

MSA

The Safety Company



SAFETY EQUIPMENT CATALOGUE

Managing Director's Message



With increasing firmness and consistency in the markets that we serve, we at MSA have increased investment in our people, in their training and education, and in the equipment and processes that we use to produce quality safety products. These are offered in quantities to meet the needs of its distribution partners and in packaging which has earned MSA membership of The National Packaging Covenant.

MSA's global R&D is now delivering exciting new developments, many of which have been influenced through the feed back obtained from you, our customers and distribution partners.

Our total commitment to customer satisfaction supported by the improved functionality of our new SAP business platform, brings steady improvement in our key performance indicators and customer service levels.

I am pleased to present to you MSA's latest catalogue, with more of the information that you have told us you want and need. The MSA Sales, Marketing and Customer Service teams throughout Australia and New Zealand, supported by our Operations and Logistics personnel, stand ready to serve you at all times. Please don't hesitate to call us.

We sincerely trust you find the latest MSA Catalogue exciting and beneficial to your day to day activities.

Kind regards

Peter Pickerill
Managing Director
MSA (Aust.) Pty. Limited

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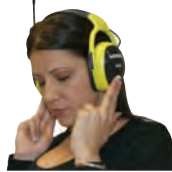
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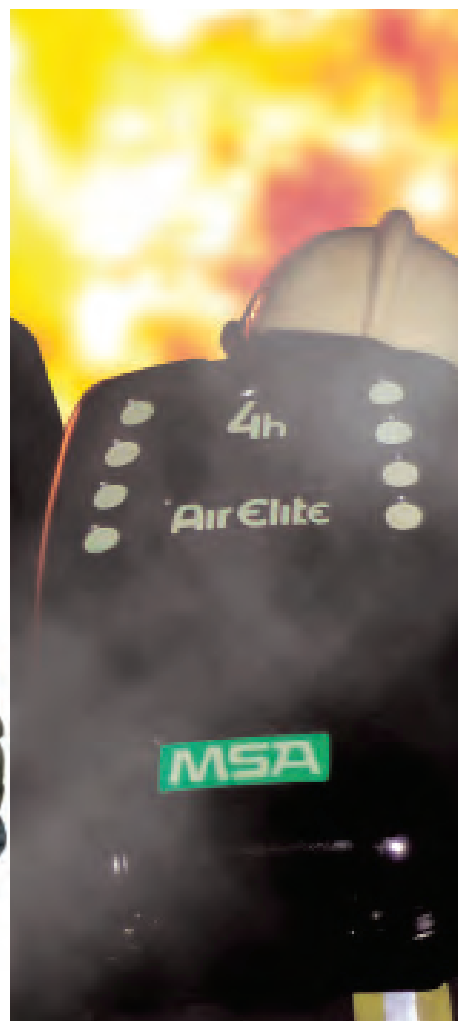
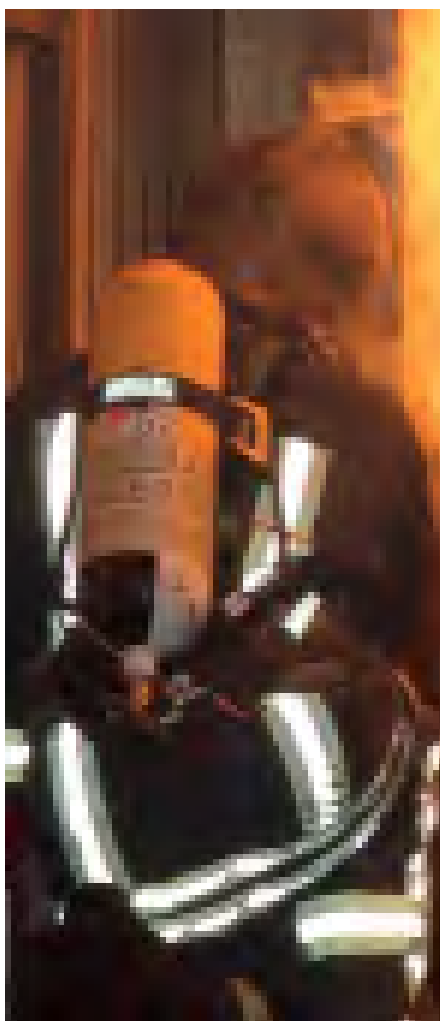
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Supplied Air Respirators

Independent of the Ambient Atmosphere



MSA offers various Supplied Air Respirators [SAR] that function independently of the ambient air.

The Self Contained Breathing Apparatus (SCBA) system, including the AirGo and AirMaXX models, is independent of the ambient atmosphere, meaning the user is not tied to a specific location. They offer a wide variety of features and applications. The same applies to the short duration breathing apparatus BD mini.

MSA offers the monitoring systems alpha Personal Network with telemetric capabilities and the personal alert safety system motionSCOUT.

MSA's chemical oxygen apparatus are ideal for escape/or working applications wherever outbreaks of toxic gases, particles or the sudden occurrence of oxygen deficiency are to be expected.

The Airline system is designed for applications of extended duration; e.g. in confined spaces. This system connects to an external air supply, offering cost effective protection. If you have to be prepared for situations where sudden oxygen deficiency can occur, an MSA compressed air escape device is an option well worth considering.

For MSA's test bench and compressor range please see the chapter "Workshop Solutions" on page 238.

Supplied Air Respirators

Self-Contained Breathing Apparatus

The Alternative for Work and Emergency



MSA's self-contained breathing apparatus systems are designed for long life and low maintenance. To meet every application and budget the long duration SCBA's can be configured according to individual requirements.

With two backplates and four harnesses, MSA has a range of carriers for your SCBA Pneumatic System that also has add-ons.

The patented SingleLine air management system combines five features in just one hose. Another

enhancement is the alpha Personal Network, a modular personal monitoring and alarm system with telemetric capabilities. The new personal alert safety system motionSCOUT detects the cessation of bodily movement and activates an automatic or manual alarm.

MSA's wide range of full facemasks, demand valves and cylinders complete the whole system.

Supplied Air Respirators

Breathing Apparatus

For each application the optimal solution

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



AirGo Pro

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 [refer alpha SL page 6]. 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, class 2II
1 G c IIC T6 [pending]



Part No.	Description
766279	AirGo Pro SL UE PS MaXX DV
766611	AirGo Pro SL 3SPS MaXX
766694	AirGo Pro SL UE PS MaXX w/swivel



Breathing Apparatus



AirGo Compact in MSA wall box A

AirGo Compact

Rule #1: expect the unexpected. The AirGo Compact SCBA 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 [refer AutoMaXX® page 11]. 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, class 2
II 1 G c IIC T6 [pending]

Part No.	Description
766278	AirGo Compact UE MaXX
766610	AirGo Compact 35PS MaXX
766695	AirGo Compact Z UE PS MaXX



AirMaXX

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 are using 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
II 1 G c IIC T6 [pending]



Part No.	Description
766281	AirMaXX SL UE PS MaXX
766280	AirGo MaXX SL UE MaXX

CBRN Approval: Today's First Responder

Teams face a widened array of threats. There is an increased likelihood that they are called to assist in a terrorist attack involving chemical or biological warfare agents. Most AirMaXX configurations can be converted to CBRN devices by using a specialised AutoMaXX demand valve.

Complies with EN 137 and BS8468-1.

Part No	Description
10098524	AutoMaXX-AS-B-CBRN

Supplied Air Respirators

Breathing Apparatus



AirMaXX eXXtreme

AirMaXX eXXtreme

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

The harness is made from extra heavy duty and non-flammable aramid fibres. The airline is protected from fire and heat by insulating tunnels on the shoulder pads. The optional rapid cylinder exchange coupling alphaCLICK, the cylinder is simply snapped onto the pressure reducer [refer alphaCLICK page 6].

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

EN 137

II 1 G c IIC T6 [pending]

Part No.	Description
765944	AirMaXX eXXtreme SL UE MaXX



Options and Accessories

Flexibility for MSA Breathing Apparatus



Hose-In-Hose Technology

alpha SingleLine 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 the 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 Rapid Cylinder Exchange Coupling

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]
765941	AirMaXX SL UE MaXX alphaCLICK

Several upgrade sets and work shop solutions are available.

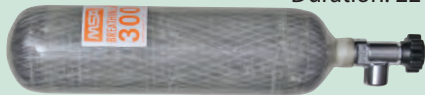


Supplied Air Respirators

Options and Accessories

Composite Cylinders

223358 3 litre 300 bar Fully wrapped carbon fibre cylinder + Valve
Duration: 22 mins Approximate Weight Full: 3.4 kg



228196 4.3 litre 300 bar Fully wrapped carbon fibre cylinder + Valve
Duration: 31 mins Approximate Weight Full: 6.4 kg



227921 6.8 litre 300 bar Fully wrapped carbon fibre cylinder + Valve
Duration: 51 mins Approximate Weight Full: 6.9 kg



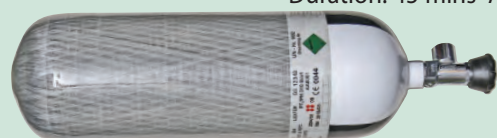
229796 9 litre 300 bar Fully wrapped carbon fibre cylinder + Valve
Duration: 67 mins Approximate Weight Full: 8.1 kg



228195 2 litre 300 bar Fully wrapped carbon fibre cylinder + Valve
Duration: 15 mins Approximate Weight Full: 2.6



765008 9 litre 200 bar Fully wrapped carbon fibre cylinder + Valve
Duration: 45 mins Approximate Weight Full: 8.5 kg



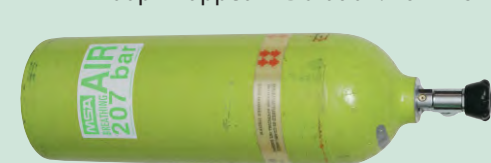
Steel Cylinders

228315 6 litre 300 bar Steel Cylinder + Valve
Duration: 45 mins Approximate Weight Full: 10.4 kg



Hoop Wrapped

222378 9 litre 207 bar Fully wrapped 3S Glass cylinder + Valve
Hoop Wrapped Duration: 46 mins Approximate Weight Full: 10.4 kg



Protection and Storing

In order to protect the high-value composite cylinders, MSA offers a protective cover of nonflammable material in black or yellow with reflective imprint.

The compressed air breathing apparatus can be transported in a rugged carrying case.

Part No.	Description
4075877	Protective cover, black
4075878	Protective cover, yellow
10049021	Carrying case [accommodates any BA set with up to two cylinders]



Protective Cover



Carrying Case

Rescue Sets

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

Part No.	Description
10045764	RespiHood
10040152	Rescue set in pouch
10040153	Rescue set in carrier



RespiHood

T-Pieces

Part No.	Description
4075818	T-piece 156/300 bar, for 2x 6/6.8l composite cylinders



Monitoring Systems

Alarm Systems with Telemetric Capabilities & PASS

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 and Manifold

alphaSCOUT

At the core of the alpha electronic system is a unique personal monitoring and signal device called alphaSCOUT. The wireless and fully disengaged alphaSCOUT is the next generation of ICU [Integrated Control Unit]. 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 to whistle.

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

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
II 1G EEx ia II C T3/T4

Part No.	Description
10069775	alphaSCOUT TM [complete set incl. long distance radio, batteries and alphaTAG] Aust
10065874	alphaSCOUT Support bracket attachment [set of 10]
10065873	alphaTAG [set of 5]
10071717	Labels for alphaTAG [10 sheets of 42 labels]
10065875	TAGwriter [including USB cable]



alphaSCOUT



TAGwriter



alphaHUD in Ultra Elite mask

alphaHUD

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.



alphaHUD

Part No.	Description
10086118	alphaHUD [incl. battery]

Supplied Air Respirators

Monitoring Systems



alphaMITTER on AirMaXX backplate

alphaMITTER

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

EN 137
II 1G EEx ia T3/T4

Part No.	Description
10058211	alphaMITTER, retrofittable to the AirGo Pro, AirMaXX, eXXtreme SL [Q], incl. support bracket for alphaSCOUT
10069803	alphaMITTER, retrofittable to BD 96 SL [Q], incl. support bracket for alphaSCOUT



alphaBASE standard plus PC

alphaBASE standard & battery-powered

For the base station you can choose between several sender/receivers. The alphaBASE standard works in combination with any PC. An external aerial with magnetic foot can optionally be used for vehicle mounted applications.

A battery-powered version of the alphaBASE or the alphaBASE standard can also be used with the xplore TABLET PC. The combination battery-powered alphaBASE and xplore TABLET PC allow full freedom of movement for mobile applications.

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

Part No.	Description
10073767	alphaBASE standard Aust [incl. power supply, direct and external aerial and software]
10070847	Aerial with magnetic foot [attaches to alphaBASE standard]
10073764	alphaBASE battery-powered [incl. 2 batteries and charger] Aust
765383	Spare battery for alphaBASE battery-powered



xplore TABLET PC with alphaBASE battery powered

xplore TABLET PC

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
765684	xlpore TABLET PC [incl. software]

Monitoring Systems



motionSCOUT



motionSCOUT

The next generation of standalone personal alert safety systems (PASS) 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 bicolour 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 shoulderstrap or hip belt. An easy-to-use key version [switch ON by pulling out the key], with manual alarm reset function, as well as an optional temperature sensor are available.

EMC: 89/336 EEC, EN 61000-6-2, EN 61000-6-3 [pending]
EX II 1G EEx ia IIC T4 [pending]

Part No.	Description
10088475	motionSCOUT
10088476	motionSCOUT K [key version]
10088477	motionSCOUT T [with temperature sensor]
10088478	motionSCOUT K-T [key version with temperature sensor]

alphaCONTROL

alphaCONTROL is a full substitute to conventional tally boards. All details of a classic accountability system are captured. Monitoring the supply of breathing air of the individual teams with the software provides a higher level of safety. Documentation becomes more reliable and efficient.



Part No	Description
10072272	alphaCONTROL monitoring software

Supplied Air Respirators

Lung Governed Demand Valves

Handy and Rugged



AutoMaXX®-AS and Ultra Elite

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 hosing 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.



AutoMaXX®-AS



AutoMaXX®-AS and Ultra Elite
H-PS-MaXX-F1

EN 137

Part No.	Description
10023688	AutoMaXX®-AS
10043133	AutoMaXX®-AS short
10036272	AutoMaXX®-AS-G

Moreover you have the choice of the following options:
G: rubber medium pressure line for industrial applications,
Short: shorter medium pressure line [50 cm].



LA 96-AS and 3S-H-F1

LA 96

Extremely compact and light, the LA 96 series gives an unrestricted view for the user. LA 96 features a servo-controlled air supply, an extremely flexible medium pressure line using high-performance materials. Precise and low-dosed positive pressure [LA 96 AS] increases the breathing comfort and provides additional protection. You can choose between several versions: normal or positive pressure, thread or plug connection.



LA96-AS

EN 137

Part No.	Description
4075850	LA 96-AS
4075906	LA 88-AS

AS = positive pressure, for PS masks with MSA quick connector

Supplied Air Respirators

Full Face Masks - SAR

MSA's expertise in breathing protection is demonstrated by the range of full face masks it offers. Comfort and quality and useful accessories meet every conceivable challenge.

Refer page 40 - APR Accessories

The SAR masks are available for compressed airline [refer page 20 - Compressed Airline] and self-contained breathing apparatus. For APR masks [air purifying respirators] refer pages 31-36.



3S-PS-MaXX and AutoMaXX-AS



3S-PF and LA 96-AE



3S-PS-MaXX and AutoMaXX-AS

3S

The 3S mask, worldwide top seller over the last 30 years, has been enhanced to improve comfort. In addition to a proven design, the 3S mask offers everything a mask wearer needs. Comfortable materials, good communication through speech diaphragm, anti fogging air flow, low weight, no pressure points, low breathing connector. Also available as positive pressure version with M 45 x 3 thread or MSA plug connector.

EN 136, class 3

Part No.	Description
2055000	3S
2055779	3S small
2055718	3S Silicone
2055763	3S-PF-Si, Silicone
2055751	3S-PS
2055764	3S-PS-Si, Silicone
10031422	3S-PS-MaXX
10031388	3S-PS-MaXX-Si, Silicone

MaXX = for positive pressure with MSA quick connector, for AutoMaXX-AS 3S-PS

PF = for positive pressure with thread M 45 x 3

PS = for positive pressure with MSA plug connector



3S



3S Silicone



3S-PS

Supplied Air Respirators

Full Face Masks - SAR



Ultra Elite-PS-MaXX and AutoMaXX-AS

Ultra Elite®

Innovative full face mask manufactured from a specially developed black rubber [silicone option also available] for two-way breathing [valve breathing], with standard thread for respiratory filters, airline 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. Five-point rolling buckle harness and good speech communication. Also available as positive pressure mask with MSA plug connector.



Ultra Elite



Ultra Elite-PS-MaXX-Silicon and AutoMaXX-AS

EN 136, class 3

Part No.	Description
2056700	Ultra Elite®
2056779	Ultra Elite® - Small
2056718	Ultra Elite® Silicone
2056770	Ultra Elite®-EZ
2056751	Ultra Elite® PS
2056789	Ultra Elite®-PS small
10026552	Ultra Elite®-PS with transponder
2056764	Ultra Elite®-PS-Si, silicone
2056772	Ultra Elite®-PS-EZ
10031385	Ultra Elite®-PS-MaXX
10031383	Ultra Elite®-PS-MaXX, small
10031384	Ultra Elite®-PS-MaXX-Si, silicone
10031382	Ultra Elite®-PS-MaXX-EZ
10031381	Ultra Elite®-PS-MaXX-EZ small



Ultra Elite Silicone

EZ = Easy-Don Nomex harness
 MaXX = for positive pressure with MSA quick connector, for AutoMaXX®-AS
 PS = for positive pressure with MSA plug connector



Ultra Elite PS

Short Duration SCBAs



BD mini

The MSA compressed air breathing apparatus BD mini is especially suited for short-duration work in confined spaces. Its small size and the variable design permit various carrying modes. With a connection for compressed airline breathing apparatus [available as accessory] the BD mini can be connected to a factory airline system or a cylinder cascade.

EN 137

Part No	Description
762082	BD Mini AutoMaXX® DV Ultra Elite Mask
228195	Fully wrapped carbon fibre cylinder and valve 2 litre - 300 bar. 15 minute duration

Supplied Air Respirators

Chemical Oxygen Technology

Proven Technology - Optimised Function



Self-contained MSA chemical oxygen [KO₂] breathing apparatus for use in oxygen deficient atmospheres, as well as hazardous atmospheres containing smoke and toxic gases offer protection for periods of between 15 minutes and 4 hours for a variety of applications ranging from simple assistance and salvage to tough fire fighting and rescue missions.

The chemical oxygen apparatus applies the proven principle of regenerating the breathing air with oxygen produced by the chemical Potassium Hyperoxide. Simultaneously retaining the carbon dioxide and humidity contained in the exhaled air, these breathing apparatus are

very reliable and almost maintenance-free for extended storage periods.

The breathing apparatus AirElite 4h is designed for missions of long duration, in particular for use in tunnels, high-rise buildings and large storage facilities. In underground mining it is used by the rescue teams for quick rescue missions.

Common to all MSA chemical oxygen apparatus is their capacity to be stored for long periods in a condition of immediate readiness, combined with minimum maintenance requirements.

Chemical Oxygen Technology



AirElite 4h

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, 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. Training conversion kit for efficient and economical training in ambient air. 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 [without mask and oxygen canister kit]
10065153	Full face mask 3S-R AirElite
10065154	Full face mask Advantage® AirElite
10065373	Oxygen canister kit
10065375	AirElite 4h-TR, Trainer conversion kit



Supplied Air Respirators

Airline Systems

The Combination of Performance and Ergonomics



Airline systems are suited for long-duration work restricted to one location or at adverse sites, if, for example, a confined entry does not permit use of a compressed air breathing apparatus.

You could choose between light duty airline, compressed air systems and fresh air hose devices.

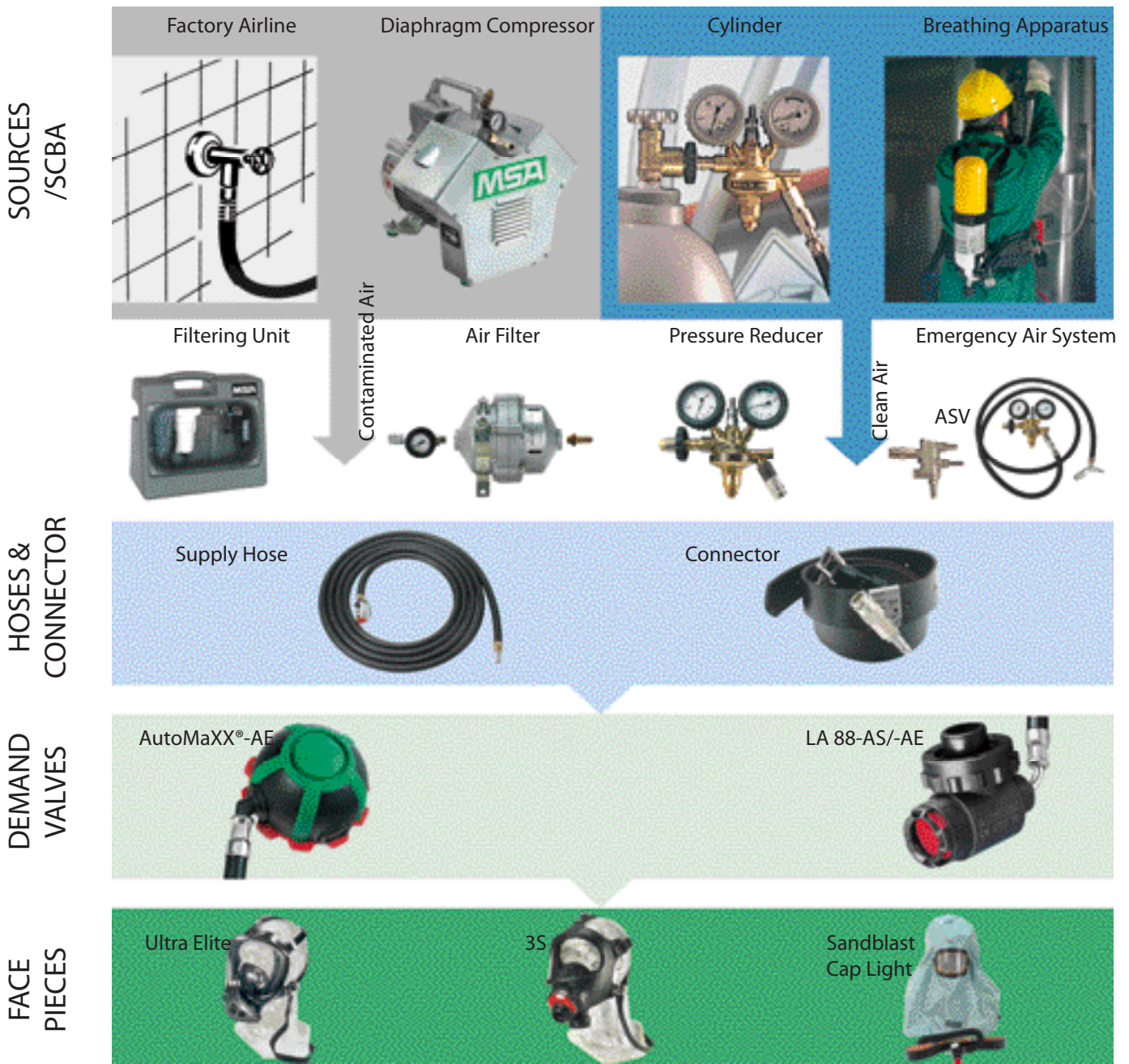
Supplied Air Respirators

Compressed Airline Breathing Apparatus

The Independence in Breathing

MSA compressed airline breathing apparatus, according to EN139. 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 (eg. factory airline), from a compressed air cylinder or



Supplied Air Respirators

Compressed Airline Breathing Apparatus



BD mini

The short-duration compressed air breathing apparatus BD mini can be used in combination with an airline as an emergency device. For details on BD mini please see page 14. A special Y-piece with non return valve permits the use of the BD mini combined with a compressed airline breathing apparatus.

Part No.	Description
762082	BD Mini AutoMaXX® DV UE Mask
4066857	Y-Piece

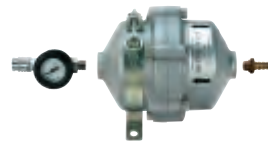


Filtering Unit

Air purification for up to 4 users in 2 stages:

- 1] dirt, oil and water aerosols removal
- 2] oil vapour and odour removal

Part No.	Description
226926D	Compressed air filtering unit 2 man/2 Stage complete with stand and regulator



Air Filter

Filter to purify compressed air [for up to 2 users].

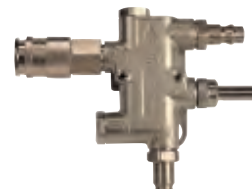
Part No.	Description
3043986	Filter housing
3043994	Filter connectors
3043987	Airline filter cartridge CO
3043989	Airline filter cartridge AB/St
3043993	Airline filter cartridge A
4066804	Y-Piece



Pressure Reducer

Directly connected to a cylinder 200 bar or 300 bar.

Part No.	Description
4066830	Pressure reducer



ASV- Automatic Switch Valve

The ASV connects a compressed airline to a BD mini. This ensures a continuous supply of air in case the external air source [e.g. factory airline] fails.

Part No.	Description
4066700	Automatic switch valve

Test Pressure Gauge

Part No.	Description
4080929	Test Pressure gauge for cylinder pressure. 400 bar

Supplied Air Respirators

Compressed Airline Breathing Apparatus



Emergency Air System

The emergency air supply system will be connected to a 200 or 300 bar cylinder, the Y-piece will be connected to an air supply system [e.g. MEKO compressor] and via the supply hose to the belt connector. If the operating pressure drops, the air comes automatically from the cylinder.

Part No.	Description
4066845	Emergency air system with Y-Piece



LA 88-AS

Normal pressure lung governed demand valves. The connection to the mask is a handwheel with thread according to EN148-1 [round thread].

The LA 88 has a small and lightweight design.

Part No.	Description
4075906	LA 88-AS [MSA plug connector]



Supply Hose

Compressed air supply hose with 344 coupling, anti static, with one-hand operation safety couplings.

Part No.	Description
762046-5.0	Air supply hose, 5 m
762046-10.0	Air supply hose, 10 m
762046-20.0	Air supply hose, 20 m
762046-15.0	Air supply hose, 15 m
762046-30.0	Air supply hose, 30 m
762046-40.0	Air supply hose, 40 m



Ultra Elite

Innovative full face mask of black special rubber for two-way breathing. Ideal for airline appliances. Various versions are available, refer Ultra Elite (page 13).

EN 136

Part No.	Description
2056751	Ultra Elite PS
2056700	Ultra Elite

PS = for positive pressure with MSA plug connector



Connector

For connecting a full face mask and a demand valve with the airline supply hose.

Part No.	Description
4066803	Connecting piece
3043918	Leather waist belt



3S

The 3S full face mask offers everything a mask wearer needs. Various versions are available, refer 3S (page 12).

EN 136

Part No.	Description
2055751	3S-PS
2055000	3S

PS = for positive pressure with MSA plug connector



AutoMaXX®-AE

The state-of-the-art lung governed demand valve AutoMaXX is handy, light and has a conveniently rounded shape with positive pressure. The version G, with rubber medium pressure line for industrial applications, is available as well.

Part No.	Description
10036272	AutoMaXX®-AS-G
10023688	AutoMaXX®-AS



Sandblast Cap Light

The right choice for sandblasting. It consists of a silicone full face mask, protective hood, pressure reducer with gauge, airline and leather waist belt.

EN 139, EN 271

Part No.	Description
3050720	Sandblast Cap light

Supplied Air Respirators

Airline

AirFlo Lite



AirFlo-Lite and Demi-Hood LDA

The AirFlo-Lite constant flow valve combines performance and ergonomics, making it one of the most versatile constant flow devices available. The unique belt holder attachment allows the device to be worn either left handed or right handed, while maintaining the correct alignment of the supply hoses. An integral activated charcoal filter removes residual odours from the air supply and has a visual end of service life indicator. To alert the wearer of any air supply failure there is an audible low flow alarm.



AirFlo-Lite

EN 1835 [for the AirFlo device]

Part No.	Description
10018972	AirFlo-Lite constant flow valve incl. waistbelt
10019632	AirFlo-Lite filter [pack of 3]
10019053	Flow tester, AirFlo-Lite
4066851	Compressed air filtering unit [without couplings]
10041368	Kit of AirFlo-Lite couplings



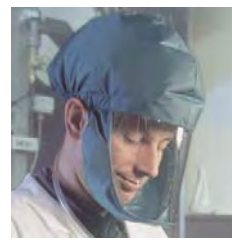
Full Hood LDA

Giving a higher degree of protection to the neck, throat and head, without restricting movement.

The full hood is also fitted with an exhalation valve for increased comfort and a drawstring neck seal.

EN 1835, class 3

Part No.	Description
10019047	Full Hood LDA
10019631	Full Hood LDA [pack of 3]



Demi Hood LDA

Lightweight, simple design, with elastic face seal allowing a high degree of freedom of movement.

Suitable for use in areas where the hazard is gaseous and non-irritating to skin.

EN 1835, class 2

Part No.	Description
10019044	Demi Hood LDA
10019630	Demi Hood LDA [pack of 3]



Airline Respirator

- Slight positive pressure of air inside facepiece preventing contaminants seeping through
- Complete respirator assembly Ultravue full facepiece
- Breathing hose support belt with quick-disconnect assembly
- Ideal for non-immediately dangerous to life & health environments

Part No.	Description
764964	Respirator Airline AutoMaXX®



Cavair

Cavair Light Duty Airline Breathing Apparatus

The Cavair light duty compressed airline equipment is versatile and comfortable, combining performance and ergonomics to be one of the most versatile constant flow devices available from MSA. It is especially suited as lasting protection against harmful vapors, gases, dust, chemicals and small particles that may fly around.

Air is supplied through an air tube that is connected to the air source by a control valve fixed to the waist belt. Cover lenses protect the lens against dirt and scratches and are easily replaceable. A hood worn underneath the apparatus protects the top and back of the head against dirt

Part No.	Description
3050750	Cavair Light Duty Air Line Breathing Apparatus

Supplied Air Respirators

Compressed Air Escape Devices

For a Safe Escape



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.

EN 1146

Duration: 15 minutes



Part No.	Description
10017668T	S-Cap-Air with charged cylinder

Air Quality Control



Airtester HP

Airtester HP and MP

Monitoring set for compressed breathable air from factory airlines, compressor and cylinders.

Airtester HP for high pressure range of 200 bar and 300 bar breathing air compressors and cylinders.

Airtester MP for medium pressure compressors and supplied air lines. Up to 10 bar. Quick and simple determination of water, carbon monoxide, carbon dioxide and oil content, as well as nitrous gases content with detector tubes at factory airlines, compressors and filter units.

EN 12021

Part No.	Description
3188701	Airtester HP
5185710	Airtester MP

Air Purifying Respirators



Toxic material can enter the body in many ways. 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.

Key Elements of a Sound Respiratory Protection Program

The fundamental goal of any respiratory protection program is to control occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, and/or vapors. The defense against these contaminants is simple: Keep them out of the air that workers breathe. Always implement engineering and/or administrative controls first. If contaminants still present a hazard, you must provide appropriate respiratory protection for every employee who might be exposed to them.

MSA can help you take a comprehensive approach to sound Respiratory Protection practices. This guide will help you understand the need for respirators, how they work, and what their limitations are.



AS/NZS 1715/1716 & OSHA (the Occupational Safety and Health Administration) and NIOSH (the National Institute of Safety and Health) regulations define all the specific requirements which must be followed, including the capabilities of appropriate respiratory protection. Employers must follow the requirements of these governmental regulations, both the general regulations which apply to all workplaces and the specific regulations for exposures in their particular industry, such as lead, silica dust, asbestos, and benzene.

A Written Respiratory Protection Program

1

Administration

The first step in a respiratory protection program is to establish written standard operating procedures governing the selection and use of respirators. Regular inspection and evaluation of the program will ensure its continued effectiveness.

A written program will help employers, employees, and compliance officers gauge the adequacy of a given program. When developing your written respiratory protection program, be sure to include the following elements:

- Procedures for selecting respirators for use in the workplace
- Fit-testing procedures for tight fitting respirators (including a signed copy of employees' fit-test records)
- Procedures for proper use of respirators in routine and emergency situations
- Procedures and schedules for cleaning, disinfecting, storing, inspecting, and repairing respirators
- Procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere supplying respirators
- Medical evaluations of employees required to wear respirators

Employees must clean, store, and maintain the respirator so that its use does not present a health hazard.

Voluntary Respirator Use

An employer must provide respiratory protection for employees who ask for it or let employees use their own respiratory protection, if such respirator use will not create a hazard. Fit testing is not required for voluntary use.

If possible, one person should administer these procedures, to ensure consistent co-ordination and direction and optimum results. The actual respiratory protection program itself for each workplace depends upon many factors, and may require input from specialists such as safety personnel, industrial hygienists, health physicists and physicians.

Respiratory Hazards

Before a respiratory protection program is initiated, it is important to first understand the types of respiratory hazards inherent to your industry. Of the three normally recognized ways toxic materials can enter the body - through the (1) gastrointestinal tract, (2) skin, and (3) lungs - the respiratory system presents the quickest and most direct avenue of entry. This is because of the respiratory system's direct relationship with the circulatory system and the constant need to oxygenate tissue cells to sustain life.

The three basic classifications of respiratory hazards are:

- oxygen-deficient air
- particulate contaminants;
- gas and vapor contaminants.

Oxygen Deficiency

Normal ambient air contains an oxygen concentration of 20.8% by volume. When the oxygen level dips below 19.5%, the air is considered oxygen-deficient. Oxygen concentrations below 16% are considered

The 7 Key Elements

Chances are that you are already familiar with the need for and use of respirators in your workplace, but as with anything else, it doesn't hurt to review your current program against standard operating procedures governing the selection and use of respirators. According to program details in OSHA's Respiratory Protection Standard (29 CFR 1910.134), the seven key elements that every respiratory protection program should contain are:

1. A written plan detailing how the program will be administered.
2. A complete assessment and knowledge of respiratory hazards that will be encountered in the workplace.
3. Procedures and equipment to control respiratory hazards, including the use of engineering controls and work practices designed to limit or reduce employee exposures to such hazards.
4. Guidelines for the proper selection of appropriate respiratory protective equipment.
5. An employee training program covering hazard recognition, the dangers associated with respiratory hazards, and proper care and use of respiratory protective equipment.
6. Inspection, maintenance, and repair of respiratory protective equipment.
7. Medical surveillance of employees.

unsafe for human exposure because of harmful effects on bodily functions, mental processes, and co-ordination.

It is important to note that life-supporting oxygen can be further displaced by other gases, such as carbon dioxide. When this occurs, the result is often an atmosphere that can be dangerous or fatal when inhaled.

Oxygen deficiency also can be caused by rust, corrosion, fermentation, or other forms of oxidation which consume oxygen. The impact of oxygen-deficiency can be gradual or sudden.

Air Purifying Respirators

Particulate Contaminates

Particulate contaminants can be classified according to their physical and chemical characteristics and their physiological effect on the body. The particle diameter in microns (1 micron = 1/25,400 inch) is of utmost importance. Particulates below 10 microns in diameter have a greater chance to enter the respiratory system, and particles below 5 microns in diameter are more apt to reach the deep lung or alveolar spaces.

In healthy lungs, particles from 5 to 10 microns in diameter are generally removed from the respiratory system by a constant cleansing action that takes place in the upper respiratory tract. However, with excessive "dust" exposures or a diseased respiratory system, the efficiency of the cleansing action can be significantly reduced.

The various types of airborne particulate contaminants can be classified as follows:

Fumes - An aerosol created when solid material is vaporized at high temperatures and then cooled. As it cools, it condenses into extremely small particles - generally less than 1 micron in diameter. Fumes can result from operations such as welding, cutting, smelting, or casting molten metals.

Dusts - An aerosol consisting of mechanically produced solid particles derived from the breaking up of larger particles. Dusts generally have a larger particle size when compared to fumes. Operations such as sanding, grinding, crushing, drilling, machining, or sand blasting are the worst dust producers. Dust particles are often found in the harmful size range of 0.5 to 10 microns.

Mists - An aerosol formed by liquids, which are atomized and/or condensed. Mists can be created by such operations as spraying, plating, or boiling, and by mixing or cleaning jobs. Particles are usually in the size range of 5 to 100 microns.

Gas and Vapor Contaminants

Gas and vapor contaminants can be classified according to their chemical characteristics. True gaseous contaminants are similar to air in that they possess the same ability to diffuse freely within an area or container. Nitrogen, chlorine, carbon monoxide, carbon dioxide, and sulfur dioxide are examples. In terms of chemical characteristics, gaseous contaminants may be classified as follows:

Inert Gases - These include such true gases as helium, argon, neon, etc. Although they do not metabolize in the body, these gases represent a hazard, because they can produce an oxygen deficiency by displacement of air.

Acidic Gases - Often highly toxic, acidic gases exist as acids or produce acids by reaction with water. Sulfur dioxide, hydrogen sulfide and hydrogen chloride are examples.

Alkaline Gases - These gases exist as alkalis or produce alkalis by reaction with water.

Ammonia and phosphine are two examples.

Vapors are the gaseous state of substances that are liquids or solids at room temperature. They are formed when the solid or liquid evaporates.

In terms of chemical characteristics, vaporous contaminants may be classified as follows:

Organic Compounds - Contaminants in this category can exist as true gases or vapors produced from organic liquids. Gasoline, solvents, and paint thinners are examples.

Organometallic Compounds - These are generally comprised of metals attached to organic groups. Tetraethyllead and organic phosphates are examples.

Hazard Assessment

2

Proper assessment of your specific hazard(s) is the first important step for protection. This requires a thorough knowledge of processes, equipment, raw materials, end-products, and by-products that can create an exposure hazard. First, you must make an initial determination of workplace conditions. This simple calculation of exposures does not require sampling of the environment. Factor in workplace size, ventilation, the amount of the regulated substance present, the type of operation, and the proximity of the workers to the source of emissions.

According to OSHA, personal exposure monitoring is the "gold standard" for determining employee exposure. It is the most reliable approach for assessing the level and type of respiratory protection required. Sampling which uses methods appropriate for contaminants(s) should represent the worst-case exposures or enough shifts and operations to determine the accurate range(s) of exposure.

To determine an atmosphere's oxygen content or concentration levels of particulate and/or gaseous contaminants, air samples must be taken with proper sampling instruments during all conditions of operation. The sampling device and the type and frequency of sampling (spot testing or continuous monitoring) will be dictated by the exposure and operating conditions.

Breathing zone samples are recommended and sampling frequency should be sufficient to assess the average exposure under the variable operating and exposure conditions.

Should contaminant concentrations exceed exposure limits recommended by the National Occupational Health and Safety Commission (NOHSC), (ACGIH), OSHA, or NIOSH, hazard control procedures must be implemented promptly.

OSHA emphasizes that, because workplaces differ, each respirator program must be

tailored to the specific conditions of the workplace. The recently revised OSHA standard serves as a "building block standard", because it consolidates respiratory protection provisions that previously were included in sections dealing with specific chemical substances.

The employer is required to evaluate respiratory hazards in the workplace, identify relevant workplace and use factors, and base respirator selection on these factors.

Exposure Monitoring

Exposure monitoring plays a critical role in the respirator selection process. The results from such testing will help you determine whether respiratory protection is needed and, if it is, the type of respirator that is required. Generally, respirator selection is based on three factors:



- The results of your atmospheric monitoring or sampling program
- The accepted ACGIH, OSHA, or NIOSH exposure limits for the substance(s) present
- The maximum use concentration (of a substance) for which a respirator can be used

Exposure limits include:

NOHSC - National Exposure Standards

ACGIH - Threshold Limit Values (TLVs)

OSHA - Permissible Exposure Limits (PELs)

NIOSH - Recommended Exposure Levels (RELs)

AIHA - Workplace Environmental Exposure Levels (WEELs) These values are guides for exposure concentrations that healthy individuals can normally tolerate for eight hours a day, five days a week, without harmful effects. Unless otherwise noted, exposure limits are eight-hour, time-weighted-average (TWA) concentrations.

In general, gas and vapor exposure limits are expressed in ppm by volume (parts of contaminant per million parts of air), while particulate concentrations are expressed as mg/m³ (milligrams of concentrations per cubic meter of air). For substances that can exist in more than one form (particulate or gaseous), concentrations are expressed in both values.

Air Purifying Respirators

IDLH (Immediately Dangerous to Life or Health) characterizes an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.

It is important to note that exposure limits and other exposure standards are constantly changing as more data is gathered about specific chemicals and substances. As such, you must be certain that you are using the most recent data when determining allowable exposure levels for employees.

Hazard Control

3

Hazard control should start at the process, equipment, and plant design levels where contaminants can be controlled effectively at the outset. With operating processes, the problem becomes more difficult. In all cases, however, attention should be given to the use of effective engineering controls to eliminate and/or reduce exposures to respiratory hazards. This includes consideration of process encapsulation or isolation; use of less toxic materials in the process' and suitable exhaust ventilation, filters, and scrubbers to control the effluents.

Because it is sometimes not practical to maintain engineering controls that eliminate all airborne concentrations of contaminants, proper respiratory protective devices should be used whenever such protection is required.

Respirator Selection

4

Selecting respirators entails knowing what level of respiratory protection employees need, as well as which size respirator is right for any face and facial contours.

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

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

- Toxicity (TLV or TWA)
- Maximum Expected Concentration
- Oxygen level
- IDLH concentration
- Warning properties (adequate or not)
- Sorbent limitations

- Facepiece fit
- Mobility requirements
- Type of use (routine, escape, or emergency entry)

Types of Respirators

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

Air-Purifying Respirators (APR's) range from simple disposable cup masks to low-maintenance halfmask facepieces with cartridges and/or filters to the more complex PAPR's with full-facepieces, or hoods.

- APR's for particulates use filters to capture dusts, mists, and fumes. Filters do not protect against gases or vapors, and generally become less effective as particles accumulate on the filter and plug spaces between the fibers. Filtering APR's require filter replacement when the user finds it difficult to breathe through them.
- Gas and vapor APR's employ chemical cartridges or canisters to remove hazardous gases or vapors from the air. They do not protect against airborne particles. Made to protect against specific gases or vapors, they provide protection only as long as the cartridge's absorbing capacity is not depleted.

The service life of a chemical cartridge depends upon many factors and can be

estimated in various ways. Cartridges and canisters require an end-of-service-life indicator (ESLI) or a change schedule, based on objective information or data that will ensure that canisters and cartridges are changed before the end of their useful life. In the respirator program, the employer must describe the information and data relied upon and the basis for the canister and cartridge change schedule as well as the basis for reliance on the data.

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

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

- Air-Line Respirators are used for extended periods in non-IDLH atmospheres. They use an air-line hose to deliver clean breathing air from a stationary source of compressed air for prolonged periods of time. Although comparatively lightweight, air-line respirators can limit users' mobility because of the air-line hose that must be attached.
- Self-Contained Breathing Apparatus (SCBA) have an open-circuit design that provides air rated for 30 to 60 minutes. They consist of a wearable, clean-air supply and a tight-fitting facepiece, and are used for short duration entrance or escape from atmospheres that are or may be IDLH. They offer relatively unrestricted movement.
- Combination SAR's are air-line devices used for extended work periods in atmospheres that are or may be IDLH. They have an auxiliary self-contained air cylinder that can be used if the primary air supply fails. The air cylinder can also be used for entry into or escape from IDLH atmospheres, such as confined spaces.

Employers are required to provide employees using SAR's with breathing gases of high purity.

Training

5

For proper use of any respiratory protection device, it is essential that the user be properly instructed in its selection, use, and maintenance. Both supervisors and workers must be so instructed by competent persons.

Minimum training must include:

- Methods of recognizing respiratory hazards
- Instruction in the hazards and an honest appraisal of what could happen if the proper respiratory protection device is not used



Air Purifying Respirators

- Explanation of why more positive control is not immediately feasible. This must include recognition that every reasonable effort is first being made to reduce or eliminate the need for respiratory protection
- A discussion of why various types of respiratory protection devices are suitable for particular purposes
- A discussion of the device's capabilities and limitations
- Instruction and training in actual use of respiratory protection equipment, and definite and frequent supervision to assure that it continues to be properly used
- Classroom and field training to recognize and cope with emergency situations

Before an employee may be required to use any respirator with a negative-or positive-pressure tight-fitting facepiece, the employee must be fit tested with the same make, model, style, and size of respirator that will be used.

Training should provide personnel with an opportunity to handle the device, have it fitted properly, test its face-to-facepiece seal, wear it in normal air for a long familiarity period, and, finally, wear it in a test atmosphere. OSHA requires fit tests to ensure proper fit for workers who use respirators.

Fit Testing

AS/NZS 1715 / OSHA requires fit testing for any face mask (full or half) designed to have a tight seal along the face, whether it is used in a positive-or negative-pressure mode, and whether it is disposable or not.

Qualitative fit test methods are subjective in nature and rely on the judgment of the test subject. They are essentially a pass/fail fit test to assess the adequacy of respirator fit.

Quantitative testing methods rely on objective data to determine a proper fit. An assessment of the adequacy of respirator fit is determined by numerically measuring the amount of leakage into the respirator.

If the required fit factor is greater than 100, i.e., when higher levels of respiratory protection are needed, quantitative fit-testing must be conducted. Most experts agree that quantitative fit-testing provides the most accurate information, because it uses actual test data, rather than depending on the respirator wearer's sense of smell and taste (subjective responses).

OSHA requires these eight exercises for both qualitative and quantitative fit testing:

- 1 - normal breathing
- 2 - deep breathing
- 3 - head side to side
- 4 - head up and down
- 5 - talking out loud
- 6 - grimacing (quantitative only)
- 7 - bending
- 8 - normal breathing



Respirator Care

6

Proper inspection, maintenance, and repair of respiratory protective equipment are mandatory to ensure success of any respiratory protection program. The goal is to maintain the equipment in a condition that provides the same effectiveness as it had when it was first manufactured.

All equipment must be inspected before and after each use. A record of all inspections by date must be kept, with the results tabulated. It is important to follow the recommendations of the manufacturer precisely.

All non-disposable respiratory protective equipment must be cleaned and decontaminated after each use. Disposable respirators and accessories should be discarded after each use, and replaced with identical new respirators.

Replacement of other than disposable parts must be done only by personnel with adequate training to ensure that the equipment is functioning properly after the work is accomplished. Only parts supplied by the manufacturer for the product being repaired must be used.

Medical Surveillance

7

According to OSHA, "using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee." Employers must determine an employee's ability to use a respirator.

Workers should never be assigned to any operation requiring respiratory protection until a physician has determined that they are capable - physically and psychologically - to perform the work using the respiratory protective equipment.

Program Evaluation

Employers are required to conduct periodic evaluations of the workplace to ensure that the written respiratory protection program is being properly implemented, and to consult employees to ensure that they are using the respirators properly. The employer must regularly consult employees required to use respirators to assess the employees' views on program effectiveness and to identify any problems. Any problems that are identified during this assessment must be corrected.

Factors to be assessed include, but are not limited to:

- Respirator fit (including the ability to use the respirator without interfering with effective workplace performance)
- Appropriate respirator selection for the hazards to which the employee is exposed
- Proper respirator use under the workplace conditions the employee encounters
- Proper respirator maintenance

Record Keeping

Employers must retain written information regarding medical evaluations, fit testing, and the respirator program. This information will facilitate employee involvement in the respirator program, assist the employer in auditing the adequacy of the program, and provide a record for compliance determinations by OSHA.

- Records must be kept on:
 - Medical evaluation
 - Qualitative and Quantitative Fit Tests, which are retained until the next fit test is administered
 - Employee identity
 - Make, model, style, and size of respirator tested
 - Date of test
 - Results
 - Written copy of the current respirator program

Although instituting a sound respiratory protection program will take effort and financial investment, the objective of a such a program is sound - ensuring that every worker is protected against potentially fatal diseases.

Air-Purifying Respirators: Disposable



Affinity Disposable Respirators

A top range, disposable respirator, Affinity provide superior fit, comfort and performance. Providing Class P2 protection the Affinity range features a collapse resistant design and two sizes for increased comfort and protection. Then range provides protection against dust, mist and fumes associated with masonry, wood, metalwork, welding and general mining.

AFFINITY P2

- Provides protection against mechanically and thermally generated dusts / mists, fumes and aerosols as in crushing, blasting, grinding, welding, soldering and refining processes

762612ML Medium/Large (box 20 / case 12 boxes)

AFFINITY P2V

- Valved version for easier breathing

762612MLV Medium/Large (box 10 / case 12 boxes)



TORNADO DISPOSABLE RESPIRATORS

- Extremely comfortable, flat-fold respirator.
- Excellent filtration with minimal breathing resistance.
- One size fits all, packaged individually in hygienically sealed pack.
- Bulk pack not individually wrapped.

TORNADO P2

- Provides protection against mechanically and thermally generated dusts / mists, fumes and aerosols as in crushing, blasting, grinding, welding, soldering and refining processes.

227813 (box 20/case 12 boxes) 227813B (box 25 bulkwrap)

TORNADO P2V

- Valved version for easier breathing

227814 (box 20/case 12 boxes) 227814B (box 25 bulkwrap)

All MSA disposable respirators featured are designed and manufactured in Australia to Australian and New Zealand Standard AS/NZS 1716. This ensures consistent quality and performance. Attention to detail also ensures the highest level of comfort in a size range that meets the demands of all wearers.

Air-Purifying Respirators: Disposable



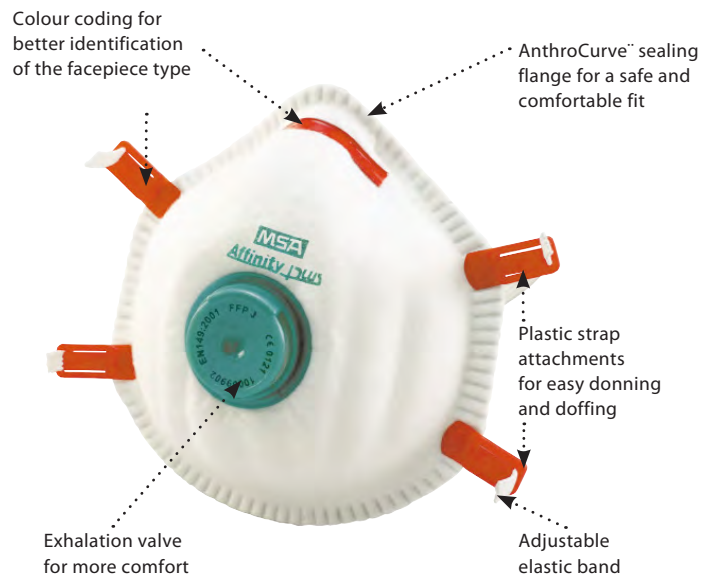
AFFINITY PLUS - (European Style Pre-Shaped Respirator)

Effective, reliable and economical, the cup-shaped Affinity Plus is available in P1 and P2. It protects against most penetrating solid and liquid aerosol particles, depending on which class of filter is used.

The specially selected filter media provides excellent efficiency and enhanced durability.

Features and Benefits

- Lightweight and exceptionally comfortable.
- Snug fit.
- Smooth material.
- Pre-shaped nose clip.
- Plastic attachments [no staples].
- Optional exhalation valves.
- Colour coding for quick identification.
- Universal size for easy selection and less inventory.
- Adjustable straps.



Applications

Application	Protection class	Colour code
Grinding, Sanding, Cutting, Sweeping, Sawing, Bagging	P1	Green
Machining, Welding, Brazing	P2	Yellow

Ordering Information

Affinity Plus	Protection Class	Units per box
10042750 Affinity Plus	P1	10
10042751 Affinity Plus-V	P1	10
10042752 Affinity Plus	P2	10
10042753 Affinity Plus-V	P2	10
10070804 Affinity Plus Odour Removal	P2	10
10070805 Affinity Plus-V Odour Removal	P2	10

Air-Purifying Respirators: Disposable

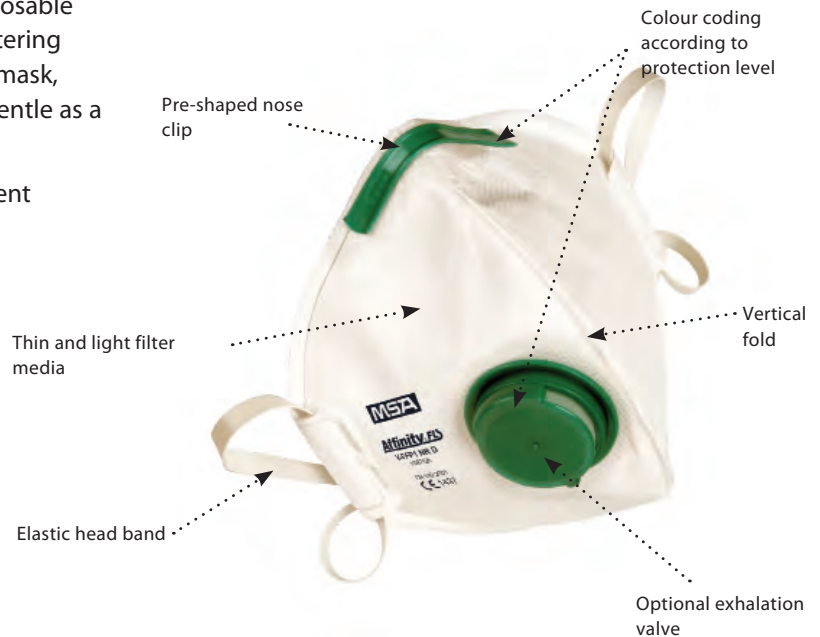
AFFINITY PLUS - FLS RANGE

Affinity FLS is the new generation of foldable disposable respirators. Its high-performance thin and light filtering media makes you feel as if you are not wearing a mask, but simply being protected. Affinity FLS feels as gentle as a summer breeze against your face.

The specially selected filter media provides excellent efficiency and enhanced durability.

Features and Benefits

- Thin and light material for a comfortable fit all shift long.
- Vertical fold provides an ergonomic face shield.
- Pre-formed nose clip prevents fogging of safety spectacles.
- Dolomite tested.
- Elastic head band.
- Colour coded according to filter class.
- High filter media quality provides 5 years storage life.



Applications

Application	Protection class	Colour code
Grinding, sanding, cutting, sweeping, sawing, bagging	FFP1	Green
Machining, welding, brazing, plastering, insulation installation	FFP2	Yellow

Ordering Information

Affinity FLS	Protection Class	Units per box	Boxes per Carton
10097425 Affinity FLS	FFP1 D	15	12
10097426 Affinity FLS-V	FFP1 D	15	12
10097427 Affinity FLS	FFP2 D	15	12
10097428 Affinity FLS-V	FFP2 D	15	12
10097429 Affinity FLS-V	FFP1 D	15	12
Affinity FR (Odour Removal)	Protection Class	Units per box	Boxes per Carton
10070802 Affinity FR OR	FFP2 D	15	12
10070803 Affinity FR-V OR	FFP2 D	15	12

V: With exhalation valve

D: Dolomite dust tested

OR: Odour Removal [providing nuisance relief]

Air Purifying Respirators:

ADVANTAGE® 400 SERIES

An important characteristic of the Advantage® 400 is user-friendliness. The innovative patent-pending single loop head harness outshines the competition. It grants the user an intuitional operation and offers high comfort and flexibility. The unique one-piece over-molded silicone nose cup is soft and pleasant to wear and extremely robust.

Features and Benefits

- Unique harness assembly makes for easier donning and doffing.
- Chin cup with built-in drain hole reduces slippage of face piece in hot humid conditions.
- Textured inner seal of face piece.
- Integrates extremely well with other PPE.
- Only 3 major components makes cleaning and maintenance much easier.
- High quality silicone.
- Uses existing MSA filters minimises inventory.



Ordering Information

Advantage® 410	
10102276	Advantage® 410, Small
10102277	Advantage® 410, Medium
10102278	Advantage® 410, Large

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

Single filters	
1070754L	P2 - Pre Filter (pack of 12)
10094376	P3 - Particle Filter
1042000	E2 - Gas Filter Sulphur Dioxide & Acid Gas
1045000	K2 - Gas Filter Ammonia & Ammonium Compounds
1051000	AX, A2 - Gas Filter Organic Vapours
1070000	A2, B2-P3 R - Gas Filter Organic Vapours & Inorganic Gases
1112000	K2-P3 R - Gas Filter Ammonium & Particulars
1070705	A2, B2, E2, K1, Hg-P3 R - Gas Filter Organic Vapours, Inorganic Gases, Acid Gases, Ammonium Compounds, Mercury & Particulars

Advantage® 420 (with twin bayonet MSA connection)	
10102273	Advantage® 420, Small
10102274	Advantage® 420, Medium
10102275	Advantage® 420, Large

Twin bayonet filters	
10011347	P2 - Prefilter
430375	P3 - Particle (P)
430371	A2 - Organic Vapour (OV)
430372	A2, P3 - Organic Vapour / Particulate
815358	K2 - Ammonia / Methylamine (NH3)
815365	K2, P3 - Ammonia / Methylamine / Particulate
430373	A2, B2, E1, K1 - Organic Vapour / Acid Gas / Ammonia
430374	A2, B2, E1, K1, P3 - Organic Vapour / Acid Gas / Ammonia / Particulate
10027699	P2 - Flexifilter Particulate
10027698	P2, OR - Flexifilter Particulate Odour Removal
10027639	P3 - Flexifilter Particulate
10027697	P3 - Flexifilter Particulate Odour Removal



Advantage® 410



Advantage® 420

Air-Purifying Respirators: Half face

Advantage® 200 LS Respirators



Advantage® 200 LS Respirator with combination chemical cartridges



Advantage 200® LS Facepieces

Description	2-Piece Neckstrap
Advantage® 200 LS, Small	430357
Advantage® 200 LS, Medium	430356
Advantage® 200 LS, Large	430358

See page 38 for Advantage filters

The Advantage® 200 LS Respirator's lighter and softer facepiece gives workers more comfort and stability than ever.

