our easy-to-use configurator, available as a CD or online, you build your SCBA system exactly the way you need it. Based on decades of experience, we also offer four SCBA presets which are described below.

All MSA premium components are designed for easy use in challenging job conditions. For example all adjustments on our SCBAs can be made with work gloves on. With their long life and low maintenance they offer exceptional value and reduced total cost of ownership.

### Preset: AirGo pro



When you are looking for a strength carrier for firefighting and for a wide range of maintenance or rescue operations, the AirGo pro is ready for deployment. Its rugged reliability, flexibility and great value make it a popular choice for fire brigades, plant, sub-surface or offshore use. Weight is distributed evenly and kept close to your body to reduce stress and fatigue.

The alpha SingleLine pneumatic system integrates warning signal, second connection and gauge in an easily accessible manifold at your chest (for details see page 11). The optional alpha Personal Network offers extended electronic and telemetric monitoring and communication capability.

Firefighters and industrial workers around the world who are looking for high quality, solid reliability and comfort use AirGo pro for their respiratory protection.

**EN 137: 2006, type 2**  
**ATEX® II 1 G IIA T6 or II 1 G IIB T6 or II 1 G IIC T6 (according to configuration)**  
**MED 96/98/EC ☉**

PART NO:	Description
10086571	AirGo pro

### AirXpress One



The MSA AirXpress One meets the high level EN 137, Type I requirements for the industry market and a variety of related applications. It's rugged and reliable with customizable configurations depending on your needs. This SCBA boasts a new, modern design with an easy-to-maintain construction for a low cost of ownership.

#### Features & Benefits

- Customizable configurations serve various applications
- Rugged and reliable – EN 137 approval
- Simplicity – ease of use and maintenance (no electronics)
- Ergonomic backplate design
- AX demand valve provides increased flow rate and better maintained pressure
- State-of-the-art pressure reducer requires only minimal maintenance
- Warning signal for added safety
- Harness zippers for easy switching of pressure gauge and demand valve
- Chest strap prevents any slipping of shoulder harness
- Demand valve with Plug & Breathe connection for automatic activation at first breath and automatic switch-off at disconnect
- Pressure gauge with rubber cap for increased protection against shock and impact



## AirXpress 2 Fire



The MSA AirXpress 2 Fire meets the high level EN 137, Type II requirements for the fire service market and a variety of related applications. It's rugged and reliable with customizable configurations depending on your needs. This SCBA boasts a new, modern design with an easy-to-maintain construction for a low cost of ownership.

### Features & Benefits

- Customizable configurations serve various applications
- Rugged and reliable – EN 137 approval
- Simplicity – ease of use and maintenance (no electronics)
- Ergonomic backplate design
- AX demand valve provides increased flow rate and better maintained pressure
- State-of-the-art pressure reducer requires only minimal maintenance
- Warning signal for added safety
- Harness zippers for easy switching of pressure gauge and demand valve
- Chest strap prevents any slipping of shoulder harness
- Demand valve with Plug & Breathe connection for automatic activation at first breath and automatic switch-off at disconnect
- Pressure gauge with rubber cap for increased protection against shock and impact

PART NO:	Description
10167125	AirXpress One, Basic unit, BD backplate, without second connector
10170342	AirXpress One, Basic unit, BD backplate, with second connector, 2 couplings
10167124	AirXpress 2 Fire, Basic unit, BD backplate, with second connector
10166588	AirXpress 2 Fire, Basic unit, BD backplate, with second connector, 2 couplings
10170341	AirXpress 2 Fire, Basic unit, BD backplate, without second connector
3490006	UE PS-MaXX full face mask, rubber head harness, Asian
10149883	UE PS-MaXX full face mask, net head harness, Asian
10170772	UE PS-MaXX full face mask, rubber head harness, European inner mask
10170773	UE PS-MaXX full face mask, net head harness, European inner mask
10031422	3S PS-MaXX full face mask
10031385	Ultra Elite PS-MaXX full face mask
10031383	Ultra Elite PS-MaXX full face mask, small
10031382	Ultra Elite PS-MaXX-EZ full face mask
10031381	Ultra Elite PS-MaXX-EZ full face mask, small
D5103986	Steel cylinder, 6 l/300 bar, empty
10084896	Steel cylinder, 6 l/300bar, air restrictor, empty
10010967	Steel cylinder, 6 l/300 bar, valve/gauge, empty
D5103979	Composite cylinder, 6.8 l/300 bar, empty
D5103980	Composite cylinder, 6.8 l/300 bar, empty
10059153	Composite cylinder, 6.8 l/300bar, air restrictor, empty
10113769	Composite cylinder, 6.8 l/300 bar, 30 years, empty
10118597	Composite cylinder, 6.8 l/300 bar, 30 years, air restrictor, empty
10118595	Composite cylinder, 6.8/300, 30 years, ratchet, empty
10118598	Composite cylinder, 6.8/300, 30 years, air restrictor, gauge, empty
10055168	Composite cylinder, 6.9 l/300 bar, AZ, empty
10055170	Composite cylinder, 6.9 l/300 bar, AZA, empty
10072888	Composite cylinder, 6.9 l/300 bar AZ, air restrictor empty
10118149	Composite cylinder, 9 l/300 bar, 30 years, yellow, empty
10127723	Composite cylinder, 9 l/300 bar, 15 years, empty
10168087	Composite cylinder, 6.8 l, EN, BTIC, w gauge
10162332	Composite cylinder, 6.8 l, EN, BTIC, w/o gauge

### Preset: AirGo compact



Rule #1: expect the unexpected. The AirGo compact SCBA preset is specifically designed for emergency response and escape. On ships or industrial facilities where such units are mandatory, the AirGo compact is an obvious choice. The lung governed demand valve AutoMaXX-AS is fixed to the medium pressure line (for details on AutoMaXX see page 17).

The no-frills system keeps costs at a minimum without sacrificing safety.

The vital pneumatic and carrier components are the same as those used in the high-end MSA presets, making AirGo compact a fully-fledged device for the toughest applications including firefighting.

**EN 137: 2006, type 2**

**ATEX® II 1 G IIA T6 or II 1 G IIB T6 or II 1 G IIC T6 (according to configuration)**

**MED 96/98/EC ☉**

PART NO:	Description
10086572	AirGo compact

### Preset: AirMaXX®



For high-frequency and extended SCBA wear, maximum user comfort translates directly into increased performance and good health. The AirMaXX SCBA preset combines premium ergonomic features with advanced technology to provide the best experience in SCBA wearability available today.

The ergonomically designed and optimally balanced AirMaXX backplate is adjustable to fit all body sizes. This works in conjunction with the premium S-swing shoulder pads and swivelling hip belt to distribute weight evenly while increasing freedom of movement. Stress and fatigue are reduced as you perform your job without restrictions. The AirMaXX stays with you even when you are turned upside down.

The alpha SingleLine pneumatic system integrates warning signal, second connection and gauge in an easily accessible manifold at your shoulder. The optional alpha Personal Network offers further electronic and telemetric monitoring and communication capability.

If you use your SCBA frequently, for long periods at a time or require absolute concentration in your work, the AirMaXX is the system of choice.

**EN 137: 2006, type 2**

**ATEX® II 1 G IIA T6 or II 1 G IIB T6 or II 1 G IIC T6 (according to configuration)**

**MED 96/98/EC ☉**

PART NO:	Description
10060803	AirMaXX SL

### Preset: eXXtreme



The continuous exposure to flames and heat from repeated hard training takes an especially hard toll on equipment. The eXXtreme preset utilizes special materials to reduce maintenance and cost of ownership of critical components that would otherwise require frequent replacement in such extreme applications.

The eXXtreme harness has been designed to meet the toughest demands for protection and durability, using materials which could also be applied in turnout gear. The protective sleeves are easily exchangeable and cover the most exposed areas of the air supply lines. With the rapid cylinder exchange coupling alphaCLICK, the cylinder is simply snapped onto the pressure reducer.

All other features such as adjustable AirMaXX back plate and alpha components are identical to the AirMaXX preset. Trainers and others who repeatedly work in high-heat and flame circumstances choose eXXtreme.

**EN 137: 2006, type 2**

**ATEX® II 1 G IIA T6 or II 1 G IIB T6 or II 1 G IIC T6 (according to configuration)**

**MED 96/98/EC ☉**

PART NO:	Description
10069671	AirMaXX eXXtreme SL-CLICK

## SCBA Options & Accessories

### alpha SL



The alpha pneumatic system is based on the acclaimed SingleLine (SL) air management system. alpha SL supplies the demand valve, gauge, warning signal, second connection and “QuickFill”, through the use of just one single visible hose. Part of the secret behind this system is the patented hose-in-hose technology. The high-pressure line runs inside the medium pressure line. With alpha SL and a state-of-the-art pressure reducer weight and maintenance requirements are minimised. You can order your next MSA breathing apparatus with SL system or you simply upgrade your existing MSA breathing apparatus.

**EN 137**

PART NO:	Description
10065798	alpha SL Upgrade kit (pressure reducer, manifold and SingleLine in exchange for your old SCBA pneumatics)
10065799	alpha SL-Q Upgrade kit (pressure reducer with QuickFill, manifold and SingleLine in exchange for your old SCBA pneumatics)

### alphaCLICK



With the alphaCLICK rapid cylinder exchange coupling, you can say goodbye to cumbersome threading. Simply snap the cylinder onto the pressure reducer and you're done. The alphaCLICK lets you change cylinders ten times faster than threading methods, while also improving on safety.

**EN 137**

PART NO:	Description
10075278	alphaCLICK cylinder adapter 200/300 bar (set of 5)

Several upgrade sets and workshop solutions are available.

### alphaFP



The alphaFP fall protection harness for SCBA has been developed for challenging applications which require both respiratory and fall protection. The unique 2-in-1 solution can be connected easily to any MSA SCBA backplate. Donning is completed in very few and intuitive steps.

alphaFP offers the highest safety in exposed situations. Its excellent wearer comfort makes the SCBA harness ideal for height and shaft rescues, respiratory protection and tunnel operations.

The two versions alphaFP pro and alphaFP basic are available in standard and large size. alphaFP pro additionally features hose protection tunnels on the shoulder pads and quick connect buckles between harness and SCBA for ease of mounting or emergency removal during operation.

**EN 361, EN 358, EN 813, EN 137**

PART NO:	Description
10116510	alphaFP basic, standard
10117620	alphaFP basic, large
10116541	alphaFP pro, standard
10117573	alphaFP pro, large

## alphaBELT



The safest way to use fall protection PPE with an SCBA is a fully integrated and approved solution that combines all necessary equipment in a user-friendly product, providing optimally balanced protection. Our revolutionary alphaBELT is a sleek and durable multifunction holding belt for first responders which can be quickly integrated into an SCBA. It comes with the following features:

- Permanently heat resistant webbing
- Two high-contrast D-rings for positioning and restraining
- Performance beyond requirements of current standards
- Securing pouch protects lanyard against damage and prevents the risk of getting caught
- Lanyard is easily demountable and could be used separately as an anchor point or rescue loop or just for standard restraining and positioning
- alphaBELT Pro in combination with lanyard provides a quickly accessible rescue seat
- Quick release mechanism allows usage of alphaBelt with or without SCBA

**Certified for AirMaXX and AirGo Series as accessory according to EN 137 and ATEX**

PART NO:	Description
10151246	alphaBELT Pro, Holding and Rescue belt
10151241	alphaBELT Basic, Holding belt w/o lanyard
10151242	alphaBELT Lanyard

## eXXtreme SCBA Harness



The eXXtreme harness has been designed to meet the toughest demands for protection and durability, as in repeated training situations. Silicon carbon coated Kevlar makes it exceptionally resistant to flame, heat, dirt and abrasion. Special design features like the large reflector areas enhance the visibility of the user.

**Certified for AirMaXX and AirGo Series as accessory according to EN 137 and ATEX**

PART NO:	Description
10145843	eXXtreme Upgrade kit, black (incl. stainless steel cylinder retaining clamp)

## RFID Transponder Holder Rings for Cylinders



The holders on the neck of the cylinder contain a transponder to facilitate the administration of your cylinders, e.g. with our TecBOS.Tech software. You can easily keep track on conditions of all your devices and their service intervals.

**Certified as SCBA accessory according to EN 137**

PART NO:	Description
10146101	RFID holder rings for Ø 26-30 mm, for steel cylinders (pack of 10)
10128846	RFID holder rings for Ø 34-40 mm, for composite cylinders (pack of 10)

## Rescue Handle for SCBA



Our upgrade handle not only makes it easy to transport the SCBA. In an emergency, the helper can also quickly and safely grasp the SCBA at the most resilient part to pull the colleague to safety in an ergonomic position.

**Certified for AirMaXX and AirGo Series as accessory according to EN 137 and ATEX**

PART NO:	Description
10152624	Rescue handle for SCBA (pack of 4)

## T-Pieces



T-piece 156/300 bar



T-piece 115/200 bar

The T-piece offers the opportunity to increase the duration of your SCBA by using two cylinders at the same time. It can be easily mounted on the pressure reducer on the backplate and comes with two screw wheels.

PART NO:	Description
D4075818	T-piece 156/300 bar, for 2x 6/6.8l composite cylinders
D4085817	T-piece 115/200 bar, for 2x 4l steel cylinders

# Respiratory Protection

## Cylinders



Composite Cylinder



Steel Cylinder

MSA steel and composite compressed air cylinders meet a wide range of applications. Composite cylinders are 50% lighter than the traditional economic steel construction. MSA offers cylinder versions with 200 and 300 bar service pressure and 2 to 9 litre capacity. Additional safety is provided by a full choice of valve options such as integrated gauge, ratchet hand wheel to prevent unintended closing and flow restrictor in case of valve breakage.

MSA cylinders can be ordered empty or charged and are equipped with cylindrical thread M18 x 1.5. The valves are approved according to EN 144.

### PED 97/23/EG

#### Empty cylinders:

PART NO:	Description
10113769	6.8 l/300 bar, composite, 30 years
10118597	6.8 l/300 bar, composite, with flow restrictor, 30 years
10118598	6.8 l/300 bar, composite, with flow restrictor, valve with gauge, 30 years
D5103976	6 l/300 bar, composite
10042070	6 l/300 bar, composite, valve with gauge
10055168	6.9 l/300 bar, composite
10055170	6.9 l/300 bar, composite, with lockable valve
10072888	6.9 l/300 bar, composite, with flow restrictor
D5103985	4 l/200 bar, steel (not useable in connection with QuickFill Q)
D5103986	6 l/300 bar, steel
10010967	6 l/300 bar, steel, valve with gauge

## Cylinder Covers



eXXtreme Cover



Basic Cover

Our protective covers made of non-flammable material meet all basic needs for the protection of your high-value composite cylinders. Beside the basic protection, the eXXtreme protective cover offers improved carrying comfort and perfect visibility and durability, also for hot trainings.

**Certified for AirMaXX and AirGo Series as accessory according to EN 137**

PART NO:	Description
10155096	Cylinder cover eXXtreme, 6-6.9 l, black
10155097	Cylinder cover Basic, 6-6.9 l, black
10155098	Cylinder cover Basic, 6-6.9 l, signal yellow

## Storage Solutions



Standard Carrying Case



Universal Carrying Bag



Wall Box Type A

With our storage solutions you can keep your equipment clean and ready for use. The standard hard-cover case fulfills all important basic needs to protect your equipment during transport and storage. The premium case offers comfortable rolls and a larger storage room. The textile bag can cover small SCBAs like the PremAire Combination.

PART NO:	Description
10126797	Carrying case for SCBA with one cylinder, standard
10049021	Carrying case for all SCBA with one or two cylinders, premium
10049626	Universal carrying bag
D4080801	Wall box type A, standard SCBA with one cylinder (1 cylinder clamp)
D4074992	Wall box type B, two small SCBA with one small cylinder (2 hooks)
D4074994	Wall box type C, two small SCBA with one small cylinder (1 hook)
D4074877	Wall box type D, standard SCBA with one cylinder (1 rubber strap)

## Rescue Sets



RespiHood

The rescue sets and the RespiHood are designed for rescuing people from hazardous areas.

PART NO:	Description
10045764	RespiHood
10040152	Rescue set in pouch

## Bag for Rapid Intervention Team



The Bag for Rapid Intervention Team serves to provide air to persons caught in hazardous environments

PART NO:	Description
10103749	Bag for Rapid Intervention Team
10104597	Bag for Rapid Intervention Team, SL long
10104598	Bag for Rapid Intervention Team SL-Q

# Monitoring Systems

## alpha Personal Network

The alpha Personal Network is a system of modular and wireless components that can be individually integrated to enhance your operation safety and capability as needed. A basic setup includes personal monitoring, pressure data and motion alarm.

This can be extended to include telemetry and evacuation notification. Existing AirGo, AirMaXX and BD 96 SCBA systems can be upgraded to include alpha Personal Network capability.

### alphaSCOUT



alphaSCOUT and Manifold

At the core of the alpha electronic system is a unique personal monitoring and signal device called alphaSCOUT. It is wireless and full disengaged, it receives pressure information from the transmitter on the back plate and then calculates the remaining service time. A motion detector and alarm signal are also integrated.

Each user can identify himself with the alphaSCOUT he is using through the alphaTAG identification tag. alphaTAGs are programmed by using the TAGwriter.

**EN 137**  
**ATEX Ex ia IIC T3/T4 Ga**  
**ATEX II 1G Ex ia IIC T3/T4 Ga**



PART NO:	Description
10058213	alphaSCOUT (complete set incl. batteries and alphaTAG)
10058212	alphaSCOUT TM (complete set incl. longdistance radio, batteries and alphaTAG)
10078682	Retrofit of radio module to alphaSCOUT
10065874	alphaSCOUT Support bracket attachment (set of 10)
10065873	alphaTAG (set of 5)
10071717	Labels for alphaTAG (10 sheets of 42 labels)
10065875	alpha TAGwriter (including USB cable)

### alphaHUD

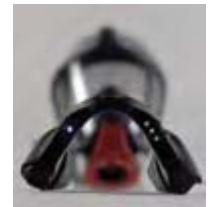


alphaHUD in Ultra Elite mask

Using a non-distracting LED display at the perimeter of your field of vision, the alphaHUD heads-up-display lets you monitor your air supply while keeping your hands free. The wireless alphaHUD provides pressure status and alarm information. It is easily attached to the inside of your Ultra Elite mask.

Advantages include greatly improved operational efficiency and safety. In combination with chemical protection suits, where the ability to use a hand-operated gauge is limited, alphaHUD is indispensable. When used in conjunction with the alphaSCOUT and alphaBASE command communication option, the alphaHUD can also deliver an evacuation signal.

**ATEX Ex ia IIC T4 Ga**



PART NO:	Description
10086118	alphaHUD (incl. battery)

### alphaMITTER



alphaMITTER on AirMaXX backplate

The alphaMITTER, a short-range transmitter on the SCBA backplate sends air pressure data to the alphaSCOUT every second.

Because the wireless alphaSCOUT is independent of the back plate, the number of units needed by a brigade can be reduced by up to 75% – a dramatic saving in investment.

**EN 137**  
**ATEX Ex ia IIC T3/T4 Ga**  
**ATEX Ex ia IIC T3/T4 Ga**

PART NO:	Description
10058211	alphaMITTER, retrofittable to AirMaXX, eXXtreme or AirGo with SingleLine (Q), incl. support bracket for alphaSCOUT
10069803	alphaMITTER, retrofittable to BD 96 with SingleLine (Q), incl. support bracket for alphaSCOUT

# Respiratory Protection

## alphaBASE



alphaBASE standard

The alphaBASE base station works in combination with any PC. It communicates with all active alphaSCOUTs to provide complete telemetric capability.

A battery-powered version of the alphaBASE can be used with the xplore TABLET PC. This combination allows full freedom of movement for mobile applications.

The alphaBASE is powered by the alphaCONTROL 2 software for automatic monitoring without the need for operator intervention. For details on alphaCONTROL 2 please see page 15.

**EN 60950/ EN 61000-6-2/ EN 61000-6-3**

PART NO:	Description
10058214	alphaBASE standard (incl. software, power supply, direct and external aerial with magnetic foot)
10070795	alphaBASE battery powered (incl. 2 batteries and charger)
10124324	alphaRACK (alphaBASE standard + car PC)

## motionSCOUT



The next generation of standalone personal alert safety systems motionSCOUT detects the cessation of bodily movement and activates an automatic alarm. For enhanced safety the alarm can be activated manually as well. With highly visible LEDs and an alarm volume of at least 95 dB it helps to locate the person in danger.

The sensitive, electronic motion sensor recognises all normal body movements. A bi-colour LED clearly shows the readiness of the unit. Maintenance-free and durable (IP 67) it guarantees a great cost-performance-ratio.

motionSCOUT is extremely simple to use and can be easily affixed to the shoulder strap or hip belt. An easy-to-use key version (switch ON by pulling out the key), a version with manual alarm reset function, as well as an optional temperature sensor are available.

**EMC: 2004/108/EC, EN 61000-6-2:2006, EN 61000-6-3:2007**

**ATEX® II 1G Ex ia IIC T3/T4 Ga**

PART NO:	Description
10088031	motionSCOUT
10088032	motionSCOUT K (key version)
10088033	motionSCOUT T (with temperature sensor)
10088034	motionSCOUT K-T (key version with temperature sensor)

The version "manual alarm reset" is available upon request for all versions above

## MSA CONTROL F



MSA CONTROL F allows the operations centre to closely monitor the position of the individual operatives and their air supply. The information is manually recorded on the water-resistant (IP54) tally board together with time data.

The optional motionSCOUT keys and apparatus tags enable the operations centre to monitor the situation specifically and according to directives.

PART NO:	Description
10125668	MSA CONTROL F without text printing

## xplore TABLET PC



xplore TABLET PC with alphaBASE

The xplore TABLET PC with its high computational power and its compact design is the ultimate tool for managing information on the go. The housing is extremely robust and watertight (tested according to IP65) making it suitable for use in emergency service operations or other harsh environments. The high resolution screen provides good viewing in all lighting conditions, including direct sunlight.

PART NO:	Description
10068805	xplore TABLET PC
10076041	Set: xplore TABLET PC, alphaBASE battery powered, accessories (software, 2 batteries, charger) in rugged case



# Software and Test Benches

## alphaCONTROL 2



The MSA alphaCONTROL 2 software is part of the alpha Personal Network respiratory protection monitoring system, which consists of modular and wireless components, that can be individually integrated and support a variety of applications.

alphaCONTROL 2 facilitates an electronic, and optionally telemetric respiratory monitoring. The new and improved entry control software was developed with ease of use at the forefront. It has the ability to document your operations and create an operational report in seconds.

alphaCONTROL 2 is a natural progression from your conventional tally board. It can deliver all the information that your tally board supplies as well as monitoring the air supply of individual users in combination gas measurements.



- Clear overview on crew-status due to real time information about pressure and measuring data
- Team driven monitoring approach increases efficient safety
- Mesh network functionality, to drive monitoring within infrastructure
- Independence of hardware and software interface
- Individual selection of displayed time value during monitoring for reliable monitoring for additional assistance to the officer-in-charge
- Remaining service time
- Count down from selected value (reverse timer)
- Count up from 1st recognized breathing pressure
- Each user interaction is automatically recorded as movie and can be replayed for documentation and training purpose
- Reports are created on click within seconds
- Quick access to functionality with or without login increases availability
- Different cylinder types and alarm thresholds can be individually set, reliable and versatile monitoring
- Mobile monitoring of accountability data with any available Windows tablet PC
- alpha Personal Network monitoring support - accountability data streaming
- Multiple Windows operating system support with touch/pen/mouse input capabilities
- Simple system with upgrade possibility low investment costs
- Full substitute to tally boards, all details of a classic accountability system are captured

PART NO:	Description
10153880	alphaCONTROL 2 - Software
10153880-SP	alphaCONTROL 2 – Software Basic

## TecBOS.Tech



TecBOS.Tech supports numerous types of workshop, e.g. for respiratory protection, portable instruments, fire extinguishers, vehicles, radio communications and hoses. It is an integrated system solution with maximum efficiency and transparency.

The recording of equipment testing dates, upcoming services, as well as the storing of documentation relating to work carried out, spare parts used and test results is managed completely by TecBOS.Tech. By connecting to MSA test benches, the direct testing of equipment, without having to go through any intermediate steps, is made possible.

- Predefined workshop and device structure
- Integrated RFID transponder and barcode technologies
- Intuitive data selection on all edit fields
- Easy extendable, modular structure
- Integration of mobile Windows CE devices (PDA)
- Microsoft Office conform export interface
- Crystal Reports interface for easy integration of self-designed print analysis and reports

## SmartCHECK



SmartCHECK is a modular, compact and fully automatic test bench for any SCBA equipment on the market today. This device is the easiest, most dependable way to test full face masks, lung-governed demand valves, compressed air breathing apparatus and chemical protective suits according to EN and local standards.

A specially designed test head ensures easy handling and the tight fit of full face masks. It features an integrated computer system with touchscreen. The system software TecBOS.Tech includes a testing Wizard, an intelligent assistant that allows intuitive operation. The user is guided through the smart test-process step by step.

- Fully automatic testing
- Intelligent assistance ( Wizard )
- New designed test head
- Touch screen
- Integrated computer
- Intelligent software

PART NO:	Description
<b>TecBOS.solutions</b>	
10126009	TecBOS.Tech Standard initial license
10126022	TecBOS.Tech Standard subsequent license
10126010	TecBOS.Tech Professional initial license
10126023	TecBOS.Tech Professional subsequent license
10126021	TecBOS.Tech Premium initial license
10126024	TecBOS.Tech Premium subsequent license

For detailed ordering information please contact your local MSA affiliates or visit our website.

