

Safety Equipment for Construction

2011–2012



MSA
The Safety Company

MSA Products for Construction

Logo Express® Service for MSA Helmets

Customize to Make it Yours!



Custom Imprinting and Striping

A variety of MSA helmets can be customized with your logo, slogan, or striping. You can select the colors and the areas to be imprinted based on available options per our guidelines. MSA uses both single and multi-color imprinting techniques to provide a choice of up to four colors.

Image 2000SM

MSA offers the Image 2000 Service, which uses a photographic process to reproduce images. Available on white MSA helmets only.

Ordering Information

A minimum quantity of 20 custom-imprinted caps or hats (of the same size and model) is required for initial and repeat orders.

See Bulletin ID 0617-03-MC for more information.

If you have any questions, please call your local MSA distributor or MSA Logo Express 1-800-MSA-LOGO (1-800-672-5646).

More details are also on our LogoExpress Web site:
www.MSAnet.com/logoexpress



V-Gard Protective Hats and Caps



Classification: Type I
Application: General Purpose
Shell Material: Polyethylene
Available Styles: Slotted Cap; Non-Slotted Full Brim Hat
Sizes: Small (6 – 7¹/₈"); Standard (6¹/₂ – 8"); Large (7 – 6¹/₂")
Standards: ANSI/ISEA Z89.1-2009 (Class E); CSA Z94.1-2005 (Class E)
Certification: Third-party by SEI
Customization: Imprinting and striping available

 *Customize to Make it Yours!*
MSA Logo Express can customize your helmets with your company logo and choice of reflective striping. For more information, see p. 2.

 *For Cap & Hat Accessories, See pp. 10-11*

NOTE: Small and Large V-Gard Caps are NOT CSA-certified. Standard-size V-Gard Caps and Hats are CSA-certified when assembled with MSA's Fas-Trac or 1-Touch Suspension ONLY.

Our **Hard Hat Accessories Compatibility Chart** can help you select the right MSA accessories to customize your cap or hat. For more information, see pp. 10–11.

V-Gard Complete Assemblies

Color	Small V-Gard Slotted Cap		Standard V-Gard Slotted Cap			Large V-Gard Slotted Cap		V-Gard Hat Non-Slotted		
	w/ Staz-On Suspension	w/ Fas-Trac Suspension	w/ Staz-On Suspension	w/ 1-Touch Suspension*	w/ Fas-Trac Suspension*	w/ Staz-On Suspension	w/ Fas-Trac Suspension	w/ Staz-On Suspension	w/ 1-Touch Suspension*	w/ Fas-Trac Suspension*
White	466354	477477	463942	10057441	475358	473284	477482	454733	10058321	475369
Blue	466355	477478	463943	10057442	475359	476928	477483	454732	10058320	475368
Yellow	466356	477479	463944	10057443	475360	473285	477484	454730	10058318	475366
Orange	.	.	463945	10057444	475361	.	See Note	454734	10058322	496075
Red	.	.	463947	10057446	475363	.	.	454736	10058324	475371
Green	.	.	463946	10057445	475362	.	.	454735	10058323	475370
Gray (navy)	.	.	463948	10057447	475364	.	.	454731	10058319	475367
Hi-Viz® Orange**	.	489368	488148	10057420	488146	.	489364	489360	10058326	10021292
Hi-Viz Yellow-Green**	.	.	.	10061514	10061512	.	.	.	10061516	10061515
Bright Lime Green	.	.	815558	.	815565	.	.	815562	.	815570
Dark (Canadian) Blue	802972	.	.	.	.	802975
Gold	.	.	464852	.	475365	.	.	.	.	.
Robin's Egg Blue	.	.	463111	.	495853	.	.	.	.	.
Brown	.	.	464658	.	495854	.	.	.	.	.
Silver	.	.	484340	.	495855	.	.	.	.	.
Tan	.	.	461180	.	.	.	.	.	.	.
Black	.	.	475235	.	492559	.	.	.	.	.
Light Buff	.	.	478237	.	495856	.	.	.	.	.
Purple	.	.	488398	.	495858	.	.	.	.	.
Pink	495862	.	.	.	.	.

Special V-Gard Assemblies

Hi-Viz® Orange w/Yellow-Green Stripe**	.	.	.	10102195	10102193	.	.	.	.	.
Hi-Viz® Yellow-Green w/Red-Orange Stripe**	.	.	.	10102234	10102233	.	.	.	.	.
Hi-Viz® Yellow-Green w/Silver Stripe**	.	.	.	10102196	10102194	.	.	.	.	.
White, w/Lamp Bracket & Cord Holder (Class C)	.	.	460018	.	.	.	.	460069	.	815009
White, w/American Flag	.	.	474159	.	.	.	.	.	.	.

V-Gard Assembly with Swing-Ratchet Suspension

White standard-size V-Gard Cap, w/Swing-Ratchet Suspension 10004689

* Certified to CSA.

** V-Gard Cap/Hat meets the voluntary standard for hi-visibility as prescribed by ANSI/ISEA Z89.1-2009. Look for the official hi-visibility marking [HV] on the helmet's ANSI label.

⚠ WARNING

Do not mix suspension and helmet sizes. Make sure the sizes match (example: standard-size suspension with standard-size helmet). Use only MSA suspensions in an MSA helmet. Failure to comply with the above will reduce the energy-absorbing ability of the protective helmet, which can result in serious injury or death.

MSA Products for Construction

V-Gard Protective Hats and Caps



MSA V-Gard® Hat and Cap Assemble-To-Order Matrix

		Option	Code	Selection	
4 Country	Choose the country to which your order will be shipped.	United States	1		
		Canada	2		
5 Item Quantity	Choose your helmet order quantity.	20	A		
		60	C		
		100+	E		
		V-Gard Hat (Std Size)	A		
6 Helmet Type	Choose the style of your helmet.	V-Gard Cap (Std Size)	B		
		White	A		
7 Shell Color/ Design	Choose your helmet color.	Blue	B		
		Yellow	C		
		Red	D		
		Orange	E		
		Green	F		
		Hi-Viz™ Orange	H		
		Hi-Viz Yellow-Green	K		
		8 Suspension Type	Choose your helmet suspension. NOTE: If "A" is chosen, the assembly is NOT CSA-certified.	Staz-On® Suspension (Pin-Lock)	A
Fas-Trac® Suspension (Ratchet)	B				
9-13 Logo Option	Choose your type of logo. New: MSA does not have this logo on file. Repeat: MSA has this logo on file w/ BL#. NOTE: For #10-13, enter "0" to select no logo for that specific location.	New	1		
		Repeat	2		
		Location(s):			
		10) Front BL#	1		
		11) Back BL#	2		
		12) Left BL#	3		
14 Stripe Option	Choose size and color of stripe(s). NOTE: Sizes are in inches.	13) Right BL#	4		
		None	0		
		½ x 26 Silver	C		
		¾ x 20 Silver	D		
		1 x 4 Silver	F		
15 Stripe Reflectivity	Choose the reflectivity of the stripe(s): Choose "0" if no stripes are to appear anywhere on the helmet (#14 is "0"). If #14 is C or F or H, code 1 must be used.	1 x 4 Red	H		
		None	0		
		100 Candle Power	1		
16 Stripe Quantity	Choose the quantity of stripes: Choose "0" if no stripes are to appear anywhere on the helmet (#14 is "0"). If #14 is C or D, code 1 must be used.	500 Candle Power	2		
		None	0		
		One Stripe	1		
		Two Stripes	2		
		Three Stripes	3		
17-20 Stripe Location(s)	Choose your stripe locations. NOTE: For #17-20, enter "0" if there is not a stripe in that particular location; otherwise, enter the corresponding number (1 through 4).	Four Stripes	4		
		Location(s):			
		17) Front	1		
		18) Back	2		
		19) Left	3		
		20) Right	4		

For more options, please consult: MSA24 Network via www.MSAnet.com, MSA Logo Express® Service bulletin #0617-03-MC via www.MSAnet.com, or MSA Customer Service at 1.800.MSA.2222.

Your Model Number

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

Selection...	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A-VGD-																	

V-Gard Protective Hats and Caps

Replacement Suspensions for V-Gard Caps and Hats



Fas-Trac (Ratchet) Suspension

Fas-Trac® Suspension

Small (6–7 ¹ / ₈)	492567
Standard (6 ¹ / ₂ –8)	10087220
Large (7–8 ¹ / ₂)	492568

Swing-Ratchet Suspension



Swing-Ratchet Suspension

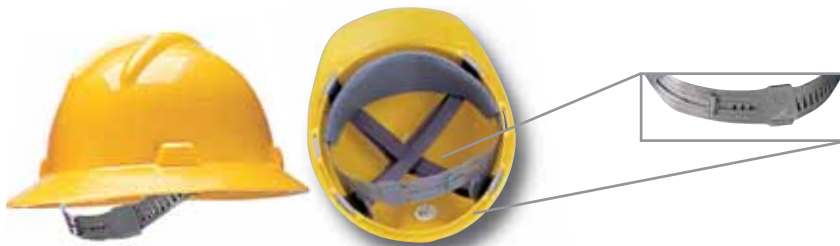
Swing-Ratchet for standard size V-Gard Cap or Hat (6 ¹ / ₂ –7 ⁵ / ₈)	816645
---	--------



1-Touch Suspension

1-Touch® Suspension

For standard size V-Gard Cap or Hat (6 ¹ / ₂ –8)	10061123
--	----------



Staz-On (Pin-Lock) Suspension

Staz-On® Suspension

Small (6–7 ¹ / ₈)	467386
Standard (6 ¹ / ₂ –8)	10087218
Large (7–8 ¹ / ₂)	492566





NFL V-Gard® Protective Caps

NFL V-Gard Slotted Caps

Come individually packaged in a display box!

- Classification:** Type I
- Application:** General Purpose
- Shell Material:** Polyethylene
- Available Styles:** Slotted Cap
- Sizes:** Standard (6 1/2 – 8")
- Standards:** ANSI/ISEA Z89.1-2009 (Class E);
CSA Z94.1-2005 (Class E)
- Certification:** Third-party by SEI



"Six-Pack" Steelers V-Gard Assemblies

V-Card Cap (Standard Size)	Part No.
Black Steelers "Six-Pack" V-Gard Cap	10102205
Gold Steelers "Six-Pack" V-Gard Cap	10102206



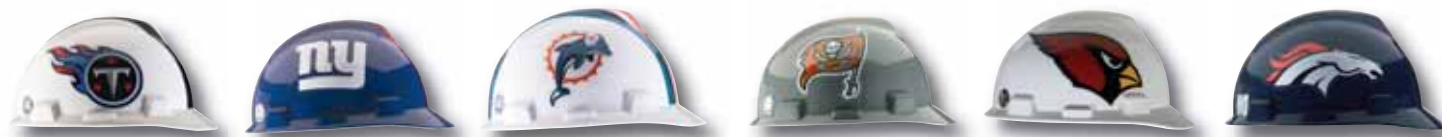
New Style NFL V-Gard Assemblies

V-Card Cap (Standard Size)	Part No.	V-Card Cap (Standard Size)	Part No.	V-Card Cap (Standard Size)	Part No.	V-Card Cap (Standard Size)	Part No.
Arizona Cardinals	10098024	Dallas Cowboys	10098072	Miami Dolphins	10098080	Pittsburgh Steelers	10098088
Atlanta Falcons	10098025	Denver Broncos	10098073	Minnesota Vikings	10098081	San Diego Chargers	10098089
Baltimore Ravens	10098026	Detroit Lions	10098074	New England Patriots	10098082	San Francisco 49ers	10098090
Buffalo Bills	10098027	Green Bay Packers	10098075	New Orleans Saints	10098083	Seattle Seahawks	10098091
Carolina Panthers	10098028	Houston Texans	10098076	New York Giants	10098084	St. Louis Rams	10098092
Chicago Bears	10098029	Indianapolis Colts	10098077	New York Jets	10098085	Tampa Bay Buccaneers	10098093
Cincinnati Bengals	10098030	Jacksonville Jaguars	10098078	Oakland Raiders	10098086	Tennessee Titans	10098094
Cleveland Browns	10098071	Kansas City Chiefs	10098079	Philadelphia Eagles	10098087	Washington Redskins	10098095

More Options!

NFL V-Gard Caps

NOTE: These styles are not packaged in a display box.



NFL V-Gard Assemblies

V-Card Cap (Standard Size)	Part No.	V-Card Cap (Standard Size)	Part No.	V-Card Cap (Standard Size)	Part No.	V-Card Cap (Standard Size)	Part No.
Arizona Cardinals	818384	Dallas Cowboys	818392	Miami Dolphins	818399	Pittsburgh Steelers	818407
Atlanta Falcons	818385	Denver Broncos	818393	Minnesota Vikings	818400	San Diego Chargers	818408
Baltimore Ravens	818386	Detroit Lions	818394	New England Patriots	818401	San Francisco 49ers	818409
Buffalo Bills	818387	Green Bay Packers	818395	New Orleans Saints	818402	Seattle Seahawks	818410
Carolina Panthers	818388	Houston Texans	10031348	New York Giants	818403	St. Louis Rams	818411
Chicago Bears	818389	Indianapolis Colts	818396	New York Jets	818404	Tampa Bay Buccaneers	818412
Cincinnati Bengals	818390	Jacksonville Jaguars	818397	Oakland Raiders	818405	Tennessee Titans	818413
Cleveland Browns	818391	Kansas City Chiefs	818398	Philadelphia Eagles	818406	Washington Redskins	818414

NFL Properties, the NFL, and its Member Clubs make no express or implied claims with respect to the effectiveness and safety of these products and have not manufactured or endorsed these products in any way.

Freedom Series™ V-Gard Protective Caps and Hats



P/N 10052945 (Cap) P/N 10071157 (Hat)



P/N 10052947 (Cap) P/N 10071159 (Hat)



P/N 10103908 (Cap) P/N 10104254 (Hat)



P/N 10050611

American Freedom Series Assemblies

Full Decoration	V-Card Cap (Standard Size)	V-Card Hat (Standard Size)
American Eagle	10079479	•
American Stars and Stripes	10052945	10071157
American Flag with 2 Eagles	10052947	10071159
Camouflage	10103908	10104254
Dual American Flag	10050611	•

Canadian Freedom Series Assemblies

Full Decoration	V-Card Cap (Standard Size)	V-Card Hat (Standard Size)
White with Red Maple Leaf	10050613	10082234
Black with Red Maple Leaf	10082233	10082235
Camouflage w/Canadian Flag on front*	10104925	•

* not pictured



P/N 10082233 (Cap) P/N 10082235 (Hat)



P/N 10050613 (Cap) P/N 10082234 (Hat)

- Classification:** Type I
- Application:** General Purpose
- Shell Material:** Polyethylene
- Available Styles:** Slotted Cap; Non-Slotted Full Brim Hat
- Sizes:** Standard (6 1/2 – 8")
- Standards:** ANSI/ISEA Z89.1-2009 (Class E);
CSA Z94.1-2005 (Class E)
- Certification:** Third-party by SEI
- Customization:** Imprinting available

Customize to Make it Yours!
MSA Logo Express can customize your helmets with your company logo and choice of reflective striping. For more information, see p. 2.



*For Cap & Hat Accessories,
see pp. 10-11*

Our **Hard Hat Accessories Compatibility Chart** can help you select the right MSA accessories to customize your cap or hat. For more information, see pp. 10-11.

Specialty V-Gard Protective Caps



V-Gard Caps with "Painted Look" Finish

Classification: Type I
Application: General Purpose
Shell Material: Polyethylene
Available Styles: Slotted Cap
Sizes: Standard (6 1/2 – 8")
Standards: ANSI/ISEA Z89.1-2009 (Class E); CSA Z94.1-2005 (Class E)
Certification: Third-party by SEI
Customization: Imprinting available

Specialty Helmets

Full Decoration	V-Gard Cap with Fas-Trac
Rally Cap	10101535
Metallic Gold	10101854
Black Fire	10092015
Extreme Hi-Viz Cap*	10102180

* Extreme Hi-Viz Cap meets the high-visibility requirements of ANSI/ISEA 107.

V-Gard 500 Caps: Vented and Non-Vented Styles



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

Classification: Type I
Application: General Purpose
Shell Material: Polyethylene
Available Styles: Slotted Cap
Sizes: Standard (6 1/2 – 8")
Standards: ANSI/ISEA Z89.1-2009 (Vented - Class C; Non-Vented - Class E)
Certification: Third-party by SEI
Customization: Imprinting and striping available

V-Gard 500 Cap Assemblies

Color	Style	4-Point Fas-Trac (Standard Size)	6-Point Fas-Trac (Standard Size)
White	Vented	10034018	10034027
Blue	Vented	10034019	10034028
Yellow	Vented	10034020	10034029
Red	Vented	10034022	10034031
Green	Vented	10034023	10034032
Hi-Viz Orange*	Vented	10034026	10034035
Hi-Viz Yellow-Green*	Vented	10074819	10074820
White	Non-Vented	10034088	10034097

* V-Gard 500 Cap meets the voluntary standard for hi-visibility as prescribed by ANSI/ISEA Z89.1-2009. Look for the official hi-visibility marking [HV] on the helmet's ANSI label.



4-Point Fas-Trac Suspension 6-Point Fas-Trac Suspension

Replacement Suspensions

4-Point Fas-Trac Suspension (6 1/2–8)	10034966
6-Point Fas-Trac Suspension (6 1/2–8)	10034967

SmoothDome™ Protective Caps

P/N 10074071



Classification: Type I
Application: General Purpose; Welding
Shell Material: Polyethylene
Available Styles: Slotted Cap
Sizes: Standard (6 1/2 - 8")

Standards: ANSI/ISEA Z89.1-2009 (Class E); CSA Z94.1-2005 (Class E)
Certification: Third-party by SEI
Customization: Imprinting and striping available

SmoothDome Cap Assemblies

Color	4-Point Fas-Trac (Standard Size)	6-Point Fas-Trac (Standard Size)
White	10074067	10084078
Blue	10074068	10084079
Yellow	10074069	10084080
Orange	10074070	10084081
Red	10074071	10084082
Green	10074072	10084083
Gray	10074073	10084084
Hi-Viz Orange*	10074077	10084088
Hi-Viz Yellow-Green*	10074084	10084095
Hi-Viz Orange w/Yellow-Green Stripe*	10095987	10095988
Hi-Viz Yellow-Green w/Orange Stripe*	10095989	10095990
Hi-Viz Orange w/Silver Stripe*	10096141	.
Hi-Viz Yellow-Green w/Silver Stripe*	10096142	.

* SmoothDome Cap meets the voluntary standard for hi-visibility as prescribed by ANSI/ISEA Z89.1-2009. Look for the official hi-visibility marking [HV] on the helmet's ANSI label.

Replacement Suspensions

4-Point Fas-Trac Suspension	10087220
6-Point Fas-Trac Suspension	10092163
Swing-Ratchet Suspension	816645



4-point Fas-Trac Suspension



6-point Fas-Trac Suspension



Swing-Ratchet Suspension

Skullgard® Protective Caps and Hats



P/N 475395

P/N 475407

Skullgard Assemblies

	Skullgard Cap			Skullgard Hat	
	w/ Staz-On	w/ Fas-Trac	w/ Swing-Ratchet	w/ Staz-On	w/ Fas-Trac
Natural Tan	454617	475395	816651	454664	475407
White	454618	475396	.	454665	475408
Yellow	454619	475397	.	454666	.
Red	454620	.	.	.	.
Green	454621	.	.	454668	.
Grey	454622	.	.	.	.
Blue	454623	.	.	.	.
Orange	454626	.	.	454673	.
Hi-Viz Red-Orange*	458702	.	.	.	.

*Skullgard Cap meets the voluntary standard for hi-visibility as prescribed by ANSI/ISEA Z89.1-2009. Look for the official hi-visibility marking [HV] on the helmet's ANSI label.

Replacement Suspensions

Size	Staz-On	Fas-Trac	Swing-Ratchet	1-Touch
Std (6 1/2-8)	454231	473334	816654 (6 1/2-7 5/8)	10061128
Large (7-8 1/2)	468096	478454	.	.

Alternative Skullgard Assemblies

Large Skullgard Cap with Staz-On suspension, natural tan	82018
Large Skullgard Cap with Fas-Trac suspension, natural tan	475405
Standard Skullgard Cap with Staz-On suspension, lamp bracket and cord holder, natural tan	460409
Skullgard Hat with Staz-On suspension, lamp bracket and cord holder, natural tan	460389
Skullgard Cap with Fas-Trac suspension, welder's lugs, natural tan	482002

Classification: Type I
Application: General Purpose; Elevated Temperature*
Shell Material: Phenolic
Available Styles: Non-Slotted Cap; Non-Slotted Full Brim Hat
Sizes: Small (6 - 7 1/8")
Standard (6 1/2 - 8")
Large (7 - 8 1/2")
Standards: ANSI/ISEA Z89.1-2009 (Class G)
Certification: Third-party by SEI
Customization: Imprinting and striping available

* Skullgard Caps and Hats can withstand radiant heat loads up to but not exceeding 350°F.

MSA Hard Hat Accessories Compatibility Chart

Product	Part No.	V-Gard® Slotted Cap	V-Gard Non-Slotted Hat	SmoothDome® Slotted Cap	V-Gard 500 Slotted Cap	Skullgard® Non-Slotted Cap	Skullgard Non-Slotted Hat
Faceshield Frames (visor not included)							
Defender®+ Faceshield Frame with lockdown	10021614*	●		●			
Defender+ Faceshield Frame without lockdown	10021616	●		●	●		
Defender+ Faceshield Frame with lockdown	10021615						
Tempgard® Defender+ Faceshield Frame for elevated temperatures, w/o lockdown	10031191	●					
Defender+ Easy Release Frame with lockdown (black)	10080783	●		●	●		
Defender+ Easy Release Frame with lockdown (black)	10080784						
Slot adapter (for Defender+ Easy Release frame)	10090221	●		●	●		
Defender+ Frame with Instant Release attachment, without lockdown	10037098**	●		●	●		
Defender+ Universal Foldback Faceshield Frame (dielectric [plastic] for cap)	10016742	●		●	●		
Defender+ Universal Foldback Faceshield Frame (dielectric [plastic] for hat)	10005383*		●				●
Defender+ Universal Foldback Faceshield Frame (metal for cap)	488160	●		●			
Defender+ Universal Foldback Faceshield Frame (metal for hat)	488159		●				●
Defender+ Universal Foldback Faceshield Frame (metal)	10079072					●	
Welding Attachments							
Lugs only, for instant release slotted caps	468771	●		●	●		
Lugs only, for instant release non-slotted caps	48733					●	
Instant Release (metal) and lugs for slotted caps	485460	●		●	●		
Instant Release (metal with stop) and lugs for non-slotted caps	91385					●	
Adapter for Welding Helmets and Sparkgards for slotted caps	488525	●		●	●		
EC Adapter Kit for slotted caps (positive positioning type)	806211	●		●	●		
Hearing Accessories							
Sound Control™ HPE for slotted caps	10061272	●		●	●		
Sound Control EXC for slotted caps	10061230	●		●	●		
Sound Control XLS for slotted caps	10061535	●		●	●		
Sound Blocker™ 26 (for use with Defender+ Faceshield Frames ONLY)	10026398	●		●	●		
Sound Blocker 26 for non-slotted caps	10022021					●	
Soprano™ Muff for hats	10034487		●				●
left/RIGHT™, LOW, white for slotted caps	10087439	●		●	●		
left/RIGHT, MED, blue for slotted caps	10087429	●		●	●		
left/RIGHT, HIGH, yellow for slotted caps	10087422	●		●	●		

*Meets CSA Z94.3.