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

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

Advantage® Fit Test Adapter

Easy to use!

Description	Part No.
Advantage® Fit Test Adapter	10056424



Free!



Advantage® 200LS Respirator with Flexi-Filter Pads



Advantage® Technical Support CD

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

- Single source for care & use information, instruction manuals, fit-testing forms, parts lists and cartridge information
- Enhances your use of MSA's lighter, softer half-mask and optically correct, comfortable full-face respirators
- Convenient, immediate, paperless retrieval
- Easy-to-use, interactive format
- Multi-lingual English/Spanish
- Call MSA Customer Service for your FREE copy!

Air-Purifying Respirators: Half Face

The Comfo Elite® II Respirator, available in black silicone, has a unique sealing surface designed to reduce facepiece slippage. The Comfo Elite® II Respirator comes in medium and large sizes.






Comfo Elite® II Respirator

Material	Medium	Large
Silicone	225515M	225515L

For alternative half face respirators - refer to the Advantage® range.



Maxi Filter Ordering Information - (For Comfo Elite® & Ultra Twin)

Type & Class	Colour Coded Label	Protection Offered	Part No.	Box of
P2		Dusts, pollen, mists & fumes	225125	10
P3		Toxic particulate matter	430158	12
A1 P2		Organic vapours (up to 1000ppm) harmful dusts, mists, pollen, fumes	225124	10
A1 E1 P2		Organic vapours (up to 1000ppm) and harmful dusts, mists, pollen, fumes and Sulphur Dioxide. Note: This filter has proven effectiveness in removing hydrogen fluoride.	225127	10
A2B2E1K1-P3		As above plus inorganic vapours, acid gases, ammonia and toxic particle matter	430302	6
Prefilter			226812	40
Prefilter Cover			489353	1 (2 Required)

* Can be used with Advantage® Masks with Adaptor 809999



A1 P2 Filter
Part No: 225124



ABEK-P3 Filter
Part No: 430302

Air-Purifying Respirators: Full Face

Advantage® 3000 Respirators



The Advantage® 3000 Full-Face Respirator incorporates MSA's global engineering expertise and is designed to meet NIOSH, EN and AS/NZS standards.

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

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

For the utmost in convenience, the Advantage® 3000 uses the same cartridges and filters as the Advantage® 200 half mask respirators.

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

In addition, the facepiece lens has a scratch resistant coating and has been engineered to be optically correct, giving you superior visibility and peripheral vision.

Donning the mask is made easier with pre-adjustable rubber straps. With the Advantage® 3000 Respirator, you can set the position of the upper straps to receive a consistent fit, time after time. In addition, the preset upper straps prevent uncomfortable snags during donning

Advantage® 3000 Respirator

Advantage® 3000 Facepieces

Description	Small	Medium	Large
Advantage® 3200 Twin Port Respirator*, with Advantage® European-style harness	10027727	10027726	10027728
Advantage® 3100 Single Port Respirator, Respirator, with Advantage® European-style harness	10027724	10027723	10027725

Spectacle Kits for Full-Facepiece Respirators

For use by workers who must wear corrective lenses

Spectacle Kit for Advantage® 3000	10037282
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Cover Lens for Advantage® 3000

This clear, flexible cover lens protects the facepiece lens from scratches during storage, handling & use

Cover Lens Clear, box of 25	10031542
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* See page 37 for Advantage® TWIN filters and Single Canister Threaded filters

Advantage® Fit Test Adapter

Easy to use!

Description	Part No.
Advantage® Fit Test Adapter	10056424



Advantage® 3000 Respirator with rubber harness



Advantage® 3000 Respirator with European-style harness

Free!



Advantage® Technical Support CD

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

- Single source for care & use information, instruction manuals, fit-testing forms, parts lists and cartridge information
- Enhances your use of MSA's lighter, softer half-mask and optically correct, comfortable full-face respirators
- Convenient, immediate, paperless retrieval
- Easy-to-use, interactive format
- Multi-lingual English/Spanish
- Call MSA Customer Service for your FREE copy!

Air-Purifying Respirators: Full Face

Advantage® 1000 Respirators

The Advantage® 1000 Full-Face Respirator features a wraparound flexible lens that offers excellent fit and comfort with increased vision. It weighs 40% less than conventional full-face respirators and uses the same cartridges as the Advantage® Family Respirators.



The Advantage® 1000 Respirator is constructed of super-soft Hycar™ rubber that provides the feel and comfort of silicone but has better permeation resistance. The facepiece, which is available in three sizes, has a unique inturred lip seal that provides an exceptional seal against a wide range of facial contours. The Advantage® 1000 facepiece also features a distinctive, flexible urethane lens that is integrally bonded to the facepiece, eliminating the need for rigid lens retainers that can cause unwanted pressure points.

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

Advantage® 1000 Facepieces

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

Advantage® 1000 Respirator Accessories

Flexible Cover Lens for Advantage® 1000

Protects the facepiece lens from scratches during storage, handling, and use.			
Advantage® 1000 Cover Lens, clear, box of 25		813832	

Lens Shield for Advantage® 1000

For added impact protection, a polycarbonate lens shield snaps into place.			
Clear Lens Shield, Small		806463	
Clear Lens Shield, Medium/Large		806462	

ESP® II Communication System

A one-piece, self-contained electronic speech projection device that allows wearers to speak normally, yet be heard loud and clear. Also fits Millennium Gas Mask.

ESP® II Communication System for Advantage® 1000 and Millennium Masks		10026265	
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* See page 37 for Advantage® TWIN filters

Ultra Elite® Respirators - Threaded Fittings

The demand version of the Ultra Elite® Facepiece air-purifying respirator provides a high level of peripheral and downward vision. It is available in three sizes and has large adjustment tabs for easy donning and doffing. A speaking diaphragm in front of the wearer's mouth improves communication. A nose cup reduces lens fogging in low temperatures or high-humidity conditions.



Ultra Elite® Facepiece

Material	Color	Medium
SoftFeel Silicone Less Twin-Cartridge Adapter	Yellow	2056718

* See page 39 for Single Canister threaded filters

3S Full Face Respirator - Threaded Fittings

- Available in chemical resistant rubber or soft pliable silicone.
- Polycarbonate lens provides impact & chemical resistance.
- Can be adapted to a Twin Filter with Twin Maxi Filter Adaptor (Part No. 803622).
- Filters sold separately, refer to table below.



Part No.	Description
2055000	3S Full Face Piece Rubber
2055718	3S Full Face Piece Silicone

* See page 39 for Single Canister threaded filters

Air-Purifying Respirators: Filters

Advantage® Respirator Cartridges

The Advantage® line of particulate, chemical and combination cartridges provides lightweight, low-profile performance. Cartridges fit Advantage® Half and Full Face Respirators.

MSA Cartridge Description	Re-Order Part Number	Color Coding	A2	Acid Gases B2E1					K1		P3 P2		See Notes below	
			Organic Vapour	Chloride	Sulfur Dioxide	Chloride Dioxide	Hydrogen Chloride	Hydrogen Sulfide*	Ammonia	Methylamine	Formaldehyde	Hydrogen Fluoride		Mercury Vapor
A2	430371													2,3
A2 P3	430372													2,3,4
K2	10107163													2,3
K2 P3	10107165													2,3,4
A2 B2 E1 K1	430373													2,3
A2 B2 E1 K1 P3	430374													2,3,4
Mersorb	815361													2,4
Mersorb P100	815368													2,4
Low-Profile P100	430375													1,4
P2 Snap-On Prefilter and Cover	10011347 Pack of 20 + Covers													

Definitions

N95-Particulate Filter (95% filter efficiency level) effective against particulate aerosols free of oil; time use restrictions may apply. (P1)

P100-Particulate Filter (99.97% filter efficiency level) effective against all particulate aerosols. (P2)

* Escape only. + Only with Full Facepiece

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

Notes

1. Do not use in atmospheres containing less than 19.5 percent oxygen, in atmospheres containing gases or vapors or in atmospheres immediately dangerous to life and health.
2. Do not use in atmospheres containing less than 19.5 percent oxygen, or in atmospheres immediately dangerous to life and health.
3. Do not wear for protection against organic vapors with poor warning properties or those which generate high heats of reaction with the sorbent material in the cartridge.
4. 99.97 percent efficient against 0.3 micron DOP.
+ P3 with Full Facemask only.

Flexi-Filter® Particulate Pads for Advantage Respirators

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

MSA Filter Description	Part No.	Color Coding
Flexi-Filter® P2	10027699	
Flexi-Filter® P2 w/Nuisance Level OV, Ozone Removal	10027698	
Flexi-Filter® P100 w/Nuisance Level AG, HF Removal	818344	
Flexi-Filter® P3	10027639	
Flexi-Filter® P3 w/ Nuisance Level OV, Ozone Removal	10027697	













Respiratory Cannisters

Reliable Protection against Gases and Particles

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 89 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.

Applications, Markings					
Colour Mark	Type	Application	Class	Max. allowed gas concentration	Standard
	A	Organic gases and vapours [boiling point > 65°C]	1 2 3	1000 ml/m ³ [0.1 Vol.-%] 5000 ml/m ³ [0.5 Vol.-%] 10000 ml/m ³ [1.0 Vol.-%]	EN 14387
	B	Inorganic gases and vapours [not CO], e.g. chlorine, H ₂ S, HCN	1 2 3	1000 ml/m ³ [0.1 Vol.-%] 5000 ml/m ³ [0.5 Vol.-%] 10000 ml/m ³ [1.0 Vol.-%]	EN 14387
	E	Sulfur dioxide and acidic gases and vapours	1 2 3	1000 ml/m ³ [0.1 Vol.-%] 5000 ml/m ³ [0.5 Vol.-%] 10000 ml/m ³ [1.0 Vol.-%]	EN 14387
	K	Ammonia and organic ammonia derivatives	1 2 3	1000 ml/m ³ [0.1 Vol.-%] 5000 ml/m ³ [0.5 Vol.-%] 10000 ml/m ³ [1.0 Vol.-%]	EN 14387
	AX	Organic gases and vapours [boiling point < 65°C] of low boiling substance groups 1 and 2	-	Group 1 [100 ml/m ³ max. 40 min.] Group 1 [500 ml/m ³ max. 20 min.] Group 2 [1000 ml/m ³ max. 60 min.] Group 2 [5000 ml/m ³ max. 20 min.]	EN 371 or EN 14387
	NO-P3	Nitrogen oxides e.g. NO, NO ₂ , NO _x and particles	-	Maximum allowed time of use 20 minutes.	EN 14387
	Hg-P3	Mercury vapours and particles	-	Maximum allowed time of use 50 hours.	EN 14387
	CO*	Carbon Monoxide	-	Local guidelines.	DIN 58620 EN 14387
	Reactor P3*	Radioactive iodine and particles	-	Local guidelines.	DIN 3181*
	P	Particles	1 2 3	Efficiency [low] Efficiency [medium] Efficiency [high]	EN 143 EN 14387



Particle Filter



Gas Filter



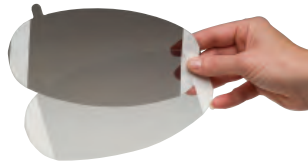
Combined Filter

Description	Part No.	Pack of	Class	Weight (approx.)
Pre Filter	10094376	12	flame resistant P2	3 g
Particle Filter P3	10094376	1	P3 R	80 g
Gas Filter Sulphur Dioxide & Acid Gas	1042000	1	E2	260 g
Gas Filter Ammonia & Ammonium Compounds	1045000	1	K2	260 g
Gas Filter Organic Vapours	1051000	1	AX, A2	260 g
Gas Filter Organic Vapours & Inorganic Gases	10097993	1	A2, B2-P3 R	290 g
Gas Filter Ammonium & Particulars	1112000	1	K2-P3 R	300 g
Gas Filter Organic Vapours, Inorganic Gases, Acid Gases, Ammonium Compounds, Mercury & Particulars	10097231	1	A2, B2, E2, K1, Hg-P3 R	300 g
Gas Filter Organic Vapours, Inorganic Gases, Acid Gases, Ammonium Compounds, Mercury & Particulars	10097232	1	A2, B2, E2, K2, Hg-P3 R	370 g
Gas Filter NO-CO/St	1018905	1	NO-P3 R	455 g
Gas Filter CO/St	1094920	1	CO-P3 R	500 g
Gas Filter ABEK-CO-NO-Hg/St	1018700	1	A1, B2, E2, K1, CO, NO, Hg/P3 R	450 g

Air-Purifying Respirator Accessories

Cover Lens for Full Facepiece Respirators

Protects the facepiece lens from scratches during storage, handling and use.



Lens Shield for Advantage® 1000

For added impact protection, a polycarbonate lens shield snaps into place.



Cover Lens for Full Facepiece Respirators

Color	No./Box	Facepiece	Part No.
Clear	25	Ultra Elite®	491500
Smoke-tinted	25	Ultra Elite®	805456
Clear	25	Ultravue	2055706
Smoke-tinted	25	Ultravue	480326
Clear	25	Advantage® 1000	813832
Clear	25	Advantage®	10031542

Lens Shield for Advantage® 1000

Lens Color	Small	Medium/Large
Clear	806463	806462

Carrying Pouches

A belt-mounted carrying pouch with Velcro closures is available for half-mask respirators; a black pouch is available for Advantage® 1000 Respirators.



Respirator Carrying/Storage Case

Black plastic carrying/storage case for full-facepiece respirators or other safety equipment, such as half-mask respirators, goggles, and ear muffs. Workers who store their safety equipment in car trunks, trucks, tool lockers, etc., will find this rugged case to be ideal.



Respirator Carrying Pouches and Carrying/Storage Case

Carrying pouch for Advantage® 1000 Respirator, black	817040
Black plastic carrying/storage case	2056734

Twin-Cartridge Adapter and Cartridge Adapter

The Twin-Cartridge Adapter (right) converts demand Ultravue or Ultra Elite® Facepieces to twin-cartridge respirators. The Cartridge Adapter allows use of threaded Comfo Cartridges on Advantage® Series Respirators.



Cartridge Adapters

Twin-Cartridge Adapter	803622
Cartridge Adapter, package of 2	809999

Air-Purifying Respirators: Accessories

Air-Purifying Respirator Accessories

Spectacle Kits for Full-Facepiece Respirators

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



Desired adjustment is obtained by moving the spectacles in and out of the rubber guide and up and down the wire support. The Advantage® 1000 and the Ultravue/Ultra-Twin kits (S-7 shape, 44-mm lens size) and the Ultra Elite® kit (S-7 shape, 48-mm lens size) fit Universal Bridge Corrective Lenses that can be obtained from local sources. The Spectacle Kit can be used with a nosecup.

Spectacle Kits

Description	Part No.
Ultra Elite® Spectacle Kit (side wire support)	804638
Advantage® 1000 Spectacle Kit (side wire support)	816137
Ultravue/Ultra-Twin Facepiece Spectacle Kit (side wire support)	454819

MSA Confidence Plus® Germicidal Cleaner

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



Personal Safety Equipment Towelettes

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



Cleaning Accessories

Description	Part No.
Cannister with 220 towelettes, 4-1/4" x 6"	697382
Box of 100 individually wrapped towelettes, 7-1/4" x 5"	697383
"The Big Ones," Box of 50 individually wrapped towelettes, 8" x 11"	10022871
MSA Confidence Plus® Germicidal Cleaner, in 32 oz. bottle	10009971

Nosecup (to reduce fogging)

Molded from a soft rubber compound that is resistant to facial oils, the optional nosecup helps reduce lens fogging. The nosecup is particularly effective under conditions of high-humidity and/or low temperatures by inhibiting contact between moist exhalation and the facepiece lens. A nosecup can be easily affixed to the facepiece without tools, and any size nosecup may be installed in any size MSA facepiece, resulting in a customized facepiece for more comfortable use.



Nosecups for Ultravue/Ultra-Twin



Nosecups for Advantage®

Welder's Adapter for Full-Facepiece Respirators

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



Welder's Adapter with AutoChange Lens



Welder's Hood with AutoChange Lens

The AutoChange Electronic Welding Lens is for use with MSA Welders Adapters. The solar-powered AutoChange Welding Lens is an automatic-darkening welding filter. The welding lens is in the light state (semi-transparent) before welding and darkens within 0.4 milliseconds after an arc is struck.

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

Welder's Accessories

Description	Part No.
Integral Welder's Adapter for Ultravue and Ultra Twin Facepiece; with cover lens, less filter plate	470786
Polycarbonate Cover Plate (4-1/2 x 5-1/4)	696095
Rayfoe™ Filter Plate, shade 6, heat-treated	38346
Rayfoe™ Filter Plate, shade 10, heat-treated	38347
Rayfoe™ Filter Plate, shade 12, heat-treated	38277
Auto-Change Welding Lens	10068601
Kevlar Welder's Hood	486328
Cover Lens	88379

Nosecup (to reduce fogging)

Facepiece	Small	Medium	Large
Ultravue/Ultra-Twin, Black	813138	813139	813140
Advantage® 1000, Black	806468	806466	806470

Air-Purifying Respirators: Fit Testing

Air-Purifying Respirator Fit-Test Accessories

Facepiece Fit-Test Kits



Qualitative Test Kit



Replacement Hood & Test Solutions



Banana Oil Test Kit

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

Saccharin Qualitative Fit-Test Kit

The Saccharin Qualitative Fit-Test Kit eliminates the need for special filters and is especially useful for dust/mist respirators.

Saccharin QLFT Kit	697287
Replacement Sensitivity Test Solution, 55 ml bottle	697285
Replacement Fit-Test Solution, 55 ml bottle	697286
Replacement Hood	697448
"Using the Qualitative Fit Test Kit" videotape	697325

Banana Oil Qualitative Fit-Test Kit

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

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

Probed Respirator Facepieces



Probed Advantage® Respirator

All Models Available

To make it easy for you to perform quantitative fit tests, MSA offers a full line of specially modified facepiece assemblies. Each probed facepiece is equipped with a built-in probe assembly, sampling line, and clothing clip to hold the sampling line. The probes are made of solid brass. In all MSA half-facepiece models, the probe is attached to the body of the respirator. Full-facepiece respirators are probed through the lens and sealed with a neoprene washer and brass fittings.

MSA also offers probed lenses for use with existing Ultravue facepieces. These lenses come completely assembled with the same brass probe, sealing hardware, and sampling line as the probed full-facepieces. All respirators use standard MSA high-efficiency filters for tests.

QuikChek Adapters

Mask

QuikChek I Fit-Test Adapter	802710	
Replacement Kit with 25 ft of sampling tubing and 25 connectors, clips, and suction cups	803196	
QuikChek II Fit-Test Adapter	812022	Comfo Ultra Twin
Replacement Kit with 25 ft of sampling tubing and 25 connectors, clips and suction cups	803196	
QuikChek III Fit Test Adapter	805078	Ultra Elite® 35
Replacement Kit with 25 ft of sampling tubing, 25 connectors, clip and suction cups	803196	
OptiFilter XL Cartridge (box of 6)	496081	
Advantage® 10000 QuikChek Adaptor		10006227
Advantage® 200 & 3000 Twin Adaptor		10056424

Online Response® Respirator Selector

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

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



Cartridge Life Expectancy Calculator

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

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

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



Air-Purifying Respirators: First Responder/First Receiver

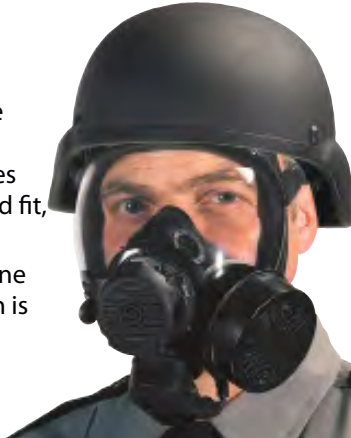
Respirators for Riot Control

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

Millennium® Riot Control Gas Mask

A Hycar version of the reliable military-style gas mask (MCU-2/P Mask) that combines high performance, customized fit, comfort, and cost efficiency.

- Flexible, 1-piece polyurethane lens with wide field of vision is bonded to durable Hycar rubber facepiece.
- Dual-canister mount (NATO 40mm thread) allows weapon sighting from either shoulder.
- Drinking tube provides connection for fluid ingestion in contaminated atmospheres.



Millennium® Riot Control Mask

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

Small	10051286
Medium	10051287
Large	10051288

Millennium® Riot Control Canisters

Description	Part No.
Millennium® RC Canisters, box of 6	818264

Advantage® 1000 Riot Control Gas Mask

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



Advantage® 1000 Riot Control Gas Mask

Complete with canister, nose cup, and identification tag.

Small	813860
Medium	813859
Large	813861

Advantage® 1000 Riot Control Canisters

Description	Part No.
Advantage® 1000 RC Canisters, box of 6	817590

Pouches

Pouch Military Style	10034184
Pouch Adv 1000 Black Nylon	817040

Responder™ CBRN PAPR (Powered Air-Purifying Respirator)

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

- Protects wearers for up to 8 hours under many hazardous conditions.
- First CBRN-approved PAPR with a tight-fitting facepiece.
- Proven positive-pressure facepieces, the MSA Millennium®.
- Choice of CBRN cartridge or multi-gas / particulate chemical cartridges for non-CBRN use.

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

Industry trusted, with over 50,000 fielded in various U.S. military programs, the Motor-Blower is ideal for filtering contaminants from ambient air and providing a constant airflow of at least 115 lpm to the user's facepiece.

Comes complete with the motor-blower, belt, airflow indicator and breathing tube.



Please contact your MSA representative for ordering information.

Note: US Export Licence Restrictions Apply.

Escape Respirator

Respirators for Homeland Security

Millennium® CBRN Gas Mask

MSA's Millennium® CBRN Gas Mask was first to receive NIOSH certification as "compliant against CBRN".

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



Millennium® CBRN Gas Mask

With nose cup, drinking tube, and clear polycarbonate outsert. Order canister separately.

Small	10051286
Medium	10051287
Large	10051288

Millennium® CBRN Canister

Description	Part No.
MSA CBRN Canister	10046570

Note: US Export Licence Restrictions Apply.

Miniscape Escape Respirator

The Miniscape respirator is a single use escape device with a 5 minute service time. It is equipped with mouthpiece and nose clip. Small and handy, the Miniscape fits into your pocket and can also be belt mounted.

The Miniscape can be donned very quickly and is immediately operational. It is housed in a rugged, translucent carrying case, to protect it against shocks and ageing. The Miniscape protects against numerous toxic gases including organic vapours and inorganic gases eg. solvents, hydrogen cyanide, ammonia, sulphur dioxide.



Description	Part No.
Miniscape Escape Respirator 5min	10038560

Ultra Elite® CBRN Gas Mask

Safety

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



Ultra Elite® CBRN Gas Mask

Size	with Speed-On Head Harness
Small	10052780
Medium	10052779
Large	10052777

Canisters & Cartridges

Description	Part No.
MSA CBRN Canister	10046570

Note: US Export Licence Restrictions Apply.

MSR 1 and MSR 2

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

The MSR 1 and 2 are fast to open in a quick action, donned in seconds and provide an excellent seal with the half mask and the easy adjustable harness. An exhalation valve reduces breathing resistance for best comfort.



Description	Part No.
MSR1 Escape Respirator 15min	2264700
MSR2 Escape Respirator 15min	2264701

Escape Respirators

Smoke Hoods

S-CAP

The S-CAP provides protection for persons endangered by smoke and gases generated by fires. Investigations confirm again and again that most victims in fire do not die from heat or flames but from the smoke and gases. Particularly dangerous is carbon monoxide which is generated by most fires. Very easy to use, the device also provides protection for the eyes and the face.

- Simple and quick handling.
- Safe protection of breathing, eyes and head.
- Also suitable for persons wearing spectacles.
- Large field of vision.
- High performance filter.
- Low breathing resistance.
- 15 minutes.

Description	Part No.
S-CAP in cardboard box	10064644
S-CAP in luminescent wallbox	10064645
S-CAP (Pack of 3) in special package for fire brigades	10064646
S-CAP in pouch	10081637



EN 403:2004



EN 403:2004



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 makes for quick and easy donning.

- Self-adjusting head harness.
- Elastic neck seal.
- Simple and quick handling.
- Safe protection of breathing, eyes and head.
- Large performance filter.
- High performance filter.
- Low breathing resistance.
- 15 minutes.

Description	Part No.
Smoke Hood	1440005
Training Hood w/o filter	1446021
Filter Holder	1446031
Filter Pads (Box of 100)	1446030

Escape Respirators

Safe Escape™ CBRN 15-minute Escape Respirator



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

Engineered for Maximum Performance

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

The Safe Escape™ Hood canister features a high-efficiency particulate filter and activated carbon to combat aerosols, gasses and vapors. In fact, the canister used in the hood contains 50% more carbon than similar canisters used by the U.S. military. Furthermore, MSA has performed extensive testing on the Safe Escape™ Hood against both simulated and live chemical agents beyond what is tested by NIOSH.

Designed for Comfort

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

Safe Escape™ Respirator

Safe Escape™ Respirator in Hextreme Case, Standard

Description	Part No.
Universal Size	10073702

Safe Escape™ Respirator in Hextreme Case, Tactical Version

Description	Part No.
Universal Size	10073923

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

Trainer Version of Safe Escape™ Respirator

Description	Part No.
Universal Size	10073703

Accessories

Description	Part No.
Safe Escape™ Respirator Sizing Kit	10066681
Optional carrying straps and harness kit	10068310
DVD Training video for Safe Escape™ Respirator	10068013



Carrying the Safe Escape™ Respirator

Escape Respirators

Chemical Oxygen Technology



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. Super lightweight (2kg). MSA Chemical Oxygen has a maximum life of ten years.



EN 401

Duration: 20 minutes [up to 100 minutes at rest]

Part No.	Description
1123701	Oxygen Self Rescuer STD
1123701R	Oxygen Self Rescuer SSR30/100 with NSW Coal Mines Registration
1123711	SSR 30/100, 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. Self-contained and low weight it is always ready for use and requires no maintenance. MSA Chemical Oxygen has a maximum life of ten years.



EN 401

Duration: 30 minutes [up to 3 hours at rest]

Part No.	Description
10023263	SavOx, Oxygen Self Rescuer STD
10023263R	SavOx, Self Rescuer with NSW Coal Mines Registration
10024538	SavOx TR, Trainer



SSR 90

SSR 90

Chemical oxygen apparatus for self-rescue, packed in a robust stainless steel container. Fitted with quick-start chlorate candle. MSA Chemical Oxygen has a maximum life of ten years.

Weight during use: 3.4 kg.

EN 401

Duration: 60 minutes [up to 5 hours at rest]



Part No.	Description
1118701	SSR 90, Oxygen Self Rescuer Standard
1118701R	SSR 90 Self Rescuer Oxygen with NSW Coal Mines Registration
1118702	SSR 90 Training Unit
767173	SSR 90 Pouch

Escape Respirators

MSA Filter Self-Rescuer FSR W95 & W65

Application

The MSA filter self-rescuer is an escape device for the underground miner. The FSR W95 and W65 protects against carbon monoxide (CO) and other hazardous gases that can occur from mine fires and fire damp explosions.

The performance as well as the breathing comfort and wearing comfort were considerably improved by a new filter design.

Design and Functioning

The design includes a proven stainless steel case and the filter assembly with mouthpiece, nose clip and head strap.

The air to be filtered is first drawn through the mechanical filter bag and the dust filter bad and then is precleaned by a prelayer of hopcalite. The second step is the conversion of carbon monoxide to carbon dioxide by a noble metal catalyst.

MSA FSR W95

- Dimensions (carrying case):
 - Height: approx. 140mm
 - Width: approx 100mm
 - Depth: approx 80mm
- Weight:
 - With case: approx. 900 g
 - Without case: approx 520 g
- Service time: Up to 4 hours

Part No.	Description
10014932L	MSA Filter Self Rescuer W95 with NSW Coal Mines Registration

MSA FSR W65

- Dimensions (carrying container):
 - Height: approx. 140mm
 - Width: approx 100mm
 - Depth: approx 85mm
 - Cross Section: 75 cm²
- Weight:
 - With container: approx. 1050 g
 - Ready-for-use: approx 650 g
- Service life (test conditions according to requirements):
 - To 100 ppm CO-breakthrough physiologic test life approx. 100 min
 - To 400 ml CO-breakthrough physiologic test life approx. 140 min
- Carrying mode:
 - Belt-worn (integrated belt adapter)

Part No.	Description
1090703	MSA Filter Self Rescuer W65 with NSW Coal Mines Registration

Features and Benefits

- MSA FSR in proven, robust design
- Low weight when carrying and in use
- Small size
- Rescuer available with carrying strap, belt loop or bag
- Stainless steel case
- Comfortable to carry and breathe
- High performance reserve
- Maintenance-free device

Certification

NSW Coal Mines registered.



Air-Purifying Respirators: PAPR

Breathing is easy with the OptimAir™ 3000 PAPR

If your job demands long-term breathing protection, the OptimAir 3000™ PAPR (Powered Air Purifying Respirator) is the way to go. Your breathing remains easy and free from resistance even after hours of work. The remarkable OptimAir™ 3000 combines the latest in high-tech features and ergonomically engineered design to give you the most advanced device of its kind available today. A maximum in safety, flexibility and ease-of-handling lets you concentrate on your work, knowing that your health is not being compromised.



Why OptimAir™ 3000 PAPR?

Typical applications are working with hazardous materials such as asbestos removal, paint and lacquer spraying, welding, chemical plants, agriculture and medicine.

Our specially designed OptimAir™ 3000 EX unit can also be used in areas where there is a potential danger of ignition.

What's so special about the OptimAir™ 3000?

The OptimAir™ 3000 is its stunningly compact and low-weight profile. At 1.3 kilos[with particle filters] you'll hardly notice you are wearing it. Its streamlined and well-balanced design reduces back strain and increases freedom of movement. The air hose port is parallel to your back to keep the hose close to your body and well-rounded edges prevent suit tears.



higher pressure
inside hood



airflow streams
outwards

Air-Purifying Respirators: PAPR

Ordering Information

Complete Sets		
10061582	OptimAir™ 3000 Full Face Complete	[Standard unit, NiMH Battery, Charger, Fullface Mask and Comfort Belt]
10061907	OptimAir™ 3000 Full Hood Complete	[Standard unit, OptimAir Hood w/Hose, NiMH Battery, Charger and Comfort Belt]
10066899	OptimAir™ 3000 Optivisor Complete	[Standard unit, NiMH Battery, Charger, Optivisor and Comfort Belt]
10061906	OptimAir™ 3000 HalfHood Complete	[Standard unit, NiMH Battery, Charger, Half Hood and Comfort Belt]
766535	OptimAir™ 3000 Optitop Complete	[Standard unit, NiMH Battery, Charger, Optitop Complete]
10049559	Optimair™ 3000 EX	
Accessories		
10049626	OptiCarrier Transport bag	
10031542	OptimAir™ Mask Cover Lenses	clear [pack of 25]
10037237	OptimAir™ Mask Cover Lenses	tinted [pack of 10]
10037282	OptimAir™ Mask Spectacles Kit	
10032100	OptimAir™ Mask Carrying Strap	
10060404	OptiTop Tear Off Lens Protector	[pack of 10]
10060781	OptiVisor Tear Off Lens Protector	[pack of 10]
10049632	Particle Filter HEPA	[pack of 10]
10049637	Organic Vapour (A2) Filter	[pack of 10]
10049635	A1 B1 E1 K1 Filter	[pack of 10]
10051805	OptimAir™ Half Hood	
10051806	OptimAir™ Full Hood	
10051807	OptimAir™ OptiTop	
10051810	OptimAir™ Mask	
10049638	OptimAir™ OptiVisor	
10049639	OptimAir™ OptiVisor Welding	
10049560	OptiBattery	

Technical Data

Battery service time

[with standard battery and standard blower] Particle Filter > 8hrs - Combined Filters > 4 hrs

[with extended battery and standard blower] Particle Filter > 12hrs - Combined Filters > 8 hrs

Dimensions

Height

200 mm

Width

270 mm

Depth

with flat cap 110 mm [Particle or Gas Filter]

with extension cap 130 mm [Combined Filters]

Weight in use with standard blower

1.3 kg with Particle Filters

[complete, without headtop]

1.7 kg with Combination Filters



When workers are exposed to potential injury from falling debris, personal protective headwear for worker safety is essential.

But safety isn't the only issue. Comfort's important, too, for maximum compliance. That's why the highly acclaimed MSA V-Gard range of head protection equipment has been designed with worker comfort and safety as equal priorities.

STAZ-ON™ SUSPENSION

For quick on the head size adjustment



Head, Eye, Face and Hearing Protection

Head, Eye, Face and Hearing Protection

What do you need?

Protective industrial helmets, or hard hats, are always visible on the job site, particularly where falling hazards exist. Other personal protection can easily be attached to the hard hat to protect the face and ears.

Head protection in Australia commonly takes the form of protective caps or hats, Type I or Type II that meet the requirements of AS/NZS 1801. See the side bar for an explanation of the protection safety caps or hats provide.

MSA's vented V-Gard Advance 500 and V-CoolGard 200 have air ventilation slots to provide additional air circulation for greater comfort in hot and humid conditions. The exclusive wear and fit Staz-on suspension provides superior comfort as the wide suspension tapes allow for easy height adjustment when on the head. The professional size adjuster allows for quick and simple fitting to headsize. Our thick padded sweatband eliminates slippage and pressure points on the head.

At MSA, customization is our specialty. We can decorate your head protection with your company logo.

All of the MSA V-Gard range of head protection is designed to integrate with genuine MSA accessories such as attachment face shields with replacable visors.

MSA hearing protection not only work exceptionally with the V-Gard range of caps but it is certified to the Australia New Zealand standards as a complete complimentary package.

Today's protective eyewear comes in stylish colours, with wraparound lenses that resist fogging and protect from the sun's harmful UV rays. Safety eyewear is lightweight and has more flexible temples, more comfortable nose bridges, and integral side shields. Lens options include clear, smoke, blue mirror and amber.

What do you want?

Workers want personal protective equipment that's so reliable, comfortable, and easy to work in that they hardly notice that they are wearing it.

Employers, of course, want reliable protection that employees will wear - at value for money prices.

To keep employees safe and comply with various government standards, starting with OH+S regulations, employers must be knowledgeable about both the range of potential hazards and the types of safety equipment needed. Fortunately, along with continuous technological improvements in materials and design, every year brings new safety products that are lighter and more comfortable, reliable, and stylish!



Head Protection

Whenever workers are exposed to injury from falling debris, swinging or moving objects, molten metal splash, live overhead wires, personal protective headwear for worker safety is essential.

Scope of AS/NZS 1801:1997

Safety caps and hats are divided into a number of Types defining the testing protocols the product is subjected to and hence defines its typical applications.

Type I Cap and Hats

– Cap or hat is tested for impact protection in various conditions (-10°C, + 50°C and wet, ambient) lateral protection from side compression and electrical resistance to 650 volts. These are the most commonly used caps and hats in industrial applications.

Type II Caps and Hats

– These are subjected to the same test conditions as Type I, but have a higher elevated temperature of 120°C for impact test ensuring these are more suitable for high temperature applications such as foundries.

Type III Caps and Hats

– These are subjected to the same test conditions as Type II with the addition of specific chinstrap tests (for high strength or defined break), reflectivity of external stickers or marking and deformity testing to 200°C. These are typically used in bushfire or rescue applications.

Lens Styles

Clear	Indoor applications where no glare is experienced.
Amber	Low light or indoor applications where enhanced contrast is required.
Smoke	Outdoor applications where glare is experienced.
Silver Mirror/Blue Mirror	Outdoor applications where high levels of glare are experienced.
Light Gold	Indoor use and outdoor use where glare is encountered. Ideal for forklift operations.
Orange; Blue	Indoor and outdoor use where no glare is experienced. Ideal for inspection applications where differences in brightness are required.

Comparison of Impact Protection

Standard	Impact Velocity			
		12 M/S	45 M/S	120 M/S
AS/NZS 1337	Low	Medium	High	
EN166		Low	Medium	
ANSI		Basic Z87	High Z87+	

Product Marking for AS/NZS 1337

I Medium Impact M Molten metal and hot solids resistant
 V High Impact O Outdoor Untinted

Head, Eye and Face Protection

Eye and Face Protection

- The vast majority of eye injuries are caused by small particles getting into the eye.
- The more comfortable and stylish the eyewear, the more workers will wear it.

Approximately 95% of eye injuries are preventable.

- According to the Optometrist Association, approximately 116,000 Australians suffer eye injuries each year.

Interesting Facts

- A survey by the bureau of statistics found that 3 out of 5 workers who suffered an eye injury wore no protection. Of those who did, 40% wore the wrong kind.
- Most injuries are caused by metal fragments, tools, particles, chemicals, and harmful radiation (welding flash).
- Safety eyewear should be worn whenever there is a chance that machines or operations present the hazard of flying objects, chemicals, harmful radiation or a combination of these or other hazards.
- Anyone working in or passing through areas that pose eye hazards should wear appropriate protective eyewear at such times.

Safety Eyewear

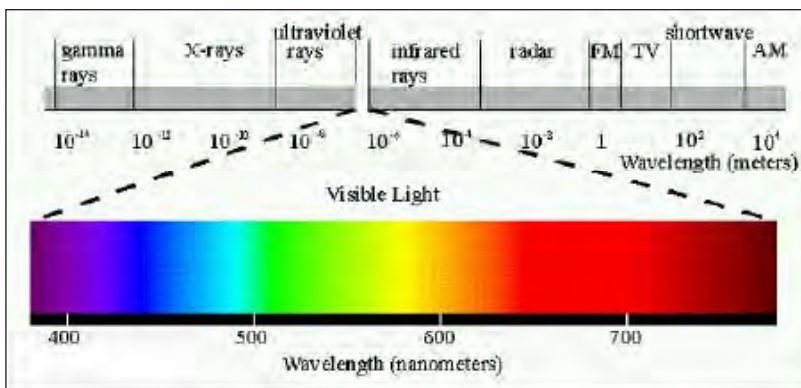
AS/NZS 1337:1992 Tests

- Penetration test (impact resistance)
 - 44g dart with 40mm x 2mm needle, resulting in no penetration of lens.
- Frame Flame Propagation
 - 2mm long samples over Bunsen burner for 10 seconds. Max burning rate is 100mm/min.
- Metal components immersed in salt water for 15mins and dried for 24 hours, must retain smooth surface and be free of corrosion.
- Optical Properties
 - Refractive Power – Shall not be positive or negative 0.12m
 - Prismatic Power – Shall not exceed 0.25
- Transmittance Values
 - Untinted – 85% min
 - Outdoor Untinted – 85% min Erythema UV 1% max
 - Outdoor Tinted – 8% min 50% max Erythema UV 1% max
- Limits on red signal visibility factor (R) [for red, green, yellow colours] and violet factor (V) [colour perception]

Ultra Violet Light and Human Eye

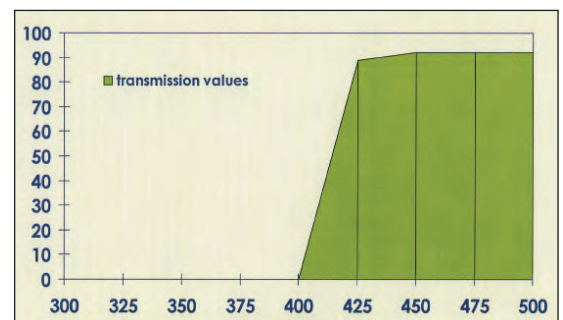
- The ultraviolet section of the spectrum covers 100-400nm, where it merges with visible light.
- Recent research shows that the UV rays above 290nm can have significant effects on the eye lens and retina.
- Effects are cumulative; low doses over a long period can cause permanent damage.
- Rays less than 290nm from the sun are mostly absorbed by oxygen, nitrogen and ozone in the atmosphere.
- Individual sensitivity can be increased by many prescription drugs, i.e. hormones, vitamins, anti depressants etc.
- UV lenses are ideal for all outdoor workers – pilots, drivers, farmers, linesmen, builders, council workers etc.
- Persons working around highly reflective surfaces i.e. snow, water and sand are at the highest risk.
- The lens does not filter out UV rays it absorbs it and offers no reflection.
- All polycarbonate MSA lenses, both clear and tinted, absorb greater than 99% of UV rays up to 400nm. i.e. UV-C (200 - 280nm), UV-B (280 - 320nm) & UV-A (320 - 400nm).

Wavelength, Frequency and Energy



MSA Nullarbor Spectacle - Clear Lens

Transmission Values



Head Protection

Visor Compatibility Chart

For use with MSA Safety Hard Hats and Caps

FACE, HEARING AND HEAD PROTECTION COMBINATIONS		left/RIGHT™			SORDIN		
		LOW WHITE HELMET MOUNTED 30MM	MEDIUM BLUE HELMET MOUNTED 30MM	HIGH YELLOW HELMET MOUNTED 30MM	EXC HELMET MOUNTED 30MM	HPE HELMET MOUNTED 30MM	WHERE EARMUFF IS NOT REQUIRED 30MM
		766242	766239	766244	763932	763934	765393
764701	VISOR CARRIER, MSA SORDIN, V-GARD, V-GARD 500, V-GARD 200						
VISORS	CERTIFIED TO EN 166, EN 1731						
764703	VISOR MSA SORDIN CLEAR PC 20CM (1, F, 3, 9)	.	.	.	.	.	.
765698	VISOR MSA SORDIN CLEAR PC 20CM FOR ELECTRICAL ARCS (B, 3, 8, 9)	.	.	.	.	.	.
764746	VISOR MSA SORDIN METAL MESH (S)	.	.	.	.	.	.

PC = Polycarbonate	Protection against:
1 = Optical Class 1	3 = Liquid Splash
Mechanical Strength:	8 = Short Circuit Electric Arc
B = 120 m/sec	9 = Molten Metals and Hot Solids
S = 12m/sec	
F = 45m/sec	

763142 VISOR HOLDER							
VISORS	CERTIFIED TO AS/NZS 1337 - HIGH IMPACT						
227947CL	VISOR CLEAR PC 400MM x 240MM	.	.	.	.	.	.
VISORS							
225170CL	VISOR TEMPGARD CLEAR WITH CHINGUARD 400MM x 180MM	.	.	.	.	.	.
762115	VISOR MESH ALUMINIUM 390MM x 165MM	.	.	.	.	.	.
762116	VISOR MESH FIBREGLASS 390MM x 165MM	.	.	.	.	.	.
221411CL	VISOR CLEAR PC 400MM x 200MM	.	.	.	.	.	.
222157CL	VISOR CLEAR PC 400MM x 250MM	.	.	.	.	.	.
225901CL	VISOR CLEAR PC WITH CHINGUARD 400MM x 180MM	.	.	.	.	.	.

NO VISOR HOLDER REQUIRED, ATTACHES TO HATS AND CAPS, HELMET MOUNTED HEARING PROTECTION CAN BE WORN							
VISORS							
227891	VISOR STATIONERY CLEAR PC 305W x 175 4 CLIP ATT CAP	.	.	.	.	.	.



226000WH Cap V-Gard White
764701 Visor Carrier
764703 Visor Sordin PC 20cm
SOR36602 Pro FM Helmet Mounted



763930 Earmuff MSA Sordin Exc HB
764745 Visor Carrier HB
764746 Visor Sordin Metal Mesh

Part No.	Description
229710WH6V	V-Gard 500 Cap White 6PT Vented Sewn Sweatband
764701	Visor Carrier
764746	Visor Sordin Metal Mesh
766239	Sordin L/R Med Cap Muff 30mm

Part No.	Description
229710YE6V	V-Gard 500 Cap Yellow 6PT Vented Sewn Sweatband
763142	Visor Holder
762116	Visor Mesh Fibreglass
763932	Earmuff, MSA Sordin Exc Helmet Mounted 30mm



764745 Visor Carrier HB, WW, CC,
EXC, HPE

Visor Compatibility Chart

For use with non-MSA brand Safety Hard Hats and Caps

FACE, HEARING AND HEAD PROTECTION COMBINATIONS		left/RIGHT™			SORDIN		
		LOW WHITE HELMET MOUNTED 25MM	MEDIUM BLUE HELMET MOUNTED 25MM	HIGH YELLOW HELMET MOUNTED 25MM	EXC HELMET MOUNTED 25MM	HPE HELMET MOUNTED 25MM	WHERE EARMUFF IS NOT REQUIRED 25MM
		766566	766567	766565	763935	763933	765118
764701	VISOR CARRIER, MSA SORDIN						
VISORS	CERTIFIED TO EN 166, EN 1731						
764703	VISOR MSA SORDIN CLEAR PC 20CM (1, F, 3, 9)	.	.	.	.	.	.
765698	VISOR MSA SORDIN CLEAR PC 20CM FOR ELECTRICAL ARCS (B, 3, 8, 9)	.	.	.	.	.	.
764746	VISOR MSA SORDIN METAL MESH (S)	.	.	.	.	.	.
PC = Polycarbonate	Protection against:						
1 = Optical Class 1	3 = Liquid Splash						
Mechanical Strength:	8 = Short Circuit Electric Arc						
B = 120 m/sec	9 = Molten Metals and Hot Solids						
S = 12m/sec							
F = 45m/sec							
763142 VISOR HOLDER							
VISORS	CERTIFIED TO AS/NZS 1337 - HIGH IMPACT						
227947CL	VISOR CLEAR PC 400MM x 240MM	.	.	.	.	.	.
VISORS							
225170CL	VISOR TEMPGARD CLEAR WITH CHINGUARD 400MM x 180MM	.	.	.	.	.	.
762115	VISOR MESH ALUMINIUM 390MM x 165MM	.	.	.	.	.	.
762116	VISOR MESH FIBREGLASS 390MM x 165MM	.	.	.	.	.	.
221411CL	VISOR CLEAR PC 400MM x 200MM	.	.	.	.	.	.
222157CL	VISOR CLEAR PC 400MM x 250MM	.	.	.	.	.	.
225901CL	VISOR CLEAR PC WITH CHINGUARD 400MM x 180MM	.	.	.	.	.	.

left/RIGHT™ and Sordin Hearing Protection products with 25mm attachments are not certified to AS/NZS 1270. These 25mm Hearing Protection products are specifically designed for use with non-MSA safety hard hats and caps, they can not be used for MSA Safety Hard Hats and Caps. When using a specified visor and helmet mounted 25mm hearing protection product, the visor holder and/or carrier may not contour to the non-MSA safety hard hats and caps due to the design. MSA Visor Holders and/or Carriers are specifically designed for MSA Hard Hats and Caps which contour to the brims.



229710WH6V V-Gard 500
 6PT Vented Sewn Sweatband
766242 Sordin L/R Low Cap Muff 30mm
764701 Visor Carrier
764746 Visor Sordin Metal Mesh



229710WH6V V-Gard 500
 6PT Vented Sewn Sweatband
766244 Sordin L/R High Cap Muff 30mm
763142 Visor Holder
762116 Visor Mesh Fibreglass

Head Protection

V-Gard Protective Caps

MSA hardhats are made of ABS plastic, for a combination of lightweight and superior strength.

The exclusive “wear and fit” staz-on suspension allows for quick and simple personal size adjustment while wearing the cap.

The range of hard hats includes the V-Gard, V-Gard 500 and V-Gard 200.

The V-Gard and V-Gard 500 are now certified under AS/NZS1801 to be worn in reverse (peak at rear), providing the retention system is fitted in reverse within the cap (therefore the retention system is worn in the regular orientation).



V-Gard Cap



The V-Gard has been awarded an Australian Design Mark in recognition of Industrial Protective Headwear. An extended peak provides greater visibility and extra protection from sun and rain.

The peak underside of V-Gard is lined with MSA's patented Glaregard textured surface, a feature that significantly reduces glare, helping to reduce eye strain caused by reflected light.

- Earmuff and visor attachment slots
- Rain protection gutter



V-Gard 500 Cap



The V-Gard 500 has genuine integrated 6 point suspension system. Lightweight design provides comfort over long periods.

This style offers better ear muff fit and rain protection. Glaregard textured surface under the peak reduces eye strain from glare. Venting in the top of the cap promotes air flow and gives a cooling effect for the wearer

- Earmuff and visor attachment slots
- Rain protection gutter



Colour	V-Gard Cap 4 Point Suspension	V-Gard 500 Cap Vented 6 Point Suspension
White	226000WH	229710WH6V
Yellow	226000YE	229710YE6V
Green	226000GN	229710GN6V
Orange	226000OR	229710OR6V
Red	226000RE	229710RE6V
Blue	226000BU	229710BU6V
Fluoro Lime	226000FL	-

V-Gard Protective Caps and Hats

V-Gard 200 Cap



The style and comfort of the V-Gard 200 is achieved with a fully integrated 6 point suspension system.

Cool by name, cool by nature. When we say this is one of the coolest hard hats available we mean it. The venting in the cap provides superior air flow for improved wearer comfort over longer periods.

Available in a wide range of colours.

And remember all MSA hard hats can be customized with your company logo.

- Superior airflow for the coolest protection
- Earmuff and visor attachment slots
- Textured Glaregard Finish under Peak



Colour	V-Gard 200 Cap Vented 6 Point Suspension
White	229720WH6V
Yellow	229720YE6V
Green	229720GN6V
Orange	229720OR6V
Red	229720RE6V
Blue	229720BU6V

V-Gard Hat

- Hats feature a full circumference brim for greater protection
- Made from polypropylene

Colour	V-Gard Hat
White	220944WH
Yellow	220944YE
Green	220944GN
Orange	220944OR
Red	220944RE

V-Gard 500 Chrome Look Cap



- Chrome look non vented cap
- Vaporised aluminium layer over cap inside & out to reflect radiant heat
- Clear polyester coating
- Reflects radiant heat keeping workers cooler in high temperature areas
- Note: Not approved to AS/NZS 1801.

Part No.	Description
229710CHR6	V-Gard 500 Chrome Look Cap



Head Protection

V-Gard Protective Caps

Hi Temperature Cap & Hat



Hi Temperature Caps & Hats

- Hi Temp Caps and Hats are made from polycarbonate
- V-Gard Hats feature full brim

Part No.	Description
762458WH4	V-Gard 500 Cap White
762458YE4	V-Gard 500 Cap Yellow
762458OR4	V-Gard 500 Cap Orange
762458RE4	V-Gard 500 Cap Red
222699WH	V-Gard Hat White
222698YE	V-Gard Hat Yellow



Miners Caps & Hats

- Caps and hats fitted with cap lamp bracket & cable clip
- Hats feature full brim
- Standard available stocks are fitted with metal lamp brackets. High quality plastic brackets are available as a make to order.

V-Gard Caps & Hats

Part No.	Description
226002WH	White metal lamp bracket
226002YE	Yellow metal lamp bracket
764443WH4	White plastic lamp bracket
764443YE4	Yellow plastic lamp bracket
224158WH	White full brim hat metal lamp bracket
224158YE	Yellow full brim hat metal bracket



V-Gard 500 Cap

Part No.	Description
229351WH6V	White 6 point vented metal bracket
229351YE6V	Yellow 6 point vented metal bracket
764442WH6V	White 6 point vented plastic bracket
764442YE6V	Yellow 6 point vented plastic bracket

V-Gard 200 Cap

Part No.	Description
229350WH6V	White 6 point vented metal bracket
229350YE6V	Yellow 6 point vented metal bracket
764441WH6V	White 6 point vented plastic bracket
764441YE6V	Yellow 6 point vented plastic bracket



Generic Branded Caps

- Generic branded caps available in 4 styles

Part No.	Description
227501YE00651000	"Visitor" in Yellow
227501YE00381000	"Fire Warden" in Yellow
227501GN01291000	"First Aid" in Green
227501RE02651000	"Warden" in Red





Custom Branded Caps

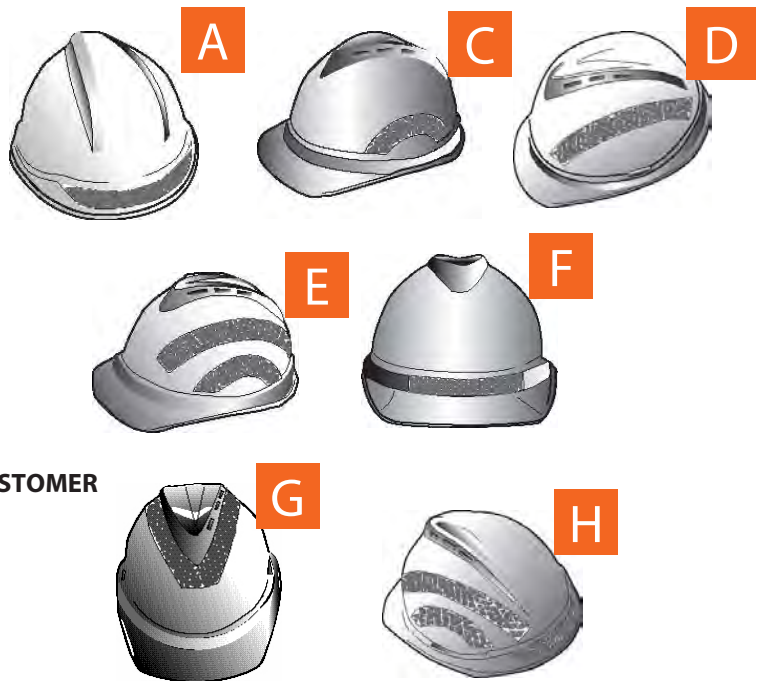
- Apply your company logo and message to safety caps and hats for increased brand exposure
- Brand can be applied to front, rear and sides of caps and hats
- Rear logo stickers available for V-Gard 500 caps & V-Gard 200

CONTACT YOUR MSA REPRESENTATIVE OR PHONE CUSTOMER SERVICE FOR MORE INFORMATION

Reflective Sticker Banding

- Available in standard formats using plain or cross hatch tape
- Style A - V-Gard 500 only
- Styles C-H - V-Gard, V-Gard 500, V-Gard 200

CONTACT YOUR MSA REPRESENTATIVE OR PHONE CUSTOMER SERVICE FOR MORE INFORMATION



MSA Bumpgard

- Baseball cap with moulded inner shell & foam crown pad
- Protects from superficial injuries caused by bumping head against stationary objects
- Velcro adjustment strap provides individual fit

Part No.	Description
763254BU	Bumpgard Baseball Cap
763254BUF	With attached Neck Flap

• **Note - Not AS/NZS 1801 approved.**

MSA Bumpcap

- Lightweight head protector
- Widely used in food preparation industry
- Side vents keep wearer cool

Part No.	Description
220819W	White

• **Note - Not AS/NZS 1801 approved.**



Head Protection

Accessories for V-Gard Caps and Hats

Cap Visors

TEMPGARD - Suitable for higher temperature application

Description	Size	Part No.
Clear with chinguard	400 x 180mm	225170CL

MESH - Low velocity particles plus more airflow

Description	Size	Part No.
Aluminium	390 x 165mm	762115
Fibreglass	390 x 165mm	762116

POLYCARB - Ideal general use, impact, heat and splash protection

Description	Size	Part No.
Clear	400 x 200mm	221411CL
Clear	400 x 250mm	222157CL
Clear with chinguard	400 x 180mm	225901CL
Clear high impact	400 x 240mm	227947CL



Metal Mesh Visor

764704 - Visor Carrier



Sordin Visor

763142 - Visor Holder



Metal Mesh Visor

Visors

The MSA SORDIN visor range is designed for those working environments where face protection is necessary. All visors are compatible with the passive hearing protectors; EXC and HPE, and the electronic hearing protectors: Basicline, Proline, Wireless World and Connected by Cable.

EN 166, EN 1731
(cartons of 20pcs)

Part No.	Description
764703	Clear PC visor, 20 cm (1, F, 3, 9)
765698	Clear PC visor, 20 cm, for electric arcs (B, 3, 8, 9)
764746	Metal mesh visor (S)

PC = Polycarbonate
1 = Optical class 1
Mechanical strength:
B = 120 m/sec
S = 12 m/sec
F = 45 m/sec

Protection against:
3 = liquid splash
8 = short circuit electric arc
9 = molten metals and hot solids



764703 - PC Visor



764746 - Nylon Mesh Visor

Visor Carriers

Carriers to connect visors to ear muffs or helmets.