PART NO:	Description
<b>Accessories &amp; Spare Parts</b>	
10108449	SmartCHECK – CPS Leak Test Accessory
10108450	SmartCHECK – CPS Valve Leak Test Accessory
10108185	SmartCHECK – AirElite Leak Test Accessories
10108526	Holder for MHC masks, complete, SmartCHECK
10093710	Dust filter, pkg 2 pcs, spare, SmartCHECK
10115053	Silicon oil/bottle 100 ml
10109451	Microfibre cloth 40 x 40 cm SmartCHECK
10144996	SmartCHECK – Test Adapter LGDV Rd 40
10144998	SmartCHECK – Test Adapter LGDV M 45 x 3
10145001	SmartCHECK – Test Adapter LGDV 88, 96 AS
10145002	SmartCHECK – Test LGDV AutoMaXX AS
10145000	SmartCHECK – Test Adapter LGDV ESA
10096973	High Pressure Supply Line
D2055754	Plug Screw, Thread Rd 40
D2055755	Plug Screw, M 45 x 3
D5175524	Adapter, Plug, Mask Leak Test, LGDV 88, 96 AS
10035659	Adapter, Mask Leak Test, PS-MaXX
10144992	SmartCHECK – High Pressure Test Line SCBA
10144993	SmartCHECK – SCBA Test Adapter 200 bar
10144994	SmartCHECK – SCBA Test Adapter 300 bar
10144987	SmartCHECK – Log-On Cards, Starter Set

Further accessories such as test adapters and spares on request

# Lung Governed Demand Valves

## AutoMaXX®



The lung governed demand valve AutoMaXX is handy, light, and has a conveniently rounded shape. It was developed along with the compressed air breathing apparatus AirMaXX but can also be used with the AirGo and BD 96 systems.

The valve is impact resistant (impacting objects are deflected) and its hemispherical shape permits a sure grip. The housing is fitted with non-skid elastomer strips. Large, variously coloured buttons can be operated easily even with gloves by right-handed or left-handed users. The medium pressure line swivels and remains flexible even at low temperatures. The AutoMaXX is very maintenance friendly.

### EN 137

PART NO:	Description	PART NO:	Description
10023686	AutoMaXX-N	10043133	AutoMaXX-AS-Short
10043464	AutoMaXX-ESA	10036274	AutoMaXX-N-G
10023687	AutoMaXX-AE	10047230	AutoMaXX-ESA-G
10023688	AutoMaXX-AS	10036271	AutoMaXX-AE-G
10023689	AutoMaXX-AS-C	10038410	AutoMaXX-AS-B-G
10038296	AutoMaXX-AS-B	10036273	AutoMaXX-AS-C-G
10070760	AutoMaXX-N-Short	10036272	AutoMaXX-AS-G
10070973	AutoMaXX-ESA-Short	10073157	AutoMaXX-ESA-G-Short
10070972	AutoMaXX-AE-Short		

**N:** negative pressure with round thread connector  
**AE:** positive pressure with M 45 x 3 thread connector  
**AS:** positive pressure with MaXX plug connector  
**AS-C:** combination of the AE and the AS

**ESA:** positive pressure with DIN plug connector  
**G:** rubber medium pressure line for industrial applications  
**B:** by-pass valve provides an adjustable, constant air stream  
**Short:** shorter medium pressure line (50 cm)



AutoMaXX-N



AutoMaXX-AE



AutoMaXX-AS

## ComKit Mask-Mounted Headsets



Ultra Elite ComKit

Combining ease-of-use and excellent speech intelligibility, ComKit mask-mounted communication systems allow the wearer of respiratory protective equipment to communicate clearly over commercially available two-way radios.

Microphone and loudspeaker of the communication system are placed on the Ultra Elite or 3S face mask by means of a rubber adapter on the exhalation valve housing. They are linked by a cable with the separate push-to-talk (PTT) button and a connecting plug to the radio. The versatile LEMO coupling offers the possibility to disconnect microphone/loudspeaker from the PTT button when removing the equipment without detaching it from the mask adapter.

PART NO:	Description
10113273	Ultra Elite ComKit (with 5 pin LEMO plug for MSA PTT)
10124074	Ultra Elite ComKit (with 4-pole NEXUS plug for MSA HandyCom or Savox C-C400 / C-C500)
D2056731	Ultra Elite ComKit mask rubber adapter
D2055761	3S ComKit mask rubber adapter (negative pressure)
D2055720	3S-P ComKit mask rubber adapter (positive pressure)

• For the Ultra Elite ComKit, the PTT button with cable and plug for the radio has to be ordered separately.  
 • For 3S ComKits, please contact your local MSA affiliate or distributor for a full list of available radio connections.



Ultra Elite ComKit and Adapter



3S ComKit and Adapters

## HandyCom PTT Microphone Speakers



With the HandyCom PTT you can experience the clearest speech intelligibility in combination with intuitive use. It is designed for durable and trouble-free operation under extreme environmental conditions, such as flame and heat exposure or the influence of water (IP67) – ideal for firefighters, police, and industry.

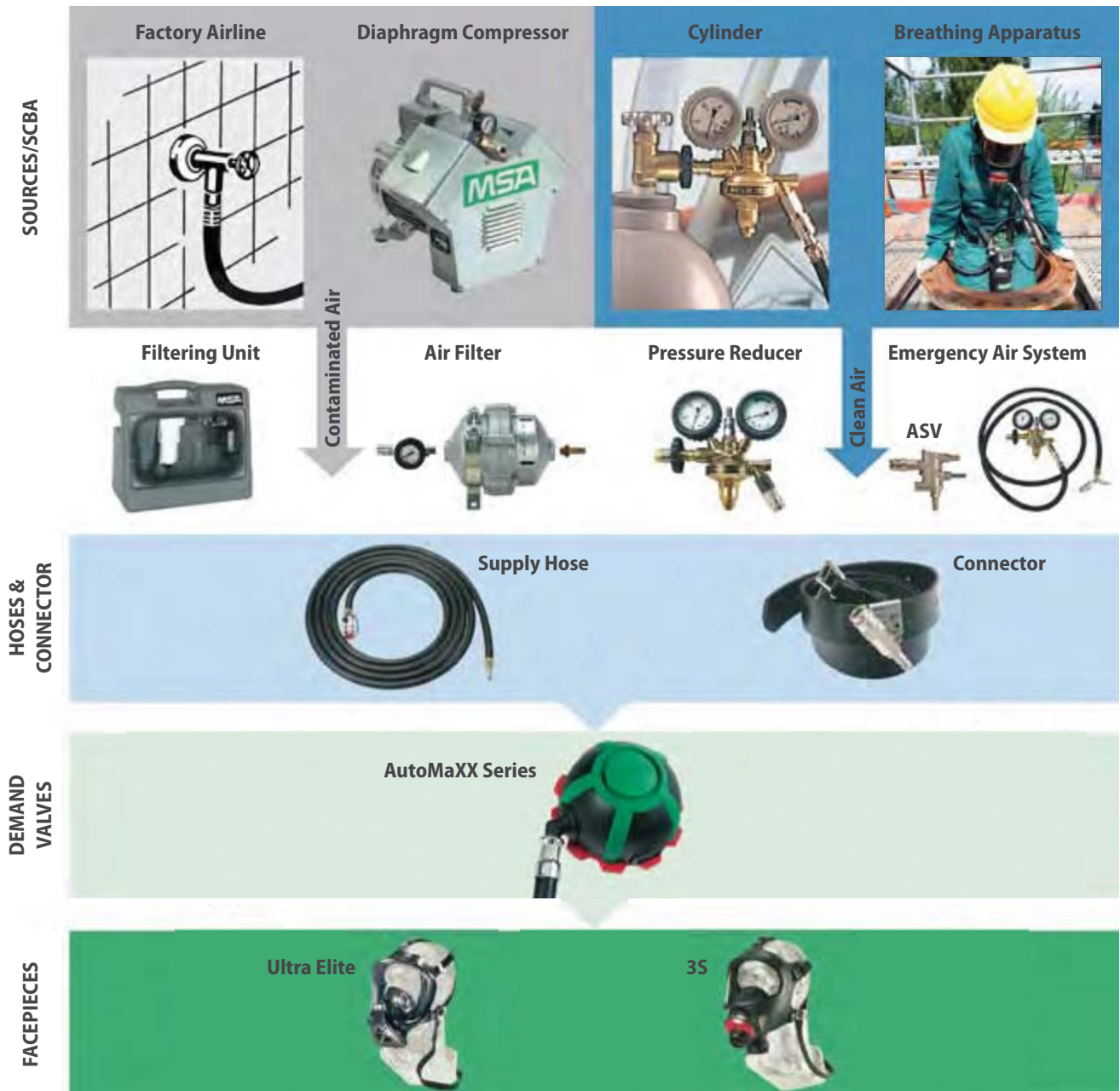
The HandyCom PTT is optimally suited for use in a digital radio network (e.g. TETRA). The NEXUS plug connection makes it compatible with various headsets and offers perfect synchronisation with the Ultra Elite ComKit.

PART NO:	Description
10157059	HandyCom PTT for Motorola digital (MTP850 FuG, etc.)
10157058	HandyCom PTT for Sepura digital (STP 9000, etc.)

Please contact your local MSA affiliate or distributor for a full list of available radio connections

# Compressed **Airline Breathing Apparatus**

MSA compressed airline breathing apparatus, according to EN 14593-1, function independently of the ambient atmosphere. They can be used in all places where the ambient air is not breathable because of contaminants or oxygen deficiency and where filtering devices do not provide sufficient protection. Compressed air is supplied from an external source (e.g. factory airline), from a compressed air cylinder or from a compressor.



# Short Duration SCBA, Combination & Escape Devices

## PremAire Combination



The PremAire Combination, a combination supplied airline respirator with compressed air cylinder, is designed to be versatile, comfortable, and affordable. A streamlined design offers a first stage pressure reducer and cylinder valve within one assembly, creating a very small size and profile that is less likely to snag when working in confined space or tight places. The PremAire Combination can be equipped with either the 3S-PS-MaXX or the Ultra Elite-PSMaXX full face mask in combination with the AutoMaXX-AS lung governed demand valve.

Depending on the type of application or approvals requested, four different configurations can be ordered:

- **PremAire Combination Escape**  
Escape only respirator approved to EN 402
  - **PremAire Combination Airline/Escape**  
Airline/Escape respirator approved to EN 14593-1 and EN 402
  - **PremAire Combination Airline/SCBA**  
Airline/SCBA respirator approved to EN 14593-1 and EN 137
  - **PremAire Combination Mini**  
Short duration SCBA approved to EN 137-type I
- EN 402 or EN 14593-1/EN 402 or EN 14593-1/EN 137 or EN 137**



PART NO:	Description
10124784	PremAire Combination Escape, with 3S full face mask, 2 l steel cylinder (empty)
10124796	PremAire Combination Escape, with 3S full face mask, 2 l composite cylinder (empty)
10124787	PremAire Combination Airline/Escape, with 3S full face mask, 2 l composite cylinder (empty)
10152571	PremAire Combination Airline/SCBA, with 3S full face mask, 2 l composite cylinder (empty)
10152572	PremAire Combination Mini, with 3S full face mask, 3 l composite cylinder (empty)

Please contact us for configurations with charged cylinders and/or Ultra Elite full face masks.

## PremAire Escape



PremAire Escape is a positive pressure short duration compressed air emergency escape breathing device that provides the users with respiratory protection while they escape from toxic atmospheres. The components of the fast to don and easy to use respirator withstand the highest levels of potential industrial gas leaks and harsh chemical environments. PremAire Escape enables the wearer to escape without difficulty from a potentially hazardous environment. It offers a duration of 10-15 minutes for safe escape.

The standard PremAire Escape is equipped with a 3S full face mask. For potential leaks of high concentration industrial gas, like deadly H<sub>2</sub>S, the device is available with the PremAire Mask-Hood.

### EN 402



PART NO:	Description
10152573	PremAire Escape, with 3S full face mask, 2 l steel cylinder (empty)
10152574	PremAire Escape, with 3S full face mask, 2 l composite cylinder (empty)
10152752	PremAire Escape, with 3S full face mask, 2 l composite cylinder (charged)
10151746	PremAire Escape, with PremAire Mask-Hood, 2 l composite cylinder (empty)

Please contact us for other configurations

# Respiratory Protection

## S-Cap-Air



The S-Cap-Air is a compressed air, constant flow, escape breathing apparatus designed to aid escape from hazardous areas in which toxic substances or oxygen deficiency may occur. It is very easy to operate – simply open the unit, put on the hood and make your escape.

The 3 litre, 200 bar compressed air cylinder is available in two versions: steel and composite (S-Cap-Air light).

**EN 1146**

PART NO:	Description
10017668	S-Cap-Air with empty cylinder
10032181	S-Cap-Air with charged cylinder
10033919	S-Cap-Air light with empty cylinder
10034561	S-Cap-Air light with charged cylinder

## AirElite 4h



Closed circuit breathing apparatus for extended operational duration of up to 4 hours. Weight: 15 kg, width: 36 cm.

Excellent breathing comfort with service-free cooling system, dry and cool breathing air, comfortable harness and underarm breathing hoses. Very little maintenance required, trouble-free servicing and refurbishment. Pressure-free system without compressed oxygen cylinder. Electronic self-check and consumption monitor (IC-Air), visual and audible alarms, automatic and manual motion alarm. Fully automatic start and monitoring procedures.

For efficient training of the user, several options are available. MSA offers a KO<sub>2</sub> training kit for the most demanding training scenarios in fire schools or mine rescue training galleries. The economical trainer conversion kit using ambient air is ideal for donning and doffing purposes.

A choice of face masks: 3S-R AirElite or Advantage AirElite.

**DIN 58652-2, vfdb 0802, incl. flame engulfment test (mining and fire service)**



PART NO:	Description
10065152	AirElite 4h (less chemical oxygen canister kit and full face mask)
10165441	AirElite 4h (Battery Version)
10065373	AirElite 4h chemical canister kit
10065153	3S-R AirElite full face mask
10065154	Advantage AirElite full face mask
10118774	Advantage 4000 AirElite full face mask
10100126	AirElite 4h trainer conversion kit HD
10151860	AirElite KO <sub>2</sub> Trainer canister set
10151861	AirElite KO <sub>2</sub> Trainer housing cover
10094376	Particle Filter P3 PlexTec (pack of 10)
10071650	AirElite case

## SSR 30/100



SSR 30/100

The oxygen self-rescuer SSR 30/100 is a small, light and robust respiratory protective device, packed in a stainless steel container, which can be used anywhere, where the ambient atmosphere may be oxygen deficient or contain toxic contaminants. The apparatus is designed to be carried on a belt, donned in seconds and will supply oxygen to the wearer during his escape or while waiting for rescue.

**EN 13794 class 20S**

**SOLAS**

PART NO:	Description
D1123701	SSR 30/100, class 20S
D1123711	SSR 30/100-TR, Trainer

## SavOx



SavOx

Very similar to the SSR 30/100 the SavOx offers additional features like safety goggles for eye protection, an automatic starter system and an indicator window. The apparatus is designed to be carried on a belt or shoulder strap, can be donned in seconds and will supply oxygen to the wearer during his escape or while waiting for rescue.

**EN 13794 class 30S**

**CA 16.817**

**SOLAS**

PART NO:	Description
10023263	SavOx, class 30S
10024538	SavOx-TR, Trainer

## SSR 90



SSR 90

The chemical oxygen apparatus SSR 90 provides oxygen on demand during gas outbursts, fires and after explosions. Designed especially for self-rescue, the unit is housed in a robust stainless steel case and can be carried along or kept on site. It provides 60 minutes of rescue oxygen and up to 5 hours while awaiting rescue.

**EN 13794 class K60S**

PART NO:	Description
D1118701	SSR 90, class 60S
D1118709	SSR 90-TR, Trainer

## SavOxCap 60



SavOx Cap 60

SavOxCap 60 is the only chemical oxygen self-rescuer with hood and starter giving 60 minutes duration. The bright orange coloured hood features an integrated half mask with speech diaphragm for voice communication. Packed in a robust stainless steel container it is made specifically for use in facilities and installations where there is a risk of sudden outbursts of toxic gases and vapours and/or oxygen deficiency.

Weight during use: 3,4 kg.

**Directive 89/686/EEC**

**DIN 58639**

**EN 13794**





PART NO:	Description
10073550	SavOxCap 60
10075670	SavOxCap 60-TR, Trainer

## Full Face Masks – APR

MSA's expertise in breathing protection is very evident in its range of full face masks. Comfort and quality, useful accessories and an unbelievable range of filters meet every challenge.

The APR masks are designed for use with filters and powered air purifying devices (please see page 36). For SAR masks (Supplied Air Respirators) please see page 25.

### Overview Full Face Masks

Mask	Advantage 3000	3S Basic Plus	3S	Ultra Elite
	 <p><b>Versatile solution for industrial applications</b></p>	 <p><b>Economical solution for industrial applications</b></p>	 <p><b>Popular solution for various applications</b></p>	 <p><b>Premium solution for various applications</b></p>
<b>Main Features</b>	<ul style="list-style-type: none"> <li>• Comfort harness</li> <li>• Single &amp; twin filter use</li> <li>• Wide field of vision</li> <li>• Special filter range</li> <li>• Easy maintenance</li> <li>• 3 sizes</li> </ul>	<ul style="list-style-type: none"> <li>• Compact design</li> <li>• Optimal price-performance-ratio</li> <li>• Wide range of accessories</li> </ul>	<ul style="list-style-type: none"> <li>• &gt; 50 different versions</li> <li>• Optional transponder</li> <li>• Speech diaphragm</li> <li>• Anti-fog airflow</li> <li>• 2 sizes</li> <li>• Wide range of accessories</li> </ul>	<ul style="list-style-type: none"> <li>• &gt; 40 different versions</li> <li>• Optional transponder</li> <li>• Speech diaphragm</li> <li>• Wide field of vision</li> <li>• Anti-fog airflow</li> <li>• 2 sizes</li> </ul>
<b>Connections</b>				
<b>Standard EN 148 thread filters</b>	YES (Advantage 3100)	YES	YES	YES
<b>Bayonet twin filters</b>	YES (Advantage 3200)	NO	NO	NO
<b>Other</b>	Special versions for PAPR and KO <sub>2</sub> devices	PAPR	PAPR, Airline, SAR, Special version for KO <sub>2</sub> devices	Airline, SAR
<b>Technical data</b>				
<b>Standard</b>	EN 136 class 2 (Advantage 3200) class 3 (Advantage 3100)	EN 136 class 2	EN 136 class 3	EN 136 class 3
<b>Harness options</b>	Patented easy-to-use Advantage harness, Silicone harness	5-point-harness	5-point harness, Special harnesses, Mask-Helmet-Combinations	5-point harness, Special harnesses, Mask-Helmet-Combinations
<b>Lens options</b>	Coated distortion-free PC	Polycarbonate (PC)	PC, Silicate coated PC, Triplex glass	Silicate coated PC
<b>Faceblank</b>	Silicone	Rubber NBR	Rubber NBR, Silicone	Special rubber, Silicone
<b>Nose Cup</b>	TPE	Rubber NBR	Rubber NBR, Silicone	Rubber NBR, Silicone
<b>Weight</b>	480 g	515 g	633 g	714 g



## Advantage 3000 Series

The full face mask series Advantage 3000 sets new milestones for full face masks, providing both protection and unparalleled comfort. In order to meet all requirements concerning respiratory protective equipment, the Advantage 3000 comes in two versions, each in three different sizes.

Donning the Advantage 3000 with the patented Advantage harness is unbelievably quick, simple and accomplished without painful hair pulling. Besides its functionality we have provided a large, optically corrected lens which assures a clear, undistorted view. And: the greyblue colour of the mask creates an aesthetic appearance.

### Advantage 3000 Selection

The selection of an Advantage is easier when using its four-digit version number:

- 1) 3 = product line 3000
- 2) 1 or 2 = EN thread or bayonet connection
- 3) 1 or 2 or 3 = small/medium/large
- 4) 1 or 2 = Advantage harness / Advantage harness w silicone strap

### Advantage 3200 "twin"



Advantage 3200 and Advantage 3100

This version is identified by the second digit (2), standing for 2 bayonets. With the Advantage 3200, you can use the Advantage filter range as well as the unique TabTec and FLEXIfilters. For filter details, please see page 24.

#### EN 136, class 2

(carton of 22 pcs)

PART NO:	Description
10027727	Advantage 3211, small
10027726	Advantage 3221, medium
10027728	Advantage 3231, large
10042732	Advantage 3212, small
10042733	Advantage 3222, medium
10042734	Advantage 3232, large

### Advantage 3100 "single"



Advantage 3100

The Advantage 3100 is identified by the second digit (1) standing for a single filter. It can be used with the full range of filters with thread connector according to EN 148 (see page 29).

#### EN 136, class 3

(carton of 22 pcs)

PART NO:	Description
10027724	Advantage 3111, small
10027723	Advantage 3121, medium
10027725	Advantage 3131, large
10042664	Advantage 3112, small
10042730	Advantage 3122, medium
10042731	Advantage 3132, large

# Respiratory Protection

## Advantage Filter



The Advantage filter line is a complete line of particulate, chemical and combination cartridges approved according to EN 14387 and EN 143, providing the best in lightweight and high-performance filters.

**EN 14387, EN 143**  
(pack of 1 pair)

PART NO:	Description
430375	200 Advantage P3 R, EN 143 (carton of 50 pairs)
430371	201 Advantage A2, EN 14387 (carton of 25 pairs)
10107163	201 Advantage K2, EN 14387 (carton of 25 pairs)
10144827	201 Advantage A1B1E1, EN 14387 (carton of 25 pairs)
430373	201 Advantage A2B2E1K1, EN 14387 (carton of 30 pairs)
430372	202 Advantage A2-P3 R, EN 14387 (carton of 25 pairs)
10107165	202 Advantage K2 P3, EN 14387 (carton of 25 pairs)
10144828	202 Advantage A1B1E1 P3, EN 14387 (carton of 25 pairs)
430374	202 Advantage A2B2E1K1-P3 R, EN 14387 (carton of 25 pairs)
10011347	P2 R (10 pairs) + 2 adapters, EN 143 (carton of 12 sets)

**R** = Reusable according EN 143:2000 / A1:2006

## Filters with Standard Thread

For details, please see page 31.

## TabTec® Filter



The patented TabTec filter technology allows the production of filters with minimum housing while maintaining high filtering performance. For use with Advantage full face and half masks.

**EN 14387**  
(pack of 1 pair)

PART NO:	Description
10030510	A1 TabTec gas filter (carton of 72 pairs)
10030511	A2 TabTec gas filter (carton of 60 pairs)
10038476	A2B2E1K1 TabTec gas filter (carton of 60 pairs)
10030514	Adapter for TabTec/FLEXIfilter combination (carton of 80 pairs)

## FLEXIfilter



With its extremely flat design, the MSA FLEXIfilter is a superb alternative to traditional particle filters. Available as P2 or P3, as well as with a layer against nuisance odors (OR) which also protects against ozone.

**EN 143**  
(pack of 5 pairs, carton of 8 packs)

PART NO:	Description
10027699	P2 R FLEXIfilter
10027639	P3 R FLEXIfilter
10027697	P3 R FLEXIfilter OR

**OR** = Odour Removal

**R** = Reusable according EN 143:2000 / A1:2006

## G1 Full Face Mask



The G1 full face mask excels in outstanding wearing comfort, low profile and low maintenance requirement. In stand-by, the open port technology offers unrestricted breathing. No electronic components reside on the mask to reduce the overall investment.

The G1 mask comes with a choice of either a classic rubber or a modern fabric harness.

The MSA G1 Full Face Mask is a positive pressure face piece providing respiratory protection for firefighters and industrial first responders and is backward compatible with the AirGo and AirMaXX SCBA family.

Variety of Connectors

- Positioned in an ergonomic and intuitive position in front of the user's mouth.
- One mask – multiple connector options

**EN 136, class 3**



**PS-MaXX**  
Push to connect



**M45x3**  
Screw to connect



**ESA unified**  
Push to connect



**G1 - Push to connect**  
with open port

PART NO:	Description	PART NO:	Description
10156458	G1 full face mask, size S, net harness	10156461	G1 full face mask, size S, rubber harness
10156459	G1 full face mask, size M, net harness	10156462	G1 full face mask, size M, rubber harness
10156460	G1 full face mask, size L, net harness	10156463	G1 full face mask, size L, rubber harness

The listed configurations can only be used with the G1 SCBA.

	Rubber Harness	Net Harness	Helmet-Mask Combination
G1 full face mask PS-MaXX, Size M	G1FP-EM1ME0P	G1FP-EM1M40P	G1FP-HM1MH0P
G1 full face mask PF (M45 x 3), Size M	G1FP-EM1ME0M	G1FP-EM1M40M	G1FP-HM1MH0M
G1 full face mask PS-ESA, Size M	G1FP-EM1ME0E	G1FP-EM1M40E	G1FP-HM1MH0E

The G1 mask is available in a variety of options. All masks mentioned above have a Polycarbonate lens w/o coating - neck strap not included. For further configurations, please contact your local channel partner.

### 3S Basic Plus



MSA's economy model 3S Basic Plus is typically used in general industry, HazMat remediation and handicrafts. The full face mask 3S Basic Plus is designed for use with filters (EN 148 thread connector) and filtering devices. For filters please see page 31

#### EN 136, class 2

PART NO:	Description
D2055790	3S Basic Plus (carton of 22 pcs)

### 3S



The 3S mask offers everything a mask wearer needs. Comfortable fit, good communication through speech diaphragm, anti fogging air flow, low weight, no pressure points, low breathing resistance, good vision. With EN 148 thread connector. For filters please see page 31.

#### EN 136, class 3

PART NO:	Description
D2055000	3S (carton of 22 pcs)
D2055779	3S small (carton of 22 pcs)
D2055718	3S Silicone (carton of 22 pcs)
D2055767	3S-EZ (carton of 22 pcs)

**EZ** = Easy-Don Nomex harness

### Ultra Elite



Innovative full face mask of black special rubber (optionally silicone) for two-way breathing (valve breathing), with standard thread for respiratory filters, air line appliances, and compressed air breathing apparatus. Pressure-free fit through comfortable single-sealing flange and deep chin cup. Available in two sizes for optimal fit. Silicate coated lens with distortion-free field of vision of almost 100%. Fog-free viewing through flushed lens. Fivepoint rolling buckle harness and good speech communication. For filters please see page 31

#### EN 136, class 3

PART NO:	Description
D2056700	Ultra Elite (carton of 22 pcs)
D2056779	Ultra Elite small (carton of 22 pcs)
10013876	Ultra Elite with transponder (carton of 22 pcs)
D2056718	Ultra Elite Silicone (carton of 22 pcs)
D2056770	Ultra Elite-EZ (carton of 22 pcs)

**EZ** = Easy-Don Nomex harness

## Accessories for Full Face Masks

### Carriers



3S-H carrying case



Advantage Container

Carriers for full face masks series Ultra Elite, 3S, 3S Basic Plus and Advantage 3000.