** For use with welding shields



MSA Hard Hat Accessories Compatibility Chart

Product	Part No.	V-Gard® Slotted Cap	V-Gard Non-Slotted Hat	SmoothDome® Slotted Cap	V-Gard 500 Slotted Cap	Skullgard® Non-Slotted Cap	Skullgard Non-Slotted Hat
Seasonal Accessories							
Sunshade, Hi Viz yellow-green fabric with reflective striping	10098032	●	●	●			
Sunshade, Hi Viz orange fabric with reflective striping	10098031	●	●	●			
Sun Shield	697290	●					
Sun Shield	697410		●				
Sun Shield	10039114				●		
Sun Shield	697373						
Stretch Winter Liner	695350	●		●	●	●	
Regular Zero Hood® Liner	86092	●	●	●	●	●	●
Extended-neck Zero Hood Liner	88587	●	●	●	●	●	●
Flame-retardant Zero Hood Liner	802439	●	●	●	●	●	●
Flame-resistant Zero Hood Liner (w/ velcro closure)	696473	●	●	●	●	●	●
Zero Hood Liner (w/ zipper)	10087241	●	●	●	●	●	●
Knit Cap Liner	34929	●	●	●	●	●	●
Economy Liner	697116	●	●	●	●	●	●
Standard Winter Liner	697117	●	●	●	●	●	●
Custom Terri-band Sweatband (single)	10068911	●	●	●	●	●	●
Custom Terri-band Sweatband (pkg of 10)	696688	●	●	●	●	●	●
Necessities							
Chinstrap, 2-pt, 3/4" cotton webbing, attaches to shell	81329	●	●	●	●		
Chinstrap, 2-pt, 3/4" cotton webbing, attaches to suspension	81390	●	●	●	●	●	●
Chinstrap, 2-pt, 3/4" polyester webbing, attaches to shell	88128	●	●	●	●		
Chinstrap, 2-pt, 3/4" polyester webbing, attaches to suspension	81391	●	●	●	●	●	●
Chinstrap, 2-pt, 3/4" Nomex® webbing, attaches to shell	10102191*	●	●	●	●		
Chinstrap, 3-pt, 3/4" nylon webbing, for Vanguard helmets only	804629						
Goggle Retainer for caps (excludes goggles)	459458	●		●		●	
Goggle Retainer for hats (excludes goggles)	449895		●				●
Medical Information Carrier System (pkg of 10) – English/Spanish	10013393	●	●	●	●	●	●
Medical Information Carrier System (pkg of 10) – English/French	10120373	●	●	●	●	●	●
Versalite helmet light with 2 AA alkaline batteries	679259†	●	●	●	●	●	●
Stealthlite helmet light	697261‡	●	●	●	●	●	●
Light holder for slotted cap	814322	●	●	●	●		

*For elevated temperatures.

†Versalite helmet light does not include, but requires, slot adapter to work in helmet slots.

‡Stealthlite helmet light does not include, but requires, batteries and a slot adapter to work in helmet slots.



Accessories for Protective Caps and Hats

Frames for Faceshields



Easy Release Frame with visor and XLS Hearing Protection



The Defender+ Easy Release is designed so the faceshield frame can be easily removed without having to take off the helmet

Defender®+ and Defender+ Easy Release Faceshield Frames

- Front drip-edge splash protection
- Multiple stop positions
- Long-lasting, O-ring, pivot-joint design
- Easy-in, easy-out visor replacement
- Cap lockdown clip option available (V-Gard, Topgard, Thermalgard and SmoothDome Caps only)

Defender+ Faceshield Frames for Slotted Caps (excludes visor)

Defender+ Faceshield Frame for V-Gard and SmoothDome Caps, with lockdown clip	10021614*
Non-locking Defender+ Faceshield Frame for most MSA slotted caps	10021616
Non-locking Defender+ frame for slotted caps	10037098
Defender+ Faceshield Frame for Topgard Caps, with lockdown clip	10021615
Tempgard® Defender+ Faceshield Frame, for elevated temperatures	10031191

Defender+ Easy Release Faceshield Frames (excludes visor)

Must be used with any model MSA ear muffs for slotted caps or the slot adapter (listed below)

Defender+ Easy Release Frame for most MSA slotted caps, with lockdown clip, black	10080783
Defender+ Easy Release Frame for Topgard Cap, with lockdown clip, black	10080784
Slot adapter, attaches Easy Release Frame directly to cap (without ear muffs)	10090221

*Meets CSA Z94.3.

Approvals

All MSA Faceshield Assemblies and Visors meet or exceed applicable requirements of ANSI/ISEA Z87.1.



MSA Hard Hat Accessories Compatibility Chart!

Our **Compatibility Chart** can help you select the right MSA accessories to customize your cap or hat. For more information, see pp. 10–11.

⚠ CAUTION

All faceshield assemblies must be worn with eye protection that meets ANSI/ISEA Z87.1 impact protector requirements.



Defender+ Frame for slotted caps, shown without visor



Defender+ Frame, Sound Blocker 26 Muff Assembly, shown with visor

Accessories for Protective Caps and Hats

Frames and Headgear for Faceshields



Plastic Defender+ Foldback Faceshield Frame (Cap)

Plastic Defender+ Foldback Faceshield Frame (Hat)

Metal Defender+ Foldback Faceshield Frames (Cap)

Defender® + Foldback Universal Faceshield Frames

Foldback Faceshield Frames are available in plastic (dielectric) and metal for MSA caps and hats. These frames can be used with slotted or non-slotted helmets. Visor not included.

For caps, plastic (dielectric)	10016742
For hats, plastic (dielectric)	10005383*
For caps, metal	488160
For hats, metal	488159
For Skullgard Cap only, metal	10079072

*Meets CSA Z94.3.

⚠ WARNING

Do not use metal Universal Foldback Faceshield Frames in electrical applications. Failure to follow this warning can result in serious injury or death.



Defender+ Headgear with Faceshield and Chinguard

Defender+ Headgear with Ratchet and Extended High-Temp Sparkgard

Defender+ Headgear for Faceshields

For use where no hardhat is required. Defender+ Headgear for Faceshields are available in three versions and all adjust to head sizes 6 1/2 to 8. The extended elevated temperature Sparkgard is for use in temperatures up to 250°F. Visors and chin protectors not included.

Approvals

All MSA Headgear for faceshields meet the applicable requirements of ANSI/ISEA Z87.1.

⚠ CAUTION

All headgear for faceshields must be worn with eye protection that meets ANSI/ISEA Z87.1 impact requirements.

Defender+ Headgear, standard Sparkgard, pin-lock suspension	10021610
Defender+ Headgear, standard Sparkgard, ratchet suspension	10021611*
Defender+ Headgear, extended elevated-temperature Sparkgard, ratchet suspension	10021612

*Meets CSA Z94.3.

Accessories for Protective Caps and Hats

Visors, Chinguards, Nitrometers



MSA Visors

Choose from a wide variety of visors that fit MSA faceshield frames. **MSA visors are manufactured for use ONLY on MSA frames and assemblies in order to comply with ANSI/ISEA Z87.1-2010.**

Visors should always be worn with eye protection, such as goggles or spectacles, that meet ANSI/ISEA Z87.1-2010 impact protector requirements. Visors should be inspected frequently and replaced immediately if worn, scratched, or damaged in any way. Selection of proper models for specific hazards and communication of all instructions, precautions, and limitations to the wearer is the responsibility of user safety specialists, who are also responsible to see that they are strictly observed. Failure to comply with any of the above could result in serious injury or death.

Approvals

Except as noted, MSA visors meet the general and impact protector requirements of ANSI/ISEA Z87.1-2010.

⚠ WARNING

Visors that meet only the general protector requirements of ANSI/ISEA Z87.1-2010 should never be used where an impact protector is required. A hazard assessment should always be done before using protectors that meet only general protector requirements.

⚠ CAUTION

Clean visor with mild soap and water only. Cleaning dry or with coarse cloth will scratch the visor.

⚠ WARNING

Do not use MSA visors for welding, elevated temperature applications, or for protection against other infrared radiation sources unless the MSA visor is approved for such applications. Do not use for sports, simulated war games, paintball games, or similar activities. A pitted or scratched visor reduces eye protection and vision. Inspect routinely and replace worn or damaged parts immediately. Do not alter or modify this product. Do not use near open flame. Failure to follow these warnings can result in permanent impairment of sight, other serious personal injury, or death.

Polycarbonate Visors	Size (inches)	Part No.
Clear (Molded)	9.5 x 19.5 x .07	10063106
Clear (Formed)	7.88 x 15.76 x .04	488131
Clear (Formed)	7.88 x 15.76 x .06	488132
Clear (Flat)	7.75 x 15.5 x .04	10017934*
Clear (Formed)	9.47 x 18.94 x .06	488138
Clear (Formed)	5.75 x 15.76 x .06	491908
Clear (Fog-free)	7.75 x 15.76 x .06	802337
Propionate Visors (Molded) All propionate visors meet ANSI/ISEA Z87.1-2010 general protector requirements ONLY.	Size (inches)	Part No.

Clear	8 x 15.5 x .06	10109107
Dark Green	8 x 15.5 x .06	10109109
Dark Green	9.5 x 19.5 x .06	10109113
Shade 3 (Green)	8 x 15.5 x .06	10086996
Shade 5 (Green)	8 x 15.5 x .06	10005882

Nitrometer Visors and Chin Protectors

Visors	Size (inches)	Part No.
Clear polycarbonate (Formed)	5.75 x 15.76 x .04	488126
Clear polycarbonate (Formed, Fog-free)	7.75 x 18.94 x .06	494916
Shade 5 (Green) propionate – ANSI/ISEA Z87.1-2010 general protector requirements ONLY (Molded, must be worn with chin protector)	6.5 x 15.5 x .06	10005881

Chin Protectors (for use w/Nitrometer Visors)	Part No.
Clear polycarbonate	10022241
Black polypropylene	10022242
Black polycarbonate (use ONLY with P/N 10005881)	10013631

Wire Screen Visors All wire screen visors meet ANSI/ISEA Z87.1-2010 general protector requirements ONLY	Size (inches)	Part No.
Plastic edge, 20 mesh (not for use in elevated temperatures)	6.35 x 15.72	476356
Aluminum edge, 20 mesh (flat, not for use in areas where splash may occur)	7.96 x 17.44	457409
Arc Shield Visor Assembly Arc shield visor assembly meets ANSI/ISEA Z87.1-2010 general protector requirements ONLY.	Size (inches)	Part No.

For protection from electric arcing. Call for protection level. Meets ANSI/ISEA Z87.1 and NFPA 70E 2009, Classes 1 & 2.

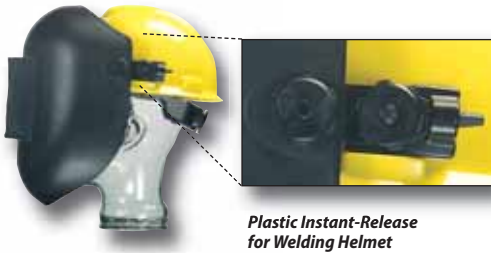
Tinted (light green/brown) complete with chin protector, 11 Cal – propionate (Molded)	7.25 x 20.5 x .07 **	10063107
Elevated-Temperature Visors	Size (inches)	Part No.
Clear polycarbonate, with gold coating (Molded)	9.5 x 19.5 x .07	10005879
Medium Green polycarbonate with gold coating (Molded)	9.5 x 19.5 x .07	10005880

*Meets CSA Z94.3.

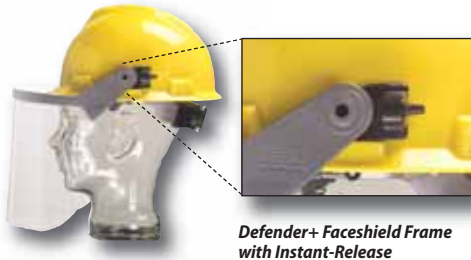
** Size includes chin protector, as the visor must be worn with the chin protector.

Accessories for Protective Caps and Hats

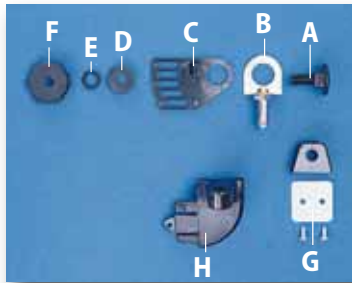
Welding Adapter Kits



Plastic Instant-Release for Welding Helmet



Defender+ Faceshield Frame with Instant-Release



Adapter Kits for Welding Shields and Defender+ Assembly

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

Welding Adapter Kits

Standard Adapter for Welding Helmets and Sparkgards	488525
EC Adapter Kit (positive positioning type)	806211
Sparkgard only	456568

Plastic Instant-Release Attachment*

Quick Disconnect Kit, welder's adapter, with lugs	10036456
---	----------

*Note: Cannot be used on Vented Advance Caps.

Defender+ Frame with Instant-Release Attachment

Defender+ frame for slotted cap, without lock-down	10037098
--	----------

Metal Instant-Release Attachment

Instant-Release and lugs for slotted caps (A, B, C, D, E, F, H)	485460
Lugs only, for instant-release slotted caps (H)	468771
Lugs only, for instant-release non-slotted caps (G)	48733



EC Adapter (left) and Sparkgard (right)—use plastic or metal Instant-Release with Sparkgard



Metal Instant-Release Attachment



Welding Shields and Accessories

MSA's thermal plastic welding shields protect workers eyes and face from infrared burns, flying sparks, hot metal spatter and chips encountered in welding operations. The nylon welding shields come in a variety of styles.

For shade 5 IR welding visors, see p. 14.

For shade 5 IR welding spectacles, see p. 20.

Sightgard Welding Plates

Polycarbonate Plates

Meet ANSI/ISEA Z87.1

Plate Size (in.)	Shade	Part No.
2 x 4 ¹ / ₄	5	791923
2 x 4 ¹ / ₄	10	791928
2 x 4 ¹ / ₄	12	791930
4 ¹ / ₂ x 5 ¹ / ₄	10	38347
4 ¹ / ₂ x 5 ¹ / ₄	12	38277

Polycarbonate Cover/Back Plates

Plate Size (in.)	Shade	Part No.
2 x 4 ¹ / ₄	clear	791933
4 ¹ / ₂ x 5 ¹ / ₄	clear	696095

Welding Shields—Fronts Only

Less headgear and attachments

Plate Size 2" x 4 ¹ / ₄ "	Part No.
Non-coated black, slim-line, lift front	695943
Non-coated black, full-curved, lift front	695946
Plate Size 4 ¹ / ₂ " x 5 ¹ / ₄ "	Part No.
Coated silver, slim-line, fixed front	695888

Accessories for Protective Caps and Hats



Stealthlite & Light Holder for Slotted Caps

VersaLite Helmet Light

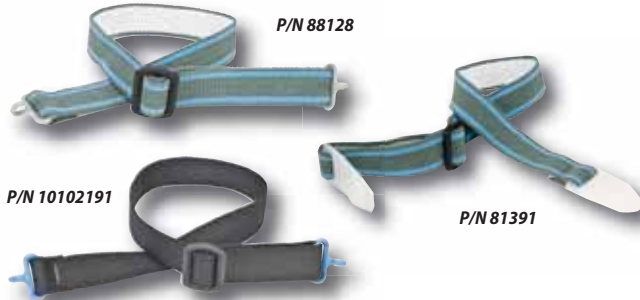
Helmet Lights

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

VersaLite Helmet Light with 2 AA alkaline batteries	697259*
Stealthlite Helmet Light (batteries not included)	697261**
Light holder for slotted Cap—no metal parts	814322

*Versalite helmet light does not include, but requires, slot adapter to work in helmet slots.

**Stealthlite helmet light does not include, but requires, batteries and a slot adapter to work in helmet slots.



P/N 88128

P/N 10102191

P/N 81391

Chinstraps

Chinstrap, 2-pt, 3/4" cotton webbing, attaches to shell	81329
Chinstrap, 2-pt, 3/4" cotton webbing, attaches to suspension	81390
Chinstrap, 2-pt, 3/4" polyester webbing, attaches to shell	88128
Chinstrap, 2-pt, 3/4" polyester webbing, attaches to suspension	81391
Chinstrap, 2-pt, 3/4" Nomex® webbing, attaches to shell	10102191*
Chinstrap, 3-pt, 3/4" nylon webbing, for Vanguard helmets only	804629

*For elevated temperatures.



Medical Information Carrier System (inside view)



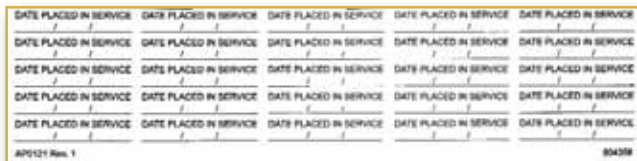
Medical Information Carrier System (outside view)

Helmet Information Labels

Medical Information Carrier System

This simple hardhat accessory provides crucial, lifesaving information in the event of a medical crisis on the job.

Medical Information Carrier System (pkg of 10) – English/Spanish	10013393
Medical Information Carrier System (pkg of 10) – English/French	10120373



In-Service Helmet Label sheet

In-Service Helmet Label

Add this label to the inside of your helmet. Complete the information with the date that your helmet was first used in order to track the shell's service life. MSA recommends that you replace the shell every 5 years and the suspension every 12 months.

In-Service Helmet Label (sheet of 25)	804358
---------------------------------------	--------



Yellow-Green SunShade

Orange SunShade

SunShade Hard Hat Accessory

MSA's SunShades not only help to protect wearer's ears and neck from sun and heat, but also enhance worker visibility with contrasting color band and reflective striping. Fit most hats and caps. Features include:

- Breathable, high-visibility mesh fabric
- Choice of high-visibility yellow-lime or orange colors
- Hat clips help to keep SunShade from falling or rotating
- Point-of-sale packaging and scannable UPC-A barcode

SunShade, Yellow-Green, with reflective striping	10098032
SunShade, Orange, with reflective striping	10098031

Passive Helmet-Mounted Hearing Protectors

Hearing Protection for Caps and Hats

Third-party tested in accordance with ANSI S3.19-1974, CSA Class A and EN352-3.

Note: Cap model noise reduction ratings listed below are for medium V-Gard Helmets only.



Sound Control Cap Models

Sound Control Cap Models

HPE cap model, complete with brackets (NRR 27)	10061272
EXC cap model, complete with brackets (NRR 25)	10061230
XLS cap model, complete with brackets (NRR 23)	10061535



left/RIGHT Cap Models

unique design/BETTER FIT

Each cup is specifically designed for the left or right ear in order to conform to your head:

- Adjust individually to ear angle
- Raise and lower muffs independently

left/RIGHT Cap Models

left/RIGHT, LOW, White (NRR 21)	10087439
left/RIGHT, MEDIUM, Blue (NRR 25)	10087429
left/RIGHT, HIGH, Yellow (NRR 28)	10087422



Sound Blocker™ 26 Hearing Protection (NRR 26)

Sound Blocker Cap Models

Sound Blocker 26 cap model for Defender Faceshield Frame	10026398
Sound Blocker 26 cap model for Non-Slotted Caps	10022021



Soprano™ Muff for Hats (NRR 25)

The addition of the Soprano Muff reduces the helmet rating to Class C.

Soprano Muff

Soprano Muff Kit for full-brim Hats	10034487
-------------------------------------	----------

Passive Hearing Protection Headband Models



left/RIGHT Earmuffs

unique design/BETTER FIT

Each cup is specifically designed for the left or right ear in order to conform to your head:

- Adjust individually to ear angle
- Raise and lower muffs independently

10087436	left/RIGHT, LOW, White, headband model (NRR 21)
10092878	Hygiene kit, left/RIGHT, LOW
10087426	left/RIGHT, MEDIUM, Blue, headband model (NRR 25)
10092879	Hygiene kit, left/RIGHT, MEDIUM
10087399	left/RIGHT, HIGH, Yellow, headband model (NRR 28)
10092880	Hygiene kit, left/RIGHT, HIGH



HPE Headband Model Muff (NRR 26)

10061271	HPE headband model
10061291	Hygiene kit, complete with cushions and inserts



EXC Headband Model Muff (NRR 24)

10061229	EXC headband model
10061292	Hygiene kit, complete with cushions and inserts

Economuff™ Multi-Position Earmuff

NRR as worn:

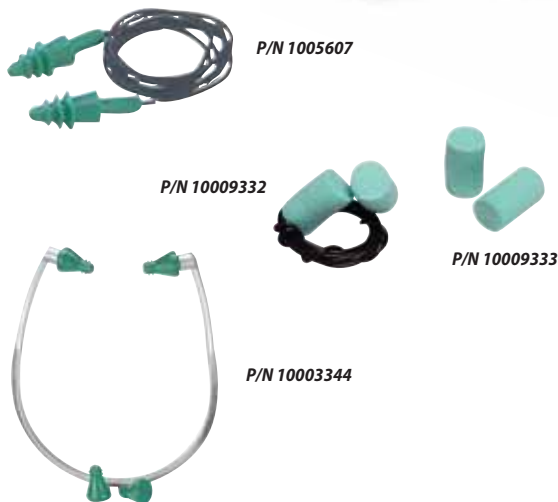
- Over-the-Head (NRR 24)
- Behind-the-Head (NRR 23)
- Under-the-Chin (NRR 23)

10061273	Economuff Multi-Position Earmuff
----------	----------------------------------

Economuff™ Earmuff (NRR 20)

Extremely lightweight at just 8.0 ounces

10004291	Economuff Earmuff
----------	-------------------



Tri-Seal™ Reusable Silicone Ear Plugs (NRR 25)

1005607	Corded, dispenser box of 100 individually packaged pairs
---------	--

FormFit™ Round Disposable Foam Ear Plugs (NRR 29)

10009332	Round, corded, dispenser box of 200 pairs
10009333	Round, non-corded, dispenser box of 200 pairs

Comfort Band™ Hearing Protector (NRR 23)

10003344	Each, must order in multiples of 20
----------	-------------------------------------

Sightgard® Line of Protective Eyewear



Safety Glasses



NEW!