EN 166, EN 1731
(cartons of 20pcs/pairs)

Part No.	Description
764701	Visor carrier for helmet mounting
764745	Visor carrier for headband Basicline, Proline, WW, CC, EXC & HPE
765274	Helmet Visor Adaptor where earmuffs are not used



764701 - Visor Carrier for Helmet Mounting



764745 - Visor Carrier for Headband

Accessories



Chin Strap Elastic

Wide Sun Brim & Neck Flap

COOL COTTON BRIM WITH ATTACHED NECKFLAP FOR MAXIMUM SUN PROTECTION

V-Gard 500 & V-Gard 200

Part No.	Description
762546WH	White
762546BU	Blue
762546OR	Orange

V-Gard

Part No.	Description
225689WH	White
225689BU	Blue
225689OR	Orange

ASSORTED ACCESSORIES

Part No.	Description
222150	General purpose cap attachment earmuffs
222151	Visor Holder - fits into earmuff attachment (Refer page 53 for visors)
222158	Visor Adapter - where earmuff not used (222151)
220553	Chin Strap Elastic
224047	Sweatband Terry Towelling (velcro fit)
765550	Sweatband, Terry Towelling, Lug Style
225690	Sweatband Sheepskin (velcro fit)
224405	Neck Flap Woollen
229068	Neck Flap Proban Yellow

Cap Attachment Earmuffs



Sordin EXC



Sordin HPE



MSA SORDIN

Part No.	Description
763932	Sordin EXC Cap Attachment earmuff Class 5
763934	Sordin HPE Cap Attachment High Performance earmuff Class 5
763142	Visor Holder (Sordin & HiLo) - (Refer page 53 for visors)
765274	Helmet Visor Adaptor where earmuffs are not used



Head Protection

Bushfire Helmets

- Australian made for Australian conditions
- Approved to AS/NZS1801: Type III
- Hi-Temp shells
- High strength or specified break chinstrap options

Part No.	Description
764467WH	V-Gard 500 Cap Style 4.10 High strength retaining Chinstrap
764468WH	V-Gard 500 Cap Style 4.11 Specified breakpoint Chinstrap
764465WH	V Gard Hat 4.10 High strength retaining Chinstrap
229068	Neck Flap Refer Page 61 for visors (Advance Style Only)



Structural Helmets

- High temperature foam liner with patented breakaway system
- Nomex ear/neckflap - Nomex quick release chinstrap
- Standard 4" or optional 6" visor
- Available in white, red, lime yellow, orange

CONTACT YOUR MSA REPRESENTATIVE FOR MORE INFORMATION

Part No.	Description
762962LY	Cairns 660CAS Metro Helmet Lime Yellow
762962WH	Cairns 660CAS Metro Helmet White

3-Position Rear Ratchet Height Adjustment
Ensures a secure and comfortable fit for all head sizes (52cm - 64cm).

Adjustable Front Headband
Allows perfect fit between helmet and SCBA mask without lifting helmet or exposing forehead.

Patented Shock-Absorbing Tube
Maximises impact protection.

Non-corroding, high-temperature-resistant
faceshield hardware.

Rugged, high-temperature edge will not melt or drip.

Durable helmet hanger fits on large hooks and
resists bending.

Minimal parts for lower service cost and
easier maintenance.

Approved to AS/NZS4067.

Spare Parts

Part No.	Description
L655XP	Neck Flap
LK28P	Cushion Liner
RHBP	Ratchet Headband
10037315	4" Visor
S806CP	6" Visor
763910	Spares Kit (Washers, Screws, Circlips)

F2 Xtrem

MSA's F2 Xtrem Helmet responds to all extreme applications. The Quick Click head size adjustment reinforces the ease and functionality of the helmet, without compromising comfort.

The F2 Xtrem is made from engineered hi-temp polycarb, which provides greater balance and a lower centre of gravity.

The F2 Xtrem is lightweight for more comfort and is effective in action, responding to customer needs under the most extreme and dangerous conditions when exposed to fire.

Features and Benefits

- 3 position sizing headband that creates better comfort and balance.
- Leather sweatband provides better breathability, absorbs perspiration.
- Additional adjustable suspension netting provides better comfort, breathability and balance.
- 6 chinstrap adjustments, positioned ergonomically for greater balance and comfort.
- Quick Click head size adjustment that is glove friendly.



Part No.	Description
765938FO	Gallet F2 Xtrem Helmet FLURO ORANGE
765938PE	Gallet F2 Xtrem Helmet PHOTOLUMINESCENT
765938RE	Gallet F2 Xtrem Helmet RED
765938WH	Gallet F2 Xtrem Helmet WHITE
765938YE	Gallet F2 Xtrem Helmet YELLOW

The F2 Xtrem Helmet fully complies with and is certified to AS/NZS1801 Type III (Bushfire Helmet)

Accessories

Part No.	Description
766078	Aluminised Neckflap
766079	Wool Neckcurtain



Head Protection

Firefighter Helmets

Real Protection Systems

It is essential for firefighters to protect themselves while performing their difficult and dangerous work. The universal, modular, high technology head protection system F1 has been designed in co-operation with fire brigades around the world. Its unique design protects the firefighter against penetration, fire electric shock and radiant heat.

The helmet system offers a wide variety of options such as a comprehensive range of neck curtains and visors, as well as adaptable face masks, lamps and communication systems. The mask-helmet-combination offers even greater breathing protection. The special face mask can be attached directly without necessitating the removal of the helmet.



F1 SF Helmet

F1 SF Helmet MSA GALLET

Based on the original F1 helmet, the F1 SF is especially designed for Structural Firefighting [SF] for firefighters worldwide. The F1 SF features built-in interfaces on both sides to become a flexible head protection platform for different types of accessories. Its mask adapter KitFix can be easily adjusted for perfect mask attachment and optimal wearing comfort. What's more, the F1 SF is designed with a ratchet cradle [quick adjustment on the head] and a new 3-point fireproof, adjustable chinstrap providing increased comfort and stability.

The F1 SF is available in a variety of helmet and front plate colours.

EN 443 : 2008 (Complete with Neckflap - GA1109)

Part No.	Description
GA230X	F1 SF painted, standard headband
GA235X	F1 SF painted, ratchet headband
GA240X	F1 SF nickel, standard headband
GA245X	F1 SF nickel, ratchet headband
GA1109	Aluminized neck curtain
GA1110	Integral neck curtain, fireproof

X = according to face-shield [9% gold, 43% gold or transparent]



F1 E Helmet

F1 E Helmet MSA GALLET

The F1 E is a very high performance helmet for structural fire-fighting aimed for large head size firemen, for sizes from 58 to 64 cm. The comfortable headgear is provided with either standard adjustment or quick ratchet adjustment. The spherically shaped face shield protects against heat and glare, with 3 options: gold, transparent and semi-tinted. The F1E helmet features a KitFix system with 3-position adjustment to optimize SCBA mask tension and wearer comfort. Furthermore it is designed with a 3-point chinstrap with automatic buckle for optimum stability.

The F1 E is available in a variety of helmet and front plate colours.

EN 443 : 2008 (Complete with Neckflap)

Part No.	Description
GA170X	F1 E painted standard headband
GA175X	F1 E painted ratchet headband
GA185X	F1 E nickel ratchet headband

X = according to face-shield [9% gold, 43% gold or transparent] and chinstrap [2-point buckle or 3-point buckle]



Firefighter Helmets



FUEGO Helmet

FUEGO Helmet MSA GALLET

FUEGO is the perfect head protection solution for Fire & Rescue and Emergency Services who demand high performance as well as cost effectiveness without compromise. FUEGO is provided with a quick adjustment headband with Velcro fastening and height adjustment [2 on the front, 3 on the rear]. It is designed with built-in interfaces for accessories [lamp, external face shield] including adjustment capability [lamp angular position]. Moreover, this helmet includes a 4-point chinstrap, with 4 adjustments [2 on the front, 2 on the rear] for optimal stability.

EN 443 : 2008 (Complete with Neckflap)

Part No.	Description
GA290X	FUEGO helmets

X = according to helmet colour and included accessories.



Head Protection

Police Helmets

High Performance Law Enforcement Helmet

Police and law enforcement forces are subject to a wide variety of threats and physical attacks during the course of their work. Therefore they need personal protective equipment which they can rely on at all times. MSA GALLET offers a range of law enforcement helmets with a high

quality of performance, intended for riot control during demonstrations or other incidents of public disorder, where the wearer is exposed to risk of injury from projectiles, gas, smoke and other hazards. The helmets and full face masks together create a total head and respiratory protection system.



MO 5006 with 3S-H-A Mask

MO 5006 Helmet MSA GALLET

The jet-shaped helmet shell is equipped with a comfortable, soft inner padding, 3 point chin-strap with locking buckle and anti-strangulation system, a curved faceshield and a 4-stud neck curtain. The integration of a bone microphone communication system is possible. The helmet is resistant to damage and penetration from blunt and sharp objects, and protects against chemical aggression, as well as fire and flames.

With the face mask 3S-H-A, the MO 5006 can be enhanced with an integrated mask-helmet protection system that meets international requirements. The helmet is available for head sizes from 51 to 64 cm in white, black and olive-green.

Accessories: protection cover, carrying bag, belt buckle.

EN136

Part No.	Description
GA5006*X	MO 5006 with curved face-shield and 4-stud neckcurtain
GA5016*X	MO 5006 with curved face-shield, add-on anti-fog Pinlock® & 4-stud neckcurtain

* Helmet colour references: White = BE, Olive-green = VK, Black = NE, Green = VA, Matt Black = BU [only for GA5006*X] X: Depending on the size [available from XXXS to XXXL]



3S-H-A Police

3S-H-A Police Full Face Mask

EN136

Part No.	Description
10058157	3S-H-A Police, with carrying strap
10061667	3S-H-A Police, small, with carrying strap
10058272	3S-H-A Police, without carrying strap
10061666	3S-H-A Police, small, without carrying strap



MO 5001R with bulb face-shield

MO 5001R and MO5011R Helmet MSA GALLET

The MO 5001R / MO 5011R is intended for riot control and law enforcement operations with risks of projectiles, gas, smoke, etc. It is compatible with the adaptation of a respiratory mask and can be either hold with a bulb anti-shock face-shield [MO 5001R] or with a curved one [MO 5011R].

Part No.	Description
GA5001R*	MO 5001R with anti-shock bulb face-shield [2 mm]
GA5011R*	MO 5011R with anti-shock curved face-shield [4 mm] Leaflet 37-108.2

* Helmet colour references: White= BA, Blue= IA, Black= NE



MO 5011R with curved face-shield

3S-H-5001 Police Full Face Mask

Part No.	Description
10044208	3S-H-5001
10045465	3S-H-5001, small

Accessories for Firefighter and Police Helmets

Communication Systems OSTEO

OSTEO uses the principle of osseous (bone) sound transmission, whereby background noises are effectively filtered out. This system is available for more than 100 different types of radios. Disconnecting the plug will automatically switch the system back to radio PTT. Great transmitting power and high sound quality.

Part No.	Description
0102X11XX	OSTEO System with plug for F1 helmets
0102X12XX	OSTEO System with plug for F2 helmets



MICRO

The MICRO system is a microphone and a loud-speaker in one. Small and light, the MICRO can be easily fitted into the helmet, or it can be used independently, for example, in gas tight suits. This system is available for more than 100 different types of radios.

Part No.	Description
0103X11XX	MICRO System with plug for F1 helmets
0103X12XX	MICRO System with plug for F2 helmets



L'COM

L'COM is a non-integrated, independent communication kit that is worn separately inside the helmet. The ears remain free allowing wearers to remain in immediate contact with their surroundings. Its revolutionary technology makes it one of the most advanced communication systems of its kind. A high level of safety is provided by the self-breaking plug and automatic switch-over to radio PTT.

Part No.	Description
0104X11XX	L'COM System with plug



Lamps



Lamp XP

Approved according to ATEX standard Zone1 and T5 approved for use with PPE equipment, the lamp XP is extremely powerful and can be attached to helmets using a choice of flashlight adapters. Its xenon laser spot module allows better penetration through water, smoke, fog and rain. The self-luminescent light cap can be easily seen in the dark.
Part No. 763043



Lamp XP LED

The new lamp XP LED - Light Emitting Diode - not only uses the advantages of LED technology but also provides a long beam [RECOIL]. It is designed for a 32 h burning time with 4 batteries. It provides 32 lumens with a 1 watt LED.
Part No. 766077

Other Accessories

Neck Curtains

Various neck curtains for F1, F2 X-TREM and FUEGO helmets.



MSA Sordin Ear Muffs for MSA GALLET Helmets

Ear muffs mounted on helmet especially designed for the F2 X-TREM helmets.



Eye Protection



The MSA range of eye protection has been designed to protect workers from immediate and long-term dangers. Our products have been designed to provide the ideal balance between fit, comfort, protection and style. High strength, lightweight materials are used to provide robustness for frames and lenses whilst the latest technology delivers hard coating, anti scratch lenses and anti fog properties.

MSA offers spectacles, goggles and welding helmets for a variety of work applications that involve an immediate risk of impact from flying debris, chemical splash, dust, sparks and glare.

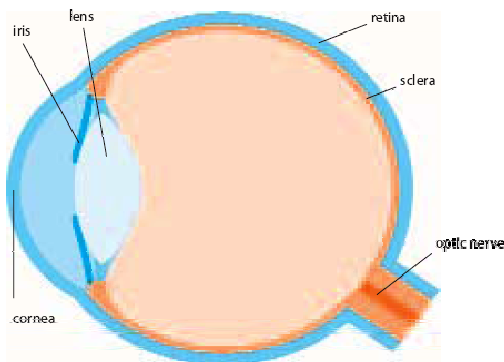
In addition, all MSA spectacles offer 100% protection from harmful UV rays to protect against long-term cumulative eye damage.



A SENSITIVE ORGAN WE NEED TO PROTECT

"At a glance" our eyes capture very quickly all kinds of information. Our eyes provide us with a view of the world and they add a quality to our life.

Hazards that exist in countless working areas can cause severe damage to human vision within just a second. Possible consequences of such an accident reach from a simple temporary irritation up to total loss of sight. Therefore in Australian National and State Occupational Health and Safety Legislation, European Labour Legislation and Australian Standards it recognised that eye protection is a major concern.

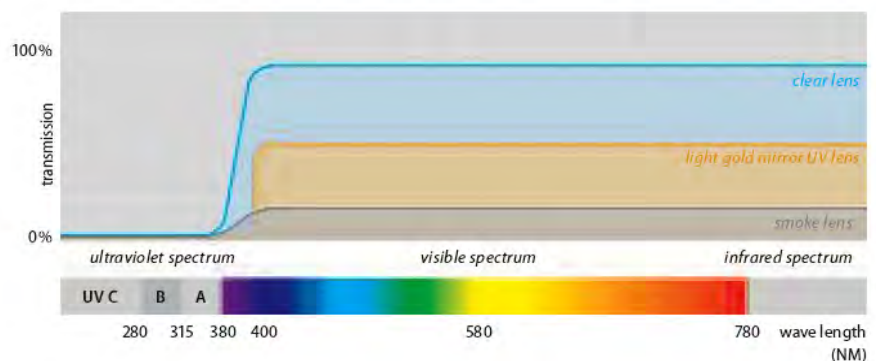


RISK AWARENESS – THINGS TO CONSIDER

Most injuries are caused by mechanical (particles such as metal fragments), chemical or harmful radiation or a combination of these or other hazards. Anyone working in or passing through areas that pose eye hazards should wear appropriate protective eyewear. The vast majority of eye injuries are preventable if appropriate eyewear is available and worn consequently. Protective eyewear that is ergonomic, comfortable and adapts well to the users style and preferences will be worn.

INVISIBLE RISKS – RADIATION

All MSA lenses fully absorb UV radiation, e.g. by sunlight, which even at low dose exposure over a long period can cause chronic damage to the cornea and crystal corps of the eye.



Eye Protection

VERSATILE AND VALUABLE

The variety of lens shades cover virtually all industrial applications. As a standard all MSA Safety Eyewear has a tough Anti-Scratch coating to protect the lens from minor scratches and abrasions. In addition the MSA Optirock Anti-Fog/Anti-Scratch (AF) coating provides superior vision even in increased humidity and temperature change applications.

UV FILTERS

UV 400	Premium protection from UV radiation. Blocks 100% of harmful UV light. Recommended when working in an environment that has high levels of UV radiation.
UV Radiation	All lenses filter out 99.9% of UV radiation.

LENS COLOURS

Lens colour	Lens Code	Special use	Luminous Transmittance	UV filter
Clear	C	Most popular lens for indoor/general	85%	UV 400
Amber	A	Contrast enhancement (quality inspection), low light environments (night shift)	84%	UV 400
Indoor Outdoor		Changing light conditions, driving, indoor/outdoor premium UV filter	43%	UV 400
Purple Blue		Contrast enhancement in outdoor activities	43%	UV 400
Gray	S	Most popular sun glare filter	19%	UV 400
Blue Mirror	BB	Modern antiglare filter for outdoor activities	17%	UV 400
Silver Mirror	SB	Modern antiglare filter for outdoor activities	18%	UV 400
Darkbrown		Enhanced outdoor vision	25%	UV 400
Sky Orange Mirror		Strong and stylish antiglare filter	16%	UV 400



SOME SELECTION CRITERIA




In addition to national and/or local standards, a proper workplace analysis needs to consider all aspects of the work environment including:-

- type of hazards at the workplace
- frequency of use
- influence by/on other workplaces
- required colour recognition
- optical capacity of worker
- use of other PPE (compatibility), e.g. hard hats, filtering facepieces, half mask respirators, ear muffs





ERGONOMIC AND COMFORTABLE

All MSA spectacles are feather light and sit comfortably on the face, even after hours of use.

Ergonomic design features increase the safety of the wearer and their individual safety perception.

	Soft/flexible temple tips	Soft co-injected materials significantly increase wearer comfort and safety as the spectacle remains always in a perfect position
	Length Adjustment	Perfect adjustment to individual headsize for a perfect fit
	Lens/temple inclination	Easy-to-use ratchet system. Adaptation to individual face shapes to ensure gap-free all-around protection.

COATINGS

	Anti-Fog	Water absorbing surface treatment prevents fogging of the lens. Always having a clear view, even in humid environments, helps avoid accidents.
	Anti-Scratch	Self sealing mechanism avoids scratching and extends service time of lens thereby reducing costs over time.
	Anti-static	Dust repellent surface treatment reduces the need for cleaning.
	UV 400	Absorbs 100% of harmful ultraviolet radiation to avoid long term damage to the eye.

STANDARDS APPROVAL

All eyewear contained within this catalogue is certified to AS/NZS 1337 Medium Impact Protection.

Premium Eye Protection

Instinct i-wear Range

NEW



Instinct i-wear - Z1

- . Embellished styled safety.
- . Frameless dual polycarbonate lens provides superior eye coverage.
- . Stylish temple arms designed to contour to head form.
- . Adjustable metal nose bridge allows for better user comfort and is complimented by soft nose pads.
- . Available in Premium Black or Classic Tortoise temple arms.
- . 100% UV Protection, UV400 rated.
- . Weight: 23 Grams.
- . Certified to AS/NZS 1337 Impact Protection.



Premium Black Frame - Single Blue Mirror Lens
767022GBSBM



Premium Black Frame - Silver Mirror Lens
767022GBSM



Premium Black Frame - Smoke Lens
767022GBS



Classic Tortoise Shell Frame - Dark Brown Lens
767022GTDB



Classic Tortoise Shell Frame - Indoor/Outdoor Lens
767022GTIO



Instinct i-wear - Z2

- . Styled low impact safety spectacle.
- . Sporty and lightweight head form hugging temple arms.
- . Cushy moulded nose pads.
- . Available in Premium Black-Marble, Vintage Tortoise and Subdued Black frames.
- . 100% UV Protection, UV400 rated.
- . Weight: 23 Grams.
- . Certified to AS/NZS 1337 Impact Protection.



Premium Black-Marble Frame - Smoke Lens
767025GBMS



Vintage Tortoise Shell Frame - Dark Brown Lens
767025GTDB



Vintage Tortoise Shell Frame - Indoor/Outdoor Lens
767025GTIO



Subdued Black Frame - Indoor/Outdoor Lens
767025MBIO



Subdued Black Frame - Smoke Lens
767025MBS



Subdued Black Frame - Silver Mirror Lens
767025MBSM

Premium Eye Protection

NEW

Instinct i-wear Range

UV 400
100%
UV PROTECTION



Instinct i-wear - Z3

- . Chic metal wrap around frame.
- . Solo polycarbonate lens construction with adjustable nose piece.
- . Sleek spring temple arms with soft comfort tips.
- . 100% UV Protection, UV400 rated.
- . Weight: 30 Grams.
- . Certified to AS/NZS 1337 Impact Protection.



Metal Frame -
Amber Lens
767001MFA



Metal Frame -
Brown Lens
767001MFB



Metal Frame -
Indoor/Outdoor
Lens
767001MFIO



Metal Frame -
Light Blue Mirror
Lens
767001MFLBM



Metal Frame -
Silver Mirror Lens
- 767001MFSM



Metal Frame
- Smoke Lens -
767001MFS

AVAILABLE
SOON

Metal Frame
- Clear Lens -
767001MFC

Instinct i-wear - Z4

- . Aggressive and Arrested styling.
- . Dual lens permanently captured within a safety frame.
- . Secured hinges for robust temple arms.
- . Smooth styled soft comfort nose piece.
- . Available in Premium Black-Dark Classic, Tortoise, Premium Black-Graduation Brown and Premium Black frames.
- . 100% UV Protection, UV400 rated.
- . Weight: 30 Grams.
- . Certified to AS/NZS 1337 Medium Velocity Impact Protection.

UV 400
100%
UV PROTECTION



Premium-
Graduation
Brown Frame
- Brown
Mirror Lens -
767002BLBBRM



Premium Black/
Dark Classic/
Tortoise Shell
Frame - Smoke
Lens - 767002BTS

AVAILABLE
SOON



Premium Black
Frame - Silver Mirror
Lens - 767002GBSM



Premium Black
Frame - Smoke Lens
- 767002GBS



Premium
Black Frame -
Polarised Lens
- 767002GBSP

Eye Protection

MSA Premium Eyewear Range



Racers Gradient Red & Jump Zebra

- Stylish and Sleek looking safety spectacles.
- Provides excellent eye and surrounding coverage.
- Medium Flex Temple Tips providing soft feel on ear.
- Curvature Plus Technology Lenses.
- Certified to AS/NZS 1337 Medium Impact Protection.
- Weight: 30g.



Red Mirror
766757RM



Smoke Anti-Fog
766757SAF

Discovery II

- Next Generation of one of MSA's most successful safety spectacles.
- Fresh and sleek design.
- Weightless durable frame construction.
- Comfort, Fit and Feel in one safety spectacle.
- Soft flexible temple tips.
- Anti-Fog and Anti-Scratch lenses.
- Certified to AS/NZS 1337 Medium Impact Protection.
- Weight: 24g.



Clear
766764CAF



Smoke
766764SAF



Lite Gold
766764LGAF



Altimeter

- Exclusive design, spectacle and goggle in one, otherwise known as "The Spoggle" supplied complete with arms and strap.
- Brawny and durable indirect vented frame constructed with co-injected polycarbonate and rubber.
- Removable adjustable elastic strap provides firmer comfort and fit.
- Replace the elastic strap with the arms and you have a quality safety spectacle, arms boast medium flex temple tips and 3 point length adjustment.
- Anti-Fog and Anti-Scratch lenses.
- Certified to AS/NZS 1337 Medium Impact Protection.
- Weight: 37g (with arms).
- Weight: 45g (with elastic).



Clear
766765CAF



Smoke
766765SAF

MSA Premium Eyewear Range



UV 400
100%
UV PROTECTION



Blue Mirror
766318BM



Smoke Anti-fog
766318SF



Lite Gold Anti-fog
766318LF

Blockz

- Provides excellent eye and surrounding coverage.
- Offers side protection coverage from foreign matter.
- Robust Polycarb frame.
- 4 point length adjustable temple arms.
- Large visibly safe paddle styled rubber temple tips.
- Anti-Fog and Anti-Scratch lenses.
- Certified to AS/NZS 1337 Medium Impact Protection.
- Weight: 25g.



UV 400
100%
UV PROTECTION



Amber
766767AAF



Clear
766767CAF



Smoke
766767SAF

Torrin

- High quality black fashion frame with matt metal finishes delivers a classy safety spectacle that just wants to be worn.
- The anti scratch/anti fog lens delivers superb optics for excellent vision with medium velocity impact and UV400 protection.
- The low profile side arms ensure a comfortable fit and the fitted nosebridge eliminates annoying slippage.
- Certified to AS/NZS 1337 Medium Impact Protection.
- Anti-Fog and Anti-Scratch lenses.



UV 400
100%
UV PROTECTION



Amber
766759AAF



Clear
766759CAF



Smoke
766759SAF



Light Gold
Indoor/
Outdoor AF
766759LGAF

Cage

- New designed injection moulded Cage temples provide gentle fit around the ear.
- Pressure discharge temples allow for a more comfortable fit when using Headband and Helmet Mounted Hearing Protection.
- Featherweight construction and lithe design.
- Anti-Fog and Anti-Scratch lenses.
- Certified to AS/NZS 1337 Medium Impact Protection.
- Weight: 26g.



Amber
766767AAF



Clear
766767CAF



Smoke
766767SAF

Eye Protection

MSA Premium Eyewear Range



Alternator

- Exclusive and durable frame construction offers the wearer a high level of protection against dust and other foreign matter plus the ability to alternate to their preference.
- Supplied with quick, easy and secured removable open cell foam insert. Replacement closed cell foam insert also available.
- Anti-Fog and Anti-Scratch lenses.
- Certified to AS/NZS 1337 Medium Impact Protection.
- Weight: 38g with open cell foam.
- Weight: 31g without open cell foam.



Clear
766758CAF



Smoke
766758SAF



Replacement closed cell foam insert
766758CCF

Ultra

- Robust frame construction with open cell foam.
- Provides protection against dust and other foreign matter.
- 4 point length adjustment arms.
- Anti-Fog and Anti-Scratch lenses.
- Certified to AS/NZS 1337 Medium Impact Protection.
- Weight: 35g.



Clear
766766CAF



Smoke
766766SAF

Arctic M

- Certified to AS/NZS 1337 Medium Velocity Impact.
- Ideal for use indoor and outdoors.
- 100% UV protection, lightweight and comfortable.
- Popular Wrap Around Style - Wide Vision Lens.
- Lightweight Frame - Blue Mirror Lens for Maximum Glare Protection.

Clear Lens for Indoor Protection, Smoke Lens for Outdoor Protection and Blue Mirror Lens for Glare Protection. Lite Gold Lens for Indoor/ Outdoor Protection. Optional Anti-Fog coating available on Clear Lens.



Clear
229208C

Clear Anti-fog
229208CF

Amber
229208A

Smoke
229208S

Blue Mirror
229208B

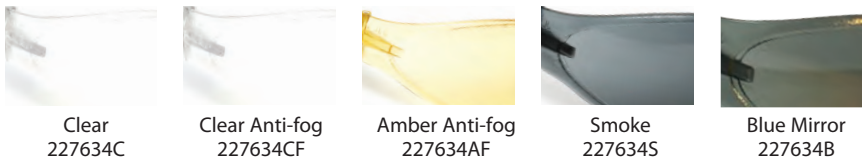
Arctic (The Original)

- Lightweight, Universal Fit.
- Unobstructed vision.
- Hard coat anti scratch lens.
- Certified to AS/NZS 1337.

Cool safety eyewear, modern styling offers a virtual weightlessness fit with unobstructed vision. 100% UV protection. The ultimate combination of style, comfort and protection:-

- Lightweight for All Day Comfort - Wraparound styling for Maximum Protection; and
- 100% UV 400 Protection - Anti Fog Coating for Humid Environments

Available in Clear Lens for Indoor Protection, Smoke Lens for Outdoor Protection, Amber Lens for Protection in Low-Light environment and Blue Mirror Lens for Glare Protection. Anti-Fog coating available on clear and amber lens.



Clear
227634C

Clear Anti-fog
227634CF

Amber Anti-fog
227634AF

Smoke
227634S

Blue Mirror
227634B

Arctic Gold

- Soft feel arms and wrap around frame.
- Soft carry pouch doubles as cleaning cloth.
- Medium velocity impact protection.
- Hard coat anti scratch lens.
- Certified to AS/NZS 1337 Medium Velocity Impact.

The popular Arctic safety spectacle now has a cool looking addition to the range. Arctic quality and performance with a cool black frame, soft feel arms and an embossed MSA logo.

Each Arctic Gold comes in its own protective, soft carry pouch that doubles as a cleaning cloth.

- Lightweight for All Day Comfort - Wraparound styling for maximum protection - 100% UV 400 Protection
- Anti Fog Coating for Humid Environments

Anti-Fog Clear Lens for Indoor Protection, Smoke Lens for Outdoor Protection, Lite-Gold Lens for Indoor/Outdoor Protection and Gold Mirror Lens for Glare Protection



Gold Mirror
762267BG

Lite Gold
762267BL

Clear Anti-fog
762267BCF

Smoke
762267BS

Eye Protection



Nullarbor

- Australia's favourite safety spectacle.
- Stylish wraparound design.
- Wide vision hard coated lens.
- Robust nylon frame.
- Certified to AS/NZS 1337 Medium Velocity Impact.

Quality protection in a stylish wrap around look and scratch resistant lens.

The polycarbonate scratch resistant lenses offer 100% UV protection with wide vision and built in side impact protection.

- Popular Wrap Around Style - Lightweight Frame with soft feel temple ends:-

Clear Lens for Indoor Protection, Smoke Lens for Outdoor Protection and Blue Mirror Lens for Glare Protection. Lite Gold Lens for Indoor/Outdoor Protection. Optional Anti-Fog coating available on Clear Lens and Lite Gold.



Clear
229207C

Clear Anti-fog
229207CF

Smoke
229207S

Blue Mirror
229207BB

Lite Gold Anti-fog
229207LF

Rainbow Frame
Smoke Lens 229207BS



Discovery

- Wraparound lenses.
- Adjustable length side arms.
- Hard coat anti scratch lens.
- Certified to AS/NZS 1337 Medium Velocity Impact.

Traditional lines with a new modern approach. The contoured black frame allows the lens to wrap around for greater protec-

Adjustable length side arms ensure a perfect fit on every occasion. 100% UV protection, seven lens styles and featuring anti fog options for clear, smoke and amber lens.

- Lightweight for All Day Comfort; and
- Wraparound styling for Maximum Protection; and
- Anti Fog Lens for Humid Environment.

Clear lens for Indoor Protection, Smoke Lens for Outdoor Protection, Lite-Gold Lens for Indoor/Outdoor Protection, Amber Lens for Protec-tion



Clear
220175BC

Clear Anti-fog
220175BCF

Lite Gold
220175BL

Lite Gold Anti-fog
220175BLF

Smoke
220175BS

Smoke Anti-fog
220175BSF

Gold Mirror
220175BG

Amber Anti-fog
220175BAF

Premier

- Ideal for indoors or outdoors applications.
- Lightweight.
- Hard coat anti scratch lens.
- Certified to AS/NZS 1337 Medium Velocity Impact.

Quality eyewear at an economical price.

Ideal for use indoors and outdoors. 100% UV protection, lightweight and comfortable;-

- Popular Wrap Around Style.

Clear Lens for Indoor Protection, Smoke Lens for Outdoor Protection and Blue Mirror Lens for Glare Protection.



Clear
763109C

Smoke
763109S

Blue Mirror
763109B





Platinum

- High quality nickel silver frame.
- Stainless steel sidearms tipped in natural rubber.
- Industrial wide-vision with non-removable sideshields.
- Ideal for use with prescription lenses.
- Certified to AS/NZS 1337 Medium Velocity Impact.

Stylish metal framed spectacle featuring a high quality nickel silver frame with stainless steel sidearms tipped in natural rubber to ensure a firm grip. Available with a choice of three scratch resistant lens styles: Clear, smoke and silver mirror.

All models feature 100% UV protection. Frame suitable for fitting prescription lenses.



Clear w/shields
229305



Smoke w/shields
229306



Silver Mirror w/shields
229307

Glacier

- Available in 3 frame colours: Champagne, Smoke & Blue.
- Certified to AS/NZS 1337 Medium Velocity Impact.
- Hard coat anti scratch lens.
- Soft feel frame.
- Stylish wraparound coverage.

Champagne looks and comfort with the MSA Glacier spectacle. Medium velocity impact resistant lenses come in Clear, Smoke, Lite Gold, Lite Blue and Orange. Glacier spectacles feature 100% UV protection and offer the ultimate in protection and style.



Smoke Frame
Clear 228007SC



Smoke Frame
Smoke 228007SS



Smoke Frame
Lite Gold 228007SL



Smoke Frame
Lite Blue 228007SB



Champagne Frame
Clear 228007CC



Champagne Frame
Smoke 228007CS



Champagne Frame
Lite Gold 228007CL



Champagne Frame
Orange 228007CO

Cool Blooz

- Super soft comfort frame.
- Hard coat anti scratch lens.
- Certified to AS/NZS 1337 Medium Velocity Impact.

A new look and a new feel in eyewear. The Cool Blooz range features a super soft frame in a stylish design. 100% UV protection, six lens styles with anti-fog coating optional on clear lens.



- Lightweight for All Day Comfort - Wraparound styling for Maximum Protection - Blue Mirror Len for Maximum Glare Protection Clear Lens for Indoor Protection, Smoke Lens for Outdoor Protection, Lite-Gold Lens for Indoor/Outdoor Protection, Blue Mirror Lens for Glare Protection.



Lite Gold
220168L



Blue Mirror
220168B



Clear
220168C



Clear Anti-fog
220168CF



Smoke
220168S



Smoke Anti-fog
220168SF

Eye Protection

Small Faces

Small Faces Mini Nullarbor

- Australia's favourite safety spectacle.
- Ideal for smaller faces.
- Anti-Fog / Anti-scratch lens.
- Soft temple tips for comfort.
- Certified to AS/NZS 1337 Medium Impact Protection.



Clear
766319CF



Smoke
766319SF



Mini Nullarbor

Small Faces Mini Arctic

- Using The Original Arctic Design and re-shaped for small faces.
- Lightweight with unobstructed vision.
- Anti-Fog and Anti-Scratch lenses.
- Certified to AS/NZS 1337 Medium Impact Protection.
- Weight: 18g.



Clear
766760CAF



Smoke
766760SAF



Supervue

- Wraparound style with rolled edges.
- Optimum visibility, comfort & protection.
- Side vents provide superior ventilation.
- Internal space allows prescriptive glasses to be worn underneath.
- Certified to AS/NZS 1337 Medium Velocity Impact.

Incorporating a traditional "wrap-around" design with rolled edges, Supervue allows optimum visibility, comfort and protection.

The impact and scratch resistant lenses and sidearms offer 100% UV protection and are contoured for 180 degree vision.

Side air vents enable superior ventilation, with internal space that allows for prescription glasses to be worn underneath.

Clear Lens for Indoor Protection, Smoke Lens for Outdoor Protection and Amber Lens for Protection in Low-light environments.



Clear
225228



Smoke
225229



Amber
225234



Goggles



Clear
766763CAF



Clear
766761CAF



Smoke



Clear
766762CAF



Clear
228028CL



Smoke
228028SM



Amber
228028AM

FlexiChem

- Soft Flex low profile frosted frame for increased comfort.
- Upper and lower indirect ventilation for improved airflow.
- Highly compatible with most Industrial Head Protection.
- Anti-Fog and Anti-Scratch lenses.
- Certified to AS/NZS 1337 Medium Impact Protection.
- Weight: 115g.

ChemPro

- Sleek and lightweight Low Profile design, co-injected Polycarb/Rubber Frame.
- Wide vision lens provides room for most prescription spectacles.
- Frame design incorporates indirect vents positioned top and bottom of lens to promote air flow for increased wearer comfort.
- 45 degrees adjustable elastic strap for individual fit.
- Highly compatible with most industrial head protection.
- Anti-Fog and Anti-Scratch lenses.
- Certified to AS/NZS 1337 Medium Impact Protection.
- Weight: 78g.

Responder

- Low profile design.
- Designed by MSA Gallet in France specifically for emergency services work.
- Durable fire retardant HTPR frame.
- Clear Twin Lens – Outer Polycarb Anti-Scratch and inner Acetate Anti-Fog for ultimate Anti-Fog protection.
- Certified to AS/NZS 1337 Medium Impact Protection.
- Weight: 132g.

FlexiFold Goggle

- Flexible, face hugging goggle with adjustable strap.
- Scratch resistant anti-fog polycarbonate lens.
- Dust/waterproof sponge cupping.
- Open/close side ventilation.
- Ideal smoke protective goggle for bushfire fighting.
- Certified to AS/NZS 1337 Medium Velocity Impact.



Chemical/Dust Goggle

- Close Fitting Faceseal.
- Soft Comfortable Frame.
- Wide Headband for Comfort.
- Indirect Frame Venting.
- Anti-Fog Anti Scratch Lens .
- Certified to AS/NZS 1337 Medium Velocity Impact.



Foam bound
Clear Anti-fog
764265



FlexiTuff General Purpose Goggles

- Certified to AS/NZS 1337 Medium Velocity Impact.

Soft and flexible PVC frames. Provide ideal eye protection for chipping and grinding. Can also be worn over prescription eyewear. Anti-fog, chemical splash goggle also available.



Standard
224761



Anti-fog/Chemical
224759



FlexiPlus Protective Goggles

- Certified to AS/NZS 1337 Medium Velocity Impact.

FlexiPlus Protective Goggles are stylish with a soft-frame, designed to comfortably fit most facial contours. They have a one piece polycarbonate, scratch resistant lens which protects against chemical splash and ultraviolet rays, while permitting unobstructed viewing.

Anti-fog coated lens models are available for work involving high humidity, temperature changes and increased worker exertion. There is a choice of clear or smoke tinted lens for anti-glare requirements and foam bound models are available for added comfort and an increased facial seal.

The splash resistant design features side mounted air vents providing maximum cooling air flow inside the goggle. A non-vent model is available for extreme chemical splash applications.



Clear
229205C



Foam bound
Clear Anti-fog
229206CF



Foam bound
Clear Anti-fog unvented
229206CFV



Foam bound
Smoke Anti-fog
229206SF



Shade 3
229405



Shade 5
229406

FlexiWeld Goggles

- Certified to AS/NZS 1337 Medium Velocity Impact.

Two models – Shade 5 for Gas Welding and Shade 3 for Welder’s Assistants.

Stylish soft-frame welding goggles designed to comfortably fit most facial contours. Roomy design allows for wearing over most prescription eyewear.

One piece polycarbonate, scratch resistant lens.

Protects against welding and chemical splatter and UV rays, while permitting unobstructed viewing.

Flashmaster ‘Flip-Up’ Welding Goggles

- Dual Purpose Goggle
- Ideal for gas welding, chipping & grinding
- Easy replacement welding filter & protective cover lenses

Description	Part No.
Flashmaster ‘Flip-Up’ Welding Goggles	220343
Cover lens Clear Polycarbonate	220038
Cover lens Clear CR39	220038CR
Welding Lens Shade 4	220321
Welding Lens Shade 5	220322
Welding Lens Shade 6	220323



220343

Flashmaster Welding Helmet

- Ideal for electrical welding.
- Made from polypropylene to combine strength, lightweight, and chemical resistance.
- Fitted with Shade 10 welding lens.
- Replaceable CR39 cover lens protecting filter.
- Impact resistant clear polycarbonate backing lens.
- Adjustable head diameter, height & faceshield angle.
- Padded cloth headband for added comfort.



221681

Description	Part No.
Cover lens Clear Polycarbonate	220035
Cover lens Clear CR39	220035CR
Cover lens Clear Glass	220316
Welding Lens Shade 8	220324
Welding Lens Shade 9	220325
Welding Lens Shade 10	220326
Welding Lens Shade 11	220327
Welding Lens Shade 12	220328
Welding Lens Shade 13	225491
Welding Lens Shade 14	220628

Face Protection



Bullet Faceshield

- Lightweight browgard.
- Fully adjustable head suspension.
- Moulded clear polycarbonate visor.
- High velocity impact protection certified to AS/NZS1337.

Part No.	Description
226792	Bullet Faceshield
227025	Replacement Visor
225474	Replacement Sweatband
226794A	Replacement Browgard
220221S	Replacement suspension w/o sweatband



Black Eagle Faceshields

- Available in 3 different shaded visor options or 2 mesh versions (aluminium & fibreglass).
- Fully adjustable head suspension.
- Medium velocity impact protection certified to AS/NZS 1337.
- Ideal for protection against flying debris and particles, liquids and vapours.
- Shaded versions suitable for oxy welding.
- Chinguard fitted to all models except mesh visor version.

Part No.	Description
227500CL	Clear faceshield
227500GN3	Green Shade 3 faceshield
227500GN5	Green Shade 5 faceshield
227500MA	Mesh Aluminium faceshield
227500MF	Mesh Fibreglass faceshield



Black Eagle Replacement Parts

Part No.	Description
227498CL	Clear visor
227498GN3	Green Shade 3 visor
227498GN5	Green Shade 5 visor
762115	Mesh Aluminium visor
762116	Mesh Fibreglass visor
225474	Sweatband Terry Towelling (velcro fit)
225690	Sweatband Sheepskin (velcro fit)
220221S	Replacement suspension w/o sweatband
227499A	Replacement Browgard
227497	Replacement Chingard



Part No. 220111

Metal Lens Cleaning Station

- Supplied with 2 cans of lens cleaning spray & one pack of cleaning tissue

Part No.	Replacement Items Description
762851	Cleaning tissues - box 200
220112	Lens cleaning aerosol can
220111	Metal Lens Cleaning Station



Clear & Clean Mini Towels

- Pre-moistened mini towels.
- Useful for cleaning eyewear, faceshields, earmuffs, respirators, and computer screens.
- Box of 100.

Handy self dispensing hang pack containing 100 pre-moistened mini towels in sealed foil packs. Anti-static, the exclusive formula can be used to clean not just safety and prescription eyewear, but other types of protective equipment including faceshields, ear muffs and respirators. Can also be used to clean computer screens, keyboards and disinfect telephones. Designed for wall mounting.



Part No. 762485



WASP KILLER

MSA Wasp Killer is an insect spray designed to clear areas of stinging insects and spiders. Wasp Killer comes in a 350 gram aerosol can with an easy to use trigger release. The operation differs from traditional aerosol sprays which are designed to provide a mist into which insects fly. MSA Wasp Killer operates with a powerful 4 meter jet that kills wasps instantly on contact and ensures that the operator is positioned at a safe distance from disturbed insects. Easy to use pressure pack - no mixing. Ideal for electrical workers, builders, gardeners, arborists, in fact just about anyone working outdoors. Wasp Killer works.

MSA Wasp Killer is registered by the Australian Pesticides and Veterinary Medicines Authority. Registered No. - 53310. Approval No. of label - 53310/1200

Box of 12

Part No. 229299

Hearing Protection

Protection for Professional, Leisure and DIY Use

Excessive noise cannot only cause short term ringing in the ears but also cause permanent damage. To ensure maximum protection during low to high-level noise environments MSA has a range of revolutionary products to meet stringent Australian hearing safety regulations.

Selecting suitable hearing protection

Comfort and the ability to wear hearing protection for the full duration of the noise exposure are primary considerations. The MSA range includes models specifically designed to be worn in conjunction with protective headwear.

Up-to-date hearing protection

In the form of electronic ear muffs, left/RIGHT™ hearing protection can add new dimensions in communication and listening to your favourite music while protecting your hearing. Passive ear muffs can be fastened to the hard hat, and raised or lowered on demand. Disposable corded ear plugs offer an alternative to helmet-mounted ear muffs, because they provide convenience, comfort, and low cost as well as high noise-reduction ratings.



Performance is the other key issue. In Australia and New Zealand the class system is used to assist with selecting the right hearing protection. Under this system hearing protection devices are grouped together according to their attenuation (SLC₈₀ rating) and the noise level with which they can be used.

Class	SLC ₈₀ Range (dB)	For Use in Noise Levels	Examples Of Possible Noise Levels
1	10-13	< 90dB(A)	Lawn Mower
2	14-17	90 - <95	Circular Saw, Personal stereo max volume
3	18-21	95 - <100	Chainsaw
4	22-25	100 - <105	Heavy Machinery
5	26+	105 - <110	Rock Concert

Hearing Protection

Electronic Earmuffs

Improved Communication, Reduced Isolation, Increased Safety

MSA offers a wide range of hearing protectors with built-in electronics - from basic functions to high specification communication devices.

All products are comfortable hearing protectors, designed to prevent you from feeling isolated, thereby encouraging you to use them and so protecting your hearing for the rest of your life.



left/RIGHT™

The new left/RIGHT™ ear muffs are different from all existing hearing protectors. Individual muffs for the left and right ear compensate for the asymmetric position of the ears on the head. The new headband design and the thinner and more flexible sealing rings ensure a better fit. Large muffs provide more room for the ear to guarantee the right protection for all shapes and sizes of ears.

The left/RIGHT™ AM/FM Radio Headband is suitable for all kinds of work environments - from heavy manufacturing to clean food processing, from construction sites to lawn mowing.

Headband: SNR 24 db, H = 25, M = 21, L = 16

Part No.	Description
766240	left/RIGHT™, medium, AM/FM, Headband



left/RIGHT™

Hearing Protection

Electronic Earmuffs



left/RIGHT™ CutOff

Level dependent protection without isolation:

- detects surrounding sound and reproduces it at a safe level
- enables the wearer to hear important sound and warning signals
- amplification of weak signals through the electronic system
- connection to an external source through the auxiliary input

left/RIGHT™ Dual

Combines the features of the CutOff and the FM radio:

- individual balance adjustment between the two functions
- enables the wearer to adjust functionality to the working environment
- connection to an external source through the auxiliary input

left/RIGHT™ FM Radio

Built-in FM radio receiver:

- automatic tuning function and volume adjustment through push buttons
- connection to an external source through the auxiliary input

left/RIGHT™

Because we all are different

Hearing Protection

Electronic Earmuffs



Wireless World

Bluetooth wireless technology gives us enormous freedom to communicate. Whether working as a craftsman, installation engineer, gardener, construction worker, forest worker, in industry, or even at home in the garage, everyone can now communicate “hands-free” at any time within the “Wireless World”, free of the inconvenience of cables.

Part No.	Description
SOR81000	WW Headband
SOR81502	WW Helmet Mounted
SOR85000	WW Cut Off Headband
SOR85502	WW Cut Off Helmet Mounted
SOR87000	WW FM Headband
SOR87502	WW FM Helmet Mounted
765664	WW Dual Headband
765665	WW Dual Helmet Mounted
764704	Hygiene Kit for CC & WW



Wireless World



Supreme

A range of hearing protectors for military, law enforcement, hunting and shooting applications. The Supreme Pro has been developed to meet MIL specifications and to function in extreme conditions. It is a hearing protector with an innovative technique: built-in level-dependent noise

EN 352-4

Supreme Pro X headband: SNR 25 dB, H = 28, M = 21, L = 16

Part No.	Description
SOR75300	Supreme Basic Headband Green
SOR75302	Supreme Pro Headband Green
765498	Supreme Pro Headband Black
SOR76302-02	Supreme Pro Neckband Black
SOR75302-X	Supreme Pro X Headband Green
SOR76302-X	Supreme Pro X Neckband Green
SOR75302-X-02	Supreme Pro X Headband Black
SOR76302-X-02	Supreme Pro X Neckband Black
SOR75318	Supreme Pro WW
764458	Supreme Hygiene Kit
SOR60092	Supreme Hygiene Kit Gel



Hearing Protection

Electronic Earmuffs



Connected by Cable [CC CutOff]

A comfortable hearing protector equipped with a down lead and boom microphone. Level Dependent ear muffs which reproduce and amplify sounds whilst automatically filtering out harmful noise levels. Allows the wearer to hear warning sounds, alarms and other important information. Ideal for use in high impulse noise areas, road maintenance, railroad noise areas, road maintenance, railroad work and other hazardous environments.

Designed to fit a majority of mobile phone adapters or for direct connection to a variety of communication radios, eg. Motorola, Kenwood, Icom, DECT phones.



- Available both as headband and helmet attachment.
- Can be connected to mobile phones in combination with a separate adaptor. Supplied with a 2.5 mm stereo plug.
- Also available for direct connection to communication radios such as Motorola, Kenwood, Icom etc and DECT phones. It is important to advise us of the model number of the communication radio.
- Noise cancelling boom microphone permits two-way communication with minimal interference from background noise.
- High amplification of weak signals possible.
- Sound level from the electronic circuits limited to max 82 dB(A).
- Weight: 330 g (Headband) 325 g (Helmet mounted).

Electronic Earmuffs

Connected by Cable [CC Headset]

A comfortable hearing protector equipped with a down lead and boom microphone. Designed to fit a majority of mobile phone adapters or for direct connection to a variety of communication radios, eg. Motorola, Kenwood, Icom, DECT phones.

- Available both as headband and helmet attachment.
- Can be connected to mobile phones in combination with a separate adaptor. Supplied with a 2.5 mm stereo plug.
- Noise cancelling boom microphone permits two-way communication with minimal interference from background noise.
- Padded headband and soft cushions provides high comfort.
- Hygiene kit and a selection of visors are available as accessories.
- Also available for direct connection to communication radios such as Motorola, Kenwood, Icom etc and DECT phones. It is important to advise us of the model number of the communication radio.
- Adjustable headband pressure for individual fit.
- Weight: 298 g (Headband) 292 g (Helmet mounted).



Hearing Protection

Passive Earmuffs

Comfort, Protection, Affordability

No matter which MSA product you choose, you will be guaranteed a first class hearing protector. Due to the supersoft ear cushions, the light weight and the slim design of all passive hearing protectors, comfort is guaranteed for the whole day.



left/RIGHT™

The new left/RIGHT™ ear muffs are different from all existing hearing protectors. Individual muffs for the left and right ear compensate the asymmetric position of the ears on the head. The new headband design and the thinner and more flexible sealing rings ensure a better fit. Large muffs provide more room for the ear to guarantee the right protection for all shapes and sizes of ears.

The left/RIGHT™ is suitable for all kinds of work environments from heavy manufacturing to clean food processing, from construction sites to lawn mowing.

Certified to AS/NZS 1270.



left/RIGHT™ headband



left/RIGHT™ helmet mounted



LOW



MEDIUM



HIGH



This is why left/RIGHT increases wear time

Part No.	Description	Class	SLC ₈₀
766241	left/RIGHT™, Low, White, Headband	4	25 dB
766242	left/RIGHT™, Low, White, Helmet Mounted	4	24 dB
766238	left/RIGHT™, Medium, Blue, Headband	5	30 dB
766239	left/RIGHT™, Medium, Blue, Helmet Mounted	5	29 dB
766243	left/RIGHT™, High, Yellow, Headband	5	32 dB
766244	left/RIGHT™, High, Yellow, Helmet Mounted	5	31 dB
766566	left/RIGHT™, White, Helmet Mounted 25mm	N/A	N/A
766567	left/RIGHT™, Blue, Helmet Mounted 25mm	N/A	N/A
766565	left/RIGHT™, Yellow, Helmet Mounted 25mm	N/A	N/A

Hearing Protection

Passive Earmuffs

The EXC and HPE are equipped with a patented adjustable headband pressure system



EXC

The ear muff that's so comfortable, you'll never want to take it off! Unique injection moulded inserts provide both excellent noise attenuation and maximum comfort. EXC is suitable for most environments where hearing protection is required.

Headband rated SLC₈₀ 29db.
Helmet mounted rated SLC₈₀ 28db

Class 5.

Certified to AS/NZS 1270.



EXC

Part No.	Description
763930	EXC Headband
763932	EXC Helmet Mounted 30mm
763935	EXC Helmet Mounted 25mm



HPE

The HPE ear muffs have been designed to offer protection against very high levels of noise, particularly at low frequency. Thick, soft, foam-filled cushions combine maximum comfort with a perfect seal.

Headband rated SLC₈₀ 29db.
Helmet mounted rated SLC₈₀ 29db.

Class 5.

Certified to AS/NZS 1270.



HPE

Part No.	Description
763931	HPE Headband
763934	HPE Helmet Mounted 30mm
763933	HPE Helmet Mounted 25mm



Hygiene Kits - Passive Earmuffs

Part No.	Description
10092878	left/RIGHT™ Hygiene Kit Low
10092879	left/RIGHT™ Hygiene Kit Medium
10092880	left/RIGHT™ Hygiene Kit High
10094605	left/RIGHT™ Hygiene Kit AM/FM
764392	Hygiene Kit MSA Sordin EXC Muff
764393	Hygiene Kit MSA Sordin HPE Muff

Hearing Protection

Passive Earmuffs

Chief Earmuff

- Economically priced.
- Comfortable soft foam ear cushions.
- Universal fitting headband.
- Rated SLC₈₀ 32dB Class 5.
- Certified to AS/NZS 1270.

Part No.	Description
228000A	Chief Earmuff



Hush Muff III Earmuff

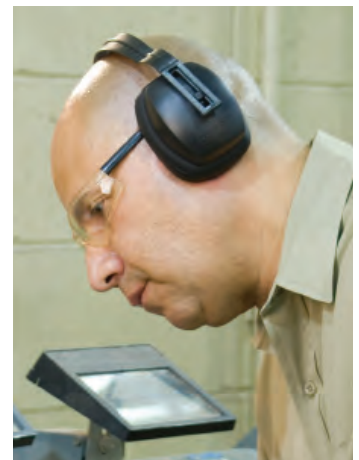
- Lightweight & very durable.
- Unique in-built sound absorption chamber.
- Urethane foam seals add to comfort & fit.
- Rated SLC₈₀ 22dB Class 4.
- Certified to AS/NZS 1270.

Part No.	Description
765246	Hushmuff III Earmuff

Comfo 500 Earmuff

- Versatile.
- Soft deep ear cushions.
- Easily adjustable.
- Lightweight, weighing approx. 120 grams.
- Rated SLC₈₀ 22dB Class 4.
- Certified to AS/NZS 1270.

Part No.	Description
763440	Comfo 500 Earmuff



Hearing Protection

Ear Plugs

Designed to provide the ultimate in comfort and protection, MSA ear plugs meet the various needs of people working in hazardous noise environments.

Perfect for industries, such as aviation maintenance, textile manufacturing, wood and metal working and construction.

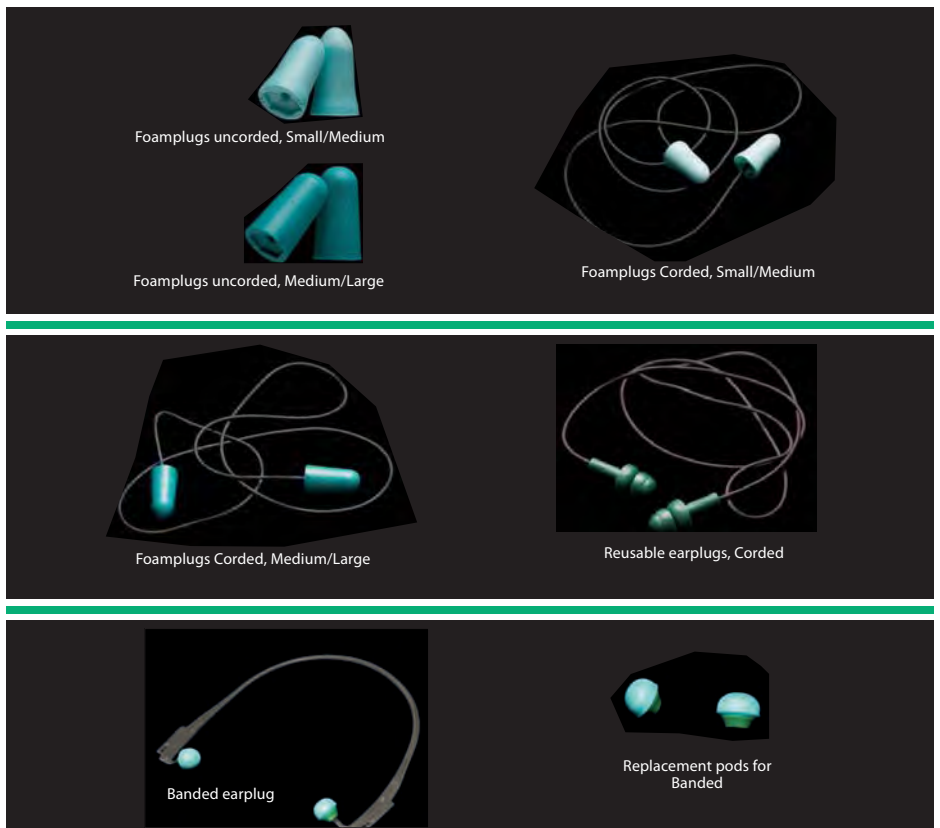


Dispenser for foamplugs
[no plugs included]

RIGHT™ PROTECTION

RIGHT™ is a complete range of ear plugs with high noise attenuation and excellent comfort. The RIGHT™ range includes disposable, reusable, non-corded, corded, banded and detectable plugs. The foam disposable plugs come in two sizes to guarantee a perfect fit. The banded version has a separate left and right plug to ensure a high level of protection and comfort.

Certified to AS/NZS 1270.



Foamplugs uncorded, Small/Medium

Foamplugs uncorded, Medium/Large

Foamplugs Corded, Small/Medium

Foamplugs Corded, Medium/Large

Reusable earplugs, Corded

Banded earplug

Replacement pods for Banded

Part No.	Description	Packaging	Class	SLC ₈₀
766228	Foamplugs Uncorded, Small/Medium	200 pair / box	4	22 dB
766226	Foamplugs Refill, Small/Medium	200 pair / pouch	4	22 dB
766230	Foamplugs Corded, Small/Medium	100 pair / box	4	22 dB
766229	Foamplugs Uncorded, Medium/Large	200 pair / box	5	26 dB
766227	Foamplugs Refill, Medium/Large	200 pair / pouch	5	26 dB
766231	Foamplugs Corded, Medium/Large	100 pair / box	5	26 dB
766232	Foamplugs Corded Detectable, Medium/Large	100 pair / box	5	26 dB

RIGHT™ Dispenser

766236	Dispenser for foamplugs	1 pcs / box
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RIGHT™ Reusable earplugs

766225	Reusable Earplugs, Corded	50 pair / box	3	21 dB
766224	Reusable Earplugs, Corded, Detectable	50 pair / box	3	21 dB

RIGHT™ Banded earplugs

766233	Banded Earplugs	10 pcs / box	2	17 dB
766234	Replacement pods for Banded	100 pair / box		

Hearing Protection

HiLo™ Earplugs

HILO™ HEXAGONAL EARPLUG

- Extra length.
- Breathable urethane composition.
- Non-irritant.
- Easy to insert & remove.
- Certified to AS/NZS 1270.
- Rated SLC₈₀ 26dB Class 5.
- Box of 200 pairs.