PART NO:	Description
D2055709	3S Carrier (plastic)
D2056734	Ultra Elite Carrier (plastic)
10026179	Advantage Container for all masks (plastic)
D2055400	Elite Carrying bag (nylon soft bag)
D6125067	3S-H carrying case (nylon soft bag)

### Mask Spectacles



Mask Spectacle Plastic

MSA mask spectacles can be quickly attached to 3S, Ultra Elite and Advantage 3000 masks.

PART NO:	Description
D2055811	3S-M Mask spectacle frame (metal)
D2055954	3S Mask spectacle frame (plastic)
D2056733	Ultra Elite-M Mask spectacle frame (metal)
D2056730	Ultra Elite Mask spectacle frame (plastic)
10037282	Advantage 3000 spectacle frame (metal)

### Welding Adapters & Cover Lenses



Welding Adapter

Welding adapters and covering lenses can be easily mounted to the standard MSA masks 3S, Ultra Elite and Advantage 3000.

PART NO:	Description
D2055781	3S Welding adapter (for lens 90 x 110 mm)
D2056701	Ultra Elite Welding adapter (for lens 90 x 110 mm)
D2055706	3S Cover lenses (pack of 10)
10037238	Advantage 3000 cover lenses, clear (pack of 10)
10037237	Advantage 3000 cover lenses, tinted (pack of 10)
D2056702	Ultra Elite cover lenses (pack of 10)

### Test Device



Test Device

Mobile carrying case for testing the tightness of various types of masks.

PART NO:	Description
D6063705	Mask tightness tester for all masks

# Half Masks

Traditionally, MSA has always offered high quality half masks. Comfort, efficiency and aesthetics are some of the most important features MSA products stand for.

All half masks come with a full range of filters and accessories. With the exclusive technology used to create the new generation of filters, MSA leapfrogs over all other products currently in existence.

## Advantage 400 Series



Advantage 410

The innovative Advantage 400 half mask stands out due to exceptional comfort and sophisticated design. The user-friendly respirator only consists of three major components, that can be easily cleaned: head harness, nose cup and 4-point yoke.

The patent-pending single loop head harness is unique to the market. It grants the user an intuitional operation and offers high comfort and flexibility. The drop-down option allows the user to remove the mask from the face without removing his other safety equipment (like helmet, ear muffs or spectacles). The respirator can be worn along the chest until the next use. Lock-down permits to set the harness to the proper fit. It can be then reused without any further adjustments.

The one-piece MultiFlex nose cup is made of soft and smooth co-molded silicone and rigid plastic. This unique combination gives the face piece great durability and extraordinary stability when worn, without compromising comfort.

The Advantage 400 is either available with single thread EN 148-1 connection (Advantage 410) or with twin bayonet MSA connection (Advantage 420). For both versions MSA offers a wide range of different filters, suitable for all applications.

### EN 140

PART NO:	Description
10102276	Advantage 410, small
10102277	Advantage 410, medium
10102278	Advantage 410, large
10102273	Advantage 420, small
10102274	Advantage 420, medium
10102275	Advantage 420, large

The weight of a single filter shall not exceed 300 g when used with the Advantage 410



Advantage 420

## Advantage 200 LS



Advantage 200 LS with TabTec®

The Advantage 200 LS half mask is ideal for applications where workers are exposed to various hazards from job to job, such as high concentrations of fumes, mists and gases. Offering unmatched fit and comfort, it's the first respirator to feature MSA's patented MultiFlex system, a soft, pliable combination of rubber and plastic that provides a customised fit, instantly conforming to the wearer's unique facial characteristics. Three available sizes raise standards of fit and comfort up another notch.

The Advantage 200 LS has a full line of particulate, chemical and combination cartridges, approved according to EN 14387 and 143. To meet your individual needs you could choose between the classic Advantage filters and the exclusive range of TabTec and FLEXIfilters, please see page 24.

### EN 140

(carton of 48 pcs)



Pouch

PART NO:	Description
430357	Advantage 200 LS, small
430356	Advantage 200 LS, medium
430358	Advantage 200 LS, large
10016038	Pouch for Advantage 200 LS

## Respiratory Filters




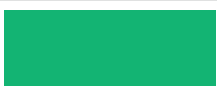


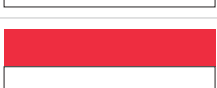

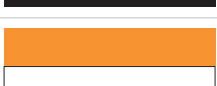
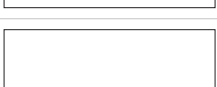
The service time of respiratory filters depends on the conditions of use. For gas or combined filters that are used against gases, the end of a filter's service life can usually be detected by odour, taste or irritation during inhalation. Some filters have a specified maximum service time (CO filter cartridges, combined filters 93 Hg/St).

For particle filters or combined filters that are used against particles, the end of service time can be detected by an increase in inhalation resistance.

With combined filters – depending on the predominant protective function – both criteria must be observed. Particle filters must only be used once against radioactive contaminants, spores, bacteria, virus and proteolytic enzymes.

The 9X series of MSA gas and combination filters are in full compliance with the REACH regulation and do not include any toxic materials listed in the European Regulation.

For Advantage filters and the exclusive range of TabTec and FLEXifilters please see page 24.

Colour mark	Type	Application	Class	Max. allowed gas concentration	Standard
	<b>A</b>	<b>Organic gases and vapours</b> (boiling point > 65°C)	1 2 3	1000 ml/m <sup>3</sup> (0.1 Vol.-%) 5000 ml/m <sup>3</sup> (0.5 Vol.-%) 10000 ml/m <sup>3</sup> (1.0 Vol.-%)	EN 14387
	<b>B</b>	<b>Inorganic gases and vapours</b> (not CO) e.g. chlorine, H <sub>2</sub> S, HCN	1 2 3	1000 ml/m <sup>3</sup> (0.1 Vol.-%) 5000 ml/m <sup>3</sup> (0.5 Vol.-%) 10000 ml/m <sup>3</sup> (1.0 Vol.-%)	EN 14387
	<b>E</b>	<b>Sulfur dioxide and acidic gases and vapours</b>	1 2 3	1000 ml/m <sup>3</sup> (0.1 Vol.-%) 5000 ml/m <sup>3</sup> (0.5 Vol.-%) 10000 ml/m <sup>3</sup> (1.0 Vol.-%)	EN 14387
	<b>K</b>	<b>Ammonia and organic ammonia derivatives</b>	1 2 3	1000 ml/m <sup>3</sup> (0.1 Vol.-%) 5000 ml/m <sup>3</sup> (0.5 Vol.-%) 10000 ml/m <sup>3</sup> (1.0 Vol.-%)	EN 14387
	<b>AX</b>	<b>Organic gases and vapours</b> (boiling point < 65°C) of low boiling substance groups 1 and 2	-	Gr. 1 (100 ml/m <sup>3</sup> max. 40 min.) Gr. 1 (500 ml/m <sup>3</sup> max. 20 min.) Gr. 2 (1000 ml/m <sup>3</sup> max. 60 min.) Gr. 2 (5000 ml/m <sup>3</sup> max. 20 min.)	EN 14387
	<b>NO-P3</b>	<b>Nitrogen oxides</b> e.g. NO, NO <sub>2</sub> , NOX <b>and particles</b>	-	Maximum allowed time of use 20 minutes	EN 14387
	<b>Hg-P3</b>	<b>Mercury vapours and particles</b>	-	Maximum allowed time of use 50 hours	EN 14387
	<b>CO*</b>	<b>Carbon monoxide</b>	-	Local guidelines	DIN 58620 EN 14387
	<b>Reactor P3*</b>	<b>Radioactive iodine and particles</b>	-	Local guidelines	DIN 3181*
	<b>P</b>	<b>Particles</b>	1 2 3	Max. filter penetration 20 % Max. filter penetration 6 % Max. filter penetration 0.05 %	EN 143 EN 14387

\*only colour mark and type standardized

## An Excerpt from our Wide Range

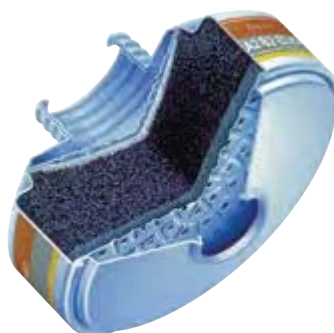
Description	Part No.	Pack of	Packs in Carton	Acc. to DIN/EN	Weight	Ø/Height in mm	Thread Connector
<b>Particle Filters</b>							
Pre Filter for Filter cartridge	D1070754	12	-	flame resistant	3 g	107/35	P3 PlexTec, series 92 & 93
Particle Filter P3 PlexTec	10094376	10	20	P3 R	80 g	104/46	EN 148-1
<b>Gas Filters</b>							
Gas Filter 90 A	10115187	1	32	A2	230 g	107/70	EN 148-1
Gas Filter 90 AB	10098113	1	32	A2, B2	230 g	107/70	EN 148-1
Gas Filter 90 E	10115349	1	32	E2	> 300 g	107/70	EN 148-1
Gas Filter 90 K	10115320	1	32	K2	> 300 g	107/70	EN 148-1
Gas Filter 90 ABE	10152442	1	32	A1, B1, E1	185 g	107/70	EN 148-1
Gas Filter 90 ABEK	10098114	1	32	A2, B2, E2, K1	255 g	107/70	EN 148-1
Gas Filter 90 AX	10108408	1	32	AX, A2	230 g	107/80	EN 148-1
Gas Filter 90 ABEK2	10098112	1	32	A2, B2, E2, K2	290 g	107/77	EN 148-1
<b>Combined Filters</b>							
Combined Filter 92 A/St	10115188	1	32	A2-P2 R D	260 g	107/85	EN 148-1
Combined Filter 92 AB/St	10097994	1	32	A2, B2-P2 R D	270 g	107/85	EN 148-1
Combined Filter 92 ABEK/St	10097995	1	32	A2, B2, E2, K1-P2 R D	295 g	107/85	EN 148-1
Combined Filter 92 ABEK2/St	10097996	1	32	A2, B2, E2, K2-P2 R D	350 g	107/93	EN 148-1
Combined Filter 93 A/St	10115189	1	32	A2-P3 R D	260 g	107/85	EN 148-1
Combined Filter 93 AX/St	10108409	1	32	AX-P3 R D	260 g	107/85	EN 148-1
Combined Filter 93 AB/St	10097993	1	32	A2, B2-P3 R D	270 g	107/85	EN 148-1
Combined Filter 93 K/St	10115190	1	32	K2-P3 R D	295 g	107/85	EN 148-1
Combined Filter 93 ABE/St	10147479	1	32	A1, B1, E1-P3 R D	215 g	107/70	EN 148-1
Combined Filter 93 ABEK-Hg/St	10097231	1	32	A2, B2, E2, K1, Hg-P3 R D	295 g	107/85	EN 148-1
Combined Filter 93 ABEK2-Hg/St	10097232	1	32	A2, B2, E2, K2, Hg-P3 R D	350 g	107/93	EN 148-1
<b>Special Filters</b>							
Combined Filter 93 Hg/St	10115201	1	32	Hg-P3 R D	270 g	107/85	EN 148-1
Combined Filter 93 NO-CO/St	10115314	1	32	NO-P3 R D	470 g	107/85	EN 148-1
Combined Filter 93 ABEK-CO-NO-Hg/St	10115315	1	32	A1, B2, E2, K1, CO, NO, Hg-P3 R D	420 g	107/93	EN 148-1

**R** = Reusable according EN 143:2000 / A1:2006;

**D** = Dolomite dust tested



Particle Filter



Gas Filter



Combined Filter

# Respiratory Protection

Advantage Respirator Cartridges			Acid Gases												Filter Type & Efficiency			
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.			Organic Vapor	Chlorine	Sulfur Dioxide	Chlorine Dioxide	Hydrogen Chloride	Hydrogen Sulfide	Ammonia	Methylamine	Formaldehyde	Hydrogen Fluoride	Mercury Vapor	See Definitions below				
			MSA Cartridge Description	Re-Order Part Number	Color Coding	OV	CL	SD	CD	HC	HS	AM	MA	FM	HF	MV	P100	R95
Organic Vapor (GMA)	815355																	2,3
Organic Vapor/P100 (GMA)	815362																	2,3,4
Acid Gas (GMB)	815356																	2
Acid Gas/P100 (GMB)	815363																	2,4
Organic Vapor/Acid Gas (GMC)	815357																	2,3
Organic Vapor/Acid Gas/P100 (GMC)	815364																	2,3,4
Ammonia/Methylamine (GMD)	815358																	2,3
Multigas (GME)	815359																	2,3
Multigas/P100 (GME)	815366																	2,3,4
Chlorine/Mercury Vapor (Mersorb)	815361																	2
Chlorine/Mercury Vapor/P100 (Mersorb)	815368																	2,4
Low-Profile P100	815369 Pack of 2																	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																	

Advantage Respirator Cartridges			Acid Gases												Filter Type & Efficiency			
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).			Organic Vapor	Chlorine	Sulfur Dioxide	Chlorine Dioxide	Hydrogen Chloride	Hydrogen Sulfide	Ammonia	Methylamine	Formaldehyde	Hydrogen Fluoride	Mercury Vapor	See Definitions below				
			MSA Cartridge Description	Re-Order Part Number	Color Coding	OV	CL	SD	CD	HC	HS	AM	MA	FM	HF	MV	P100	R95
Organic Vapor/P100 (GMA)	815178 (6 in pkg.)																	2,3,4
Organic Vapor/Acid Gas (GMC)	464046 (10 in pkg.)																	2,3,5
Organic Vapor/Acid Gas/P100 (GMC)	815180 (6 in box)																	2,3,4
Organic Vapor/Acid Gas/P100 Short Stack (GMC)	815188 (6 in box)																	2,3,4
Chlorine/Mercury Vapor/P100 (Mersorb)	815185 (6 in box)																	2,4
Prefilter and Cover R95	816287 R95 (20 in box) 489219 R95 Reusable snap-on cover (1 in pkg; 2 req.)																	1

Flexi-Filter® Pads for Advantage Respirators			Filter Type & Efficiency		
These low-profile, "exible 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.			See Definitions		
			MSA Filter Description	Part No.	Color Coding
Flexi-Filter/P100	818342				1,4
Flexi-Filter/P100 w/Nuisance Level OV, Ozone Removal	818343				1,4
Flexi-Filter/P100 w/Nuisance Level AG, HF Removal	818344				1,4
Flexi-Filter/P95 w/Nuisance Level OV Removal	818355				1

## 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.

## Notes

- 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.
- Do not use in atmospheres containing less than 19.5 percent oxygen, or in atmospheres immediately dangerous to life and health.
- 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.
- 99.97 percent efficient against 0.3 micron DOP.
- Both a prefilter and cover must be used with the cartridge in order to obtain R95 or N95 particulate protection.



## Filters with Standard Thread

### Particle Filter



Advantage 3100 with Particle Filter

With large retention capacity for protection against solid and liquid particles of toxic agents, e.g. radioactive and carcinogenic particles.

With its significantly increased filtering surface the high-performance particle filter P3 PlexTec reduces inhalation resistance and improves filtering performance and service time, while at the same time allowing slightly more relaxed breathing.

**EN 143**



Particle Filter  
P3 PlexTec

PART NO:	Description
10094376	Particle Filter P3 PlexTec (pack of 10)
10114676	Particle filter P3 PlexTec (pack of 100)

### Gas Filter



3S with Gas Filter

For protection against organic or inorganic gases and vapours, according to the required protection range. Gas filter classes 1 or 2, single or multiple range filter (ABEK).

**EN 14387**



Gas Filter 90

PART NO:	Description
Various types, please see page 29	

### Combined Filter



3S with Combined Filter

For protection against organic or inorganic gases and vapours, according to the required protection range, as well as against solid and liquid particles. Single and multiple range filters (ABEK/St). Also available, a filter for protection against radioactive iodine and its organic compounds, especially methyl iodide. In addition, special filters for carbon monoxide, low-boiling compounds, nitrous gases, mercury, etc.

MSA combined filters have been redesigned and upgraded by using the PlexTec media to provide even better comfort for the user.

**EN 14387**



Combined Filter 93

PART NO:	Description
Various types, please see page 29	

## Filter Escape Devices

### miniSCAPE



miniSCAPE

Using the latest filtering media TabTec technology, the miniSCAPE is a onetime use escape device with 5 minutes service time. It is equipped with mouthpiece and nose clip. Small and handy, the miniSCAPE fits into the pocket of a lab overall or any work clothing. It can also be belt carried, with the very practical integrated belt clip. In case of emergency, it can be donned very quickly and is immediately operational. In case of sudden and unexpected outbreaks of toxic gases or vapours at the workplace, personnel can quickly and safely leave the danger area using the miniSCAPE.

The hygienic and convenient plastic casing allows the device, if unused, to be distributed indefinitely to different people, for example mechanics, visitors or shift workers.

#### ABEK-5 DIN 58647-7

PART NO:	Description
10038560	miniSCAPE in plastic housing



### MSR 1 & MSR 2



MSR 2

The MSR 1 provides protection against hazardous gases of the types A, B, E and K. The MSR 2 also provides protection against particles (P2). Both devices are packaged in a robust carrying container with belt clip.

#### ABEK-15 DIN 58647-7

PART NO:	Description
D2264700	MSR 1 escape respirator
D2264701	MSR 2 escape respirator



### W65-2 & W95



W65-2

The MSA Filter Self-Rescuers W65-2 and W95 for one-time escape use provide protection against toxic carbon monoxide (CO) and other gases emitted in underground mine fires or explosions. The W65-2 is a standard Filter Self-Rescuer. The W95 is designed for extended escape routes. Both devices are available in shoulder carrying mode or with integral belt loop and as trainer version.

#### EN 404 (FSR 4BR)

PART NO:	Description
D1035701	W65-2
10064638	W65-2 BL (with belt loop)
D1034700	W95
10014932	W95 BL (with belt loop)



Belt loop



Shoulder carrying mode

## S-CAP



S-CAP

S-CAP is an escape hood especially designed to protect persons endangered by smoke and gases generated by fires. The most dangerous of these gases is carbon monoxide.

S-CAP provides effective protection for eyes, head and especially the respiratory tract, and thus rescue can be effected with little risk. Even for those who wear spectacles, the donning of the device is very fast and easy.

The S-CAP Trainer is a device to be used by rescue teams to train potential users. The standard yellow hood is included in a blue bag, closed by velcro straps intended to simulate the tearing of the aluminized foil bag.

**EN 403:2004**

PART NO:	Description
10064644	S-CAP in cardboard box
10064645	S-CAP in luminescent wall box
10064646	S-CAP in fireman's pack (pack of 3)
10081637	S-CAP in pouch
10113222	S-CAP in pouch w/o carrying strap
10101163	S-CAP in container Elite (pack of 2)
10146795	S-CAP Trainer hood without filter, in pouch
B1446031	Filter holder for Trainer
B1446030	Filter pads for Trainer (pack of 100)
10146807	Spare hoods (3 pcs)



Wall Box



Pouch



Container Elite



Trainer

## Smoke Hood



Smoke Hood

The Smoke Hood is an emergency escape respirator, designed to the exacting requirements of the North Sea oil production industry, for self rescue from fire incidents where smoke, carbon monoxide and other toxic gases may be present.

The hood provides protection against radiant heat while the neck seal provides additional protection against smoke rising inside the hood. A self-adjusting, one size fits all, head harness allows quick and easy donning.

**EN 403:1993**

PART NO:	Description
B1440005	Smoke Hood
B1446021	Smoke Hood Trainer (without filter holder)
B1446031	Filter holder for Trainer
B1446030	Filter pads for Trainer (pack of 100)



Smoke Hood in Bag


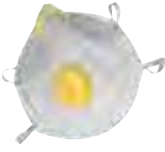

## Filtering Face Pieces

### Affinity Range

A full range of disposable masks for both professional and DIY (Do-It-Yourself) use. Different types of masks cover the protection levels FFP1 to FFP3 to enable safe work in various applications. The "Odour-Removal" (OR) versions offer relief from unpleasant odours, e.g. of acid gases (incl. HF), in concentrations below TLV (nuisance levels).

Affinity is true to its name: automatically conforming to the face. The Affinity product line, with the versions 1100 and 2100, provides every user with a compatible respirator according to the latest European Standards.

**All Affinity masks are compatible with MSA Protective Eyewear (see page 64).**

Applications	Color	Type
Grinding, Sanding, Cutting, Sweeping, Sawing, Bagging		FFP1
Machining, Welding, Brazing, Plastering, Insulation Installation		FFP2
Pharmaceuticals, Industrial Processes, Asbestos Environments		FFP3

### Approvals

The products have been tested and approved according to the latest revision of EN 149:2008 (solid and liquid particles) which now includes the loading test, described in the amendment A1 of EN 143:2000. The classification of these products is NR (not reusable), i.e. for single shift use only.



FFP1



FFP2



FFP3

## Affinity 1100



Affinity 1100

The AnthroCurve sealing flange ensures that these cup shaped respirators fit safely and comfortably. Furthermore a pre-shaped nose band and inner nose foam make adjustment easy and provide improved comfort. The FFP3D version comes additionally with an adjustable elastic band for easy donning and doffing.

The selected filter materials of Affinity 1100 are Dolomite tested to guarantee better breathing comfort, particularly in high dust environments.

**EN 149:2001**

PART NO:	Description
10128847	Affinity 1110 FFP1 NR D, green (pack of 10, carton of 12 packs)
10128848	Affinity 1111 V FFP1 NR D, green (pack of 10, carton of 12 packs)
10128849	Affinity 1120 FFP2 NR D, yellow (pack of 10, carton of 12 packs)
10128850	Affinity 1121 V FFP2 NR D, yellow (pack of 10, carton of 12 packs)
10128873	Affinity 1141 V OR FFP2 NR D, blue (pack of 10, carton of 12 packs)
10128871	Affinity 1131 V FFP3 NR D, red (pack of 5, carton of 12 packs)

**D** = Dolomite tested  
**OR** = Odour Removal  
**V** = with Valve

## Affinity 2100



Affinity 2100

Affinity 2100 foldable disposable respirators offer high-performance light filtering media, which are thin and light, and provide a comfortable fit even when used for longer periods. The low-profile design with vertical fold makes it ideal for use under welding hoods or in any tight spot where a respirator must be worn. A pre-shaped nose clip allows for easy contour adjustments to achieve a snug fit that prevents exhaled breath from escaping and fogging safety glasses. A colour coding system ensures easy identification of the protection level and helps the user to select the right kind of mask for any given application.

Due to the exceptional quality of the filtering media, Affinity 2100 masks have a storage life of 5 years, from the date of manufacture.

**EN 149:2001**

PART NO:	Description
10128874	Affinity 2110 FFP1 NR D, green (pack of 15, carton of 12 packs)
10128875	Affinity 2111 V FFP1 NR D, green (pack of 15, carton of 12 packs)
10128876	Affinity 2120 FFP2 NR D, yellow (pack of 15, carton of 12 packs)
10128877	Affinity 2121 V FFP2 NR D, yellow (pack of 15, carton of 12 packs)
10128878	Affinity 2131 V FFP3 NR D, red (pack of 15, carton of 12 packs)

**D** = Dolomite tested **V** = with Valve

## Powered Air-Purifying Respirators

A wide range of occupations require long periods of time in unhealthy or even toxic environments. Typical applications are work with hazardous materials such as asbestos removal, paint and lacquer spraying, welding, chemical plants, agriculture and medicine. The use of a traditional nonpowered filter system over time adds a significant strain on breathing and increases body temperature.

When long-term breathing protection is necessary, a Powered Air-Purifying Respirator (PAPR) is the way to go. Breathing remains easy and free from resistance even after hours of work. Maximum safety, flexibility and ease-of-handling allows the user to concentrate on his work.

### OptimAir® 3000



OptimAir 3000

The OptimAir 3000 is the next generation PAPR to protect against hazardous particles, gases and vapours. Our specially designed OptimAir 3000 EX unit can also be used in areas where there is a potential danger of ignition. Driven by a powerful low profile blower, OptimAir 3000 is the most advanced High-Tec system using an exclusive stackable filter system. Easy to use (one-button operation) and ergonomic.

EN 12941, EN 12942

PART NO:	Description
10049557	OptimAir 3000 (Standard unit with 130 l airflow, NiMH Battery, Charger and Comfort Belt)
10049558	OptimAir 3000 A (Unit with 160 l airflow, OptimAir Mask w/Hose, Particle Filter [pack of 10], NiMH Battery, Charger and Decon Belt)
10049559	OptimAir 3000 EX (Unit with 130 l airflow, NiMH EX Battery, Charger and Comfort Belt)

### Head Pieces



OptimAir Mask



OptiVizor



OptiTop

The OptimAir 3000 features a wide range of specially designed head pieces (full face masks, hoods, hooded helmet, welder's screen and visor) to cover most applications.

EN 12941, EN 12942

PART NO:	Description
10051810	OptimAir Mask with hose (TM3)
10051807	OptiTop (Hooded helmet) (EN 397), (TH3) with hose
10051805	OptiHood Demi (TH2) without hose
10051806	OptiHood Full (TH2) without hose
10049638	OptiVizor (Face shield) without hose (TH2) (EN 166)
10049639	OptiVizor W (Welder's screen) complete (TH2) without hose (EN 166, EN 175)
10049630	Hose for masks
10049631	Hose for hoods and visors

### OptimAir 3000 Filters



Depending on the application, the following filters can be used with the OptimAir 3000. (pack of 10)

PART NO:	Description
10049632	OptimAir 3000 Particle filters
10049635	OptimAir 3000 ABEK filters
10049637	OptimAir 3000 A2 filters



## Thermal Imaging Cameras



MSA's state-of-the-art Thermal Imaging Cameras (TIC) are invaluable tools for fire fighters and police, e.g. for fast and safe navigation in smoke filled rooms or dark environments.

The TIC models feature the same ergonomic design, robust components and extreme durability. The image quality is best-in-class.

The Video Transmission System gives the back-up team a clear view of what is happening on the fire ground in real time. Furthermore, the Image and Video Capture functions are invaluable for documentation purposes.

## Thermal Imaging Cameras

### Evolution® Series

#### Evolution® 6000



- The Evolution 6000 series makes TIC use easier, faster, lighter and more intuitive.
- 3 models available depending on users needs.
- Durable tool for fire fighting operations and search/rescue.
- All models feature High Resolution 320 x 240 pixel imaging core that provides excellent image quality.
- Flashlight/laser pointer for extra visibility.
- Field replaceable germanium lens lowers repair costs.
- Integrated Compass.
- Plus model features 2X/4X zoom.
- Plus model features 6 user selectable colour palettes.
- Plus model available with optional integrated video transmitter.
- Xtreme model includes all the great features of the Plus, as well as integrated video and image capture.
- Class 1, Division 2 Intrinsic Safety.
- NFPA 1801 Compliant.