Adder Copper™

- Serpentine hinges
- Removable browguard
- Soft rubber nose bridge and temple tips
- Anti-scratch coating



Clear	10106377
-------	----------



Arctic™

- Lightweight
- Tuff Stuff™ Anti-Scratch Coating
- Full side coverage
- Blue mirror lens offers 99.999% UV protection



PN
10008179
only
UV

Clear	697514
Gray	697515
Blue Mirror	10008179



Mini Arctic™

- Tuff Stuff™ Anti-scratch Coating
- Designed for slender faces
- Close-fitting design



Clear	10106378
-------	----------



Arctic Elite™

- Anti-fog coating
- Rubber tipped temples
- Rubber nose bridge



PN
10059671
only
UV

Clear	10038845
Gray	10038846
Indoor/outdoor (I/O) Mirror	10059671



Aurora™

- 7-base curve lens
- Anti-fog coating
- Ratchet temple adjustment



Clear	10026005
Gray	10026006



NEW!

Blockz™

- Sliding temple adjustment
- Tuff Stuff™ Anti-scratch Coating
- Anti-fog coating



Clear	10106379
-------	----------

MSA Products for Construction

Sightgard® Line of Protective Eyewear



Blockz VM™

- Lens color increases contrast
- Tuff Stuff™ Anti-scratch Coating
- Anti-fog coating



Vermillion	10106380
------------	----------



Clearvue®

- Fits over most prescription lenses
- Shade 5 IR lens
- Anti-fog coating

Shade 5 IR	10012847
------------	----------



Discovery™ II

- Tuff Stuff™ Anti-scratch Coating
- Lightweight and flexible
- Soft rubber nose bridge
- Meet CSA Z94.3



Clear	10106382
-------	----------



Easyflex™

- Tuff Stuff™ Anti-scratch Coating
- Temples and frame flex for comfortable fit



Clear	10070917
Gray	10070918
Sky Orange Mirror	10070921



Easyflex

- Amber lens increases contrast
- Tuff Stuff™ Anti-scratch Coating
- Temples and frame flex for comfortable fit



Amber	10070919
-------	----------



Espresso™

- 99.999% UV protection
- Tight-wrapping design
- Soft rubber nose pads



Brown Polarized	10106383
-----------------	----------



NEW!

Feather Fit™ Gray

- 99.999% UV protection
- Rubber flange nosepiece
- Rubber temple grips



Gray	10106384
------	----------



Luxor™

- Single wrap style lens
- Tuff Stuff™ Anti-scratch Coating
- Horizontal temple adjustment
- Meet CSA Z94.3



Clear	697516
Gray	697517



NEW!

Nuevo Wrap™

- 99.999% UV protection
- Stylish comfort
- Anti-fog coating
- Meet CSA Z94.3



Gray	10106385
------	----------



Plant Visitor

- Fits over most prescription lenses
- Integral, vented side shields
- Meet CSA Z94.3



Clear	10027944
Clear, Box of 10	697500
Clear, Box of 144	10008174



Pyrenees™

- Full side protection
- Anti-fog coating
- Dual-injected soft tip temples
- Amber lens increases contrast
- Meet CSA Z94.3



Clear	10033718
Gray	10033719
Amber	10033740



NEW!

Racer™ Red

- Rich red mirrored lens
- 99.999% UV protection
- Anti-fog coating



Sky Red Mirror	10106381
----------------	----------

Sightgard® Line of Protective Eyewear



Rx Overlasses

- Fits over most prescription lenses
- Anti-fog coating
- Horizontal and vertical temple adjustment



Clear	10008175
Gray	10012855



Sierra™

- Vented browguard
- Anti-fog coating
- Meet CSA Z94.3



PN 697505 only



Clear (teal frame)	697505
Gray (black frame)	10010572
Clear (blue frame)	10018662



Sierra

- Tuff Stuff™ Anti-scratch Coating
- Integral side protection
- Adjustable temples
- Meet CSA Z94.3



Clear (black frame)	697550
Gray (black frame)	10010570



Vista™

- Tuff-Stuff™ Anti-scratch Coating
- Lightweight single lens
- Adjustable lens

PN 10070916 only



Clear	10070914
Indoor/outdoor (I/O) Mirror	10070916



Voyager™

- Single wrap style lens
- No metal parts
- Meet CSA Z94.3



PN 10065849 only



PN 10065850 only



Clear	10065849
Gray	10065850



NEW!

Yellow Jacket™

- Amber gradient wrap style lens
- 99.999% UV protection
- Great for indoor or outdoor
- Meet CSA Z94.3



Gradient Amber	10106386
----------------	----------

Safety Vests, Cones, and First Aid



Class II Safety Vest

- Meets ANSI Class II Vest requirements for traffic up to 50 MPH
- Unique integral back pocket storage for when vest is not in use
- Horizontal and vertical stripes for excellent visibility even when bending
- Popular high-viz lime green color stands out better around orange traffic barriers
- UPC-A barcode for retail sale

ANSI Class II Safety Vest, order in multiples of 4	10053455
--	----------



High Visibility Safety Vest

- One size fits all to accommodate most wearers
- Hook and loop closures keep vest closed
- Elastic straps automatically adjust to waistline
- UPC-A barcode for retail sale

High-Visibility Safety Vest, order in multiples of 12	818040
---	--------



Reflective Safety Vest

- Reflective stripes provide increased visibility
- Hook and loop closures keep vest closed
- Elastic straps automatically adjust to waistline
- UPC-A barcode for retail sale

Reflective Safety Vest, order in multiples of 12	817890
--	--------



Safety Cones

- Available in 12", 18" or 28" sizes
- One-piece mold helps prevent cracking
- UPC-A barcode for retail sale

12-inch cones, order in multiples of 20	10073426
18-inch cones, order in multiples of 10	10073425
28-inch cones, order in multiples of 6	10073424



All-Purpose First Aid Kit

- Portable kit with 20 unique emergency response items
- Latex-free kit contents
- Includes instant cold compress
- UPC-A barcode for retail sale

All-Purpose First Aid Kit	10068529
---------------------------	----------



160-Piece First Aid Kit

- Meets ANSI Z308.1-2009 Standard requirements for Type II First Aid Kit
- Dispenser tray helps keep contents organized
- Includes major wound bandage and instant cold pack
- UPC-A barcode for retail sale

160-Piece First Aid Kit	10049585
-------------------------	----------

Approvals and Standards

What is OSHA?

OSHA (Occupational Safety and Health Administration) rules and regulations are enforceable by law. Non-compliance with OSHA rules and regulations can result in stiff penalties and abatement periods.

OSHA REGULATIONS UNDER TITLE 29 OF THE CODE OF FEDERAL REGULATIONS

OSHA's Occupational Safety and Health Standards for General Industry

Subpart D, Walking/Working Surfaces

- Fixed Ladders, Ladder Safety Devices _____ 1910.27 (d) (5)
- Safety Requirements for Scaffolding, Boatswain's Chairs _____ 1910.28 (j) (4)

Subpart F

- Powered Platforms and Building Maintenance _____ 1910.66
- Personal Fall Arrest Systems _____ 1910.66, Appendix C

Subpart R

- Agricultural Operations _____ 1910.267
- Telecommunications _____ 1910.268
- Electric Power Generation, Transmission and Distribution _____ 1910.269

OSHA's Safety and Health Standards for Construction

Subpart E, Personal Protective Equipment

- Safety Belts, Lifelines and Lanyards _____ 1926.104
- Safety Requirements for Scaffolding, Boatswain's Chairs _____ 1926.105

Subpart L, Scaffolding

- Boatswain's Chairs _____ 1926.450-454
- Aerial Lift Platforms _____ 1926.453 (b) (2) (v)

Subpart M, Fall Protection

- Scope, Application and Definitions _____ 1926.500
- Duty to Have Fall Protection _____ 1926.501
- Scope, Application and Definitions _____ 1926.502
- Duty to Have Fall Protection _____ 1926.503

Subpart R, Scaffolding

- Fall Protection _____ 1926.750

Subpart M, Ladders _____ 1926.1053

What is ANSI?


ANSI (American National Standards Institute) is a voluntary standardization system and does not possess the ability to enforce its standards. ANSI facilitates development of national standards by establishing consensus among manufacturers and consumers. Many of OSHA's regulations are adopted from ANSI standards.

ANSI Z359 STANDARD FOR PERSONAL FALL ARREST

The ANSI Z359 Accredited Standards Committee completed work on a new series of fall protection standards that became effective on November 24, 2007. The new standards replace the previous ANSI Z359.1-1992(R1999) and include:

- ANSI Z359.0-2007 _____ Definitions
- ANSI Z359.1-2007 _____ Fall Arrest Systems, Subsystems and Components
- ANSI Z359.2-2007 _____ Minimum Requirements for a Comprehensive, Managed Fall Protection Program
- ANSI Z359.3-2007 _____ Work Positioning and Travel Restriction Systems, Subsystems and Components
- ANSI Z359.4-2007 _____ Assisted-Rescue and Self-Rescue Systems, Subsystems and Components
- ANSI Z359.6 _____ Specifications and Design Requirements for Active Fall Protection Systems
- ANSI Z359.12 _____ Connecting Components for Personal Fall Arrest Systems
- ANSI Z359.13 _____ Personal Energy Absorbers and Energy Absorbing Lanyards

What is CSA?

The Canadian Standards Association (CSA) Technical Committee Z259 sets standards for fall protection equipment and practices. The CSA Certification and Test Division is responsible for testing and certifying products to the CSA Z259 product standards. Other certification organizations, including the Safety Equipment Institute, also certify fall protection equipment to the CSA Z259 standards. Products that are certified to the Z259 fall protection standards carry compliance markings of the certifying agency, for example: or **CSEI**. All Canadian Provinces and Territories require that fall protection equipment  not be certified by a recognized third-party organization in compliance with Canadian standards (or meet equivalent levels of protection approved by the legislative authority).

CANADIAN STANDARDS UNDER THE CSA Z259 FALL PROTECTION SERIES

- CAN/CSA Z259.10-06 _____ Full Body Harnesses
- CAN/CSA Z259.11-05 _____ Energy Absorbers and Lanyards
- CAN/CSA Z259.12-01 _____ Connecting Components for Personal Fall Arrest Systems
- CAN/CSA Z259.13-04 _____ Design of Active Fall Protection Systems
- CAN/CSA Z259.16-04 _____ Design of Active Fall Protection Systems
- CAN/CSA Z259.2.1-1998 _____ Fall Arresters, Vertical Lifelines and Rails
- CAN/CSA Z259.2.2-1999 _____ Self-Retracting Devices for Personal Fall Arrest Systems
- CAN/CSA Z259.2.3-1999 _____ Descent Control Devices



Attachment points



Fall arrest systems are an assembly of components and subsystems, including the necessary connectors, used to arrest the user in a fall from a working height and suspend the user until rescue can be effected.



Suspension Systems permit workers to sit and work safely while elevated. The system is designed to raise or lower, and support a worker at an elevated work station. This system alone cannot be relied upon to provide proper fall arrest protection.

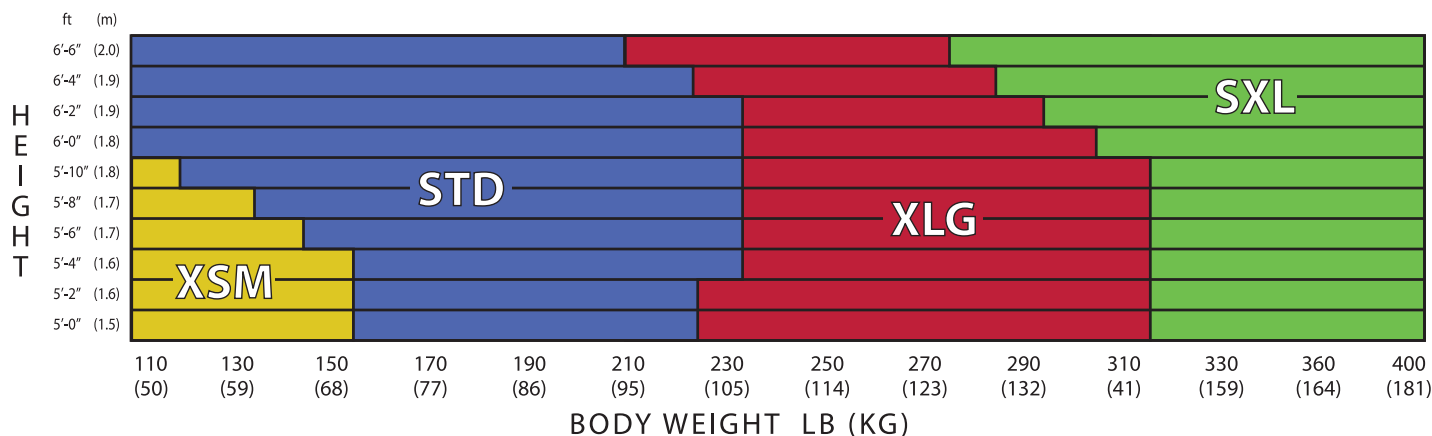


Restraint Systems are an assembly of components and subsystems, including the necessary connectors, used to: (a) stabilize and partially support the user at an elevated work location and allow free use of both hands; (b) restrict the user's motion so as to prevent reaching a location where a fall hazard exists.



Personnel-Riding Systems provide a quick means of raising a user out of, or lowering a worker into, a working environment. The system supports full body weight for a short period of time, but should not be used for suspension. A retrieval system by itself may not provide all the protection a worker requires. Fall arrest and/or restraint systems may also be required.

Harness Sizing



Our commitment to you...

the MSA Fall Protection Promise

MSA promises to replace any MSA harness and/or textile lanyard FREE of charge if a user falls while properly using our product. If the fall occurs while using an MSA mechanical device, we will re-certify the device FREE of charge.

MSA believes it is important to provide high quality products and recognize safe work practices.

Products should be returned with a signed copy of the accident report to:

MSA
Attn: Fall Protection Product Line Manager
1100 Cranberry Woods Drive
Cranberry Twp, PA 16066-5204

MSA Products for Construction

EVOTECH™ Full-Body Harness

MSA's new EVOTECH Full-Body Harness offers the latest design features that improve user comfort, ease of use, durability, and user safety.

NEW!

Comfort



Breathable padding with moisture-wicking material keeps users cooler
No binding edge on shoulder padding—prevents neck chafing



Patent-pending leg strap design keeps leg straps in place, increasing mobility and comfort
Leg strap padding provides additional comfort during work positioning and personnel riding activities

Approvals

- OSHA
- ANSI Z359.1/ANSI A10.32
- CSA Z259.10-06



Patented variable width sub-pelvic webbing provides 50% more surface area for improved weight distribution, improving comfort during work positioning and personnel riding applications



Ease of Use



Patent-pending web management system provides means of storing excess webbing



Available with Qwik-Fit™ Buckle hardware on chest and leg straps; includes slotted mating buckles for easier connection

Available with Tongue Buckle hardware on leg straps



Dual-color webbing—red pattern on outside, black on inside—simplifies harness donning and promotes easy identification of twisted webbing

Added Safety

- Reflective piping integrated into harness webbing increases visibility in low-light environments
- Available with Suspension Trauma Safety Step to improve post-fall comfort and help to prevent suspension trauma
- Available with Medical ID kit—provides vital medical information to potential rescuers/emergency personnel in the event of medical emergencies

Durability

- Web finials prevent fraying on web ends
- NanoSphere® coating on webbing repels dirt, grease, moisture, etc.
- Covered label pack protects labels from environment



Positionable Lanyard clip

3-position back D-ring allows users to determine optimal lanyard connection position



RFID Enabled

RFID chip provides easy means of tracking and inspecting product

Patent-pending single-hand torso adjustment buckles simplify harness adjustment



Part Number	D-Ring Configuration				Size		Leg Strap Type			Chest Strap Type		Padding			Accessories		Standards
	Back	Back, Chest	Back, Chest, Hips	Back, Hips	Standard	X-Large	Quick-Connect	Tongue Buckle	Qwik-Fit	Quick-Connect	Qwik-Fit	None	Shoulder	Shoulder & Leg	None	Safety Step	OSHA/ANSI/CSA
10105889	•				•				•		•	•			•		•
10105890	•					•			•		•	•			•		•
10105931	•				•			•		•			•		•		•
10105932	•					•		•		•			•		•		•
10105933				•	•			•		•			•		•		•
10105935				•		•		•		•			•		•		•
10105936			•		•			•		•			•		•		•
10105939			•			•		•		•			•		•		•
10105940	•				•		•			•			•		•		•
10105941	•					•	•			•			•		•		•
10105942				•	•		•			•			•		•		•
10105943				•		•	•			•			•		•		•
10105944			•		•		•			•			•		•		•
10105945			•			•	•			•			•		•		•
10105946		•			•		•			•			•		•		•
10105947		•				•	•			•			•		•		•
10105948			•		•		•			•				•	•		•
10105949			•			•	•			•				•	•		•
10105950				•	•		•			•				•	•		•
10105951				•		•	•			•				•	•		•
10105952			•		•			•		•				•	•		•
10105953			•			•		•		•				•	•		•
10105954				•	•			•		•				•	•		•
10105955				•		•		•		•				•	•		•
10105956	•				•			•			•		•		•		•
10105957	•					•		•			•		•		•		•
10105958				•	•			•			•		•		•		•
10105959				•		•		•			•		•		•		•
10105960				•	•		•			•				•	•	•	•
10105961				•		•	•			•				•	•	•	•

Additional configurations available. Log on to <http://assetlibrary.msanet.com/> and search for bulletin 2302-53-MC for more information.

TechnaCurv® Full Body Harness

TechnaCurv Harness
Part No. 10053000

The **TechnaCurv Full Body Harness** was designed with your comfort in mind. Features include:

- Curvilinear Comfort System
- Visco-elastic shoulder padding
- Innovative web design
- 400 pound capacity
- Secure-Fit buckles
- Sorbtek fabric on shoulder and sub-pelvic pads
- Integral load indicator
- Meets ANSI Z359.1-2007, ANSI A10.32, all applicable OSHA regulations, and is CSA certified to Z259.10-06

In addition to the features above, the TechnaCurv harness is designed with downward adjusting torso straps on most models to ease adjustment. This is also the first harness on the market that allows you to order exactly the options you want, and only the options you want, through our Assemble-to-Order process. All these features combine to provide you with one of the most comfortable, versatile, unique, and safe harnesses available today.



Part No.	SIZE				STYLE		PADDING		CHEST BUCKLE		LEG BUCKLES			D-RINGS			STANDARDS	
	XSM	STD	XLG	SXL	Vestype	Pullover	Shoulder	Sub-Pelvic	Qwik-Fit	Secure-Fit	Secure-Fit	Tongue	Qwik-Fit	Back	Chest	Hip	Shoulder	OSHA/ANSI/CSA
10041517		X			X				X				X	1	0	0	0	X
10041518		X				X							X	1	0	0	0	X
10041519			X		X				X				X	1	0	0	0	X
10041590			X			X							X	1	0	0	0	X
10041591	X				X				X			X		1	0	0	0	X
10041592			X		X				X			X		1	0	0	0	X
10041593	X					X						X		1	0	0	0	X
10041594			X			X						X		1	0	0	0	X
10041595	X				X				X			X		1	0	2	0	X
10041596			X		X				X			X		1	0	2	0	X
10041597	X					X						X		1	0	2	0	X
10041598			X			X						X		1	0	2	0	X
10041599	X				X		X		X			X		1	0	0	0	X
10041600			X		X		X		X			X		1	0	0	0	X
10041601	X					X	X					X		1	0	0	0	X
10041602			X			X	X					X		1	0	0	0	X
10041603	X				X				X			X		1	0	2	0	X
10041604			X		X				X			X		1	0	2	0	X
10041605	X					X						X		1	0	2	0	X
10041606			X			X						X		1	0	2	0	X
10041607	X				X				X			X		1	1	2	0	X
10041608			X		X				X			X		1	1	2	0	X
10041609	X					X						X		1	1	2	0	X
10041610			X			X						X		1	1	2	0	X
10041611	X				X		X		X			X		1	1	2	0	X
10041612			X		X		X		X			X		1	1	2	0	X
10041613	X					X	X					X		1	1	2	0	X
10041614			X			X	X					X		1	1	2	0	X
10041615	X				X		X	X	X	X				1	1	2	0	X
10041616			X		X		X	X	X	X				1	1	2	0	X
10041617	X					X	X	X		X				1	1	2	0	X
10041618			X			X	X	X		X				1	1	2	0	X
10043354	X				X				X			X		1	0	0	2	X
10043355			X		X							X		1	0	0	2	X
10043691	X				X					X	X			1	0	0	2	X
10043692			X		X					X	X			1	0	0	2	X
10072081	X				X				X			X		1	0	0	0	X
10072082			X		X				X			X		1	0	0	0	X
10072083		X			X				X			X		1	0	0	0	X
10073051	X				X				X			X		1	0	0	2	X
10073052				X	X				X			X		1	0	0	2	X

Additional configurations available. Log on to <http://assetlibrary.msanet.com/> and search for bulletin 2301-18-MC for more information.



TechnaCurv
Construction
Harness with Belt
Part No. 10054403



TechnaCurv Construction Harnesses offer all of the exciting features of the TechnaCurv Harness with the added flexibility of incorporating a tool belt. There are two construction harnesses to choose from:

- With integral belt that includes a dual-durometer back pad for superior comfort
- With Belt Loops for total flexibility of adding any belt of your choice
- Optional bright green (Hi-Viz) webbing for greater visibility

Note: Webbing does not meet the requirements for high-visibility clothing as defined in OSHA and ANSI.