Part No.	Description
223247B	HiLo™ Hexagonal Earplug

HILO™ ROUND EARPLUG

- Extra length & easy roll down.
- Breathable urethane composition.
- Non-irritant.
- Easy to insert & remove.
- Certified to AS/NZS 1270.
- Rated SLC₈₀ 27dB Class 5.
- Box of 200 pairs.



Part No.	Description
762734B	HiLo™ Round Earplug

HOW TO INSERT AN EARPLUG



STEP 1

With clean hands, slowly roll and compress the earplug tightly along its entire length into a crease free cylinder (between finger and



STEP 3

A correctly fitted earplug will be mostly inside the ear canal and will not dislodge while working, moving or talking.



STEP 2

While earplug is still tightly compressed, reach over head and gently pull ear upwards and outwards while inserting earplug with other hand. Hold plug in place, with maximum penetration inside the ear canal, for at least 30 seconds while it expands.



STEP 4

If earplug will not insert deeply into ear canal, restart the procedure.

Litepak

- A highly efficient, patented, light focusing technology using an LED light source that provides spare capacity for auxillary systems.
- Lithium polymer battery, 4.4 Ah, 3.7 volt - weight 260gms.
- Low cost of ownership due to low cost of recharging and low cost of maintenance.

Features:

- Patented technology that focuses the light from the LED for maximum energy efficiency.
- LED light source life is greater than 50 000 hours.
- Emits white light of uniform intensity at greater than 1 600 lux for the entire shift.
- Optimal auxillary light.
- Battery weight 260gms.
- Average battery life of 700 charging cycles.
- Totally maintenance free battery.
- Compatible with all universal charging racks.
- Environmentally friendly (no lead or cadmium) and suitable for normal landfill disposal.
- Spare capacity to drive auxillary systems.
- Intrinsically safe Ex ia.
- Ergonomic design.
- Lighting time 16 hours.

Applications:

- Underground mining
- Emergency services
- Security services
- Maintenance services



Litepak

Part No.	Description
75500	Caplamp, Litepak, 1 Led
75504	Caplamp, Litepak, Dual Led

Charging Rack

Part No.	Description
76400	Charging Rack, Litepak, Single
76401	Charging Rack, Litepak, 10 Unit
76402	Charging Rack, Litepak, 51 Unit
76403	Charging Rack, Litepak, 102 Unit



Industrial Safety Apparel



MSA provides a comprehensive range of quality Safety Protective Apparel, FRAS Garments, Hi-Visibility, Rainwear, Disposable Coveralls servicing all industries and applications.

Fabrics and finished garments are independently tested ensuring compliance to the highest applicable standards. Manufacturing facilities produce to controlled high standards ensuring ongoing consistent quality and product performance.

Industrial Safety Apparel

Reflective Vests

Part Number	Description
Vest Day/Night with Tail	
228256M	High Visibility, Medium, Yellow
228256L	High Visibility, Large, Yellow
228256X	High Visibility, Extra Large, Yellow
228256XX	High Visibility, 2X Large, Yellow
228256XXX	High Visibility, 3X Large, Yellow
228256XXXX	High Visibility, 4X Large, Yellow
228257M	High Visibility, Medium, Orange
228257L	High Visibility, Large, Orange
228257X	High Visibility, Extra Large, Orange
228257XX	High Visibility, 2X Large, Orange
228257XXX	High Visibility, 3X Large, Orange
Vest Day/Night	
228258M	High Visibility, Medium, Yellow
228258L	High Visibility, Large, Yellow
228258X	High Visibility, Extra Large, Yellow
228258XX	High Visibility, 2X Large, Yellow
228258XXX	High Visibility, 3X Large, Yellow
228258XXXX	High Visibility, 4X Large, Yellow
228259M	High Visibility, Medium, Orange
228259L	High Visibility, Large, Orange
228259X	High Visibility, Extra Large, Orange
228259XX	High Visibility, 2X Large, Orange
228259XXX	High Visibility, 3X Large, Orange
228259XXXX	High Visibility, 4X Large, Orange
Vest Day (Day Use Only)	
228260M	High Visibility, Medium, Yellow
228260L	High Visibility, Large, Yellow
228260X	High Visibility, Extra Large, Yellow
228260XX	High Visibility, 2 x Extra Large, Yellow
228260XXX	High Visibility, 3 x Extra Large, Yellow
228260XXXX	High Visibility, 4 x Extra Large, Yellow
228261M	High Visibility, Medium, Orange
228261L	High Visibility, Large, Orange
228261X	High Visibility, Extra Large, Orange
228261XX	High Visibility, 2 x Extra Large, Orange
228261XXX	High Visibility, 3 x Extra Large, Orange
228261XXXX	High Visibility, 4 x Extra Large, Orange

The MSA Complete Range of Day and Day/Night Reflective Vests is compliant to AS/NZS 4602:1999 (high visibility safety garments), AS/NZS 1906.4 (fabric retro reflective materials). Extended back(tail) length for additional high visibility protection (228256 and 228257).



228256



228257



228258



228259



228260



228261

Industrial Safety Apparel

Winter Wear

Bluey Jacket



The MSA Bluey Hi-Viz Day / Night Jacket is ideal for the outdoor worker in the cooler months with the added benefit of reflective tape for extra safety.

Featuring elasticised sleeve cuffs, heavy duty zip, multiple pockets with internal zipper and mobile phone pocket. The jacket is washable and suitable for many applications

- 90/10 Wool/polyester coat with cotton lining.
- Hi Vis overlay to front yokes and full back with 50mm reflective tape.
- Visibly Safe, Winter Warmth.

Features and Benefits

- Three quarter length jacket 21oz 90% wool/10% polyester navy blue outer.
- 300 denier Hi visibility yellow polyester oxford over outer full back, half front.
- Internal lining 100% cotton twill with Polyester Padding.
- High collar, outer poly oxford fabric, inner wool/poly fabric .
- Heavy duty front zip with tab.

- Two front lined hand warmer pockets.
- Internal opening zippered pocket.
- Internal mobile phone pocket with velcro flap closure and pen section.
- Half elasticised sleeve cuff with adjustable velcro closure.
- Complete with 50mm 'H' pattern class 2 retro reflective tape for day/night safety.

Applications

- Outdoor / Indoor work
- Road working
- Security
- Mining
- Construction sites
- Traffic control

Part No.	Description
763937S	Jacket, Bluey, Small, High Visibility, Yellow
763937M	Jacket, Bluey, Medium, High Visibility, Yellow
763937L	Jacket, Bluey, Large, High Visibility, Yellow
763937X	Jacket, Bluey, Extra Large, High Visibility, Yellow
763937XX	Jacket, Bluey, 2X Large, High Visibility, Yellow
763937XXX	Jacket, Bluey, 3X Large, High Visibility, Yellow
763937XXXX	Jacket, Bluey, 4X Large, High Visibility, Yellow

Industrial Safety Apparel

Reversible Vest - Winter Warmth



Hi Visibility Day/Night winter warmth safety vest. Available in Hi Viz Yellow and Orange both with quilted cotton lining and polyester padding. Complete with 50mm retro reflective class 2 tape for day/night safety.

Applications:

- Building/Construction Industry
- Mining
- Outdoor Maintenance



Part No.	Description
763944S	Vest, Reversible, Day/Night, Large, Yellow
763944M	Vest, Reversible, Day/Night, Medium, Yellow
763944L	Vest, Reversible, Day/Night, Large, Yellow
763944X	Vest, Reversible, Day/Night, Extra Large, Yellow
763944XX	Vest, Reversible, Day/Night, 2X Large, Yellow
763944XXX	Vest, Reversible, Day/Night, 3X Large, Yellow
763944XXXX	Vest, Reversible, Day/Night, 4X Large, Yellow
763945S	Vest, Reversible, Day/Night, Small, Orange
763945M	Vest, Reversible, Day/Night, Medium, Orange
763945L	Vest, Reversible, Day/Night, Large, Orange
763945X	Vest, Reversible, Day/Night, Extra Large, Orange
763945XX	Vest, Reversible, Day/Night, 2X Large, Orange
763945XXX	Vest, Reversible, Day/Night, 3X Large, Orange
763945XXXX	Vest, Reversible, Day/Night, 4X Large, Orange

Rawson Day/Night

Rawson Wet Weather/Winter Warmth Breathable, Reflective Jacket. Outer Jacket - heavy duty, breathable polyester, waterproof and seam sealed. Two tone front, back and arms, yellow/navy or orange/navy. Internal Storm cuffs with velcro closures, front storm flap and detachable hood. Inner Vest - short sleeve zip out heavy weight polar fleece. Rawson Jacket / Vest combination

both come complete with 50mm class 2 retro reflective tape providing day/night safety compliance.

Applications: • Building/Construction Industry • Mining • Outdoor Maintenance

Part No.	Description
763946S	Jacket, Rawson Day/Night, Small, High Visibility, Yellow/Navy
763946M	Jacket, Rawson Day/Night, Medium, High Visibility, Yellow/Navy
763946L	Jacket, Rawson Day/Night, Large, High Visibility, Yellow/Navy
763946X	Jacket, Rawson Day/Night, Extra Large, High Visibility, Yellow/Navy
763946XX	Jacket, Rawson Day/Night, 2X Large, High Visibility, Yellow/Navy
763946XXX	Jacket, Rawson Day/Night, 3X Large, High Visibility, Yellow/Navy
763946XXXX	Jacket, Rawson Day/Night, 4X Large, High Visibility, Yellow/Navy
763947S	Jacket, Rawson Day/Night, Small, High Visibility, Orange/Navy
763947M	Jacket, Rawson Day/Night, Medium, High Visibility, Orange/Navy
763947L	Jacket, Rawson Day/Night, Large, High Visibility, Orange/Navy
763947X	Jacket, Rawson Day/Night, Extra Large, High Visibility, Orange/Navy
763947XX	Jacket, Rawson Day/Night, 2X Large, High Visibility, Orange/Navy
763947XXX	Jacket, Rawson Day/Night, 3X Large, High Visibility, Orange/Navy
763947XXXX	Jacket, Rawson Day/Night, 4X Large, High Visibility, Orange/Navy



Industrial Safety Apparel

FRAS (Flame Resistant Anti Static) Visibly Safe Jackets and Trousers

Premium Breathable Waterproof Day and Night FRAS Rainwear.

Jacket, trousers and fleece jacket combination provide excellent dry winter warmth. The outer jacket and trousers are manufactured from premium heavy duty breathable fabric, the treatment provides flame resistance and anti-static protection and are in 2 tone orange/navy.

The outer jacket comes complete with detachable or foldaway hood with allowance for hard hat. Cuffs have external velcro closures, heavy duty FR zip with storm flap, 2 expandable front pockets with velcro flaps and inner pocket with FR zip. 'H' pattern FR 3M retro reflective compliant tape.

The trousers have support braces providing wearer comfort, pocket access, concealed expanding boot allowance with FR zip and velcro closure. FR 3M retro reflective compliant tape.

Fleece Jacket - long sleeve, zip front, FR heavy duty polar fleece with 'H' pattern FR 3M retro reflective compliant tape. (Not anti-static)

Applications:

- Oil, Gas and Petroleum Industry
- Mining and Construction
- Available in Small to 5X Large

Features and Benefits:

- EN 533 - Protection against heat and flame.
- EN 471 - High visibility requirement.
- EN 343 - Protection against foul weather.
- EN 13034 - Limited chemical protection.
- EN 1149.3 - Anti static behaviour.



Combination outer jacket, fleece jacket and trousers



Fleece jacket and trousers



Trousers

Size	Jacket Outer	Jacket Fleece	Trousers
Small	765842SR	765843SR	765844SR
Medium	765842MR	765843MR	765844MR
Large	765842LR	765843LR	765844LR
X Large	765842XR	765843XR	765844XR
2X Large	765842XXR	765843XXR	765844XXR
3X Large	765842XXXR	765843XXXR	765844XXXR
4X Large	765842XXXXR	765843XXXXR	765844XXXXR
5X Large	765842XXXXXR	765843XXXXXR	765844XXXXXR

Industrial Safety Apparel

Rainwear Breathable Reflective Day and Night

Premium Breathable Reflective Day/Night Hi-Visibility Waist Length Rain Jacket.

Heavy duty, breathable, fully waterproofed seam sealed, mesh lining, concealed foldaway detachable hood, internal storm cuffs and adjustable velcro sleeve cuffs, heavy duty nylon zipper with press stud weather cover flap, front pockets.

Hi-Visibility yellow complete with 50mm 'X' pattern (back) class 2 retro reflective tape providing day/night safety compliance.

Breathable Rainwear manufactured to AS/NZS 4602:1999, AS/NZS 1906.4, EN471:1994 Australian, New Zealand and European Standards.



Premium Breathable Day/Night Reflective Hi-Visibility Rain Trousers

Heavy duty, breathable, fully waterproofed seam sealed, pocket side access, draw cord elasticized waist, concealed heavy duty nylon zipper.

Part No.	Description
Jacket Breathable Day and Night Yellow	
228583S	Jacket, Reflective Tape, Small, Yellow
228583M	Jacket, Reflective Tape, Medium, Yellow
228583L	Jacket, Reflective Tape, Large, Yellow
228583X	Jacket, Reflective Tape, Extra Large, Yellow
228583XX	Jacket, Reflective Tape, 2X Large, Yellow
228583XXX	Jacket, Reflective Tape, 3X Large, Yellow
228583XXXX	Jacket, Reflective Tape, 4X Large, Yellow
Trousers Breathable Day and Night Yellow and Orange	
763940M	Trousers, Medium, Yellow
763940L	Trousers, Large, Yellow
763940X	Trousers, Extra Large, Yellow
763940XX	Trousers, 2X Large, Yellow
763940XXX	Trousers, 3X Large, Yellow
763940XXXX	Trousers, 4X Large, Yellow
763941S	Trousers, Small, Orange
763941M	Trousers, Medium, Orange
763941L	Trousers, Large, Orange
763941X	Trousers, Extra Large, Orange
763941XX	Trousers, 2X Large, Orange
763941XXX	Trousers, 3X Large, Orange
763941XXXX	Trousers, 4X Large, Orange



Industrial Safety Apparel

Rainwear Breathable

Premium Breathable Hi-Visibility Waist Length Rain Jacket

Heavy duty, breathable, fully waterproofed seam sealed, mesh lining, concealed foldaway detachable hood, internal storm cuffs and adjustable velcro sleeve cuffs, heavy duty nylon zipper with press stud weather cover flap, front pockets.

Breathable Rainwear manufactured to AS/NZS 4602:1999, AS/NZS 1906.4, EN471:1994 Australian, New Zealand and European Standards.

Part No.	Description
Jacket Breathable Non Reflective	
227587S	Jacket, Small, Yellow
227587M	Jacket, Medium, Yellow
227587L	Jacket, Large, Yellow
227587X	Jacket, Extra Large, Yellow
227587XX	Jacket, 2X Large, Yellow
227587XXX	Jacket, 3X Large, Yellow
227587XXXX	Jacket, 4X Large, Yellow



Breathable Rain Trousers

Part No.	Description
Trousers Breathable Non Reflective Yellow and Orange	
763938S	Trousers, Day, Small, Yellow
763938M	Trousers, Day, Medium Yellow
763938L	Trousers, Day, Large, Yellow
763938X	Trousers, Day, Extra Large, Yellow
763938XX	Trousers, Day, 2X Large, Yellow
763938XXX	Trousers, Day, 3X Large, Yellow
763938XXXX	Trousers, Day, 4X Large, Yellow
763939S	Trousers, Day, Small, Orange
763939M	Trousers, Day, Medium, Orange
763939L	Trousers, Day, Large, Orange
763939X	Trousers, Day, Extra Large, Orange
763939XX	Trousers, Day, 2X Large, Orange
763939XXX	Trousers, Day, 3X Large, Orange
763939XXXX	Trousers, Day, 4X Large, Orange



Premium Breathable Reflective Hi-Visibility Rain Trousers

Heavy duty, breathable, fully waterproofed seam sealed, pocket side access, draw cord elasticized waist, concealed heavy duty nylon zipper.

Available in Hi-Visibility Yellow and Hi-Visibility Orange Day/Night Reflective.

Industrial Safety Apparel

Disposable Coveralls, CE Compliance Type 5 & Type 6

MSA's complete Range of Disposable Coveralls provides the solution and protection from hazardous dusts, water based liquid light sprays to asbestos removal and chemical handling.



MicroTech Disposable White/Orange



MicroTech Coveralls are designed and manufactured to meet or exceed the European Standards Type 5 and Type 6 chemical protective clothing and carry the CE mark.

Manufactured from premium breathable, soft fabric, high structural strength with excellent tensile & tear resistance, ultra low linting, anti-static treated & breathable (helping prevent heat stress). Offers protection against fibers & hazardous particles, water-based liquid chemicals, aerosols, biological hazards, virus and blood borne pathogens. The MicroTech Coveralls are lightweight, ultra low linting, durable with superior soft comfort. Complete with elastic hood, wrists, waist & ankles. Double reinforced zipper cover flap for additional protection, with peel off self adhesive tape providing increased protection. It also has reinforced crotch pleats, double bound surge seam, providing superior tear resistance.

The MicroTech Coveralls are Certified Compliant to Type 6 (Limited Liquid Chemical Splash - Light Sprays) and Type 5 (Solid Dry Particulate Chemical Protection), Category 3 (PPE of complex design) in addition to EN 1149-1 (Anti-Static), EN14126 Protection Against Infective Agents and EN1073-2 (Radioactive Contamination).



Part No.	Description
White	
765353S	Coverall, MicroTech, MCT56W, Small, White
765353M	Coverall, MicroTech, MCT56W, Medium, White
765353L	Coverall, MicroTech, MCT56W, Large, White
765353X	Coverall, MicroTech, MCT56W, Extra Large, White
765353XX	Coverall, MicroTech, MCT56W, 2X Large, White
765353XXX	Coverall, MicroTech, MCT56W, 3X Large, White
765353XXXX	Coverall, MicroTech, MCT56W, 4X Large, White
Orange	
765500S	Coverall, MicroTech, MCT56O, Small, Orange
765500M	Coverall, MicroTech, MCT56O, Medium, Orange
765500L	Coverall, MicroTech, MCT56O, Large, Orange
765500X	Coverall, MicroTech, MCT56O, Extra Large, Orange
765500XX	Coverall, MicroTech, MCT56O, 2X Large, Orange
765500XXX	Coverall, MicroTech, MCT56O, 3X Large, Orange
765500XXXX	Coverall, MicroTech, MCT56O, 4X Large, Orange

Individually packaged in cartons of 25.

Industrial Safety Apparel

Litefit White/Navy Disposable Coverall



Litefit White 229298



Litefit Navy 227601

Litefit White and Navy disposable coveralls manufactured with premium breathable SMS fabric. Litefit are antistatic (AS/NZS 1149.1) treated lightweight and breathable providing excellent wearer comfort and protection against hazardous dust, particulate matter and providing a good level of repellency against water based liquid light sprays. Litefit are available in 7 sizes small – 4xl. Complete with elasticized hood, wrists, ankle and back of waist. Double layer zip flap preventing entanglement and reinforced crotch pleats provide greater tear resistance. Individually packaged in cartons of 25.

Applications: • Construction and Demolition • Maintenance • Mining
• Painting / Spraying • Personal Protection

Part No.	Description
229298S	Coverall Litefit, Disposable, Small, White
229298M	Coverall Litefit, Disposable, Medium, White
229298L	Coverall Litefit, Disposable, Large, White
229298X	Coverall Litefit, Disposable, Extra Large, White
229298XX	Coverall Litefit, Disposable, 2X Large, White
229298XXX	Coverall Litefit, Disposable, 3X Large, White
229298XXXX	Coverall Litefit, Disposable, 4X Large, White
227601S	Coverall Litefit, Disposable, Small, Navy
227601M	Coverall Litefit, Disposable, Medium, Navy
227601L	Coverall Litefit, Disposable, Large, Navy
227601X	Coverall Litefit, Disposable, Extra Large, Navy
227601XX	Coverall Litefit, Disposable, 2X Large, Navy
227601XXX	Coverall Litefit, Disposable, 3X Large, Navy
227601XXXX	Coverall Litefit, Disposable, 4X Large, Navy



Chem 222312

Chem Disposable Coverall

Made from Tyvek spun-bonded olefin, providing an excellent barrier against many dry particulates, including asbestos, lead dust and radioactive dusts.

Part No.	Description
222312S	Coverall, Disposable, Small, White
222312M	Coverall, Disposable, Medium, White
222312L	Coverall, Disposable, Large, White
222312X	Coverall, Disposable, Extra Large, White
222312XX	Coverall, Disposable, 2X Large, White
222312XXX	Coverall, Disposable, 3X Large, White



Chem C 229516

Chem Type C Disposable Coverall

Made from Tyvek with additional properties for protection against inorganic acids and bases, blood, blood borne pathogens and body fluids.

Part No.	Description
229516M	Coverall, Type C, Disposable, Medium
229516L	Coverall, Type C, Disposable, Large
229516X	Coverall, Type C, Disposable, Extra Large
229516XX	Coverall, Type C, Disposable, 2X Large
229516XXX	Coverall, Type C, Disposable, 3X Large

Welding Apparel

Flashmaster Leather Aprons

- Heavy duty split leather.

Part No.	Description
220530HD	Bib Apron 36 x 24cm



Flashmaster Leather Welding Jacket

- Heavy duty split leather.
- Underarm gussets.
- Full length double line of press studs.
- External stud close pocket.

Part No.	Description
220022S	Flashmaster Leather Welding Jacket, Small
220022M	Flashmaster Leather Welding Jacket, Medium
220022L	Flashmaster Leather Welding Jacket, Large
220022X	Flashmaster Leather Welding Jacket, Extra Large
220022XX	Flashmaster Leather Welding Jacket, 2X Large

Refer Page 83 for Welding Helmets.



Refer Page 142 for Welding Gloves.

Chemical Protective Suits

The Clever Choice Against Aggressive Hazards



Not only is the skin the largest organ, it is also one of the most sensitive. Special protective work-clothing provides a "thick skin" to protect the "thin skin" that nature has given us.

Whether for natural disaster, decontamination work or the plugging of toxic leaks, MSA has the right type of garment for every conceivable eventuality.

Gastight chemical protective clothing is designed to protect against solid, liquid, gaseous or vaporous hazards. Total encapsulating suits completely enclose the body and isolate it from the ambient air.

The air supply is provided by a compressed air breathing apparatus or a compressed airline breathing apparatus with air supply from an airline or a compressor.

MSA suit materials are proven products, such as Vautex SL and Champion Elite, but the range also includes the latest multilayer film compound material Vautex Elite, a combination of elastomer-coated fabric and film laminate.

Chemical Protective Suits

Gastight Chemical Protective Suits

Independent from the Ambient Air



Vautex Elite ET

Vautex Elite ET

The chemical protective suit for Emergency Teams [ET] has a combination of elastomer coated fabric and multilayer film laminate. Vautex Elite ET provides optimal protection against solid, liquid and gaseous hazards. It features increased resistance against mechanical stress, flames and low temperatures [- 60°C], while being flexible and allowing freedom of movement. The large integrated lens allows weight reduction in the head section for better wearing comfort. Additional features are the removable back padding, electronic identification by transponder, gas-tight zipper with cover and replaceable glove system and boots.

As an option the suit can be equipped with our sophisticated Dual Air System.

PPE 89/686/EEC

EN 943 [part 1 & 2, type 1a ET], EN 533, EN 1073, EN 14126

II 1G IIC T6

MED 96/98/EC

VFDB 0801: 2006

Can be configured per individual requirements



Vautex Elite S

Vautex Elite S

All Vautex Elite S suits offer reliable protection against gases, vapours, solid and liquid chemicals, infective agents, low temperatures [- 60°C] as well as radioactive contamination. A double glove system, replaceable boots and gloves, and an integrated transponder are standard features. MSA offers various Vautex Elite S models to meet all your needs and requirements. The economic Vautex Elite S Expert model features a fully integrated lens. The head section within the Vautex Elite S GALLET model is designed for MSA GALLET helmets.

PPE 89/686/EEC

prEN 943, part 1 and 2, type 1a ET

SOLAS 74/88 Chapter II-2, Reg. 19.3.6.2

VFDB 0801/0802

Part No.	Description
3020826	Vautex Elite S
3020867	Vautex Elite S Expert
3020868	Vautex Elite S MSA GALLET

Chemical Protective Suits

Gastight Chemical Protective Suits



Vautex Elite S Dual Air System

Vautex Elite S Dual Air System

An automatic change-over valve between compressed air breathing apparatus and compressed airline breathing apparatus is integrated in the suit [not available separately]. The unlimited air supply from the compressed airline breathing apparatus permits air conditioning inside the suit. If the pressure from this air line supply source falls below a certain level, the valve automatically switches over to the compressed airbreathing apparatus, turns off the air conditioning and sounds an audible alarm. A suit version with head section for the MSA GALLET helmet is also available.

PPE 89/686/EEC
prEN 943, part 1, type 1c

Part No.	Description
10015300	Vautex Elite S with Dual Air System
10025882	Vautex Elite S Dual Air System GALLET



Vautex Elite 3S-L

Vautex Elite 3S-L

Material combination of elastomer coated fabric with additional film laminate. Protection against solid, liquid and gaseous hazards. High mechanical strength. Increased resistance against darting flames. High resistance against low temperatures [-60 °C]. Head section with integrated replaceable full face mask 3S. External air supply, e.g. from compressed air breathing apparatus worn outside the suit. Double glove system and replaceable boots. Also available in Vautex SL material, please ask for the details.

PPE 89/686/EC
EN 943, part 1 and 2, type 1b ET
MED 96/98/CE

Part No.	Description
3020851	Vautex Elite 3S-L
10023262	Vautex Elite 3S-L-P



Vautex SL-S

Vautex SL-S

Total encapsulating suit for protection against solid, liquid and gaseous or vaporous hazards. Air supply from compressed air breathing apparatus inside the suit. With large replaceable lens. Special material Vautex Super Light [Viton-Butyl]. High resistance against low temperatures [- 60 °C] while maintaining good material flexibility.

PPE 89/686/EECpr
EN 943, part 1 and 2, type 1a ET
SOLAS 74/88 Chapter II-2, Reg. 19.3.6.2
VFDB 0801/0802

Part No.	Description
3020870	Vautex SL S
10018600	Vautex Elite SL S

Chemical Protective Suits

Gastight Chemical Protective Suits



Vautex SL-M-1b-3S-V-CombiAir

Total encapsulating suit for protection against solid, liquid and gaseous or vaporous hazards. Specially designed for waste management enterprises. Air supply from compressed airline breathing apparatus. Continuous air ventilation of between 25l and 50l/min inside the suit. Head section with integrated replaceable full face mask 3S. Special material Vautex Super Light [Viton-Butyl]. High resistance against low temperatures [- 60 °C] while maintaining good material flexibility.

PPE 89/686/EEC
EN 943-1 Type 1b

Part No.	Description
10010939	Vautex SL-M-1b-3S-V-CombiAir [V= silicate coated glass for the 3S mask]
10057734	Vautex SL-M-1b-3S-Vg-CombiAir [Vg= triple glass for the 3S mask]



Champion Elite

Total encapsulating suit for protection against solid, liquid and gaseous or vaporous hazards [type 1a]. Air supply provided by compressed air breathing apparatus inside the suit. Suit material: multilayer film laminate on carrier fleece. Lightweight and comfortable.

PPE 89/686/EEC
VFDB 0801/0802

Part No.	Description
3020893	Champion Elite RZ [rear zip]
3020895	Champion Elite SZ [side zip]



Integrity Check Kit

For quick and simple tightness testing of total encapsulating suits, as part of regular maintenance or after use, repair or replacement of components. Tightness testing can be performed on site using, e.g. a compressed air breathing apparatus.

Part No.	Description
3022800	Leak tester
5135047	Exhalation valve seal and cover cap

Chemical Protective Suits

Chemical Protective Clothing

Plastiklos

Protective clothing against liquid chemicals [type 4]. As an overall with hood or as a two-piece suit [jacket and dungarees], each in 5 sizes. Material is plastic fabric coated on both sides with Neoprene-Plus, also resistant against mechanical impact, wear and tear resistant.

PPE 89/686/EEC
EN 14605

Various versions on request



PLASTIKLOS

Tychem®

This line of chemical protective clothing is especially suited for protection against toxic, corrosive gases, liquids and solid chemicals. Developed by DuPont, Tychem® TK garments can be found in industrial, hazmat and domestic preparedness applications. They offer dependable protection with performance that has been proven over a wide range of chemicals.

Tychem® TK garments are extremely durable and puncture resistant. The chemical barrier properties of TK have been tested against 260 challenge chemicals. Permeation data proves the excellent protective capabilities of Tychem® TK. Lakeland's Tychem® TK garments are all lime-yellow in color, highly visible in both bright and dim light. Easily seen in hazy or smoky environments, this line-up of chemical protective clothing is the first line of defense.



LEVEL A

Represents the greatest danger of respiratory, eye or skin damage from hazardous vapors, gases, particulates, sudden splash, immersion or contact with hazardous materials. It calls for total encapsulation in a vapor tight chemical suit with self-contained breathing apparatus (SCBA) or supplied air and appropriate accessories

LEVEL B

Situations call for the highest degree of respiratory protection but a lesser need for skin protection. It calls for SCBA or positive pressure supplied air respirator with escape SCBA, plus hooded chemical resistant clothing (overalls and long sleeved jacket; coveralls; one or two piece chemical-splash suit; or disposable chemical-resistant coveralls.

Tychem® TK Level A Protection Suit

- Strong, durable Dupont material.
- Highest level of limited use protection available on market.
- Copolymer film laminated to spun-bound material.
- No breakthrough after 8 hours of exposure.
- Excellent NFPA 1991 ratings.

Tychem® 670 Level A Encapsulated Suit

- Rear entry vapour-protective suit (Level A). Front entry version also available.
- Expanded back & sealed seam on outside.
- 48" zipper & double storm flap with Velcro.
- 40 mil PVC face shield & 2 Pirelli valves.
- Attached sock boots with boot flaps & butyl gloves.
- Storage bag included.
- Standard sizes include S, M, L, XL. Sizes up to XXXXXL available at additional cost

Chemical Protective Suits

TYCHEM® TK LEVEL B SPLASH PROTECTION

- Ideal for environments where gaseous chemicals are not a concern but maximum splash protection is needed.
- Available in various sizes and configurations.



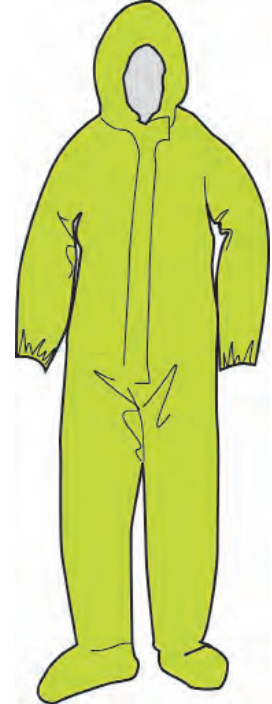
TYCHEM® 100 COVERALL

- Collar, open wrists & ankles
- 763782 S - XL



TYCHEM® 130 COVERALL

- Hood, elastic face, wrists & ankles
- 229413 S - XXX Level B



TYCHEM® 150 COVERALL

- Hood, elastic face & wrists, attached sock boots
- 228111 S - X Level B



TYCHEM® 155 COVERALL

- Expanded back for SCBA, elastic face & wrists, attached sock boots
- 764895 S - X Level B



TYCHEM® 450 COVERALL

- Rear Entry, expanded back, 48' zipper, storm flap, 20 mil PVC faceshield, elastic wrists, 2 exhaust ports with shroud, attached sock boots with boot flaps
- 764894 S - X Level B

NOTE: COMMON SUIT STYLES. OTHER SIZES AND STYLES AVAILABLE UPON REQUEST.

Ballistic Protection



With today's increasing need for specialized personal protection, MSA has invested significant resources toward our research and engineering capabilities, including three ballistic testing chambers. We take the business of protecting our troops very seriously, evidenced by our working relationships with the military community.

As an ISO 9001-2000 certified manufacturer, MSA strives to improve and innovate our designs, materials procurement, and production processes. Our products are thoroughly field-tested to exacting requirements, and meet or exceed industry standards. We consider ease of use, excess weight reduction, and employ quality assurance processes in order to provide maximum performance as well as comfort.

Note: US Export Licence Restrictions Apply.

MSA Paraclete® Tactical Body Armour

MSA Paraclete® Releasable Modular Vest

The Releasable Modular Vest (RMV) with patented release feature was designed for specialized military applications and is now available for your tactical teams.

Activating the release feature allows the armour to be removed immediately for quick escape or administration of medical care. Law enforcement personnel benefit from the following features:

- Patented single-point release feature can be mounted on either side of the vest.
- Full Molle-style grid webbing compatible with our pockets, and military issue Molle / Spear pockets.
- 07 version includes low-profile flat-front Molle grid with no closure hardware.
- The drag strap is sewn the full length of the vest.
- Integrated drink tube and communication channels located on each shoulder.
- The zip-off back panel allows the user to easily change the configuration of the back of the vest.
- Hook & loop closure allows rapid access to the internal armour plate pockets and the soft armour package.
- 10" x 12" rifle plate pockets.
- Built-in side plate pockets for 6" X 6" hard plates.
- Mil. Spec. materials.



MSA Paraclete® Modular Vest Light

The Modular Vest Light (MVL) is designed for the professional that wants the lightest weight vest carrier possible, yet still offers unsurpassed quality and reliability.

MSA Paraclete® Releasable Modular Vests and Modular Light Vests

RMV05 Models

Size	P/N Black	P/N Green	Description
XS	RMV024-05-XS-BK	RMV024-05-XS-SG	Releasable Modular Vest Carrier, X-Small
SM	RMV024-05-SM-BK	RMV024-05-SM-SG	Releasable Modular Vest Carrier, Small
MD	RMV024-05-MD-BK	RMV024-05-MD-SG	Releasable Modular Vest Carrier, Medium
ML	RMV024-05-ML-BK	RMV024-05-ML-SG	Releasable Modular Vest Carrier, Medium Long
LG	RMV024-05-LG-BK	RMV024-05-LG-SG	Releasable Modular Vest Carrier, Large
XL	RMV024-05-XL-BK	RMV024-05-XL-SG	Releasable Modular Vest Carrier, X-Large

RMV07 Models

Size	P/N Black	P/N Green	Description
XS	RMV024-07-XS-BK	RMV024-07-XS-SG	Releasable Modular Vest Carrier, X-Small
SM	RMV024-07-SM-BK	RMV024-07-SM-SG	Releasable Modular Vest Carrier, Small
MD	RMV024-07-MD-BK	RMV024-07-MD-SG	Releasable Modular Vest Carrier, Medium
ML	RMV024-07-ML-BK	RMV024-07-ML-SG	Releasable Modular Vest Carrier, Medium Long
LG	RMV024-07-LG-BK	RMV024-07-LG-SG	Releasable Modular Vest Carrier, Large
XL	RMV024-07-XL-BK	RMV024-07-XL-SG	Releasable Modular Vest Carrier, X-Large



Releasable Modular Vest (RMV) 05

MSA Paraclete® Modular Vest Light

RMV05 Models

Size	P/N Black	P/N Green	Description
XS	MVL024-XS-BK	MVL024-XS-SG	Modular Vest Light, Carrier, X-Small
SM	MVL024-SM-BK	MVL024-SM-SG	Modular Vest Light, Carrier, Small
MD	MVL024-MD-BK	MVL024-MD-SG	Modular Vest Light, Carrier, Medium
ML	MVL024-ML-BK	MVL024-ML-SG	Modular Vest Light, Carrier, Medium Long
LG	MVL024-LG-BK	MVL024-LG-SG	Modular Vest Light, Carrier, Large
XL	MVL024-XL-BK	MVL024-XL-SG	Modular Vest Light, Carrier, X-large



Releasable Modular Vest (RMV) 07

Ballistic Protection

Sizing Chart for Paraclete® Tactical Body Armour

Size	Chest (in.)	Height (in.)	Plate Size	Measurements (in.)
X-Small	34 – 38	5'5" – 5'8"	Small	8 ¾" x 11 ¾"
Small	38 – 42	5'7" – 5'11"	Small	8 ¾" x 11 ¾"
Medium	42 – 46	5'8" – 6'2"	Medium	9 ½" x 12 ½"
Medium Long	42 – 46	6' – 6'4"	Medium Long	9 ½" x 13 ¾"
Large	46 – 50	5'10" – 6'2"	Large	10 ¼" x 13 ¼"
X-Large	50 – 54	6' – 6'4"	X-Large	10 ¾" x 13 ¾"

Please provide size with order.

Armour Packages for MVL and RMV (Order same size as carrier)

Size	Part Number	Description
XS	K3K3A-PAE-XS	Level IIIA Soft Armour Inserts (Aramid) X-Small
SM	K3K3A-PAE-SM	Level IIIA Soft Armour Inserts (Aramid) Small
MD	K3K3A-PAE-MD	Level IIIA Soft Armour Inserts (Aramid) Medium
ML	K3K3A-PAE-ML	Level IIIA Soft Armour Inserts (Aramid) Medium Long
LG	K3K3A-PAE-LG	Level IIIA Soft Armour Inserts (Aramid) Large
XL	K3K3A-PAE-XL	Level IIIA Soft Armour Inserts (Aramid) X-Large

Armour Accessories

Part Number		Description
Black	Green	
PCL019T-SM-BK	PCL019T-SM-SG	Collar w/ Aramid Soft Armour, Small
PCL019T-MD-BK	PCL019T-MD-SG	Collar w/ Aramid Soft Armour, Medium
PCL019T-LG-BK	PCL019T-LG-SG	Collar w/ Aramid Soft Armour, Large
PFY019T-BK	PFY019T-SG	Front Yoke w/ Aramid Soft Armour
PGP019T-BK	PGP019T-SG	Groin Protector w/ Aramid Soft Armour
PSP019T-BK	PSP019T-SG	Shoulder Protector w/ Aramid Soft Armour (set)
BPA019-BK	BPA019-SG	Bicep Protector w/ Aramid Soft Armour (set)
SPC019-BK	SPC019-SG	Shoulder Protector Cover (set)
CSPA019-BK	CSPA019-SG	Cummerbund Side Plate Pocket (set)
Part Number		Description
SHP019		6 inch Single Curve Boron Carbide (B4C) Plate



Modular Pouches and Accessories

The MSA Paraclete® line of pockets ensures that you will have flexibility at the team, individual, and mission – specific level. Our modular pockets and pouches includes a patented attachment system that negates the need for clips, snaps, plastic tie downs, and cordage. The attachment device is permanently affixed to the equipment assembly, so it cannot be lost or otherwise separated from the pocket, pouch, or holster. This system will not rust or become unserviceable even under the most extreme environmental conditions, and it maintains its flexibility in frigid climates. It's as easy to use as simple basket-weaving. No other tactical modular attachment system in the world today can compare with its simplicity, durability, and flexibility.

Modular Pockets and Pouches		
Part Number		Description
Black	Green	
ADP019-BK	ADP019-SG	Mag Pouch Double M16/M4
AFP019R-9-BK	AFP019R-9-SG	Mag Pouch 9mm Double
AMP507-BK	AMP507-SG	Mag Pouch Double MP-5
ASG019-BK	ASG019-SG	Ammo Pouch - Shotgun
BPP0707-BK	BPP0707-SG	Flash Bang Pouch - X 3
GPL077-LG-BK	GPL077-LG-SG	GP Pouch, Large
GPS019-SM-BK	GPS019-SM-SG	GP Pouch, Small
RUL019-LG-BK	RUL019-LG-SG	Radio Pouch Universal, Large
RUS019-SM-BK	RUS019-SM-SG	Radio Pouch Universal, Small
MCR019-BK	MCR019-SG	Chemical Mask Pouch M-45
HFG019B-BK	HFG019B-SG	Holster - 45/Glock/9MM
RTH007-BK	RTH007-SG	Holster - Reversible Thigh
FLH077-BK	FLH077-SG	Flashlight Holder
FSP019-BK	FSP019-SG	Foam Shoulder Pads
CBK019-BK	CBK019-SG	Pouch - Hydration System



Mag Pouch
M16/M4



Mag Pouch 9mm
(Double)



Ammo Pouch



Radio Pouch
(Large)



Radio Pouch
(Small)



Chemical Mask Pouch



Flashlight
Holder



Holster - Glock



Foam Shoulder Pads



Hydration System
Pouch



Small GP Pouch

ForceField® Concealable Female Body Armour

The ForceField® Bravo Female Concealable Carrier meets the needs of female officers in styling, comfort, and protection. ForceField® Bravo incorporates MSA's unique:





- Non-darted seamless ballistic construction that accommodates the female form while minimizing uncomfortable wear.
- Full-wrap ballistic coverage which provides unmatched side protection.
- Flexible sizing, ensuring a comfortable fit.



ForceField® Concealable Armor - Female

Part No.	Vest Description
10074446	ForceField® Bravo, XTG Level II, Female
10074445	ForceField® Bravo, XTG Level IIIA, Female
10074443	ForceField® Bravo, K129 Level II, Female
10074444	ForceField® Bravo, K129 Level IIIA, Female

Ballistic Packages

NIJ Standard 0101.04 Ballistic Chart				
	Threat Level	Test Bullet	Bullet Weight	Bullet Velocity
	IIA	9mm - FMJ RN	124gr./8.0g	1120 ft/s - 341 m/s
		40 S&W - FMJ	180gr./11.7g	1055 ft/s - 322 m/s
	II	9mm - FMJ RN	124gr./8.0g	1205 ft/s - 367 m/s
		357 Mag - JSP	158gr./10.2g	1430 ft/s - 436 m/s
	IIIA	9mm - FMJ RN	124gr./8.0g	1430 ft/s - 436 m/s
		44 Mag - SJHP	240gr./15.6g	1430 ft/s - 436 m/s
	III	7.62mm NATO - FMJ	148gr./9.6g	2780 ft/s - 847 m/s
	IV	.30 caliber M2 AP	166gr./10.8g	2880 ft/s - 878 m/s



Honeywell
Gold Flex®

DuPont™
KEVLAR

ForceField® ACH Advanced Combat Helmet

Superior ballistic and high-speed frag protection plus comfort

The MSA Advanced Combat Helmet was originally developed for the U.S. Military Special Operations Command, meeting stringent requirements and unprecedented demands, and setting new performance standards. The ACH has been credited with “taking the bullet” and saving several soldiers’ lives during combat, and was named one of the 10 Best Inventions of 2002 by the US Army Material Command. Now MSA’s ACH, battle-tested in Iraq and Afghanistan, is available for use in Law Enforcement, enhanced to meet your advanced handgun specification. MSA’s ForceField® Advanced Combat Helmet delivers the best impact protection, stability, and comfort available.

ForceField® ACH Specifications - Ballistic Performance, IIIA

- 124 grain, 9mm • 240 grain, 44 Magnum

Fragmentation Performance Specification (V50)

- 2 grain RCC @ 4075 fps • 4 grain RCC @ 3450 fps
- 16 grain RCC @ 2425 fps • 64 grain RCC @ 1700 fps



Shell Size	Pad Size – Thickness	Head Size	MSA P/N Black - No NVG Hole	MSA P/N Green - No NVG Hole	MSA P/N Black - Single NVG Hole	MSA P/N Green - Single NVG Hole
Medium	No. 8 – 1”	6 1/2 – 7	10060496	10060499	10060497	10060500
Medium	No. 6 – 3/4”	7 – 7 1/4	10060484	10060487	10060485	10060488
Medium	No. 4 – 1/2”	7 1/4 – 7 1/2	10078896	10079897	10079895	10079898
Large	No. 8 – 1”	7 1/4 – 7 1/2	10060502	10060505	10060503	10060506
Large	No. 6 – 3/4”	7 1/2 – 7 3/4	10060490	10060493	10060491	10060494
Large	No. 4 – 1/2”	7 3/4 – 8	10079900	10079902	10079899	10079901

Advanced Combat Helmet (ACH) - TC 2000 Military Series

ACH TC-2000 — GREEN

	Medium Size, Pad Set #6	Medium Size, Pad Set #8	Large Size, Pad Set #6	Large Size, Pad Set #8	Extra-Large Size, Pad Set #6	Extra-Large Size, Pad Set #8
No. Holes	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
0	300098A	300641A	300099A	300642A	—	—
1	300188A	300647A	300189A	300648A	010050873	10050874
2	300363A	300653A	300371A	300654A	—	—
3	300364A	300659A	300372A	300660A	—	—

ACH TC-2000 — BLACK

	Medium Size, Pad Set #6	Medium Size, Pad Set #8	Large Size, Pad Set #6	Large Size, Pad Set #8
No. Holes	Part No.	Part No.	Part No.	Part No.
0	300134A	300689A	300135A	300690A
1	300368A	300695A	300376A	300696A
2	300369A	300701A	300377A	300702A
3	300370A	300707A	300378A	300708A

ACH TC-2000 — TAN

	Medium Size, Pad Set #6	Medium Size, Pad Set #8	Large Size, Pad Set #6	Large Size, Pad Set #8
No. Holes	Part No.	Part No.	Part No.	Part No.
0	300132A	300665A	300133A	300666A
1	300365A	300671A	300373A	300672A
2	300366A	300677A	300374A	300678A
3	300367A	300683A	300375A	300684A



POLICE LINE



Helmet Pad Kit

Accessories and Replacement Parts

300021A	Chinstrap
10060678	Pad Kit, Size 6 – 3/4”
10060679	Pad Kit, Size 8 – 1”
10079894	Pad Kit, Size 4 – 1/2” thickness
10060735	Pad Kit, Combat Helmet, MD/LG, 10 Sets, Size 6
10060736	Pad Kit, Combat Helmet, MD/LG, 10 Sets, Size 8

Ballistic Protection

ForceField® ACH Accessory Faceshields

Removable full-wrap visor attachments that can be field deployed and mounted to all sizes of ACH style helmets in order to protect the user's face from projectiles and debris that may be encountered in performing law enforcement, first response, and crowd control enforcement tasks.



ForceField® ACH Accessory Faceshields	
10072800	Military Style Shield, .250" Thickness, short, Anti-Fog
10072804	Military Style Shield, .250" Thickness, long, Anti-Fog
10072799	Riot Shield, .150" Thickness, short
10072803	Riot Shield, .150" Thickness, long

Supreme Pro™ High Noise Communication Sys-

The Supreme Pro™ Communication System integrates with ballistic helmets providing unobtrusive communications and hearing protection in areas of loud impulsive sounds, such as areas where weapons may be fired. The system protects your hearing while enabling clear radio communications. Cup-mounted microphones enhance user situational awareness, allowing the user to hear ambient sounds

within the environment while protecting your hearing. The communication system is used as either a stand-alone headset or with MSA's ForceField® ACH, Millennium® CBRN Gas Mask and eyewear. This noise-canceling boom microphone-based system interfaces with various police radio transceivers and intercom systems.

- Hands-free monitoring.
- Functional with gloved hands.
- Connects to communication radios via MSA's TacPTT.
- Two-way communication with minimal background noise interference.
- Lightweight, comfortable, and easy to use.
- Superior hearing protection and amplification.



Supreme Pro™ Neckband Style

TacPTT

A Push-To-Talk assembly is made available for integration with the upper headset assembly. Methods of affixing the PTT assembly to BDUs or protective vests will include military spec hook and loop fastener materials, a mil-spec steel alligator style clip or velcro. Other options and accessories will be made available including both water-resistant headset inline quick disconnects and remote finger PTTs.

Supreme Pro™ Communication Systems		
Description	Headband	Neckband
Supreme Pro™ Headset, Boom Mic R, Nexus	10079965	10079962
Supreme Pro™ Headset, Boom Mic L, Nexus	10079964	10079967
Accessories		
Finger PTT	10083177	
Hygiene kit, complete with cushions & inserts	10061294	



Neckband Style

Headband Style

Radio Manufacturer	U.S. Radio Model(s)	Part No.
KENWOOD	Kenwood TK190, TK280/380/290/390, 480, 481, 2140, 3140, 290K, 2180	10078233
MOTOROLA	SABER	10079684
MOTOROLA	Motorola HT1000, JT1000, MT2000, MTX2000, MTX838/839, MTS2000, MTX8000, MTX9000, Transcript Stealth, GP900, MTX, JEDI, XTS 3500R, XTS 3000R, PTX1200, PTX3600, XTS5000, XTS5000R, GP900, XTS1500, XTS2500, XTS3000	10078232
MOTOROLA	Motorola HT750, HT1250, GP328, Pro5150, LS, Quick Disconnect, HT1550, GP328, Hardwired, Pro5150, HT1550XLS, Pro7150, Pro7350, Pro7550, Pro9150, MTX850, MTX850LS, GP329, GP388, GP339, GP340, GP360, GP680, MTX8250, MTX8250-LS, MTX950, MTX9250, PTX700, PTX760, PTX780, PR860	10077885
ICOM	Top load IC-F10/20, IC-F3S, IC-F4S	10079722
M/A-COM	P7100	10078234





MSA provides a selected range of quality industrial safety hand protection work gloves.

Quality raw materials are combined providing a consistent ongoing high performance and are compliant to the European CE, AS/NZS 2161 standards where possible.



Hand Protection

AUSTRALIAN/NEW ZEALAND OCCUPATIONAL PROTECTIVE GLOVE STANDARDS

Overview

The Australian/New Zealand Glove Standards AS/NZS 2161 have been reproduced from the equivalent European Standards.

AS/NZS 2161 consists of the following:

AS/NZS 2161.2 Occupational Protective Gloves - General Requirements (EN 420)

This standard covers the general requirements for Glove Construction, Ergonomics, Design & Sizing, Innocuousness of Protective Gloves, High Visibility, Comfort & Efficiency, Marking & Information applicable to all Occupational Protective Gloves.

Defined as follows:

General Requirements:

- Protective Gloves are designed, manufactured and are suitable for its intended use.
- When the glove construction includes seams, the material & strength of the seams shall be such that the overall performance of the glove is not significantly decreased.
- Protective Gloves provide protection when used to the manufactures instructions, without harm to the end user when so used.
- Glove sizing conforms to specifications in relation to hand circumference & minimum length requirement.
- Marking information covering the name, trademark or other means of identification, code/part number, size.
- Packaging information requirements & instructions for use.

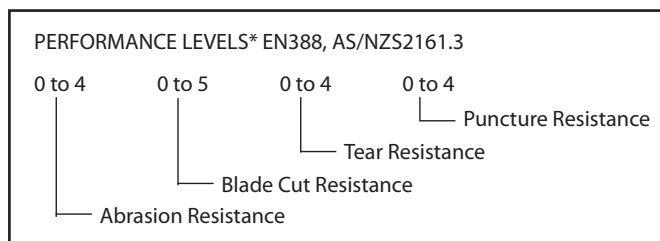
AS/NZS 2161.3 Occupational Protective Gloves - Protection Against Mechanical Risks (EN 388).

This standard specifies requirements, test methods, marking & information for protective gloves against the mechanical risk of Abrasion, Blade Cut, Tear & Puncture.

Defined as follows:

- Abrasion Resistance - Is a measure of the number of cycles required for breakthrough to occur. Breakthrough is understood to mean when a hole is worn through the test specimen.
- Blade Cut Resistance - Is a measure of the materials cut resistance index. Specimens are cut by a counter-rotating circular blade, which moves with an alternating motion under a specified load.
- Tear Resistance - Is a measure of the force necessary to propagate a tear in a specimen slit halfway along its length.
- Puncture Resistance - Is a measure of the force exerted by a steel stylus of defined dimensions to puncture a test specimen held on a retaining device.

Test results are reported as performance ratings, the higher the rating the greater resistance/protection.



<p>MECHANICAL HAZARDS EN 388</p> <p>MICRO-ORGANISMS EN 374</p> <p>RADIOACTIVE CONTAMINATION EN 421</p> <p>COLD HAZARDS EN 511</p> <p>HEAT AND FIRE EN 407</p>	<p>SPECIFIC CHEMICAL PROTECTION EN 374 :2003</p>	Letter Code	Chemical product (EN 374:
		A	Methanol
		B	Acetone
		C	Acetonitrile
		D	Dichloromethane
		E	Carbon disulphide
		F	Toluene
		G	Diethylamine
		H	Tetrahydrofuran
		I	Ethyl acetate
		J	n-Heptane
		K	Sodium hydroxide
		L	40%
<p>GENERAL CHEMICAL PROTECTION EN 374 :1994</p>	Protection	Breakthrough	Chemical Tested
	1	>10 minutes	Sodium Hydroxide 25%
2	>30 minutes	Sodium Hypochlorite	
3	>60 minutes	25%	
4	>120 minutes	Sulphuric Acid 25%	
5	>240 minutes		
6	>480 minutes		

Cut Resistant Gloves and Sleeves

Cut Resistance with Optimum Cover

CROC (Cut Resistant Optimal Cover) gloves and sleeves offer a high level of cut resistance with optimum cover. CROC knitted cut resistant gloves and sleeves are manufactured from a blend of synthetic and fine steel fibres, offering continuous Level 5 protection and superior comfort. Glove available in full knit with split leather reinforced palm and thumb version for added abrasion and cut resistance or fully knitted.

- Heavy weight protection - Light weight feel.

Typical Applications:

- Metal Fabricators.
- Machine Operators.
- Building and Construction Industry.
- Glass and Paper Handling.
- White Goods Assembly.

Specifications and Features:

- CE compliant, EN388, EN420.
- Abrasion - Level 3.
- Cut Resistance - Level 5.
- Tear Resistance - Level 4.
- Style 766221 (SM, MD, LG, XL) has additional protection offering quality Split Leather Palm.
- Comfort fit, dexterity.
- Washable.



Sleeve

Note: Gloves and Sleeves sold separately



766223

Part No.	Description
766221S	Glove, Cut Resistant Leather Palm, Small
766221M	Glove, Cut Resistant Leather Palm, Medium
766221L	Glove, Cut Resistant Leather Palm, Large
766221X	Glove, Cut Resistant Leather Palm, Extra Large
766223S	Glove, Cut Resistant Fully Knitted, Small
766223M	Glove, Cut Resistant Fully Knitted, Medium
766223L	Glove, Cut Resistant Fully Knitted, Large
766223X	Glove, Cut Resistant Fully Knitted, Extra Large
766222	Sleeve, Cut Resistant Fully Knitted, 18"



Hand Protection

Cotton and Leather Gloves

Split Leather Premium Candy Stripe Glove

General purpose medium grade work glove in a generous men's size. Working area is of a selected split leather and the candy striped cotton back promotes air flow for comfort, knuckle bar provides additional protection.

Suitable for the following applications:

- Building & Maintenance material handling.
- Warehousing.
- Light Engineering.

Features:

- Quality Leather split palm.
- Generous men's hand size.
- Candy striped cotton back for airflow.
- Knuckle bar and fingertip protection.

Markets:

- Construction.
- Mining.
- Oil, Gas & Petrochemical.



Premium - 220815

Part No.	Description
220815	Glove, Candy Stripe, Select Split, Leather, Rubberised Cuff, Premium
762075	Glove, Candy Stripe, Leather, Cotton, Budget

Split Leather and Cotton Polishers

Quality select split leather, double reinforced leather palm and thumb, forefinger and knuckle bar protection. Canvas back and cuff, generous large size.

Markets:

- Construction.
- General Purpose.
- Maintenance.
- Lumber Industry .
- Mining.

Part No.	Description
220812	Glove, Polisher, Leather, Cotton



Mustang

Quality select split leather, canvas back and cuff, knuckle bar protection, generous large size.

Markets:

- Construction.
- Mining.
- Oil, Gas & Petrochemical.

Part No.	Description
226545	Glove, Mustang, Leather, Double Palm



Leather Gloves

Grand Prix Premium Beige Driver

Applications:

- Drivers.
- Forklift Operators.
- Materials Handling.
- Storeman.
- Yard Workers.
- General Industry.

Markets:

- Construction.
- Mining.
- Oil, Gas and Petrochemical.

Features:

1. "A" Grade Cow Grain Leather Driver Glove.
2. Consistent thickness of "A" Grade Cow Grain Leather.
3. Functional elastic shirred wrist.
4. Available in 4 sizes.
5. Reinforced stitching for greater seam strength.
6. CE Standard compliant.
EN388/03 (Protective Gloves against Mechanical Risks).
and EN 420/03 (Gloves General Requirements).
7. Comfortable soft feel.
8. Generous sizing, manufactured to CE standards sizing requirement.
9. Excellent durability and abrasive resistance.
10. Wing thumb, offering comfort & good flexibility.



PERFORMANCE LEVELS*

0 to 4	0 to 5	0 to 4	0 to 4
Blade cut resistance - 1		Puncture resistance - 3	
Tear resistance - 2		Abrasion resistance - 3	

Part No.	Description
225030S	Glove, Grand Prix, Driver, Small
225030M	Glove, Grand Prix, Driver, Medium
225030	Glove, Grand Prix, Driver, Large
225030X	Glove, Grand Prix, Driver, Extra Large



Hand Protection

Glove Cow Grain Extended Cuff

Cow Grain Extended Cuff glove is a select consistent quality beige cow grain. Provides protection against many hazards, excellent abrasion resistance and durability.

Typical Applications:

- Riggers and Drivers.
- Forklift Operators.
- Baggage Handlers.
- Storemen.
- Logistics.
- Shipping and Steel Fabrications.
- Construction.

Markets:

- Construction and Mining.
- Smelters and Foundries.
- Engineering.
- Materials Handling and General Maintenance.



Specifications and Features:

- Select quality B/C leather cow grain.
- 30cm overall length.
- Elastic Shirred Wrist.
- Wing Thumb.

Part No.	Description
765443S	Glove, Rigger, Extended Cuff, Beige, Small
765443M	Glove, Rigger, Extended Cuff, Beige, Medium
765443L	Glove, Rigger, Extended Cuff, Beige, Large
765443X	Glove, Rigger, Extended Cuff, Beige, Extra Large

Freezer Fur Lined Glove

- Select B/C Cow Grade Leather.
- Synthetic Fur Lined.
- Elastic Shirred Cuff.
- Wing Thumb.