PART NO:	Description
10145939K	Evolution® 6000, Basic with laser pointer and Station Kit
10145955K	Evolution® 6000, Plus with Station Kit
10145963K	Evolution® 6000, Xtreme with Station Kit
10145965AUK	Evolution® 6000, Xtreme with Video Transmitter and Station Kit

#### Evolution® 6000 Series accessories



Station Kit

Vehicle Kit

PART NO:	Description	PART NO:	Description
10120606-SP	Battery, Evolution® 6000 Series, lithium-ion	10145771	Kit, vehicle Evolution® 6000 Series
10145860-SP	Cable, USB, Evolution® 6000 Series, configuration cable	10040226	Lanyard Retractable Evolution® 5000 and 6000 Series
10147388	Charger, Evolution® 6000 Series, includes wall and vehicle chargers	10039515	Strap, Shoulder, Evolution® 5000 and 6000 Series
10148136	Charger, vehicle, Evolution® 6000 Series	10039516	Strap, Wrist, Evolution® 5000 and 6000 Series
10040005	Kit, station, Evolution® 6000 Series	10147892	Sun Shade, Evolution® 6000 Series
10147389	Evolution® 6000, Xtreme with Video Transmitter and Station Kit	Note: US Export Restrictions may apply.	

#### Evolution Series Video Receiver



- Includes receiving antenna and 300mm LCD screen in waterproof carry case.
- Can receive two independent transmitter feeds.

PART NO:	Description
10049271	Receiver station with monitor and case suits both 6000 and 5000 Series





## Portable Gas Detection Calibration Accessories



Battery-powered, direct-reading portable instruments are classified into two groups - single-gas instruments or multiple-gas instruments. 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.

No matter which type of portable 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.

MSA offers a wide variety of portable and permanent gas monitoring solutions to detect combustible gases, toxic gases, oxygen deficiency/enrichment.

Our instruments reflect the latest developments in sensor and instrumentation design, using electrochemical, catalytic bead, infrared (IR) and photoionization detector (PID) sensing technologies, and offer wireless communication capabilities.

We offer a wide range of systems to meet your facility's monitoring needs: from a single sensor in a stand-alone application to a large-scale, completely integrated networked fleet management solution. MSA also designs custom systems that are tailored to fit unique monitoring requirements.

Contact your MSA representative for more information and ordering information.

# 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, including volatile organic compounds (VOC).

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, 5-in-1 or 6-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



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.

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.



Figure 4

## 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, an alarm is activated when oxygen levels drop below e.g. 19.5 percent.

## How Combustible Gas Monitors Work



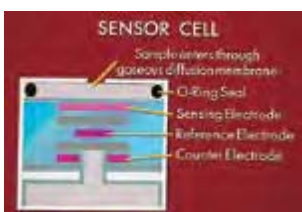
**Figure 5**

Portable instruments for monitoring combustible gases and vapors are generally calibrated on pentane simulant 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) and/or hydrogen sulfide (H<sub>2</sub>S), 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<sub>2</sub>S.



**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

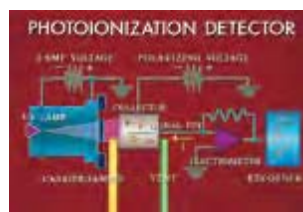
can be used. Sensors measure 0 to 100 percent of the LEL and oxygen from 0 to 25 percent. Remote sampling requires either a built-in pump module or an external pump probe.

### 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. 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<sub>2</sub>S, 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 Detectors for Toxic Gases and Vapors

A photoionization detector, featuring micro-processor 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 2,000 ppm scale.

### Personal Sampling

Personal sampling is used to determine the concentration of airborne contaminants. Personal sampling pumps are designed to measure individual workers’ exposures, so they typically are lightweight, belt-mounted, battery-powered devices.

The process of sampling entails drawing a predetermined volume of air through a filter designed to trap contaminants. The filter

is contained in a plastic cassette, which is attached by plastic tubing to a sampling pump calibrated to draw a specific, known volume of air into the filter. After air samples are drawn, the filters are sent to a laboratory where they are examined to determine the level of exposure.

Personal sampling determines the concentration found in the “breathing zone” or the area near the worker’s face, which is usually measured at or near the collar or lapel.

### 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.

For more information on bump test, calibration and frequency, please visit [https://safetyequipment.org/wp-content/uploads/2015/09/calibration\\_statement-2010-Mar4.pdf](https://safetyequipment.org/wp-content/uploads/2015/09/calibration_statement-2010-Mar4.pdf).

# Portable Instrumentation

## Gas Detectors

### ALTAIR® 2X

ALTAIR 2X Gas Detector from MSA; the first one - or two-gas detector that incorporates industry-leading XCell Sensor technology to deliver unparalleled performance while dramatically minimising total cost of ownership, increasing durability and delivering enhanced worker safety, compliance and traceability.

#### ALTAIR 2XP Gas Detector – with XCell Pulse Technology

#### Compliance, Traceability and Simplicity without Compromising Safety



- The industry best practice of conducting a bump test prior to each day's use is easily achieved with the ALTAIR 2XP. Bump anywhere, any time, without bottled gas or accessories.
- Visual indicators on the detector make verification of bump test easy
- Highly visible green light verifies successful bump test (green light, check mark)
- Flashes red when not bumped
- The ALTAIR 2X family of detectors have full instrument traceability of bump and calibration records, peak readings, event logs and data logs.

#### ALTAIR 2XT – Two-Tox Gas Detector

The ALTAIR 2XT Detector eliminates the need for a second detector by utilising proven XCell Two-Tox Sensors. XCell Two-Tox Sensors detect two gases on distinct sensor channels with digital output that minimises cross-channel interference.

#### ALTAIR 2X – Single-Gas Detector

MSA revolutionised gas detection with XCell Sensor technology. By miniaturising the sensors' controlling electronics and placing them inside the sensor itself using MSA's proprietary application-specific integrated circuit (ASIC) design, MSA XCell Sensors offer superior stability, accuracy, and sensor life.



FEATURES	BENEFITS
VARIETY OF OPTIONS	<ul style="list-style-type: none"> <li>• ALTAIR 2X Single-Gas Detectors with XCell Sensors</li> <li>• ALTAIR 2XP Single-Gas Detector with XCell Pulse Technology</li> <li>• ALTAIR 2XT Two-Tox Gas Detectors with XCell Two-Tox Sensors</li> </ul>
LOW COST OF OWNERSHIP	<ul style="list-style-type: none"> <li>• Fastest sensor response times, lowest calibration gas flow rate on the market</li> <li>• 4-year expected instrument &amp; sensor life</li> <li>• 3-year warranty on instrument &amp; most sensors (2 years on Cl<sub>2</sub>, NH<sub>3</sub>)</li> <li>• Stand-alone bump tests reduce maintenance, increase productivity (ALTAIR 2XP Detector only)</li> <li>• 1 device can monitor 2 gases (ALTAIR 2XT Detector only)</li> </ul>
INCREASED SAFETY AWARENESS & REAL-TIME COMPLIANCE	<ul style="list-style-type: none"> <li>• Stand-alone bump test anytime, anywhere without bottled calibration gas (ALTAIR 2XP Detector only)</li> <li>• BUMP PASS: green LED flash every 15s, large on-screen checkmark for real-time compliance</li> <li>• BUMP FAIL: red LED flash every 15s, no checkmark</li> <li>• End-of-sensor-life warning and alarm</li> </ul>
FULL-TIME TRACEABILITY	<ul style="list-style-type: none"> <li>• Records 75 alarm events and over 100 hours of periodic data, including bump and calibration records</li> <li>• Compatible with MSA GALAXY® GX2 Automated Test System and MSA Link Pro Software</li> </ul>
RUGGED DURABILITY	<ul style="list-style-type: none"> <li>• Tough over-molded rubber armor</li> <li>• Survives up to 11m drops onto concrete</li> <li>• Agency-certified dust- and water-tight IP67 and intrinsically-safe construction</li> </ul>
EASY TO USE	<ul style="list-style-type: none"> <li>• 1-button, gloved hand operation</li> <li>• Large LCD, characters, and status icons</li> <li>• onscreen step-by-step user instructions for stand-alone bump test (ALTAIR 2XP Detector only)</li> <li>• 10s backlight with adjustable timeout</li> </ul>

DETECTOR TYPE (LOW, HIGH ALARM IN PPM)	CHARCOAL	GLOW-IN-THE-DARK	REPLACEMENT SENSOR
ALTAIR® 2X SINGLE GAS DETECTOR			
CO	10153986	10154185	10152603
CO-H <sub>2</sub>	10154074	10154186	10152604
CO-HC	10154075	10154187	10152602
H <sub>2</sub> S-LC	10154076	10154189	10152605
SO <sub>2</sub>	10154077	10154191	10152607
NO <sub>2</sub>	10154078	10154192	10152606
NH <sub>3</sub>	10154079	-	10152601
Cl <sub>2</sub>	10154080	-	10152600

DETECTOR TYPE (LOW, HIGH ALARM IN PPM)	CHARCOAL	GLOW-IN-THE-DARK	REPLACEMENT SENSOR
ALTAIR® 2 XP - WITH XCELL PULSE TECHNOLOGY			
H <sub>2</sub> S-PULSE	10153984	10154188	10121227
ALTAIR® 2XT TWO-TOX GAS DETECTOR			
CO/H <sub>2</sub> S	10154040	10154181	10152603
CO-H <sub>2</sub> /H <sub>2</sub> S	10154071	10154182	10152604
CO/H <sub>2</sub> S-LC	10154072	10154183	10152605
CO/NO <sub>2</sub>	10154073	10154184	10152606
SO <sub>2</sub> /H <sub>2</sub> S-LC	10153985	10154190	10152607

### ALTAIR® Maintenance-Free Single-Gas Detector



INSTRUMENT TYPE	PART NO.
CARBON MONOXIDE (CO)	10092522
HYDROGEN SULFIDE (H <sub>2</sub> S)	10092521
OXYGEN (O <sub>2</sub> )	10092523

#### Alarm System

- 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

- Three years for chassis, electronics and sensors\* (two years for Chlorine and Ammonia sensors).

Please visit our website for more information

#### 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.

### ALTAIR® Pro Single-Gas Detector



- 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).
- Event-logging and data-logging .
- Excellent impact resistance .

- Versions available for O<sub>2</sub>, ClO<sub>2</sub>, HCN and PH<sub>3</sub>. Please refer to Instruction Manual.
- 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.

INSTRUMENT TYPE	PART NO.
OXYGEN (O <sub>2</sub> )	10074137
HYDROGEN CYANIDE (HCN)	10076729
CHLORINE DIOXIDE (ClO <sub>2</sub> )	10076717
PHOSPHINE (PH <sub>3</sub> )	10076735

## ALTAIR® 4X Multigas Detector

ALTAIR® 4X Multigas Detector (IECEX), with data logging feature, charger, calibration cap & tubing, CD manual

### Features

- MotionAlert™ feature plus audible, visual, and vibrating alarms.
- Most rugged instrument available.
- ALTAIR® 4X Oxygen expected life 5+ years under normal operating conditions.
- Large buttons for easy operation.
- 20-hour battery run time when fully charged.
- Tested to IP67.
- Phosphorescent "Glow" case option.
- Galaxy® GX2 Automated System compatible.
- Global approvals.
- Economically priced.
- MSA Link and Link Pro Software-ready.
- MSA XCell Sensors.



MSA XCell sensors



Popular Models	Part Number	Description	ATO Configuration
4-GAS	10107602	LEL(0-100% Pentane), O2, CO, H2S, North America power supply, CSA	A-ALT4XL2ANC0000
	10110453	LEL(0-100% Pentane), O2, CO, H2S, European power supply, ATEX	A-ALT4XL2AEE0000
	A-ALT4XL2AGC0000	LEL(0-100% Pentane), O2, CO, H2S, Global power supply, CSA	
	A-ALT4XL2LGC0000	LEL(0-100% Pentane), O2, CO-H2 resistant, H2S, Global power supply, CSA	
	A-ALT4XL2NGC0000	LEL(0-100% Pentane), O2, SO2, H2S, Global power supply, CSA	
	10107603	LEL(0-100% Pentane), O2, CO, H2S, North America power supply, CSA, GLOW	A-ALT4XL2ANC00G0
	A-ALT4XA2AGT0000	LEL(0-100% Methane), O2, CO, H2S, Global power supply, ETL	
	A-ALT4XA2AGC0000	LEL(0-100% Methane), O2, CO, H2S, Global power supply, CSA	
3-GAS	10110443	LEL(0-100% Pentane), O2, CO, North America power supply, CSA	A-ALT4XL2BNC0000
	10110445	LEL(0-100% Pentane), O2, CO, North America power supply, CSA, GLOW	A-ALT4XL2BNC00G0
	10110680	O2, CO, H2S, EUROPEAN power supply, ATEX	A-ALT4X02AEE0000
2-GAS	10110444	LEL(0-100% Pentane), O2, North America power supply, CSA	A-ALT4XL20NC0000
	A-ALT4XL20GC0000	LEL(0-100% Pentane), O2, Global power supply, CSA	
	A-ALT4XA20GC0000	LEL(0-100% Methane), O2, Global power supply, CSA	
SINGLE LEL	A-ALT4XL00GC0000	LEL(0-100% Pentane), Global power supply, CSA	

Note: \*SO2 sensor and NO2 sensor are also available with ALTAIR 4X now!

Please visit our website to configure your own ALTAIR 4X.

<http://us.msasafety.com/Portable-Gas-Detection/Multi-Gas/ALTAIR&reg-4X-Multigas-Detector/p/000080001600001022>

## ALTAIR 4X Multigas Detector Accessories

Category	Part Number	Description	Category	Part Number	Description
CALIBRATION ACCESSORIES	467895	Regulator 0.25 lpm Model RP	SENSORS / SPARE PARTS	10106722	Kit, XCell Ex combustible sensor
	10089321	Calibration assembly (cap, tube, connector)		10106729	Kit, XCell O2 sensor
	10048280	34L Quad gas mix (1.45% CH4, 15% O2, 60 ppm CO, 20 ppm H2S)		10106725	Kit, XCell CO/H2S two-tox sensor
	10045035	58L Quad gas mix (1.45% CH4, 15% O2, 60 ppm CO, 20 ppm H2S)		10121213	Kit, XCell CO/H2S-LC two-tox sensor
				10121217	Kit, XCell CO/NO2 two-tox sensor
		10110030		Front housing with integrated dust filters (Charcoal)	
POWER SUPPLY	10127424	Charger, Multi-Unit, GX2, Altair 4X, UK Plug	10110029	Front housing with integrated dust filters (Phosphorescent)	
	10086638	Charger cradle + Power Supply Altair 4X	10106621	Main board with battery pack	
	10095774	Vehicle charger	10110061	LCD frame assembly (frame, LCD, zebra strips, screws)	
ACCESSORIES	10069894	Stainless steel suspender clip	10110062	Sensors gasket, Phillips screws (4x), self-tapping (2x)	
	10088099	MSA Link™ Software CD-ROM	SAMPLING LINES	10153103	10 foot polyurethane
	10082834	JetEye IR Adapter with USB connector		10153104	25 foot polyurethane
	10050333	Hand aspirator assembly		10153105	50 foot polyurethane
				10151096	10 foot conductive
		10151104		25 foot conductive	
		10151097	50 foot conductive		

\*Contact MSA for other available combinations.

## ALTAIR® Pump Probe

The ALTAIR Pump Probe is durable and simple to use, its powerful pump can draw through 15 metres of tubing for remote sampling applications. The Altair Pump Probe is also equipped with status indicators, audible and visual alarms for low flow and low battery warnings. The ALTAIR Pump Probe is approved for use in most hazardous locations and is an intrinsically safe instrument.

- Rechargeable Li-ion battery
- Can be charged with the standard ALTAIR 4X charger
- Sample draw speed 1 ft per 1 second
- Alarms for low battery and flow restriction
- Charge time less than 4 hours
- Run time 24 hours at 25 degrees C
- Over-moulded static dissipative rubber housing
- Conductive wand and coiled tubing
- Rated to IP65



ALTAIR® Pump	10152668	ALTAIR® PUMP PROBE WITH CHARGER
Probe	10153040	ALTAIR® PUMP PROBE NO CHARGER

\*Altair 4X Instrument Not Included.

## ALTAIR® 4XR Multigas Detector

### Features

- Standard 4-year warranty on instrument and sensor. Long operation life on all sensors, including non-consuming lead-free type O2 sensor.
- Ruggedized construction, tested to survive 25 repeated drops from 4 feet (MIL-STD-810G) and direct 25-ft drops onto concrete floor
- Ingress protection rated to IP68, waterproof tested to 6-ft (2m) for 45 minutes
- Tolerates extreme operating environments in ambient temperatures of -40°C to +60°C
- Simultaneously measures multiple gases, including: LEL, O2, H2S, SO2, CO, NO2
- Rapid sensor response (2X faster than industry average), with T90 rating of <10s(methane), <15s(pentane), <10s(oxygen), <15s(toxics)
- Data logging function (>50hours, >500 events)
- MotionAlert™ man-down alarm function
- InstantAlert™ distress call function
- High decibel audible alarm (>95dB@1-ft), including vibrating function
- Bump test LED & checkmark for bump test status and compliance
- End-of-sensor life warning & alarm
- Long runtime of 24 hours (22 hours when Bluetooth enabled)
- Bluetooth enabled, full compatibility with the MSA ALTAIR Connect App
- Large operation buttons, ergonomic non-slip grip
- Charcoal or glow-in-the-dark phosphorescent casings



### Compatible with:

- GALAXY® GX2 Test System & MSA Link™ Pro Software
- Existing ALTAIR 4X accessories (chargers, pump probes, sampling lines)

ALTAIR 4XR Gas Detector Part Numbers			
CONFIGURATION	Case Color	USA/CAN	ATEX
LEL, O2, CO, H2S,	Charcoal	10178557	10178573
LEL, O2, CO, H2S,	Phosphorescent	10178558	10178569

Need something different? Contact MSA for options.

Kits with ALTAIR 4XR (LEL, O2, CO, H2S & Charcoal Case)	
DESCRIPTION	USA/CAN
34-liter gas cylinder (1.45% CH4, 15% O2, 60 ppm CO, 20 ppm H2S) Regulator (0.25 l/min)	10178356
ALTAIR Pump Probe 34-liter gas cylinder (1.45% CH4, 15% O2, 60 ppm CO, 20 ppm H2S) Regulator (0.25 l/min)	10178357

Calibration Gas	
1.45% CH4, 15% O2, 60 ppm CO, 20 ppm H2S	
34-liter cylinder	10048280
58-liter cylinder	10045035

ALTAIR Pump Probe with charger	
For USA/Canada	10152669
For ATEX/IEC	10052668

Don't need a charger? Contact MSA for options.

XCell Sensor Replacement Kits	
EX Combustible	10106722
O2	10106729
CO/H2S	10106725
CO/H2S-LC	10121213
CO-H2/H2S	10121214
SO2/H2S-LC	10121215
CO/NO2	10121217

## ALTAIR® 5X PID Multigas Detector



MSA's new ALTAIR 5X Multigas Detector and PID is driven by the most advanced technology available in any portable gas detector on the market. The ALTAIR 5X outlasts the competition and delivers the most functionality with integrated XCell Sensors, PID and Bluetooth technology to meet current and future needs.

### Features

- Rugged detector with fast response time for up to six target gas.
- Integrated PID sensor option for detection of VOCs.
- Rapid bump test gives results in under 60 seconds with low consumption of calibration gas.
- Xcell sensors designed for Superior stability, accuracy, repeatability, fast response and longevity.
- MotionAlert™ feature - "man-down" alarm
- InstantAlert™ feature - manual alarm (panic button)
- Standard Bluetooth Wireless Connectivity
- Large Buttons for easy operation even with gloved hands
- Instrument settings are configurable using Bluetooth phone or computer with MSA Link/Link Pro.
- Galaxy GX2 and MSA Link Pro Software allows for automated calibration, bump testing and fleet management.



Popular Models	Part Number	Description
5-GAS	A-ALT5XDLK011EC020	ALTAIR 5X PID Kit, Colour, LEL, O2, CO, H2S, reactive sample line and probe, Plastic case.
	10165446	ALTAIR 5X PID, Color, LEL,O2,CO,H2S, sample line and probe, CSA
	10165445	ALTAIR 5X PID, Color, LEL,O2,CO,H2S, CSA
	10166730	ALTAIR 5X PID, Color, LEL,O2,CO,H2S, ATEX
	10166741	ALTAIR 5X PID, Color, LEL,O2,CO,H2S-LC, ATEX
6-GAS	A-ALT5X-DLKA110T020	ALTAIR 5X PID, Colour, LEL, O2, SO2, CO, H2S, reactive sample line and probe
	A-ALT5X-DLKB110T020	ALTAIR 5X PID, Colour, LEL, O2, CL2, CO, H2S & reactive sample line and probe
	A-ALT5X-DLKD110T020	ALTAIR 5X PID, Colour, LEL, O2, NH3, CO, H2S, reactive sample line and probe
	A-ALT5X-DLKF110T020	ALTAIR 5X PID, Colour, LEL, O2, HCN, CO, H2S, reactive sample line and probe
SINGLE PID	10166742	ALTAIR 5X PID, Color, ATEX

Note: \*Bluetooth is the standard feature of all ALTAIR 5X now!

Please visit our website to configure your own ALTAIR 5X, by selecting from a list of electrochemical, IR or PID sensors.

<http://us.msasafety.com/Portable-Gas-Detection/Multi-Gas/ALTAIR%26reg%3B-5X-Multigas-Detector/p/000080001600001023>



## ALTAIR® 5X (IR) Multigas Detector

- Rugged detector with fast response time for up to six target gas.
- Extended sensor range for toxic gases
- Rapid bump test gives results in under 60 seconds with low consumption of calibration gas.
- Xcell sensors designed for Superior stability, accuracy, repeatability, fast response and longevity.
- MotionAlert™ feature - “man-down” alarm
- InstantAlert™ feature - manual alarm (panic button)
- Standard Bluetooth Wireless Connectivity
- Large Buttons for easy operation even with gloved hands
- Instrument settings are configurable using Bluetooth phone or computer with MSA Link/Link Pro.
- Galaxy GX2 and MSA Link Pro Software allows for automated calibration, bump testing and fleet management.



MSA XCell sensors

Popular Models	Part Number	Description	ATO Configuration
<b>ALTAIR® 5X with Sampling Line and Probe, UL</b>			
4-GAS	10116926	ALTAIR® 5X LEL O2 CO H2S Standard	A-ALT5XALK0100T010
	10116928	ALTAIR® 5X LEL O2 CO H2S COLOUR	A-ALT5XBLK0100T010
	A-ALT5XALK010ET010	ALTAIR® 5X LEL O2 CO H2S Standard with case	
	A-ALT5XBLK010ET010	ALTAIR® 5X LEL O2 CO H2S COLOUR with case	
5X SO2	10116929	ALTAIR® 5X LEL O2 SO2 CO H2S Standard	A-ALT5XALKA100T010
	A-ALT5XALKA40ET010	ALTAIR® 5X LEL O2 SO2 CO H2S-LC with case	
	A-ALT5XBNKA10ET010	ALTAIR® 5X LEL O2 SO2 CO H2S COLOUR with case	
5X NH3	A-ALT5XALKD100T020	ALTAIR® 5X LEL O2 NH3 CO H2S Standard	
5X CL2	A-ALT5XALKB100T020	ALTAIR® 5X LEL O2 CL2 CO H2S Standard	
5X HCN	A-ALT5XALKF100T010	ALTAIR® 5X LEL O2 HCN CO H2S Standard	
5X NO2	A-ALT5XBLKC100T010	ALTAIR® 5X LEL O2 NO2 CO H2S COLOUR	
5-GAS	A-ALT5XAL1DA00T020	ALTAIR® 5X, LEL CO H2S NH3 SO2	
2-GAS	A-ALT5XALK0000T010	ALTAIR® 5X LEL, O2	
Single LEL	A-ALT5XAL00000T010	ALTAIR® 5X LEL	
<b>ALTAIR® 5X Infrared Methane option with Sampling Line and Probe, UL</b>			
5X IR CH4	A-ALT5XALK01L0T010	ALTAIR® 5X LEL O2 CO H2S IR CH4	
	A-ALT5XBLK01L0T010	ALTAIR® 5X LEL O2 CO H2S IR CH4 COLOUR	
6-GAS IR CH4	A-ALT5XALKD1L0T020	ALTAIR® 5X LEL O2 NH3 CO H2S IR CH4	
2-GAS	A-ALT5XA0K00L0T010	ALTAIR® 5X O2 IR CH4	
<b>ALTAIR® 5X Infrared Carbon Dioxide option with Sampling Line and Probe, UL</b>			
5X CO2	A-ALT5XALK01B0T010	ALTAIR® 5X LEL O2 CO H2S IR CO2	
	A-ALT5XBLK01BRT010	ALTAIR® 5X LEL O2 CO H2S IR CO2 COLOUR with RED case	
6-GAS IR CO2	A-ALT5XALKA1B0T010	ALTAIR® 5X LEL O2 SO2 CO H2S IR CO2	
	A-ALT5XALKC1B0T010	ALTAIR® 5X LEL O2 NO2 CO H2S IR CO2	
	A-ALT5XALKD1B0T020	ALTAIR® 5X LEL O2 NH3 CO H2S IR CO2	

\*Selection may change without notice. Please visit our website to configure the latest ALTAIR 5X.