Part No.	SIZE				WEBBING		CHEST BUCKLE		LEG BUCKLES			BELT LOOPS		D-RINGS		STANDARDS OSHA/ANSI/CSA
	XSM	STD	XLG	SXL	Green/Black	Red/Black	Secure-Fit	Qwik-Fit	Secure-Fit	Tongue	Qwik-Fit	w/o Belt	w/integral Belt	Back	Hip	
10053001		X				X		X			X	X		1	0	X
10053002		X				X	X				X	X		1	0	X
10053003		X				X		X		X		X		1	0	X
10053004		X				X	X			X		X		1	0	X
10053005		X				X	X		X			X		1	0	X
10053006		X				X		X			X	X		1	2	X
10053007		X				X	X				X	X		1	2	X
10053008		X				X		X		X		X		1	2	X
10053009		X				X	X			X		X		1	2	X
10053010		X				X	X		X			X		1	2	X
10054402		X				X		X		X			X	1	2	X
10054403		X				X	X			X			X	1	2	X
10054719		X				X	X		X	X			X	1	2	X
10063653	X				X			X		X			X	1	2	X
10063654		X			X			X		X			X	1	2	X
10063656			X		X			X		X			X	1	2	X
10063657				X	X			X		X			X	1	2	X
10062471				X		X		X		X			X	1	2	X
10054720			X			X		X		X			X	1	2	X
10057538			X			X		X		X			X	1	2	X
10062921				X		X	X		X				X	1	2	X
10054762			X			X	X		X				X	1	2	X
10054761			X			X	X		X				X	1	2	X



TechnaCurv Hi-Viz
Construction Harness
Part No. 10063654

In addition to the features of the standard TechnaCurv Harness, the **TechnaCurv Tower Harness** model incorporates an integral body belt and removable saddle. The body belt and saddle are constructed using a dual-durometer pad and Sorbtek fabric for ultimate comfort during prolonged work positioning/suspension activities. The body belt and saddle both include two side D-rings and the saddle height is adjustable. Models also include back and front D-rings. Additional options are available as outlined in the chart below.

Part No.	SIZE		STYLE		PADDING		LEG BUCKLES			STANDARDS OSHA/ANSI/CSA
	STD	XLG	Pullover	Vestype	Shoulder	Sub-Pelvic	Secure-Fit	Tongue	Qwik-Fit	
10048342	X		X		X	X	X			X
10048344	X			X	X	X	X			X
10048346	X		X		X			X		X
10048348	X			X	X			X		X
10048350	X		X						X	X
10048432	X			X					X	X
10048343		X	X		X	X	X			X
10048345		X		X	X	X	X			X
10048347		X	X		X			X		X
10048349		X		X	X			X		X
10048431		X	X						X	X
10048433		X		X					X	X



TechnaCurv Tower
Harness
Part No. 10048342

Workman® Full Body Harness

The **Workman Harness** provides comfortable protection, due to its lightweight components and durable webbing. The vest-style harness, with optional hip D-Rings for work positioning, fits a wide range of body types and sizes. Color-contrasting thigh and torso straps simplify donning.

- Optimum quality at an economical price
- Comfortable
- Yellow polyester webbing for increased visibility
- Web retainer collars to keep excess webbing neat
- 400 pound capacity
- Integral load indicator
- Choice of Qwik-Fit™ or Tongue-Buckle leg straps for easy adjustment
- Instructions in English, Spanish, and French
- Meets OSHA regulations, ANSI A10.32 & ANSI Z359.1-2007, and is certified to CSA Z259.10-06

The **Workman Construction Harness** also offers shoulder pads and an integral backpad for added comfort during work positioning and a removable, tongue-buckle tool belt. Meets applicable OSHA regulations, ANSI A10.32, ANSI Z359.1-2007, and is certified to CSA Z259.10-06.



Part No.	SIZE				CHEST STRAP	LEG BUCKLES		ATTACHMENT POINTS		INTEGRAL BACK PAD & TOOL BELT	SHOULDER PADS	STANDARDS
	XSM	STD	XLG	SXL	Qwik-Fit	Tongue	Qwik-Fit	Back	Hip			OSHA/ANSI/CSA
10072478	X				X		X	X				X
10072479		X			X		X	X				X
10072480			X		X		X	X				X
10072481				X	X		X	X				X
10072482	X				X		X	X	X			X
10072483		X			X		X	X	X			X
10072484			X		X		X	X	X			X
10072485				X	X		X	X	X			X
10072486	X				X	X		X				X
10072487		X			X	X		X				X
10072488			X		X	X		X				X
10072489				X	X	X		X				X
10072490	X				X	X		X	X			X
10072491		X			X	X		X	X			X
10072492			X		X	X		X	X			X
10072493				X	X	X		X	X			X
10072494	X				X	X		X	X	X		X
10072495		X			X	X		X	X	X		X
10072496			X		X	X		X	X	X		X
10072497				X	X	X		X	X	X		X
10077490	X				X	X		X	X	X	X	X
10077571		X			X	X		X	X	X	X	X
10077572			X		X	X		X	X	X	X	X
10077573				X	X	X		X	X	X	X	X

Workman Harness

Workman Construction Harness

Gravity™ Harnesses

400 pound capacity

Gravity Harness
Part No. SSH30420000

Gravity Harnesses are available in vest and cross-over styles. Gravity Harnesses are suitable for controlled descent, positioning, ladder climbing, rescue, and fall arrest. A variety of options are available to meet your specific needs. All Gravity Harnesses now include a load-indicator to alert you when the harness has been involved in a fall event. All gravity harnesses meet applicable OSHA regulations, ANSI A10.32, ANSI Z359.1-2007, and are CSA certified to Z259.10-06.

For Gravity Harnesses with a belt, belt sizing is as follows:

XSM	28" – 36"
SML	32" – 40"
MED	36" – 44"
LGE	40" – 48"
XLG	44" – 52"

Harness Classes as defined in CSA Z259.10-06

Class A: Fall Arrest
Class D: Suspension & Controlled Descent
Class E: Evacuation
Class L: Ladder Climbing
Class P: Work Positioning

SSH304 Series – Class A

The SSH304 series of Gravity Harnesses are a vest-style design and include a back D-ring and an integral load detector. Additional options are available as outlined in the chart on the next page.



Class A	SIZE			WEBBING									LEG CONNECTION		Integral Shock-Absorber	STANDARDS OSHA/ANSI/CSA
	XSM	STD	XLG	Nylon	Polyester	Kevlar	Orange Reflective	Yellow Reflective	Red/Blue	Blue/Gray	Black	Red/Black	Tongue Buckle	Mating Buckle		
SSH30420000		X		X					X					X		X
SSH30420001		X		X							X			X		X
SSH30420005		X		X						X				X		X
SSH30420020	X			X					X					X		X
SSH30420028	X			X			X							X		X
SSH30420050			X	X					X					X		X
SSH30420055			X	X						X				X		X
SSH30420060		X		X					X					X		X
SSH30420061		X		X							X			X		X
SSH30420064		X		X								X		X		X
SSH30420066		X		X				X						X		X
SSH30420070			X	X					X					X		X
SSH30420300		X		X					X					X	X	X
SSH30420305		X		X						X				X	X	X
SSH30420350			X	X					X					X	X	X
SSH30420351			X	X							X			X	X	X
SSH30420355			X	X						X				X	X	X
SSH30420360		X		X					X					X	X	X
SSH30420361		X		X							X			X	X	X
SSH30420366		X		X				X						X	X	X
SSH30425000		X		X					X				X			X
SSH30425050			X	X					X				X			X
SSH30425060		X		X					X				X			X
SSH30425300		X		X					X				X		X	X
SSH30425350			X	X					X				X		X	X
SSH30430004		X			X							X		X		X
SSH30430054			X		X							X		X		X
SSH30430064		X			X							X		X		X
SSH30430074			X		X							X		X		X
SSH30430304		X			X							X		X	X	X
SSH30430364		X			X							X		X	X	X
SSH30435064		X			X							X	X			X
SSH30435074			X		X							X	X			X
SSH30435364		X			X							X	X		X	X
SSH30440061		X				X					X			X		X
SSH30440361		X				X					X			X	X	X
SSH30440371			X			X					X			X	X	X
SSH30440021	X					X					X			X		X
SSH30440071			X			X					X			X		X

Gravity Harnesses



Gravity Harness
Part No. SSH30620000

SSH306 Series – Class A, E

The SSH306 series of Gravity Harnesses are a vest-style design and include back and shoulder D-rings as well as mating leg buckles. Harnesses also include an integral load indicator. Additional options are available as outlined in the chart below.

Class A, E	SIZE		WEBBING				Integral Shock-Absorber	STANDARDS
	STD	XLG	Nylon	Polyester	Red/Blue	Red/Black		OSHA/ANSI/CSA
SSH30620000	X		X		X			X
SSH30620050		X	X		X			X
SSH30620060	X		X		X			X
SSH30620300	X		X		X		X	X
SSH30625000	X		X		X			X
SSH30625300	X		X		X		X	X
SSH30630064	X			X		X		X



Gravity Harness
Part No. SSH31420C

SSH314 Series – Class A, L, P

The SSH314 series of Gravity Harnesses are a vest-style design and include back, front, and hip D-rings. This model is offered in a universal size. Harnesses also include an integral load indicator. Additional options are available as outlined in the chart below.

Class A, L, P	WEBBING		LEG CONNECTION		BELT				STANDARDS
	Nylon	Polyester	Tongue Buckle	Mating Buckle	SM	MED	LG	XLG	OSHA/ANSI/CSA
SSH31420B	X			X	X				X
SSH31420C	X			X		X			X
SSH31420D	X			X			X		X
SSH31420D22	X			X			X		X
SSH31420E	X			X				X	X
SSH31425C	X		X			X			X
SSH31425D22	X		X				X		X
SSH31430D22		X		X			X		X
SSH31435D22		X	X				X		X



Gravity Harness
Part No. SSH31535C364

SSH315 Series, Derrick Harness – Class A, D, P

The SSH315 series of Gravity Harnesses are a vest-style design and include back and hip D-rings. This model is offered in a universal size, with tongue buckle leg straps and an integral shock absorber. Harnesses also include an integral load indicator. Additional options are available as outlined in the chart below.

Class A, D, P	WEBBING		BELT					STANDARDS
	Black	Red/Black	SM	MED	LG	XLG	SXL	OSHA/ANSI/CSA
SSH31535B364		X	X					X
SSH31535C364		X		X				X
SSH31535D361	X				X			X
SSH31535D364		X			X			X
SSH31535E364		X				X		X
SSH31535F364		X					X	X

SSH609 Series, Rigger/Rescue Harness – Class A, L, D, P

The SSH609 series of Gravity Harnesses are a cross-over style design and include back, front, and hip D-rings. This model is offered in black, polyester webbing and mating leg buckles. Harnesses also include an integral load indicator. Additional options are available as outlined in the chart below.

Class A, L, D, P	SIZE		Integral SA	STANDARDS
	STD	XLG		OSHA/ANSI/CSA
SSH60930001	X			X
SSH60930051		X		X
SSH60930301	X		X	X

Gravity Harness
Part No. SSH60930001



Gravity Harness
Part No. SSH70920000



SSH709 Series – Class A

The SSH709 series of Gravity Harnesses are a cross-over style design and include a back D-ring and integral load indicator. Additional options are available as outlined in the chart below.

Class A	SIZE				WEBBING								LEG CONNECTION		Integral Shock-Absorber	STANDARDS	
	XSM	STD	XLG	SXL	Nylon	Polyester	Kevlar	Orange Reflective	Yellow Reflective	Red/Blue	Black	Red/Black	Tongue Buckle	Mating Buckle		OSHA/ANSI	CSA
SSH70920000		X			X					X				X		X	X
SSH70920001		X			X						X			X		X	X
SSH70920006		X			X				X					X		X	X
SSH70920008		X			X			X						X		X	X
SSH70920050			X		X					X				X		X	X
SSH70920056			X		X				X					X		X	X
SSH70920300		X			X					X				X	X	X	X
SSH70920301		X			X						X			X	X	X	X
SSH70920306		X			X				X					X	X	X	X
SSH70920308		X			X			X						X	X	X	X
SSH70920350			X		X					X				X	X	X	X
SSH70920356			X		X				X					X	X	X	X
SSH70920358			X		X			X						X	X	X	X
SSH70925000		X			X					X			X			X	X
SSH70935004		X				X						X	X			X	X
SSH70940001		X					X				X			X		X	X
SSH70940301		X					X				X			X		X	X
10067455	X				X					X			X			X	
10067456				X	X					X			X			X	
10067512			X		X					X			X			X	

Gravity Harnesses

SSH807 Series – Class A, P

The SSH807 series of Gravity Harnesses are a vest-style design and include back and hip D-rings. This model is offered in a universal size with mating leg buckles and an integral load indicator. Additional options are available as outlined in the chart below.

Class A, P	SIZE			STANDARDS
	SM	MED	LG	OSHA/ANSI/CSA
SSH80720B	X			X
SSH80720C		X		X
SSH80720D			X	X



Gravity Harness
Part No. SSH80720C



Gravity Harness
Part No. SSH80920000

SSH809 Series – Class A, L, D, P

The SSH809 series of Gravity Harnesses are a cross-over style design and include back, front, and hip D-rings. Harnesses also include an integral load indicator. Additional options are available as outlined in the chart below.

Class A, L, D, P	SIZE			WEBBING									LEG CONNECTION		Integral Shock-Absorber	STANDARDS OSHA/ANSI/CSA
	XSM	STD	XLG	Nylon	Polyester	Kevlar	Orange Reflective	Yellow Reflective	Red/Blue	Blue/Gray	Black	Red/Black	Tongue Buckle	Mating Buckle		
SSH80920020	X			X					X					X	X	
SSH80920021	X			X							X			X	X	
SSH80925001		X		X							X		X	X	X	
SSH80920000		X		X					X					X	X	
SSH80920001		X		X							X			X	X	
SSH80920006		X		X				X						X	X	
SSH80920300		X		X					X					X	X	
SSH80920301		X		X						X				X	X	
SSH80920305		X		X						X				X	X	
SSH80920306		X		X				X						X	X	
SSH80925301		X		X							X		X	X	X	
SSH80930004		X			X							X		X	X	
SSH80935004		X			X							X	X		X	
SSH80940301		X				X					X			X	X	
SSH80920308		X		X			X							X	X	
SSH80940001		X				X					X			X	X	
SSH80920050			X	X					X					X	X	
SSH80920051			X	X							X			X	X	
SSH80920350			X	X					X					X	X	
SSH80920351			X	X							X			X	X	
SSH80925351			X	X							X		X	X	X	
SSH80940351			X			X					X			X	X	
SSH80925050			X	X					X				X		X	
SSH80920056			X	X				X						X	X	
SSH80920356			X	X				X						X	X	
SSH80925321	X			X							X		X	X	X	
SSH80920008		X		X			X							X	X	
SSH80940051			X			X					X			X	X	
SSH80925000		X		X					X				X		X	

SSH909 Series – Class A, L, D

The SSH909 series of Gravity Harnesses are a cross-over style design and include back and front D-rings and an integral load indicator. Additional options are available as outlined in the chart below.

Gravity Harness
Part No. SSH90920000



Class A, L, D	SIZE		WEBBING									LEG CONNECTION		Integral Shock-Absorber	STANDARDS OSHA/ANSI/CSA
	STD	XLG	Nylon	Polyester	Kevlar	Orange Reflective	Yellow Reflective	Red/Blue	Blue/Gray	Black	Red/Black	Tongue Buckle	Mating Buckle		
SSH90920306	X		X				X						X	X	X
SSH90920308	X		X				X						X	X	X
SSH90920000	X		X					X					X		X
SSH90920001	X		X							X			X		X
SSH90920300	X		X					X					X	X	X
SSH90920301	X		X							X			X	X	X
SSH90925000	X		X					X				X			X
SSH90925001	X		X							X		X			X
SSH90925300	X		X					X				X		X	X
SSH90930004	X			X							X		X		X
SSH90935004	X			X							X	X			X
SSH90940001	X				X					X			X		X
SSH90920006	X		X					X					X		X
SSH90920355		X	X							X			X	X	X
SSH90920050		X	X					X					X		X
SSH90920350		X	X					X					X	X	X
SSH90920356		X	X					X					X	X	X
SSH90920305	X		X							X			X	X	X

SSH915 Series, Derrick Harness – Class A, L, D

The SSH915 series of Gravity Harnesses are a cross-over style design and include a back, front, and side D-rings. This model is offered in a universal size with a 3" wide web saddle and tongue buckle leg straps. Harnesses also include an integral load indicator. Additional options are available as outlined in the chart below.

Gravity Harness
Part No. SSH91535C304

Class A, L, D	Integral Shock-Absorber	BELT					STANDARDS OSHA/ANSI/CSA
		SM	MED	LG	XLG	SXL	
SSH91535B304	X	X					X
SSH91535C304	X		X				X
SSH91535D304	X			X			X
SSH91535E304	X				X		X
SSH91535F304	X					X	X
SSH91535B004		X					X
SSH91535C004			X				X
SSH91535D004				X			X
SSH91535E004					X		X
SSH91535F004						X	X



Gravity Harnesses

SSH916 Series, Derrick Harness – Class A, L, D, P

The SSH916 series of Gravity Harnesses are a cross-over style design and include a back, front, and side D-rings. This model is offered in a universal size with a 3" wide web saddle, tongue buckle leg straps, and an additional D-ring attached to the back of the integral, padded belt. Harnesses also include an integral load indicator. Belt size options are available as outlined in the chart below.

Gravity Harness
Part No. SSH91635C3048



Class A, L, D, P	BELT					STANDARDS
	SM	MED	LG	XLG	SXL	OSHA/ANSI/CSA
SSH91635B30438	X					X
SSH91635C30438		X				X
SSH91635D30438			X			X
SSH91635E30438				X		X
SSH91635F30438					X	X



Gravity Harness
Part No. SSH91725C001

SSH917 Series, Tower Harness – Class A, L, D, P

The SSH917 series of Gravity Harnesses are a cross-over style design and include back, front, and hip D-rings. This model is offered in a universal size with a web saddle and tongue buckle leg straps. Harnesses also include an integral load indicator. Additional options are available as outlined in the chart below.

Class A, L, D, P	LEG CONNECTION				BELT					STANDARDS
	Tongue Buckle	Mating Buckle	Integral SA	Cranked D-Ring	XSM	SM	MED	LG	XLG	OSHA/ANSI/CSA
SSH91725A001	X				X					X
SSH91725D001	X							X		X
SSH91725C001	X						X			X
SSH91725B001	X					X				X
SSH91725E001	X								X	X
SSH91725B301	X		X			X				X
SSH91720C301		X	X				X			X
SSH91725C301	X		X				X			X
SSH91725D301	X		X					X		X
SSH91725E301	X		X						X	X
SSH91720CD21608*		X	X	X				X		X
SSH91720CD23308*		X	X	X			X			X
SSH91720CD25308*		X	X	X			X			X
SSH91720CD25608*		X	X	X				X		X

* Orange webbing

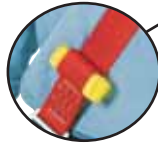
ArcSafe® Harnesses

The ArcSafe harness is SEI-certified to the requirements of the ASTM F887-05 standard for arc flash protection up to 40 cal/cm² and is designed to meet the needs of utility and maintenance workers.

Additional features

- Nylon web loop attachment points
- Meets all applicable OSHA regulations and ANSI Z359.1-2007 & A10.32 standards
- Certified to CSA Z259.10-06
- Integral load indicator
- 400 pound capacity
- Y-shaped back web loop locator pad provides comfort by moving the webbing away from the wearer's neck
- Color-coded leg and torso straps to simplify donning
- Downward-adjusting torso straps to ease adjustment

Front attachment loops can be tucked away when not in use



Vest-Style
ArcSafe Harness
Part No. 10070439

Cross-Chest
ArcSafe Harness
Part No. 10070463

ArcSafe Vest-Style Harnesses (for Cross-Chest Style see next page)

All vest-style ArcSafe Harnesses include protective covers over chest strap and torso adjustment hardware.

	SIZE				LEG BUCKLES		ATTACHMENT POINTS			Integral Shock Absorber	Belt Loops	STANDARDS OSHA/ANSI/CSA
	XSM	STD	XLG	SXL	Qwik-Fit	Tongue	Hip	Back	Front			
10070422	X					X	X	X	X			X
10070423		X				X	X	X	X			X
10070424			X			X	X	X	X			X
10070425				X		X	X	X	X			X
10070426	X					X		X				X
10070427		X				X		X				X
10070428			X			X		X				X
10070429				X		X		X				X
10070462	X					X	X	X	X			X
10070463		X				X	X	X	X			X
10070464			X			X	X	X	X			X
10070465				X		X	X	X	X			X
10070470	X				X		X	X	X			X
10070471		X			X		X	X	X			X
10070472			X		X		X	X	X			X
10070473				X	X		X	X	X			X
10060108	X				X			X	X			X
10060110		X			X			X	X			X
10060111			X		X			X	X			X
10060112				X	X			X	X			X
10060100	X				X			X				X
10060101		X			X			X				X
10060102			X		X			X				X
10060103				X	X			X				X
10074529	X				X		X	X				X
10074530		X			X		X	X				X
10074561			X		X		X	X				X
10074562				X	X		X	X				X
10077853		X			X			X	X			X
10077855			X		X			X	X			X
10082568	X					X	X	X	X			X
10082569		X				X	X	X	X			X
10082570			X			X	X	X	X			X
10082691				X		X	X	X	X			X

Welding Harnesses



Welding Harness
Part No. 10020062

Welding Harness
Part No. 10103216



Welding Harnesses are vest-style harnesses designed for high-heat applications such as welding. All Welding Harnesses are made using Kevlar/Nomex webbing and use mating buckles on the leg and chest straps.

Part No.	SIZE				LEG BUCKLES	COLOR		ATTACHMENT POINTS		STANDARDS	
	XSM	STD	XLG	SXL	Qwik-Fit	Green	Black	Back	Hip	OSHA/ANSI	CSA
10020067	X				X	X		1	2	X	X
10020062		X			X	X		1	2	X	X
10020066			X		X	X		1	2	X	X
10020065				X	X	X		1	2	X	X
10103213	X				X		X	1	0	X	
10103216		X			X		X	1	0	X	
10103217			X		X		X	1	0	X	
10103218				X	X		X	1	0	X	

Harness Accessories

Lanyard Connector Adapter
Part No. 505318



Shoulder Pads
Part No. 10077489



Shoulder Pad
Part No. 10028444



Double D-ring Extension
Part No. 10043147



Miscellaneous Harness Accessories

A Back pad (P/N 507144) snaps into the hip D-rings of Pullover and Vesttype Harnesses and adds additional lower lumbar support while work positioning. Shoulder pad (P/N 10028444) may be snapped around the shoulder straps and under the back D-ring pad of the harness to add comfort.