Applications:

- Freezer Rooms.
- Cold Storage Areas.
- Food Industries.
- Materials Handling.

Part No.	Description
225499	Glove, Freezer Fur Lined, Large



Rodeo Driver

- Rodeo Drivers Glove.
- Cow Grain B/C Leather Palm.
- Split Leather Back.
- Keystone Thumb.
- Shirred Wrist.

Applications:

- Mine Sites.
- Construction Sites.
- Logistics.
- Workshops.

Markets:

- Construction.
- Mining.
- Oil, Gas and Petrochemical.



Part No.	Description
227507	Glove, Rodeo, Driver, Leather, Large

Grain Palm Split Leather Back Driver

- Select Quality Cow Grain and Split Leather.
- Natural Colour.
- Grain Leather Palm and Forefinger.
- Split Leather Back.
- 3 sizes Med, Large and X Large.
- Wing Thumb, Shirred Wrist.



Part No.	Description
229835M	Glove, Driver, Leather Natural, Medium
229835	Glove, Driver, Leather Natural, Large
229835X	Glove, Driver, Leather Natural, Extra Large

Pigskin Split Leather Driver

- Selected split.
- Large hand size.
- Unlined.
- Shirred Wrist, Wing Thumb.

Applications:

- Storeman.
- Gardeners.
- Light Engineering.
- Horticulture.

Markets:

- Construction.
- Mining.
- Oil, Gas and Petrochemical.



Part No.	Description
221434	Glove, Pigskin Driver, Large

Hand Protection

Nitrile, Latex and PVC Gloves

Latex Palm Dipped "Glass Gripper"

Natural latex palm dipped glove. General purpose suitable for a variety of industrial tasks.

Typical Applications:

- Brick, Block and Glass handling.
- Timber.
- Building and Maintenance.
- Light Construction.
- Fisheries.

Markets:

- Construction.
- Refining.
- Public Utilities.
- Clean and General maintenance.
- Oil, Gas and Petroleum.

Specifications and Features:

- CE Standards Compliant EN 388 (Protection Against Mechanical Risks).
- Excellent durability and grip.
- Soft jersey lining.
- Flexible, high abrasion resistance.
- Knitted cuff.
- Natural latex coated.



Part No.	Description
220216	Glove, Glass Gripper, Knit Wrist, Premium Quality

Nitrosolve Flocklined Chemical Glove

Nitrosolve gloves are manufactured from nitrile (synthetic rubber) offering enhanced dexterity, chemically toughened to meet user requirements providing protection against organic, inorganic chemicals and solvents, oils and fats.

CE compliant EN 374-03 (Specific Chemical Protection).

Part No.	Description
226836S	Glove, Nitrosolve, Flocked Lined, Small
226836M	Glove, Nitrosolve, Flocked Lined, Medium
226836L	Glove, Nitrosolve, Flocked Lined, Large
226836X	Glove, Nitrosolve, Flocked Lined, Extra Large
226836XX	Glove, Nitrosolve, Flocked Lined, 2X Large

Typical Applications:

- Automotive assembly.
- Laboratory.
- Chemical handling and clean up.
- Food Processing.
- Oil Refining.
- Janitorial.
- General Industry.
- Solvent/Acid Protection.

Features:

- Unsupported highly flexible.
- Latex free flock lined.
- Enhanced dexterity, stretch and durability.
- 33cm overall length x 0.40mm thickness.

Markets:

- Mining.
- Food.
- Printing.
- Automotive Industry.
- Petrochemical Industry.



SPECIFIC CHEMICAL PROTECTION
EN 374 : 2003
KLA



MECHANICAL HAZARDS
EN 388
4001

Flexifit Foam Nitrile Black and Grey Glove

Flexifit Gloves offer excellent abrasion resistance, ultra lightweight with superior secure grip in dry, wet and oily conditions. Flexifit Gloves provide workers with a maximum level of comfort, fit, sensitivity and dexterity with minimum hand fatigue.

- CE compliant EN 388-03 (Protection Against Mechanical Hazards).
- Oil Resistant Foam Nitrile palm coating on a stretch seamless low lint nylon liner.

Features:

1. Black or grey foam nitrile coating.
2. Close comfortable fit.
3. Low lint nylon liner.
4. Elasticised knit wrist.
5. Machine washable.

Applications:

- Component Assembly.
- Automotive Industry.
- Packing and Inspection.
- Delicate and precise operations.
- Machine operation.



Part No.	Description
Grey	
766043	Glove, Flexifit, Foam Knit, Extra Small, Grey
765134	Glove, Flexifit, Foam Knit, Small, Grey
765135	Glove, Flexifit, Foam Knit, Medium, Grey
765136	Glove, Flexifit, Foam Knit, Large, Grey
765137	Glove, Flexifit, Foam Knit, Extra Large, Grey
Black	
766044	Glove, Flexifit, Foam Knit, Extra Small, Black
765265	Glove, Flexifit, Foam Knit, Small, Black
765266	Glove, Flexifit, Foam Knit, Medium, Black
765267	Glove, Flexifit, Foam Knit, Large, Black
765268	Glove, Flexifit, Foam Knit, Extra Large, Black



Light Nitrile Palm Coated Gloves

Nitrile dipped, textured finished lightweight glove offering good grip, dexterity and flexibility.

Typical Applications:

- Abrasive Metals/Castings.
- Assembly/Packing.
- Fabricated Products.
- Bricks and Block applications.
- General Industry/Maintenance.

Markets:

- Mining.
- Maintenance.
- Metal Processing.

Specifications and Features:

- CE compliant EN 388-03 (Protection Against Mechanical Hazards).
- Good grip and abrasion resistance.
- Comfort jersey lining.
- 27cm overall length.
- Multi-purpose, hard wearing.
- Knit wrist.



Part No.	Description
227002S	Glove, Nitrolite Poly Cotton Knit Wrist Small
227002M	Glove, Nitrolite Poly Cotton Knit Wrist Medium
227002L	Glove, Nitrolite Poly Cotton Knit Wrist Large
227002X	Glove, Nitrolite Poly Cotton Knit Wrist Extra Large

Hand Protection

Heavy Nitrile Palm Coated Gloves Knit Wrist & Open Cuff

Heavy duty nitrile provides excellent cut and abrasion resistance. Jersey cotton liner providing superior soft comfort.

Applications:

- Abrasive Metals/Castings.
- Transport.
- Construction.
- Fabricated Products.
- Bricks and Block applications.
- General Industry.

Features:

- CE compliant EN 388-03 (Protection Against Mechanical Hazards).
- Nitrile palm coated.
- Knit Wrist or Open Cuff.
- Soft jersey liner.
- Excellent grip and dexterity.
- Comfortable ergonomic fit and good flexibility.

Markets:

- Construction.
- Mining.
- Oil, Gas and Petrochemical.
- Foundries.
- Smelters and Steel Mill Operations.
- Materials Handling.



Part No.	Description
Open Cuff	
227003M	Glove Nitrogard PC Open Cuff Medium
227003L	Glove Nitrogard PC Open Cuff Large
227003X	Glove Nitrogard PC Open Cuff Extra Large
Knit Wrist	
227004S	Glove Nitrogard PC Knit Wrist Small
227004M	Glove Nitrogard PC Knit Wrist Medium
227004L	Glove Nitrogard PC Knit Wrist Large
227004X	Glove Nitrogard PC Knit Wrist Extra Large

Fully Coated PVC Single Dipped Glove

Single dipped PVC glove, smooth finish providing protection against chemical and mechanical hazards, good dexterity, comfort and flexibility.

Applications:

- Light chemical handling.
- Fisheries.
- Automotive.
- Brick works.
- Cleaning.
- Utilities.

Markets:

- Mining.
- Maintenance.
- Oil, Gas and Petrochemical.

Features:

- CE compliant EN 388-03 (Protection Against Mechanical Hazards).
- CE compliant EN 374-03 (General Chemical Protection).
- Abrasion resistance.
- Wet and Dry grip.
- 27cm or 45cm overall length.
- Cotton lining.
- Flexible, Durable.
- Size - Large.



Part No.	Description
221741	GLOVE, PVC, OPEN CUFF, 27CM, RED
220615	GLOVE, PVC, OPEN CUFF, 45CM, RED



Green Double Dipped PVC Glove

Double Dipped PVC Glove with textured finish providing wet and dry grip, protection against chemical and mechanical hazards, robust glove with high abrasion resistance.

- CE compliant
EN 388-03 (Protection Against Mechanical Hazards).
- CE compliant
EN 374-03 (General Chemical Protection).
- Interlock Lining.
- Fully Coated.



Applications:

- Light chemical handling.
- Fisheries.
- Automotive.
- Painting and Concreting.
- Wet work.
- Brick works.
- Cleaning.
- Utilities.

Part No.	Description
762515	Glove PVC Green Double Dipped 27cm
762514	Glove PVC Green Double Dipped 45cm

PVC Gard Gloves

PART NUMBERS & SUITABILITY CHART

	METAL GARD	SOLV GARD		METAL GARD	SOLV GARD
ALCOHOLS			Hydrocarbons		
Amyl, Butyl, Hexyl, Isopropyl, methyl 6% aq. soin.	E	E	Toluene, Benzene, Styrene	N.R.	E
CAUSTICS			Miscellaneous		
Ammonium, Hydroxide, Sodium Hydroxide 50%, Potassium Nitrate	E	E	Lacquer Thinner	F	E
Chlorinated Solvents			Cutting Oil	E	E
Carbon Tetrachloride, Perchloroethylene			Battery Acid	E	E
Trichlorethylene	N.R.	E	Phenol	G	G
KETONES			Insecticides	E	E
M.E.K., M.I.K., Acetone	N.R.	E	Printing Ink	E	E
Petroleum SOLVENTS			Synthetic Detergents	E	E
Petrol, Naptha, Kerosene, Mineral Thinner, Turpentine	G	E	Paraffin	E	E
Organic acids			Glycerine	E	E
Citric, Formic, Tannic, Acetic	E	E	Vegetable Oils	E	E
Inorganic Acids			Animal Oils	G	G
Hydrochloric	E	E	Creosote	G	G
Sulphuric 10%-80%	E	E	Carbon Dioxide	E	E
90%-95% @ 20°C	G	E	Vinegar	E	E
Sulphurous	E	E	Linseed Oil	E	E
Nitric 10%	E	E	Hexane	G	G
Nitric 70%	F	G	Photographic Emulsion	G	G
Chromic	G	E	Tanning Extracts	E	E
			Wine & Spirits	E	E

E- Excellent F- Fair G- Good NR- Not recommended

Hand Protection

PVC Gard Gloves



Metalgard

Ideal for the heavy manufacturing industry to handle metal plates and castings. Manufactured using MSA's exclusive high density resin/plasticiser ration formulation for extra durability and abrasion resistance.

Green in colour, fully coated.
Available in a choice of sizes and lengths.

Part No.	Description
220875	Glove, Metalgard Handsize 8.5 Length 27cm
220876	Glove, Metalgard Handsize 9.5 Length 27cm
220879	Glove, Metalgard Handsize 8.5 Length 35cm
220880	Glove, Metalgard Handsize 9.5 Length 35cm
220881	Glove, Metalgard Handsize 8.5 Length 45cm
220882	Glove, Metalgard Handsize 9.5 Length 45cm

Applications:

- Mine Sites.
- Constuction Sites.
- Workshops.

Solvgard Glove

Provides protection against most chemicals, petroleum and paint solvents. The unique formulation maximises resistance against degradation or glove hardening to improve comfort and dexterity. Ideal for use in the automotive industry, oil refining and paint manufacturing. Durable and can be laundered. Blue in colour, fully coated, cotton liner. Available in a variety of lengths and sizes.

Applications:

- Mine Sites.
- Construction Sites.
- Workshops.
- Automotive Industry.
- Oil Refining.
- Paint Manufacturing.

Markets:

- Construction.
- Defence.
- Mining.
- Oil, Gas and Petrochemical.



Part No.	Description
224248	Glove, Solvgard, Handsize 8.5 Length 27cm
224249	Glove, Solvgard, Handsize 9.5 Length 27cm
224252	Glove, Solvgard, Handsize 8.5 Length 35cm
224253	Glove, Solvgard, Handsize 9.5 Length 35cm
224336	Glove, Solvgard, Handsize 8.5 Length 45cm
224337	Glove, Solvgard, Handsize 9.5 Length 45cm

Welding Gloves

Flashmaster TIGmate

TIG glove manufactured from select grain leather, providing excellent sensitivity, dexterity, comfort and protection.

- Premium Grade Select Grain.
- Full Dexterity.
- Kevlar Sewn.
- 32cm Overall Length.

Applications:

- Tig Welding.
- Oxy Welding.
- Welding Industry.
- General Industry.



Part No.	Description
227765L	Glove, Flashmaster, TIGmate, Large

Blue Welding Gauntlet

Blue/Gold Welding Gauntlet providing excellent protection from radiant heat and hot metal splash.

Features:

- Kevlar Stitching.
- Reinforced Double Palm and Thumb.
- Full Lining.
- Generous Hand Size.
- Quality Split Cow Leather.
- Comfort with Heavy Duty Palm Protection.
- 40cm Overall Length.

Markets:

- Foundries.
- Construction.
- Engineering.
- Automotive Industry.
- Petrochemical Industry.



Typical Applications:

- Welding and Heat.
- Flame and Spark Protection.
- Mig, Oxy and Arc Welding.
- Engineering and Maintenance.
- Smelters and Foundries.

Part No.	Description
228370	Glove Welders Blue Reinforced Palm

Premium Quality Welding Gauntlet

Red Premium quality cow split leather Welding Gauntlet providing excellent protection from radiant heat and hot metal splash.

Features:

- Kevlar Stitching.
- Reinforced Palm and Thumb.
- Full Lining.
- Generous Hand Size.
- Quality Split Cow Leather.
- Comfort with Heavy Duty Palm Protection.
- 40cm Overall Length.

- Engineering and Maintenance.
- Smelters and Foundries.

Markets:

- Foundries.
- Construction.
- Engineering.
- Automotive Industry.
- Petrochemical Industry.



Typical Applications:

- Welding and Heat.
- Flame and Spark Protection.
- Mig, Oxy and Arc Welding.

Part No.	Description
224518	Glove, Flashmaster, Welding Gauntlet Large

Refer Page 112 for Welding Apparel

Hand Protection

Synthetic Glove

Mechanics Anti-Shock Glove

The MSA Mechanics style glove features gel inserts to provide an anti shock feature. The gel inserts are ergonomically positioned to reduce impact and lessen wearer fatigue. The inserts span the palm of the glove and up into wrist area. The design of the glove makes it ideal for use in the building, construction, maintenance, mining, automotive and materials handling plus many other work areas.

For added protection of the most vulnerable areas of the hand MSA has provided high density webbing rolls over the knuckles, additional material over the finger tips and a contoured pulse guard with a Velcro closing tab across the inside of the wrist.

Silicone pads on the inside of the finger tips provided added grip while the reinforced double stitching and synthetic leather palm provide excellent durability and abrasion resistance.

The visibly safe bright colour of the glove makes it easily recognisable and the venting in the finger sidewalls gives increased breathing for wearer comfort. The MSA Anti-shock mechanic glove is a high performing all rounder suited to a wide variety of applications at a very competitive price.



Applications

Ideal for building, construction, maintenance, mining, automotive and materials handling.

Features and Benefits

- Gel inserts absorbs impact and reduce wearer fatigue.
- Knuckle bar protection with high-density webbing.
- Silicone fingertip pads provide added grip.
- Pulse guard with Velcro closing tab protects the inside wrist area.
- Vented finger sidewalls provide increased breathing and comfort.
- Reinforced double stitching and synthetic leather palm increase durability and abrasion resistance.

Part No.	Description
765447S	Glove, Mechanic Gel Inserts Velcro Small
765447M	Glove, Mechanic Gel Inserts Velcro Medium
765447L	Glove, Mechanic Gel Inserts Velcro Large
765447X	Glove, Mechanic Gel Inserts Velcro Extra Large
765447XX	Glove, Mechanic Gel Inserts Velcro 2X Large

Thermal Imaging

For the Toughest Demands



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 three TIC models feature the same ergonomic design, robust components and extreme durability. The image quality is best-in-class. But the MSA TIC models each feature different resolutions in order to ensure the optimal price-performance ratio for each application.

The practical modular system allows all three types of camera to be enhanced with a Video Transmission System or Video Capture.

The Video Transmission System gives the back-up team a clear view of what is happening on the fire ground in real time. Furthermore, a unique Video Capture for documentation purposes is easily adaptable to all three cameras.

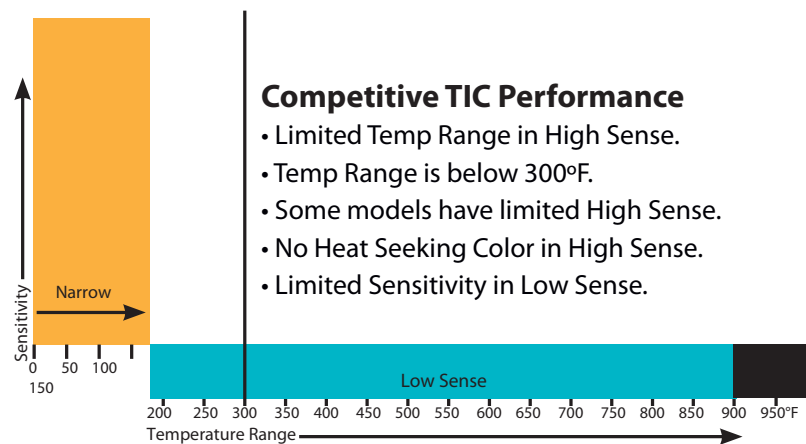
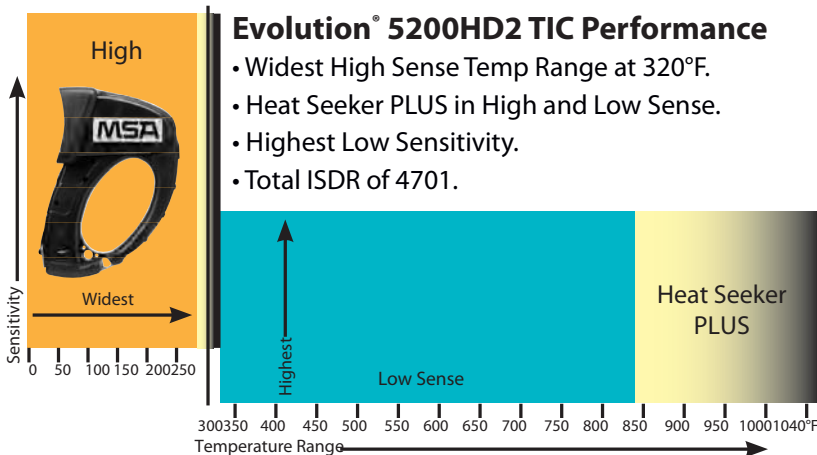
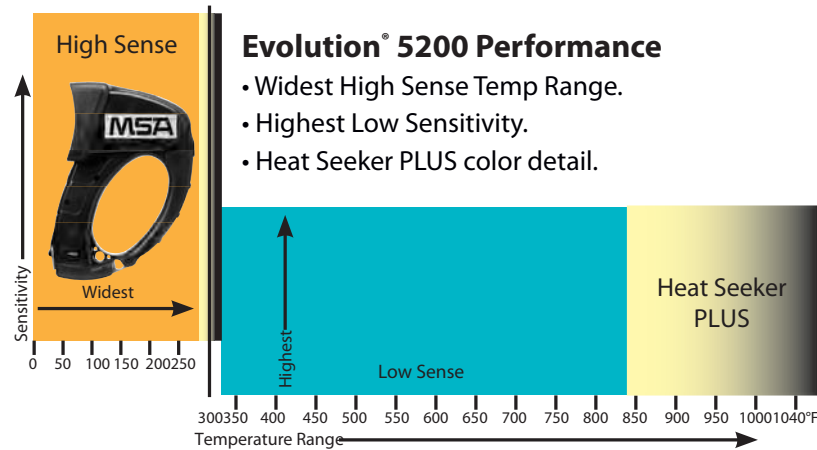
Thermal Imaging

Evolution® Thermal Imaging Cameras (TICs)

Comparison of Fire Service TIC Performance*

High and Low Sensitivity

Most TIC's generate thermal images in either High Sense or Low Sense modes, depending on the temperature of the scene. High Sense mode delivers the best image quality – but has a limited temperature range. Low Sense mode trades image quality



Thermal Imaging Cameras

For every demand the optimal TIC model



Evolution® 5200



EVOLUTION® 5200

MSA's all-rounder EVOLUTION® 5200 offers high image quality and the widest viewing angle. Designed according to various requirements, it is the best camera for a wide range of applications.

The Heat Seeker PLUS function provides shaded, heat-seeking colour pixels. The colour spectrum ranges from light yellow to dark red indicating increases in structural temperature and displaying the intensity and direction of a fire in revealing detail.

The rugged, compact and lightweight design, as well as the shutter indicator, instant-on and Quick-Temp functions provide additional value to the user.

Video Output and Standby Mode as standard

Part No.	Description
765269	EVOLUTION® 5200 with Heat Seeker PLUS and Quick-Temp °C

Refer page 151 for accessories.



Features	Benefits
Widest High Sense Operating Range on any Fire Service TIC conditions	Provides better performance in high heat.
Highest Low Sensitivity Mode of any Fire Service TIC	Extends the dynamic range for better image distinction at higher scene temperatures.
Quick-Temp Temperature Measurement	Gives users a digital temperature measurement along with a temperature scale measurement to determine advancing heat.
Heat Seeker PLUS Indicator	Allows the user to easily locate hot spots and the seat of the fire. Effective in High and Low Sensitivity.
New Internal Mounting Foam	60% increase in heat tolerance. Protects system electronics from rough handling. Insulates sensor and electronics.
Microbolometer technology (vanadium oxide)	Extremely sharp image.
3-1/2-inch display	Team of users gets full view of the action.
Revolutionary ergonomic design	Easy handling and integration.
Reflective ID label kit	Allows user to personalize the TIC to a specific station/department with a choice of different color labels.
Unique high-impact bumper protection system	Drop protection from any angle - outstanding durability.

Thermal Imaging Cameras



Evolution® 5200HD

EVOLUTION® 5200 HD

The EVOLUTION® 5200 HD features the most brilliant, high resolution images available. With the 320 x 240 pixels sensor and the optional 2x digital zoom it is the perfect tool for challenging policing and fire-fighting operations.

The design is lightweight, compact and ergonomical. The HeatSeeker PLUS and the Quick-Temp functions enable the fast location of fire sources and hot-spots supported by a graphic and numerical temperature readout. Combined with the other features such as extreme durability, shutter indicator and instant mode switching this camera is at the cutting-edge of thermal imaging technology.

Video Output, Heat Seeker PLUS and Quick-Temp as standard

Part No.	Description
765580	EVOLUTION® 5200 HD with Digital Zoom 2x [without Standby Mode]

Refer Page 139 - for accessories.



Normal Image



2X Zoom Image



Evolution® 5600

EVOLUTION® 5600

The EVOLUTION® 5600 features state-of-the-art image resolution. With its excellent price-performance ratio it is the optimal solution for applications requiring a speedy overview.

MSA's sophisticated Heat Seeker PLUS and Quick-Temp functions deliver unequalled performance at all temperatures. The lightweight, compact and durable design, as well as the shutter indicator and instant mode switching, make it a very user-friendly device.

Standby Mode, Heat Seeker PLUS and Quick-Temp as standard

Part No.	Description
766282	EVOLUTION® 5600 standard

Refer Page 151 - for accessories.



Thermal Imaging Cameras



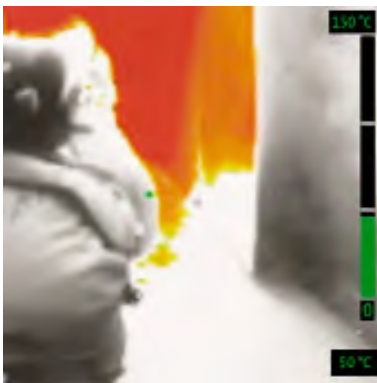
Video Transmitter

The ability to send thermal images from the area of operation to the incident control centre gives the commander the essential information required to know what is happening in “real time”. This enables faster and more effective decision-making, increases safety and permits the rapid selection and deployment of the resources required to tackle the situation in hand.

The Video Transmitter is retrofittable to and removeable from any EVOLUTION® 5000 series thermal imager within seconds.



Part No.	Description
10048841	Video Transmitter (incl. Lithium ion battery pack)
10049271	Receiver Station with monitor and case



Video Capture

In the fire service, documentation is becoming more and more important. MSA's unique Video Capture for EVOLUTION® 5000 thermal imaging cameras enables straight forward video recording from thermal imaging equipment for documentation and training purposes, which is quick and easy to set up.

The video capture is a small and easy-to-use free-standing unit, which is retrofittable and can be transferred to any EVOLUTION® 5000 series thermal imager within seconds. An integrated standard flash memory card provides up to 2 hours filming capacity in MPEG-1 format.



Part No.	Description
10064785	Video Capture [incl. MMC-Memory Card Reader and RS-MMC Memory Card 512MB]

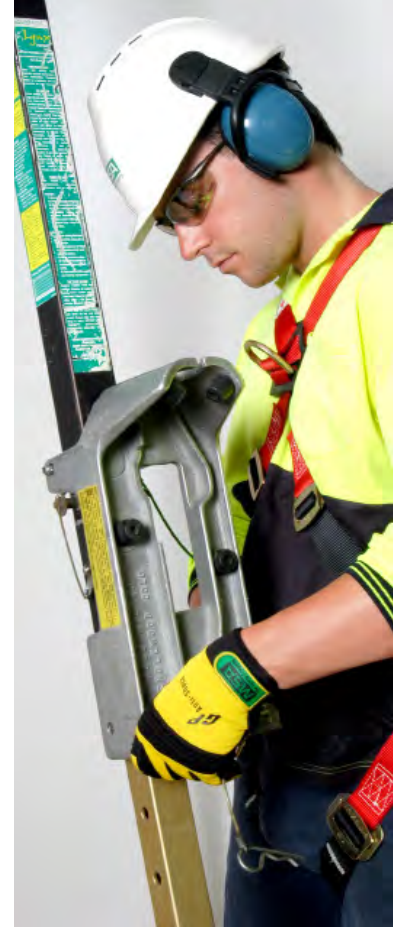
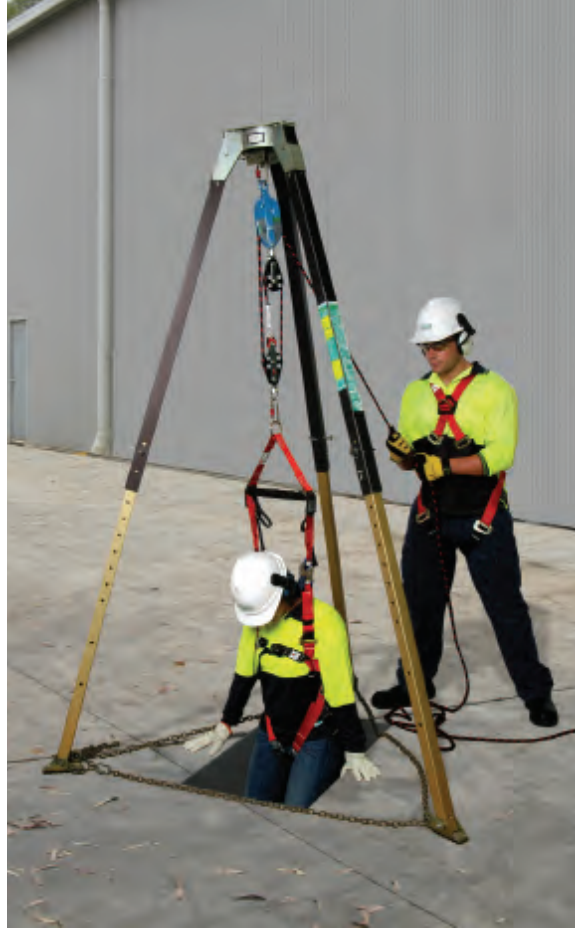


Accessories

Accessories for all Evolution® 5000 series TICs	
764656	Charger 220V with cigarette lighter adapter
10038412	Lithium Ion battery
10067565	Vehicle Mounted Charger
10039516	Wrist Strap
10039515	Shoulder Strap
10040226	Retractable Lanyard
10040005	Carabiner
10039603	Sun Shroud
10062184	Reflective Label ID Kit
10038970	Disposable Display Covers - Clear
10040229	Tripod Adapter



Fall Protection



Fall Protection

MSA has been in the business of safety at height since 1930. Today it is at the forefront in both the supply and the range of innovative fall protection products.

MSA Australia today manufactures most of its textile products locally at its head office manufacturing facility located at Girraween in Sydney. This range includes the new generation 'Gravity' range of harnesses, and 'Diamond' shock absorbing lanyards. The truly unique 'Workman' range of harnesses and shock absorbing lanyards and an extensive range of miners belts.

As part of a global business, MSA Australia also has access to a complete range of product from facilities in Mexico, China, Europe and the U.K. This access enables MSA Australia to carry stocks of the complete MSA fall protection product range. From SRL's, confined space entry, rescue products through to a comprehensive range of engineered horizontal and vertical lifeline and rail systems. All of this carried in stock in our warehouse locations in Sydney, Perth and Auckland, New Zealand.

Solutions for Safety at Heights

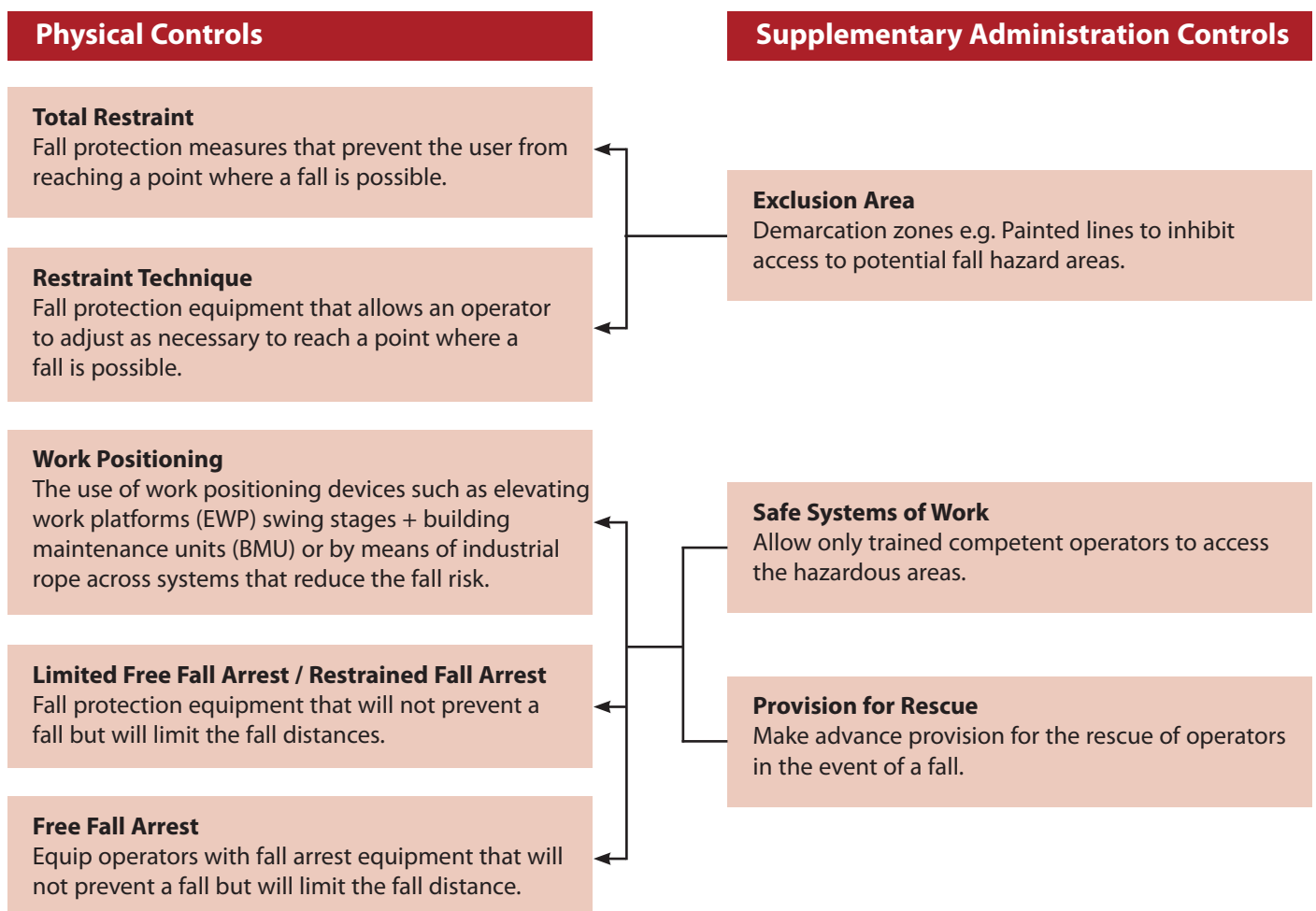
Risk Assessment

Consult AS/NZS 1891.4 – HIERARCHY OF CONTROLS, these are;

- **IDENTIFY** all potential fall hazards.
- **ELIMINATE** the need to access the potential hazard area.
- **SUBSTITUTION** of the potential hazard area, e.g. walkways.
- **ISOLATION**, by enclosing or barricading the hazard area.
- **FALL PROTECTION EQUIPMENT** shall be provided which prevents a fall, or reduces the risk of an injury as a result of a fall.

Note: The order of control should be from top to bottom.

Hierarchy of fall protection options



Fall Protection

Making Safety as Easy as 1, 2, 3...

1 HARNESS

What do I want?

Comfort. You want the perfect fit.

To ensure a perfect fit, harnesses are available in different sizes. A standard size will fit most workers. See harness sizing selection chart (next page) to determine the best size for you.

Ease of Use. You want a harness that is easy for you to get into and adjust. Harnesses are available in primarily two styles:

- **Parachute style (vest style).** A Vest type harness is put on like a jacket.
- **Crossover (cross-chest).** A crossover harness is put on over the head, similar to putting on a jumper.

The choice on style is a matter of personal preference. There are also different types of leg and shoulder strap connections available on a harness:

- **Qwik-Fit** (traditional mating buckle) or



(auto lock double action unlock)



Both styles offer fast and easy connection and adjustment. The choice of leg strap connections is a matter of personal preference.

You also have a choice of **D-Ring configurations** on a harness: Rear D-rings, Side D-rings, or chest D-rings (or web loops). D-ring usage is as follows:

- **Chest D-ring** (or web loops). AS/NZS 1891.1:2007 standard recommends the chest frontal attach point is the preferred point of attachment for all fall arrest applications.
- **Rear D-Ring.** This is also an approved attachment point for fall arrest. It can also be used as a rescue attachment.
- **Side D-rings.** Used for work positioning activities to allow the worker to have their hands free to perform work using pole strap.

2 LANYARD

How do I know which to choose?

There are two primary types of lanyards:

- **Shock-absorbing lanyards** used when the free fall distance (fall hazard) can exceed 600mm.
- **Restraint or positioning lanyards** used only when free fall distance (fall hazard) can be limited to 600mm or less (note: a shock absorber should still be used in the lanyard).

In choosing the correct lanyard, you must **keep the application in mind.**

- Ensure the lanyard is the proper length to allow the necessary worker movement/positioning.
- Determine that the right material type is chosen (depending on your work environment).
 - Cable works best in high heat environments or around sharp edges.
 - Rope or Webbing works best in most other applications.
- Ensure you have **calculated your total fall distance.** See diagram below for more information.

You also need to consider the compatibility of the system components. Components produced by different manufacturers may not be interchangeable. The best way to ensure compatibility is to purchase all components from the same manufacturer.

Note: If a lanyard assembly is not suitable then use of a self retracting lifeline (SRL) device is recommended.

3 ANCHORAGE

How do I know which to choose?

Anchorage selection is **driven primarily by application.** You will need to carefully consider your work environment, in particular the type of structure where the connector will be attached.

Examples include:

- Roof.
- Scaffold.
- Steel Beam.
- Concrete Column.
- Rail.

Weight should also be a consideration if a worker will need to carry the connector around during the work day.

You will also need to **consider the number of workers** required to attach to the anchorage. Most MSA connectors are rated for two person use with a 22.2kN minimum breaking strength. Anchorages are required, under AS/NZS 1891.4, to have a minimum breaking strength of 15kN for 1 person attached. An anchorage rated to greater than 21kN is suitable for use by no more than 2 people.

FACTORS TO CONSIDER

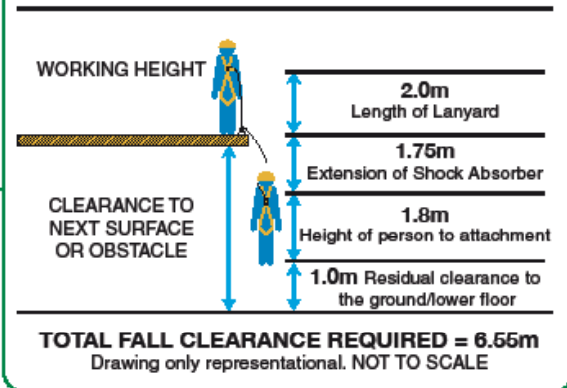
- Anchorage (Min. 15kN)
- Full Body Harness
- Connection Means (Shock Absorbing Lanyard or SRL)
- Rescue Plan
- Clearance Distance (see chart)

RESCUE METHODS

Using the unique MSA Rescue Pole Kit, Rescue Sola Retrieval System or The Skyline Milan rescue devices, allows a rescuer in danger by requiring them to descend down to the fallen worker, these rescue devices allow a rescue to be performed within 5 to 15 minutes with regular training sessions on the technique.

CLEARANCE DISTANCE

ANCHOR POINT AT FOOT LEVEL



Solutions for Safety at Heights

As easy as - A + B + C + R

A = Anchorage

Selection of the anchorage point should be to a minimum rating of 15kN, regardless of the work application.

Note: The MSA range of anchorages are all rated to a minimum of 15kN but in most products to 22kN which allows 1 or 2 persons to be attached the same anchor.

B = Body Support

Full body or lower body harness, general height work, work positioning / suspension, confined space applications. You must select the harness applicable to your work application.

Note: MSA does not recommend a lower body harness for use in industrial fall protection applications.

C = Connection Means

What is needed between the anchorage and harness?

As a minimum, a lanyard assembly (shock absorbing lanyard). Possible configurations are:-

- Fixed Length Lanyards.
- Adjustable Lanyard.
- Tie back lanyard.
- Twin-tail lanyard.

All available in 11mm Kernmantle Rope, 22mm webbing or PVC covered stainless steel wire rope.

Also available is the MSA range of self retracting lanyards, both webbing and wire rope.

R = Rescue

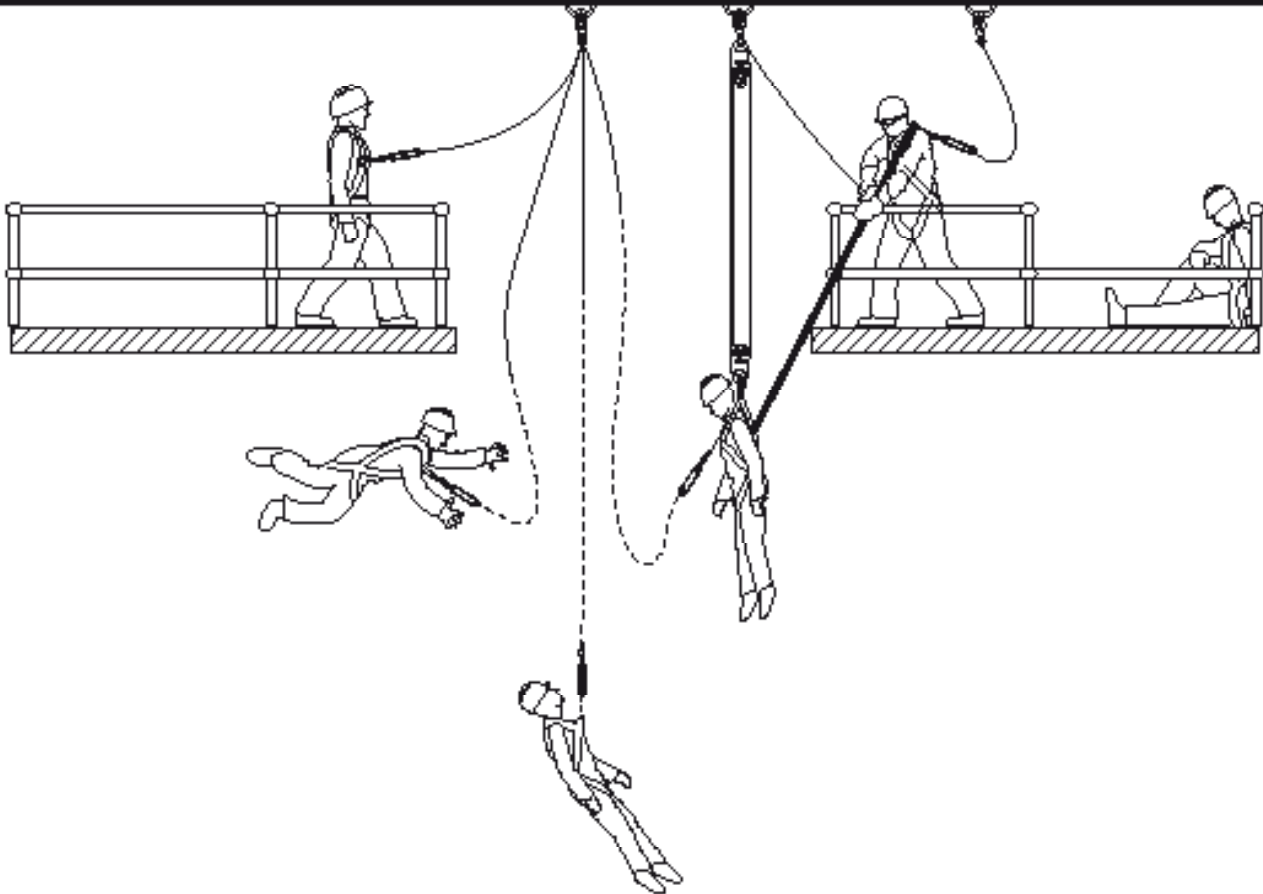
Typically the forgotten term in a PPE selection plan. Suspension trauma can occur in as little as 5 minutes after a person has fallen in a harness. Do not rely on local rescue authorities to be on site within 5 minutes. MSA has a range of simple to use rescue products to assist you in performing a quick, safe and successful rescue. Consult your MSA specialist for advice on all of the above.

HARNES SIZING CHART

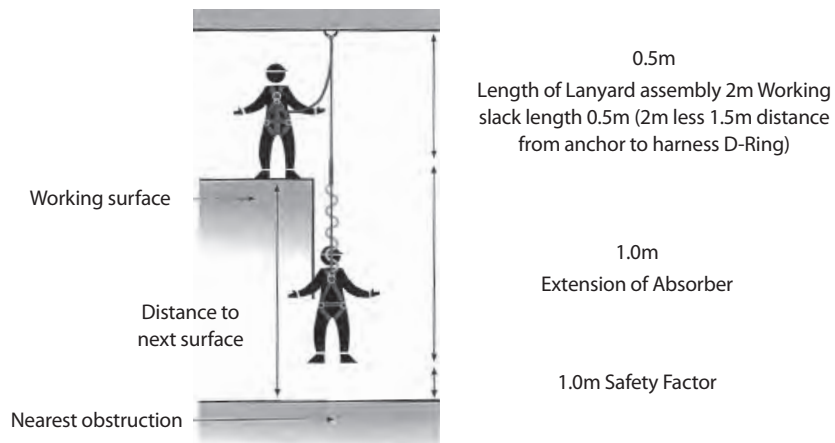
Height	Body Weight (kg)													
	50	60	70	80	90	100	110	120	130	140	LARGE			
2.0	STANDARD										LARGE			
1.8	STANDARD										LARGE			
1.5	SMALL			STANDARD										LARGE



SOLUTIONS FOR SAFETY AT HEIGHTS TYPICAL FALL SITUATION AND RESCUE



CALCULATING TOTAL FALL DISTANCE - ANCHOR POINT ABOVE USER



TOTAL FALL CLEARANCE REQUIRED = 2.5m
Drawing only representational. NOT TO SCALE

SUSPENSION TRAUMA

THE MAJOR REASON FOR THE IMPORTANCE OF EFFECTING A QUICK RESCUE RESPONSE

'WORKMAN' International Fall Protection Harnesses



This new range will compliment the already existing 'WORKMAN' fall protection product series. The 'WORKMAN' Premier and Utility harnesses has now been complimented with fully adjustable and removable leg support pads incorporated with the unique floating shoulder, leg strap and sub pelvic strap for greater comfort to the user. The 'WORKMAN' International fall protection product series is perfectly suited for all work in OGP, Mining, Construction, Utilities, Confined Space, Roof Workers and general working at heights applications. The 'WORKMAN' International harness range is certified to AS/NZS 1891.1: 2007.

'WORKMAN' International Premier Harness

- Unique floating shoulder, leg and sub pelvic straps giving the user a versatile and comfortable fitting harness.
- Fall arrest rated frontal attachment points linked to a floating rear comfort strap allows easy donning and doffing of the harness.
- Fall arrest rated, adjustable rear D-Ring allowing the harness to be correctly adjusted to the torso with ease.
- Attachment loops on the shoulders for confined space entry and retrieval applications with spreader bar use.
- Options for leg connection hardware of the traditional Qwik-fit buckles and Bayonet (Klik Connect) buckles.
- Fully adjustable and removable leg support pads.
- Newly designed card-type tag package includes detailed harness information cards for inspection and are wear resistant.
- Yellow/black webbing for high visibility applications.
- Sizes: Small, Medium (Standard) and Large.
- **Certified to AS/NZS 1891.1: 2007.**

Part No.	Size	Description
10112901	SML	'WORKMAN' Premier full body harness Qwik-fit
10112902	MED	'WORKMAN' Premier full body harness Qwik-fit
10112903	LGE	'WORKMAN' Premier full body harness Qwik-fit
10112904	SML	'WORKMAN' Premier full body harness Bayonet
10112905	MED	'WORKMAN' Premier full body harness Bayonet
10112906	LGE	'WORKMAN' Premier full body harness Bayonet

Harnesses

'WORKMAN' International Fall Protection Harnesses

'WORKMAN' International Utility Harness

- Unique floating shoulder, leg and sub pelvic straps giving the user a versatile and comfortable fitting harness.
- Fall arrest rated frontal attachment points linked to a floating rear comfort strap allows easy donning and doffing of the harness.
- Fall arrest rated, adjustable rear D-Ring allowing the harness to be correctly adjusted to the torso with ease.
- Attachment loops on the shoulders for confined space entry and retrieval applications with spreader bar use.
- Leg connection hardware will only be offered in Bayonet (Klik Connect) buckles.
- Fully adjustable and removable leg support pads.
- Newly designed card-type tag package includes detailed harness information cards for inspection and are wear resistant.
- Padded waist belt pad and thigh support pad.
- Pole Strap attach side D-Rings located close to the hips.
- Yellow/black webbing for high visibility applications.
- Sizes: Small, Medium (Standard) and Large.
- **Certified to AS/NZS 1891.1: 2007.**



Part No.	Size	Description
10112907	SML	'WORKMAN' Utility full body harness Bayonet
10112908	MED	'WORKMAN' Utility full body harness Bayonet
10112909	LGE	'WORKMAN' Utility full body harness Bayonet

New Generation Harness Range

The MSA New Generation harness range features the proven 'Gravity' Crossover and Gravity Tower Rescue harnesses and now the truly unique 'Workman' range of basic and work, positioning harnesses. The 'Gravity' range and the 'Workman' range are certified to Australian standard - AS/NZS 1891.1:2007.

Gravity Crossover

- An innovative harness featuring a distinctive crossover design with unique floating shoulder & leg straps.
- Choose between MSA traditional black/red webbing or the new black with fluoro orange webbing.
- Suitable for fall arrest from both front & rear D-Ring. Restraint, ladder climbing, controlled descent & rescue from the front D-Ring and rear D-Ring.
- Low cost and lightweight.
- Sub Pelvic strap.
- **Certified to AS/NZS 1891.1:2007.**



Part No.	Size	Description
10034810	STD	Gravity Crossover Red/Black Webbing
10034810-FL	STD	Gravity Crossover Fluoro/Black Webbing
10034811	SML	Gravity Crossover Red/Black Webbing
10034812	LRG	Gravity Crossover Red/Black Webbing

Add -FL to Small and Large P/Ns for Fluoro Webbing.

Suspension Trauma Safety Step

Lightweight web ladder designed 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.

Attachment point options



Attachment with carabiner



Attachment without carabiner



Bosun Chair

- Best method to sit suspended for long durations.
- Padded seat ensures your comfort during use.
- Adjustable web assembly ensures security.
- Designed for use with both the Gravity Crossover harnesses, and the new Workman range, via the frontal attachment point, will keep the user in an upright position.
- **Part No. SSH3505017.**



Part No.	Description
10063431	Suspension Trauma Safety Step with karabiner
10063441	Suspension Trauma Safety Step without

These products are suitable for use with both the gravity and workman range of harnesses.

Harnesses

Gravity Tower/Rescue Harness



Fall arrest rated frontal attachment point

- Featuring the innovative crossover shoulder strap design. Padded waist belt and sub pelvic padding on this harness raises the levels in harness comfort.
- Fall arrest, rated front and rear D-Rings. Pole strap attach side D-Rings.
- Sub Pelvic strap.
- Suitable for any industry requiring work, work positioning or work suspension activities.
- Chest D-Ring suitable for emergency rescue.
- Choose between MSA traditional black/red webbing or the new black with fluoro orange webbing.

Part No.	Size	Description
10034816	STD	Gravity Tower/Rescue
10034818	SML	Gravity Tower/Rescue
10034819	LRG	Gravity Tower/Rescue

Add -FL to P/Ns for Fluoro Webbing.



'WORKMAN' International Spreader Bar

- For confined space entry application.



Part No: 10112910 -
'WORKMAN' International
Spreader Bar - Steel Snap
Hooks

Part No: 10112911 -
'WORKMAN' International
Spreader Bar - Aluminium
Snap
Hooks



Suitable for use with both the gravity and workman range of harnesses.

Workman Harness Range

The Workman Harness Range has taken the traditional parachute (vest style) harness style to a new level. Taking the very best features of the proven 'Gravity' Crossover Harness, which is the unique floating shoulder, leg strap and sub pelvic strap. Combine these with a truly unique upper body design featuring fall arrest rated frontal attach loops linked to a floating rear comfort strap and a fall arrest rated adjustable rear D-ring. Add webbing loops on the shoulder straps for confined space use, giving the wearer a truly unique, versatile and comfortable harness.

Workman Basic

Probably the most versatile, comfortable and cost effective harness on the market.

- Floating shoulder and leg straps.
- Fall arrest rated frontal attach loops linked to a floating rear comfort strap.
- Fall arrest rated, adjustable rear D-ring.
- Attachment loops on the shoulders for confined space entry.
- Optional attachable shoulder strap padding.
- Option of Qwik Fit or Klik Connect hardware and red/black or fluoro orange/black webbing.
- Certified to AS/NZS 1891.1:2007.



Part No.	Description
766202	Harness Workman Basic Medium
766202-FL	Harness Workman Basic Medium Fluoro
766202-KC	Harness Workman Basic Medium with Klik Connect Buckles
766202-FL-KC	Harness Workman Basic Medium Fluoro with Klik Connect Buckles
For small size harness, replace 766202 with 766203 and add -FL to P/N for Fluoro Webbing	
For large size harness, replace 766202 with 766204 and add -FL to P/N for Fluoro Webbing	

Harnesses

Workman Harness Range

Workman Tower/Rescue/Work Positioning

Features all the attributes of the Workman Basic, as well as:

- Padded waist belt pad and thigh support pad.
- Pole strap attach D-rings located close to the hips.
- **Certified to AS/NZS 1891.1:2007.**

Part No.	Description
766206	Harness Workman Tower Medium
766206-FL	Harness Workman Tower Medium Fluoro
766206-KC	Harness Workman Tower Medium with Klik Connect Buckles
766206-FL-KC	Harness Workman Tower Medium Fluoro with Klik Connect Buckles
For small size harness, replace 766206 with 766207 and add -FL to P/N for Fluoro Webbing	
For large size harness, replace 766206 with 766208 and add -FL to P/N for Fluoro Webbing	



Workman Thermatek Harness

- Kevlar (60%) & Nomex (40%) blended webbing which is resistant to chemicals, weld splatter & other heat applications.
- Green webbing & contrasting Kevlar yellow structural stitching which allows for easier inspection.
- Floating shoulder and leg straps, sub pelvic strap.
- Qwik-fit leg staps for easy connection.
- **Certified to AS/NZS 1891.1:2007.**

Part No.	Description
766209	Harness Workman Thermatek (One size fits all)



Pole Straps



Pole Straps

- Ideal for workers on a pole or structure needing restrained fall arrest positioning.
- Heavy duty 44mm polyester webbing & protective outer sheath.
- Easy webbing length adjuster.
- Available with either forged steel or alloy double action snap hooks.
- Standard blue or red coloured webbing, other colours available.
- **Certified to AS/NZS 1891.1:1995.**



Forged Steel D/
Action Snaphook
20mm Gate (-31)



Alloy Steel
D/Action
Snaphook
15mm Gate (-5)

Part No.	Description
229601-2.0-31-31	Pole Strap web c/w adjuster and forged steel d/action hooks 2.0m
229601-2.0-5-5	Pole Strap web c/w adjuster and alloy d/action hooks 2.0m
229601-2.5-31-31	Pole Strap web c/w adjuster and forged steel d/action hooks 2.5m
229601-2.5-5-5	Pole Strap web c/w adjuster and alloy d/action hooks 2.5m
229601-3.0-31-31	Pole Strap web c/w adjuster and forged steel d/action hooks 3.0m
229601-3.0-5-5	Pole Strap web c/w adjuster and alloy d/action hooks 3.0m

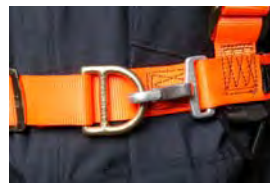


Miners Belts

Miners Belts

Available in four models:

- Manufactured from a Basic 44mm Fluoro Orange Webbing.
- 25mm equipment strap positioned over waist pad and has been fitted with cam buckles.
- Breathable waist support pad.
- Equipment straps manufactured with support loops.
- Two small plastic triangles supplied for storing items such as lock out tags.
- Two types with braces offering Klik Connect buckles or Snap & "D".
- Two types, belt only with waist pad offering Klik Connect buckles or Snap & "D".
- Miners belts available in Small, Medium and Large.



Part No.	Description
766903	BELT Miners Small W/Braces Snap & "D"
766902	BELT Miners Medium W/Braces Snap & "D"
766904	BELT Miners Large W/Braces Snap & "D"
766903-KC	BELT Miners Small W/Braces Pad & KC
766902-KC	BELT Miners Medium W/Braces Pad & KC
766904-KC	BELT Miners Large W/Braces Pad & KC
766803	BELT Miners Small Snap & "D"
766802	BELT Miners Medium Snap & "D"
766804	BELT Miners Large Snap & "D"
766803-KC	BELT Miners Small W/Waist Pad & KC
766802-KC	BELT Miners Medium W/Waist Pad & KC
766804-KC	BELT Miners Large W/Waist Pad & KC

Workman Basic Harness Complete with Miner's Belts

- Has all the features of the Workman Basic Harness as well as the features of the Miner's Belts.
- The Workman c/w Miner's Belt are certified to AS/NZS 1891.1:2007.