## ALTAIR 5X Multigas Detector Accessories

<b>SPARE PARTS / REPLACEMENTS</b>	10114836	Battery Rechargeable Li-Polymer Altair 5X 5AA	
	10114851	Battery Altair 5X IR Charcoal	
	10114852	Battery Altair 5X IR Glow	
	10094830	Kit, belt clip replacement	
	10083591	Filter cover assembly	
	10114949	Maintenance kit	
	10114950	Maintenance kit, Cl2, ClO2, NH3	
	474555	Shoulder strap	
	10050976	Retractable line with belt clip	
	10099648	Holster, leather	
	10099397	Vehicle charger	
	10114853	Front housing with integrated filters	
	10127427	Multi-unit charger, Altair 5X Detector 4-unit	
	<b>SAMPLING ACCESSORIES</b>	10040665	Sampling line with quick-disconnect, 10-ft polyurethane
10040664		Sampling line with quick-disconnect, 25-ft polyurethane	
10049058		Sampling line with quick-disconnect, 10-ft teflon	
10049057		Sampling line with quick-disconnect, 25-ft teflon	
10040667		Sampling line with quick-disconnect, 3-ft polyurethane coiled	
10105210		Sampling line with quick-disconnect for reactive gases, 5-ft polyurethane coiled	
10105251		Sampling line with quick-disconnect for reactive gases, 5-ft polyurethane straight	
10105839		Sampling line with quick-disconnect for reactive gases, 10-ft teflon straight	
10042621		Probe, 1-ft	
10042622		Probe, 3-ft	
801582		Filter, water stop, pack of 10	
<b>REPLACEMENT SENSORS</b>		10106722	Kit, XCell Ex Sensor, combustible
		10106729	9 Kit, XCell O2 Sensor
	10106725	Kit, XCell CO/H2S two-tox sensor	
	10106375	Kit, replacement, HCN	
	10106728	Kit, XCell Cl2 Sensor replacement	
	10080222	Kit, replacement, ClO2	
	10106727	Kit, XCell SO2 Sensor replacement	
	10080224	Kit, replacement, NO2	
	10106726	Kit, XCell NH3 Sensor replacement	
	10116638	Kit, replacement, PH3	
	10114750	Kit, replacement, NO	
	10105650	XCell Sensor plug	
	10088192	Sensor plug, oxygen and toxics (20 mm)	

## Link™ Pro Fleet Management Solution

### Proactive Safety: Keep Your Workers Protected



MSA Link Pro Software lets you easily and proactively manage your gas detection fleet. Program offers efficient setup and configuration with dashboard alerts as to all conditions, as well as calibration gas and expiration warnings. Query data, print or save reports including gas exposures incidents; system can be set up to automatically send email exposure alerts. Generate session logs, including periodic as well as calibration and GALAXY® GX2 System bank data. Program sends scheduled emails from master test stand based upon detector conditions and events. Directly input your data and filter results live.



View test and exposure data, session and periodic logs at a glance. Dashboard displays live status of GALAXY System test stand banks.



Live filtering can be viewed, printed and saved as PDF document.



System offers direct data input, live filtering, test and exposure queries, and detailed reports.



Print and save detailed calibration, bump test and exposure reports.

### The MSA Commitment

From the latest in sensor technology to instrument design and manufacturing, MSA has the capabilities and expertise to support your portable gas detection challenges.

### Four Easy Ways to Access Data

#### Dashboard – Live System View

Single-glance notification of instruments that are overdue for calibration or bump test

#### Reports – View at your convenience

Database storage of instrument Periodic and Session data logs and customizable reports

#### Email Alerts – Instant alerts

Email notifications of GALAXY GX2 System and instrument warnings and error messages

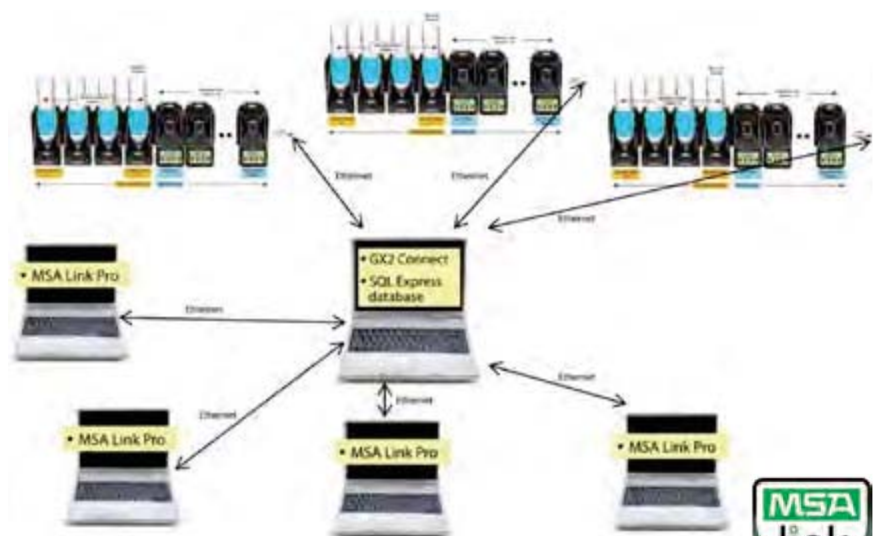
#### Fleet Management – Configure and Audit Systems

Configure banks, instruments and audits fleet settings



### Setup, Network and User Flexibility

- System can be set up with either static or DHCP connections, offering wide flexibility.
- Access flexibility: administrator assigns several levels of user rights.
- Users can access software from any computer that is directed to main database.
- Database exists on one computer or server; multiple end user PCs can access database to use program.
- Network can be as simple as one test stand bank, one router and one laptop computer, or have one or many test stand banks exist within a corporate intranet structure.



System flexibility: single or multiple banks are tied into database  
MSA Link Pro Software operates completely within your company's firewall



# Instrumentation

## MSA Link Pro Software Ordering Information

PART NUMBER	Description
10123938	MSA Link Pro Software key

## GALAXY GX2 System Ordering Information

GALAXY GX2 SYSTEM TEST STAND				
	1-VALVE (FOR USE WITH 1 CALIBRATION GAS CYLINDER)		4-VALVE (FOR USE WITH 1-4 CALIBRATION GAS CYLINDERS)	
	Charging*	No-charging	Charging*	No-charging
ALTAIR / ALTAIR PRO SINGLE-GAS DETECTOR	-	10128644	-	10128643
ALTAIR 4/4X MULTIGAS DETECTOR	10128630	10128642	10128629	10128641
ALTAIR 5/5X MULTIGAS DETECTOR	10128626	10128628	10128625	10128627

GALAXY GX2 SYSTEM TEST STAND	
PART NUMBER	Description
10105756	Electronic cylinder holder
10125135	Non-electronic cylinder holder
10127111	4 GB SD card
10123937	Digital secure USB key
10125907	End cap
10127422	ALTAIR 4/4X Detector Multi-unit Charger, NA
10127427	ALTAIR 5/5X Detector Multi-unit Charger, NA
10127112	Laminated quick-start guide
10127518	12" (TBR) Ethernet cable for test stand to test stand connection
10126657	DIN rail clip kit (2 clips & screws per kit)
10062364	Type Omega DIN Rail 0.5m, perforated, steel, zinc-plated
10062365	Type Omega DIN Rail 1m, perforated, steel, zinc-plated
10062366	Type Omega DIN Rail 2m, perforated, steel, zinc-plated
10082834	USB IR dongle (for use with MSA Link Software)
10034391	Demand flow regulator (universal)
710289	Large capacity (<3000 psi) demand regulator
10126268	Vehicle power adapter
10127808	Sticker or receipt / sticker printer
10126437	Detector sticker label roll
10126138	Receipt & sticker label roll
10145138	Printer ribbon

CALIBRATION GAS	
PART NUMBER	Description
10048280	Calibration gas cylinder (34L) 1.45% CH <sub>4</sub> , 15% O <sub>2</sub> , 60 ppm CO, 20 ppm H <sub>2</sub> S
10045035	Calibration gas cylinder (54L) 1.45% CH <sub>4</sub> , 15% O <sub>2</sub> , 60 ppm CO, 20 ppm H <sub>2</sub> S
10117738	Calibration gas cylinder (58L) 1.45% CH <sub>4</sub> , 15% O <sub>2</sub> , 60 ppm CO, 20 ppm H <sub>2</sub> S, 10 ppm SO <sub>2</sub>
10098855	Calibration gas cylinder (34L) 1.45% CH <sub>4</sub> , 15% O <sub>2</sub> , 60 ppm CO, 20 ppm H <sub>2</sub> S, 10 ppm SO <sub>2</sub>
10103262	Calibration gas cylinder (58L) 1.45% CH <sub>4</sub> , 15% O <sub>2</sub> , 60 ppm CO, 20 ppm H <sub>2</sub> S, 2.5% CO <sub>2</sub>

## System Requirements

Listed below are system requirements for software application installation.

SUPPORTED OPERATING SYSTEMS	SALEABLE PART NUMBER
SUPPORTED OPERATING SYSTEMS	Windows 7 SP1 or later (x86 / x64) Windows 8/8.1/10 Windows Server 2008R2/2012/2012R2
MINIMUM SYSTEM REQUIREMENTS	Intel / AMD 1 GHz or faster CPU and 1GB RAM Disk space: x86 - 850MB, x64 - 2GB If using an existing SQL database, ensure it is Microsoft SQL 2008 R2 10.5 or later.
MSA RECOMMENDED SYSTEM REQUIREMENTS	Intel Core i3 / AMD Phenom II CPU 4GB RAM
ADDITIONAL SOFTWARE PROVIDED WITH MSA LINK PRO SOFTWARE APPLICATION	Microsoft .Net Framework 4.5 Windows Installer 4.5 GALAXY GX2 System Database User

# Portable Instruments - Calibration Accessories

## GALAXY® GX2 Automated Test System



The GALAXY GX2 Automated Test System provides simple and intelligent testing and calibration of MSA ALTAIR and ALTAIR PRO Single-Gas Detectors, as well as ALTAIR 4X and ALTAIR 5X Multigas Detectors, driven by the most advanced technology available in any portable gas detector: MSA XCell Sensors.

This easy-to-use automated test stand offers high performance as either a stand-alone unit or an integrated portable detector management system, enabling total data access and control of your MSA ALTAIR Gas Detector fleet.

Once any ALTAIR Family Gas Detector is placed within the GALAXY GX2 System, it can be tested, calibrated and charged automatically. Flexibility allows for up to 10 test stations, four cylinder holders and multi-unit charger within one GALAXY GX2 System detector bank.

- Color touchscreen for ease of setup and viewing; no touch operation is needed for calibration or bump test
- Visual indicators on GALAXY GX2 System and software
- RFID automated calibration gas setup, status alerts and traceability
- MSA Link Pro and MSA Link Software
- Global platform - many language options
- Significant cost of ownership reduction when used with MSA XCell Sensors
- Simultaneous testing of up to 10 gas detectors
- Securely configure gas detectors at the touch of a button
- MSA XCell Sensor Technology
- Your MSA ALTAIR Multigas Detectors are always ready for use

Suitable for the entire ALTAIR family of portable gas detectors

PART NO:	Description
10127424*	Charger, Multi-unit, GX2, Altair® 4 and Altair® 4X, UK plug
10127429*	Charger, Multi-unit, GX2, Altair® 5 and Altair® 5X, UK plug
10105756	Cylinder Holder Assy: GX2 (electronic)
10128662*	Test Stand Galaxy GX2, Altair®/Altair® Pro/Altair® 2X, UK plug
10128660*	Test Stand Galaxy GX2, Altair® 4/4X, UK plug
10128656*	Test Stand Galaxy GX2, Altair® 5/5X, UK plug
10127111	4 GB SD memory card
10127808	Sticker or receipt / sticker printer
10126437	Detector sticker label roll
10126138	Receipt & sticker label roll
10145138	Printer ribbon
10123938	MSA Link Pro Software key
10123937	Digital secure USB key

\*North American and other plugs are also available. Please contact MSA for more part numbers.

## Regulators

### Model RP Regulators



- Fixed flow rate standard regulators with or without taps.
- Used with Model RP and R type cylinders.

0.25/1.5 LPM Flow Control Model RP



## Gas Miser® Demand Regulator: The Intelligent Regulator

- Nickel-plated brass and polished aluminium.
- Gas flow from 0.1 lpm to 3.0 lpm.
- Designed for use with any MSA Model RP Calibration Cylinder except chlorine and ammonia\*
- Automatic ON/OFF valve that releases gas only on demand.
- Shuts off automatically.
- Can stay connected to the cylinder where it remains in a ready state.
- Cost-efficient.
- Supplied with calibration tubing and special fitting.



Gas Miser® Model RP

PART NO:	Description	PART NO:	Description
467895	Gas Miser® Model RP .25 lpm†	459949	Gas Miser® Model 7HP 0.25 lpm
478358	Gas Miser® Model RP Cylinder 1.5 lpm	459948	Gas Miser® Model 7HP 1.5 lpm
PART NO:	Description	PART NO:	Description
10034391	Gas Miser® Model RP, Chlorine and Ammonia	477149	Gas Miser® Check Kit, Model RP, with 0.25 lpm regulator - does not include calibration gas
710289	Gas Miser® Model BD-20, with CGA 590 fitting		

\* A Gas Miser® Regulator for chlorine and ammonia is available for Model RP cylinders - P/N 10034391.

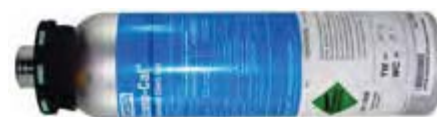
† Can be used with chlorine and ammonia; replaces P/N 809945.



Gas Miser® Model BD-20

## Calibration Gas

MSA offers a complete line of calibration gas cylinders to calibrate all instruments. The gas mixture in calibration gas cylinders is certified and prepared gravimetrically, using NIST traceable weights. The lot number and nominal value of the gas constituents in volume, percent by mass, PPM, or volume is specified on the cylinder.



# Gases	Gas Mix	Part No. (34L)	Part No. (58L)	Part No. (116L)	Used for:
5	1.45% CH <sub>4</sub> , 15.0% O <sub>2</sub> , 60 ppm CO, 20 ppm H <sub>2</sub> S, 2.5% CO <sub>2</sub>	-	10103262	10150606	ALTAIR 5X IR CO <sub>2</sub>
5	1.45% CH <sub>4</sub> , 15.0% O <sub>2</sub> , 60 ppm CO, 20 ppm H <sub>2</sub> S, 10 ppm SO <sub>2</sub>	10098855	10117738	-	ALTAIR 5X SO <sub>2</sub>
4	1.45% CH <sub>4</sub> , 15.0% O <sub>2</sub> , 60 ppm CO, 20 ppm H <sub>2</sub> S	10048280	10045035	10150595	Standard 4-in-1 detector
3	1.45% CH <sub>4</sub> , 15.0% O <sub>2</sub> , 20 ppm H <sub>2</sub> S	10048790	10048788	-	LEL/O <sub>2</sub> /H <sub>2</sub> S sensors
3	1.45% CH <sub>4</sub> , 15.0% O <sub>2</sub> , 60 ppm CO	10048789	-	478191 (100L)	LEL/O <sub>2</sub> /CO sensors
2	1.45% CH <sub>4</sub> , 15.0% O <sub>2</sub>	-	-	478192 (100L)	LEL/O <sub>2</sub> sensors
2	20 ppm H <sub>2</sub> S, 10 ppm SO <sub>2</sub>	10153806	10153807	10153808	SO <sub>2</sub> /H <sub>2</sub> S sensors
1	10 ppm HCN in N <sub>2</sub>	711072	809351	10150614	HCN sensor
1	25 ppm NH <sub>3</sub> in N <sub>2</sub>	711078	814866	10150611	NH <sub>3</sub> sensor
1	10 ppm Cl <sub>2</sub> in N <sub>2</sub>	711066	806740	10150612	Cl <sub>2</sub> sensor
1	0.5 ppm PH <sub>3</sub> in N <sub>2</sub>	711088	710533	10150615	PH <sub>3</sub> sensor
1	20 ppm H <sub>2</sub> S in N <sub>2</sub>	10153844	10153845	10153846	ALTAIR 2XP/ 2X H <sub>2</sub> S sensor
1	40 ppm H <sub>2</sub> S in N <sub>2</sub>	711062	467897	10150616	ALTAIR Pro/Maintenance-free H <sub>2</sub> S sensor
1	10 ppm SO <sub>2</sub> in Air	711070	808978	10150600	SO <sub>2</sub> sensor
1	10 ppm NO <sub>2</sub> in Air	711068	808977	10150599	NO <sub>2</sub> sensor
1	20.8% O <sub>2</sub> in N <sub>2</sub>	-	-	479857 (100L)	O <sub>2</sub> sensor
1	50 ppm CO in Air	-	-	809241 (100L)	CO sensor
1	50% vol Methane in N <sub>2</sub>	-	10075804	-	100% vol Methane IR sensor
1	100 ppm Isobutylene	10048279	494450	-	PID sensor

Contact MSA for more gas mixes and RFID-tagged cylinders for automated recognition by Galaxy GX2 test system.

# HEFH - Head, Eye, Face, Hearing & Miscellaneous Protection



Head Protection  
Eye Protection  
Face Protection  
Hearing Protection



MSA remains at the forefront of Head, Eye, Face and Hearing protection products through research and development in our design and manufacturing sites in U.S.A, France, Sweden and China. Our local expertise ensures you get quality, tested, certified and supported products every time. As a manufacturer we are experts in our products and are constantly innovating to ensure we deliver safety solutions your business can rely on. This means you spend more time getting on with your business.

To ensure you are covered with a complete safety system, MSA products are designed to work in conjunction with each other. Match our Hard Hats with a wide array of accessories such as face shields, passive and electronic hearing protection, sun brims, winter warming liners or flame resistant liners to ensure you are protected by a complete system.

In addition to protecting you, MSA understands the importance of your business brand which is why we offer hard hat customisation from our Sydney factory. We can expertly brand your hard hats not only with your company brand, but with other safety information and reflective decaling and striping to ensure your team stands out, safely.

Turn the page to view our range of Head, Eye, Face and Hearing protection. We've got you covered.

*Because every life has a **purpose...***

## Head Protection

### V-Gard™ Protective Caps and Hats

- Classification:** Type 1  
**Applications:** General Purpose  
**Material:** Polyethylene  
**Available Styles:** Slotted Cap; Slotted Full-Brim Hat  
**Sizes:** Cap: Small (6 – 7 1/8"); Standard (6 1/2 – 8"); Large (7 – 8 1/2") Hat: Standard (6 1/2 – 8")  
**Standards:** ANSI/ISEA Z89.1-2014 (Class E); CSA Z94.1-2005 (Class E)



Did you know that the working life of a hard hat is 3 years from the issue date? Make sure you write the issue date on the label provided in the back of the cap.

Also it is recommended that suspensions be replaced after 2 years as they degrade quicker from contact with your skin. Inspect your cap before every use and replace caps immediately that show signs of damage or have been impacted.

Contact your local MSA Representative for ordering information.



## V-Gard™ 500 Protective Caps

**Vented V-Gard 500 Caps** provide cooling vents for improved air circulation and comfort; the Non-Vented V-Gard 500 Caps provide users with dielectric head protection.

- Classification:** Type 1
- Applications:** General Purpose
- Shell Material:** Polyethylene
- Available Styles:** Vented or Non-Vented Slotted Cap
- Sizes:** Standard (6 1/2 – 8")
- Standards:** ANSI/ISEA Z89.1-2014 (Vented - Class C; Non-Vented Class E)



## Bump Caps

- Classification:** None
- Applications:** Non-impact
- Shell Material:** Polyethylene
- Available Styles:** Non-Slotted Cap w/ plastic suspension
- Sizes:** Standard (6 1/2 – 8")
- Standards:** Not applicable
- Certification:** None



**⚠ Warning:** Bump caps are not safety helmets and do not meet OSHA or ANSI/ISEA Z89.1 requirements. DO NOT use bumps caps for impact protection, for sports or when an ANSI-compliant helmet is required.

Contact your local MSA Representative for ordering information.

# HEFH - Head, Eye, Face, Hearing & Miscellaneous Protection

## C-50 Cap

With the rise in construction projects, comes a corresponding increase in job-related accidents. MSA, with over 100 years committed to protecting workers, is pleased to introduce the patented c-50 Helmet with unique features for the Southeast Asia market: cooling ventilation slots; grooves to move rain water away from the brim; unmatched quality from the world leader in safety.

### Features of C-50 Helmet:

- Specially designed for Asian market, unique patented design
- Ventilation holes on both top side of the shell is conducive in releasing the warm air that trap between our head and helmet, and increase comfortability
- Curved brom directs rain water away, preventing vision obstructed by the rain water
- Fully imported virgin and non-recycled resins
- Six color available: white, yellow, orange, red, blue and green
- Compliant to China GB and Singapore SS98
- Staz-on harness for ease of use



## Replacement Suspensions for MSA Safety Helmets

### MSA Fas-Trac® III Ratchet Suspension

Ensuring your workforce wears their safety helmets can be a real headache. MSA, the leading provider of protective helmets, has the perfect remedy: the Fas-Trac III Suspension. No more pressure headaches. No more pulled hair. No more falling off.

No more sacrificing worker comfort for safety.

- 1 Sweatband fully covers the headband and worker's forehead.
- 2 Three levels of nape strap adjustment for customized fit.
- 3 Lower nape strap cradles the head. Retention is greatly improved-even when bending over!
- 4 Smooth ratchet rotation and secure hold.

Learn how the Fas-Trac III Suspension can relieve your headaches.

Visit [www.MSAafety.com/fastrac](http://www.MSAafety.com/fastrac).



## Helmet Lights

### Stealthlite® Helmet Light



MSA offers helmet lights that fit into our special cap adapters. Lights are FM and CSA-approved for intrinsic safety, and are non-incendive.

The MSA light holder is designed especially to fit MSA slotted hard hats. The holder allows the light to be pointed downward at an angle, so the light beam follows the natural line of sight. When properly attached, the holder will not affect the dielectric properties of the helmet.

Contact your local MSA Representative for ordering information.

# Structural Fire Helmets and Accessories

## F1 XF Helmet



### Outdoor Fighting

Open-space fires involving vehicles, gas or chemicals expose firemen to extreme temperatures, radiant heat, and explosive or caustic materials for long periods of time.

### Road and Traffic Accidents

Emergency Responders to accident scenes are exposed to various hazards (explosion, collapse, projectiles and high noise situations) when rescuing victims needing immediate assistance.

### Structural firefighting

High temperatures, low visibility, falling debris, confined spaces and flashover situations make structural firefighting one of the most dangerous and challenging occupations.

### Technical Rescue Operations

Unstable ground, environmental or structural hazards, fire, fatigue and other factors are all potential risks that may be encountered during long-lasting technical rescue operations.

### Key Features



**Optimal fit** for all user profiles (female, large heads, etc) in all operating conditions

- 1 helmet, 2 sizes
- Medium for 52–62 cm
- Large for and 57–65 cm

**Unmatched comfort** with no pressure points on the head, and padding designed for ease of care and use

- Padded headband, 2 versions (leather and nomex)
- Removable / Washable paddings
- Wearing height adjustment

Short range, **integrated lighting** for optimal visibility in dark or smoky environments

- Lightweight, integrated lighting module (LED)
- Battery level indicator
- Over 10 hours of continuous operation



**Robust sizing** mechanism allowing for user friendly adjustment while on the head

- Ergonomic Wheel ratchet adjustment
- Large knob with easy access
- Multiple size increments

Adjustment of the wearing position for an optimal **comfort and balance** for all users profiles

- Angular rear and front adjustments for optimal wearing position
- Rear strap setting for enhanced stability
- Bright Yellow colour for intuitive adjustments

Adjustable, **high performance** ocular visor - optimal fit for all faces to prevent injuries

- Ease of manipulation with no interference in the viewing area
- Compatible with corrective spectacles
- Angular adjustment of the ocular visor with adjustable Mechanical stop
- Optical class 1

Contact your local MSA Representative for ordering information.

# HEFH - Head, Eye, Face, Hearing & Miscellaneous Protection



**High performance** and comfortable face protection with clear or gold coating

- Unique sliding mechanism to eliminate interferences
- Extended coverage
- Unique field of vision through the face shield

Optimised care and maintenance procedures, **reduced cost of ownership** and safer use

- Modular design with 2 separate modules
- Shortest full inspection time
- Easy care and component replacement

Optimal **retention and stability** on the head, with and without breathing apparatus

- Ergonomic 3 points chinstrap, with padded side straps
- Free pivot point accommodate various chin shape and size
- Quick strap adjustment to accommodate face piece



Unmatched **thermal and mechanical protection** even in extremely hot conditions

- Extended impact liner with Aramide insert
- Extended side protection for lateral impact protection
- Suspension system for lower force transmission

State-of-the-art integration **helmet mounted communication**

- Bone conductive headset with self adjustment
- Adjustable neckswan microphone with parking position
- One or two loudspeaker for comfort of hearing

Unique **customisation capabilities** with interchangeable front plate and personalised badges

- Various front plates colors and designs
- Metal badge with multiple colours
- Logo printing area for tampography identification

## Available Colours:

White, Yellow, Red, Black, Hi-Viz Yellow, Hi-Viz Orange, Photoluminescent, Grey, Blue, Green



Contact your local MSA Representative for ordering information.

## F1 XF Communication

### Communication headset for integration in Gallet F1 XF fire helmet

MSA manufacture custom communications systems to suit your Gallet F1 XF Helmet.

#### Step 1. Choose one of the following communications types:



#### Flexible Microphone Headset

- One or two loudspeakers, in plastic housing with mounting clips.
- Flexible microphone, adjustable in length (80 mm) to optimize position in front of the mouth or in front of the speech diaphragm (BA face piece).
- Download Cable with anti-tearing, LEMO connecting plug (green cover).

#### Part Numbers

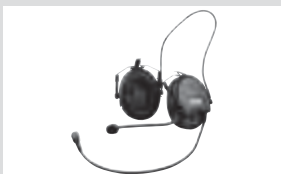
GA010002H3 (1 Speaker) LEMO Plug

GA010002H3A (2 Speaker) Nexus Plug



#### Bone Conductive Microphone Headset

- One or two loudspeakers, in housing with mounting clips.
- Bone conductive microphone, inserted in the front headband padding.
- Download Cable with anti-tearing, LEMO connecting plug (blue cover).



#### Hearing Protection with Flexible Microphone

- Two ear muffs with padding and noise attenuation foam.
- Ear cup height adjustment system for optimal wearing position.
- Flexible microphone attached to the left muff.
- Download Cable with anti-tearing, LEMO connecting plug (green).

#### Step 2. Choose the push-to-talk (PTT) to suit your radio model.



#### Step 3. Contact MSA Customer Service for your nearest distributor

Contact MSA with your radio make and model for compatibility, part numbers and price.