Part No.	Description
505318	Lanyard Connector Adapter, nylon, 1 D-ring, 18" (Back D-Ring Extension)
507144	Economic Back Support Pad, nylon
10028444	Shoulder pad
10043147	Double D-Ring Extension, 1" nylon web, sewn loop
10071688	Single D-Ring Extension, 1" nylon web, sewn loop
10077489	Shoulder Pads, 1 set
SHW26	Lanyard Clip (Velcro key ring)
10113240	Lanyard Clip (Velcro strap)

Suspension Trauma Safety Step

The Suspension Trauma Safety Step is designed to help workers in a post-fall suspension position avoid the effects of suspension trauma. The Safety Step allows workers to relieve pressure by inserting a foot into one of the step loops and then standing up in the harness. The flexing of leg muscles and release of harness leg strap pressure stimulates blood flow, helping to prevent the onset of suspension trauma. Workers can use a single Safety Step or two Safety Steps (one for each leg) to provide additional support, balance, and comfort.

Part No.	Description
10063431	Suspension Trauma Safety Step with carabiner
10063441	Suspension Trauma Safety Step without carabiner



Shock-Absorbing Lanyards

Energy absorbing lanyards are a component of a personal fall arrest system. They provide a means of connection between the back (dorsal) D-ring of MSA full body harnesses and a qualified anchorage and anchorage connector. The energy absorber keeps fall arrest forces below ANSI and OSHA limits and deceleration distance is controlled to a maximum of 42 inches. The lanyard is available in web, rope, and wire rope configurations with a variety of snaphooks.



Workman Energy-Absorbing Lanyard
Part No. 10072472



Workman Energy-Absorbing Lanyard
Part No. 10076124



Workman Energy-Absorbing Lanyard
Part No. 10072474



Workman Energy-Absorbing Lanyard
Part No. 10072473



Workman Energy-Absorbing Lanyard
Part No. 10073708



Workman Energy-Absorbing Lanyard
Part No. 10072475

Workman® Energy-Absorbing Lanyards

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

Features

- Tear-tape design to keep fall arrest forces below 900 lbf.
- Choice of single or twin-leg configurations
- Choice of adjustable or tie-back configurations
- Models below meet ANSI A10.32 and applicable OSHA regulations. Compliance to ANSI Z359.13 and CSA Z259.11-05 E4 are noted in the table below.

Workman Energy-Absorbing Lanyards

Part No.	Harness Connection	Anchorage Connection	Twin	Single	Tie-Back	Standards	
						ANSI Z359.13	CSA Z259.11
10072472	LC	LC		X	X		X
10072473	LC	(2) LC	X		X		X
10072474	LC	LC		X			X
10073708	LC	(2) LC	X				X
10072475	LC	(2) GL3100	X				X
10076124	LC	GL3100		X			X
10113157	36C	36C				X	
10113158	36C	36C				X	
10113159	36C	36C				X	
10113162	36C	36C				X	
10113163	36C	36C				X	
10113164	36C	36C				X	



ArcSafe Lanyard
Part No. 10060139



ArcSafe Lanyard
Part No. 10060140

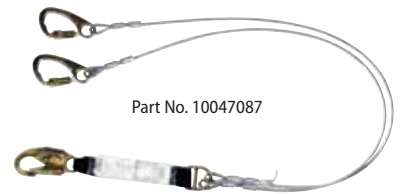
ArcSafe® Lanyards

ArcSafe Lanyards are SEI-certified to the requirements of ASTM F887-05 standard for electrical arc flash protection. ArcSafe Shock-Absorbing Lanyards utilize a tear-tape design to keep fall arrest forces below 900 pounds. Models below meet applicable OSHA requirements and ANSI A10.32. Compliance to ANSI Z359.13, and CSA Z259.11 are noted below. Heavy Worker Lanyards are compliant to OSHA regulations only.

ArcSafe Lanyards

Part No.	Harness Connection	Anchorage Connection	Twin	Single	Heavy Worker	Standards	
						ANSI Z359.13	CSA Z259.11
10060139	hitch loop	36C		X		X	X
10060140	hitch loop	36C	X			X	X
10088256	hitch loop	36CL	X			X	X
10088255	hitch loop	36C		X	X		
10088257	hitch loop	36C	X		X		
10088253	hitch loop	36CL	X		X		

Shock-Absorbing Lanyards



FP5K™ Tie-Back Shock-Absorbing Lanyard

- Uses the FP5K Carabiner, a Tie-back lanyard connector with a 5000-pound gate strength in any direction and a 1" Gate Opening
- Available in web or cable version
- Web version utilizes Monster-Edge™ Webbing with 12,000-pound minimum breaking strength and increased abrasion resistance
- Utilizes the Sure-Stop Shock Absorber to keep fall arrest forces below 900 lbf
- Available in both single and twin-leg configurations
- Models below meet OSHA regulations. Compliance to ANSI and CSA are noted in the table below.

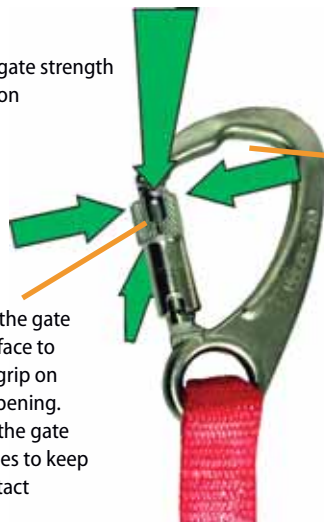


FP5K Tie-Back Shock-Absorbing Lanyards

Part No.	Shock-Absorber	Hardware	Length	Type	Heavy Worker	Standards	
						ANSI Z359.13	CSA Z259.11
10047084	Sure-Stop	36C/FP5K	6'	Adjustable, Web		X	X
10047085	Sure-Stop	36C in center (attaches to back D-Ring)/FP5K each leg	6'	Twin Leg, Adjustable, Web		X	X
10047086	Sure-Stop	36C/FP5K	6'	Fixed, Cable		X	X
10047087	Sure-Stop	36C in center (attaches to back D-Ring)/FP5K each leg	6'	Twin Leg, Fixed, Cable		X	X
10056762	—	LS/FP5K	5'	Adjustable, Web		X	X
10056763	—	LS in center (attaches to back D-Ring)/FP5K each leg	5'	Twin Leg, Adjustable, Web		X	X
10088073	Sure-Stop	36C/FP5K	6'	Adjustable, Web	X		
10088074	Sure-Stop	36C in center/FP5K each leg	6'	Twin Leg, Adjustable, Web	X		
10088075	Sure-Stop	36C/FP5K	6'	Fixed, Cable	X		
10088076	Sure-Stop	36C in center/FP5K each leg	6'	Twin Leg, Fixed, Cable	X		

FP5K Carabiner

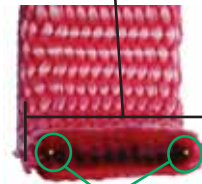
5000-pound gate strength in any direction



The outer side of the gate has a knurled surface to provide a secure grip on the gate when opening. The inner side of the gate has flattened edges to keep lanyard/gate contact at a minimum.

Specially designed safety recess inside the body of the carabiner provides a place for the lanyard to rest when tied back.

Section of Monster Edge Webbing



Internal wear indicator





Diamond™ Shock-Absorbing Lanyards and Expanyards

The **Diamond Shock-Absorbing Lanyard** raises the standard for shock-absorbing lanyards:

- Teflon-coated, durable polyester sheath for increased abrasion and UV resistance
- Available in a single or twin-leg configuration
- Keeps fall arrest forces below 900 lbf
- Highly visible deployment tag
- Comfortable, lightweight pouchless design

In addition to the exciting features of the Diamond Lanyard, the **Diamond Expanyard** features:

- Elastic design reduces trip hazards and snag hazards
- 6' Diamond Expanyard contracts to 4.5'

For workers who need 100% continuous connection and are required to transition from a shock-absorbing lanyard to a self-retracting lanyard, the **Diamond Lanyard** with integral D-ring extension offers the versatility you need. All Diamond Lanyards and Expanyards meet applicable OSHA regulations and ANSI A10.32. Compliance with ANSI Z359.1-2007 and certification to CSA Z259.11-05 E4 are noted in the part number table.

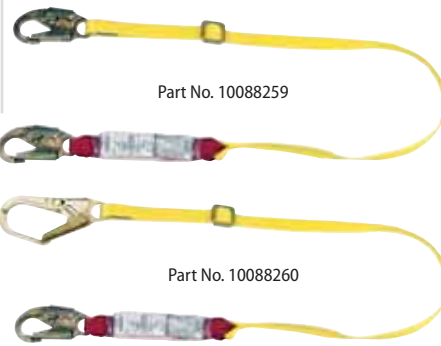


Diamond Shock-Absorbing Lanyards and Expanyards—polyester, single piece construction, fixed length

Part No.	Harness Connection	Anchorage Connection	Type			D-ring Extension	Length			Standards	
			Expanyard	Single-Leg	Twin-Leg		4.5'	5'	6'	CSA Z259.11-05 E4	ANSI Z359.13-2007
10023932	LS	LS		X				X	X		
10023933	LS	HL64		X				X	X		
10023970	Swivel LS	(2) LS			X			X	X		
10023971	Swivel LS	(2) HL64			X			X	X		
10023936	LS	LS		X			X		X		
10023937	Swivel LS	(2) LS			X		X		X		
10045936	LS	LS	X	X				X	X		
10045938	Swivel LS	(2) HL64	X		X			X	X		
10047290	Swivel LS	(2) GL3100	X		X			X	X		
10053012	LS Snap	GL3100		X				X	X		
10053013	LS Snap	(2) GL3100			X			X	X		
10053014	LS Snap	LS Snap	X	X				X	X		
10053015	LS Snap	GL3100	X	X				X	X		
10053016	LS Snap	(2) GL3100	X		X			X	X		
10088065	36C	36C		X				X		X	
10088066	36C	36CL		X				X		X	
10088067	36C	36C	X	X				X		X	
10088068	36C	36CL	X	X				X		X	
10088069	36C	36C			X			X		X	
10088070	36C	36CL			X			X		X	
10088071	36C	36C	X		X			X		X	
10088072	36C	36CL	X		X			X		X	
10059837	Swivel LS Snap	(2) GL3100			X	X	X		X		
10088077	36C	36CL			X	X		X		X	
10035039	Loop	LS		X				X	X		

Additional configurations available. Log on to <http://assetlibrary.msanet.com/> and search for bulletin 2301-40-MC for more information.

Shock-Absorbing Lanyards



Sure-Stop™ Shock-Absorbing Lanyards

Sure-Stop Shock-Absorbing Lanyards use a tear-tape design to keep fall arrest forces below 900 pounds. Restraint lanyards are offered in adjustable and fixed lengths and are available in your choice of rope, cable, or web. Models below meet applicable OSHA regulations and ANSI A10.32. Compliance with ANSI Z359.1-2007 and certification to CSA Z259.11-05 E4 are noted in the part number tables.



Web Shock-Absorbing Lanyards

Part No.	Harness Connection	Anchorage Connection	Type							Standards	
			Single-Leg	Twin-Leg	Tie-Back	Adjustable	Fixed	Expanyard	Heavy Worker	CSA Z259.11-05 E4	ANSI Z359.13-2007
10088259	36C	36C	X			X					X
10088260	36C	36CL	X			X					X
10088261	36C	36C	X			X			X		X
10088262	36C	36CL	X			X			X		X
10088265	36C	36C		X		X					X
10088266	36C	36CL		X		X					X
10088268	36C	36CL		X				X			X
10088267	36C	36C		X				X			X
10088269	Sewn loop	36CL		X				X			X
10088263	36C	36C		X					X		X
10088264	36C	36CL		X					X		X
10088213	36C	36C	X		X			X			X
10088214	36C	36C		X	X			X			X
10088215	Sewn loop	36C		X	X			X			X
10088216	Sewn loop	36C	X					X			X
10088217	Sewn loop	36C		X				X			X
10088223*	36C	36C	X			X				X	
10088224*	36C	36CL	X			X				X	
10088225*	36C	36C	X			X			X	X	
10088226*	36C	36CL	X			X			X	X	
10088229*	36C	36C		X		X				X	
10088230*	36C	36CL		X		X				X	
10088231*	36C	36CL		X				X		X	
10088232*	36C	36C		X				X		X	
10088233*	Sewn loop	36CL		X				X		X	
10088227*	36C	36C		X		X			X	X	
10088228*	36C	36CL		X		X			X	X	
10088237*	36C	36C	X		X			X		X	
10088238*	36C	36C		X	X			X		X	
10088239*	Sewn loop	36C		X	X			X		X	
10088240*	Sewn loop	36C	X					X		X	
10088241*	Sewn loop	36C		X				X		X	

* ANSI Z359.1 does not recognize lanyard capacities above 310 pounds. Heavy worker lanyards are compliant to OSHA regulations only.



Part No. SWL40400206LS



Part No. SWL4068703LS

Web Shock-Absorbing Lanyards, continued

Part No.	Type		Material		Harness Connection	Anchorage Connection	Length			Standards	
	Single	Twin	Nylon	Polyester			3'	4'	6'	CSA Z259.11-05 E4	ANSI Z359.13-2007
SPL4048406LS	X			X	LS	LS			X	X	
SWL40400206LI		X	X		LI	LI			X	X	
SWL40400206LS		X	X		LS	LS			X	X	
SWL40400206LLS		X	X		LS	LS			X	X	
SWL40400206LSH		X	X		LS	HL64			X	X	
SWL404002P04LI		X	X		LI	LI		X		X	
SWL404002P06LI		X	X		LI	LI			X	X	
SWL4068104LS	X		X		LS	LS		X		X	
SWL4068703LS	X		X		LS	LS	X			X	
SWL4068704LS	X		X		LS	LS		X		X	
SWL4068706LS	X		X		LS	LS			X	X	
SWL4268706LS	X		X		LS	LS			X	X	
SWLP0635A		X			LS	LS			X	X	



Part No. 10088120

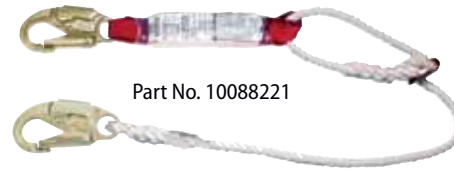


Part No. SCL4067304LS

Cable Shock-Absorbing Lanyards

Part No.	Harness Connection	Anchorage Connection	Type			Length				Standards	
			Single-Leg	Twin-Leg	Heavy Worker	4'	5'	6'	8'	CSA Z259.11-05 E4	ANSI Z359.13-2007
SCL4067304LSTL	LS	LS	X			X				X	
SCL4067304LS	LS	LS	X			X				X	
SCL4067305LS	LS	LS	X				X			X	
SCL4067306LS	LS	LS	X					X		X	
SCL4067308LS	LS	LS	X						X	X	
SCL4068104LS	LS	HL64	X			X				X	
SCL4068106LS	LS	HL64	X					X		X	
10088120	36C	36C	X					X			X
10088211	36C	36C		X				X			X
10088212	36C	36CL		X				X			X
10088234*	36C	36C	X		X			X			
10088235*	36C	36C		X	X			X			
10088236*	36C	36CL		X	X			X			

Shock-Absorbing Lanyards



Part No. 10088221



Part No. SNL4048404LS

Rope Shock-Absorbing Lanyards

Part No.	Harness Connection	Anchorage Connection	Web	Type				Length					Standards		
				Single	Twin	Fixed	Adjustable	4'	5'	6'	8'	10'	CSA Z259.11-05 E4	ANSI Z359.1-2007	
10088219	36C	36C	5/8 "	X		X				X					X
10088220	36C	36C	5/8 "		X	X				X					X
10088221	36C	36C	5/8 "	X			X			X					X
SNL4048404LS	LS	LS	5/8 "	X		X		X						X	
SNL4048405LS	LS	LS	5/8 "	X		X			X					X	
SNL4048406LS	LS	LS	5/8 "	X		X				X				X	
SNL4048408LS	LS	LS	5/8 "	X		X					X			X	
SNL4048410LS	LS	LS	5/8 "	X		X						X		X	
SNL4078106LS	HL64	LS	5/8 "	X		X				X				X	
SNL4098604LS	HL2000	LS	5/8 "	X		X		X						X	

Thermatek® Shock-Absorbing Lanyard

Thermatek Lanyards are designed for high-heat applications. This specialized design features a Tuffweld protective cover over the shock-absorber and a Kevlar back-up strap inside the shock-absorbing pouch. Models below meet applicable OSHA regulations. Compliance with ANSI Z359.13-2007 and certification to CSA Z259.11-05 E4 are noted in the part number table. Additional options are available as outlined in the chart below.

Part No.	Type				Harness Connection	Anchorage Connection	Length			Standards	
	Single	Twin	12' Freefall	Heavy Worker			4'	5'	6'	CSA Z259.11-05 E4	ANSI Z359.13-2007
10088246	X				36C	36C			X		X
10088248*	X			X	36C	36C			X		
10088247	X		X		36C	36C			X		X
10088252*		X		X	36C	36C			X		
10088250		X			36C	36C			X		X
10027104	X				LS	LS		X		X	
10023485	X				LS	LS			X		
10026048	X		X		LS	LS			X		



Part No. 10088246



Part No. 10027104

* ANSI Z359.1 does not recognize lanyard capacities above 310 pounds. Heavy worker lanyards are compliant to OSHA regulations only.

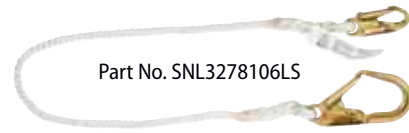
Restraint Lanyards

Restraint lanyards are primarily used for travel restriction (to restrain a worker from reaching a fall hazard) and work positioning (stabilizing a worker at an elevated location) applications. All restraint lanyards meet applicable OSHA regulations. Compliance to ANSI and CSA are noted in the tables below.



Web Restraint Lanyards

Part No.	Material			Type				Harness Connection	Anchorage Connection	Length					Standards	
	Web	Nylon	Polyester	Single-Leg	Twin-Leg	Adjust.	Fixed			2'	3'	4'	5'	6'	CSA Z259.11-05	ANSI Z359.3-2007
10056762	1"	X		X		X		FP5K	LS				X		X	
10056763	1"	X			X		X	FP5K	FP5K				X		X	
10072499	1"		X	X		X		LS	LS					X	X	X
SWL3268702LS	1"	X		X			X	LS	LS	X					X	
SWL3268703LS	1"	X		X			X	LS	LS		X				X	
SWL3268704LS	1"	X		X			X	LS	LS			X			X	
SWL3268706LS	1"	X		X			X	LS	LS					X	X	
10089345	1"	X		X		X		36C	36C					X		X
10089347	1"	X		X		X		LOOP	36C					X		X
10089346	1"	X		X			X	LOOP	36C					X		X



Rope Restraint Lanyards

Part No.	Material			Type			Harness Connection	Anchorage Connection	Length												Standards	
	Rope	Nylon	Polyester	Single	Adjust.	Fixed			2'	3'	4'	5'	6'	7'	8'	9'	10'	12'	CSA Z259.11-05 E4	ANSI Z359.3-2007		
SNL3248402LS	5/8"	X		X		X	LS	LS	X									X				
SNL3248403LS	5/8"	X		X		X	LS	LS		X								X				
SNL3248403LS	5/8"	X		X		X	LS	LS		X								X				
SNL3248404LS	5/8"	X		X		X	LS	LS			X							X				
SNL3248405LS	5/8"	X		X		X	LS	LS				X						X				
SNL3248406LS	5/8"	X		X		X	LS	LS					X					X				
SNL3248407LS	5/8"	X		X		X	LS	LS						X				X				
SNL3248408LS	5/8"	X		X		X	LS	LS							X			X				
SNL3248409LS	5/8"	X		X		X	LS	LS								X		X				
SNL3248410LS	5/8"	X		X		X	LS	LS								X		X				
SNL3248412LS	5/8"	X		X		X	LS	LS									X	X				
SNL3278104LS	5/8"	X		X		X	LS	HL64			X							X				
SNL3278106LS	5/8"	X		X		X	LS	HL64				X						X				

Restraint Lanyards

Cable Restraint Lanyard

Part No.	Width	Harness Connection	Anchorage Connection	Length			Type	Standards		
				3'	4'	6'		Fixed	OSHA	ANSI A10.32	CSA
505063	1/4"	HL2000	HL2000			X	X	X	X	
SCL3267304LS	1/4"	LS	LS		X		X	X	X	
SCL3267306LS	1/4"	LS	LS			X	X	X	X	
SCL3267303LS	1/4"	LS	LS	X			X	X	X	
SCL3267306RM	1/4"	LS	LS			X	X	X	X	



Rebar Assemblies

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

Part No.	Description	Standards		
		OSHA	ANSI A10.32	CSA Z259.11-05
415957	Rebar chain assembly, large snaphook with 2.5" (64mm) gate	X	X	X
10107326	Rebar chain assembly, 36CL snaphook with 2.25" (57mm) gate	X	X	
10072498	Rebar web assembly, 13" legs, with sliding large snaphook	X	X	X
SCH3187511	Rebar web assembly, 18" legs, with sliding large snaphook	X	X	X



Sure-Grab™ Positioning Lanyard

Connects to the user's harness or belt for travel restriction or work positioning applications. Features fast and easy length adjustment. Meets applicable OSHA regulations and ANSI A10.32.

Part No.	Description
SNYR537DH306	Sure-Grab positioning lanyard, manual, closed body, c/w 5/8" x 6' blue Static Kernmantle, chrome locking swivel snaphook, right-handed version
SNYL537DH306	Sure-Grab positioning lanyard, manual, closed body, c/w 5/8" x 6' blue Static Kernmantle, chrome locking swivel snaphook, left-handed version



Lineman's Pole Strap

The Lineman's Pole Strap is used to assist a lineman in climbing wooden poles and for work positioning. Meets applicable OSHA regulations and ANSI A10.32.

Part No.	Description
415834	Lineman's polestrap, nylon, adjustable to maximum length of 70"



Shock-Absorbing Sub-Assembly Lanyards



Part No.	Material		Harness Connection	Anchorage Connection	Heavy Worker	Standards			
	Nylon	Polyester				OSHA	ANSI A10.32	CSA Z259.11-05	ANSI Z359.13
SSA4002LS	X		LS	D-Ring		X	X	X	
10088064	X		36C	D-Ring		X			X
10090058	X		36C	D-Ring	X	X			

Anchorage Connectors

- Have a minimum breaking strength of 5,000 lb.
- Are compatible for use with MSA fall arrest and confined space entry/retrieval components
- Meet ANSI Z359.1-2007, ANSI A10.32 and all applicable OSHA regulations

PointGuard™ Anchorage Connector Strap

The PointGuard Anchorage Connector provides a secure point of attachment for residential and concrete construction applications. When the anchorage connector is no longer needed a worker can simply cut the protruding strap and throw it away.