Part No.	Description
766602	Harness W/M Med - KC W/Miners Belt Snap & D Waist
766603	Harness W/M Sml - KC W/Miners Belt Snap & D Waist
766604	Harness W/M Lge - KC W/Miners Belt Snap & D Waist
766602-KC	Harness W/M Med - KC W/Miners Belt KC Waist
766603-KC	Harness W/M Sml - KC W/Miners Belt KC Waist
766604-KC	Harness W/M Lge - KC W/Miners Belt KC Waist



'WORKMAN' INTERNATIONAL LANYARDS, SPREADER BARS AND ANCHOR STRAPS

Part No:	Product Description
10112910	Workman Spreader Bar Steel Snaphook
10112911	Workman Spreader Bar Aluminium Snaphook
10112987	Anchor Sling Workman 1.5m
10112988	Anchor Sling Workman 2.0m
10112943	Lanyard - Single Leg SA Webbing - 2.0m Adjustable Snaphook - Snaphook
10112944	Lanyard - Single Leg SA Webbing - 2.0m Adjustable Snaphook - Scaffold Hook
10112945	Lanyard - Single Leg SA Webbing - 2.0m Adjustable Snaphook - Scaffold Hook (Aluminium)
10112946	Lanyard - Single Leg SA Webbing - 2.0m Adjustable Snaphook - Karabiner (Aluminium)
10112947	Lanyard - Single Leg SA Webbing - 2.0m Adjustable Snaphook - Snaphook (Aluminium)
10112948	Lanyard - Twin Leg SA Webbing - 2.0m Adjustable Snaphook - Snaphook
10112949	Lanyard - Twin Leg SA Webbing - 2.0m Adjustable Snaphook - Scaffold Hook
10112950	Lanyard - Twin Leg SA Webbing - 2.0m Adjustable Snaphook - Scaffold Hook (Aluminium)
10112951	Lanyard - Twin Leg SA Webbing - 2.0m Adjustable Snaphook - Karabiner (Aluminium)
10112952	Lanyard - Twin Leg SA Webbing - 2.0m Adjustable Snaphook - Snaphook (Aluminium)
10112953	Lanyard - Single Leg SA Webbing - 2.0m Adjustable Triple Action Karabiner - Triple Action Karabiner
10112954	Lanyard - Single Leg SA Webbing - 2.0m Adjustable Triple Action Karabiner - Scaffold Hook
10112955	Lanyard - Single Leg SA Webbing - 2.0m Adjustable Triple Action Karabiner - Scaffold Hook (Aluminium)
10112956	Lanyard - Single Leg SA Webbing - 2.0m Adjustable Triple Action Karabiner - Snaphook (Aluminium)
10112957	Lanyard - Single Leg SA Webbing - 2.0m Adjustable Aluminium Karabiner - Aluminium Karabiner
10112958	Lanyard - Twin Leg SA Webbing - 2.0m Adjustable Triple Action Karabiner - Triple Action Karabiner
10112960	Lanyard - Twin Leg SA Webbing - 2.0m Adjustable Triple Action Karabiner - Scaffold Hook (Aluminium)
10112962	Lanyard - Twin Leg SA Webbing - 2.0m Adjustable Aluminium Karabiner - Aluminium Karabiner
10112968	Lanyard - Single Leg SA Kernmantle - 12mm - 2.0m fixed Triple Action Karabiner - Triple Action Karabiner
10112969	Lanyard - Single Leg SA Kernmantle - 12mm - 2.0m fixed Triple Action Karabiner - Scaffold Hook
10112972	Lanyard - Single Leg SA Kernmantle - 12mm - 2.0m fixed Aluminium Karabiner - Aluminium Karabiner
10112974	Lanyard - Twin Leg SA Kernmantle - 12mm - 1.5m fixed Triple Action Karabiner - Scaffold Hook
10112976	Lanyard - Twin Leg SA Kernmantle - 12mm - 1.5m fixed Triple Action Karabiner - Snaphook (Aluminium)
10112977	Lanyard - Twin Leg SA Kernmantle - 12mm - 1.5m fixed Aluminium Karabiner - Aluminium Karabiner
10112985	Lanyard - Restraint Webbing - 2.0m Adjustable Triple Action Karabiner - Triple Action Karabiner
10112986	Lanyard - Restraint Kernmantle - 12mm - 2.0m Adjustable Aluminium Karabiner - Aluminium Karabiner



10112944



10112950



10112974



10112957



10112960



10112968



10112985



10112911



10112987

Lanyards

WORKMAN SHOCK ABSORBING LANYARDS

Workman Fall Arrest Rated Shock Absorbing Lanyards are designed to effectively arrest the fall of an individual, whilst minimising the shock loads on the body. The 'teartape' shock pack utilises a controlled tearing action that is initiated during the fall and limits the fall arrest forces to below 6kN. The shock pack features a clear, heat shrink casing and is designed to allow a more user-friendly visual inspection.

The Workman Shock Absorbing Lanyard range is available with a variety of Lanyard and hardware options.

Lanyard Options Include:

- **Kernmantle Rope:** 11mm diameter complete with sewn eyelets.
- **Webbing:** 25mm diameter available in standard length plus;
 - **Adjustable Webbing** - designed to reduce the overall length from 2m to 1.2m.
 - **Adjustable Webbing and Tie Back 'D' Ring** - A unique option that allows the user to loop the webbing lanyard around a structural anchor point and back onto the 'D' ring.
- **Stainless Steel Wire Rope:** 6mm PVC covered
 - Designed for use in hot work and extreme conditions.



Hardware options include:

- Alloy and Forged Steel double action snap hooks.
- Forged Steel Karabiners.

Note: All variations of the Workman Lanyard range are certified to AS/NZS 1891.1:2007.

Part No.	Lanyard Material	LANYARD OPTIONS	Features
765600 series	Rope Kernmantle		Super Strength inner core, delivers greater resistance
765601 series	Webbing, Polyester		Strength at 29kn breaking force, provides excellent durability
765602 series	Adjustable Webbing, Polyester		Designed to reduce length from 2m to 1.2m
765603 series	Adjustable Webbing & Tie Back 'D' Ring, Polyester		Loop webbing around a structural anchor point and back onto the 'D' ring
765604 series	Stainless Steel, Wire Rope, PVC covered		Most durable of all Lanyards with breaking force at 26.9kn



ALLOY 20MM GATE
• Part No. 765804



ALLOY 60MM
• Part No. 765805



Forged Steel D/
Action Snaphook
20mm Gate (-31)



FORGED STEEL CAPTIVE BAR
KARABINER
• Triple Action
• 25mm Gate
• Part No. 764315
• Also available as a 15mm screwgate version (Part Number:)

WORKMAN SHOCK ABSORBING LANYARDS

Workman Single Leg Shock Absorbing Lanyards

Part NO.	Description
Workman Single Leg Kernmantle Rope	
765600-2.0-5-5	SHOCK ABSORBING LANYARD ROPE c/w 2 x aluminium 20mm gate double action hooks
765600-2.0-31-7	SHOCK ABSORBING LANYARD ROPE c/w 1 x 20mm steel & 1 x 60mm aluminium scaffold hooks
765600-2.0-31-31	SHOCK ABSORBING LANYARD ROPE c/w 2 x forged steel 20mm gate double action hooks
765600-2.0-35-35	SHOCK ABSORBING LANYARD ROPE c/w 2 x 25mm gate triple action karabiners
Workman Single Leg 25mm Webbing	
765601-2.0-5-5	SHOCK ABSORBING LANYARD WEB c/w 2 x aluminium 20mm gate double action hooks
765601-2.0-31-31	SHOCK ABSORBING LANYARD WEB c/w 2 x forged steel 20mm gate double action hooks
765601-2.0-35-35	SHOCK ABSORBING LANYARD WEB c/w 2 x 25mm gate triple action karabiners
Workman Single Leg 25mm Adjustable Webbing	
765602-2.0-5-5	SHOCK ABSORBING LANYARD ADJ WEB c/w 2 x aluminium 20mm gate double action hooks
765602-2.0-31-31	SHOCK ABSORBING LANYARD ADJ WEB c/w 2 x forged steel 20mm gate double action hooks
Workman Single Leg 25mm Adjustable Webbing & Tie Back 'D' Ring	
765603-2.0-5-5	SHOCK ABSORBING LANYARD ADJ WEB c/w Tie Back 'D' Ring & 2 x aluminium 20mm gate double action hooks
765603-2.0-31-7	SHOCK ABSORBING LANYARD ADJ WEB c/w Tie Back 'D' Ring & 1 x 20mm steel & 1 x 60mm alloy scaffold hooks
765603-2.0-31-31	SHOCK ABSORBING LANYARD ADJ WEB c/w Tie Back 'D' Ring & 2 x forged steel 20mm gate hooks
Workman Single Leg PVC Covered 6mm Stainless Steel Wire Rope	
765604-2.0-31-7	SHOCK ABSORBING LANYARD WIRE ROPE c/w 1 x 20mm steel & 1 x 60mm aluminium scaffold hooks
765604-2.0-31-31	SHOCK ABSORBING LANYARD WIRE ROPE c/w 2 x forged steel 20mm gate double action hooks

NOTE: Other lengths and hardware variations available on request

NOTE: Certified to AS/NZS 1891.1:2007



Workman Twin Leg Shock Absorbing Lanyards

Part NO.	Description
Workman Twin Leg Kernmantle Rope Lanyards	
766150-2.0-31-31	SHOCK ABSORBING LANYARDS lanyards twin kernmantle rope & 20mm Gate forged steel hooks
766150-2.0-31-7	SHOCK ABSORBING LANYARDS lanyards twin kernmantle rope & 60mm Gate scaffold hook on lanyards
766150-2.0-35-7	SHOCK ABSORBING LANYARDS twin kernmantle rope & as above with triple action karabiner on shock pack
Workman Twin Leg 25mm Webbing Lanyards	
766151-2.0-31-31	SHOCK ABSORBING LANYARDS twin 25mm web & 20mm gate forged steel hooks
766151-2.0-31-7	SHOCK ABSORBING LANYARDS twin 25mm web & 60mm gate scaffold hook on lanyards
766151-2.0-35-7	SHOCK ABSORBING LANYARDS twin 25mm web & as above with triple action karabiner shock pack
Workman Twin Leg 25mm Adjustable Webbing Lanyards	
766152-2.0-31-31	SHOCK ABSORBING LANYARDS twin 25mm adjustable web & 20mm gate forged steel hooks
766152-2.0-31-7	SHOCK ABSORBING LANYARDS twin 25mm adjustable web & 60mm gate scaffold hook on lanyards
766152-2.0-35-7	SHOCK ABSORBING LANYARDS twin 25mm adjustable web & as above with triple action karabiner shock pack
Workman Twin Leg Wire Rope Lanyards	
766153-2.0-31-31	SHOCK ABSORBING LANYARD twin 6mm wire rope & 20mm gate forged steel hooks
766153-2.0-31-7	SHOCK ABSORBING LANYARD twin 6mm wire rope & 60mm gate scaffold hooks
766153-2.0-35-7	SHOCK ABSORBING LANYARD twin 6mm wire rope & as above with triple action karabiner on shock pack

NOTE: Other lengths and hardware variations available on request

NOTE: Certified to AS/NZS 1891.1:2007



Lanyards

Diamond Shock Absorbing Lanyard

Raises the standard for shock absorbing lanyards with the following exciting features:

- Durable polyester sheaf (Teflon coated) for increased abrasion & UV resistance.
- Elastic design which reduces trip hazards and snag hazards.
- Highly visible deployment tag.
- 1.8m Diamond Expanyard contracts to 1.4m.
- Pouchless design is more comfortable to wear & lighter weight (950gm).
- Innovative internal shock absorber provides a sleek alternative to traditional shock absorbers with pouches.
- **Certified to AS/NZS 1891.1:2007.**



Part No.	Description
765700-2.0-31-31	Diamond Shock Absorbing Lanyard, Forged Steel Double Action Hooks
765700-2.0-35-35	Diamond Shock Absorbing Lanyard, Triple Action Karabiners
765700-2.0-5-5	Diamond Shock Absorbing Lanyard, Alloy Steel Double Action Hooks



Adjustable Restraint Lanyards

The Skylotec adjustable restraint lanyard is a 12mm heavy duty kernmantle rope with an extremely lightweight and easily adjustable rope grab. This unique product is ideal for use as an adjustable restraint lanyard or as an alternative to the traditional webbing type pole strap.

Product Specification Materials

Rope:	Kernmantle
Diameter:	12mm
Rope Adjuster:	Aluminium
Karabiner:	Aluminium

Certification

The product is certified to:	EN 358
This product is compliant with:	AS/NZS 1891.4:2009

Technical

Maximum Work Load:	1 person (140kg)
Length:	2.0m
Weight:	0.69kg



Part No. 765356

Note: Other lengths available on request

Attachment Sleeves for Rope Systems

ROPE GRAB REMOVABLE - WIRE ROPE



- For use on 10mm wire rope.

Part No. 10016211



- For use on 8mm wire rope.

Part No. 229608CG

ROPE GRAB REMOVABLE - POLYESTER OR KERNMANTLE

- For use on 11mm to 12mm polyester or kernmantle rope.
- For use with either 11mm or 12mm polyester or kernmantle rope.



Part No. 229214RG



Part No. 10054077

NON REMOVABLE ROPE ADJUSTER

- For use with either 11mm or 12mm polyester or kernmantle blend rope.



Part No. 229070E

SRL Devices

Self Retracting Lanyards

The MSA Dyna-Lock Self-Retracting Lanyards (SRL) are fast-acting fall arresters that limit free-fall distance, deceleration distance and fall arrest forces while allowing user freedom of movement. The Dyna-Lock SRL is ideal for climbing applications where vertical mobility is needed.

The Dyna-Lock SRL has a maximum arrest distance of only 410mm. A built-in shock absorber limits fall arrest forces to under 4kN. Three continuously moving independent braking mechanisms prevent freezing in icy or corrosive conditions. Available with 5mm galvanised or stainless steel wire rope, or 25mm wide nylon webbing. A forged steel, zinc-plated, self-locking swivel snaphook is present on each unit with a load indicator that activates and alerts the user when the Dyna-Lock SRL has been impact loaded.



DYNA-LOCK™ SRL - 6M

- Certified to EN 360.
- Complies to AS/NZS 1891.3:1997.
- Available in web & stainless steel cable.
- Part No. 506615 - 6m Web.
- Part No. 10017931 - 6m Stainless Steel Cable.



DYNA-LOCK™ SRL - 10M

- Certified to EN 360.
- Complies to AS/NZS 1891.3:1997.
- Fall arrest lifeline block 10m travel galvanised wire cable.
- Also available in stainless steel wire rope.

Refer below for variations & part numbers:

- | | |
|-------------------|---|
| • Part no. 506202 | Dyna-Lock SRL Galvanised Wire Rope, 10m (30') |
| Part no. 506204 | 16m (50') |
| Part no. 506206 | 22m (70') |
| Part no. 506208 | 30m (95') |
| • Part no. 506203 | Dyna-Lock SRL Stainless Steel Wire Rope, 10m (30') |
| Part no. 506205 | 16m (50') |
| Part no. 506207 | 22m (70') |
| Part no. 506209 | 30m (95') |



Inertia Reel Fall Arrest

Self Retracting Lifeline

The MSA Skylotec range of 6m, 10m, 15m and 20m fall arresters are designed to give the user maximum protection and mobility in working environments where there is a serious risk of a fall.

Engineered and manufactured in Germany, the MSA Skylotec range of fall arresters provide reliable protection with mechanisms that lock when they should and won't lock when it shouldn't.

The extremely lightweight design (6m-3.5kg / 10m-3.7kg / 15m, 6.15kg / 20m, 6.4kg) features a compact ABS plastic housing on the 6 and 10m and a marine grade anodised aluminium housing and stainless steel frame in the 15m and 20m models.

They are designed for use in applications such as:

- Construction
- Oil and Gas
- Mining
- Rigging
- Electrical Utilities
- Rail bridge and signals maintenance
- Silos, Roof work
- Other height safety hazards areas
- Certified for use in horizontal applications

Certified to the European standard - EN 360, the MSA Skylotec 15m and 20m fall arrestors are compliant with the Australian and New Zealand standard AS/NZS 1891.3:1997.

NOTE: These products are compatible with the complete range of MSA harnesses, connecting hardware and anchorage devices.



15m – P/NO. 765058 / 20m – P/NO. 765059

Technical

Maximum Working Load:	1 person (140kg)
Maximum Arresting Distance:	700mm
Arresting Force:	3.5kN
Weights:	6m = 3.5kg 10m = 3.7kg 15m = 6.15kg 20m = 6.4kg

Part No.	Description	Length
765056	ABS Plastic SRL	6m
765057	ABS Plastic SRL	10m
765058	Aluminium SRL	15m
765059	Aluminium SRL	20m



Confined Space Entry Equipment

WORKMAN PFL

- Impact-resistant thermoplastic housing.
- Alloy steel frame.
- Carbon steel locking mechanism.
- 1.9cm Nylon lifeline.
- Steel and aluminium snaphook options.
- Suitable for use in vertical, horizontal and incline applications.
- Maximum Working Load: 181 kg.
- Minimum Breaking Strength: 15kN.
- Maximum Arresting Distance:
 - 1.07 m – up to 140 kg
 - 1.37 m – from 141 kg to 181 kg
- **Certified to EN360.**
- **Complies to AS/NZS 1891.3:1997**



Part No.	Description
10093348	Workman PFL 3.7m Alloy Double Action Hook
10093349	Workman PFL 3.7m Steel Double Action Hook
10099598	Workman PFL 3.7m Steel Triple Action Karabiner

APTURA LT30 SRL

- Lightweight design starting at 3.4kg.
- Available in lengths of 6m and 10m.
- Suitable for use in vertical, horizontal and incline applications.
- **Certified to EN360 .**
- **Complies to AS/NZS 1891.3:1997.**



Aptura LT30
Part No.
10056965



Alloy Steel
Double Action
Snaphook



Forged Steel
Swivel
Karabiner

Forged Steel
Double Action
Snaphook

Part No.	Description
APTURA LT30	6m & 10m
10056963	Aptura SRL 6m Alloy Double Action Hook
10056965	Aptura SRL 6m Forged Steel Double Action Hook
10056967	Aptura SRL 10m Forged Steel Swivel Karabiner
10056968	Aptura SRL 10m Forged Steel Double Action Hook

Inertia Reel Fall Arrest

Confined Space Entry / Retrieval Systems

MSA confined space entry/retrieval systems are designed for fall arrest, lifting and lowering, rescue, and work positioning applications. They incorporate an anchorage connector, fall arrest component (Dyna-Lock, Dynevac II, Lynx Rescuer), a personnel and materials handling hoist (Lynx Hoist) and associated hardware to rig the system for use. The systems can be used for leading edge work, maintenance and entry/retrieval from manholes, tank cars, silos, tanks, vaults, pits, vats and other confined space applications.

Lynx™ Rescuer, Field Resettable Model c/w key reset function

Dynevac® II, Field Resettable Model c/w safety pin reset function

- Self Retracting Lanyard with emergency retrieval capabilities.
- User is able to reset device from retrieval mode to fall arrest mode.
- The easiest, quickest field-reset mechanism on the market.
- Same unit can be used in the field and for training situations.
- Dynevac II utilises a safety pin feature for field re-set from inertia reel to recovery and back to inertia reel.
- Lynx Rescuer utilises a lock feature with key which allows more control over who can reset the unit back to fall arrest mode.
- Provides fall arrest and emergency lifting and lowering for confined space entry.
- **Certified to EN 360.**
- **Complies with AS/NZS 1891.3:1997.**



Part No.	Description
10011744	Stainless Steel Wire Rope, 16m (50') Lynx Rescuer
10011745	Stainless Steel Wire Rope, 30m (95') Lynx Rescuer
10007782	Stainless Steel Wire Rope, 16m (50') Dynevac II
10007783	Stainless Steel Wire Rope, 30m (95') Dynevac II



Confined Space Entry Equipment

Lynx Hoist™

- Personnel/material lifting and lowering hoist with side mount bracket, emergency drive and airdrive adaptor.
- Includes an internal shock absorber for reduction in forces should an impact load occur.
- Available with either galvanised steel or stainless steel cable.



Part No.	Description
10016569	Lynx Hoist™ galvanised steel cable 16m
10016567	Lynx Hoist™ stainless steel cable 16m
10016568	Lynx Hoist™ galvanised steel cable 32m
10016566	Lynx Hoist™ stainless steel cable 32m

Note: All Lynx Hoist™ models come complete with a bracket that allows the device to attach to both the Lynx Tripod and Davit arm.

Brackets/Pulleys

Part No.	Description
506232	Dynevac/Lynx Rescuer Mounting Bracket to Tripod - 16m unit
506216	Dynevac/Lynx Rescuer Mounting Bracket to Tripod - 30m unit
506473	Side Mount Bracket + Pulley for Lynx Hoist™ to Tripod
506222	Split Mount Pulley to Tripod/Davit arm
506622	Dynevac/Lynx Rescuer Mounting Bracket to Davit arm - 16m unit
506362	Dynevac/Lynx Rescuer Mounting Bracket to Davit arm - 30m unit



16m unit - P/N 506232
30m unit - P/N 506216



P/N 506473



P/N 506222



16m unit - P/N 506622
30m unit - P/N 5066362

Confined Space Entry Equipment

Rescue Retrieval Systems

Rescue Safe Rope Rescue Retrieval System

- Designed for raising and lowering people in rescue and industrial work access & is ideal for confined space applications.
- Overspeed locking brake.
- Hand ascender for aiding the operation and fail safe brake.
- Anchor strap and karabiners (2).
- 3:1 or 4:1 mechanical advantage.



Part No.	Description	Overall Rope Length	Max. Travel Distance
229090-45.0	Rescue Safe Retrieval System 3:1 Ratio	45m	15m
229090-60.0	Rescue Safe Retrieval System 3:1 Ratio	60m	20m
229090-90.0	Rescue Safe Retrieval System 3:1 Ratio	90m	30m
229485-60.0	Rescue Safe Retrieval System 4:1 Ratio	60m	15m
229485-80.0	Rescue Safe Retrieval System 4:1 Ratio	80m	20m
229485-120.0	Rescue Safe Retrieval System 4:1 Ratio	120m	30m

Note: Other travel lengths available on request

Rescue Utility System

- Primarily used for raising and lowering people or equipment in rescue and industrial work access and is ideal for confined space applications.
- Pulleys equipped with a built-in anti-reversing feature.
- A 4.5kg force is all that is required to hold a 90kg load.
- An ascender attached to both the operating rope and the user via a securing rope - if the operating rope accidentally releases, the ascender automatically stops the descent.
- Rated for 2-person load.
- Rated capacity of 272kg for personnel and materials.
- 4:1 mechanical advantage.

Part No.	Description	Max. Travel Distance
SRS15.0	Rescue Utility System 4:1 Ratio	15m
SRS20.0	Rescue Utility System 4:1 Ratio	20m
SRS25.0	Rescue Utility System 4:1 Ratio	25m



Confined Space Entry Equipment



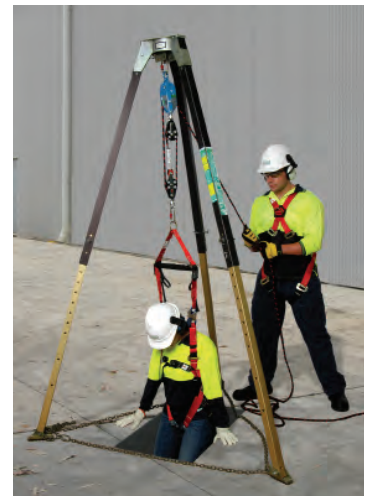
Lynx Tripod with Lynx Hoist™ and Lynx Rescuer attached

Lynx Tripod

- Rated for both personnel and materials handling.
- Note: Does not include Lynx Hoist or Rescuer shown.

Part No.	Description
10022050	8 ft (2.44 m) working height
10022051	10 ft (3.1 m) working height

Rated for both personal (Max. 310 lbs/140 kgs) and materials handling (Max. 620 lbs/280 kgs).



Workman Tripod

The Workman Tripod is very easy to use. A simple set up procedure makes the process quick and promotes correct use. Features that improve ease of use include:

- Legs automatically lock in the open position for added safety.
- A maximum height indicator provides quick and easy identification of the maximum leg extension length.
- There is no need for a separate pulley/bracket assembly, which makes hoist attachment easier and faster.
- Includes four attachments points on the tripod head.
- Accessories can attach to any leg for faster set up.
- Aluminium leg and head design reduces weight, improving portability.
- Telescoping legs (up to 8 ft/2.44 m high) do not tangle when the unit is collapsed, for easier transportation and storage.
- Leg base support strap doubles as a carry strap
- Duffel bag is optional.



Part No.	Description
10102002	Workman Tripod - 8 ft (2.44 m) working height.
10105656	Workman Tripod Duffel Bag.
10105612	Workman Tripod Leg Base Support Strap.

Rated for both personal (Max. 400 lbs/182 kgs) and materials handling (Max. 620 lbs/280 kgs).

Confined Space Entry Equipment



Davit Arm and Base with Lynx Hoist™ attached

Folding Davit & Base - Davit Arm & Base

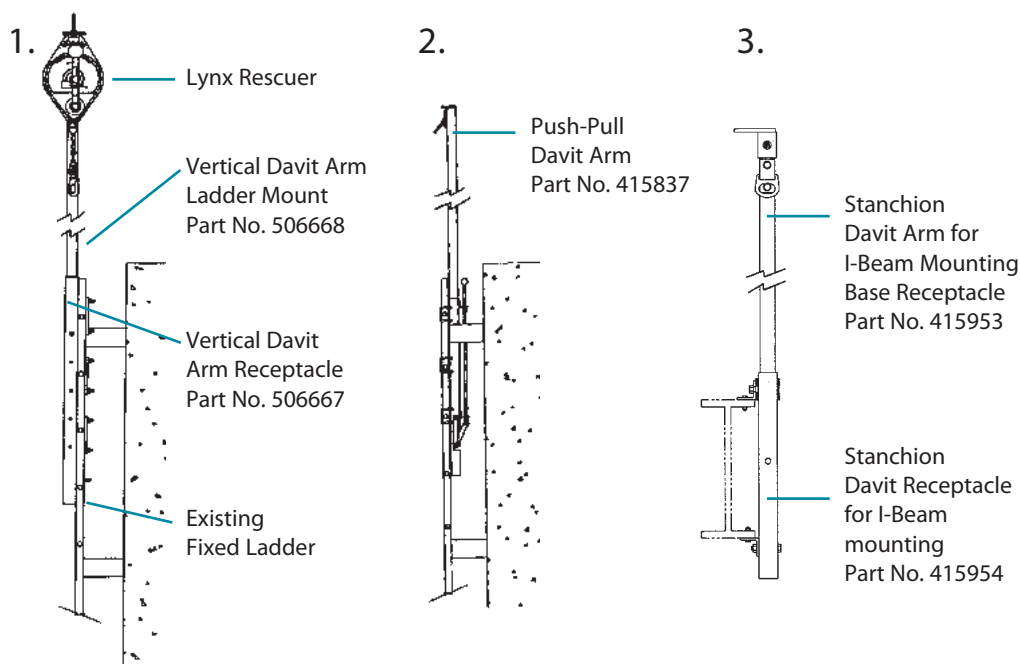
- Designed to accept both the Lynx & Dynevac range of devices with the appropriate mounting bracket.
- See Page 171 for Brackets.

Part No.	Description
506613	Davit Arm Folding
506614	Davit Arm Base

1. VERTICAL DAVIT ARM LADDER MOUNT & RECEPTACLE

2. PUSH-PULL DAVIT ARM LADDER MOUNT

3. STANCHION DAVIT ARM & RECEPTACLE FOR I-BEAM MOUNTING



Rescue Devices

Milan Automatic Evacuation and Rescue Devices

Milan Basic Evacuation Device
P/NO. 765060 – (10.0/15.0/20.0)

Part No 765060



Milan Basic Evacuation and Rescue Device
P/NO. 765104 – (15.0/30.0/50.0/60.0)



Part No 765104

Milan Basic Evacuation and Rescue Device comes with Winch Function
P/NO. 765061 – (15.0/30.0/100.0)



Part No 765061

NOTE: Other rope lengths available on request.

Featuring three different models, the Milan offers the choice of basic evacuation, controlled descent rescue or the versatility of a rescue device complete with lifting ability.

The Milan evacuation and rescue devices are among the smallest most lightweight, fully automatic controlled descent devices available on the market today.

The Milan devices can be used for rescue and evacuation from heights up to 500m. Certified to EN 341 – Class A, it is full rated for 2 person use to a maximum weight of 250kg. Featuring 9mm super static kernmantle rope, the Milan

devices are configured with attachment hardware at each end of the rope. This configuration allows the Milan to operate in both directions, as one or two people are descending at a rate of 0.9m per second. The Milan device will bring another hook to the height to allow another one or two people to evacuate. Note: The travel distance (rope length) must be nominated for quote request.

In rescue mode, a fallen worker can be attached to the Milan device, raised to a point that allows his fall arrest device to be removed, then lowered to the ground.



Materials

Housing:	Milled aircraft aluminium
Braking Mechanism:	Steel
Lifeline:	'Super Static' 9mm nylon - EN 1891
Snaphook:	Aluminium snaphook. Other options available.

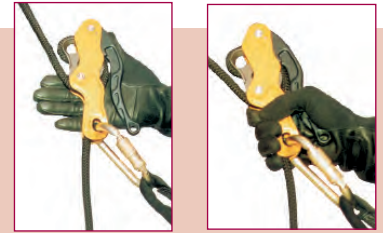
Technical

Maximum Working Load:	2 people (250kg) total
Maximum Breaking Strength:	>15kN
Maximum Rescue Height:	500m
Weight:	1.5kg
Descent Speed (m/s):	0.9m/s

Controlled Descent Devices



To begin descent, the user depresses the control lever on the Anthron. If the control lever is fully depressed in a panic situation, the descent will stop. Also, the descent will stop if the control lever is released.



Anthron Descender

Pole Top & Tower Rescue Kit

- Commonly used for suspended work positioning, self evacuation or rescue operations.
- Utilises a cam assembly that provides friction on the rope to hold a load, or allow the rope to descend at a controlled rate. In most applications the Anthron operator attaches the rope end to an approved anchor and descends suspended from the device in an approved fall arrest/rescue harness.
- 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.
- 229680 - Length required.

Kit Contents

- Anthron Descender
- 11mm Kernmantle rope
- 2 x Karabiners
- 1m anchor strap
- Carry bag

Part Number (Lengths Available)
229680-10.0
229680-15.0
229680-25.0
229680-30.0
229680-50.0
229680-60.0
229680-75.0
Note: Other lengths available on request



Dynescape Descender - Industrial Controlled Descent Device (Automatic)

- Rescue and evacuation device.
- Designed to automatically lower the user to ground level from a height.
- A frictional brake governs the extraction of the wire rope to a maximum of 1.8m per second.

Part No.	Description
506630	16m Wire Rope
506262	33m Wire Rope

Rescue Equipment

Sked Basic Rescue Stretcher System

- Suitable for confined space, high angle or technical rescue, & traditional land based applications.
- Outstanding patient protection and security.
- Equipped for horizontal hoisting by helicopter or vertical hoisting in caves or industrial confined spaces.
- Durable plastic provides rigid protection for the patient while allowing extraction through the most demanding confined spaces.
- Weight 19lb (8.6kg).
- Sked Stretcher & removable webbing handles.
- Cordura backpack/towing harness.
- Horizontal & vertical lift swings



Part No.	Description
SRSSK200	Complete system
SRS36382	Replacement 4pt bridle

Rescue Pole/Remote Hook

- Designed as a rescue tool for the retrieval of a worker suspended in a fall arrest system or for remote rescue access.
- Can be used in a wide variety of rescue applications and will serve as an excellent tool to help perform a safer, efficient rescue. In most cases, the need for the rescuer to go to the fallen worker is not required.
- The system consists of an adjustable fibreglass pole, pole adaptor, and remote hook. Comes with nylon storage bag.

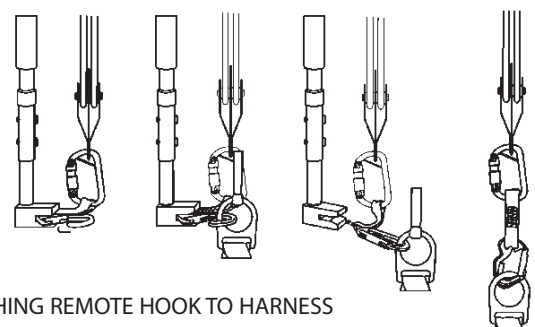


Rescue Pole/Remote Hook Kit Ordering Information

Part No.	Description
228228-3.6	Rescue Pole/Remote Hook Kit c/w 3.6m Ext Pole
228228-7.3	Rescue Pole/Remote Hook Kit c/w 7.3m Ext Pole

Rescue Pole/Remote Hook Component Ordering Information

Part No.	Description
SFP675009	Adjustable pole, fibreglass 6 ft (1.8m) to 12 ft (3.6m)
SFP675012	Adjustable pole, fibreglass 8 ft (2.4m) to 24 ft (7.3m)
SRCA401	Remote hook, aluminium, with web sling
SCE109001	Pole adaptor, aluminium/rubber
SCE109003	Pole adaptor, 6 ft (1.8m), aluminium/rubber
SRB675009	Storage bag for SFP675009



ATTACHING REMOTE HOOK TO HARNESS D-RING USING A ROPE RESCUE SYSTEM

Ladder Climbing Equipment

Sure-Climb Permanent Cable System

- Designed to provide fall protection when climbing or descending ladders or vertical structures up to 85m in height.
- Applications include telecommunications towers, light poles, water towers, hydroelectric towers, stacks, and any other climbable structure.
- Uses 8.0mm 7x19 galvanised steel cable.
- Includes energy absorbing, galvanised steel top and bottom mounting brackets.
- Incorporates cable guides to minimise cable vibration and wear.
- Uses a stainless steel fall arrester (order separately – P/No 229608CG).
- **Complies with AS/NZS 1891.3:1997.**

Part No.	Description
SFPLS350030	Sure-Climb Permanent Ladder Cable System 10m
SFPLS350070	Sure-Climb Permanent Ladder Cable System 20m
SFPLS350100	Sure-Climb Permanent Ladder Cable System 30m
SFPLS350130	Sure-Climb Permanent Ladder Cable System 40m
SFPLS350160	Sure-Climb Permanent Ladder Cable System 50m
SFPLS350200	Sure-Climb Permanent Ladder Cable System 60m
229608CG	Cable Grab To Suit Sure Climb System

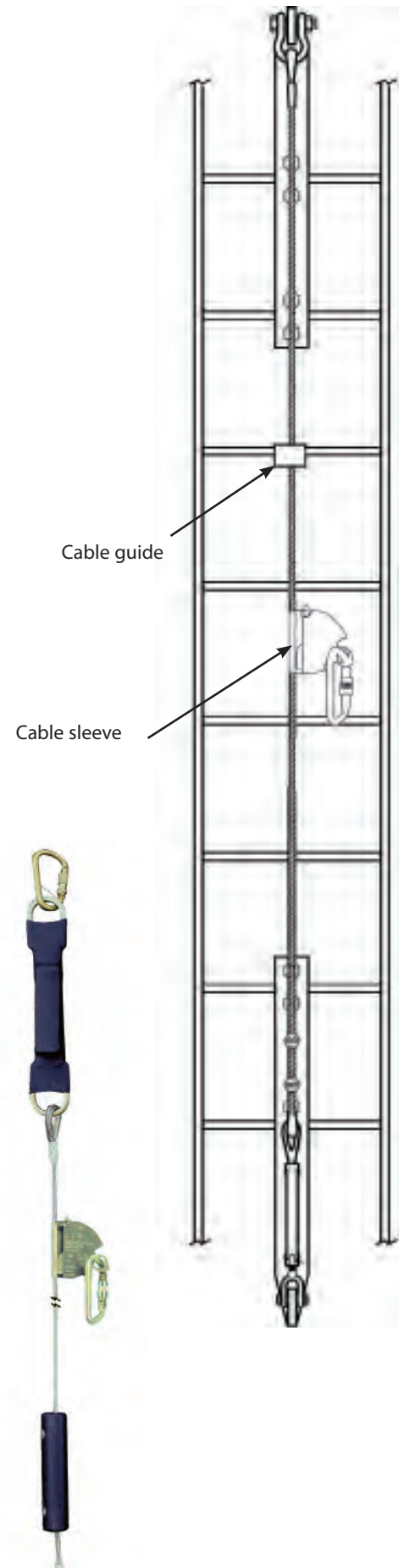
Other lengths available on request.

Sure-Climb Temporary Ladder Cable System

- 8mm galvanised cable vertical restraint system for ladder climbing protection.
- Incorporates an in-line shock absorber to reduce end anchor loadings.
- Profiled lead weight, adjustable to provide cable tension and to suit cable length.
- **Complies with AS/NZS 1891.3:1997.**

Part No	Description
SFPLS353030	Sure-Climb Temporary Ladder Cable System 10m
SFPLS353050	Sure-Climb Temporary Ladder Cable System 15m
SFPLS353100	Sure-Climb Temporary Ladder Cable System 30m
229608CG	Cable Grab To Suit Sure Climb System

Other lengths available on request.



Ladder Climbing Equipment

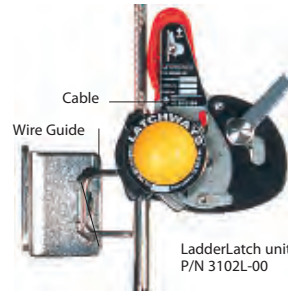


Latchways LadderLatch™ Permanent Cable System

The Latchways LadderLatch™ Permanent Cable Systems are designed to provide fall protection when climbing or descending ladders or vertical structures. The flexibility of the design allows a system to be installed so that it follows the contours of the structure, including horizontal and inclined sections. A perfect example being the Latchways system on the Sydney Harbour Bridge.

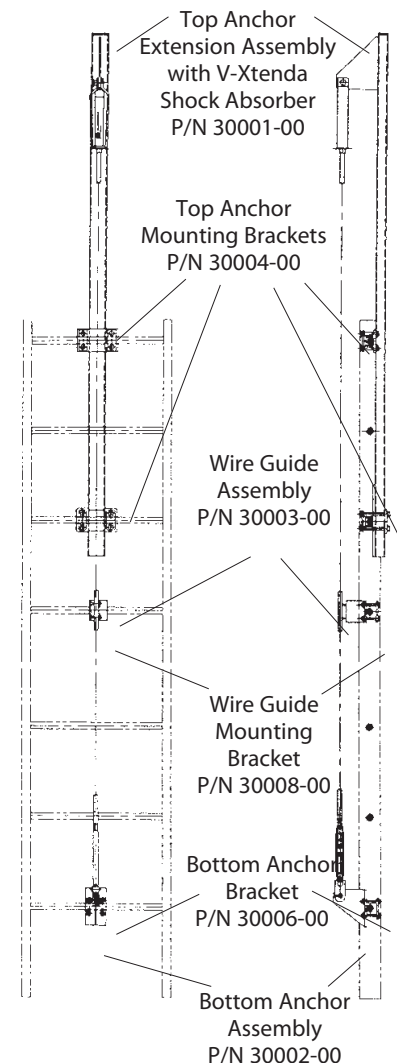
The variety of mounting brackets allow for quick and easy installation to almost any type of structure. This allows the system to be installed by your own personnel; however, installation services are available from MSA upon request. Other features of the LadderLatch system features include:

- Lifeline that will support up to 3 workers.
- LadderLatch device that can be attached or detached at any point on the cable.
- Wide variety of mounting brackets available.
- Top Anchor Extension Assembly to extend lifeline approximately 4 ft above ladder.
- Cable guides to reduce cable vibration and wear.
- Line tensioning device with proper line tension indicator.
- System components made of Grade 316 Stainless Steel.
- **Complies with AS/NZS 1891.3:1997.**



Dyna-Glide® Climbing Protection System

- Can be mounted to already-installed ladders, to corners of lattice towers, and to almost any other suitably strong structure your crew needs to climb.
- Can be constructed to travel vertically, horizontally, or around curves, corners or obstacles.
- Limits total fall distance to inches.
- Uses galvanised or stainless steel for corrosion resistance.
- Provides smooth travel – there's no binding of the fall arrester inside the rail.
- Rails are available in straight or curved sections.
- Eliminates concern of system slippage found in frictional design systems – all because of our mechanical fall arrester design.
- Offers product life of 20+ years.
- Orients fallen worker in upright position, face towards climbing structure.
- Uses detachable, lightweight, stainless steel and aluminium mechanism for hands-free ascent and descent
- Shows a decade-plus track record of performing in some of the most severe weather conditions in the world
- Can be installed without modification to the structure and can be assembled with simple hand tools.
- Installation Instructions for every aspect of the product. We also offer full training by a "competent" person – either at our training facility or on your job site.
- **Complies with AS/NZS 1891.3:1997.**



Horizontal Lifelines

Temporary

Dyna-Line™ Horizontal Lifeline

- Easy installation and removal.
- Can be mounted to any suitable 22kN rated anchorage.
- Highly visible 12 strand red rope will not hockle and minimises fall distance due to its low stretch properties.
- Includes an integral shock absorber.
- **Complies with AS/NZS 1891.2:2001**



Note: Green anchor straps are not included in kit

Part No.	Description
10013150	Dyna-Line™ Temporary Horizontal Lifeline for single worker, 10m rope
10013151	Dyna-Line™ Temporary Horizontal Lifeline for single worker, 20m rope
10019084	Dyna-Line™ Temporary Horizontal Lifeline for single worker, 30m rope
10022826	Dyna-Line™ Temporary Horizontal Lifeline for single worker, 60m rope

- **Dyna-Line™ Two Worker system includes 2 polyester anchorage straps.**

Part No.	Description
10013152	Dyna-Line™ Temporary Horizontal Lifeline for two workers, 10m rope*
10013153	Dyna-Line™ Temporary Horizontal Lifeline for two workers, 20m rope*
10019085	Dyna-Line™ Temporary Horizontal Lifeline for two workers, 30m rope*
10022827	Dyna-Line™ Temporary Horizontal Lifeline for two workers, 60m rope*

* Note - Minimum anchorage strength required 22kN.



Sure-Line™ Horizontal Lifeline

- Lightweight cable system that is suspended between two approved anchor points to provide worker fall protection during horizontal movement.
- Quick and easy installation at temporary worksites.
- Includes an integral shock absorber.
- Uses a 10mm, 6x36 stainless steel cable.
- Incorporates a combination clamp/thimble that allows for effortless tensioning of lifeline.
- Rated for up to 2 people.
- **Complies with AS/NZS 1891.2: 2001**



Part No.	Description
SHL2009020	Steel Cable Horizontal Lifeline System with turnbuckle, 6m
SHL2009040	Steel Cable Horizontal Lifeline System with turnbuckle, 12m
SHL2009060	Steel Cable Horizontal Lifeline System with turnbuckle, 18m

Skylotec Temporary Horizontal Lifeline

The MSA Skylotec temporary horizontal lifeline is an easily deployable, lightweight 20m horizontal lifeline giving the users (maximum 2) freedom of movement over a 20m span with the added benefit of total portability. The 35mm heavy duty webbing is tensioned by a ratchet device and allows shorter distances to be spanned as required. European certified to EN 795 B and rated for 2 person use.

- **Complies with AS/NZS 1891.2: 2001**

Part No.	Description
765242	Skylotec Temporary Horizontal Lifeline - 20m webbing

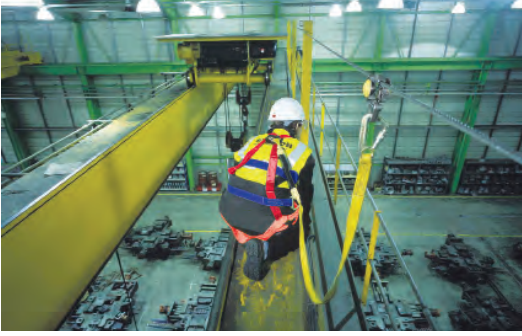


Technical

Webbing Strength:	25kN	Weight:	2.2kg
Tension Device:	15kN	Maximum Deflection:	(2 people, 20m - 2m)
Maximum Working Load:	2 person (280kg)		

Horizontal Lifelines

Permanent



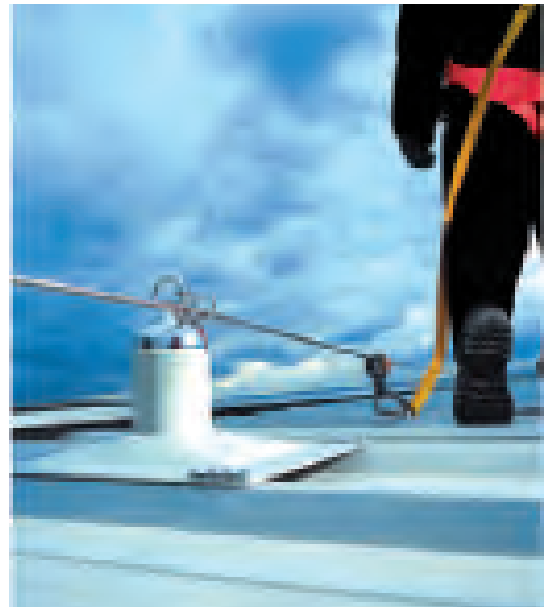
Latchways Mansafe® Horizontal Lifeline

- Designed to operate horizontally, around corners, and up or down inclines to offer continuous worker protection regardless of the building type or structure.
- Unsurpassed system flexibility.
- Can support up to 6 workers per lifeline.
- Unique Latchways Transfastener rotates freely through intermediate supports to enable hands-free operation.
- Transfastener can be removed/installed at any point along the lifeline.
- Stainless steel components for durability.
- Can only be installed by Latchways trained and certified professionals.
- **Complies with AS/NZS 1891.2:2001**



Latchways Constant Force Post

- Latchways has taken the science of constant force and applied it to the fall protection industry providing an easy to install, reliable and cost effective solution to roof top safety.
- Top fixing horizontal lifeline anchor requiring no major penetration of the roof surface .
- Can be used as a single point anchor, or as the end anchor and intermediate anchors of a horizontal lifeline cable system.
- Tested and approved for a variety of roof profiles.
- **Complies with AS/NZS 1891.2:2000.**



As an authorised Latchways distributor, MSA can provide the fall hazard analysis, engineering services, custom product fabrication, system installation, system certification, and training necessary to make your fall protection program a success.

CONTACT YOUR MSA REPRESENTATIVE FOR MORE INFORMATION

Permanent

SafeRidge / SafeTraxx System - Fall Protection for the Roofing Industry

- SafeRidge system designed to replace the ridge capping on new build or retro fit to existing roofs.
- Optional vented SafeRidge rail available.
- Designed to provide fall protection on metal deck roofs.
- Can be installed on new or existing buildings.
- Installs quickly and easily.
- SafeTraxx is designed as an off the ridge horizontal rail system for fall protection and can be located anywhere on the roof.
- Consists of 2m long powder coated extruded aluminium track sections, utilising a precision sliding joint.
- Top down fastening, eliminating the need to enter premises or to erect internal scaffolding.
- Suitable for up to 3 users per system.
- Supplied standard in goosewing grey for SafeRidge and SafeTraxx.
- Other colours available on request.



SafeRidge System

CONTACT YOUR MSA REPRESENTATIVE FOR MORE INFORMATION



SafeTraxx System

Roof Anchors

Stay on top with the MSA range of roof anchor point safety products. The new MSA range of roof anchor points and ladder attach points have all been designed to allow quick and easy installation, there by lowering the overall cost. The extremely low profile design is aimed at making retro fitting as unobtrusive as possible and at the same time appealing to architects and owners of new build structure.



**Timber Mount
TILE Roof Anchor**

Part No 766363



**Timber Mount
Iron Roof Anchor**

Part No 766362



**Purlin Mount
Standard**

Part No 766364



**Purlin Mount
Corrugated**

Part No 766365



**Purlin Mount
Spandek**

Part No 766366



**Surface Mount
Universal**

Part No 766360



**Surface Mount
Top Hat**

Part No 766361



**Ladder Support Bracket
Gutter Mount**

Part No 766368



**Temporary Ladder Smart
Support Bracket**

Part No 766331



**Ladder Support Bracket
Wall Mount**

Part No 766367

Anchorage Connectors

Removable Concrete Anchors - A safe and reliable anchor point for concrete applications

- Quickly and easily removed and reinstalled in another location.
- Compact and lightweight.
- Durable stainless steel and aluminum construction.
- 400 lb capacity.

5K and 10K Removable Concrete Anchors for elevated level, concrete work applications. Anchors install easily and can be quickly removed for additional projects. 5K is for use as a single person anchorage. 10K is for use as a two person or temporary horizontal lifeline anchorage.



Part No	Description
10081594	Concrete Anchors - 22kN (5K)
10081570	Concrete Anchors - 44kN (10K)

Skylink Stanchion

- Temporary anchor for horizontal life systems.
- Lightweight - std version 9.5kg, SL version 7.7kg.
- No tools required for installation.
- Can be used as single point attachment.
- Offers two installation methods to concrete.
- Detachable feet.
- Aluminium and steel construction.
- Folding leg stanchion design.
- 2 models available
 - standard version @ 1.12m working height.
 - SL (Short Length) @ 584mm working height.
- No tie-back required.
- Complies with AS/NZS 1891.4:2000.



Part No	Description
10055659	Standard Skylink Stanchion
10055660	Short Length (SL) Skylink Stanchion

Anchorage Connectors

FP Stryder Anchorage Connector

- Easy single hand installation.
- Low friction wear pads with Teflon allow Stryder to glide effortlessly along beam flange.
- Lightweight.
- Integral load indicator.
- Versatile design allows for mounting overhead or at workers feet.
- Vernier adjustability for secure fit.
- Push button adjustment - no pins to be lost!
- 2 models available - standard version and XL version .
- 182kg working capacity.
- 22.2kN rated.
- **Complies with AS/NZS 1891.4:2009.**
- **Part No. 10051455.**



D-Plate Anchorage Connector

- 22.2kN rated.
- Provides permanent anchorage point.
- Bolts to beams or columns.
- Also available with 8" x 8" back plate made of black anodised aluminium for attachment to concrete walls.
- **Complies with AS/NZS 1891.4:2009.**
- **Part No. 506632.**

D-Plate Part No. 506632

Webbing Anchor Strap

Part No.	Description
229829	Webbing Anchor Strap 0.5m, 1.0m, 1.5m, 2.0m, 2.5m 3.0m, 4.0m, 5.0m



Webbing Anchor Strap

Skylotec - Webbing Anchor Strap

The MSA Skylotec webbing anchor strap is unique in the industry. Featuring cut and abrasion proof Kevlar webbing it is the ideal anchor strap for use around structural steel or timber. Overall length - 750mm.

European certified to EN 354, EN 795, EN 566 and compliant with **AS/NZS 1891.4:2009.**



Part No. 765355

Bolt D Ring Anchorage Connector

- Designed for horizontal installation.
- 22.2kN rated.
- Bolts to beams or girders.
- Uses single 1/2" (12mm) bolt (not supplied).
- Provides permanent anchor point.
- **Complies with AS/NZS 1891.4:2009.**
- **Part No. 10003213.**



BeamGlide™ Trolley

- Provides horizontal mobility - keeps anchorage connector directly overhead.
- Sizing to fit all beams.



BeamGlide Trolley
Removable Model

Part No.	Description
506266	TROLLEY Beamglide Removable Adjustable

RailSlider™

- Anchorage connector for use on railroad tracks between 85 and 136 Lbs/yd.



Part No.	Description
228251	RailSlider™

Karabiners and Hooks

Karabiners Autolock



TRIPLE ACTION

- Forged steel 20mm gate
- Part No. 229200SSTL



AUTOLOCK

- Forged steel 25mm gate
- Part No. 229202TL



AUTOLOCK

- Forged steel 50mm gate
- Part No. 229407TL



AUTOLOCK

- Forged steel 20mm gate
- Part No. 229200TL

Hook Double Action Snap



ALLOY 20MM GATE

- Part No. 765804



FORGED STEEL 50MM GATE

- Part No. 229704M



ALLOY 60MM

- Part No. 765805



FORGED STEEL 20MM GATE

- Part No. 763159

Captive Bar & Eye Karabiners



FORGED STEEL CAPTIVE BAR KARABINER

- Triple Action
- 25mm Gate
- Part No. 764315
- Also available as a 15mm screwgate version (Part Number: 764801)



FORGED STEEL CAPTIVE EYE KARABINER

- 18mm Gate
- Part No. 764802

Karabiner Screw Gate



ALLOY 25MM GATE

- Part No. 229704SG



**FORGED STEEL DELTA RAPIDE,
15MM SCREW GATE**

- Part No. 765802



FORGED STEEL, 15MM SCREW GATE

- Part No. 765807

Workman Roof Workers Kit

- 'WORKMAN' International Premier Harness.
- Kernmantle rope c/w rope adjuster.
- 1m webbing anchor strap.
- Screw gate karabiner.
- Back pack carry bag.



Part No.	Description
229001-15.0	Roof Workers Kit (Workman Harness) c/w 15m rope
229001-20.0	Roof Workers Kit (Workman Harness) c/w 20m rope
229001-25.0	Roof Workers Kit (Workman Harness) c/w 25m rope
229001-30.0	Roof Workers Kit (Workman Harness) c/w 30m rope

Also available with Removable Rope Grab, add -1-4-32 to above P/no.

Gravity Crossover Roof Workers Kit

- Gravity Crossover Fall Arrest Harness.
- Kernmantle rope c/w rope adjuster.
- Screw gate karabiner.
- Back pack carry bag.



Part No.	Description
762208-15.0	Roof Workers Kit (Gravity C/over Harness) c/w 15m rope
762208-20.0	Roof Workers Kit (Gravity C/over Harness) c/w 20m rope
762208-25.0	Roof Workers Kit (Gravity C/over Harness) c/w 25m rope
762208-30.0	Roof Workers Kit (Gravity C/over Harness) c/w 30m rope

Also available with Removable Rope Grab, add -1-4-32 to above P/no.

Construction Workers Kit

- 'WORKMAN' International Premier Harness.
- Shock Absorbing Lanyard - 2m.
- Workman PFL 3.6m - *Note - and a 765807 Karabiner.
- Back pack carry bag.



Part No.	Description
229001KIT1	Construction Workers Kit

Basic Fall Protection Kit

- 'WORKMAN' International Premier Harness.
- Shock Absorbing Lanyard - adjustable web from 1.2m to 2m.
- 1m Anchor Strap.
- Back pack carry bag.



Part No.	Description
229842-1.0	Basic Fall Protection

Weight Bag

- Ideal for keeping a roof workers kit restraint line taut.



Part No.	Description
763392	Weight Bag

Fall Protection Accessories

Suspension Trauma Safety Step

Lightweight web ladder designed 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.

Attachment point options



Attachment with carabiner



Attachment without carabiner



Part No.	Description
10063431	Suspension Trauma Safety Step with karabiner
10063441	Suspension Trauma Safety Step without

Tool Wrist Loop

- This hand tool strap attaches to a users wrist and the cord at the opposite end secures the tool.
- Part No. 763160BK



Ladder Tie Down Strap

Ladder Tie Down Strap

- Part No. 229816



Bosun Chair

- Best method to sit suspended for long durations.
- Padded seat ensures your comfort during use.
- Adjustable web assembly ensures security.
- Designed for use with both the Gravity Crossover harnesses, and the new Workman range, via the frontal attachment point, will keep the user in an upright position.
- Part No. SSH3505017.

Tool Holders

Hands Off Chisel Grip

- Keeps hands away from the point of contact.
- Easy adjustment to hold a variety of chisels and stakes up to 1' in diameter.
- Vibration absorbing handle.
- Spark resistant.
- Part No. 10040018.
- Part No. 10042431 Chisel Grip Replacement Strap Assembly.



Yoke Extension - Single

- Provides a centre waist attachment point for rescue on both the gravity tower and workman tower.
- Part No. 229810SGL.



Single Yoke Extension



Double Yoke Extension

Yoke Extension - Double

- Front attachment point for Classic style fall arrest harness.
- Part No. 229810DBL.



Ergonomic Tool Holders

- Holds wrenches, chisels etc.
- Vibration absorbing design.
- Eases awkward hand positioning.
- Part No. 507005 Tool Holder 460mm length.
- Part No. 507006 Tool Holder spark resistant 460mm length.

Instrumentation

Something you can rely on



Understanding Environmental Surveillance

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

1. oxygen deficiency or enrichment;
2. the presence of combustible gas; and
3. the presence of certain toxic gases.

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

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

Atmospheric Composition

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

When testing permit-required spaces for acceptable entry conditions, always test in the following order:

1. oxygen content
2. flammable gases and vapors
3. potential toxic air contaminants



Figure 1

Comprehensive testing should be conducted in various locations within the work area. Some gases are heavier than air, and tend to collect at the bottom of a confined space. Others are lighter, and are usually in higher concentrations near the top of the confined space. Still others are the same molecular weight as air, so they can be found in varying concentrations

throughout the space. This is why test samples should be drawn at the top, middle and bottom of the space to pinpoint varying concentrations of gases or vapors (see **Figure 1**). The results of the atmospheric testing will have a direct impact on the selection of protective equipment necessary for the tasks in the area. It may also dictate the duration of worker exposure to the environment of the space, or whether an entry will be made at all. Substance-specific detectors should be used whenever actual contaminants have been identified.



Figure 2



Figure 3

Combustible Gases

In order for combustion to occur, there must be three elements:

1. fuel
2. oxygen to support combustion
3. heat or a source of ignition

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

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

cold morning (a lean atmosphere because the liquid gasoline has not vaporized sufficiently), but can be flooded with too much gasoline (a rich atmosphere with too much vaporization). Eventually, when the right mixture of gas and air finally exists (explosive), the car starts.

How Combustible Gas Monitors Work

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

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

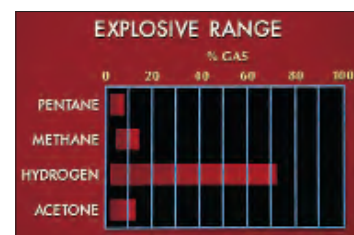


Figure 4

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

Single-Gas Monitors for Combustible Gases



Figure 5

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

Single-Gas Monitors for Toxic Gases

Compact, battery-powered devices can be used to measure levels of such gases as carbon monoxide (CO) or hydrogen sulfide (H₂S), 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 H₂S.

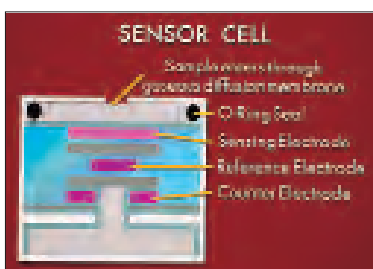


Figure 6

Multiple-Gas Monitors for Oxygen and Combustible Gas

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

Multiple-Gas Monitors for Oxygen, Combustible and Toxic Gases

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

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

Diffusion-type instruments are available for simultaneously measuring the LEL of combustible gases, oxygen levels and toxic levels (in parts per million) of H₂S, CO and other toxic gases. Alarms also alert the user to low and high oxygen levels. Remote sampling pump adapters are available to convert these diffusion-type instruments into pump-style instruments.



Figure 7

Photoionization Devices for Toxic Gases and Vapors

A photoionization detector, featuring 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 10,000 ppm scale. Some instruments automatically compensate for signal loss due to humidity, which is inherent in all PID detectors.