#### F2 Xtreme



- 3 position sizing headband for better comfort and balance.
- Additional adjustable suspension netting provides better comfort, breathability and balance.
- 6 chinstrap adjustments, for greater balance and comfort.
- Quick Click head size adjustment that is glove friendly.
- EN Certified.

#### Cairns Fire Helmets



Our lowest-profile NFPA 1971 compliant helmet, the Cairns 360R offers excellent fire and impact protection.

The brimless helmet features a thermoplastic shell and non-corroding, high-temperature, glass-filled polymer goggle hardware. The ultra high-temperature (TPR) edge trim won't melt or drip, and the Nomex chinstrap with one-hand quick release buckle and postman slide allows quick and easy adjustment.




A choice of Nomex or Pbi/Kevlar earlap offers increased neck/ ear protection, while a high-temperature foam cap increases thermal and impact protection. Certified to both NFPA 1971-2007 for structural firefighting as well as NFPA 1951-2007 for urban search and rescue (USAR)

Contact your local MSA Representative for ordering information.


## Face Protection

### V-Gard Accessory System: V-Gard Frames for Caps and Hats

- Classification:** General purpose
- Markets:** General industry, manufacturing, repair and maintenance, construction, oil and gas, forestry, shipbuilding, metalworking, automotive, mining
- Applications:** Chipping, splash, chiseling, drilling, grinding, machining, power fastening, sanding, sawing
- Material:** High density polyethylene (HDPE)
- Standards:** ANSI/ISEA Z87.1-2010; EN 166; CSA Z94.3; and AS/NZS 1337
- Min Order Qty:** 10



		DESCRIPTION	PRODUCT SPECIFICATIONS
<b>V-GARD FRAME FOR GENERAL PURPOSES</b>		V-Gard™ Frame For Slotted Caps	<ul style="list-style-type: none"> <li>Attaches directly into MSA V-Gard™ caps.</li> <li>Complete with unique replaceable debris control.</li> <li>Includes integral slot adapters.</li> <li>Sliding adjustment allows visors to fit over large half-face respirator filters.</li> <li>Non metal construction enables use in electrical applications.</li> </ul>
		V-Gard™ Frame, Universal For Slotted Caps With Debris Control	<ul style="list-style-type: none"> <li>Universal. Fits most caps (MSA and other brands).</li> <li>Also fits all MSA Caps (Slotted or Non-Slotted).</li> <li>Sold with replaceable debris control which creates tight seal between frame and cap.</li> <li>Heavy duty flat rubber strap allows easy and secure placement on all MSA caps, including non-slotted models.</li> <li>Design allows use with other PPE, including MSA earmuffs and respirators.</li> </ul>
		V-Gard™ Frame, for caps without debris control	<ul style="list-style-type: none"> <li>Fits all MSA Slotted Caps</li> <li>Debris control sold separately</li> <li>Stowable slot adaptors secure frame tightly in slotted MSA caps, and allow frame to work with or without earmuffs</li> <li>Sliding adjustment blades allow visor to work with most half-mask respirators and other PPE worn under a visor</li> </ul>

- Classification:** Elevated temperature
- Markets:** Food manufacturing/canneries, steel mills, construction, open-pit mining, agriculture, oil/gas/petrochemical refineries, rubber manufacturing, and steam tunnels
- Applications:** Food processing, machine operation, maintenance, millwright, cutting, punching, extrusion, drilling, blasting, casting/conveying, chemical mixing, sanding
- Material:** Polycarbonate
- Standards:** ANSI/ISEA Z87.1-2010; EN 166; CSA Z94.3; and AS/NZS 1337
- Min Order Qty:** 10

		DESCRIPTION	PRODUCT SPECIFICATIONS
<b>V-GARD FRAME FOR ELEVATED TEMPERATURE APPLICATIONS</b>		V-Gard™ Frame For Slotted Caps	<ul style="list-style-type: none"> <li>Attaches directly into MSA V-Gard™ caps.</li> <li>Complete with unique replaceable debris control.</li> <li>Includes integral slot adapters.</li> <li>Sliding adjustment allows visors to fit over large half-face respirator filters.</li> <li>Non metal construction enables use in electrical applications.</li> </ul>

### Gard Chin Protectors


V-Gard Chin Protectors work with select V-Gard Nitrometers to help provide extra protection from impact and splash hazards to face and neck.

		DESCRIPTION	PRODUCT SPECIFICATIONS
<b>CHIN PROTECTORS</b>		Chin Protector	<ul style="list-style-type: none"> <li>Standard chin protector.</li> <li>Opaque material can be used with clear and tinted visors.</li> <li>Compact design provides additional protection between the neck and chin.</li> </ul>
		Chin Protector, Retractable	<ul style="list-style-type: none"> <li>Deluxe retractable chin protector.</li> <li>Opaque material can be used with clear and tinted visors.</li> <li>Compact design provides additional protection between the neck and chin.</li> </ul>

Contact your local MSA Representative for ordering information.

## V-Gard Headgear

V-Gard Headgear can be used for face protection when head protection is not required. V-Gard Headgear is available in two versions: General Purpose and Elevated Temperature (Extended). V-Gard Headgear are designed and approved for use with V-Gard Visors.

V-GARD HEADGEAR FOR GENERAL PURPOSE APPLICATIONS		DESCRIPTION	PRODUCT SPECIFICATIONS
		V-Gard Headgear for General Purpose Applications	<ul style="list-style-type: none"> <li>• Patent-pending, Infiniti-just lift/closure with grippable knobs that don't unscrew; no parts to lose!</li> <li>• Seven-point crown adjustment</li> <li>• Replaceable, sweat-wicking, cushionable headband helps keep workers dry and cool</li> <li>• For use ONLY with V-Gard Visors; <b>not for use where head protection is required</b></li> <li>• All non-metal construction</li> </ul>


## V-Gard Visors

### Choosing the proper V-Gard visor

Material	Polycarbonate (PC)	Suitable for most applications where impact and splash hazards exist. Available in a variety of sizes and thicknesses, sheet or injection moulded versions. Moulded visors are optically corrected and therefore offer very good view and reduce fatigue during work. Their chemical and heat resistance is better as they are thicker and not as stressed as flat visors. Flat visors are the perfect solution for general and basic applications offering a good price/performance ratio.
	Mesh	Provides maximum ventilation in humid working conditions. Lightweight and durable great for outdoor applications such as brush clearing and trimming. Does not provide splash protection.
	Propionate	Provides superior chemical splash resistance mainly against organic chemicals such as solvents. Available in injection moulded version for a great optical quality and reliable resistance not as stressed as flat visors.
Colour/ Tint	Clear	Provides maximum light transmission. Good for indoor use applications, or outdoor use in low-light conditions.
	Shade 3 IR / Shade 5 IR	Helps protect against infrared (IR) up to Shade 3 and Shade 5, as applicable, as well as ultraviolet (UV) radiation. Perfect for autogenous welding, metal pouring, gas soldering, light cutting and brazing applications.
Coatings	Anti-fog	Controls condensation build-up on inside of visor surface. Great for humid conditions.
	Anti-Scratch	Provides excellent scratch resistance, extending visor life. A "must have" in abrasive work environments.
	Reflective	Reflects radiant heat, keeping the wearer comfortable in elevated temperature environments, such as manufacturing plants with blast furnaces.
Options	Chin Protectors	V-Gard chin protectors provide additional protection to the face and neck from impacts, chemical splash and arc flash making them suitable for applications in forestry, chemical industry, utilities, etc.
	Debris Control	Provides additional protection against debris and chemical splash and reduces the possibility of debris or chemical entry between the visor frames and the front of the helmet.

## V-Gard Visors: General Purpose

- Classification:** General purpose
- Markets:** General industry, manufacturing, repair and maintenance, construction, oil and gas, forestry, shipbuilding, metalworking, automotive, mining
- Applications:** Chipping, splash, chiseling, drilling, grinding, machining, power fastening, sanding, sawing
- Material:** Polycarbonate
- Colour:** Clear
- Standards:** ANSI/ISEA Z87.1-2010; CSA Z94.3 and EN 166 (2C-1.2 MSA)
- Min Order Qty:** 10



V-GARD VISORS FOR GENERAL PURPOSE APPLICATIONS		DESCRIPTION	PRODUCT SPECIFICATIONS
		Clear, Flat	<ul style="list-style-type: none"> <li>• 8" (20.3 cm) x 17" (43.2 cm) x .04" (1.02mm)</li> <li>• Contoured visor; closer fit and improved resistance to impact and splash hazards</li> </ul>
		Clear, Flat	<ul style="list-style-type: none"> <li>• 8" (20.3 cm) x 17" (43.2 cm) x .04" (1.02mm)</li> <li>• Flat visor; wider design; improved resistance to impact and splash hazards</li> <li>• Does not meet CSA Z94.3</li> </ul>

Contact your local MSA Representative for ordering information.

# HEFH - Head, Eye, Face, Hearing & Miscellaneous Protection

## V-Gard Visors: Heavy Duty Chemical and Splash



- Classification:** Chemical and splash: heavy duty
- Markets:** General industry, heavy manufacturing, laboratories, chem/petrochemical, agriculture, pharmaceutical, oil and gas, mining
- Applications:** Chipping, splash, chemical mixing, grinding, machining, power fastening, sanding, sawing
- Material:** Propionate
- Colour:** Clear
- Standards:** ANSI/ISEA Z87.1-2010; EN 166 (MSA 1B 3); CSA Z94.3
- Min Order Qty:** 5

V-GARD VISORS FOR CHEMICAL AND SPLASH APPLICATIONS		DESCRIPTION	PRODUCT SPECIFICATIONS
		Clear, Propionate, Moulded	<ul style="list-style-type: none"> <li>• 2.49mm injected propionate.</li> <li>• Superior optical quality.</li> <li>• Best visor for chemical applications.</li> </ul>
		Clear, Propionate, Moulded, Nitrometer*	<ul style="list-style-type: none"> <li>• 2.49mm injected propionate.</li> <li>• Superior optical quality.</li> <li>• Best visor for chemical applications.</li> <li>• Use with V-Gard™ Retractable or standard chin protectors.</li> </ul>

\* Nitrometer, for use with MSA Chin Protectors ONLY.

## V-Gard Visors: Welding (Shade 3 and Shade 5)

- Classification:** Welding
- Markets:** Fabrication, steel mills, shipbuilding, construction, open-pit mining, agriculture, oil/gas/petrochemical refineries, rubber manufacturing
- Applications:** Welding, metal pouring, gas soldering, light cutting/brazing, manufacturing, impact and debris
- Material:** Polycarbonate
- Colour:** Shade 3 IR, green  
Shade 5 IR, green
- Standards:** ANSI/ISEA Z87.1-2010; EN 166 (4-3/3 MSA 1BT39 [shade 3] and 4-5/5 MSA 1BT39 [shade 5]); CSA Z94.3
- Min Order Qty:** 5


V-GARD VISORS FOR WELDING APPLICATIONS		DESCRIPTION	PRODUCT SPECIFICATIONS
		Shade 3 IR, Moulded	<ul style="list-style-type: none"> <li>• 2.49mm injected polycarbonate.</li> <li>• Shade 3 Infra Red protection for gas welding applications.</li> <li>• Scratch resistant.</li> <li>• Thickness helps prevent pitting and warping from heat or weld spatter.</li> </ul>
		Shade 5 IR, Moulded	<ul style="list-style-type: none"> <li>• 2.49mm injected polycarbonate.</li> <li>• Shade 5 Infra Red protection for gas welding applications.</li> <li>• Scratch resistant.</li> <li>• Thickness helps prevent pitting and warping from heat or weld spatter.</li> </ul>

Contact your local MSA Representative for ordering information.



## V-Gard Visors: Arc Flash Application

<b>Classification:</b>	Arc
<b>Markets:</b>	Maintenance, impact and debris, testing/repair
<b>Applications:</b>	Flying chips and other light debris
<b>Material:</b>	Polycarbonate
<b>Colour:</b>	Special tint, light green
<b>Standards:</b>	ANSI/ISEA 287.1:2010 Compliant
<b>Min Order Qty:</b>	5

V-GARD NITROMETER WITH CHIN PROTECTOR FOR ARC FLASH APPLICATIONS		DESCRIPTION	PRODUCT SPECIFICATIONS
		Arc+, Moulded, Nitrometer*	<ul style="list-style-type: none"> <li>• 1.7mm injected polycarbonate.</li> <li>• Extended length for greater face and neck coverage.</li> <li>• For electric arc flash applications.</li> <li>• Use with V-Gard™ Retractable or standard chin protector.</li> <li>• Rated 11.3 cal/cm2.</li> </ul>

## Welding Adapter Kit

### Adapter kits for Welding Shields











Kits permit the easy attachment of Welding Shields and Sparkgard Faceshields with visors to MSA's helmets.

Contact your local MSA Representative for ordering information.

## Eye Protection



### Sightgard Safety Glasses: Indoor Humid Conditions

- Classification:** Indoor: Humid Environments
- Markets:** Facility maintenance, repair and operations, construction, food and beverage, general manufacturing and industry, mining, oil and gas, pharmaceuticals, transportation, shipbuilding, automotive
- Applications:** Assembly and mechanical, drilling, grinding, machining, painting, sanding, sawing
- Material:** Polycarbonate
- Features:** Anti-fog coating  
Clear lenses  
Impact-rated (Z87+)  
Anti-scratch coating (as noted)
- Standards:** ANSI/ISEA Z87.1-2010 and CSA Z94.3 (as noted)
- Min Order Qty:** 12 (unless otherwise stated)

INDOOR APPLICATIONS	MODEL	PART NO.	PRODUCT SPECIFICATIONS
	Arctic	697514	<ul style="list-style-type: none"> <li>• Frameless and lightweight</li> <li>• Among our most popular models!</li> <li>• Tuff Stuff Anti-scratch Coating</li> <li>• Full side coverage</li> </ul>
	Arctic Elite	10038845	<ul style="list-style-type: none"> <li>• Rubber tipped temples and nosebridge for comfortable, yet secure fit</li> </ul>
	Aurora	10026005	<ul style="list-style-type: none"> <li>• Ratchet temple adjustment</li> <li>• Single, 7-base wrap curve lens</li> <li>• Tuff Stuff™ Anti-scratch Coating</li> </ul>
	Discovery II	10106382	<ul style="list-style-type: none"> <li>• Flexible, nylon temple arms adjust to head width</li> <li>• Soft nose bridge</li> <li>• So light, you forget you have them on</li> </ul>
	Pyrenees 	10033718	<ul style="list-style-type: none"> <li>• Full side protection</li> <li>• Dual injected, soft-tipped temples</li> </ul>
	Voyager 	10065849	<ul style="list-style-type: none"> <li>• Single wrap-style lens</li> </ul>

## Safety Glasses: Indoor/Outdoor

- Classification:** Indoor/outdoor
- Markets:** General industry, manufacturing, construction, oil and gas, forestry, shipbuilding, automotive, food and beverage, mining, pharmaceuticals, primary metals, transportation
- Applications:** Assembly and mechanical, chipping, chiseling, cleaning, drilling, grinding, machining, masonry, riveting, sanding, sawing, UV protection
- Material:** Polycarbonate, indoor/outdoor or light mirroring
- Features:** Maximum UV protection ("U6")  
Light mirror and Gray tint lenses provide glare reduction without significantly reducing light transmittance  
Impact-rated (Z87+), Anti-fog and/or anti-scratch coatings (as noted)
- Standards:** ANSI/ISEA Z87.1-2010
- Min Order Qty:** 12 (unless otherwise stated)

INDOOR/ OUTDOOR APPLICATIONS	MODEL	PART NO.	PRODUCT SPECIFICATIONS
	Arctic	10008179 697515	<ul style="list-style-type: none"> <li>• Blue mirror and Grey lense reduces glare without causing color degradation</li> <li>• Popular, lightweight model</li> <li>• Full side coverage</li> <li>• Anti-scratch coating</li> </ul>
	Arctic Elite	10059671 10038846	<ul style="list-style-type: none"> <li>• Indoor/outdoor mirror allows workers to go from bright to low light conditions</li> <li>• Rubber tipped temples and nosebridge for comfortable, yet secure fit</li> <li>• Anti-fog coating</li> </ul>
	Vista	10070916	<ul style="list-style-type: none"> <li>• Indoor/outdoor mirror allows workers to go from bright to low light conditions</li> <li>• Vertical temple adjustment</li> <li>• Lightweight, single lens</li> <li>• Tuff Stuff Anti-scratch Coating</li> </ul>

## 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 the applicable standards of the products in the assembly.**








	PART NO.	DESCRIPTION
<b>GOGGLE RETAINERS</b>	459458	• Goggle Retainer, for caps
	449895	• Goggle Retainer, for hats
<b>LANYARD</b>	10020871	<ul style="list-style-type: none"> <li>• Deluxe Eyewear Lanyard (pk/12)</li> <li>• Holds eyewear securely</li> <li>• Lanyard strap slides over temple ends</li> </ul>
<b>CLEANING ACCESSORIES</b>	13016	• 4 oz. Fogpruf™ Cleaner Refill
	10022087	• Pre-moistened Towelettes (box of 100)



# HEFH - Head, Eye, Face, Hearing & Miscellaneous Protection

## Safety Glasses: Over-the-Glasses

<b>Classification:</b>	Over-the-glasses	<b>Material:</b>	Polycarbonate
<b>Markets:</b>	Facility safety, maintenance, repair and operations, overhaul, general industry, manufacturing, construction, oil and gas, metalworking, automotive	<b>Features:</b>	Impact-rated (Z87+) Maximum UV protection ("U6") (as noted), Anti-fog coating (as noted)
<b>Applications:</b>	Assembly and mechanical, drilling, grinding, machining, masonry, power fastening, riveting, sanding, sawing	<b>Standards:</b>	ANSI/ISEA Z87.1-2010 and CSA Z94.3 (as noted)
		<b>Min Order Qty:</b>	12 (unless otherwise stated)

OVER GLASSES	MODEL	PART NO.	PRODUCT SPECIFICATIONS
	OvrG™ II 	10118475	<ul style="list-style-type: none"> <li>• Clear lenses</li> <li>• For use over small-to-medium Rx glasses</li> <li>• Squared-off, stylish look</li> <li>• Maximum UV protection</li> <li>• 30% lighter weight than standard visitor specs</li> </ul>
	OvrG™ II 	10118476	<ul style="list-style-type: none"> <li>• Indoor/outdoor mirrored lens</li> <li>• For use over small-to-medium Rx glasses</li> <li>• Maximum UV protection</li> </ul>
	Plant Visitor 	10027944 697500 (10/Box)	<ul style="list-style-type: none"> <li>• Classic look</li> <li>• Fits over most Rx glasses</li> <li>• Integral, vented side shields</li> </ul>
	Rx Overglasses	10008175	<ul style="list-style-type: none"> <li>• Clear lenses</li> <li>• Fits over most Rx glasses</li> <li>• Anti-fog coating</li> <li>• Horizontal and vertical temple adjustment</li> </ul>

## Safety Glasses: Goggles

<b>Classification:</b>	Chemical and Splash General purpose: Impact and Splash	<b>Material:</b>	Acetate lens (FlexiChem™ iV) Clear Polycarbonate lenses (Sightgard NV, iV)
<b>Markets:</b>	Chemicals, construction, food and beverage, general manufacturing and industry, mining, oil and gas, pharmaceuticals, primary metals, transportation, shipbuilding, automotive	<b>Features:</b>	Impact-rated (Z87+) Splash-rated (D3)
<b>Applications:</b>	Cleaning, chemical mixing and use, chipping, chiseling, drilling, grinding, machining, painting, power washing, sanding, sawing, splash	<b>Standards:</b>	ANSI/ISEA Z87.1-2010 and CSA Z94.3
		<b>Min Order Qty:</b>	12 (unless otherwise stated)

	MODEL	PART NO.	PRODUCT SPECIFICATIONS
<b>CHEMICAL AND SPLASH APPLICATIONS</b> 	FlexiChem™ iV 	10106281	<ul style="list-style-type: none"> <li>• Soft, pliable goggle body ensures all-day comfort</li> <li>• Indirect vent helps eliminate fogging while retaining splash resistance</li> <li>• Acetate lens resists warping, cracking and crazing from chemical splash</li> <li>• Anti-fog coating</li> <li>• Flame-retardant strap</li> </ul>
<b>GENERAL PURPOSE IMPACT/SPLASH APPLICATIONS</b> 	Sightgard NV 	10106268	<ul style="list-style-type: none"> <li>• Non-vented for tighter seal</li> </ul>
	Sightgard iV 	10106270	<ul style="list-style-type: none"> <li>• Indirect-venting helps keep goggles fog-free</li> </ul>




# Hearing Protection

## left/RIGHT Passive Hearing Protection




MSA left/RIGHT passive headband hearing products offer three levels of NRR values ranging from 21 to 28 dBA, making it simple to match the attenuation of the earmuff with the noise exposure of the worker.

- Classification:** Headband, Passive  
Slotted Helmet-Mounted, Passive
- Applications:** Heavy mechanical industries, compression rooms, airports (HIGH)  
Utilities, construction, general industry (MEDIUM)  
Food manufacturing, automotive, light industry (LOW)
- Markets:** General industry, manufacturing, repair and maintenance, construction, OGP, forestry, shipbuilding, mining
- Standards:** Meets ANSI S3.19-1974 and CSA Class A Standards


### left/RIGHT Earmuffs, Passive

	PRODUCT NAME	PART NO.	NRR	PRODUCT SPECIFICATIONS
	left/RIGHT (LOW)	10087436	21 dB	<ul style="list-style-type: none"> <li>For use in low-noise environments, such as pharmaceuticals and outside maintenance</li> </ul>
	left/RIGHT (MEDIUM)	10087426	25 dB	<ul style="list-style-type: none"> <li>For use in medium-noise environments, such as oil, gas and petrochemical, forestry and agriculture</li> <li>Cups are sized and shaped to provide space for most ear sizes</li> </ul>
	left/RIGHT (HIGH)	10087399	28 dB	<ul style="list-style-type: none"> <li>For use in high-noise environments, such as paper mills, foundries, mines and airports</li> <li>Cups are sized and shaped to provide space for most ear sizes</li> </ul>

### left/RIGHT Helmet Mounted, Passive

	PRODUCT NAME	PART NO.	NRR	PRODUCT SPECIFICATIONS
	left/RIGHT (LOW)	10087439	21 dB	<ul style="list-style-type: none"> <li>For use with MSA slotted caps</li> <li>For use in low-noise environments, such as pharmaceuticals and outside maintenance</li> </ul>
	left/RIGHT (MEDIUM)	10087429	25 dB	<ul style="list-style-type: none"> <li>For use with MSA slotted caps</li> <li>For use in medium-noise environments, such as oil, gas and petrochemical, forestry and agriculture</li> </ul>
	left/RIGHT (HIGH)	10087422	28 dB	<ul style="list-style-type: none"> <li>For use with MSA slotted caps</li> <li>For use in high-noise environments, such as paper mills, foundries, mines and airports</li> <li>Cups are sized and shaped to provide space for most ear sizes</li> </ul>

### left/RIGHT Hygiene Kits

	PRODUCT NAME	PART NO.	PRODUCT SPECIFICATIONS
	left/RIGHT™ - Hygiene Kit - Low	10092878	<ul style="list-style-type: none"> <li>Cushions and inserts</li> <li>Works with left/RIGHT passive helmet-mounted or headband products</li> <li>Replace regularly to retain comfort, performance and hygiene</li> </ul>
	left/RIGHT™ - Hygiene Kit - Medium	10092879	
	left/RIGHT™ - Hygiene Kit - High	10092880	

# HEFH - Head, Eye, Face, Hearing & Miscellaneous Protection

## Headband, Passive Hearing Protection

### SoundControl Classic Hearing Protection





MSA SoundControl Classic hearing protection offers two headband models, making it easy for safety directors to find the proper attenuation levels for noise in their particular environment. And, just like their helmet-mounted Classic counterparts, these muffs are lightweight and low-profile!

**Classification:** Headband, Passive

**Applications:** Confined space, sanding/grinding, power tool use, occupations with non-impulse noise (such as machine operations), demolition, assembly

**Markets:** General industry, manufacturing, repair and maintenance, construction, OGP, forestry, shipbuilding, mining, metal processing, automotive

**Standards:** Meets ANSI S3.19-1974 and CSA Class A Standards

	PRODUCT NAME	PART NO.	NRR	PRODUCT SPECIFICATIONS
	SoundControl HPE	10061271	26 dBA	<ul style="list-style-type: none"> <li>Lightweight, low-profile earmuffs are ideal for a variety of noisy applications</li> <li>High attenuation and excellent sealing for reliable protection</li> <li>Headband design and two-point cup mounting distributes weight evenly, offering outstanding balance and comfort</li> <li>No metal parts</li> <li>Cups can be moved to a range of wearing positions for a custom fit</li> </ul>
	SoundControl EXC	10061229	24 dBA	<ul style="list-style-type: none"> <li>Unique injection-molded inserts provide excellent attenuation and maximum ear space</li> <li>Medium attenuation for moderately-high noise exposures</li> <li>Three distinct wearing positions</li> <li>Cups can be moved to a range of wearing positions for a custom fit</li> </ul>
	HPE Hygiene Kit	10061291	-	<ul style="list-style-type: none"> <li>Foam cushions and inserts</li> <li>Works with Classic helmet-mounted or headband products</li> </ul>
	EXC Hygiene Kit	10061292	-	

### Economuff Value Hearing Protection



MSA Economuff Value hearing protection offers two headband options. Economuff hearing protectors provide cost-effective options that don't sacrifice comfort or protection.

**Classification:** Headband, Passive

**Applications:** Facility maintenance, grinding, machine operations, sanding, welding, demolition, painting, assembly, cleaning

**Markets:** Repair and operation (MRO), mining, food and beverage manufacturing, metal fabrication, oil & gas, general manufacturing

**Standards:** Meets ANSI S3.19-1974 and CSA Class B Standards

	PRODUCT NAME	PART NO.	NRR	PRODUCT SPECIFICATIONS
	Economuff Multi-Position	10061273	23 dBA (under chin/ Behind head) 24 dBA (over the head)	<ul style="list-style-type: none"> <li>Offers three positions: under the chin, behind the head or over the head</li> <li>Under the chin or behind the head positions allow use of head protection</li> <li>Durable design for use in tough environments</li> <li>No metal parts</li> <li>Padded headband makes longer wear possible</li> <li>One size fits most</li> </ul>
	Economuff	10004291	20 dBA	<ul style="list-style-type: none"> <li>Soft wide cushions maintain comfortable pressure around the ears</li> <li>Lightweight</li> <li>One size fits most</li> <li>No metal parts</li> <li>Most economical option</li> </ul>



Harnesses, Lanyards & Self Retracting Devices  
Anchorage Connectors  
Horizontal and Vertical Lifelines  
Descent and Rescue  
Fall Protection Kits  
Confined Space Equipment



MSA has been in the business of safety at heights since 1930. Today we are at the forefront of innovation in fall protection products.