PointGuard Concrete Part No. 10042794

- Quick and easy to install
- Economical
- Available in 2 models -
 - Residential Construction
 - ❖ Meets all applicable OSHA regulations as well as ANSI A10.32 and ANSI Z359.1
 - Concrete Construction
 - ❖ Includes protective sheath
 - ❖ Meets all applicable OSHA regulations as well as ANSI A10.32 and ANSI Z359.1
- Durable Polyester Webbing with 5,000-pound minimum breaking strength
- 400-pound (182 kg) capacity



PointGuard Residential Part No. 10042792

Anchorage Connector Strap

- Standard 5-ft. length, custom lengths available
- D-ring on one end and a sewn loop on the other end



Anchorage Connector Strap Part No. 505282

Double D-Ring Anchorage Connector Strap

Double D-Ring Anchorage Connector Strap Part No. SFP2267503



Anchorage Connector Chain

- Temporary anchorage connector
- Useful near sharp edges or in high heat environments



Anchorage Connector Chain Part No. 10003206

Boom Belt

- Attaches to boom arm
- Adjustable
- Allows for quick & easy installation



Boom Belt Part No. SSB22040

Part No.	Description
10042792	PointGuard residential anchorage connector strap, 3' with D-ring
10042794	PointGuard concrete anchorage connector strap, 4' with D-ring
10042793	PointGuard residential anchorage connector strap, 3'
10042795	PointGuard concrete anchorage connector strap, 4'
505282	Anchorage connector strap, nylon, 5'
10023490	Anchorage connector strap, double D-ring
SFP2267503	Double D-Ring Anchorage Connector Strap, 3' length
SFP2267504	Double D-Ring Anchorage Connector Strap, 4' length
SFP2267506	Double D-Ring Anchorage Connector Strap, 6' length
505298	Anchorage connector strap, polyester, 5'
10003206	Chain anchorage connector
SSB22040	Boom belt, 1-3/4" nylon webbing, adjustable, one size fits all
SFP3267504	Anchorage Cable Sling, 4' length
SFP3267506	Anchorage Cable Sling, 6' length
SFP2267402	Suretyman Anchorage Sling, 2' length
SFP2267404	Suretyman Anchorage Sling, 4' length
SFP2267406	Suretyman Anchorage Sling, 6' length
505233	Anchorage Connector extension, 5', 36C, O-ring
10001620	Anchorage Connector extension, 6', RL20, O-ring
10082683	Anchorage Connector extension, 12', RL20, O-ring
10087003	Anchorage Connector extension, 6', FP5K, O-ring
10073847	Anchorage Connector extension, 5', FP5K, O-ring

Anchorage Cable Sling

- Standard lengths of 2', 4', and 6', custom lengths available
- Vinyl Coated
- 1/4" Galvanized Cable

Anchorage Cable Sling Part No. SFP3267504



Suretyman™ Anchorage Sling

Suretyman Anchorage Sling Part No. SFP2267402

- 1" nylon tube webbing sewn into an endless loop
- Available in 2', 4', and 6' lengths
- Can be hitched to an anchorage point using various configurations



Anchorage Connector Extension

- Vinyl coated
- 1/4" galvanized cable



Anchorage Connector Extension Part No. 505233

Anchorage Connectors

- Have a minimum breaking strength of 5,000 lb.
- Are compatible for use with MSA fall arrest and confined space entry/retrieval components
- Meet ANSI Z359.1-2007, ANSI A10.32 and all applicable OSHA regulations

FP Stryder™ Anchorage Connector

- Easy, single-hand installation
- Low friction wear pads with Teflon allow the FP Stryder Anchorage Connector to glide effortlessly along the beam flange
- Lightweight - only 4.5 pounds
- Integral load indicator alerts user if unit has been exposed to a fall
- Versatile design allows for mounting overhead or at worker's feet
- Vernier adjustability allows for a secure fit and 1/4" adjustment increments
- Easy to use, push button adjustment - no pins to be lost!
- 2 models available to fit most beam sizes
 - Standard version fits beam flange widths from 4" to 14"
 - XL version fits beam flange widths from 14" to 24"
- 400-pound working capacity



FP Stryder
Part No. 10051455

Part No.	Description
10051455	FP Stryder Anchorage Connector, Standard version, fits beam flange widths from 4" - 14"
10051456	FP Stryder XL Anchorage Connector, XL version, fits beam flange widths from 14" - 24"
10051457	FP Stryder Anchorage Connector Kit, containing one complete Standard version FP Stryder, one XL adjustment bar, one carrying case, and one adjuster button replacement kit
506682	BeamGrip for beams with flange width: 3.94" to 5.64" flange thickness: .205" to .659"
415171	BeamGrip for beams with flange width: 5.525" to 8.07" flange thickness: .36" to 1.09"
415172	BeamGrip for beams with flange width: 8.06" to 10.475" flange thickness: .56" to .935"
415173	BeamGrip for beams with flange width: 10.265" to 12.8" flange thickness: .605" to 1.25"
506643	D-Ring insert for BeamGrip
506673	Swivel D-Ring
10072789	506682 BeamGrip with swivel D-Ring
506266	BeamGlide Trolley, removable model
506252	BeamGlide Trolley, permanent model
506379	Trolley End Stops (pair)
10016468	Permanent roof anchor, 2" x 4"
10017593	Permanent roof anchor, 2" x 6"
10017594	Permanent roof anchor, 2" x 8"
10017595	Permanent roof anchor, 2" x 10"
10017596	Permanent roof anchor, 2" x 12"
416068	Temporary roof anchor, 3-pak
506632	D-plate anchorage connector, zinc-plated steel
506669	D-plate with 8 x 8 galvanized back plate
506672	D-plate with 8 x 8 aluminum back plate
10003213	Bolt D-Ring with hole only
10062597	Single bolt anchor
10102686	Workman reusable roof anchor

BeamGrip™

- Attaches to I-beam flange—no tools required
- Optional D-ring insert (P/N 506643) and/or swivel D-ring (P/N 506673) can provide anchorage connection for one or two persons (D-rings sold separately)



BeamGrip
Part No. 506682,
shown with Part No. 506643
and Part No. 506673

BeamGlide™ Trolley

- Provides horizontal mobility—keeps anchorage connector directly overhead
- Sizing to fit all beams

BeamGlide Trolley
Removable Model
Part No. 506266



Roof Anchors

- All steel construction
- Fit all pitches of roof trusses or rafters
- Easy to install without special tools

Temporary Roof Anchors
Part No. 416068



Permanent Roof Anchor
Part No. 10016468

D-Plate Anchorage Connector

- Provides permanent anchorage point
- Bolts to beams or columns
- Also available with 8" x 8" back-plate made of black anodized aluminum or galvanized steel for attachment to concrete walls

D-Plate Anchorage Connector
Part No. 506632



Bolt D-ring with Hole

- Permanent anchorage connector
- Attaches to bottom of I-beam flange, user supplies bolt
- Designed for horizontal installation

Bolt D-ring with Hole
Part No. 10003213



Single Bolt Anchor

- Permanent anchorage connector
- Bolts to vertical columns

Single Bolt Anchor
Part No. 10062597



Workman Reusable Roof Anchor

- Fits up to a 12 x 12 roof pitch
- Fastens with screws or nails

Workman Reusable Roof Anchor
Part No. 10102686



Anchorage Connectors

- Have a minimum breaking strength of 5,000 lb.
- Are compatible for use with MSA fall arrest and confined space entry/retrieval components
- Meet ANSI Z359.1-2007, ANSI A10.32 and all applicable OSHA regulations

ManSafe Freestanding Constant Force Post

- Does not attach to the working surface
- Installer will never have to lift more than 55 lbs (25 kg) at any time
- Used on nominally flat roofs up to a maximum pitch of 5 degrees
- Tested and approved for use on concrete, single-ply membrane, asphalt-sanded, asphalt-stone chipped, and steel roof profiles
- Post is omni-directional
- Meets OSHA regulations only



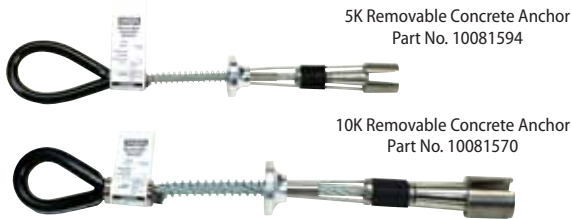
ManSafe Freestanding Post*
Part No. 10055719

* Post D-ring (Part No. 10038363) must be purchased separately.

Part No.	Description
10055717	ManSafe Freestanding Constant Force Post, 440 lbs (200 kg)
10055718	ManSafe Freestanding Constant Force Post, 660 lbs (300 kg)
10055719	ManSafe Freestanding Constant Force Post, 880 lbs (400 kg)
10055716	220 lb (100 kg) Upgrade kit for ManSafe Freestanding Constant Force Post
10038363	Post D-ring for ManSafe Freestanding Constant Force Post
10081594	5K removable concrete anchor
10081570	10K removable concrete anchor
SFPRS6000	Rail-Slider, steel, galvanized, for 80 - 136 # rail, used on train/crane type rail, [carabiner required - sold separately (see below)]
10030608	Rail-Slider, steel, galvanized, for 141 # rail, used on train/crane type rail, [carabiner required - sold separately (see below)]
10002820	Large hook with strap

Removable Concrete Anchors

- Quickly and easily removed and reinstalled in another location
- Compact and lightweight
- Durable stainless steel and aluminum construction
- 400 lb capacity
- 2 models: 5,000 lb version (5K) and 10,000 lb (10K) version
- 10,000 lb version can be used to anchor MSA Dyna-Line or Sure-Line Horizontal Lifelines



5K Removable Concrete Anchor
Part No. 10081594

10K Removable Concrete Anchor
Part No. 10081570

Rail-Slider™

- Provides fall protection during horizontal movement on railway bridges
- Quick and easy installation
- 2 sizes available



Rail-Slider
Part No. SFPRS6000

Large Hook with Strap

- Large 2-1/2" throat-opening hook with integral strap and D-ring
- Compatible with all MSA lanyards and vertical lifelines



Large Hook with Strap
Part No. 10002820

Carabiners

MSA offers a wide variety of carabiners for almost every application. All carabiners have a minimum breaking strength of 5,000 lbs. All carabiners meet applicable OSHA regulations. See chart for additional standards met.

Part No.	Description	Standards	
		CSA Z259.12-2001	ANSI Z359.1-2007
506259	Carabiner, 7/8" (22 mm) gate, twist lock, auto-locking, aluminum		
506572	Carabiner, 7/8" (22 mm) gate, twist lock, auto-locking, steel		
506308	Carabiner, 2" (50 mm) gate, twist lock, auto-locking, steel, with captive eye		
10089205	Carabiner, 9/16" (14 mm) gate, auto-locking, steel, 3,600-lb gate strength	X	X
10089207	Carabiner, 1" (25 mm) gate, auto-locking, steel, 3,600-lb gate strength	X	X
10089209	Carabiner, 2.1" (53 mm) gate, auto-locking, steel, 3,600-lb gate strength	X	X
SRCC413	Carabiner, 9/16" (14 mm) gate, auto-locking, steel	X	
SRCA853	Carabiner, 1" (25 mm) gate, auto-locking, aluminum	X	
SRCC740	Carabiner, 2" (50 mm) gate, auto-locking, steel	X	
SRCC641	Carabiner, large D design, 1.2" (32 mm) gate, screwgate, steel	X	
SRCA613	Carabiner, 3/4" (19 mm) gate, auto-locking, aluminum	X	
SRCC642	Carabiner, 1.2" (52 mm) gate, auto-locking, steel, NFPA	X	
SRCA722	Carabiner, 2.1" (52 mm) gate, auto-locking, aluminum	X	
SRCC643	Carabiner, 1" (25 mm) gate, auto-locking, steel	X	
SRCC734G	Carabiner, 2.1" (52mm) gate, auto-locking, steel		



Fall Protection Kits

Thermatek® Kit

Includes:

- Thermatek Harness, standard size, made of a Kevlar/Nomex blend webbing that is resistant to chemicals, weld splatter, and other high heat exposures.
- Thermatek Shock-Absorbing Lanyard features a burn-resistant Tuffweld protective cover that is superior to Nomex. The Thermatek 12 lanyard model is designed to arrest a freefall up to 12' and keep fall arrest forces below OSHA limits.
- Thermatek Anchorage Connector Strap with Kevlar webbing and stitching has a replaceable wear pad to protect webbing from abrasion.
- Carrying Bag for convenience.
- Meets OSHA, ANSI A10.32



Thermatek Kit	with HL2000 Snaphooks	with RL20 Snaphooks
Kit with Thermatek 6 Lanyard	10026061	10026063
Kit with Thermatek 12 Lanyard	10026062	10026064

Workman Fall Protection Kits



Kits include the Workman Vest-Style Harness, the Workman Shock-Absorbing Lanyard, the PointGuard Anchor Strap, and a duffel bag. Meets OSHA, ANSI A10.32 and CSA.

Part No.	Description
10092166	Workman Fall Protection kit includes STD size Vest-Style Harness with Qwik-Fit Leg Straps; Workman Shock-Absorbing Lanyard, single-leg, adjustable; Pointguard Anchor Strap; duffel bag
10092167	Workman Fall Protection kit includes STD size Vest-Style Harness with Tongue-buckle Leg Straps; Workman Shock-Absorbing Lanyard, single-leg, adjustable; Pointguard Anchor Strap; duffel bag
10092168	Workman Fall Protection kit includes XLG size Vest-Style Harness with Qwik-Fit Leg Straps; Workman Shock-Absorbing Lanyard, single-leg, adjustable; Pointguard Anchor Strap; duffel bag
10092169	Workman Fall Protection kit includes XLG size Vest-Style Harness with Tongue-buckle Leg Straps; Workman Shock-Absorbing Lanyard, single-leg, adjustable; Pointguard Anchor Strap; duffel bag

Workman Aerial Kits

Kits include the Workman Vest-Style Harness, the Workman Shock-Absorbing Lanyard, and a convenient storage bag that can be attached to an aerial lift.



Meets OSHA, ANSI A10.32 and CSA.

Part No.	Description
10092170	Workman Aerial Kit includes STD size Vest-Style Harness with Qwik-Fit leg straps; Workman Shock-Absorbing Lanyard, single-leg, adjustable; carry bag
10092191	Workman Aerial Kit includes STD size Vest-Style Harness with Tongue-Buckle leg straps; Workman Shock-Absorbing Lanyard, single-leg, adjustable; carry bag
10092192	Workman Aerial Kit includes XLG size Vest-Style Harness with Qwik-Fit leg straps; Workman Shock-Absorbing Lanyard, single-leg, adjustable; carry bag
10092193	Workman Aerial Kit includes XLG size Vest-Style Harness with Tongue-Buckle leg straps; Workman Shock-Absorbing Lanyard, single-leg, adjustable; carry bag

Anthron Descent Device System



Anthron systems and replacement ropes available in lengths of 25-ft increments from 50 ft up to 600 ft

The Anthron Descent Controller is a manually operated descent device. It is most commonly used for suspended work positioning, self evacuation, or rescue operations. Other features include:

- Proper roping/rigging diagrams on the side of the Anthron Descender
- Device can be installed/removed at any point on rope
- Working load of 300 lbs (136 kg)
- System consists of a 7/16" (11mm) rope, Anthron Descender, and two carabiners

Part No.	Description
SDC726050	Anthron system includes: Anthron descender, 2 carabiners, 50 ft rope
SDC726100	Anthron system includes: Anthron descender, 2 carabiners, 100 ft rope
SDC726150	Anthron system includes: Anthron descender, 2 carabiners, 150 ft rope

Roofers' Kits



Part No.	Description
10074475	Roofer's Kit
Kit Contents (Meets ANSI A10.32, OSHA, and CSA)	
Workman Harness, Vest-Style STD size, with Qwik-Fit leg straps	
25' rope lifeline with trailing rope grab	
Roof anchor	
Storage bucket	

Roofer's Kit, Part No. 10074474 same as above with 50' rope lifeline

Part No.	Description
10074584	Roofer's Kit
Kit Contents (Meets ANSI A10.32, OSHA, and CSA)	
Workman Harness, Vest-Style XLG size, with Qwik-Fit leg straps	
25' rope lifeline with trailing rope grab	
Roof anchor	
Storage bucket	

Roofer's Kit, Part No. 10077583 same as above with 50' rope lifeline

Part No.	Description
10074477	Roofer's Kit
Kit Contents (Meets ANSI A10.32, OSHA, and CSA)	
Workman Harness, Vest-Style STD size, with tongue-buckle leg straps	
25' rope lifeline with trailing rope grab	
Roof anchor	
Storage bucket	

Roofer's Kit, Part No. 10074476 same as above with 50' rope lifeline

Part No.	Description
10074482	Roofer's Kit
Kit Contents (Meets ANSI A10.32, OSHA, and CSA)	
Workman Harness, Vest-Style XLG size, with tongue-buckle leg straps	
25' rope lifeline with trailing rope grab	
Roof anchor	
Storage bucket	

Part No.	Description
10074480	Roofer's Kit
Kit Contents (Meets ANSI A10.32 and OSHA)	
Workman Harness, Vest-Style STD size, with Qwik-Fit leg straps	
25' rope lifeline with manual rope grab	
Storage bag	

Roofer's Kit, Part No. 10074479 same as above with 50' rope lifeline

Part No.	Description
10077588	Roofer's Kit
Kit Contents (Meets ANSI A10.32 and OSHA)	
Workman Harness, Vest-Style XLG size, with Qwik-Fit leg straps	
25' rope lifeline with manual rope grab	
Storage bag	

Roofer's Kit, Part No. 10077587 same as above with 50' rope lifeline

Part No.	Description
10092959	Roofer's Kit
Kit Contents (Meets ANSI A10.32 and OSHA)	
Workman Harness, Vest-Style STD size, with tongue-buckle leg straps	
25' rope lifeline with manual rope grab	
Storage bag	

Roofer's Kit, Part No. 10092958 same as above with 50' rope lifeline

Part No.	Description
10077590	Roofer's Kit
Kit Contents (Meets ANSI A10.32 and OSHA)	
Workman Harness, Vest-Style XLG size, with tongue-buckle leg straps	
25' rope lifeline with manual rope grab	
Storage bag	

Roofer's Kit, Part No. 10077589 same as above with 50' rope lifeline

Roofer's Kit



Roofers' Kit
Part No. 10055061

Part No.	Description
10055061	Roofers' Kit
Kit Contents (Meets OSHA and ANSI A10.32)	
Gravity Harness, Vest-Style STD size, with Qwik-Fit chest and leg straps, and back D-ring; includes integral Sure-Stop Shock-Absorber with D-ring	
Manual Rope Grab Fall Arrester with manual-lock carabiner	
25' - 5/8" Rope, polysteel/polyester, with LS snaphook	
Temporary roof anchor (3)	
Woodscrews, #12 x 2.5" Philips flathead, zinc	
Roofers' Kit Tote Bag	

Roofers' Kit, Part No. 10055000 same as above with 50' vertical lifeline

Rope Grabs and Vertical Lifelines



FP Pro Rope Grab with 3'
Dyna-Brake Lanyard
Part No. 415940



Rope Grab Fall Arrester
Part No. 10054077

Rope Grabs and Vertical Lifelines

FP Pro Rope Grab

Unique, versatile, lightweight and affordable, the FP Pro Rope Grab features:

- Hands-free operation while ascending or descending
- Ultra-smooth travel action
- Cam and hinge design allows for a quick, easy installation on the rope
- Available with either polyester or polyester/polypropylene blend rope
- Rope Grabs and ropes with 36C snaphook meet ANSI Z359.1-2007

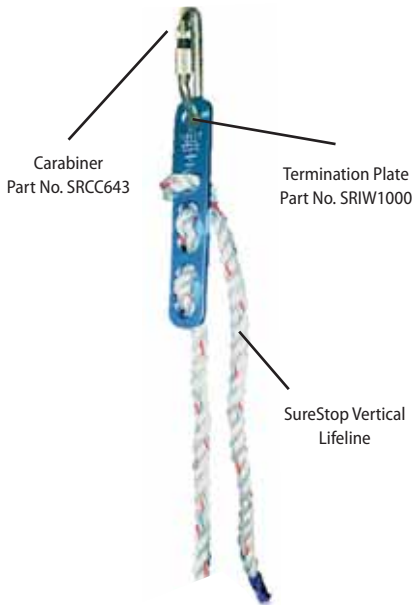
Vertical Lifelines

Part No.	Description	Length
415865	5/8" polyester rope, w/36C Snaphook on one end	25'
415869	5/8" polyester rope, w/36C Snaphook on one end	50'
415870	5/8" polyester rope, w/36C Snaphook on one end	75'
415871	5/8" polyester rope, w/36C Snaphook on one end	100'
415872	5/8" polyester rope, w/36C Snaphook on one end	150'
415873	5/8" polyester rope, w/36C Snaphook on one end	200'
416048	5/8" polyester/polypropylene rope, w/twist-lock carabiner on one end	25'
416049	5/8" polyester/polypropylene rope, w/twist-lock carabiner on one end	50'
416050	5/8" polyester/polypropylene rope, w/twist-lock carabiner on one end	75'
416051	5/8" polyester/polypropylene rope, w/twist-lock carabiner on one end	100'
416052	5/8" polyester/polypropylene rope, w/twist-lock carabiner on one end	150'
416053	5/8" polyester/polypropylene rope, w/twist-lock carabiner on one end	200'

Rope Grabs

Part No.	Description
415940	FP Pro Rope Grab with 3' Sure-Stop Lanyard, 36C snaphook
415941	Rope Grab with 19' Sure-Stop Lanyard, 36C snaphook
415942	Rope Grab kit with 50' -5/8" rope, polyester, anchorage connector strap
415943	Rope Grab kit with 100' -5/8" rope, polyester, anchorage connector strap
415964	Rope Grab kit with 50' -5/8" rope, polyester/propylene, anchorage connector strap
415965	Rope Grab kit with 100' -5/8" rope, polyester/propylene, nylon anchorage connector strap
10054077	Rope Grab fall arrester

Rope Grabs and Vertical Lifelines



SureGrab™ Rope Grab

The SVLR78 SureGrab device and lifeline is used to provide temporary fall protection on ladders or when climbing vertical structures. This system can also be used to provide a secondary lifeline for suspended positioning systems used by building/structure



inspectors, window cleaners, and maintenance personnel. The SureGrab device moves freely up or down an approved 5/8" (16 mm) diameter lifeline. When sudden downward movement occurs, a camming lever is activated arresting the fall. The device can be installed or removed from the lifeline at any point along its length.

Meets and exceeds ANSI Z359.1 and OSHA standards. SureGrab rope grabs are CSA certified.