Detector Tube Sampling Systems

Detector tube-type devices are recommended for conducting quick evaluations of potential hazards that cannot otherwise be measured. With detector tubes, a known volume of air is drawn through the tube, using a manually operated or battery-powered sampling pump.

If gas or vapor is present in the air, chemically treated granules in the tube are stained a different color. By measuring the length of the color stain within the tube, users can determine concentration levels.

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

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

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.

Altair® Maintenance-Free Single-Gas Detector

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

Alarm System

The triple-alarm system featuring two bright flashing LEDs, a piercing audible alarm, and a vibrating alarm ensures that no alarm condition goes unnoticed.

- 95 dB audible alarm (distinct sounds for High and Low alarms).
- Dual LEDs positioned to be seen from all angles.
- Standard vibrating alarm and standard event logging.

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.**

Warranty

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

Altair® Single-Gas Detectors

Instrument Type	Part No.	Low Alarm	High Alarm
Carbon Monoxide (CO)	10092522	25 ppm	100 ppm
Hydrogen Sulfide (H ₂ S)	10092521	10 ppm	15 ppm
Oxygen (O ₂)	10092523	19.5% Vol	23% Vol
Alternate Set Point Models	Part No.	Low Alarm	High Alarm
Carbon Monoxide (CO)	10071334	30 ppm	60 ppm
Carbon Monoxide (CO)	10071335	35 ppm	100 ppm
Carbon Monoxide (CO)	10071336	35 ppm	400 ppm
Carbon Monoxide (CO)	10071337	50 ppm	200 ppm
Carbon Monoxide (CO)	10071338	100 ppm	300 ppm
Hydrogen Sulfide (H ₂ S)	10071340	10 ppm	200 ppm
Hydrogen Sulfide (H ₂ S)	10071361	5 ppm	10 ppm
Hydrogen Sulfide (H ₂ S)	10071362	8 ppm	12 ppm
Hydrogen Sulfide (H ₂ S)	10071363	7 ppm	14 ppm
Oxygen (O ₂)	10071364	19.5% Vol	18% Vol

Altair® QuickCheck™ Station

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

Altair® QuickCheck™ Station

Manual Regulator	Automatic Regulator	Gas Type
10076694	10076706	O ₂ /CO/H ₂ S/SO ₂ /NO ₂
10076703	10076715	Cl ₂ /ClO ₂
10076697	10079709	NH ₃
10076700	10076712	HCN



Accessories and Parts

710882	Cylinder, 60 ppm CO
473180	Cylinder, 300 ppm CO
467897	Cylinder, 40 ppm H ₂ S, RP
711062	Cylinder, 40 ppm H ₂ S, Econo-Cal
467895	Regulator, 0.25 lpm
10040002	Clip, suspender (standard)
10069894	Clip, stainless steel
10041105	Cellphone clip
10041107	Lanyard kit
710946	FiveStar® Link® with IR (for event log)
10030325	Tubing, 16"
10073346	Hardhat clip



Replacement and Accessory Parts

10058037	Aust Power Supply
10049410	Vehicle Power Supply
10077384	Regulator Tubing
10077385	Front Housing Assembly
10075893	Automatic Gas Regulator
467895	Manual Regulator
710386	Single Cylinder Holder

Instrumentation

Altair® Pro Single-Gas Detector

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

- Tough rubberized housing.
- One-button operation.
- Accurately measures the gas concentration or percent oxygen.
- Displays information on a large, clear, backlit LCD.
- Superior dust and water protection (rated IP67 except O₂-R).
- Event-logging and data-logging .
- Excellent impact resistance .

- Versions available for CO, H₂S, O₂, NH₃, Cl₂, ClO₂, NO₂, SO₂, HCN and PH₃.
- 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.

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



Some of the available Altair® Gas Detectors

Altair® Pro Single-Gas Detectors

Instrument Type	Part No.	Low Alarm	High Alarm	STEL	TWA
Oxygen (O ₂)	10074137	19.50%	23.00%	N/A	N/A
Carbon Monoxide (CO)	10074135	25 ppm	100 ppm	100 ppm	25 ppm
Carbon Monoxide (CO) Steel	10076724	75 ppm	200 ppm	200 ppm	75 ppm
Hydrogen Sulfide (H ₂ S)	10074136	10 ppm	15 ppm	15 ppm	10 ppm
Hydrogen Cyanide (HCN)	10076729	4.7 ppm	10 ppm	10 ppm	4.7 ppm
Chlorine (Cl ₂)	10076716	0.5 ppm	1.0 ppm	1.0 ppm	0.5 ppm
Chlorine Dioxide (ClO ₂)	10076717	0.1 ppm	0.3 ppm	0.3 ppm	0.1 ppm
Sulfur Dioxide (SO ₂)	10076736	2.0 ppm	5.0 ppm	5.0 ppm	2.0 ppm
Nitrogen Dioxide (NO ₂)	10076731	2.0 ppm	5.0 ppm	5.0 ppm	2.0 ppm
Ammonia (NH ₃)	10076730	25 ppm	50 ppm	35 ppm	25 ppm
Phosphine (PH ₃)	10076735	0.3 ppm	1.0 ppm	1.0 ppm	0.3 ppm
Oxygen Remote (O ₂ -R)	10076733	19.50%	23.00%	N/A	N/A
Alternate Set Point Models	Part No.	Low Alarm	High Alarm	STEL	TWA
Carbon Monoxide (CO)	10076718	30 ppm	60 ppm	60 ppm	30 ppm
Carbon Monoxide (CO)	10076719	35 ppm	100 ppm	100 ppm	35 ppm
Carbon Monoxide (CO)	10076720	35 ppm	400 ppm	400 ppm	35 ppm
Carbon Monoxide (CO)	10076721	50 ppm	200 ppm	200 ppm	50 ppm
Carbon Monoxide (CO)	10076722	100 ppm	300 ppm	300 ppm	100 ppm
Carbon Monoxide (CO) Steel	10080532	199 ppm	200 ppm	200 ppm	35 ppm
Hydrogen Sulfide (H ₂ S)	10076728	10 ppm	20 ppm	20 ppm	10 ppm
Hydrogen Sulfide (H ₂ S)	10076725	5 ppm	10 ppm	10 ppm	5 ppm
Hydrogen Sulfide (H ₂ S)	10076727	8 ppm	12 ppm	12 ppm	8 ppm
Hydrogen Sulfide (H ₂ S)	10076726	7 ppm	14 ppm	14 ppm	7 ppm

Accessories and Parts

467895	Regulator, 0.25 lpm	10041105	Cellphone clip
10030325	Tubing, 16" (do not use with NH ₃ , Cl ₂ , and ClO ₂)	10041107	Lanyard clip
10080534	Tubing, 16" Teflon-lined (NH ₃ , Cl ₂ , and ClO ₂)	10073346	Hardhat clip
10074132	3V CR2 battery	10040002	Clip, suspender (standard)
10069894	Clip, stainless steel	710946	MSA Link with IR

Altair® 4X eXtreme Multigas Detector

Altair® 4X offers MSA's unique eXtreme sensors offering great performance, long service life and reliability. The Altair® 4X Multigas Detector for LEL, CO, H₂S, and O₂ is a super-durable, competitively-priced, personal multigas detector. The Altair® 4X Multigas Detector is the only portable gas detector with MotionAlert™ feature if a user should become disabled due to unforeseen hazards. When enabled, the MotionAlert™ feature will activate if the instrument does not detect motion for 30 seconds, and is ideal for confined space entry applications. This unique gas detector function is easily turned off by the user if desired. Altair® 4X also offers MSA's unique "Glow" case option for easy location and observation in the dark.

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.
- Phosphorescent "Glow" case option.
- Global approvals.
- MSA Link™ Software-ready.
- QuickCheck™ Test Station available for fast, easy bump testing
- Tested to IP67.
- Galaxy® System compatible.
- Economically priced.



Altair® 4X eXtreme Multigas Detector

Altair® 4X Multigas Detector (UL approved), with data logging feature, charger, calibration cap & tubing, CD manual

SAA Certification	Description
10110447	Altair® 4X (LEL, O ₂ , CO, H ₂ S) Charcoal, 3 Yr Warranty
10110450	Altair® 4X eXtreme Glow (LEL, O ₂ , CO, H ₂ S) 5 Yr Warranty
10110448	Altair® 4X (LEL, O ₂ , CO) Charcoal, 3 Yr Warranty
10110451	Altair® 4X eXtreme Glow (LEL, O ₂ , CO) 5 Yr Warranty
10110449	Altair® 4X (LEL, O ₂) Charcoal, 3 Yr Warranty
10110452	Altair® 4X eXtreme Glow (LEL, O ₂) 5 Yr Warranty
10110447K	Altair® 4X Kit - Standard Charcoal Unit
10110450K	Altair® 4X Kit - Extreme Glow

Accessories

10069894	Stainless Steel Suspender clip
10089322	Belt clip
10048280	34L quad gas mix (1.45% CH ₄ , 15% O ₂ , 60 ppm CO, 20 ppm H ₂ S)
10045035	58L quad gas mix (1.45% CH ₄ , 15% O ₂ , 60 ppm CO, 20 ppm H ₂ S)
10047594	Universal pump probe (Aust)
10089321	Calibration assembly (cap, tube, connector)
10082834	JetEye IR adapter with USB connector
10088099	MSA Link Software CD-ROM
10089487	Aust Power Supply & Cradle
10088976	Filter Kit
10095774	Vehicle Charger
10089120	Display Kit
10050333	Hand Adaptor

Sensors

10106722	Combustible sensor
10106729	O ₂ sensor
10106725	CO/H ₂ S duo-tox sensor

Specifications

Gas	Range	Resolution
LEL	0–100%	1%
O ₂	0–25% vol	0.1% vol
CO	0–999 ppm	1 ppm
H ₂ S	0–200 ppm	1 ppm

Instrumentation

Altair® 5 Multigas Detector

The first portable 5-gas detector with MotionAlert™ and InstantAlert™ features

Features

- Logo display screen customization.
- MotionAlert™ and InstantAlert™ features standard.
- MSA Link Software with multi-language capability.
- Galaxy® Test System-compatible.
- Triple alarms at 95 dB+.
- Durable rubber/synthetic over-molding.
- Intuitive 3-button operation.
- Unit passes 6-foot drop test; IP65-rated for water/dust ingress.
- Real-time on-line monitoring capability with MSA Link Software.
- 2-year comprehensive warranty for standard models.

Options

- High-resolution colour or monochrome display screen.
- Many e-chem sensor options.
- Integral pump or diffusion option.
- Rechargeable lithium-ion or alkaline battery options.
- 17-language display capability.



Instrument Table*

Part Number	Mono (M) Colour (C)	Li-Ion (L) Alkaline (A)	Diffusion (D) Pump (P)	KIT	CH4	LEL	O2	CO	H2S	SO2	NO2	HCN	NH3	CL2	CO2 (5%) (IR)	CO2 50% (IR)	CH4 100% (IR)	PROPANE 100% (IR)
766619	M	L	P			✓	✓											
766619C	C	L	P			✓	✓											
766852	M	L	P				✓								✓			
766622B	M	L	D			✓	✓	✓	✓									
766622	M	L	P			✓	✓	✓	✓									
766622C	C	L	P			✓	✓	✓	✓									
766622CK	C	L	P	✓		✓	✓	✓	✓									
766622D	C	L	D			✓	✓	✓	✓									
766631	M	L	P			✓	✓	✓	✓						✓			
766631C	C	L	P			✓	✓	✓	✓						✓			
766631CK	C	L	P	✓		✓	✓	✓	✓						✓			
766632	M	L	P			✓	✓	✓	✓							✓		
766632C	C	L	P			✓	✓	✓	✓							✓		
766633	M	L	P			✓	✓	✓	✓								✓	
766633C	C	L	P			✓	✓	✓	✓								✓	
766634	M	L	P			✓	✓	✓	✓									✓
766634C	C	L	P			✓	✓	✓	✓									✓
766625B	M	L	D			✓	✓	✓	✓	✓								
766625	M	L	P			✓	✓	✓	✓	✓								
766625C	C	L	P			✓	✓	✓	✓	✓								
766625D	C	L	D			✓	✓	✓	✓	✓								

Altair® 5 Multigas Detector

Instrument Table cont.

Part Number	Mono (M) Colour (C)	Li-Ion (L) Alkaline (A)	Diffusion (D) Pump (P)	KIT	CH4	LEL	O2	CO	H2S	SO2	NO2	HCN	NH3	CL2	CO2 (5%) (IR)	CO2 50% (IR)	CH4 100% (IR)	PROPANE 100% (IR)
766626B	M	L	D			✓	✓	✓	✓		✓							
766626	M	L	P			✓	✓	✓	✓		✓							
766626C	C	L	P			✓	✓	✓	✓		✓							
766626CM	C	L	P		✓		✓	✓	✓		✓							
766635	M	L	P			✓	✓	✓	✓		✓				✓			
766635C	C	L	P			✓	✓	✓	✓		✓				✓			
766635CM	C	L	P		✓		✓	✓	✓		✓				✓			
766638	M	L	P			✓	✓	✓	✓		✓						✓	
766638C	C	L	P			✓	✓	✓	✓		✓						✓	
766627	M	L	P			✓	✓	✓	✓			✓						
766627C	C	L	P			✓	✓	✓	✓			✓						
766628	M	L	P			✓	✓	✓	✓				✓					
766628C	C	L	P			✓	✓	✓	✓				✓					
766636	M	L	P			✓	✓	✓	✓				✓		✓			
766636C	C	L	P			✓	✓	✓	✓				✓		✓			
766629	M	L	P			✓	✓	✓	✓					✓				
766629C	C	L	P			✓	✓	✓	✓					✓				

* Other combinations available

See next page for accessories.

Gas Cylinder List

# Gases	Gas Mix	Part No. Econocal (34 L)	Part No. RP (58 L)	Recommended Cal Gas for:
1	10% CO ₂ in N ₂		10081603	
1	8% Butane in N ₂ (6L)	10075802		25% vol Butane IR
1	8% Propane in N ₂ (27L)	10075803		25% vol Propane IR
1	50% vol Methane in N ₂		10075804	100% vol Methane IR
1	100% vol Methane		711014	
1	0.6% vol Propane (100 L)		493579	LEL Propane IR sensor
1	10 ppm NO ₂ in Air	711068	808977	NO2 sensor
1	10 ppm SO ₂ in Air	711070	808978	SO2 sensor
1	25 ppm NH ₃ in N ₂	711078	814866	NH3 sensor
1	10 ppm Cl ₂ in N ₂	711066	806740	Cl2 sensor
1	2 ppm Cl ₂ in N ₂	711082	10028080	ClO2 IR
1	10 ppm HCN in N ₂	711072	809351	HCN sensor
1	0.5 ppm PH ₃ in N ₂	711088	710533	PH3 sensor
1	15% CO ₂ in N ₂		807387	50% CO2 IR
3	1.45% CH ₄ , 15.0% O ₂ , 20 ppm H ₂ S	10048790	10048788	
3	2.50% CH ₄ , 15.0% O ₂ , 20 ppm H ₂ S	10048888	10048889	
3	1.45% CH ₄ , 15.0% O ₂ , 60 ppm CO	10048789	478191	
3	2.50% CH ₄ , 15.0% O ₂ , 60 ppm CO	10049056	813718	
4	1.45% CH ₄ , 15.0% O ₂ , 60 ppm CO, 10 ppm NO ₂		10058034	
4	1.45% CH ₄ , 15.0% O ₂ , 60 ppm CO, 20 ppm H ₂ S	10048280	10045035	Big 4
4	2.50% CH ₄ , 15.0% O ₂ , 60 ppm CO, 20 ppm H ₂ S	10048981	10048890	
4	1.45% CH ₄ , 15.0% O ₂ , 60 ppm CO, 10 ppm NO ₂	10058036	10058171	
4	2.50% CH ₄ , 15.0% O ₂ , 60 ppm CO, 10 ppm NO ₂	10058172		
5	1.45% CH ₄ , 15.0% O ₂ , 60 ppm CO, 20 ppm H ₂ S, 2.5%		10103262	Big 4 + 5% or 10% CO ₂ IR

Instrumentation

Altair® 5 Multigas Detector

Cal Kit	Description	Suits Detector
766790	Cal Kit CW Gas & Demand Regulator	766626, 766626C
766805	Cal Kit CW Gas & Demand Regulator	766629, 766629C
766792	Cal Kit CW Gas & Demand Regulator	766631, 766631C
766794	Cal Kit CW Gas & Demand Regulator	766636, 766636C
766806	Cal Kit CW Gas & Demand Regulator	766628, 766628C
766796	Cal Kit CW Gas & Demand Regulator	766635, 766635C
766791	Cal Kit CW Gas & Demand Regulator	766622, 766622C

ALTAIR® 5 Multigas Detector Accessories

Altair 5 Accessories	
10083508	BATTERY PACK, RECHARGEABLE
10093415	BATTERY PACK, ALKALINE
10093416	BATTERY PACK, RECHARGEABLE, IR
10094830	BELT CLIP A5
10083591	FILTER COVER ASS A5
10094829	KIT FILTERS, SCREWS, O-RINGS A5
10099533	KIT FILTER, SCREWS, O-RINGS, CL2, CLO2, NH3
10050976	RETRACTABLE LINE CW BELT CLIP
10099648	LEATHER HOLSTER
10099397	VEHICLE CHARGER A5
10040667	SAMPLE LINE 1M PU COIL A5
10040665	SAMPLE LINE 3M PU A5
10040664	SAMPLE LINE 7.5M PU A5
10049058	SAMPLE LINE 3M TEFLON A5
10049057	SAMPLE LINE 7.5M TEFLON A5
10105210	KIT SAMPLE LINE & PROBE 5FT COILED FOR CL2, CLO2, NH3
10105251	KIT SAMPLE LINE & PROBE 5FT FOR CL2, CLO2, NH3
10105839	KIT SAMPLE LINE & PROBE 10FT FOR CL2, CLO2, NH3
10103191	PROBE A5 FOR CL2, CLO2, NH3 ANTI-STATIC
10089116	SENSOR COMBUSTIBLE A5
10089163	SENSOR OXYGEN A5
10089117	SENSOR CO/H2S DUO A5
10095052	SENSOR KIT 4 GAS A5
10080220	SENSOR HCN A5
10080221	SENSOR CL2 A5
10080222	SENSOR CLO2
10080223	SENSOR SO2 A5
10080224	SENSOR NO2 A5
10080225	SENSOR NH3 A5
10080226	SENSOR PH3 A5
10095051	KIT PUMP COVER
10083589	DISPLAY ASSBLY MONO
10099650	DISPLAY ASSBLY COLOUR
10082834	USB IR receiver
10088099	MSA Link Software CD

Altair® 5X Multigas Detector

Introducing the new Altair® 5X Multigas Detector with MSA XCell® Sensor Technology

MSA is proud to present the pinnacle of their portable gas detection range: The Altair® 5X multi-gas detector with MSA XCell™ Sensor Technology.

The Altair® 5X can measure up to six gases simultaneously and can be fitted with a wide range of both toxic and infra-red sensors, providing the flexibility required to meet most applications.

At the heart of the Altair® 5X are MSA's XCell™ sensors, now with an extended range covering SO₂, Cl₂, and NH₃. Superior stability, accuracy, repeatability, fast response and longevity characterize the new MSA XCell™ sensors. They are remarkably long-lasting and the standard sensors are designed for an average life of more than four years (more than three years for SO₂, Cl₂, and NH₃) These new sensors allow for faster response/clear times, bump tests in less than 10 seconds, and span calibration time of 60 seconds for common configurations, thanks to micro-electronics inside the sensor. XCell™ Sensors provide greater signal stability and repeatability under changing or extreme environmental conditions and are plug-and-play-capable. An end-of-sensor-life indicator gives advanced warning to user, eliminating service outages.

A rugged housing provides unsurpassed durability and with large, glove-friendly buttons and an optional high-contrast colour display, the Altair® 5X is easy to operate in any work environment, even in low-light conditions. This is further with the option of a glow in the dark housing for all IR sensor equipped instruments.

Unique features like MotionAlert and InstantAlert are standard on the ALTAIR 5X providing added user confidence when faced with applications like confined space entry.

As you would expect, the ALTAIR 5X is fully compatible with MSA's GALAXY Automated Test System and MSA Link™ Software.



Instrument Table

Part Number	Mono (M) Colour (C)	Li-Ion (L) Alkaline (A)	Diffusion (D) Pump (P)	KIT	LEL	O ₂	CO	H ₂ S	SO ₂	NO ₂	HCN	NH ₃	CL ₂	PH ₃	CO ₂ (5%) (IR)	CO ₂ 50% (IR)	CH ₄ 100% (IR)	PROPANE 100% (IR)
10119665	C				✓	✓	✓	✓		✓								
10119665K	C			✓	✓	✓	✓	✓		✓								
10119666	M				✓	✓	✓	✓		✓								
10119666K	M			✓	✓	✓	✓	✓		✓								
10119667	M				✓	✓	✓	✓										
10119667K	M			✓	✓	✓	✓	✓										
10119668	C				✓	✓	✓	✓										
10119668K	C			✓	✓	✓	✓	✓										
10119669	M				✓	✓	✓	✓		✓								
10119669K	M			✓	✓	✓	✓	✓		✓								
10119670	C				✓	✓	✓	✓		✓								
10119670K	C			✓	✓	✓	✓	✓		✓								
10119671	C				✓	✓	✓	✓				✓						
10119671K	C			✓	✓	✓	✓	✓				✓						
767245	M				✓	✓	✓	✓				✓						
767245K	M			✓	✓	✓	✓	✓				✓						
10119673	C				✓	✓	✓	✓						✓				
10119673K	C			✓	✓	✓	✓	✓						✓				
767246	M				✓	✓	✓	✓						✓				
767246K	M			✓	✓	✓	✓	✓						✓				

Instrumentation

Altair® 5X Multigas Detector

Instrument Table (Continued)

Part Number	Mono (M)	Li-Ion (L)	Diffusion (D)	KIT	LEL	O2	CO	H2S	SO2	NO2	HCN	NH3	CL2	PH3	ClO2	CO2 (5%)	CO2 50%	CH4 100%	PROPANE 100%	
	Colour (C)	Alkaline (A)	Pump (P)													(IR)	(IR)	(IR)	(IR)	
10122118	C				✓	✓	✓	✓				✓								
10122118K	C			✓	✓	✓	✓	✓				✓								
767248	M				✓	✓	✓	✓				✓								
767248K	M			✓	✓	✓	✓	✓				✓								
767249	C				✓	✓	✓	✓								✓				
767249K	C			✓	✓	✓	✓	✓								✓				
767250	M				✓	✓	✓	✓								✓				
767250K	M			✓	✓	✓	✓	✓								✓				

Sirius® PID Multigas Detector

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

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

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

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

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

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

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

the unit is actively detecting gas by flashing every 15 seconds.

Interchangeable Lithium-ion and Alkaline Battery Packs -

Allows for quick battery turn to keep users continually charged and ready to take action.

Easy Calibration and Compatibility with Galaxy Automated Test System -

One-button calibration makes calibration simple for any user. Intelligent software frees users from complicated calibration adjustments.

Item	Standard	Data Logging
LEL O ₂ CO H ₂ S PID LI/ALK * Internal Pump	765031	765030
PID Only Internal Pump	765029	765028

* Includes Li-ION and alkaline packs, lanyard, rubber protective boot, shoulder harness, protective carry case, calibration certificate.

Item	Part No
LEL (COMB) Sensor	10049808
Oxygen Sensor	10049806
Carbon Monoxide Sensor	10049804
Hydrogen Sulphide Sensor	10049805
PID Lamp 10.6 EV1004 9692	10049692
PID Lamp 9.8 EV	10052298
Sensor Kit (LEL, O ₂ , CO ₂ , H ₂ S)	10051717
PID Lamp Cleaning Kit	10049691
ION Chamber	10049768
MSA Link Datalog Software and Reader	10082834



Instrumentation

Calibration

Galaxy® Automated Test System

Extremely Easy to Use

- Standard web browser accessibility for data retrieval and reporting.
- Industry-standard memory card available for simple data retention.
- System does not require a computer or network interface.
- Works without the touch of a single button.
- Minimal training needed.

Versatile and Expandable

- Up to 10 systems can be interconnected.
- Instrument charging option available.
- Optional battery pack available for remote use.

Durable, Innovative Design

- Wireless- or wired-network interface available.
- Inventive system door also functions as dust cover.
- Guaranteed to work in the harshest environments.
- In-line gas cylinder holster available; keeps the work area clean and orderly.

Value-Driven Performance

- All-inclusive, 2-year warranty.
- High quality, cost-effective solution.
- Very low total cost of ownership.



Galaxy® System Kits

	Sirius Galaxy®	Altair® Galaxy®	Altair 4®/4X Galaxy®	Altair® 5 Diffusion Galaxy®	Altair® 5/5X Pumped Galaxy®
Basic Standalone					
Basic System	765026	765626	766348	766723	766724

Accessories

710288	Demand Flow Regulator
10047343	Global Power Supply



Replacement Parts and Accessories

ITEM	PART NO.
AC Power Supply, Global	10065716
End Cap	10061219
O-Ring Replacement, Orion Galaxy (package of 12)	711464
Fresh Air Filter	10050789
Fresh Air Filter, High Capacity	10062363
Memory Card	10061059
Memory Card Reader	10061058
Spare Parts Kit (feet, barb fittings, plugs)	10062301
Battery Pack	10062273
Cylinder Holder	10062235
Mounting Rail Set, .5m (wall-mount up to three units)	10062364
Mounting Rail Set, 1m (wall-mount up to six units)	10062365
Mounting Rail Set, 2m (wall-mount up to thirteen units)	10062366
Demand Regulator	710288
Inlet Seal Replacement Kit (Sirius Instrument)	10062638
Network Interface Wired	10062274
Network Interface Wireless	10062275
Receipt Printer	10066386
Printer Cable	10067705
Inlet Seal Replacement Kit (ORIONplus Instrument)	10083594

Detector Tube Pumps

Toximeter™ II Automatic Detector Tube Pump

The Toximeter™ II Automatic Detector Tube Pump makes the sampling process easier, allowing the user to preset the number of pump strokes from 1 to 250. Intrinsically safe, the automatic pump works with all MSA detector tubes. It can also be used as a sampling pump.



Toximeter™ II Automatic Detector Tube Pump

5142701T Toximeter™ II Automatic Detector Tube Pump

Kwik-Draw® Detector Tube Pumps

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

Kwik-Draw® Detector Tube Pumps

140904 Kwik-Draw® Basic Pump, with remote sampling adapter and carrying pouch

487500 Kwik-Draw® Deluxe Pump, with remote sampling adapter, carrying pouch and end-of-stroke indicator

Accessories

73067 Sampling line, 10 ft

73068 Sampling line, 25 ft

73069 Sampling line, 50 ft

87970 Remote Sampling Adapter, required for above sampling line

488780 Solvent-Resistant Sampling Line, 25 ft, with reel

488872 Tube Holder, required for 488780 line above

470321 Flue Gas Kit



Gas-Tester™ II H Detector Tube Pump

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

Gas-Tester™ II H Detector Tube Pump

5146760 Gas-Tester™ II H Detector Tube Pump

5146906 Gas -Tester™ II H Detector Tube Pump Service Kit



Detector Tube Handbook

Detector Tube Handbook

813929 Detector Tube Handbook

Detector Tubes

Detector tubes are the simplest solution if the application requires the measurement of many different substances. Due to their long storage time detector tubes are most suitable for occasional measurements. The handling of detector tubes is very simple and easy.

Detector, Action, Trainer and Sampling Tubes

Detector tubes are used to measure hazardous substances in the workplace and in the environment.

Action tubes have a shortened sampling procedure (only 2 strokes) for the rapid evaluation of dangerous situations, e.g. for fire services (with warning marks).

Trainer tubes are for demonstration and training. They contain a gaseous test substance which reacts with detector tubes when connected to them by a hose.

Sampling tubes contain various absorptive materials as sample carriers for active sampling of hazardous materials in the air using two component tubes with sampling and backup layers. The samples are analyzed in a laboratory. MSA recommended laboratory services are available on request.



Detector Tube Sets

Various detector tubes have accessories especially designed for a range of different applications, e.g. Indoor Air Set, Biogas-Reactor Set and Promile Test.

Indoor Air Set

Designed to check the air quality in offices, restaurants, schools, hospitals, etc. These are designed to measure levels of humidity, carbon monoxide, carbon dioxide, formaldehyde and ozone concentrations as well as temperature.

Biogas-Reactor Set

Simple and economic method to monitor the fermentation in biogas reactors, by determining the carbon dioxide in the range of 5 to 40 vol.%.

Smoke Tubes

Smoke tubes are designed to detect and determine the velocity and direction of air currents in ventilation systems, to detect leakages in pipelines, furnaces and windows, and to check the ventilation systems in mines.



Detector Tubes

Substance Measured	Detector Tube applicable	Part No. (1 box of 10 tubes)	Measuring range (ppm)	Threshold Limit Value 1998 ACGIH (ppm)
Acetaldehyde	Formaldehyde-0.1	5086813	5–50	25 (ceiling)
Acetic Acid	Acetic Acid-1	5086821	1–80	10
Acetone	Acetone-100	5086829	100–10,000	500
	Qualitest QL	5085810	n/a	
Acetylene dichloride, cis and trans (1,2 Dichloroethylene)	Trichloroethane-5	5086834	10–500	200
	Qualitest QL	5085810	n/a	
Acetylene tetrabromide (1,1,2,2-Tetrabromoethane)	Trichloroethane-5	5086834	5–200	1
	Qualitest QL	5085810	n/a	
Acetylene tetrachloride (1,1,2,2-Tetrachloroethane)	Trichloroethane-5	5086834	50–1000	1
	Qualitest QL	5085810	n/a	
Ammonia	NH ₃ -2	5085845	2–500	25
	NH ₃ -20	5085814	20–1000	
	NH ₃ -0.1%	5085815	0.1–10 Vol.-%	
n-Amyl chloride (1-Chloropentane)	Trichloroethane-5	5086834	5–550	–
Benzene	Aromatic HC	5086811	5–500	.5
	C ₆ H ₆ -1	5086835	1–100	
	C ₆ H ₆ -5	5085816	5–100	
	Qualitest QL	5085810	n/a	
Bromine	C ₁ -0.2	5085801	0.2–3	0.1
Bromobenzene	Aromatic HC	5086811	30–720	–
Bromoethane (Ethyl bromide)	Trichloroethane-5	5086834	15–400	5
Bromoform (Tribromomethane)	Trichloroethane-5	5086834	7–200	0.5
Bromomethane (Methyl bromide)	Trichloroethane-5	5086834	20–270	1
1,3-Butadiene	Ethylene-50	5086833	100–1200	2
	Qualitest QL	5085810	n/a	
n-Butane	Propane-200	5086831	200–3800	800
	Qualitest QL	5085810	n/a	
n-Butanol (Butyl Alcohol)	Ethanol-100	5086818	100–3900	50 (ceiling)
sec. Butanol (sec-Butyl Alcohol)	Ethanol-100	5086818	300–5100	100
1-Butene (1-Butylene)	Ethylene-50	5086833	100–5000	–
	Qualitest QL	5085810	n/a	
2-Butylene, cis and trans (2-Butylene)	Ethylene-50	5086833	200–5000	–
	Qualitest QL	5085810	n/a	
Butyl Alcohol (n-Butanol)	Ethanol-100	5086818	100–3900	50 (ceiling)
sec-Butyl Alcohol (sec-Butanol)	Ethanol-100	5086818	300–5100	100
n-Butylamine	Triethylamine-5	5086816	2–28	5 (ceiling)
iso-Butylamine	Triethylamine-5	5086816	3–36	–
sec-Butylamine	Triethylamine-5	5086816	2–18	–
t-Butylamine	Triethylamine-5	5086816	2–14	–
n-Butylchloride (1-Chlorobutane)	Trichloroethane-5	5086834	5–170	–
	Qualitest QL	5085810	n/a	
1-Butylene (1-Butene)	Ethylene-50	5086833	100–5000	–
	Qualitest QL	5085810	n/a	
2-Butylene (2-Butene, cis and trans)	Ethylene-50	5086833	200–5000	–
	Qualitest QL	5085810	n/a	
n-Butyl mercaptan	Ethylmercaptan-0.5	5086815	1.5–15	0.5
t-Butyl mercaptan	Ethylmercaptan-0.5	5086815	0.8–5	–
Carbon Dioxide	CO ₂ -100	5086814	100–3000	5000
	CO ₂ -0.1%	5085817	0.1–7.0 Vol.-%	
	CO ₂ -1%	5085841	1–20 Vol.-%	
Carbon Disulfide	CS ₂ -2	5085834	2–300	10
	Qualitest QL	5085810	n/a	
Carbon Monoxide	CO-5	5085836	5–1000	25
	CO-10	5085821	10–3000	
	CO-0.1%	5085822	0.1–1.0 Vol.-%	
	CO-0.5%	5085835	0.5–7.0 Vol.-%	
	CO-10/color	5086810	10–1000	
	Qualitest QL	n/a	n/a	
Chlorine	Cl ₂ -0.2	5085801	0.2–30	0.5
	ClO ₂ -0.05	5086812	1–46	

Instrumentation

Substance Measured	Detector Tube applicable	Part No. (1 box of 10 tubes)	Measuring range (ppm)	Threshold Limit Value 1998 ACGIH (ppm)
Chlorine dioxide	ClO ₂ -0.05	5086812	0.05–15	0.1
Chlorobenzene	Aromatic HC	5086811	40–610	10
Chlorobromomethane	Trichloroethane-5	5086834	5–180	200
1-Chlorobutane (n-Butylchloride)	Trichloroethane-5	5086834	5–170	–
	Qualitest QL	5085810	n/a	
Chloroethane(Ethyl chloride)	Trichloroethane-5	5086834	50–800	100
Chloroethylene (Vinyl chloride)	VC-1	5085837	1–70	5
	Trichloroethane-5	5086834	20–550	
Chloroform (Trichloromethane)	Trichloroethane-5	5086834	8–100	10
1-Chloropentane (n-Amylchloride)	Trichloroethane-5	5086834	5–550	–
1-Chloropropane (1-Propylchloride)	Trichloroethane-5	5086834	5–220	–
2-Chloropropane (2-Propylchloride)	Trichloroethane-5	5086834	8–1700	–
Cycloheptane	Hexane-20	5086832	80–3300	–
Cyclohexane	Hexane-20	5086832	20–3400	300
	Qualitest QL	5085810	n/a	
Cyclohexylamine	Triethylamine-5	5086816	7–38	10
Cyclooctane	Hexane-20	5086832	20–2100	–
Cyclopentane	Hexane-20	5086832	80–2700	600
n-Decane	Hexane-20	5086832	50–500	–
1,2-Dibromoethane (Ethylene dibromide)	Trichloroethane-5	5086834	25–700	–
Dibromomethane (Methylene dibromide)	Trichloroethane-5	5086834	9–200	–
1,1-Dichloroethane (Ethylidene chloride)	Trichloroethane-5	5086834	8–300	100
1,2-Dichloroethane (Ethylene dichloride)	CH ₂ Cl ₂ -50	5085823	30–720	10
1,1-Dichloroethylene (Vinylidene chloride)	Trichloroethane-5	5086834	10–600	5
1,2-Dichloroethylene (Acetylene dichloride, cis and trans)	Trichloroethane-5	5086834	10–500	200
Dichloromethane (Methylene chloride)	CH ₂ Cl ₂ -50	5085823	50–1000	50
1,2-Dichloropropane (Propylene dichloride)	Trichloroethane-5	5086834	5–440	75
1,3-Dichloropropane (Trimethylene dichloride)	Trichloroethane-5	5086834	5–220	–
Diesel Oil	Qualitest QL	5085810	n/a	–
Diethylamine	Triethylamine-5	5086816	3–27	5
Dimethylamine	Triethylamine-5	5086816	3–27	5
2,2-Dimethylbutane	Hexane-20	5086832	100–4900	–
Ethanol (Ethyl Alcohol)	Ethanol-100	5086818	100–6000	1000
	Qualitest QL	5085810	n/a	
Ethene (Ethylene)	Ethylene-50	5086833	50–5000	–
	Qualitest QL	5085810	n/a	
Ethyl Alcohol (Ethanol)	Ethanol-100	5086818	100–6000	1000
	Qualitest QL	5085810	n/a	
Ethylamine	Triethylamine-5	5086816	4–55	5
Ethyl benzene	Tol.-5	5085828	5–1800	100
Ethyl bromide (Bromoethane)	Trichloroethane-5	5086834	15–400	5
Ethyl chloride (Chloroethane)	Trichloroethane-5	5086834	50–8000	100
Ethylenediamine	Triethylamine-5	5086816	5–27	10
Ethylene dibromide (1,2-Dibromoethane)	Trichloroethane-5	5086834	25–700	–
Ethylene dichloride (1,2-Dichloroethane)	CH ₂ Cl ₂ -50	5085823	30–720	10
Ethylidene chloride (1,1-Dichloroethane)	Trichloroethane-5	5086834	8–300	100
Ethyl mercaptan	Ethylmercaptan-0.5	5086815	0.5–80	0.5
Formaldehyde	Formaldehyde-0.1	5086813	0.1–55	0.3 (ceiling)
Formic Acid	Qualitest QL	5085810	n/a	5
	Acetic Acid-1	5086821	2–160	
Furfuryl alcohol	Phenol-1	on request		10
Gasoline	Gasoline-30	5085898	30–6000	300
	Qualitest QL	5085810	n/a	
n-Heptane	Hexane-20	5086832	20–2600	400
n-Hexane	Hexane-20	5086832	20–3200	50
Hydrogen Chloride	HCl-1	5085846	1–30	5 (ceiling)
	Qualitest QL	5085810	n/a	
Hydrogen Cyanide	HCN-2	5085824	2–50	4.7 (ceiling)
Hydrogen Fluoride	HF-1	5086830	1–50	3 (ceiling)

Substance Measured	Detector Tube applicable	Part No. (1 box of 10 tubes)	Measuring range (ppm)	Threshold Limit Value 1998 ACGIH (ppm)
Hydrogen Sulphide	H ₂ S-1	5085826	1–200	10
	H ₂ S-100	5085827	0100–4000	
	H ₂ S-0.1%		0.1–4 Vol. %	
	Qualitest QL	5085810	n/a	
Isobutane (Methylpropane)	Propane-200	5086831	200–4200	–
Isobutanol (Isobutyl Alcohol, 2-Methylpropyl Alcohol)	Ethanol-100	5086818	100–2900	50
Isobutene (Isobutylene, Methylpropene)	Ethylene-50	5086833	400–2600	–
Iso-Butylamine	Triethylamine-5	5086816	3–36	–
Isobutylene (Isobutene, Methylpropene)	Ethylene-50	5086833	400–2600	–
Isobutyl Alcohol (Isobutanol, 2-Methylpropyl Alcohol)	Ethanol-100	5086818	150–2900	50
Isobutyl Methyl Ketone	MEK-50	5086818	50–6500	–
Iso Octane	Hexane-20		100–3000	–
Isopropanol (Isopropyl Alcohol, 2-Propanol)	Ethanol-100	5086818	200–5000	400
	Qualitest QL	5085810	n/a	
Isopropyl Alcohol (Isopropanol, 2-Propanol)	Ethanol-100	5086818	200–5000	400
	Qualitest QL	5085810	n/a	
Isopropylamine	Triethylamine-5	5086816	5–30	5
Isopropyl mercaptan	Ethylmercaptan-0.5	5086815	0.5–5.5	–
Kerosene	Qualitest QL	5085810	n/a	–
Ketones	Qualitest QL		n/a	–
Liquified Petroleum Gases	Gasoline-30	5085898	Semiquantitative	–
	Qualitest QL	5085810	n/a	
Mercury	Hg–0.1 mg/m ³	5085843	0.1–0.8 mg/m ³ (0.01–0.08 ppm)	0.025 mg/m ³ (inorganic)
Methane	Natural Gas		Semiquant. 5000+	–
Methanol (Methyl Alcohol)	Ethanol-100	5086818	100–2350	200
Methyl Alcohol (Methanol)	Ethanol-100	5086818	100–2350	200
Methylamine	Triethylamine-5	5086816	4–55	5
Methyl benzene (Toluene)	Tol.-5	5085828	5–1000	50
Methyl bromide (Bromomethane)	Trichloroethane-5	5086834	9–200	5
	MeBr-200		200–8000 ppm	
	MeBr-2		2–100 ppm	
2-Methyl butane	Hexane-20	5086832	50–3000	–
Methyl chloroform (1,1,1-Trichloroethane)	Trichloroethane-5	5086834	5–1500	350
	Qualitest QL	5085810	n/a	
Methylcyclohexane	Hexane-20	5086832	80–4900	400
Methylcyclopentane	Hexane-20	5086832	150–3700	–
Methylene chloride (Dichloromethane)	CH ₂ Cl ₂ -50	5085823	50–1000	50
Methylene dibromide (Dibromomethane)	Trichloroethane-5	5086834	9–200	–
Methyl Ethyl Ketone (MEK)	MEK-50	5086837	50–4000	200
	Qualitest QL	5085810	n/a	
Methyl mercaptan	Ethylmercaptan-0.5	5086815	0.5–5	0.5
2-Methyl pentane	Hexane-20	5086832	150–4500	–
3-Methyl pentane	Hexane-20	5086832	100–3700	–
Methylpropane (Isobutane)	Propane-200	5086831	200–4200	–
Methylpropene (Isobutylene, Isobutene)	Ethylene-50	5086833	400–2600	–
2-Methylpropyl Alcohol (Isobutanol, Isobutyl Alcohol)	Ethanol-100	5086818	150–2900	50
Nitrogen Dioxide	NO ₂ -0.5	5085805	0.5–50	3
	NO ₂ -2	5085867	2–140	
Nitrous Fumes	Nitr.-0.5	5085818	0.5–50	–
	Nitr.-2	5085844	2–140	
	Nitr.-10	5085808	10–300	
	Nitr.-50	5085809	50–3000	
n-Nonane	Hexane-20	5086832	50–2800	200
n-Octane	Hexane-20	5086832	50–3000	300
Ozone	Ozone-0.05	5086828	0.05–5	0.05 (ceiling)
Pentachloroethane	Trichloroethane-5	5086834	10–300	–
n-Pentane	Hexane-20	5086832	50–3900	600
	Qualitest QL	5085810	n/a	

Instrumentation

Substance Measured	Detector Tube applicable	Part No. (1 box of 10 tubes)	Measuring range (ppm)	Threshold Limit Value 1998 ACGIH (ppm)
Perchloroethylene (Tetrachloroethylene)	Per-5	5085865	5–200	25
	Per-10	5085840	10–500	
	Qualitest QL	5085810	n/a	
Phenol	Phenol-1	5086838	1–25	5
	Qualitest QL	5085810	n/a	
Phosgene	Phosgene-0.1	5085854	0.1–20	0.1
Phosphine	PH ₃ -0.05	5085829	0.05–3	0.3
	PH ₃ -0 1	5085830	0.1–100	
	PH ₃ -50	5085831	50–2000	
Propane	Propane-200	5086831	200–4000	2500
	Qualitest QL	5085810	n/a	
n-Propanol (Propyl Alcohol)	Ethanol-100	5086818	100–3000	200
	Qualitest QL	5085810	n/a	
2-Propanol (Isopropanol, Isopropyl Alcohol)	Ethanol-100	5086818	200–5000	400
	Qualitest QL	5085810	n/a	
Propene (Propylene)	Ethylene-50	5086833	20–5000	–
	Qualitest QL	5085810	n/a	
Propyl Alcohol (n-Propanol)	Ethanol-100	5086818	100–3000	200
	Qualitest QL	5085810	n/a	
n-Propylamine	Triethylamine-5	5086816	2–28	–
1-Propylchloride (1-Chloropropane)	Trichloroethane-5	5086834	5–220	–
2-Propylchloride (2-Chloropropane)	Trichloroethane-5	5086834	8–1700	–
Propylene (Propene)	Ethylene-50	5086833	20–5000	–
	Qualitest QL	5085810	n/a	
Propylene dichloride (1,2-Dichloropropane)	Trichloroethane-5	5086834	5–440	75
n-Propyl mercaptan	Ethylmercaptan-0.5	5086815	0.7–8.0	–
Styrene	Styrene-10	5086819	10–300	20
	Qualitest QL	5085810	n/a	
Sulfur Dioxide	SO ₂ -1	5085803	0.5–25	2
	SO ₂ -5	5085813	5–120	
	SO ₂ -100	5085825	100–4000	
Sulfur Hexafluoride decomposition products	SF ₆ Decomposition Products	5085838	0.5–15	1000
1,1,2,2-Tetrabromoethane (Acetylene tetrabromide)	Trichloroethane-5	5086834	5–200	1
1,1,2,2-Tetrachloroethane	Trichloroethane-5	5086834	50–1000	1
Tetrachloroethylene (Perchloroethylene)	Per-5	5085865	5–200	25
	Per-10	5085840	10–500	
	Qualitest QL	5085810	n/a	
Tetrahydrofuran	Ethanol-100		Semi-quant	200
Toluene (Methyl benzene)	Tol.-5	5085828	5–1000	50
	Qualitest QL	5085810	n/a	
Tribromomethane (Bromoform)	Trichloroethane-5	5086834	7–200	0.5
1,1,1-Trichloroethane (Methyl chloroform)	Trichloroethane-5	5086834	5–1500	350
	Qualitest QL	5085810	n/a	
1,1,2-Trichloroethane (Vinyltrichloride)	Trichloroethane-5	5086834	10–170	10
Trichloroethene (Trichloroethylene)	Tri-5	5085842	5–250	50
Trichloroethylene (Trichloroethene)	Tri-5	5085842	5–250	50
Trichloromethane (Chloroform)	Trichloroethane-5	5086834	8–100	10
1,2,3-Trichloropropane	Trichloroethane-5	5086834	10–1200	10
Triethylamine	Triethylamine-5	5086816	5–30	1
Trimethylamine	Triethylamine-5	5086816	5–30	5
Trimethylene dichloride (1,3-Dichloropropane)	Trichloroethane-5	5086834	5–220	–
2,2,4-Trimethylpentane	Hexane-20	5086832	100–3000	–
Vinyl Chloride (Chloroethylene)	VC-1	5085837	1–70	5
	Qualitest QL	5085810	n/a	
Vinylidene chloride (1,1-Dichloroethylene)	Trichloroethane-5	5086834	10–600	5
Vinyltrichloride (1,1,2-Trichloroethane)	Trichloroethane-5	5086834	10–170	10
Water Vapor	H ₂ O-10		10–100% RH	–
o-Xylene (1,2-Xylene)	Tol.-5	5085828	5–2500	100
	Qualitest QL	5085810	n/a	
m-Xylene (1,3-Xylene)	Tol.-5	5085828	5–2500	100

Sampling Pump Calibration Check Devices

Ventilation Smoke Tube Kits

MSA's Ventilation Smoke Tube Kits are for use where controlled generation of a visible smoke is desired in order to determine the velocity of slow-moving air currents and establish their direction and flow patterns in shafts, mines and tunnels.

They can also be used in commercial buildings and industrial processing plants to determine velocity and flow patterns of heating, ventilating, and air-conditioning systems.



Ventilation Smoke Tube Kits

Ventilation Smoke Kit, including aspirator bulb, two rubber plugs, and six smoke-producing tubes contained in plastic carrying case	458481
Ventilation Smoke Kit, including aspirator bulb, six tube caps, and two glass smoke-producing tubes contained in plastic carrying case	5019702
Ventilation smoke tubes, box of 12	458480
Glass smoke tubes, box of 10	5019701

Airborne Compounds Sampling Chart

This MSA/SupelCo guide to sorbent tube sampling lists MSA part numbers. It is a very comprehensive guide to all types of air sampling using personal sampling pumps.



Airborne Compounds Sampling Chart

MSA/SupelCo Sampling Chart	814473
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Instrumentation - Homeland Security

HAZMATCAD™ and HAZMATCAD Plus Hazardous Material Chemical Agent Detectors

HAZMATCAD™ Detector

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

Features

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

HAZMATCAD™ Plus Detector

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

Features

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

HazMat Response Kit

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

HazMat Response Kit

807472	Includes 12 types of detector tubes, multiple tube holder, Kwik-Draw Pump and interpretation guide
485233	Extra Quad-Port Sampler

Note: US Export Licence Restrictions Apply.



HAZMATCAD™ Detector Kits

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

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



Features & Benefits

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

Instrumentation - Homeland Security

SafeSite® Multi-Threat Detection System

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

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

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

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

The SAFEMTX™ Multi-Threat Detector utilizes multi-sensing technologies to detect up to six potential threats; helping first responders, law enforcement and government agents reduce the risk of exposure and facilitate consequence management.

The SAFECOM™ Command Center receives mission-critical information from the SAFEMTX™ Detectors and permits this crucial and wide-ranging data to be converted quickly into practical information for rapid decision-making through an uncomplicated graphical user interface. The SAFECOM™ Command Center can manage up to four systems with 16 SAFEMTX™ Detectors per system, integrating SAFEMTX data, including:

- Gas readings
- Relative CWA threat level
- Radiation dose rate
- Alarm status
- GPS location
- Battery run time
- RF signal strength
- Fault conditions
- SAFEMTX™ min, max, and average values

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

Wireless Technology

The SAFESITE® System provides up to two miles of wireless communication between any SAFEMTX™ Detector, SAFECONNECT Belt-Bridge and SAFECOM™ Command Center. SAFECONFIG™ Software works with the SAFECOM™ Command Center or SAFECONNECT™ Belt-Bridge, enabling configuration of any SAFEMTX™ Detector as a repeater. This added capability maximizes deployment range and ensures maximum signal strength and reliable deployment without the need to move units.

SAFEPAC™ Perimeter Area Command Kit

SAFESITE® SAFEPAC™ Perimeter Area Command Kit provides a basic kit for quick deployment and monitoring of an event or a location. The kit includes two Pelican cases with an internal battery charger, 4 SAFEMTX™ Multi-Threat Detectors, 1 SAFECOM™ Command Center, all necessary PC interface software, and 4 extra batteries. A laptop PC is also available as an option, or an existing PC can be used.



SAFEMTX Multi-Threat Detector



- 1 Threat Readings – scrolling readings of up to 16 MTX Detectors per channel. Unit is identified by large icons to the left of the readings. In alarm condition, display snaps to unit in alarm.
- 2 MTX Icons – identify number of units enabled in current network. Users may view specific unit reading by double-clicking on icon.
- 3 Map – option for map view or uploaded image view.
- 4 Signal Strength – communication status from SAFEMTX™ Detector to SAFECOM™ Command Center.
- 5 Power – status of battery life of SAFEMTX™ Detectors.
- 6 System Status – alerts user to alarm, warning or fault within a particular system.
- 7 Action Buttons – allow user to select address, cycle units, acknowledge alarms and enable or disable units from the system.

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

Note: US Export Licence Restrictions Apply.

Instrumentation - Homeland Security

BIOSENSOR™ 2200R Biological Agent Detector

The new BIOSENSOR™ 2200R Biological Agent Detector from MSA is a handheld, portable, on-site instrument for rapid detection, analysis, and identification of biological agents. Unique bioassay technology offers excellent sensitivity and low false positives while offering ease of use during white powder response calls. This highly accurate detection method provides rapid measurement of biohazards such as anthrax, ricin, botulism, SEB, and plague.

Exclusive five minute time-to-answer allows first responders to make informed critical decisions more rapidly than any other biological agent detector.

The BIOSENSOR™ 2200R employs dynamic surface generation, a patent pending type of immunoassay detection technology. This technology offers significant advantages over other field-based assay methods by combining the benefits of both the free solution and lateral flow types. The result is more rapid analysis, a user-friendly format, and detector stability within a wide range of climates.

Both wet and dry samples may be tested and results are displayed with a simple red (target present) or green (no target present) indication. As tests are non-destructive, samples may be retained as evidence. Single-test, disposable cartridges with on-board reagents have a 12-month shelf life. This instrument is permanently housed in a sturdy, lightweight Pelican case.



Instrument Features and Benefits

- 5 minute time-to-answer.
- Uses positive and negative control cartridges.
- Battery-operated with ability to run 50 tests on a single charge.
- Fully deconable housing; IP67 rated.
- Visual and audible alarms provide clear indication of status.
- Extremely easy to use with a training time of one hour.
- Integrated RFID (radio frequency identification) for automatic cartridge recognition.

Targets

- Anthrax/ricin duplex—one test, two agents
- Anthrax
- Ricin
- SEB (staphylococcal enterotoxin B)
- Botulism*
- Plague*
- Smallpox*
- Tularemia*
- Cholera*
- West Nile virus*

*additional agents in development.



BIOSENSOR™ 2200R Biological Agent Detector	
	MSA BIOSENSOR™ 2200R Biological Agent Detector Kit*, includes carry case, 10084834 charger, cartridge starter kit (10084758), instruction manual, and quick start guide.
BIOSENSOR Cartridge Plans	
	MSA BIOSENSOR™ cartridge starter kit includes 3 Anthrax/Ricin dual kits**, 10084758 1 Anthrax, 1 Ricin, 3 positive control, 2 negative control cartridges, and 2 wet sample kits
	MSA BIOSENSOR™ Low volume cartridge plan includes 6 Anthrax/Ricin dual 10084753 kits**, 2 Anthrax, 2 Ricin, 6 positive control, 2 negative control cartridges, and 2 wet sample kits
	MSA BIOSENSOR™ Medium volume cartridge plan includes 24 Anthrax/Ricin 10084754 dual kits**, 6 Anthrax, 6 Ricin, 24 positive control, 6 negative control cartridges, and 4 wet sample kits
	MSA BIOSENSOR™ High volume cartridge plan includes 60 Anthrax/Ricin 10084755 dual kits**, 8 Anthrax, 8 Ricin, 60 positive control, 8 negative control cartridges, and 6 wet sample kits.

* Extended warranties available.

** Each biohazard cartridge test kit includes a dry sample kit. Please contact your MSA representative for more information.

Regulators

Gas Miser® Demand Regulator: The Intelligent Regulator

The Gas Miser® Regulator is the most advanced, yet simple-to-use calibration gas delivery system available. Made of nickel-plated brass and polished aluminum (especially important for reactive gases), the Gas Miser® Regulator can supply gas flow from 0.1 lpm to 3.0 lpm. But that's only the beginning. Designed for use with any MSA Model RP Calibration Cylinder except chlorine and ammonia*, the Gas Miser® Regulator features an automatic ON/OFF valve that releases gas only on demand. So only the amount of gas needed to calibrate your MSA instrument is delivered accurately. When the calibration is complete, the Gas Miser® Regulator shuts off automatically. And, for user convenience, the regulator can stay connected to the cylinder where it remains in a ready state - making it ideal for such fixed installations as work benches and calibration stations.



Gas Miser® Model RP



Gas Miser® Model BD-20

The Gas Miser® Regulator also eliminates the need to change regulators to accommodate different instruments or flow rates. It's not only intelligent, it's cost-efficient. Supplied with calibration tubing and special fitting.

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

Model RP Regulators

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

Gas Miser® Manifold

The Gas Miser® Manifold is not only a cylinder holder but it also incorporates a 4-station "bump test" or calibration manifold. It works with Model RP and Econo-Cal cylinders and Gas Miser® regulator on any pumped or aspirated instrument.



The manifold will supply the correct amount of gas required and will bump test or calibrate up to four instruments simultaneously. Gas Miser® regulator sold separately.

Regulators

.25/1.5 LPM Flow Control	
Model RP .25 lpm*	467895
Model RP Cylinder 1.5 lpm	478358
Gas Miser® Demand Regulator:	
Model RP	710288
Model RP, Chlorine and Ammonia	
Model BD-20, with CGA 590 fitting	710289
Model 7HP Regulators	
Model 7HP 0.25 lpm	459949
Model 7HP 1.5 lpm	459948
Gas Miser® Manifold	
4-station Manifold	710274
Model RP Calibration Check Kits	
Check Kit, Model RP, with 0.25 lpm regulator - complete + must add gas	477149

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



.25/1.5 LPM Flow Control Model RP

Model RP Calibration Check Kits

Model RP Check Kits consist of a regulating valve which includes a gauge to measure container pressure, an adapter hose, sensor adapter (where applicable), instructions, and a case fitted with room for two Model RP cylinders of calibration check gas.



Instrumentation

Calibration Gases

Each MSA Calibration Gas Cylinder is shipped with an individual copy of a material safety data sheet (MSDS) and an individual copy of a certificate of analysis. MSA certifies that the gas mixture in calibration gas cylinders was prepared gravimetrically, using NIST traceable weights.

The lot number and nominal value of the gas constituents in percent by volume, percent by mass, PPM, or volume are specified on the cylinder. The uncertainty statement of the specified nominal value is also listed.