MSA are proud of it's Fall Protection range and with new Latchways, Workman and Gravity range of height safety products we can assist you with all of your fall protection needs.

As part of a global business, MSA Pacific Asia has access to a complete range of product from facilities in North America, Mexico, China and

Europe. This enables MSA Pacific Asia to carry stocks of the complete MSA Fall Protection range,

We stock a full range of anchorages, full body harnesses, connections and decent and rescue products to ensure workers at height have the protection they need at all times.

## Fall Protection



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 that 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 Pacific Asia

Attn: Fall Protection Segment Marketing Manager

35 Marsiling Industrial Estate Road 3,

#04-01, Singapore 739257

**MSA makes Fall Protection as easy as ABCD ensuring you have everything you need to work at height safely.**

#### Anchorage:

Anchor points are an important part of any system. They should be suitably positioned for the intended operation and are required to be structurally sound.

#### Body support:

A full body harness with a front and rear fall arrest connection. You must select the harness applicable to your work application.

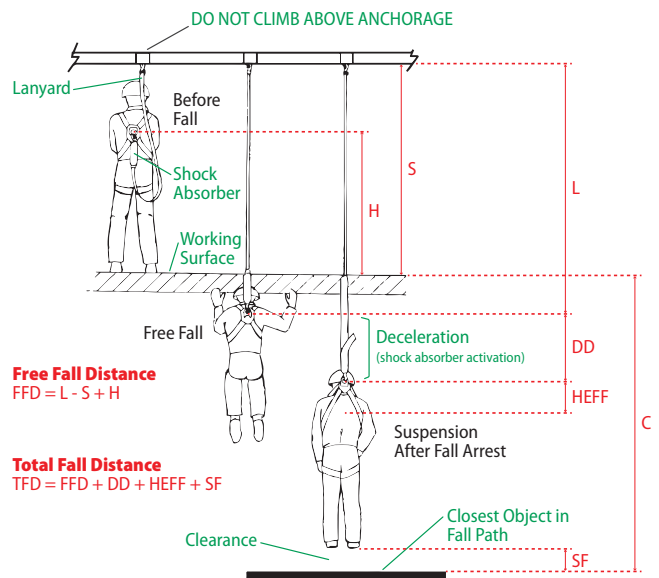
#### Connection means:

What is needed between the anchorage and harness? As a minimum, a shock absorbing lanyard assembly in either a single or twin leg assembly. Another alternative is to select a personal fall limiter or self retracting lanyard, which has the added benefit of reducing your free fall distance and increasing your mobility.

#### Descent & Rescue:

Typically the forgotten term in a PPE selection plan. Suspension trauma can occur in as little as 5 minutes after a person has fallen in a harness. Do not rely on local rescue authorities to be on site within 5 minutes. MSA has a range of simple to use rescue products to assist you in performing a quick, safe and successful rescue. We also offer a range of confined space equipment to assist you with your descent.

### Fall Protection Distance Calculation for a Shock Absorbing Lanyard



### Harness Sizing Chart

Height in m	50	60	70	80	90	100	110	120	130	140
2.0	SMALL									
1.9	SMALL									
1.8	SMALL									
1.7	SMALL									
1.6	SMALL									
1.5	SMALL									

Height in m	50	60	70	80	90	100	110	120	130	140
2.0	SMALL									
1.9	SMALL									
1.8	SMALL									
1.7	SMALL									
1.6	SMALL									
1.5	SMALL									



## Fall Definitions

There are four types of fall situations:

- Restraint Technique – When the person is not physically able to reach a position where a fall can occur due to a restraint lanyard between the anchor point and the harness
- Restrained Fall – When the person is using a pole strap whilst working on a pole
- Limited Free Fall – When the person is limited to a free fall distance of less than 600 mm
- Free Fall – When the person is exposed to a free fall distance of greater than 600 mm

In all cases, MSA recommends that the user wear a full body harness.

### 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 is the sum of the Free Fall 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 metre into the formula. Total Fall Distance can be calculated using the following formula:

$$TFD = FFD + DD + HEFF + VEL + SF$$

**Free Fall 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. For a shock absorbing lanyard, this can be calculated as the length of the lanyard “L”, minus the straight line distance between the anchor and the working surface “S”, plus the distance between the person’s lanyard attachment point and the working surface “H”. As per the AS/NZS 1891.4 standard, Free Fall Distance must not exceed 2 m.

$$FFD = L - S + H$$

**Did you know** this is where the true benefit of using a self retracting device, such as a self retracting lanyard (SRL) or personal fall limiter (PFL) comes into consideration, as your lifeline distance “L” will always be the minimum length required without restricting your mobility. Also to decrease your free fall distance always keep your anchor point as far above your attachment point on the harness as possible.

**Deceleration Distance (DD)** – The vertical distance a worker travels between the activation of the fall arrest system and the final fall arrest. For a shock absorbing lanyard the maximum distance permitted is 1.75 m, and for a self-retracting device, the maximum distance permitted is 0.7 m.

**Harness Effects (HEFF)** – The stretch in the harness during fall at rest. This can be estimated at approximately 0.3 m.

**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 a shock absorbing lanyard or self retracting device, this is factored into DD, but for a rope grab system or horizontal lifeline, vertical elongation must be calculated based on the stretch on the vertical or horizontal lifelines in those systems.

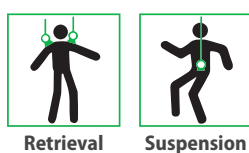
**Safety Factor (SF)** – An additional factor of safety to ensure that you have required clearance below your working surface. We recommend a safety factor of 1 m.

Once you have calculated your Total Fall Distance you must ensure that your clearance between your working surface and the next closest object in the fall path is less than your calculated distance.

## Selecting a Harness

Harness selection will be dependent on your particular working environment. To ease the selection processes, look out for the appropriate icons for your attachment and application needs to find your ideal harness.

### Attachment



### Application



## Full Body Harnesses

### Workman® Full-Body Harness



10072479



10072483



10072487



10072491

- Optimum quality at an economical price
- Yellow polyester webbing for increased visibility
- Color-contrasting thigh and torso straps simplify donning
- Choice of Qwik-Fit or tongue-buckle leg straps for easy adjustment
- Web retainer collars to keep excess webbing neat

- Includes two lanyard keepers for added safety when lanyard leg is not in use
- All Workman Harnesses include a load-indicator to alert you when the harness has been involved in a fall event
- Standards: OSHA/ANSI

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.

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.

PART NO:	Description
10072478	MSA Workman Full Body Harness, Qwik-fit leg straps, Back D-ring, X-Small
10072479	MSA Workman Full Body Harness, Qwik-fit leg straps, Back D-ring, Medium
10072480	MSA Workman Full Body Harness, Qwik-fit leg straps, Back D-ring, X-Large
10072483	MSA Workman Full Body Harness, Qwik-fit leg straps, Back, hips D-ring, Medium
10072487	MSA Workman Full Body Harness, Tongue-buckle leg straps, Back D-ring, Medium
10072491	MSA Workman Full Body Harness, Tongue-buckle leg straps, Back, hips D-ring, Medium

### MSA Workman® Light



- The MSA Workman Light, single D-ring harness, provides comfortable protection, due to its lightweight components and durable webbing.
- Vest-style harness fits a wide range of body types and sizes.
- Colour contrasting thigh and torso straps simplify donning.
- Qwikfit leg straps offer easy adjustment.
- Certified to EN 361.

PART NO:	Description
10115526	MSA Workman Light Harness, Qwik-fit leg straps, D-ring, Small
10115527	MSA Workman Light Harness, Qwik-fit leg straps, D-ring, Medium
10115528	MSA Workman Light Harness, Qwik-fit leg straps, D-ring, Large

### MSA Workman® Premier



- The MSA Workman Premier offers the user an additional attachment point at the front, with extra adjusters on the torso for more precise adjustment. The harness also offers shoulder loops for use with the MSA Workman Spreader Bar.
- The MSA Workman Premier harness is available with Qwik-fit or bayonet style leg straps.
- Both styles offer fast and easy connection and adjustment.
- Certified to EN 361, EN 1497

PART NO:	Description
10115541	MSA Workman Premier Harness, Qwik-fit leg straps, D-ring, Small
10115542	MSA Workman Premier Harness, Qwik-fit leg straps, D-ring, Medium
10115543	MSA Workman Premier Harness, Qwik-fit leg straps, D-ring, Large
10115544	MSA Workman Premier Harness, Bayonet leg straps, D-ring, Small
10115545	MSA Workman Premier Harness, Bayonet leg straps, D-ring, Medium
10115546	MSA Workman Premier Harness, Bayonet leg straps, D-ring, Large

### MSA Workman® Utility



- The MSA Workman Utility offers everything the Premier harness offers and more.
- An integral waist belt and pad for added comfort and hip-positioning D-rings make this the perfect harness for Utility work.
- Certified to EN 358, EN 361, EN 1497

PART NO:	Description
10115547	MSA Workman Utility Harness, Bayonet leg straps, D-ring, Small
10115548	MSA Workman Utility Harness, Bayonet leg straps, D-ring, Medium
10115549	MSA Workman Utility Harness, Bayonet leg straps, D-ring, Large

### Gravity® Suspension Harnesses



- The Gravity Suspension harness is designed to offer the best comfort, safety and quality for suspended work.
- Waist pad is manufactured from fully breathable material and designed with multi-layered padding which dissipates pressure from the webbing to reduce fatigue when working for long periods of time.
- The Gravity Suspension harness comes with aluminium hardware and shoulder, leg and waist padding.
- The Gravity Light Suspension harness comes with steel hardware and waist and leg padding.
- Certified to EN 361, EN 358, EN 813

PART NO:	Description
10150442	Gravity Suspension Harness, black, medium
10150434	Gravity Light Suspension Harness, green, medium

Contact your local MSA Representative for ordering information.

# Fall Protection

## EVOTECH® Full Body Harnesses



10123403

10123406

10123411

Using the latest technology in safety and comfort, the EVOTECH harness is designed for all day use for the most demanding of users. The EVOTECH has a host of features including:

- Breathable padding with moisture-wicking material keeps wearers cooler
- Leg strap padding offers additional comfort during work positioning.
- Variable width, sub-pelvic strap webbing provides 50% more surface area for improved weight distribution.
- 3-position back D-ring allows users to determine optimal lanyard connection position.
- Built-in RFID chip allows you to track and inspect the harness easily.
- NanoSphere® coating on webbing repels dirt, grease, moisture, and more.
- Reflective piping increases visibility in low-light environments.
- Front and back fall arrest attachment points.
- Certified to EN 358, EN 361 (depending on model)

PART NO:	Description
10123403	EVOTECH Harness, small
10123406	EVOTECH Harness, small, waist padding, hip D-rings
10123411	EVOTECH Harness, small, waist padding, dorsal ext., hip & shoulder D-rings

## MSA Workman® Harness Kits



Your basic fall protection needs for construction and general maintenance are now available in one, easy-to-order kit. All fall protection kits include the MSA Workman Light harness, energy-absorbing lanyard (webbing) and anchorage connector in an easy-to-stow bag.

PART NO:	Description
10115529	MSA Workman Light Full Body Harness, small, Qwik-fit leg straps, single-leg lanyard, aluminium carabiner
10115530	MSA Workman Light Full Body Harness, medium, Qwik-fit leg straps, single-leg lanyard, aluminium carabiner
10115531	MSA Workman Light Full Body Harness, large, Qwik-fit leg straps, single-leg lanyard, aluminium carabiner
10115532	MSA Workman Light Full Body Harness, small, Qwik-fit leg straps, single-leg lanyard, aluminium scaffold hook
10115533	MSA Workman Light Full Body Harness, medium, Qwik-fit leg straps, single-leg lanyard, aluminium scaffold hook
10115534	MSA Workman Light Full Body Harness, large, Qwik-fit leg straps, single-leg lanyard, aluminium scaffold hook
10115535	MSA Workman Light Full Body Harness, small, Qwik-fit leg straps, twin-leg lanyard, aluminium carabiner
10115536	MSA Workman Light Full Body Harness, medium, Qwik-fit leg straps, twin-leg lanyard, aluminium carabiner
10115537	MSA Workman Light Full Body Harness, large, Qwik-fit leg straps, twin-leg lanyard, aluminium carabiner
10115538	MSA Workman Light Full Body Harness, small, Qwik-fit leg straps, twin-leg lanyard, aluminium scaffold hook
10115539	MSA Workman Light Full Body Harness, medium, Qwik-fit leg straps, twin-leg lanyard, aluminium scaffold hook
10115540	MSA Workman Light Full Body Harness, large, Qwik-fit leg straps, twin-leg lanyard, aluminium scaffold hook

## Fall Protection Accessories

### Suspension Trauma Safety Step



- Lightweight web ladder design to reduce the onset of suspension trauma during post-fall suspension
- Loops allow user to flex leg muscles and relieve leg strap pressure while suspended prior to rescue
- When connected to the fall arrest connection that the fall has occurred on, force and pressure is transferred back onto the anchor point, rather than onto the body

PART NO:	Description
10063431	With Karabiner
10063441	Without Karabiner

### Bosun Chair



- Best method to sit suspended for long durations
- Padded seat ensures comfort during use
- Adjustable web assembly for added security

PART NO:	Description
SSH3505017	Bosun Chair

### Yoke Extension



- Harness accessory that can be used as a dorsal extension to the rear D-Ring or Type 1 device when connected to the front D-ring during ladder climbing
- Extension is 300mm in length and features a double action snaphook at one end and a D-ring connection at the other

PART NO:	Description
229810SGL	Yoke Extension

### Wrist Tool Loop



This economical tool strap attaches to a users wrist and the cord at the opposite end secures the tool

PART NO:	Description
763160BK	Tool Wrist Loop

### Hands Off Chisel Grip Tool Holder



- Keeps hands away from the point of contact
- Ergonomically designed to match the specific shape of the human hand for a comfortable and firm grip
- Easy adjustment to hold a variety of chisels and stakes up to 1" in diameter
- Vibration absorbing handle
- Spark resistant

PART NO:	Description
10040018	Chisel Grip
10042431	Replacement Strap

# Fall Protection

## Ergonomic Tool Holders



- Holds wrenches, chisels etc
- Vibration absorbing design
- Eases awkward hand positioning

PART NO:	Description
507005	Length 460mm

## Ladder Tie Down Strap



Can be used on most ladders for added stability

PART NO:	Description
229816	Ladder Tie Down Strap

## MSA Workman® Light



The MSA Workman spreader bar is used in conjunction with the Premier or Utility harness for raising and lowering a person during rescue. The attached web loops can be used to secure an incapacitated victim's arms when lifting or lowering.

PART NO:	Description
10115550	MSA Workman Spreader Bar, steel snaphook
10115551	MSA Workman Spreader Bar, aluminium snaphook

## Hooks and Karabiners

PART NO:	Description	Item No.
2292005STL	Karabiner, Triple Action, Steel, 18mm Gate	1
229202TL	Karabiner, Autolock, Steel, 18mm Gate	2
229407TL	Karabiner, Autolock, Steel 56mm Gate	3
229200TL	Karabiner, Autolock, Steel 23mm Gate	4
765804	Snaphook, Double Action, Alloy, 20mm Gate	5
229704M	Snaphook, Double Action, Steel, 55mm Gate	6
765805	Snaphook, Double Action, Alloy, 60mm Gate	7
763159	Snaphook, Double Action, Steel, 20mm Gate	8
764315	Karabiner, Captive Bar, Triple Action, Steel, 25mm Gate	9
764802	Karabiner, Captive Eye, Autolock, Steel, 18mm Gate	10
2297045G	Karabiner, Screwgate, Alloy, 25mm Gate	11
765807	Karabiner, Screwgate, Alloy, 15mm Gate	12
765802	Delta Rapid, Steel, 15mm Gate	13



## MSA Workman® Energy-Absorbing Lanyards (Standards: OSHA/ANSI/CSA)

Energy-absorbing lanyards are a component of a personal fall arrest system. They provide a means of connection between the back D-Ring of MSA full-body harnesses and a qualified anchorage and anchorage connector. The energy absorber keeps fall arrest forces below ANSI, CSA & OSHA limits and deceleration distance is controlled to meet the applicable standard requirements. The lanyard is available in web, rope, and cable configurations with a variety of snaphooks.



10072472

10072473



10072475

PART NO:	Harness Connection	Anchorage Connection	Type	Standards
10072472	36C	36C	Single leg Tie-back	CSA Z259.11, OSHA
10072473	36C	(2) 36C	Twin leg Tie-back	CSA Z259.11, OSHA
10072475	36C	(2) 36CL	Twin leg	CSA Z259.11, OSHA

## MSA Workman® Energy-Absorbing Lanyards (EN Certified)

Energy-absorbing lanyards provide a means of connection between the fall arrest attachment of MSA full body harnesses and a qualified anchorage and anchorage connector. The energy absorber keeps fall arrest forces below EN limits and deceleration distance is controlled to a maximum of 175 cm. The lanyard is available in web and kernmantel rope configurations with a variety of snaphooks.

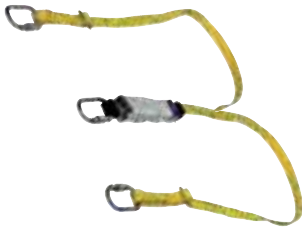
MSA Workman energy-absorbing lanyards are lightweight with a low-profile body. The energy absorber includes a clear, durable protective cover over the labels to increase service life and allow for easy inspection. Certified to EN 354, EN 355.

### MSA Workman® Single-Leg Energy-Absorbing Lanyards



PART NO:	Material	Length	Carabiner on Harness Connection	Carabiner/Hook on Anchorage Connection
10115741	Webbing	2.0 m adjustable	Steel screwgate	Steel screwgate
10115742	Webbing	2.0 m adjustable	Steel screwgate	Steel scaffold
10115747	Webbing	2.0 m adjustable	Aluminium screwgate	Aluminium scaffold
10115748	Webbing	2.0 m adjustable	Aluminium screwgate	Aluminium snaphook
10115749	Webbing	2.0 m adjustable	Aluminium autolock	Aluminium autolock
10115763	Kernmantel rope	1.5 m fixed	Aluminium screwgate	Aluminium screwgate
10115765	Kernmantel rope	1.5 m fixed	Aluminium screwgate	Aluminium scaffold
10115776	Kernmantel rope	2.0 m fixed	Aluminium autolock	Aluminium autolock

## MSA Workman® Twin-Leg Energy-Absorbing Lanyards



PART NO:	Material	Length	Carabiner on Harness Connection	Carabiner/Hook on Anchorage Connection
10115751	Webbing	2.0 m adjustable	Steel screwgate	Steel scaffold
10115758	Webbing	2.0 m adjustable	Aluminium autolock	Aluminium autolock
10115778	Kernmantel rope	1.5 m fixed	Steel screwgate	Steel scaffold
10115785	Kernmantel rope	1.5 m fixed	Aluminium autolock	Aluminium autolock

## ArcSafe Lanyards



ArcSafe Lanyards are SEI-certified to the requirements of ASTM F887-05 standard for electrical arc flash protection. ArcSafe energy-absorbing lanyards utilise a tear-tape design to keep fall arrest forces below 4kN.

PART NO:	Description
10101886	ArcSafe Lanyard, single-leg, hitch loop, 1 x 19 mm snaphook
10101887	ArcSafe Lanyard, twin-leg, hitch loop, 2 x 19 mm snaphooks

## Sure-Stop EN Lanyards



The Sure-Stop EN energy-absorbing lanyards are engineered with precision and are manufactured using only those components that meet our high quality standard. With a compact, tear-tape energy absorber design, the Sure-Stop EN lanyards ensure that the fall arrest forces transmitted to your body do not exceed 6 kN. In addition, Sure-Stop EN lanyards feature:

- A clear energy absorber cover to protect product labels from damage and make inspection easier
- A choice of high-strength web, rope, or cable models
- A variety of snaphook options for virtually any application
- Single-leg and twin-leg models (twin-leg models provide 100% continuous connection)
- Fixed and adjustable lengths (1.8 m adjustable length lanyards adjust down to 1.2 m)
- A standard length of 1.8 m
- Certified to EN 355

### Expanyard Energy-Absorbing Lanyards

- Designed to stretch to a 1.8 m length (relaxed length is 1.5 m)
- When relaxed, it stays close to the user's body, reducing the possibility of trip and snag hazards

PART NO:	Description
10114328	Sure-Stop EN Lanyard, 25 mm nylon web, fixed length, 2 x 19 mm snaphooks
10114329	Sure-Stop EN Lanyard, 25 mm nylon web, twin-leg, fixed length,
10114334	Sure-Stop EN Lanyard, cable, fixed length, 2 x 19 mm snaphooks
10114335	Sure-Stop EN Lanyard, cable, twin-leg, fixed length, 3 x 19 mm snaphooks
10114331	Sure-Stop EN Lanyard, Expanyard style, 2 x 19 mm snaphooks
10114332	Sure-Stop EN Lanyard, Expanyard style, twin-leg, 3 x 19 mm snaphooks
10114333	Sure-Stop EN Lanyard, Expanyard style, twin-leg, 1 x 19 mm snaphook,



### Thermatek Lanyard



This specialized energy-absorbing lanyard features a Tuffweld protective cover that is superior to Nomex and a unique energy absorber design that incorporates a Kevlar back-up strap that is resistant to charring and burning.

- 6 mm cable
- 1.8 m length
- Certified to EN 355

PART NO:	Description
10101888	Thermatek Lanyard, cable, 2 x 19 mm snaphooks

### Restraint Lanyards



A fall restraint lanyard connection is used between the anchor point and the body harness to prevent the user from reaching the fall area and should never be used to arrest a fall.

To meet all your application needs and environments, MSA Restraint Lanyards are made available in web, 16mm rope, wire rope and kernmantel rope.

Certified to EN 354 (Restraint Lanyard) and EN 358 (MSA Workman Restraint Lanyard).

PART NO:	Description
10102692	Restraint Lanyard, cable, 1.5m fixed length, 19mm snaphooks, 35mm width
10102693	Restraint Lanyard, polyester rope, 1.8m fixed length, 19mm snaphooks, 35mm width
10115795	MSA Workman Restraint Lanyard, webbing, 1.5m fixed length, steel screwgate carabiner
10115796	MSA Workman Restraint Lanyard, webbing, 1.5m fixed length, aluminium screwgate carabiner
10115797	MSA Workman Restraint Lanyard, webbing, 2m fixed length, steel screwgate carabiner
10115798	MSA Workman Restraint Lanyard, webbing, 2m fixed length, aluminium screwgate carabiner
10115799	MSA Workman Restraint Lanyard, webbing, 2m adjustable length, steel screwgate carabiner
10115800	MSA Workman Restraint Lanyard, webbing, 2m adjustable length, aluminium screwgate carabiner
10115801	MSA Workman Restraint Lanyard, kernmantel rope, 2m adjustable length, aluminium carabiner

### Rebar Assemblies



Designed for work positioning applications such as tying rebar or constructing concrete forms.

Certified to EN 358. Also meets ANSI A10.32.

PART NO:	Description
10102695	Rebar web assembly, 25 mm polyester, 33 cm legs, with sliding large snaphooks
10102689	Rebar chain assembly, 19 mm snaphook with 52 mm gate

### Lineman's Pole Strap



The Lineman's Pole Strap is used to assist a lineman in climbing wooden poles and for work positioning. Certified to EN 358. Also meets ANSI A10.32.

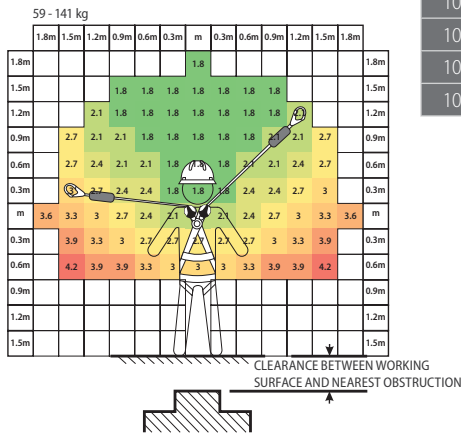
PART NO:	Description
10102694	10102694 Lineman's pole strap, nylon, adjustable to max. length of 1.78 m, steel snaphooks

## Workman® Personal Fall Limiters

### Workman® Mini PFL NEW



Standard MSA Workman Mini PFL Anchorage Location



The Workman Mini Personal Fall Limiter (PFL) is the premier option in MSA's line of self-retracting devices (SRDs) for users working at heights. The internal fast-acting pawl lock mechanism offers the most versatile, compact, self-retracting device on the market, allowing for increased user safety at lower heights.

Fall limiter design stops a fall quickly, providing workers with the ability to tie off at lower levels below the D-ring. Housing design is compact and lightweight; users can replace their standard 1.8 m energy-absorbing lanyards. The Workman Mini PFL is available in both single and twin-leg configurations.

PART NO:	Description	Single	Twin	Length (m)	Anchorage Connector	Harness Connector
10160394	Workman Mini PFL	■		1.8	36C Snaphook	TA Karabiner
10160393	Workman Mini PFL	■		1.8	36CL Scaffold Hook	TA Karabiner
10157850	Workman Mini PFL	■		1.8	Triple Action Karabiner	TA Karabiner
10160396	Workman Mini PFL, Twin Leg		■	1.8	36C Snaphook	TA Karabiner
10160395	Workman Mini PFL, Twin Leg		■	1.8	36CL Scaffold Hook	TA Karabiner
10157867	Workman Mini PFL, Twin Leg		■	1.8	Triple Action Karabiner	TA Karabiner
10159667	Workman Mini PFL, Twin Leg		■	1.8	AL36C Snaphook	DA Karabiner
10157866	Workman Mini PFL, Twin Leg		■	1.8	AL36CL Scaffold Hook	DA Karabiner

### Workman® PFL



With its solid design and fast-acting brake mechanism, you can be confident that the Workman Personal Fall Limiter (PFL) will be there for you when you need it most.