SureGrab Rope Grabs

Part No.	Description
SVLR78LS	Rope grab fall arrester, automatic/manual, open body, c/w 1-3/4" x 12" web lanyard, LS snaphook
SRIW1000	5/8" Termination Plate
SLLNL672060LS	Lifeline, nylon, white 3-strand, 5/8" x 60-ft (16mm x 20m) with LS snap on one end
SLLNL672100LS	Lifeline, nylon, white 3-strand, 5/8" x 100-ft (16mm x 30.5m) with LS snap on one end
SLLNL672200LS	Lifeline, nylon, white 3-strand, 5/8" x 200-ft (16mm x 61m) with LS snap on one end

Self-Retracting Lanyards

Workman PFL Lanyard

Features include:

- A field-replaceable lifeline
- A 400-pound working capacity
- No annual factory recertification required
- Integral load indicator
- Integral swivel at PFL/SRL connector
- A durable, engineered thermoplastic housing
- Meets ANSI A10.32 and all applicable OSHA standards. Compliance with ANSI Z359.1-2007 and certification to CSA Z259.2.2 is noted in the part number table.



Workman Web PFL (Personal Fall Limiter)

Part No.	Description	PFL Connection	Lifeline Connection	Standards	
				CSA Z259.2.2	ANSI Z359.1-2007
10093348	Workman PFL, 12' line length	None	LI Snaphook		
10093349	Workman PFL, 12' line length	None	LC Snaphook		
10093350	Workman PFL, 12' line length	1" Steel Carabiner	LC Snaphook		
10093352	Workman PFL, 12' line length	Back D Connector	LC Snaphook		
10093353	Workman PFL, 12' line length	1" Steel Carabiner	36C Snaphook		X
10093354	Workman PFL, 12' line length	None	36C Snaphook		X
10093351	Workman PFL, 11' line length	Back D Connector	AL64 Snaphook		
10093355	Workman PFL, 10' line length	None	LI Snaphook	X	
10093356	Workman PFL, 10' line length	None	LC Snaphook	X	
10093357	Workman PFL, 10' line length	1" Steel Carabiner	LC Snaphook	X	
10093358	Workman PFL, 10' line length	Back D Connector	LC Snaphook	X	

Workman Cable PFL (Personal Fall Limiter)

Part No.	Description	PFL Connection	Lifeline Connection	Standards	
				CSA Z259.2.2	ANSI Z359.1-2007
10104708	Workman PFL, 12' line length	None	LI snaphook		
10104709	Workman PFL, 12' line length	None	LC Snaphook		
10104710	Workman PFL, 12' line length	1" Steel Carabiner	LC Snaphook		
10104791	Workman PFL, 11' line length	Back D Connector	AL64 Snaphook		
10104792	Workman PFL, 12' line length	Back D Connector	LC Snaphook		
10104793	Workman PFL, 12' line length	1" Steel Carabiner	36C Snaphook		X
10104794	Workman PFL, 12' line length	None	36C Snaphook		X
10104795	Workman PFL, 10' line length	None	LI Snaphook	X	
10104796	Workman PFL, 10' line length	None	LC Snaphook	X	
10104797	Workman PFL, 10' line length	1" Steel Carabiner	LC Snaphook	X	
10104798	Workman PFL, 10' line length	Back D Connector	LC Snaphook	X	

Additional configurations available. Log on to <http://assetlibrary.msanet.com/> and search for bulletin 2301-25-MC for more information.

Self-Retracting Lanyards



Dyna-Lock SRL
Part No. 506204



20' Strap
Dyna-Lock SRL
Part No. 506615



20' Wire Rope
Dyna-Lock SRL
Part No. 10017931
(310 lbs Maximum Capacity)



Backpacker SRL
Part No. 506619

Dyna-Lock® SRL's

The MSA Dyna-Lock Self-Retracting Lanyards (SRL) are fast-acting fall arresters that limit free-fall distance, deceleration distance, and fall arrest forces while allowing user freedom of movement. The Dyna-Lock SRL is ideal for climbing applications where vertical mobility is needed. All Dyna-Lock SRLs meet applicable OSHA regulations and ANSI A10.32. See chart below for ANSI Z359.1-2007 and CSA compliance.

Capacity (working load)

For 20' web; 30', 50', 70' and 95' cable
Dyna-Lock Models:

- Maximum: 400 lbs (181 kg)
- Minimum: 75 lbs (34 kg)

For 20' cable model:

- Maximum: 310 lbs (140 kg)
- Minimum: 75 lbs (34 kg)

Arrest Force

- 75–310 lbs < 900 lbf (4 kN)
- 311–400 lbs < 1800 lbf (8 kN)

Arrest Distance

- 75–310 lbs < 40 in (101.6 cm)
- 311–400 lbs < 54 in (137 cm)



20' Cable Dyna-Lock SRL in use



Dyna-Lock Backpacker SRL in use

Part No.	Model	Length	Standards	
			CSA Z259.2.2	ANSI Z359.1-2007
506202	Galvanized Wire Rope	10M (30')		X
506204	Galvanized Wire Rope	16M (50')		X
506206	Galvanized Wire Rope	22M (70')		X
506208	Galvanized Wire Rope	30M (95')		X
506203	Stainless Steel Wire Rope	10M (30')		X
506205	Stainless Steel Wire Rope	16M (50')		X
506207	Stainless Steel Wire Rope	22M (70')		X
506209	Stainless Steel Wire Rope	30M (95')		X
506615	Nylon Web	20'		X
10017931	Wire Rope Dyna-Lock	20'		X
506619	Backpacker, Web	20'		
10006470	Galvanized Wire Rope	30'	X	
10006468	Galvanized Wire Rope	50'	X	
10006466	Galvanized Wire Rope	70'	X	
10006464	Galvanized Wire Rope	95'	X	
10006469	Stainless Steel Wire Rope	30'	X	
10006467	Stainless Steel Wire Rope	50'	X	
10006465	Stainless Steel Wire Rope	70'	X	
10006463	Stainless Steel Wire Rope	95'	X	
10006447	Nylon Web	20'	X	
10017933	Stainless Steel Cable	20'	X	
10006446	Backpacker, web	20'	X	

Confined Space Equipment

MSA confined space entry/retrieval systems are designed for fall arrest, lifting and lowering, rescue, and work positioning applications. They incorporate an anchorage connector, fall arrest component (Dyna-Lock, Dynevac II, Lynx Rescuer), a personnel and materials handling hoist (Lynx Hoist), and associated hardware to rig the system for use. The systems can be used for leading edge work, maintenance and entry/retrieval from manholes, tank cars, silos, tanks, vaults, pits, vats, and other confined space applications.

Workman® Tripod and Workman Confined Space Entry Kit

Easy To Use

- Simple setup procedure makes the process quick and promotes correct use.
- Legs automatically lock in the open position for added safety.
- A maximum height indicator provides quick and easy identification of the maximum leg extension length.
- Aluminum leg and head design reduces weight, improving portability.

Durable

- An internal leg-locking mechanism prevents accidental disengagement during use and reduces the possibility of damage to the mechanism during use or while in storage.

Versatile

- The leg base support strap also serves as a convenient carrying strap.



Confined Space Entry Kits

- Single part number for simplified ordering
- Lynx Rescuer allows for non-entry rescue of a confined space entrant
- Lynx Hoist designed for lifting, lowering and positioning of personnel and materials
- Carrying bags allow for great portability

Part No.	CSA Part No.	
10102002	10102002	Workman Tripod
10105271	10115109	Confined Space Entry Kit with Lynx Hoist and Lynx Rescuer
10117244	10115110	Confined Space Entry Kit with Lynx Rescuer

Replacement parts and accessories

1015612	Leg base support strap
10089207	Carabiner
506222	Pulley
10011744	Lynx Rescuer
10016569	Side Mount Lynx Hoist
506232	Lynx Rescuer Mounting Bracket
10105656	Tripod duffel bag
507151	Hoist/Rescuer carrying bag

Lynx® Rescuer, Field Resettable Model with Lockout

- Self-Retracting Lanyard with emergency retrieval capabilities
- User is able to reset device from retrieval mode to fall arrest mode
- The easiest, quickest field-reset mechanism on the market
- Same unit can be used in the field and for training situations
- Lock feature with key allows more control over who can reset unit to fall arrest mode
- Confined space entry provides fall arrest and emergency lifting and lowering
- Meets ANSI Z359.1-2007, and all applicable OSHA standards, and CSA part numbers are CSA certified



Lynx Rescuer
Part No. 10011744

Part No.	CSA Part No.	Description
10011744	10023016	50-ft (16m) Self-Retracting Lanyard with Emergency Rescuer, 3/16" diameter stainless steel line. With proper inspection, system may be reused after fall arrest and/or retrieval.
10011745	10023017	95-ft (30m) Self-Retracting Lanyard with Emergency Rescuer, 3/16" diameter stainless steel line. With proper inspection, system may be reused after fall arrest and/or retrieval.

Confined Space Equipment



Lynx Personnel/Material Hoist

- Designed for lifting, lowering, and positioning of personnel and materials
- Maximum work load of 310 lbs for personnel and 620 lbs for materials
- Anti-backlash crank handle with a lifting/ lowering speed of 25 ft per minute
- Integral shock absorber
- Load-limiting clutch prevents overloading of hoist
- Emergency drive allows manual bypass of load-limiting clutch for extra lifting capacity in an emergency
- Primary gear backed up by two independent secondary brakes
- Air drive adapter enables powered lifting/ lowering with optional air-powered drive assembly
- Meets ANSI Z359.1-2007, and all applicable OSHA standards

Part No.	Description
10016569	Side mount with emergency drive and air drive adapter, galvanized wire rope, 50'
10016568	Side mount with emergency drive and air drive adapter, galvanized wire rope, 105'
10016683	Boom mount with emergency drive and air drive adapter, galvanized wire rope, 50'
10016682	Boom mount with emergency drive and air drive adapter, galvanized wire rope, 105'
506420	Lynx Hoist air drive assembly

Folding Davit and Base

The Folding Davit and Base is a portable and economical anchorage connector used where a tripod will not work. Available with a zinc-plated alloy-steel Davit Arm and your choice of zinc-plated carbon steel or stainless steel Davit Base. This lightweight device provides a 24-inch reach and 77-inches of head clearance. It pivots 360-degrees and can readily maneuver personnel and materials between spaces below the deck where it is mounted. The Folding Davit may be carried from base to base and installed in minutes. Meets or exceeds ANSI Z359.1, ANSI A10.32, and applicable OSHA requirements. Mounting brackets and pulleys sold separately.



Column Davit and Base

The Column Davit and Base are used for more permanent conditions where a tripod will not work. Available with a zinc-plated alloy-steel Davit Arm and zinc-plated carbon steel or stainless steel bases. Provides a 30 inch reach and 77 inches of head clearance. May be mounted to horizontal, vertical, and subsurface appropriate anchor points. Pivots 360 degrees. Meets or exceeds applicable OSHA requirements. Mounting brackets and pulleys sold separately.



Bosun Chair

The Bosun Chair is the best method to sit suspended for long durations. The padded seat ensures your comfort during use. The adjustable web assembly ensures security. Designed to be used in conjunction with our Full Body Harnesses, the Bosun Chair, attached to the chest D-ring, will keep the user in the upright position.

Bosun Chair
Part No. SSH3505017



Part No.	Description
506613	Folding davit arm, 24" reach, 77" working height, swivels to extend over work area, folds for ease of transport and storage
506614	Folding davit base
506622	Bracket for mounting 10m (30 ft)/ 16m (50 ft) Dyna-Lock, Dynevac, and Lynx Rescuer to Folding davit
506362	Bracket (same as above), except for 22m (70 ft)/ 30m (95 ft) Dyna-Lock
506568	Column davit arm, 30" reach, 77" working height, boom arm swivels to extend over work area
506492	Surface mounting receptacle for Column davit arm
506232	Bracket for mounting 10m (30 ft)/ 16m (50 ft) Dyna-Lock, Dynevac, and Lynx Rescuer to Column davit, aluminum (requires part no. 506590)
506216	Bracket (same as above), except for 22m (70 ft)/ 30m (95 ft) Dyna-Lock
506590	Bracket for mounting Dyna-Lock or Dynevac to Column davit (requires part no. 506216 or 506232)
506603	Holster to store Boom Mount Hoist when not in use
506668	Vertical davit arm - Ladder Mount
506667	Receptacle for Vertical davit arm - Ladder Mount (bolts to ladder)
415837	Push-Pull davit - Ladder Mount, bolts to ladder and retracts to allow hatch cover to close, extends 60" above hatch when extended
SSH3505017	Bosun Chair, 5" x 16-1/2" padded seat, black nylon straps, 2 carabiners

Ladder Climbing Equipment

SureClimb™ Temporary Cable System

The SureClimb Temporary Ladder Cable System is designed to provide fall protection when climbing or descending ladders or vertical structures up to 300 ft in height. Applications include telecommunications towers, light poles, water towers, hydroelectric towers, stacks, and any other climbable structure. The SureClimb temporary system:

- Uses a 5/16" galvanized steel cable
- Allows for quick and easy attachment to approved ladder or structure
- Includes an integral, adjustable line weight
- Uses a stainless steel fall arrester (ordered separately)
- Meets all applicable OSHA regulations and ANSI standards
- CSA certified

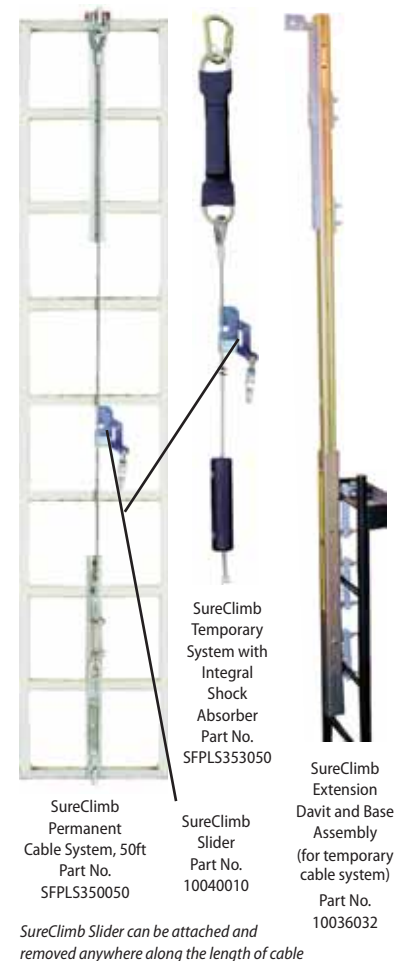
SureClimb™ Permanent Cable System

The SureClimb Permanent Ladder Cable System is designed to provide fall protection when climbing or descending ladders or vertical structures up to 300' in height. Applications include telecommunications towers, light poles, water towers, hydroelectric towers, stacks, and any other climbable structure. The SureClimb permanent system:

- Includes energy-absorbing, galvanized steel top and bottom mounting brackets
- Uses a 5/16" galvanized steel cable
- Incorporates cable guides to minimize cable vibration and wear
- Uses a stainless steel fall arrester (ordered separately)
- Meets all applicable OSHA regulations and ANSI standards
- Is CSA certified and meets ANSI A14.3-1992

50 ft (16 m)	100 ft (30 m)	150 ft (46 m)	200 ft (61 m)	Description
SFPLS353050	SFPLS353100	—	SFPLS353200	Temporary SureClimb System with integral shock absorber Additional lengths available from 50 ft. up to 200 ft. in 50 ft. increments
SFPLS350050	SFPLS350100	SFPLS350150	SFPLS350200	Permanent SureClimb System Additional lengths available from 20 ft. up to 300 ft. in 10 ft. increments

Part No.	Description
10040010	SureClimb Slider (fall arrester) with carabiner (for both temporary and permanent cable systems)
10036032	SureClimb Extension Davit and Base Assembly (for temporary cable system)



Dyna-Glide® Climbing Protection System

The Dyna-Glide Climbing Protection Systems are used to prevent and/or arrest falls from heights and also enhance the way a climber is able to perform the necessary work. Our systems can be mounted to already-installed ladders, to corners of lattice towers, and to almost any other suitably strong structure your crew needs to climb.

- Limits total fall distance to inches
- Offers components for complete rescue systems
- Allows for vertical and horizontal mobility
- Uses galvanized or stainless steel for corrosion resistance
- Offers your choice of Ladder Rail Combination (LRC) or Rail only
- Provides smooth travel – there's no binding of the fall arrester inside the rail
- Uses detachable, lightweight, stainless steel and aluminum mechanism for hands-free ascent and descent
- Is CSA certified and meets ANSI A14.3-1992

Taken together, the Dyna-Glide System is designed to be installed without modification to the structure and can be assembled with simple hand tools.



- LRC Combination (Part No. 506390)
- Rungs incorporate skid-resistant surface
 - Can be curved or bent for your specific application
 - Constructed of galvanized steel
 - Standard length: 7' 4-3/16"
 - Standard width: 18"

Fall Arrester (Part No. 506277)

- Mechanical locking mechanism to reduce fall distance
- Permits hands-free ascent and descent
- Constructed of aluminum and stainless steel
- Carabiner not included



For more complete information on the Dyna-Glide System, see the Dyna-Glide Catalog (Bulletin 2300-22-MC).

Part No.	Description
506270	Straight Notched Rail, galvanized, standard length 7' 4-3/16"
506273	Rung Mount Assembly, galvanized
506274	Gated top end stop, stainless steel
506275	Gated bottom end stop, stainless steel
506277	Fall arrester (CSA Part No. 415752)
506282	Mounting base angle corner, galvanized
506283	Mounting angle corner, galvanized
506312	Ungated top end stop, stainless steel
506329	Rail connector, galvanized
506388	Ladder/Rail Combination (LRC) standoff bracket, galvanized, standard length 7' 4-3/16"
506389	LRC standoff bracket, bottom, galvanized
506390	LRC, galvanized (CSA Part No. 10006461)
506391	LRC side rail connector, galvanized

Temporary Horizontal Lifelines

Temporary Synthetic Horizontal Lifelines

Designed for easy installation and removal, these temporary horizontal lifeline systems were created for a wide range of applications. The system may be mounted to any suitable 5,000 lb-rated anchorage. Both systems can be rigged using many standard components, reducing the need for special or "engineered" equipment.

Dyna-Line® HLL

- Highly visible 12-strand red rope will not hockle and minimizes fall distance due to its low stretch properties
- Available in a Single-Worker or Two-Worker system
- Available in lengths up to 200 ft. System comes in a handy bucket for lengths up to 60 ft.
- Meets all OSHA requirements and ANSI A10.32 standards

SureLine™ HLL

- Includes integral energy absorber
- 5/8" black nylon kernmantle rope
- Available in lengths up to 60 ft
- Rated for two workers
- Includes 2 cable anchor slings
- Includes storage bag



Dyna-Line Temporary Horizontal Lifeline for Two Workers Part No. 10013152

Part No.	Description
10013150	Dyna-Line Temporary Horizontal Lifeline for single worker, 30 ft rope
10013151	Dyna-Line Temporary Horizontal Lifeline for single worker, 60 ft rope
10022826	Dyna-Line Temporary Horizontal Lifeline for single worker, 200 ft rope
10013152	Dyna-Line Temporary Horizontal Lifeline for two workers, 30 ft rope*
10013153	Dyna-Line Temporary Horizontal Lifeline for two workers, 60 ft rope*
10019085	Dyna-Line Temporary Horizontal Lifeline for two workers, 100 ft rope*
10022827	Dyna-Line Temporary Horizontal Lifeline for two workers, 200 ft rope*
SHL1009035BLK	SureLine Temporary Horizontal Lifeline, 35 ft black rope
SHL1009060BLK	SureLine Temporary Horizontal Lifeline, 60 ft black rope

* Dyna-Line Two-Worker system includes 2 polyester anchorage straps.

Line Length	1-Worker System		2-Worker System	
	6' Lanyard	SRL	6' Lanyard	SRL
10 ft	14'10"	12'5"	15'10"	13'2"
20 ft	15'9"	13'8"	17'2"	14'9"
30 ft	16'10"	15'1"	19'4"	16'6"
40 ft	18'0"	16'4"	21'4"	18'3"
50 ft	19'3"	17'6"	23'2"	20'1"
60 ft	20'6"	18'9"	25'1"	22'

Clearances based on Lifeline 4' above working surface

Line Length	1-Worker System		2-Worker System	
	6' Lanyard	SRL	6' Lanyard	SRL
10 ft	14'3"	12'5"	14'7"	13'2"
20 ft	15'6"	13'9"	17'	15'
30 ft	17'1"	15'2"	19'4"	16'7"
40 ft	18'6"	16'5"	21'8"	18'4"
50 ft	20'	17'8"	24'2"	20'3"
60 ft	21'5"	19'1"	26'	22'2"



SureLine Temporary Horizontal Lifeline for Two Workers Part No. SHL1009060BLK

Clearances based on Lifeline 4' above working surface

SureLine™ Temporary Cable Horizontal Lifeline

The SureLine temporary Horizontal Lifeline is a lightweight cable system that is suspended between two approved anchor points to provide worker fall protection during horizontal movement. Designed for quick and easy installation at temporary work sites, the SureLine system:

- Includes an integral shock absorber
- Available in 2 models, with or without turnbuckle
- Available in 20 ft, 40 ft, or 60 ft lengths
- Rated for up to 2 people
- Uses a 3/8", 6x36 galvanized cable
- Incorporates a combination clamp/thimble that allows for effortless tensioning of lifeline
- Meets all OSHA requirements and ANSI A10.32 standards.