Model RP Calibration Cylinders—Non-Reactive Gases, Steel Cylinder, 100 Liters						
Gas Fill	Gas Mixture	Background	100 LTRS 1000 PSI	Regulators	Regulators	Demand Flow
			Model RP	0.25 lpm	1.5 lpm	
Air	air zero (THC < 1 ppm)	—	801050	467895	478358	710288
Carbon Monoxide	400 ppm carbon monoxide	air	806255	467895	478358	710288
	300 ppm carbon monoxide	air	473180	467895	478358	710288
	200 ppm carbon monoxide	air	809243	467895	478358	710288
	100 ppm carbon monoxide	air	809242	467895	478358	710288
	50 ppm carbon monoxide	air	809241	467895	478358	710288
	100 ppm carbon monoxide	nitrogen	806734	467895	478358	710288
Hydrogen	0.8% hydrogen	air	803102	467895	478358	710288
Isobutylene	100 ppm isobutylene	air	494450	467895	478358	710288
Methane	1.45% methane, 15% O ₂ bal N ₂ (Pentane Sim)		478192	467895	478358	710288
	2.5% methane, 15% O ₂ bal N ₂		10028032	467895	478358	710288
	2.5% methane	air	491041	467895	478358	710288
	6.6% methane	nitrogen	801049	467895	478358	710288
Oxygen	20.8% oxygen	nitrogen	479857	467895	478358	710288
	5.0% oxygen	nitrogen	493580	467895	478358	710288
Nitrogen	100% nitrogen	—	481317	467895	478358	710288
Nitrous Oxide	10 ppm nitrous oxide	nitrogen	806736	467895	478358	710288
Pentane	0.75% pentane (50% LEL)	air	804532	467895	478358	710288
Propane	0.6% propane	air	493579	467895	478358	710288
Combination Gas Cylinders	0.35% pentane, 19.0% oxygen, 100 ppm carbon monoxide	nitrogen	10007047	467895	478358	710288
	0.6% propane, 15% oxygen, 60 ppm carbon monoxide	nitrogen	801051	467895	478358	710288
	1.45% methane, 300 ppm carbon monoxide, 15% oxygen	nitrogen	10010162	467895	478358	710288
	2.5% methane, 60 ppm carbon monoxide, 15% oxygen	nitrogen	813718	467895	478358	710288
	2.5% methane, 300 ppm carbon monoxide, 15% oxygen	nitrogen	10040791	467895	478358	710288
	1.45% methane, 15% oxygen	nitrogen	478192	467895	478358	710288



Model RP

Model RP Cylinder
 Contents: Pressure 1000
 psig; approximately 100
 liters at atmospheric
 pressure
 Size: 13-3/4" x 3"
 Weight: 2 lb 13 oz
 Material: Steel

Model RP and Econo-Cal Calibration Cylinders—Reactive Gases, Aluminum Cylinders, 58 & 34 Liters

Gas Fill	Gas Mixture	Background	58 LTRS 500 PSI		Regulators	Regulators	Demand Flow
			Model RP	Econo-Cal	0.25 lpm	1.5 lpm	
Ammonia	25 ppm ammonia	nitrogen	814866	711078	467895	478358	710288
Chlorine	10 ppm chlorine	nitrogen	806740	711066	467895	478358	710288
Hydrogen Sulfide	40 ppm hydrogen sulfide	nitrogen	467897	711062	467895	478358	710288
	15 ppm hydrogen sulfide	nitrogen	806253	711064	467895	478358	710288
	10 ppm hydrogen sulfide	nitrogen	467898	711060	467895	478358	710288
Nitric Oxide	50 ppm nitric oxide	air	812144	711074	467895	478358	710288
Nitrogen Dioxide	10 ppm nitrogen dioxide	air	808977	711068	467895	478358	710288
Phosphine	0.5 ppm phosphine	nitrogen	710533	711088	467895	478358	710288
Hydrogen Chloride	40 ppm hydrogen chloride	nitrogen	710210	711080	467895	478358	710288
Hydrogen Cyanide	10 ppm hydrogen cyanide	nitrogen	809351	711072	467895	478358	710288
Sulfur Dioxide	10 ppm sulfur dioxide	air	808978	711070	467895	478358	710288
Combination Gas Cylinders	1.45% methane, 15% oxygen, 300 ppm carbon monoxide, 10 ppm hydrogen sulfide	nitrogen	804770	711058	467895	478358	710288
	1.45% methane, 15% oxygen, 20 ppm hydrogen sulfide	nitrogen	10048788	10048790	467895	478358	710288
	1.45% methane, 15% oxygen, 300 ppm carbon monoxide, 2.5% carbon dioxide	nitrogen	—	10058023	467895	478358	710288
	1.45% methane, 15% oxygen, 60 ppm carbon monoxide, 20 ppm hydrogen sulfide	nitrogen	10045035	10048280	467895	478358	710288
	1.45% methane, 15% oxygen, 10 ppm hydrogen sulfide	nitrogen	804769	711056	467895	478358	710288
	2.5% methane, 15% oxygen, 300 ppm carbon monoxide, 10 ppm hydrogen sulfide	nitrogen	813720	711076	467895	478358	710288
	2.5% methane, 15% oxygen, 60 ppm carbon monoxide, 20 ppm hydrogen sulfide	nitrogen	10048890	10048981	467895	478358	710288
	1.45% methane, 15% oxygen, 20 ppm hydrogen sulfide	nitrogen	10048889	10048888	467895	478358	710288
	1.45% methane, 15% oxygen, 10 ppm hydrogen sulfide, 300 ppm carbon monoxide, 2.5% carbon dioxide	nitrogen	10050744	10058022	467895	478358	710288
	1.45% methane, 15% oxygen, 300 ppm carbon monoxide, 2.5% carbon dioxide	nitrogen	10058021		467895	478358	710288
	1.45% methane, 15% oxygen, 60 ppm carbon monoxide, 20 ppm H ₂ S, 2.5% carbon dioxide	nitrogen	10103262	10104621			

Note: Reactive gases have an expiration date listed on each cylinder. This is to ensure the highest quality and accuracy for instrument calibration. Most cylinders have an expiration date of 12 months. Check with MSA Customer Service for the exact shelf life of a particular calibration cylinder.

Model 5E Calibration Cylinders

Contents:	1200L	Material: Steel	Regulators	
Gas Fill	Gas Mixture	Background	Part No.	0.25 lpm
Methane	2.5% Methane, 15% Oxygen, 60 ppm Carbon Monoxide	Nitrogen	710566	710289
	1.45% Methane, 15% Oxygen, 60 ppm Carbon Monoxide	Nitrogen	710565	710289
Air, zero	Air, zero, THC<1 ppm	—	710776	710289



Model 5E Calibration Cylinders

Model 650AL Calibration Cylinders

Contents:	950L	Material: Aluminium	Regulators	
Gas Fill	Gas Mixture	Background	Part No.	0.25 lpm
Combination Gas	1.45% Methane, 15% Oxygen, 60ppm Carbon Monoxide, 10 ppm Hydrogen Sulphide (Pentane Sin)	Nitrogen	766875	766876

Permanent Instruments



MSA offers a wide variety of 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, photoacoustic infrared (PIR) and both point and open path infrared 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 computerized installation consisting of thousands of sensing points.

MSA also designs custom systems that are tailored to fit unique monitoring requirements.

Contact your MSA representative for more information and ordering information.

Gas Monitors/Sensors

General Industry

HVA

Water & Wastewater

Oil, Gas & Petrochemical

Prima™ X Gas Monitors

PrimaX™, the new fixed gas transmitter from MSA, is suited to a wide range of indoor and outdoor applications for the detection of combustible gases, toxic gases or oxygen.

Available in flameproof (PrimaX™ P) and intrinsically safe (PrimaX™ I) versions, the PrimaX™ is ATEX, IECEx, UL and CSA approved, has IP66 ingress protection and also SIL 2 approval from TUV. Featuring innovative custom designed enclosures with integral keypad for ease of use and a large LCD with clear plain text, both versions have the option for HART (Highway Addressable Remote Transducer) digital protocol.

The PrimaX™ P can be 3 or 4 wire with the option of alarm and fault relays and includes three status LED's while the PrimaX™ I is 2 wire only. Built in diagnostics provide fault and warning information on the display. The PrimaX™ full scale gas range of up to 22 gases and the span calibration points can be adjusted to suit individual requirements and a wide range of applications. With plug-in replacement sensors and an integral backplate for fast and easy installation, the PrimaX range of gas transmitters is both cost effective and easy to use.

The PrimaX™ features make this gas transmitter the choice for versatile gas detection, offering the proven MSA quality and reliability.

Prima™ X-P Gas Monitor



Features & Benefits

- Wide range of detectable gases (explosive gases, oxygen and toxic gases).
- Standard 4-20mA output with optional modules (HART module, HART+RELAYS module and HART+RELAYS module galvanically isolated).
- Configurable ALARM and FAULT relay.
- External keypad makes setup and maintenance easy.
- Large LCD display and status LED's provide all information for quick and easy sensor status identification.
- Quick site installation using a mounting plate accessory.
- Sensor bayonet cup for quick and easy access to the sensor. Bayonet lock with safety screw locks sensor cap in desired position.
- Wide range of global approvals (ATEX, IEC, SIL 2, UL, CSA and CCCF).

Prima™ X-I Gas Monitor



Features & Benefits

- Wide range of detectable gases (oxygen and toxic gases).
- Standard 4-20mA output with optional HART module.
- General purpose intrinsic safe design.
- External keypad makes setup and maintenance easy.
- Large LCD display provides all information for quick and easy sensor status identification.
- Quick site installation using a mounting plate accessory.
- Sensor bayonet cup for quick and easy access to the sensor. Bayonet lock with safety screw locks sensor cap in desired position.
- Sensor disconnect-under-power without declassifying hazardous area.
- Manual or automatic calibration option.
- Wide range of global approvals (ATEX, IEC, SIL 2, UL, CSA and CCCF).

Permanent Instruments

Gas Monitors/Sensors

General Industry

HVA

Water & Wastewater

Oil, Gas & Petrochemical

Ultima® X Series Gas Monitors - State-of-the-art detection for any gas need.

Ultima® X Series Gas Monitors feature the latest mechanical and electrical technologies to monitor against the threat of combustible and toxic gases and for oxygen deficiency. Installation is simple and flexible, and calibration is easy.

Ultima® X Series Gas Monitors feature the latest mechanical and electrical technologies to monitor against the threat of combustible and toxic gases and for oxygen deficiency. Installation is simple and flexible, and calibration is easy.

Features

- Patented sensor disconnect under power allows for sensor change-out without declassifying a hazardous area.
- Interchangeable smart sensors can be replaced in the field without the use of tools. The unit quickly recognizes the new sensor type and reconfigures alarm and relay settings to optimize the new sensor.
- State-of-the-art liquid crystal display conveniently alternates between sensor reading and gas type and features scrolling messaging, indicating ongoing diagnostic checks such as sensor "end-of-life" condition.
- World-class design features a single-board design for ultimate reliability and serviceability. The multiple-entry mounting enclosure has been designed to be separate from the electronics and sensor, allowing for problem-free installation and servicing.
- Onboard optional "quick-check" LEDs and 4 relay outputs allow for increased indication of alarm and fault conditions.

3 Models:

Ultima® XE Monitor: Explosion-proof stainless steel gas detector with display.

Ultima® XA Monitor: Water-and corrosion-resistant, all-purpose, polycarbonate gas detector with display.

Ultima® XIR Monitor: Explosion-proof stainless steel, infrared gas detector with display.

Ultima® X3® Technology for the Ultima® X Series Gas Monitors features:

Multi-sensing

- System can handle 93 sensors (up to 31 monitors with up to 3 sensors per monitor).



- Accepts any combination of electrochemical, catalytic and infrared sensors.
- Scrolling display shows type and reading for all sensors.
- Ultima® X3 Monitor operates as a slave device on the network.

Signal boost

- Each sensor can be observed remotely up to 3,000 ft. from the monitor.
- Universal 85-256VAC or 7-30VDC power supply available at remote conduit.

ModBUS RTU Output

- Industry-standard format.
- Provides an RS-485 half-duplex communication interface.
- Integration into PLC/DCS systems.



Gas Monitors/Sensors

Ultima® XA Part Numbers

Description	Enhanced with Relays and Alarm	Basic without Relays and Alarm	Replacement Sensors
Ultima® XA HCN 50PPM	765332	763127	765159
Ultima® XA H2S 100PPM	765284	765339	765227
Ultima® XA CO 500 PPM	763024	765338	765225
Ultima® XA NO 100PPM	765285	765341	765161
Ultima® XA NO2 10PPM	765331	765342	765160
Ultima® XA HCL 50PPM	765333	765343	765158
Ultima® XA CLO2 3PPM	765334	765344	765157
Ultima® XA PH3 2PPM	765335	765345	765162
Ultima® XA O2 25%	763023	765346	765228
Ultima® XA NH3 50PPM	765336	765347	765153
Ultima® XA LEL 100% LEL	765337	765381	765155
Ultima® XA H2 1000PPM	765407	765408	765380
Ultima® XA ASH3 2PPM	76409	765410	765378
Ultima® XA 10PPM	763752	765411	765379
Ultima® XA CL2 5PPM	765283	762918	765226
Ultima® XA SO2 25PPM	763025	765340	765229
Ultima® XA SO2 100PPM			765156

Ultima® XE Part Numbers

Description	Enhanced with Relays and Alarm	Basic without Relays and Alarm LED
Ultima® XE HCN 50PPM	765557	765571
Ultima® XE H2S 100PPM	765551	765568
Ultima® XE CO 500 PPM	765560	765567
Ultima® XE NO 100PPM	TBA	NEW PN
Ultima® XE NO2 10PPM	765558	765570
Ultima® XE HCL 50PPM	765563	765565
Ultima® XE CLO2 3PPM	765562	765566
Ultima® XE PH3 2PPM	765552	765576
Ultima® XE O2 25%	765555	765573
Ultima® XE NH3 50PPM	TBA	NEW PN
Ultima® XE NH3 1000PM	765588	766548
Ultima® XE H2 1000PPM	765554	765574
Ultima® XE ASH3 2PPM	76409	765410
Ultima® XE CL2 5PPM	763752	765411
Ultima® XE SO2 25PPM	765559	765569
Ultima® XE LEL 100%	765561	-

Permanent Instruments

Gas Monitors/Sensors

General Industry

HVA

Water & Wastewater

Oil, Gas & Petrochemical

Gas Detection System - TRIGARD™ Monitoring System for Chlorine and Sulfur Dioxide

Application

The MSA TRIGARD™ Monitoring System is designed for monitoring chlorine, sulfur dioxide and other toxic gases, as well as for oxygen deficiency or enrichment. These new monitors were designed specifically for water and wastewater facilities which are typically large producers of these gases. The MSA TRIGARD™ Monitor offers an affordable monitoring solution for a variety of needs.

Features

- Adjustable range.
- Internal, pre-wired sensors in 25-, 50- and 100-foot lengths.
- AC-powered.
- On-board relays.
- NEMA 4X design.
- Highly visible LED indicators.
- Piezo horn with horn silence button.
- LCD display.
- Long-life, MSA-designed sensors.
- Simple push-button calibration.
- Available as single-point or 3-point unit.

Advanced Features

- **Sensor Disconnect Under Power:** MSA's patented feature allows for sensor change-out without declassifying a hazardous area.
- **Interchangeable Smart Sensors:** Pre-calibrated sensor modules are ready for installation out of the box. Sensors can be replaced in the field without the use of tools. The unit quickly recognizes the new sensor type and reconfigures alarm and relay settings to optimize the new sensor.
- **State-of-the-Art Display:** Liquid crystal display conveniently alternates between sensor reading and gas type and features scrolling messaging, indicating ongoing diagnostic checks such as sensor "end-of-life" condition.



TRIGARD™ Gas Monitor showing single local sensor with two remote sensors attached.



Factory-assembled remote sensors are available in 25-, 50- and 100-foot lengths.

- **World-Class Design:** Engineering efforts feature a single-board design for ultimate reliability and serviceability. The mounting enclosure has been designed to be separate from the electronics and sensor, allowing for problem-free installation and servicing.
- **Onboard LEDs and Relays:** "Quick-check" LEDs and four relay outputs allow for increased indication of alarm and fault conditions. "Quick-check" LEDs, viewable from up to 50 feet, indicate NORMAL (green) and ALERT (red) status conditions. Field-programmable alarm levels and normally energized/de-energized, normally opened/closed and latching/non-latching relay functions offer three levels of alarm and a fault.

Options

- 25-, 50- and 100-foot shielded cables on remote sensors.
- Sulfur dioxide sensor option.

Specifications

Gas Type:	Toxics & oxygen
Gas Sampling:	Diffusion
Output Type:	4-20mA, 3-wire (non-loop power) - (single-point only) - ModBus RTU
Sensor Location:	Local or remote sensor (up to 100 ft.)
Enclosure:	General-purpose plastic enclosure
Sensor Temperature Range:	-25 to 40°C
Accuracy:	Repeatability +1% FS
Sensor Life:	18 months to 2 years
Relays:	LEDs and relays
Power Input:	Internal 24VDC power supply
Alarm Type:	Peizo horn with horn silence button
Battery Backup:	Up to 24 hours
Environmental Protection:	Designed to meet NEMA 4X

Gas Monitors/Sensors

General Industry

HVA

Water & Wastewater

Oil, Gas & Petrochemical

Ultima® XIR Gas Monitors

Infrared technology with display for combustible gas detection.

The Ultima® XIR Gas Monitor is a microprocessor-based, infrared point gas detector for continuous monitoring of combustible gases and vapors. Designed around a rugged, 316 stainless steel enclosure, the monitor operates with dual-wavelength, heated-optics technology, providing definitive compensation for temperature, humidity and aging effects. The IR technology offers excellent long-term stability, eliminates the need for frequent calibrations and reduces the overall cost of ownership.

Reliability

- Extremely fast speed of response.
- Designed without a sintered disk for optimum performance in the harsh, offshore environment.
- Operates over extended temperature ranges.
- Immune to poisoning.
- Operates in high-gas and low-oxygen environments.
- "Fail to safety" operation.



Ease of Use

- LCD display with scrolling messaging.
- Single-board design for ultimate reliability and easy, no-tool servicing.
- Optional "quick-check" LEDs for increased product visibility.
- No-gas calibration. A zero adjustment is all that is required for full calibration.

Part No.	Description
766617	Ultima® XIR PROPANE 2.1% with RELAYS IEC
763675	Ultima® XIR PROPANE 2.1% with RELAYS and WARNING LED
766831	Ultima® XIR PROPANE 1.7% with RELAYS IEC
766618	Ultima® XIR CH ₄ 5% with RELAYS IEC
766540	Ultima® XIR CO ₂ 2% with RELAYS and WARNING LED

Ultima® XI Series Gas Monitor - Infrared technology for combustible gas detection.

The Ultima® XI Gas Monitor is a digital signal processor-based, infrared point gas detector for continuous monitoring of combustible gases and vapors. Designed around a rugged 316 stainless steel enclosure, the Ultima® XI Monitor is a completely self-contained, explosion-proof unit that is dependable in harsh environments. Dual wavelength-heated optics technology, provides definitive compensation for temperature, humidity and aging effects. The IR technology offers excellent long-term stability, eliminates the need for frequent calibrations and reduces overall cost of ownership.

Reliability

- Extremely fast speed of response.
- Operates over extended temperature ranges.
- Immune to poisoning.
- Operates in high-gas and low-oxygen environments.
- "Fail to safety" operation.



Part No.	Description
766823	Ultima® XI IEC Methane 100% LEL (4.4% CH ₄)
766824	Ultima® XI IEC Propane 100% LEL (1.7% C ₃ H ₈)

Permanent Instruments

Gas Monitors/Sensors

General Industry

HVA

Water & Wastewater

Oil, Gas & Petrochemical

Toxgard® II Gas Monitor

- Versatile monitor for combustible gas, toxic gas or oxygen deficiency detection.

Simplicity/Ease of Use

- Large, four-digit LED display.
- Large LED alarm indicators.
- Internal relay contacts for FAULT, CAUTION, WARNING and ALARM.
- Failsafe fault relay output.
- Diagnostics that appear on the display.
- Audible alarm.
- 4 to 20 mA output.
- Automatic calibration.
- "Replace Sensor" indication when sensor nears its end-of-life.
- Real-time clock for time and date stamping of events.
- Logging of minimum, maximum and average gas concentrations over predetermined time intervals.
- Selectable lock-out of output signals during calibration to inhibit alarms and control actions.
- Digital, multi-drop communication.

- Externally-mounted plug-in sensor is easily replaced.
- Remote sensor enables sensors and transmitters to be separated for installations where access to the sensor may be difficult.
- Some UL Class I, Div 2 approvals apply.

Flexibility

- Can be used as a transportable gas monitor with its optional internal battery.
- Three levels of alarm.
- Optional integral pump for sample draw systems.

Durability

- Housed in a rugged, metal NEMA 4X enclosure, or standard steel version.
- Sensorgard protects sensor from dirt and water and acts as a baffle in windy environments.



Part No.	Description
223370	Toxgard® II CO 100PPM Banshee Wailer Strobe Battery Backup Diffusion
223371	Toxgard® II CO 500PPM Banshee Wailer Strobe Battery Backup Diffusion
223372	Toxgard® II O ₂ 25% Banshee Wailer Strobe Battery Backup Diffusion
223373	Toxgard® II H ₂ S 50PPM Banshee Wailer Strobe Battery Backup Diffusion
223374	Toxgard® II NO ₂ 10PPM Banshee Wailer Strobe Battery Backup Diffusion
223375	Toxgard® II CL ₂ 5PPM Banshee Wailer Strobe Battery Backup Diffusion
223376	Toxgard® II HCN 50PPM Banshee Wailer Strobe Battery Backup Diffusion
223377	Toxgard® II SO ₂ 25PPM Banshee Wailer Strobe Battery Backup Diffusion
766645	Toxgard® II HCL 100PPM Banshee Wailer Strobe Battery Backup Diffusion
766646	Toxgard® II CLO ₂ 3PPM Banshee Wailer Strobe Battery Backup Diffusion
766647	Toxgard® II NO 100PPM Banshee Wailer Strobe Battery Backup Diffusion
223378GS	Toxgard® II LEL REM SOLVENTS Banshee Wailer Strobe Battery Backup
223378NG	Toxgard® II LEL CH4 REM Banshee Wailer Strobe Battery Backup
223378PV	Toxgard® II LEL PETR REM Banshee Wailer Strobe Battery Backup
223380	Toxgard® II CO 100PPM Banshee Wailer Strobe Battery Backup Pump
223381	Toxgard® II CO 500PPM Banshee Wailer Strobe Battery Backup Pump
223382	Toxgard® II O ₂ 25% Banshee Wailer Strobe Battery Backup Pump
223383	Toxgard® II H ₂ S 50PPM Banshee Wailer Strobe Battery Backup Pump
766648	Toxgard® II NO ₂ 10PPM Banshee Wailer Strobe Battery Backup Pump
223385	Toxgard® II CL ₂ 5PPM Banshee Wailer Strobe Battery Backup Pump
223386	Toxgard® II HCN 50PPM Banshee Wailer Strobe Battery Backup Pump
223387	Toxgard® II SO ₂ 25PPM Banshee Wailer Strobe Battery Backup Pump
766649	Toxgard® II HCL 100PPM Banshee Wailer Strobe Battery Backup Pump
766650	Toxgard® II CLO ₂ 3PPM Banshee Wailer Strobe Battery Backup Pump
766651	Toxgard® II NO 100PPM Banshee Wailer Strobe Battery Backup Pump

Permanent Instruments

Gas Monitors/Sensors

General Industry

HVA

Water & Wastewater

Oil, Gas & Petrochemical

Chemgard® Series Infrared Gas Monitors

- Precise photoacoustic IR monitoring of a variety of industrial gases such as hydrocarbons, solvents, alcohols, alkanes and toxics.

The Chemgard® Series of Gas Monitors provide low-cost, high-performance monitoring that is extremely stable and highly selective to the gas of interest. Detectability is as low as 0.01 ppm for certain applications, and the unit can operate for months with virtually no zero drift.

Simplicity/Ease of Use

- Direct-reading display shows actual gas value, alarms and diagnostic messages.
- Data logging provides access to date-stamped information on key events including gas readings, alarms and fault conditions. Data is accessible through the front panel display or the RS-232 port.
- Easy to install, operate and maintain.
- Easy-to-read display showing gas concentration(s) and alarms.
- Three alarm levels with relay output.
- All user functions configurable through front panel.
- Three system alarm levels with relays.
- Normally energized trouble and alarm relays for failsafe operation.



Flexibility

- Variety of output ranges.
- 3 enclosure styles: explosion-proof, NEMA 4, or rack-mounted.
- Can be expanded to monitor up to 8 locations simply by adding the multipoint sequencer option.

- Operates over a wide temperature range.
- Can be installed in numerous environments and configurations.
- Monitor one, four or eight sampling points per instrument.
- Discreet relays expandable up to 3 per sample line (separate enclosure).

Chemgard® Application Table

COMPOUND	10 PPM	100 PPM	1000 PPM	1%	10%	100%	100% LEL	Current Min. Detection (PPM)	TLV (PPM)
Acetaldehyde			Y					4	25
Acetic Acid		Y*						1	10
Acetone			Y	Y			Y	3	500
Acetonitrile				Y				40	40
Acetylene***									
Acrylonitrile		Y*	Y		Y(0-20%)			3	2
Ammonia			Y					4	25
Benzene			Y*	Y				10	0.5
Butane			Y	Y			Y	3	800
1,3 Butadiene			Y					3	2
1-Butyl Acetate			Y					4	150
Carbon Dioxide***	Y*	Y	Y	Y	Y	Y		0.04	5000
Carbon Monoxide			Y	Y	Y	Y		4	25
Carbon Tetrachloride			Y					3	5
Chloroform		Y*	Y					1	10
Cyclopentane			Y					3	600
1,2 Dichloroethane			Y					4	10
Diethyl Ether			Y	Y				3	400
Difluoromethane			Y					3	
Dimethylacetamide		Y*						2	10
Dimethylamine			Y					4	5

Permanent Instruments

Gas Monitors/Sensors

Chemgard® Application Table cont.

COMPOUND	10 PPM	100 PPM	1000 PPM	1%	10%	100%	100% LEL	Current Min. Detection (PPM)	TLV (PPM)
Dimethyl Ether				Y				4	
Dimethyl Ethyl Amine			Y					4	
Dowtherm J			Y*					5	10
Ethane			Y				Y	3	
Ethanol			Y	Y				3	1000
Ethanolamine				Y				20	3
Ethyl Acetate			Y	Y				3	400
Ethyl Benzene			Y*					5	100
Ethylene		Y*	Y					2	
Ethylene Oxide			Y	Y	Y			4	1
Formic Acid		Y*						1	5
Halon 1211			Y					3	
Halon 1301			Y					3	
Heptane		Y*	Y	Y			Y	1	400
Hexafluoropropylene			Y					4	
Hexafluoro 1,3, Butadiene		Y*	Y					0.4	
Hexane		Y*	Y	Y	Y		Y	1	50
Hexene				Y				50	30
HFC 245fa			Y					3	
HFE 347E			Y					3	
HFE 7100			Y					3	600
Isceon 89			Y					3	
Isobutane			Y	Y			Y	3	
Isohexane			Y					4	500
Isopar G			Y					3	
Isopentane			Y	Y			Y	4	600
Isopropanol			Y	Y			Y	4	400
Methanol			Y					4	200
Mek		Y*	Y				Y	1	200
Methyl Chloride				Y	Y			20	50
Methyl Formate			Y					4	100
Methane			Y*	Y	Y	Y	Y	5	
Methyl Fluoride		Y*	Y					3	
Methyl Iodide			Y					4	2
MIBK			Y					4	50
Methyl Methacrylate			Y					3	100
Methyl Morpholine		Y*						1	
Methylene Chloride			Y					3	50
Methylene Fluoride			Y					4	
Methyl N-Propyl Ketone			Y					4	200
Monomethylamine			Y					4	5

Gas Monitors/Sensors

Chemgard® Application Table cont.

COMPOUND	10 PPM	100 PPM	1000 PPM	1%	10%	100%	100% LEL	Current Min. Detection (PPM)	TLV (PPM)
Nitrogen Trifluoride		Y*	Y					0.4	10
Nitrous Oxide		Y*	Y					1	50
Octafluorobutane			Y					3	
Octafluoropropene		Y*	Y					0.4	
Pentane			Y	Y			Y	3	600
Perchloroethylene		Y*	Y					1	25
Perfluorohexane		Y						1	
PF 5050			Y					3	
Phosgene	Y*	Y*						0.5	0.1
PMVE			Y					3	
Propanal			Y					4	
2-Propanol			Y	Y		Y	Y	4	400
N-Propanol			Y					3	200
Propane			Y	Y			Y	3	2500
Prop. Glyc. Dimeth. Acetate			Y					4	
Propylene Oxide			Y					4	20
Solkane 365/227			Y				Y	3	
Styrene			Y*					5	20
Sulfur Hexafluoride		Y*	Y	Y				0.05	1000
Tetrahydrofuran			Y					3	200
Tetrafluoroethylene			Y					4	
Toluene			Y	Y				5	50
1,1,1 Trichloroethane			Y					4	350
1,1,2 Trichloroethane			Y					4	10
Trichloroethylene		Y*	Y					0.4	50
Triethylamine			Y					4	1
Vinyl Acetate			Y					4	10
Vinyl Chloride		Y*	Y					1	1
Vinyl Fluoride			Y	Y	Y			3	1
O-Xylene			Y					4	100
M-Xylene			Y					4	100
P-Xylene			Y					4	100
Xylenes			Y					3	100

Y = Acceptable Application

* NOT CE APPROVED APPLICATION

** Other applications and ranges are possible

*** Carbon Dioxide: 20-50% Range Available

**** Acetylene: 0-20% Range Available

Hydrocarbon vapors from complex mixtures such as Gasoline, Diesel, Jet Fuels and Kerosene have been detected by calibrating for a simulant gas such as Propane or Pentane.

Permanent Instruments

Gas Monitors/Sensors

General Industry

HVA

Water & Wastewater

Oil, Gas & Petrochemical

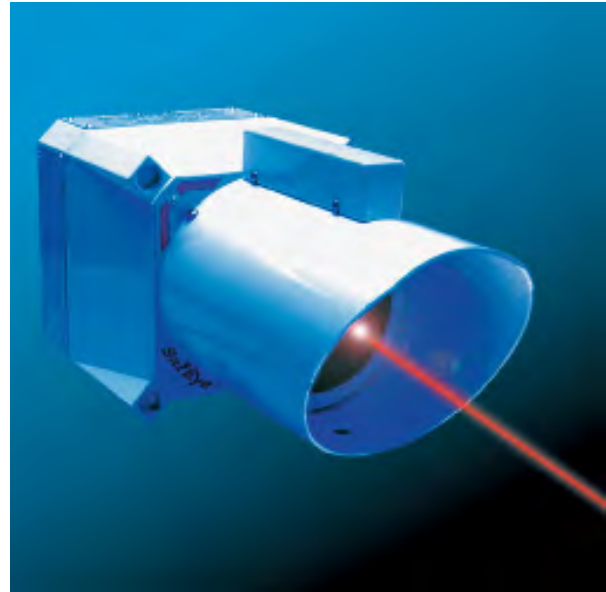
SafEye™ Open Path Detection System

- Long-range detection of combustible gases.

MSA's SafEye™ Open Path Gas Detection System is a self-contained optical gas detection system. Using breakthrough technology, the SafEye™ Detector can detect combustible gases below the lower explosion limit (LEL) range over an open path up to 450 feet long. Open Path gas monitoring is cost-effective, providing complete gas detection of an open area along a line of sight. Standard point-type gas monitors provide coverage at the location of the sensor only while Open-Path provides complete linear coverage across an open area. Advantages include lower installation and maintenance costs, as one SafEye™ Gas Detection can

Simplicity/Ease of Use

- Available in various configurations, for both short-path and long distance applications.
- Multiple outputs for easy field installation.
- No oxygen required for proper operation.
- Built-in temperature sensor enables automatic temperature change compensation.
- Easily installed without special tools or equipment.
- Front-facing LEDs provide all the necessary information for alignment, zeroing and normal operation.
- Factory-calibrated to typical hydrocarbons that may leak in a location.
- Patented flash source allows detector to synchronize with the source IR energy, preventing false alarms from sunlight, welding, etc.



Chillgard® RT Photoacoustic Infrared Refrigerant Monitor

- The industry standard for refrigerant leak detection monitors.

The Chillgard® RT Photoacoustic Infrared Refrigerant Monitor provides economical, low-level monitoring of refrigerant gases used in most refrigeration systems or chillers. By detecting leaks early enough to prevent a major loss of refrigerant gas, the monitor reduces operating costs. Chillgard® RT Monitors meet the requirements of ANSI/ASHRAE 15-2004.

Sensor Technology

The Chillgard® RT Monitor utilizes very stable and highly selective photoacoustic infrared (IR) technology to sense refrigerant gases at levels as low as 1 part-per million.

- Can operate for months with virtually no zero drift.
- Inherent stability eliminates the need for auto-zeroing techniques that take the monitor "off-line" at regular intervals, leaving the area unprotected.
- "Fresh air" sampling line or "on-line" scrubber is not required.
- High immunity to interferences such as cleaning agents and solvents.
- Unaffected by changes in humidity.
- Operates over a wide temperature range.
- Detects single or multiple refrigerants.

Expandability

Simply by adding the Multipoint Sequencer, the Chillgard® RT Refrigerant Monitor can be expanded to monitor up to 8 locations.



Part No.	Description
764971	Chillgard® RT cw Strobe, 4 sample point R123, R22, R134a, R404a, R407c, R410a
765861	Chillgard® RT cw Strobe, 8 sample point R123, R22, R134a, R404a, R407c, R410a
228371	Chillgard® RT cw Strobe, 4 sample point Ammonia
227796	Chillgard® RT cw Strobe, 8 sample point Ammonia

Gas Monitors/Sensors

General Industry

HVA

Water & Wastewater

Oil, Gas & Petrochemical

Chillgard® LE Refrigerant Monitor

- Refrigerant sensor and control module in one enclosure.

The Chillgard® LE Photoacoustic Infrared Refrigerant Monitor provides fast, reliable and economical low-level monitoring of refrigerant gases used in most refrigerant systems or chillers, including R123, R 134A, R 11, R12 and R22. The full scale range of the unit is 0-1,000 ppm with the capability of measuring a refrigerant leak as low as 20 ppm, well below the established threshold limit values.

- Single point diffusion or 4- point pumped models.
- Complies with ANSI/ASHRAE 15-2001.

Part No.	Description
765280	Chillgard® LE 240V 4PT R11
765281	Chillgard® LE 240V 4PT R12
765282	Chillgard® LE 240V 4PT R22
763209	Chillgard® LE 4Pt R134a Pump, Strobe



Chillgard® LS Refrigerant Monitor - Flexible, reliable gas monitor.

The Chillgard® LS Refrigerant Monitor detects the five most commonly used refrigerant gases (R-11, R-12, R-22, R-123 and R-134a). Standard features include five LED's to indicate power, alarm and fault conditions, 4-20 mA output and communication to the Chillgard® LC Control Module. The Chillgard® LS Refrigerant Monitor sensor module meets the requirements of ASHRAE 15 for detection below the TLV for refrigerant gases.

- Available in either single-point diffusion (no pump needed) or 4-point pumped version for remote sampling.
- Works as either a stand-alone unit or in conjunction with the Chillgard® LC Control Module.
- Full scale range of 0-1,000 ppm with the capability of measuring as low as 20 ppm.
- Fast reliable detection for low level leaks prevents a major loss of costly refrigerant gas.
- Integral status LEDs and optional strobe provide visual indication of refrigerant level.



Chillgard® LC Control Module - Microprocessor-based controller.

The MSA Chillgard® LC Control Module can communicate with up to eight sample points from Chillgard® LS Refrigerant Monitors. The Chillgard® LC Module remotely displays gas concentration, alarm status, calibration and fault diagnostics for the LS Monitors.

- Expandable: Configurable with up to 8 LS sensor module points of detection.
- Easy to use: 20-position LCD display with 4-button keypad.
- 3 LEDs-POWER, FAULT and ALARM-give a quick visual indication of monitor status.



Permanent Instruments

Gas Monitors/Sensors

Chillgard® M-100 Photoacoustic Infrared Refrigerant Monitor

- Refrigerant sensor and control module in one enclosure.

MSA's Chillgard® M-100 Refrigerant sensor is designed to detect the presence of the most common halogenated refrigerants in cold storage facilities, mechanical equipment rooms and other refrigerant applications. This compact sensor can be mounted almost anywhere to detect potential leaks of halogenated refrigerants. Easy installation ensures fast and practical integration into existing automated systems.

- Low-level detection – down to as low as 20 ppm.
- Versatility – capable of operating within a wide temperature and humidity range.
- Low maintenance – no moving parts.
- Easy installation – simply secure back plate to wall.
- Proven photoacoustic infrared refrigerant sensor.

Applications

- Cold-storage facilities.
- Meat-packing plants.
- Mechanical equipment rooms.
- Solvent-cleaning stations.
- Other specialist applications.

Ordering Information

Chillgard® M-100 is available with a number of options including:

- Refrigerant gas detected.
- Temperature & Relative Humidity sensors.
- Current or voltage analogue output or RS-458 ModBUS digital output.
- De-icer option operates at temperatures down to –30 °C.

Chillgard® M-100 can be configured for individual requirements. Please contact your MSA representative for ordering details.

Part No.	Description
766678	Chillgard® M-100 R134a, 407a, 407c, 427c cw RH/T & de-icer
766679	Chillgard® M-100 R123 cw RH/T & de-icer
766680	Chillgard® M-100 R404a, 422a, 422d, 507c cw RH/T & de-icer
766681	Chillgard® M-100 R22 cw RH/T & de-icer



Gas Monitors/Sensors

General Industry

HVA

Water & Wastewater

Oil, Gas & Petrochemical

Chillgard® NH3 Gas Monitor - In Freezer Ammonia Detection

Provides fast, reliable detection of low-level ammonia leaks.

Simplicity/Ease of Use

- Single-board design for ultimate reliability and serviceability.
- Interchangeable Smart Sensors - pre-calibrated sensor modules are ready for installation out of the box. Sensors can be replaced in the field without the use of tools.
- Integral display and status LEDs provide visual indication of the ammonia level in an area.
- State-of-the-art display – liquid crystal display (LCD) conveniently alternates between sensor reading and gas type and features scrolling messaging, indicating ongoing diagnostic checks such as sensor “end-of-life” condition.
- Onboard LEDs and relays - optional “quick-check” LEDs and four relay outputs allow for increased indication of alarm and fault conditions. Quickcheck LEDs, viewable from afar, indicate NORMAL (green) and ALERT (red) status conditions.
- Simple and flexible installation and operation.
- Easy-to-follow calibration instructions displayed on monitor.
- No need to open the enclosure during set-up and calibration when using accessory calibrator or controller.



Part No.	Description
10064883	Chillgard® 0-1000 ppm NH3, with heater
10064884	Chillgard® 0-1000 ppm NH3, with heater, relays and LED's

Permanent Instruments

Gas Monitors/Sensors

General Industry

HVA

Water & Wastewater

Oil, Gas & Petrochemical

Gasgard® Family of Products

- Versatile, compact, cost-effective gas monitors.

The MSA Gasgard® family of products includes the Gasgard® 1 and Gasgard® 8 Monitors. Designed to work with any 2- or 3-wire 4-20 mA input signal, these monitors offer expanded features and options, selectable through user-friendly software. Each monitor uses micro-processor-based technology and provides effective and reliable monitoring of toxic and combustible gases as well as for oxygen deficiency. Each monitor's measuring range includes PPM, % LEL and % Volume.

Features

- Each channel has:
 - 4 levels of alarm with LED indicator and failsafe relay output for each alarm level.
 - Fault alarm with LED indicator and failsafe relay output.
 - Individual digital LED display and electronics.
 - 4-20 mA output signal.
 - Selectable measuring range
 - Audible alarm.
 - Easy-to-program alarm levels.
 - User-selectable relay contact positions.
 - Configurable external reset switch or flow failure fault status.



Gasgard 8

Gasgard 1

Additional Features for the Gasgard® 8 Monitor

- Field-expandable and programmable.
- Common Alarm and Fault LED indicators and relay outputs.
- 1 to 8 channels.
- Alarm time delay for each channel.
- RS-232 and RS-485 output.

FlameGard® Series of Flame Detectors

Fast, reliable optical flame detection for hydrocarbon-based fires.

MSA FlameGard® Flame Detectors provide constant monitoring for fire or flame by detecting the characteristic ultraviolet (UV) and/or infrared (IR) radiation from a hydrogen or hydrocarbon-fueled fire.

They operate as a stand alone unit without a control panel, or can be connected to a fire or security panel via an internal alarm or accessory relay. FlameGard® Detectors reduce the possibility of false alarms because the units must receive the proper wavelength, duration and intensity of the fire's radiation before an alarm is activated.

3 Versions:

FlameGard® UV Flame Detector: monitors UV radiation.

FlameGard® UV/IR Flame Detector: dual-optical sensing monitors UV and IR radiation.

FlameGard® IR3 Flame Detector: patented triple-IR technique monitors IR radiation with enhanced immunity to false alarms.

- Uses a patented triple-infrared (IR) detection technique that offers two to three times the detection distance (up to 200 ft) of conventional IR or UV/IR detectors.



Simplicity/ Ease of Use

- Easy to operate and maintain.
- Easily mounted via a simple bracket or the optional Swivel Mount Kit.

Durability

- Enclosed in heavy-duty, copper-free, explosion-proof aluminum or stainless steel housings.

Calibration and Sensor Placement

Instrument Calibration

General Industry

HVA

Water & Wastewater

Oil, Gas & Petrochemical

Whether an instrument warns and/ or alarms at the proper time depends on its ability to translate the quantity of gas it detects into an accurate reading. "Calibration" refers to an instrument's measurement accuracy relative to a known concentration of gas.

Gas detectors perform relative measurements: rather than independently assessing the quantity of gas present, they measure the concentration of the air sample and then compare it to the known concentration of the gas that the instrument is configured to sample. This "known concentration" serves as the instrument's measurement scale, or reference point.

If the instrument's reference point has moved, then its reading will also move. This is called "calibration drift" and it happens to most instruments over time. (Common causes of calibration drift include the normal degradation of sensors, exposure of the sensor to poisons, and harsh operating conditions.)

When an instrument experiences calibration drift it can still measure the quantity of gas present, but it cannot convert it into an accurate numerical reading. Regular calibration with a certified standard gas concentration updates the instrument's reference point, re-enabling it to produce accurate readings.

There are two methods of verifying instrument calibration: through a functional or "bump" test (or span check) or by performing a full calibration. Each is appropriate under certain conditions

Bump (or Span) Check

A bump check is a means of verifying calibration by exposing the instrument to a known concentration of test gas. The instrument reading is then compared to the actual quantity of gas present (as indicated on the cylinder). If the instrument's response is within an acceptable range of the actual concentration then its calibration is verified. When performing a bump test, the test gas concentration should be high enough to trigger the instrument alarm. If the bump test results are not within the acceptable range, then a full calibration must be performed.

Full Calibration

A full calibration is the adjustment of the instrument's reading to coincide with known concentrations (generally a certified standard) of zero and span gases, to compensate for calibration drift. In most cases, a full calibration is only necessary when an instrument does not pass the bump test (or after it has been serviced).

Zero Check

A zero check is performed to verify that the instrument reads true zero (also referred to as the "baseline") in an environment in which no amount of target gas is present. Common situations in which a zero check is performed include:

- after exposure of the sensor to a sensor contaminant;
- after the sensor has been exposed to a very high concentration of the target gas;
- as the sensor ages, since it may gradually drift;

- after the unit has operated in varying background conditions (e.g. humidity levels); and
- after exposure to extreme conditions (e.g. high temperature or humidity).

If the instrument fails the zero check, then a zero adjustment - which sets the instrument to true zero - should be performed.

Frequency of Calibration

The frequency of calibration depends on the sensor's operating time, conditions of use (including chemical exposure) and user experience with the instrument. New sensors should be calibrated more often until the calibration records prove sensor stability.

The calibration frequency can then be reduced to the schedule set by the safety officer or plant manager. Before calibrating the sensors, it is good practice to apply power to the unit to allow the sensor to adapt to the new environment.

Sensors should be powered at least one full hour before any calibration attempt is made.

Calibration Kits

- For calibrating instruments and sensors.

MSA calibration kits, when used with the appropriate calibration gas, offer a quick, convenient, and economical method of checking the response of MSA gas sensors and gas detection instrumentation.

Calibration kits contain all the components necessary to calibrate your MSA equipment.

They are housed in a lightweight carrying case for easy transportation to the job site or sensor location. MSA also has a wide assortment of calibration gases available.



Calibration and Sensor Placement

MSA Guide to Gas Sensor Selection and Placement

General Industry

HVA

Water & Wastewater

Oil, Gas & Petrochemical

STEP 1: To determine where to place sensors, perform an analysis of the potential gas hazards in your facility.

STEP 2: Create drawings indicating all potential leak sites, as well as the severity of each site's hazard potential.

There are two main categories of hazardous locations:

A. Potential gas discharge points. These are places where hazardous gases may be released, such as valve stem seals, gaskets, compression fittings and expansion joints.

B. Potential contact areas. These are places where hazardous gases may endanger workers, or damage equipment or property. Examples include populated areas, confined spaces, pits, stairwells, crawl spaces, shelters, and residential, business and industrial environments located nearby.

STEP 3: Since gases do not always behave in the same way, take air flow conditions, as well as potential gas pockets, into consideration before placing sensors. MSA smoke tubes (P/N 458481) can be useful in measuring the direction and rate of air flow to determine areas where

In general, when placing sensors the following principles should be considered:

- Place sensors in areas where the air currents are likely to produce the highest gas concentration, including areas where gas buildup is likely, such as corners or stopping points of moving devices that release gas.
- If you are attempting to take a representative room sample, do not place sensors near entrances or fresh air vents (because the sample concentration will be diluted by incoming air) unless there is a need to sample that specific area of the room.
- Place sensors close to the possible gas/leak source.
- Place combustible gas sensors between the potential leak and the ignition source.
- Place toxic gas and oxygen sensors between the potential leak and the populated area, and in the workers' breathing zone.
- Consider ease of access to the sensor for maintenance requirements, such as periodic calibration. Use a remote sensor for high or inaccessible locations.
- Avoid mounting sensors near radio transmitters or other RFI-producing sources (e.g., welding activity and induction heaters), to reduce possible RF interference.
- Avoid locations where airborne particles may coat or contaminate the sensor, such as paint booths.
- Install sensors in a position that prevents water or dust accumulation on the sensor head (which may impede the diffusion of gas into the sensor). The preferred position is facing downward, but horizontal placement is also acceptable.
- Facility air intakes are generally good locations for sensors.
- Ensure that the entire area in question is sufficiently monitored, including little-used areas such as closets, warehouses and other storage areas.
- Factor in the vapor density of the monitored gases when compared to air.

Gas Density and Sensor Placement		
Gases	Gas Density	Sensor Placement
carbon dioxide, heavy hydrocarbons	greater than air	closer to the ground
hydrogen, methane	less than air	near the ceiling
carbon monoxide, nitrogen	similar to air	according to air current path, at or near breathing level (usually 4 to 6 ft. from floor)

Note: This is for informational purposes only and is intended for use as a general guide to important considerations in sensor placement. It is not intended to serve as an exhaustive review of all considerations. Due to the large number of variables present, each site should be considered individually by a trained professional. The services of an Industrial Hygienist (CIH) or Safety Professional (CSP) should be considered if an onsite survey is required.

Professional, Reliable and Responsive



In addition to the extensive range of top quality personal protective equipment and gas detection systems, MSA provides a high level of customised service. MSA's comprehensive and versatile range of services ensures that your equipment and systems will always be reliable, economical and ready for use. MSA is always at your service to provide you with the support you need, when you need it.

MSA also offers a variety of test benches for your workshop with manually or automatically recorded test results. From the mobile test case Multitest to the stationary computer supported test bench ProfiCHECK, your equipment will be tested to the highest professional standards.

All MSA test benches meet the industry standards and manufacturer regulations for the testing of compressed air breathing apparatus, full face masks, demand valves and chemical protective suits.

MSA Service - Your Key to Lasting Performance



MSA offers professional project planning, installation and the commissioning of permanent gas detection systems and permanent Fall Protection systems via MSA's extensive installer network.

After Sales Service

The MSA After-Sales Service includes repair and maintenance services, system modification and spare parts management.

www.msa.net.au/aus_service.html

Training

Access training courses which will enable you to get the best from MSA's range of products and services.

www.msa.net.au/aus_training.html

Software and Workshop Solutions

TecBOS. Solutions for Public Authorities and Safety Organisations



TecBOS.solutions is the modern software system for all public authorities, plant security and safety organisations.

TecBOS.solutions was developed using MSA's extensive experience in the field to meet high safety standards, deal with new kinds of danger and, at the same time, to help work more efficiently. The performance efficiency of your personnel will be maximised through the automation of routine processes and the optimisation of operational procedures.

Three software product lines are available:

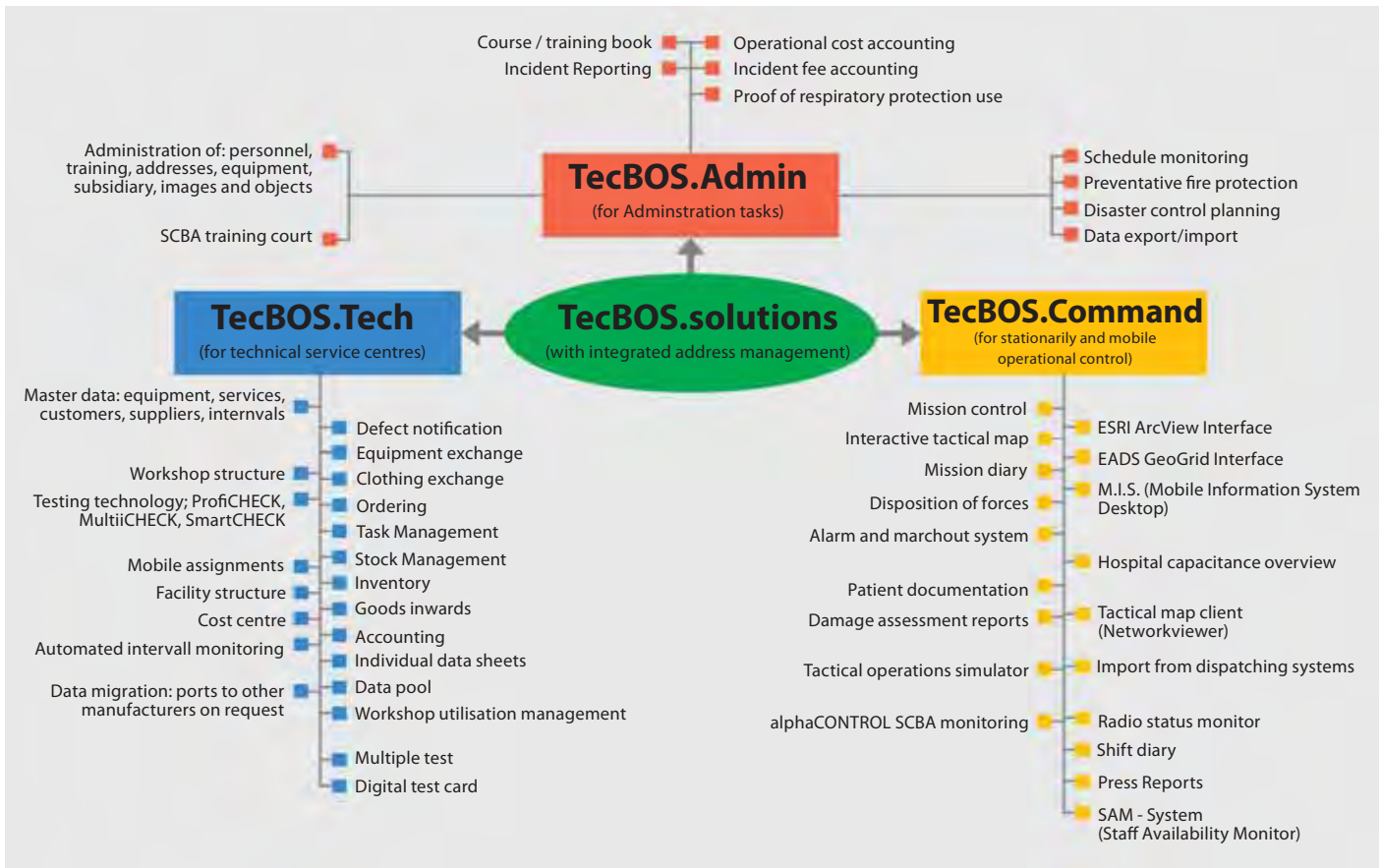
TecBOS.Tech for technical centres [in connection with or without MSA test equipment and asset management.

TecBOS.Command for emergency and incident management in all kinds of command units and centers;

TecBOS.Admin for the administration of every area of your safety organisation.

Thanks to the modular construction of TecBOS.solutions, every user can decide for themselves which module is best for their own particular application. Owing to its integrated hardware components, TecBOS.solutions can be dovetailed into existing work processes.

A range of MSA products such as the automated test benches of the ProfiCHECK series and the respiratory protection monitoring system alpha Personal Network, can be seamlessly integrated into TecBOS.solutions.



TecBOS.Tech

TecBOS.Tech supports numerous types of workshop, for example, for respiratory protection, fire extinguishers, vehicles, radio communications, hoses, and so on - it is an integrated system solution. TecBOS.Tech takes complete control of the consistent logging, registration and administrative procedures for various types of equipment.

The recording of equipment testing dates, upcoming services, as well as the storing of documentation relating to work carried out, replacement 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. This results in a greater efficiency in testing, maintenance scheduling and inventory management of all equipment.

Asset Management Using TecBos.Tech

- . Comprehensive asset and inventory management.
- . Barcode and RFID tracking (scanner optional).
- . Deadline monitoring for devices including preview of future requirements.
- . PDA addon for mobile working.

Part No.	Description
10048780	TecBOS.Tech [Standard]
10053018	TecBOS.Tech [Standard] subsequent licence
10052539	TecBOS.Tech [Professional]
10053036	TecBOS.Tech [Professional] subsequent licence

Upgrade "Premium" is available on request.

Software Solutions



TecBOS.Command

The software module TecBOS.Command is an information and communication system for incident managers. It has been especially designed for the management of disaster areas and for extraordinary events of all kinds. The automatic monitoring of deployed resources is supported through the respiratory protection monitoring system, either by telemetric or conventional means.

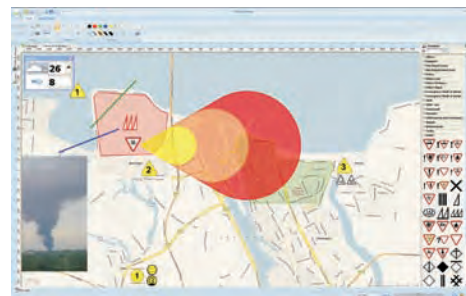
TecBOS.Command, amongst other functions, provides support for operational control through the automated management, documentation and communication of the incident. All processes are automatically recorded and managed in the incident log. The module "emergency simulation trainer" helps to optimise incident planning and tactics. Other available functions support public relations tasks and the post-incident analysis of events.

The interactive tactical map with integrated record and playback functions for example, provides a complete visualisation of events taking place on the ground.



Part No.	Description
10052604	TecBOS.Command [Standard]
10053071	TecBOS.Command [Standard] subsequent licence
10067487	TecBOS.Command interactive tactical map

Upgrades "Professional" and "Premium" are available on request.



TecBOS.Admin

TecBOS.Admin is the optimal software module for the administration of all information relating to personnel, training, fees/charges and fire prevention [facility management].

Besides the gathering and processing of the above information, statistical data and information on ongoing processes is also provided by the system. The preparation of charge accounts, as well as the transfer of incident reports and invoices, are just some of the other features available with this system.

Part No.	Description
10052601	TecBOS.Admin [Standard]
10053038	TecBOS.Admin [Standard] subsequent licence

Upgrades "Professional" and "Premium" are available on request.

Service & Workshop Solutions

Versatile Test Bench Family & Compressors



SmartCHECK.basic

SmartCHECK.basic is the next generation compact and fully automatic test bench for any SCBA equipment on the market today. It features an integrated computer system with touchscreen. The software TecBOS.Tech with Wizard, an intelligent assistant, allows intuitive operation. The user is guided step by step through the smart test-process.

The fully automatic SmartCHECK.basic performs a complete range of tests for: full face masks, lung governed demand valves, compressed air breathing apparatus and chemical protective suits according to EN and local standards i.e. VFdB. The stiff material of the test head ensures a tight fit and makes mask handling easy. The basic SmartCHECK.basic offers all standard static tests for low and medium pressure.

Part No.	Description
10107176	SmartCHECK.basic Test Bench



ProfiCHECK.net

ProfiCHECK.net

Reliable equipment is core to your effectiveness. Our flagship test bench model is the essential tool for modern breathing equipment workshops. The fully automatic ProfiCHECK.net performs a complete range of tests of self-contained breathing apparatus components and chemical protective suits. An artificial lung allows for dynamic testing. It includes the full-featured TecBOS.Tech equipment management software and is network-capable.

Part No.	Description
10028223T	ProfiCHECK.net without P



Compressor 260/330 EF Low Noise

Compressors

MSA offers compressors that charge 200 and 300 bar compressed air cylinders at the same time. The quality of the breathable air meets the specifications of EN 12021.

The range includes models that offer a variety of different features: standard or noise – suppression enclosures for “superquiet” compressors [64 dB], filling panels with up to nine cylinder connections, air supply from 160 – 450 l/min., compressors with three pressure settings. Other features include: fully automatic condensate removal and the easy replacement of filter/drying cartridges.









An operating hours counter or a supplementary humidity monitor indicate when the filters have to be replaced. Compressors and charging panels are offered with the option of a separate mounting in accordance with German Standard DIN 14092 [Fire Stations, Respiratory Protective Equipment Workshops].








Airtester HP and MP

Monitoring set for compressed breathable air at factory airlines, compressor and cylinders, in accordance with DIN EN 12021.



Airtester HP

	Supplied Air Respirators	1
	Air-Purifying Respirators	23
	Head, Eye and Face Protection	52
	Hearing	86
	Mine Lighting	97
	Industrial Safety Apparel	98
	Chemical Protective Suits	113
	Ballistic Protection	119

	Hand Protection	129
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Handy Reference Tools!

Look for a product by NAME
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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 detailed information concerning proper use and care of these products.

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