PART NO:	Description	Single	Twin	Length (m)	Anchorage Connector	Harness Connector
10093348	Workman PFL	■		3.7	LC Snaphook (Alloy)	-
10093349	Workman PFL	■		3.7	LI Snaphook (Steel)	-
10099598	Workman PFL	■		3.7	Triple Action Karabiner	-

### Workman® Twin Leg PFL



The Workman Twin Leg Personal Fall Limiter increases worker productivity by providing greater mobility and continuous connection (100% tie-off) while moving from one location to another, offering a great alternative to twin leg shock-absorbing lanyards. The Workman Personal Fall Limiter features the patent-pending ARCA™ Harness Connection. The innovative, integral ARCA Harness Connection makes the Workman Personal Fall Limiter easier to use than any product on the market – simply insert D-ring into the slot and you're ready to work! This intuitive design offers several important safety features.

PART NO:	Description	Single	Twin	Length (m)	Anchorage Connector	Harness Connector
10126099	Workman Twin Leg PFL		■	2	Swivel Snaphook	ARCA
10126098	Workman Twin Leg PFL		■	2	Swivel Scaffold Hook	ARCA

## MSA Latchways® Self Retracting Lifeline

### Latchways® SRL **NEW**



The Latchways® Standard SRL has undergone extensive, independently verified testing to ensure consistent, reliable performance. Developed with unique features to provide a smarter, safer and stronger alternative to traditional SRLs, the Latchways® Standard SRL is as versatile as it is flexible. Suitable for a wide range of applications, it's available with cable and webbing lanyards in four different lengths.

The Latchways® SRL is easily recertified with just a few simple tools. Recertification can be performed locally by authorized representatives, or on site ensuring the Latchways® SRL has minimal time out of action.

PART NO:	Description	Lifeline	Lifeline Length (m)	Anchorage Connector	Harness Connector
62007-00UK	Latchways® SRL	Web	7	36C Snaphook	DA Karabiner
62407-00UK	Latchways® SRL	Galv Cable	7	Swivel DA Snaphook	DA Karabiner
62207-00UKTL	Latchways® SRL	SS Cable	7	SS TA Swivel Karabiner	DA Karabiner
62410-00UK	Latchways® SRL	Galv Cable	10	Swivel DA Snaphook	DA Karabiner
62210-00UKTL	Latchways® SRL	SS Cable	10	SS TA Swivel Karabiner	DA Karabiner
62415-00UK	Latchways® SRL	Galv Cable	15	Swivel DA Snaphook	DA Karabiner
62215-00UKTL	Latchways® SRL	SS Cable	15	SS TA Swivel Karabiner	DA Karabiner

## MSA Latchways® Specialised Self Retracting Lifeline

### Latchways® Sealed SRL **NEW**



The Latchways® Sealed SRL was designed for hands-free use in harsh environments such as oil rigs, wind turbines and other offshore applications, helping keep workers safe and focused on the task at hand.

Our Sealed SRL has undergone extensive, independently verified testing to ensure consistent, reliable performance.

With cutting-edge technology and engineering, the Latchways® Sealed SRL is one of the most advanced and cost effective SRLs on the market. Like our other SRLs, the Latchways® Sealed SRL may be recertified on site by a Latchways®-trained service technician, helping to lower the cost of ownership and provide a strong return on investment.

PART NO:	Description	Lifeline	Lifeline Length (m)	Anchorage Connector	Harness Connector
62809-00UK	Latchways® Sealed SRL	Galv Cable	9	SS Swivel Snaphook	DA Karabiner
62810-00UKTL	Latchways® Sealed SRL	SS Cable	9	SS TA Swivel Karabiner	DA Karabiner
62815-00UK	Latchways® Sealed SRL	Galv Cable	15	SS Swivel Snaphook	DA Karabiner
62816-00UKTL	Latchways® Sealed SRL	SS Cable	15	SS TA Swivel Karabiner	DA Karabiner
62825-00UK	Latchways® Sealed SRL	Galv Cable	25	SS Swivel Snaphook	DA Karabiner
62826-00UKTL	Latchways® Sealed SRL	SS Cable	25	SS TA Swivel Karabiner	DA Karabiner
62840-00UK	Latchways® Sealed SRL	Galv Cable	40	SS Swivel Snaphook	DA Karabiner
62841-00UKTL	Latchways® Sealed SRL	SS Cable	40	SS TA Swivel Karabiner	DA Karabiner
62820-00UK	Latchways® Sealed SRL	SS Cable	15	SS Swivel Snaphook	DA Karabiner

### Latchways® Leading Edge SRL **NEW**



The Latchways® Leading Edge SRL is intended to be used as a connecting element within a personal fall arrest system when either the user is working vertically or horizontally. The device is also designed for use in applications where falls may occur over a Type A\* leading edge, including edges, such as roofing, wooden beams, leading edge construction, etc.

PART NO:	Description	Lifeline	Lifeline Length (m)	Anchorage Connector	Harness Connector
62705-00EU	Latchways® Leading Edge SRL	Galv Cable	5	SS Swivel Snaphook	DA Karabiner
62707-00EU	Latchways® Leading Edge SRL	Galv Cable	7	SS Swivel Snaphook	DA Karabiner
62710-00EU	Latchways® Leading Edge SRL	Galv Cable	10	SS Swivel Snaphook	DA Karabiner

## Workman® Self Retracting Lanyards

### Workman® SRL



MSA's Workman SRL provides the best value for your money! With lightweight design and durable, thermoplastic housing with impact-absorbing bumpers, the Workman SRL will not only be accepted by users, but also provides years of dependable service.

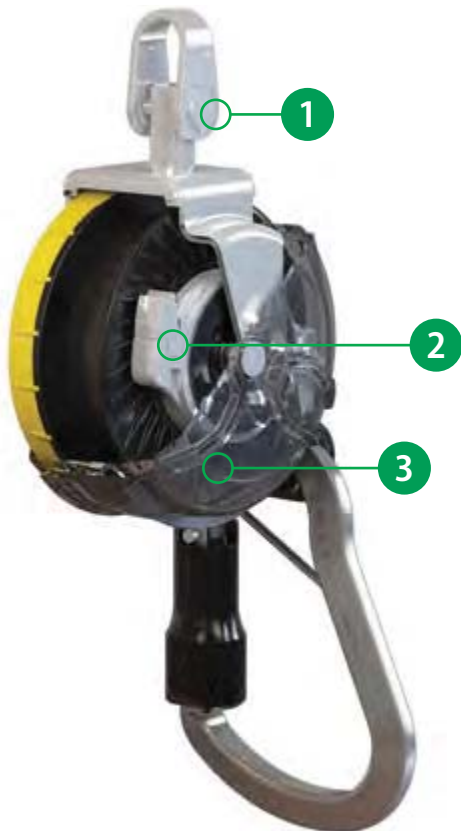
Certified to EN 360

PART NO:	Description	Lifeline	Lifeline Length (m)	Anchorage Connector	Harness Connector
10119507	Workman SRL	Galvanised Cable	9	36CS Swivel Snaphook	-
10120724	Workman SRL	Stainless Steel Cable	9	36CS Swivel Snaphook	-
10163875	Workman SRL	Stainless Steel Cable	9	SS TA Swivel Karabiner	-
10121777	Workman SRL	Stainless Steel Cable	15	36CS Swivel Snaphook	-
10163876	Workman SRL	Stainless Steel Cable	15	SS TA Swivel Karabiner	-

## MSA Latchways® Personal Fall Limiters

### Latchways® Mini PFL **NEW**

The Latchways® Mini Retractable Lanyard is the most compact & lightweight self-retracting lanyard ever developed using multiple spring radial energy-absorbing technology. This new design eliminates the need for an external energy-absorber outside of the housing making it the smallest retractable lanyard on the market.



### Available Connectors



- A** AL36CL Scaffold Hook
- B** 36C Snaphook
- C** AL Swivel TA Karabiner
- D** AL TA Karabiner
- E** 36CS Swivel Snaphook
- F** 36CL Scaffold Hook

#### 1 Free range of motion

A fully rotating attachment point for complete flexibility - both 360° and 180°.

#### 2 Precision engineering

A structurally reinforced pawl mechanism.

#### 3 Highly durable

The Mini PFL has a tough polycarbonate casing which is transparent to allow for easy visual inspection of critical internal components.

#### Superior materials

Components manufactured from high-grade stainless steel and engineered plastics.

PART NO:	Description	Single	Twin	Lifeline Length (m)	Anchorage Connector	Harness Connector
63011-00AEU	Latchways® Mini PFL, 1.8m	■		1.8	AL36CL Scaffold Hook	DA Karabiner
63011-00BEU	Latchways® Mini PFL, 1.8m	■		1.8	36C Snaphook	DA Karabiner
63011-00CEU	Latchways® Mini PFL, 1.8m	■		1.8	AL Swivel TA Karabiner	DA Karabiner
63011-00DEU	Latchways® Mini PFL, 1.8m	■		1.8	AL TA Karabiner	DA Karabiner
63011-00EEU	Latchways® Mini PFL, 1.8m	■		1.8	36CS Swivel Snaphook	DA Karabiner
63011-00FEU	Latchways® Mini PFL, 1.8m	■		1.8	36CL Scaffold Hook	DA Karabiner
63011-00MEU	Latchways® Mini PFL, 1.8m	■		1.8	AL36CL Scaffold Hook	AL TA Karabiner
63011-00NEU	Latchways® Mini PFL, 1.8m	■		1.8	AL TA Karabiner	AL TA Karabiner
63111-00AEU	Latchways® Mini PFL, Twin Leg, 1.8m		■	1.8	AL36CL Scaffold Hook	Twin Link
63111-00DEU	Latchways® Mini PFL, Twin Leg, 1.8m		■	1.8	AL TA Karabiner	Twin Link
63111-00EEU	Latchways® Mini PFL, Twin Leg, 1.8m		■	1.8	36CS Swivel Snaphook	Twin Link
63111-00FEU	Latchways® Mini PFL, Twin Leg, 1.8m		■	1.8	36CL Scaffold Hook	Twin Link
63013-00AEU	Latchways® Mini PFL, 3m	■		3	AL36CL Scaffold Hook	DA Karabiner
63013-00BEU	Latchways® Mini PFL, 3m	■		3	36C Snaphook	DA Karabiner
63013-00CEU	Latchways® Mini PFL, 3m	■		3	AL Swivel TA Karabiner	DA Karabiner
63013-00DEU	Latchways® Mini PFL, 3m	■		3	AL TA Karabiner	DA Karabiner
63013-00EEU	Latchways® Mini PFL, 3m	■		3	36CS Swivel Snaphook	DA Karabiner
63013-00FEU	Latchways® Mini PFL, 3m	■		3	36CL Scaffold Hook	DA Karabiner
63013-00MEU	Latchways® Mini PFL, 3m	■		3	AL36CL Scaffold Hook	AL TA Karabiner
63013-00NEU	Latchways® Mini PFL, 3m	■		3	AL TA Karabiner	AL TA Karabiner
63900-04	Twin-Link Connector for Latchways® Mini PFL					-

## Anchorage Connectors

Anchorage Connectors are compatible for use with MSA fall arrest and confined space entry/retrieval components. They have a minimum breaking strength of 22.24kN. Certified to EN 795. Also meet ANSI Z359.1-2007, ANSI A10.32.

### PointGuard Anchorage Connector Strap



The PointGuard Anchorage Connector provides a secure point of attachment for residential construction applications.

- Quick and easy to install
- Economical
- Residential construction
- Durable polyester webbing

PART NO:	Description
10103224	PointGuard anchorage connector strap, 0.9m with D-ring

### MSA Workman Anchorage Sling



- 25mm webbing
- 1.5m or 2m lengths available
- Certified to EN 354, EN 795

PART NO:	Description
10115802	MSA Workman anchorage sling, 1.5m
10115803	MSA Workman anchorage sling, 2m

### Thermatek Anchorage Connector Strap



- Kevlar webbing and stitching
- Contrasting colours allow for easier inspection
- Includes replaceable wear pad to protect webbing from abrasion
- Heat- and burn-resistant

PART NO:	Description
10103224	PointGuard anchorage connector strap, 0.9m with D-ring

### Anchorage Connector Cable



- Standard 1.5m length
- Vinyl coated
- 6.35mm galvanised cable
- Flemish eye spliced

PART NO:	Description
10103219	Anchorage connector cable, 1.8m

## Anchorage Connector Strap



- Standard 1.5m length (custom lengths available)
- D-ring on one end and a sewn loop on the other end
- Available in nylon or polyester webbing

PART NO:	Description
10103223	Anchorage connector strap, nylon, 1.5m

## Anchorage Cable Sling



- Standard lengths of 1.2m and 1.8m (custom lengths available)
- Vinyl coated
- 6.35mm galvanised cable
- Flemish eye spliced

PART NO:	Description
10110162	Anchorage cable sling, 1.2m
10110163	Anchorage cable sling, 1.8m

## Rope Grabs and Vertical Lifelines

### SureGrab Rope Grab and Vertical Lifeline Kit



The 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 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.

The Vertical Lifeline Kit consists of a 16 mm diameter, 18 m length polyblend rope and a 19 mm snaphook on one end. It comes with rope grab.

PART NO:	Description
10104072	Rope grab fall arrester, automatic/manual, open body, 44.5 mm x 30.5 cm web lanyard, 19 mm snaphook
10110161	Vertical Lifeline Kit, 18 m, 19 mm snaphook, incl. rope grab

## Temporary 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 22.24kN rated anchorage and can be rigged using many standard components, reducing the need for special or "engineered" equipment.

### Gravity Sure-Line Horizontal Lifeline



The Gravity Sure-Line system is a temporary lightweight synthetic rope system that is suspended between two anchorage points.

- Includes integral energy absorber.
- 16 mm black nylon kernmantel rope
- Length adjustable (3m to 18m)
- Rated for two workers
- Includes 2 cable anchor slings
- Comes with storage bag
- Certified to EN 795, Class C

PART NO:	Description
10110164	Gravity Sure-Line Horizontal Lifeline, 18 m including carabiners, anchorage cable slings 1.8 m, bag

Sure-Line Rope Horizontal Lifeline Minimum Clearance Required Below Working Surface

Line Length	1-Worker-System		2-Worker-System	
	1.8m Lanyard	SRL	1.8m Lanyard	SRL
3m	4.34m	3.78m	4.44m	4.01m
6m	4.72m	4.19m	5.18m	4.57m
9m	5.21m	4.62m	5.89m	5.05m
12m	5.64m	5.00m	6.60m	5.58m
15m	6.09m	5.38m	7.36m	6.17m
18m	6.53m	5.81m	7.92m	6.75m

Clearances based on lifeline 1.2m above working surface

# Descent and Rescue Equipment

## Descent and Rescue Anchorages

### Workman® Tripod



MSA Tripods make confined space entry with vertical descent easy.

The Workman® Tripod features internal leg-locking mechanism, maximum height indicator on the tripod legs, cut-resistant leg pin, retention chains, recessed product labels, reduced weight and integral carrying strap. The Workman® Tripod can be set up and dismantled without the use of tools.

- Automatic hinge lock legs with incremental adjustment
- Skid resistant feet
- Tripod head features four separate attachment points
- Accessories can attach to any leg for faster setup
- Telescoping legs up to 2.44m (8 ft) high do not tangle when unit is collapsed for easier transportation and storage

PART NO:	Description
10102002	Workman® Tripod
10169369	Duffel Bag
10105612	Workman® Tripod Leg Base Support Strap

## Rope Rescue Systems

### SuretyMan Rescue Utility System



- The Rescue Utility System is primarily used for raising and lowering people or equipment in rescue and industrial work access and confined space applications
- Pulleys are equipped with a built-in anti-reversing lock
- Offers rapid deployment, is virtually maintenance free, and is rated for two-person load
- Compact and lightweight with a standard system weight of 7.7 kg
- Rated capacity of 272 kg for personnel and materials
- Offered as a 4:1 mechanical advantage system with hand ascender included

PART NO:	Description
SRS15200	SuretyMan Rescue Utility System, 200' (61m) length
SRS15300	SuretyMan Rescue Utility System, 300' (91.4m) length
SRS15400	SuretyMan Rescue Utility System, 400' (122m) length
10093608	SuretyMan Rescue Utility System, 500' (152.4m) length
10033360	SuretyMan Rescue Utility System, 600' (183m) length
10101135	SuretyMan Rescue Utility System, 800' (244m) length
10037101	Left-hand ascender with securing rope
10035698	Right-hand ascender with securing rope

## Confined Space Equipment

### Workman® Winch



- The Workman® Winch is a rugged, versatile and economical choice for lifting, lowering and positioning of personnel and materials within confined space applications
- Integral bracket design allows assembly onto the Workman® Tripod in less than 50 seconds using the existing tripod leg pins - no extra tools required for assembly
- Designed for a maximum 140kg workload for personnel and 225kg for materials
- The tough thermoplastic housing ensures high performance in the harshest environments
- Offers an integral and ergonomic carry grip with a unique, foldable crank handle for simple storage inside the included carry bag
- Level wind mechanism for a tangle-free cable drum
- Built in shock absorber and double braking system
- Compatible with Workman® Tripod (Split mount pulley to be ordered separately PN: 506222)
- RFID-enabled product for simplified product tracking and inspection
- Certified to EN1496 Class B

PART NO:	Description
10147296	20.0M, Stainless Steel Cable
10154688	30.0M, Stainless Steel Cable

### Workman® Rescuer



- MSA's Workman® Rescuer provides fast, easy and intuitive fall protection with integral bi-directional retrieval capability. Not only does the Workman® Rescuer arrest the fall, its retrieval capability allows the fallen worker to ascend or descend to a safe location. This durable, economical addition to the Workman Series of products offers fast installation and setup, ideal for applications where time and ease of use are a priority. The Workman Rescuer is also a stand-alone retractable device, as the carrying handle may be used as an anchorage attachment.
- User capacity up to 140 kg for personnel
  - Stainless steel 3/16" wire rope
  - Integral mounting bracket
  - Colour-coded switch for retrieval mechanism activation
  - Ergonomic, stainless steel carry handle can also be used as anchorage connection point
  - Built in shock absorber
  - Robust aluminium housing with thermoplastic bumpers
  - Self-locking swivel snaphook with load indicator
  - Stow-able, foldable crank handle
  - RFID-enabled
  - Certified to EN 360, complies with AS/NZS 1891.3

PART NO:	Description
10158192	Workman® Rescuer, Stainless Steel Cable, 15m



## Emergency Retrieval Self Retracting Lanyards

### Dynavac®II



- Dynavac® II is a fall arrest rated self retracting lanyard with emergency retrieval capabilities
- User is able to reset device from retrieval mode to fall arrest mode
- Dynevac® II utilises a safety pin feature for field re-set from fall arrest mode to retrieval mode back to fall arrest mode
- Compatible with Workman® and Lynx® Tripods, davit systems and qualified anchorage connector (Split mount pulley and brackets to be ordered separately)
- Certified to EN 360 and complies with AS/NZS 1891.3:1997

PART NO:	Description
10007782	Dynavac®II, 16.0M, Stainless Steel Cable
10007783	Dynavac®II, 30.0M, Stainless Steel Cable

Note: Separate Mounting Bracket (506232 - 16m; 506216 30m), Pulley (506222) and Karabiner (765807) are required for use with Tripod

### Brackets and Pulleys



These brackets and pulleys are compatible with the Lynx® Tripod and Workman® Tripod.

PART NO:	Description
506232	Dynevac®/Lynx® - Mounting Bracket to Tripod - 16m unit
506216	Dynevac®/Lynx® - Mounting Bracket to Tripod - 30m unit
506222	Split Mount Pulley for to Tripod/Davit Arm
506622	Dynevac®/Lynx® - Mounting Bracket to Davit Arm - 16m unit
506362	Dynevac®/Lynx® - Mounting Bracket to Davit Arm - 30m unit

## Descent Accessories

### Spreader Bars



### Latchways® Retrieval SRL



An innovative and fail-safe self-retracting lifeline, sealed to IP58, complete with retrieval winch.

The Latchways® Retrieval SRL has been designed specifically for use within offshore oil and gas applications and to complement the broad range of sealed self-retracting lifelines already offered by Latchways. Whether it be moon pool access or tank cleaning operations, the Latchways® Retrieval SRL can provide rescue cover to all essential areas of the rig where winch retrieval is a necessity. In the event of a fall over the rig floor, the user may also be raised or lowered using the winch mechanism.

When connected to the device, a worker has reassuring continuous hands-free fall protection with unhindered mobility. The audible clicking of the Latchways® Retrieval SRL is a constant reminder that the SRL functions correctly - even in the harshest of environments. The Latchways® Retrieval SRL may be recertified by Latchways or a Latchways trained and approved service technician, offering exceptionally-low cost of ownership.

PART NO:	Description
62820-00UK	50ft (15m) Latchways® Sealed SRL W/Emergency Retrieval, Stainless Steel Cable, Stainless Steel Snaphook

- Workman® Spreader Bars are the ideal harness accessory for personnel descent and retrieval via the harnesses shoulder loops
- Available with steel or aluminium snaphooks

PART NO:	Description
10112910	Snaphook, Steel
10112911	Snaphook, Aluminium

## Rescue Equipment

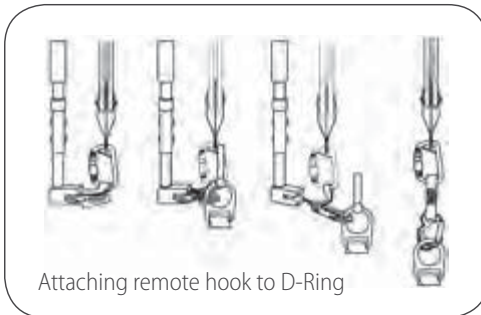
### Sked Rescue Stretcher System



- Suitable for confined space, high angle or technical rescue, and traditional land based applications
- Equipped for horizontal hoisting by helicopter or vertical hoisting in caves or industrial confined spaces
- Durable plastic provides rigid protection for the patient
- Weight 8.6kg
- Includes Sked Stretcher and removable webbing handles, cordura backpack/towing harness, and horizontal and vertical lift swings

PART NO:	Description
SRSSK200	Complete System
SRS36382	Replacement 4PT Bridle

### Rescue Pole/Remote Hook



Adjustable Pole  
Part No.  
SFP675009

Storage Bag  
Part No.  
SRB675009



Pole Adapter  
Part No.  
SCE109001



Remote Hook  
Part No.  
SRCA401

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.

### Pole Top Rescue Kit



- The Anthron Descender is a manually operated, controlled descent device most commonly used for suspended, work positioning, self-evacuation, or rescue operations
- A cam assembly provides friction on the rope to hold a load or allow the load to descend at a controlled rate
- The system consists of 11mm kernmantle rope, the Anthron Descender an anchor strap and carry bag
- Proper roping and rigging diagrams are on the side of the Anthron device, which can be installed or removed at any point on the rope and has a working load of 136 kg
- Can also be inverted so that the device can be attached to an approved anchor, and the rope end attached to an injured worker. In this orientation, the injured worker can be lowered while being controlled by a rescuer

PART NO:	Description
229680-15.0	15.0M Kernmantle Rope Length
229680-25.0	25.0M Kernmantle Rope Length
229680-30.0	30.0M Kernmantle Rope Length
229680-50.0	50.0M Kernmantle Rope Length

### 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).

PART NO:	Description
10030025	Fall Protection Rescue Kit

# Confined Space Entry Kits

Confined Space Kits come complete with all the essentials required for a safe entry, exit and retrieval from a confined space. Intuitively designed, the Workman® range of products minimises extensive user training and setup time by being simple, easy to use and fast to assemble. Kits come standard with a Workman® Premier Harness (medium), Workman® Tripod, duffel bag and spreader bar.

Kits include all components required for assembly.

## Confined Space Entry Kit with Workman® Winch and Workman® Rescuer

PART NO.	8'Tripod	15m Workman® Rescuer	20m Workman® Winch	Pulleys	Karabiners	Workman® Premier Full Body Harness	Workman® Spreader Bar	Workman® Tripod Duffel Bag
768392	■	■	■	2	2	■	■	■

## Confined Space Entry Kits with Rescue Safe Retrieval System

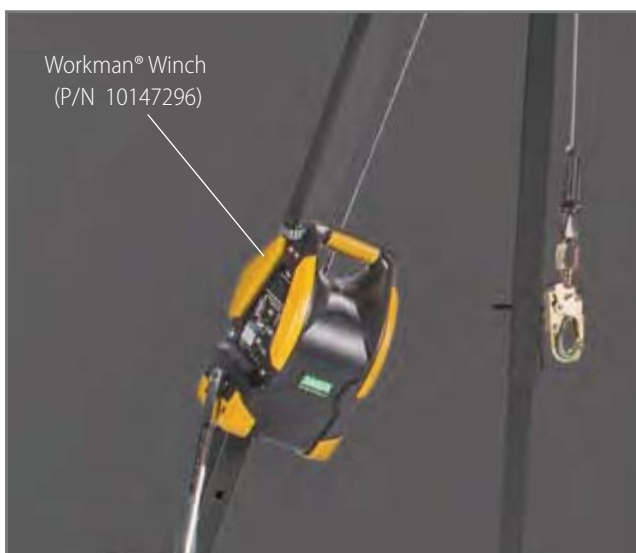
PART NO.	8'Tripod	Rescue Safe Retrieval Rope Kit 3:1, 15M Travel	Rescue Safe Retrieval Rope Kit 4:1, 15M Travel	Workman® Premier Full Body Harness	Workman® Spreader Bar	Workman® Tripod Duffel Bag
767790	■	■		■	■	■
767791	■		■	■	■	■

## Confined Space Entry Kit with Workman® Winch

PART NO.	8'Tripod	20m Workman® Winch	30m Workman® Winch	Pulleys	Karabiners	Workman® Premier Full Body Harness	Workman® Spreader Bar	Workman® Tripod Duffel Bag
767939	■	■		1	2	■	■	■
768017	■		■	1	2	■	■	■

## Confined Space Entry Kit with Workman® Rescuer

PART NO.	8'Tripod	15m Workman® Rescuer	Pulleys	Karabiners	Workman® Premier Full Body Harness	Workman® Spreader Bar	Workman® Tripod Duffel Bag
768384	■	■	1	2	■	■	■



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Contact your local MSA Representative for ordering information.

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# MSA - The Safety Company

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**NOTE:** This Bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warning or cautions provided have been thoroughly read and understood. Only they contain the complete and detail information concerning proper use and care of these products.

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