SureLine Steel Cable System Part No. SHL2009040

Part No.	Description
SHL2009040	Steel Cable Horizontal Lifeline System with turnbuckle, 40 ft (12 m)
SHL2009060	Steel Cable Horizontal Lifeline System with turnbuckle, 60 ft (18 m)
SHL2009040IW	Iron Worker Cable Horizontal Lifeline System without turnbuckle, 40 ft (12 m)
SHL2009060IW	Iron Worker Cable Horizontal Lifeline System without turnbuckle, 60 ft (18 m)

Line Length	1-Worker System		2-Worker System	
	6' Lanyard	SRL	6' Lanyard	SRL
10 ft	14'1"	12'2"	14'6"	13'2"
20 ft	15'1"	13'1"	16'7"	14'8"
30 ft	16'2"	14'	19'	16'4"
40 ft	17'3"	14'9"	21'	18'
50 ft	18'4"	15'7"	22'7"	19'6"
60 ft	19'5"	16'5"	24'3"	21'4"

Clearances based on Lifeline 4' above working surface

Horizontal Lifeline Stanchions



SkyLink® HLL Stanchion

- Accommodates two workers per system
- Lightweight - weighs only 21 pounds, making it easily installed, removed, and handled by 1 person
- No tools required for installation when using pour-in-place anchor, making it easy to install—sets up in minutes!
- Can be used as single point anchor attachment, providing fall protection for workers while installing horizontal lifelines
- Aluminum and steel construction increases durability to ensure long service life
- Offers two installation methods to concrete, a pour-in-place anchor for new construction or concrete expansion bolts for existing construction, providing versatility to meet the requirements of your application
- Folding leg stanchion design makes the stanchion easy to carry and convenient to store
- Meets ANSI A10.32 and OSHA requirements



Designed to support horizontal lifelines in two directions (in-line with D-ring head)



Can be used as single point anchor while connecting lifeline

Part No.	Description
10055659	Skylink Stanchion, Standard model - 44" height (pour-in-place Pigtail or concrete expansion anchors must be ordered separately)
10055660	Skylink Stanchion, SL model - 23" height (pour-in-place Pigtail or concrete expansion anchors must be ordered separately)
10055721	3.25" concrete expansion anchor with nut and washer
10059805	0.5" x 12" pour in place "Pigtail" anchor with washer and vinyl cap
10059806	Skylink Stanchion Kit including 2 - Standard stanchions with 60' 2-worker Dyna-Line 10013151 (without anchor straps) and 4 Pigtail anchors
10059807	Skylink Stanchion Kit including 2 - Standard stanchions with 60' Sure-Line for Iron Workers (p/n SHL2009060IW), and 4 Pigtail anchors
10059808	Skylink Stanchion Kit including 2 - SL stanchions with 60' 2-worker Dyna-Line (p/n 10013153 - without anchor straps) and 4 Pigtail anchors
10059809	Skylink Stanchion Kit including 2 - SL stanchions with 60' Sure-Line for Iron Workers (p/n SHL2009060IW), and 4 Pigtail anchors

HLL quickly connects to Stanchion



Jaw clamp screw easily attaches to I-beam flange



D6 HLL Stanchion for Horizontal Lifeline
Part No. SHLARD6A

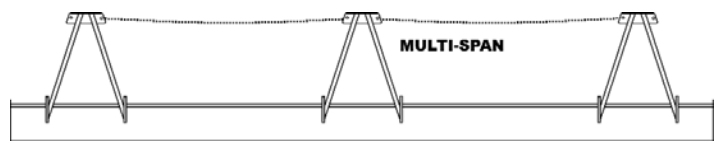
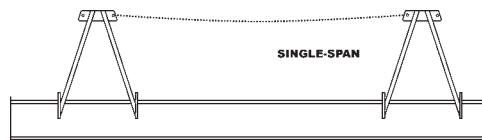
D6 HLL Stanchion

The D6 HLL Stanchion is an anchorage connector used for the installation of horizontal lifeline systems. Designed with a jaw clamp screw, D6 HLL Stanchions are easily installed on steel girders or base plates fitted to bridge rail ties to provide a strong stable connection point for the approved horizontal lifeline system.

Anchorage Bracket also features:

- Constructed of galvanized steel
- Collapsible A-frame for easy transport & storage
- Meets all applicable OSHA regulations & ANSI standards

Part No.	Description
SHLARD6A	D6 HLL Stanchion A-frame design, galvanized steel



Rescue Equipment: FP Rescue™ Pulleys & Components



Part No.
SPPPU8708



Part No.
SPPPU8710



Part No.
SPPPU8720

Part No.
SPPRL4000



SuretyMan Q-Eight
Part No.
SRSFFE2120

SuretyMan Rescue
Eight, Steel
Part No. SRSF5045



Stealth Rigging Plate
Part No. SRSPR5990



Stretcher Rigging Plate
Part No. SRSPR5980

SuretyMan™ Pulleys

Designed to meet the rigorous standards of the professional rescuer. Built with high grade aluminum side plates and sheaves, oilite bearings, stainless steel bolts, washers, and lock nuts make these some of the best pulleys available. The aluminum side plates swivel and rotate to allow the pulley to be attached anywhere along the rope. The top holes of the side plates are large enough to accept three carabiners. Contain Prusik design (squared corners of the side plates) to provide rope security with a Prusik hitch. Pulleys accept 3/8" (1 cm) to 1/2" (1.3 cm) static kernmantle ropes. Side plates are powder coated. Strength: 2" (5 cm) Double 8,100 lb (36 kN), 4" (10 cm) Double 11,200 lb (49 kN).

SuretyMan™ Mini Knot Passing Pulley

The Suretyman Mini Knot Passing Pulley was designed for the professional rescue team concerned with size and weight. The Suretyman Mini Knot Passing Pulley features:

- Ample room for the passing of knots
- Size: 9-1/2" (24 cm) tall, 4" (10 cm) wide, 3" (7.6 cm) deep
- Aluminum sheave (that will not score like some of the plastic sheaves)
- Locking pin
- Weight: 1.9 lb (.89 kg)
- Half the size and weight of some of the larger, bulkier knot passing pulleys

SuretyMan™ Edge Roller

The best way to protect your rope from sharp edges and reduce rope friction. High quality construction. The 6" x 10" (15.3 cm x 24.4 cm) base is rubber covered to reduce slippage. The bottom and side plate feature attachment holes for ease of security in any situation. Added slots in the base plate accept tube webbing for security. Two edge rollers are required (sold separately). Two quick links are required (sold separately). Edge roller is 4" (10 cm) tall. Weight: 2.8 lb (1.3 kg).

SuretyMan™ Q-Eight

- Ears/cleat are positioned to make tie off very easy and safe
- Ears/cleat still prevent larks footing (girth hitch)
- Designed for 7/16" (11 mm) diameter rope (will work with 1/2" (12 mm) diameter rope)
- Aluminum, anodized gold
- Strength 13,000 lbs (58 kN)
- Weight 8 oz (.24 kg)

SuretyMan™ Rescue Eight

- Designed for rope diameters from 7/16" (11 mm) to 5/8" (16 mm)
- Strength 6,720 lb (30 kN)
- Designed for the fire service, rescue, and police tactical operations
- Available in aluminum or steel
- Weight 1.5 lb (675 g)

SuretyMan™ Rigging Plates

Stealth Rigging Plate: Anchor on the point and the wings will rotate toward the load for a straighter line of pull. Material aluminum. Weight: .46 lb (250g). Strength: 11,000 lb (48 kN). Color: Teal

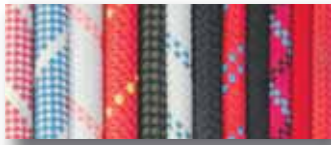
Stretcher Rigging Plate: Designed to unclutter and organize litter rigging points, reducing the chance of error. Material aluminum. Weight: .74 lb (330g). Strength: 12,200 lb (54 kN). Color: Teal

SuretyMan™ Carabiner

- Traditional large "D" design
- Developed for fire and rescue communities
- Manual locking
- Certified to meet NFPA 1993-1995, Class "G"
- Carbon steel, zinc-plated
- Strength 12,364 lbs (55 kg)
- Weight 11 oz (311g)
- Gate opening 1.2" (32mm)

Part No.	Description
SPPPU8708	SuretyMan Pulley, 2" (5 cm) double, Std/Prusik, orange, aluminum, weight: .83 lb (375 g)
SPPPU8710	SuretyMan Pulley, 4" (10 cm) single, Std/Prusik, yellow, aluminum, weight: 1.2 lb (545 g)
SPPPU8717	SuretyMan Pulley, 4" (10 cm) double, Std/Prusik, orange, aluminum, weight: 1.8 lb (840 g)
SPPPU8720	SuretyMan Mini Knot Passing Pulley, yellow, weight: 1.9 lb (.89 kg)
SPPRL4000	SuretyMan Edge Roller, aluminum, weight: 2.8 lb (1.3 kg) - [two required]
SMI420560	Quick Link 5/16" (8 mm) for use with Suretyman Edge Roller - [two required]
SRSF5077	SuretyMan Rescue Eight, aluminum
SRSFFE2120	SuretyMan Q-Eight
SRSPR5990	SuretyMan Stealth Rigging Plate, aluminum, teal
SRSPR5980	SuretyMan Stretcher Rigging Plate, aluminum, teal
SRCC641	Carabiner, 1.2" (32mm) gate, steel

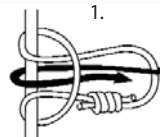
Rescue Equipment: FP Rescue Ropes



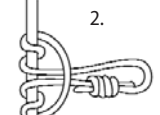
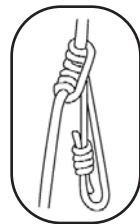
Static Kernmantle Ropes

These ropes are 100% permanent solution dyed color with contrasting marker stripe. Superior flexibility and knotability, provided by a unique double-twist cable core construction, gives superior resistance to abrasion that is up to four times greater than other static kernmantle ropes. These ropes are designed with load absorbing capabilities to provide additional safety in the event a dynamic force is applied.

Tying a Two-Wrap Prusik Hitch



Tying a Three-Wrap Prusik Hitch



3.

Prusik & Accessory Cords

Prusik cords have the same high quality and long wear design as rescue ropes. Size selection should be based upon diameter of the main line. The flexible cord is both strong and highly resistant to abrasion. Prusik cords and accessory cords are identical.

Rope Storage Bags

Rope Storage Bags are made of tough Cordura nylon fabric. Features include a drawstring top, handle/shoulder strap, and carabiner loops at top and bottom. In the bottom of the bag there is an inside loop for the end of the rope, or it can pass through the bottom grommet. Available in orange and black colors.

Rope Bag #1
Part No. SRB430105



Rope Bag #2
Part No. SRB430201

Part No.	Description
SRP508760050	7/16" (11 mm), nylon, 6,500 lb (2,948 kg), black, 50'
SRP504860SL050	1/2" (12 mm), nylon, 9,100 lb (4,128 kg), white/orange tracer, 50'
SRP508960050	5/8" (16 mm), nylon, 11,400 lb (5,171 kg), black, 50'
SRP530961050	1/2" (12 mm) polyester, 9,100 lb (4,128 kg), red, 50'
SRP510660SL050	3/8" (10 mm), nylon, 5,000 lb (2,269 kg), white/blue tracer, 50'
SRP544000050	7/16" (11 mm), nylon, 6,500 lb (2,722 kg), olive, 50'
SRP504866SL050	1/2" (12 mm), nylon, 9,000 lb (4,083 kg), white/blue tracer, 50'
SRP504863SL050	1/2" (12 mm), nylon, 9,000 lb (4,083 kg), red/white tracer, 50'

Additional lengths are available in 1-foot increments.

Part No.	Description
SRP500860	8 mm Accessory Cord, nylon. Use with 1/2"-5/8" (1.3cm-1.6cm) main line, black, 3,100 lb (1,406 kg)
SRP500900	9 mm Accessory Cord, nylon. Use with 1/2"-5/8" (1.3cm-1.6cm) main line, 3,600 lb (1,632 kg)
SRP500500050	5 mm Accessory Cord, nylon, 1,275 lb (578 kg) strength, 50'
SRP5020550050	5.5 mm Titian™ Cord, Spectra Core, nylon, 4,500 lb (2,042 kg) strength, 50'
SRP500700050	7 mm Accessory Cord, nylon. Use with 3/8"-1/2" (1cm-1.3cm) main line, red, 2,600 lb (1,179 kg), 50'

Part No.	Description
SRB430101	Rope Bag #1, orange, holds 120-ft / 1/2" (36.6m / 12 mm) rope
SRB430105	Rope Bag #1, black, holds 120-ft / 1/2" (36.6m / 12 mm) rope
SRB430201	Rope Bag #2, orange, holds 200-ft / 1/2" (60.1m / 12 mm) rope
SRB430205	Rope Bag #2, black, holds 200-ft / 1/2" (60.1m / 12 mm) rope
SRB430301	Rope Bag #3, orange, holds 300-ft / 1/2" (91.4m / 12 mm) rope
SRB430305	Rope Bag #3, black, holds 300-ft / 1/2" (91.4m / 12 mm) rope
SRB430601	Rope Bag #6, orange, holds 600-ft / 1/2" (182.8m / 12 mm) rope
SRB430605	Rope Bag #6, black, holds 600-ft / 1/2" (182.8m / 12 mm) rope

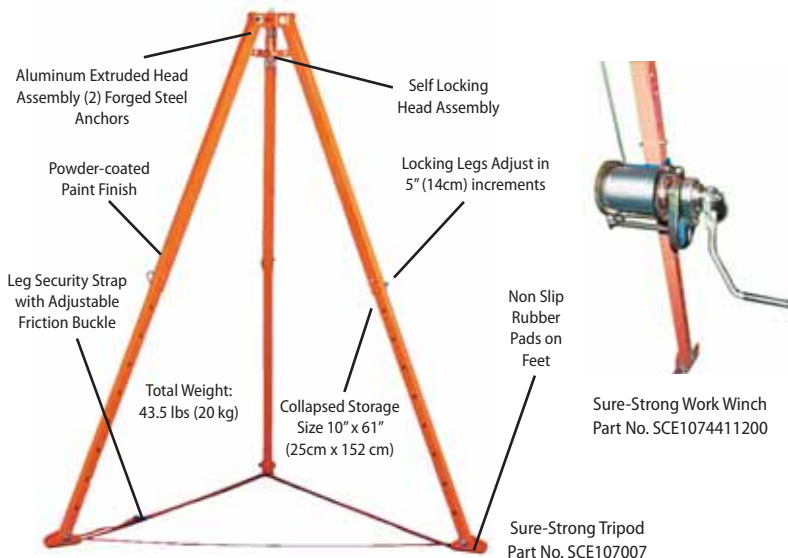
Rescue Equipment: FP Rescue Tripod

Sure-Strong™ Tripods

Sure-Strong Tripods feature:

- Adjustable aluminum legs
- Two forged steel anchor eyes in head assembly
- Head assembly prevents unintentional collapse of tripod
- Legs adjust and lock individually to accommodate variable anchor heights, uneven ground, and compact storage
- Leg security strap prevents legs from spreading in the event of excessive loading
- Available with a cordura nylon storage bag
- Rated for 2 people with a working load of 1,100 lbs

Part No.	Description
SCE107007	Sure-Strong 7-ft (2m) tripod, aluminum, 10,000 lb (48 kN)
SCE107010HD	Sure-Strong 10-ft (3m) tripod, aluminum, 10,000 lb (48 kN)
SCE1074411200	Sure-Strong work winch, 200-ft (61m) galvanized wire rope, with bracket (compatible with Lynx Tripod and Sure-Strong Tripod)



Rescue Equipment: FP Rescue Kits



SuretyMan™ Rescue Utility System

The SuretyMan Rescue Utility System incorporates all the features professionals have come to expect from a first class rescue system. The system is primarily used for raising and lowering people or equipment in rescue and industrial work access and is ideal for confined space applications.

The SuretyMan Rescue Utility System features:

- Pulleys equipped with a built-in anti-reversing lock
- Only a 10 lb force is required to hold a 220-lb (90 kg) load
- SuretyMan ascender attached to both the operating rope and the user via a securing rope—if the operating rope accidentally releases, the ascender automatically stops the descent
- Rapid deployment
- Virtually maintenance free
- Rated for 2-person load
- Compact and light weight with a standard system weight of 17 lb (7.7 kg)
- Versatile for rescue & access
- Multi-purpose ascent or descent
- Rated capacity of 600 lb (272 kg) for personnel and materials
- Standard rope length of 200 ft (66m) with a maximum rope length of 800 ft (267m)

Part No.	Description
SRS15200	SuretyMan Rescue Utility System (200' length)

PLEASE NOTE:

Due to a 4:1 mechanical advantage, the user should order the Rescue Utility System with 4 times the length of rope necessary for their application. For example, the 200' system listed above provides a 50' working length. A 800' system provides a 200' working length.



Fall Protection Rescue Kit

The Fall Protection Rescue kit is designed to be an "out of the bag" rescue system. This kit combines a remote hook and extension pole with a rescue utility system. The remote hook and extension pole allows for remote attachment of a rescue line to a victim. The Rescue Utility System allows a rescuer to raise or lower the victim to safety. This kit should be used with a back-up system (not included).

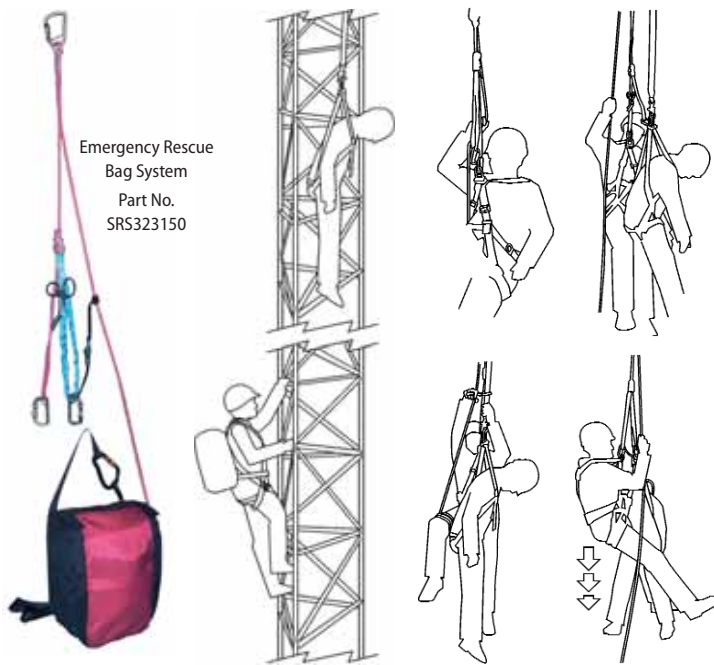
Fall Protection Rescue Kit includes:

- Adjustable Pole, 6 ft (1.8m) to 12 ft (3.6m) (P/N - SFP675009)
- Pole Adapter (P/N - SCE109001) converts pole to hold remote hook
- Remote Hook (P/N - SRCA401) for remote attachment
- Storage Bag (P/N - SRB675009) for pole and remote hook
- Rescue Utility System (P/N - SRS15200) - raising and lowering system with a 4:1 mechanical advantage

Part No.	Description
10030025	Fall Protection Rescue Kit

PLEASE NOTE:

Due to a 4:1 mechanical advantage, the user should order the Rescue Utility System with 4 times the length of rope necessary for their application.



Emergency Rescue Bag System

The Emergency Rescue Bag System is designed for rescue on electrical and communication towers. Developed for use in restrictive environments, this extremely lightweight system was primarily designed for tower rescue; however, the system can be used to perform rescues on almost any vertical structure. The Emergency Rescue Bag System consists of a pre-rigged lowering System that comes in a variety of lengths. The users of this product must receive training by an approved trainer.

Part No.	Description
SRS323150	Emergency Rescue Bag System, 150-ft (45 m) working length
SRS323300	Emergency Rescue Bag System, 300-ft (90 m) working length

PLEASE NOTE:

Due to a 2:1 mechanical advantage, the user should order the Emergency Rescue Bag System with twice the length of rope necessary for their application. For example, the SRS323150 uses 300' of rope to achieve a 150' working length. The maximum system available provides a 400' working length with 800' of rope.



Confined Space/Head First Extraction System

The Confined Space/Head First Extraction System (HFES) is a specialized rescue product designed for those extreme cases where the rescuer has no other option, but to be lowered head first into a confined space to perform a rescue. These cases are rare, but can happen when someone has fallen into a restrictive confined space such as a well or drain system. The system allows the rescuer to be lowered comfortably into a confined space head first, harness the victim, and raise both victim and rescuer out of the confined space. This small, compact system can be used with any confined space retrieval equipment such as tripods and davits.

The HFES consists of the following components:

- Adjustable Lifting Strap (A)
- Adjustable Victim Strap (B)
- 1 Pair of Ankle Harnesses (C)
- 2 Carabiners (D)
- Storage Bag (E)

Part No.	Description
SRS3100	Confined space head first extraction system



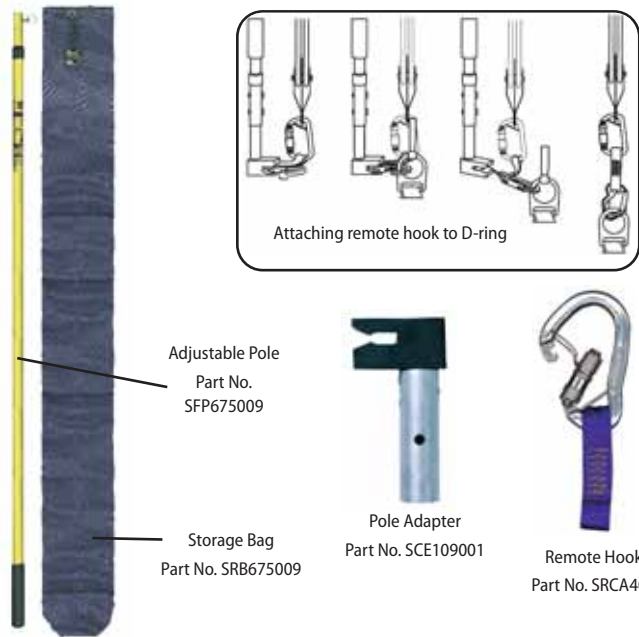
Bucket Truck Evacuation Kit

The Bucket Truck Evacuation Kit was created to provide all necessary equipment to allow a worker to safely evacuate an aerial bucket that has become inoperative. The kit includes:

- #2 Rope Bag (P/N - SRB430205)
- 10-ft Synthetic Ladder with Swivel Snaphook P/N - SCE405010)
- Boom Anchor Strap (P/N - SSB22040)
- Antron system (P/N - SDC726075) which includes Antron device, Carabiners (2), 75-ft (22m) 7/16" rope

Part No.	Description
SKITSMT001	Bucket Truck Evacuation Kit

Rescue Equipment: FP Rescue Kits



Rescue Pole/Remote Hook

The Rescue Pole/Remote Hook is designed as a rescue tool for the retrieval of a worker suspended in a fall arrest system or for remote rescue access. In most cases, the need for the rescuer to go to the fallen worker (victim) is limited. The Rescue Pole can be used in a wide variety of rescue applications and will serve as an excellent tool to help perform a safer, efficient rescue. The system consists of an adjustable fiberglass pole, pole adapter, and remote hook. A nylon storage bag is optional.

Part No.	Description
SFP675009	Adjustable pole, fiberglass 6 ft (1.8m) to 12 ft (3.6m)
SFP675012	Adjustable pole, fiberglass 8 ft (2.4m) to 24 ft (7.3m)
SRCA401	Remote hook, aluminum, with web sling
SCE109001	Pole adapter, aluminum/rubber
SCE109003	Pole adapter, 6 ft (1.8m), aluminum/rubber
SRB675009	Storage bag for FP675-009

Rescue Equipment: Cradles, Ladder & Etrier



Rescue Cradles

The Rescue Cradle is available in two model types. The SRH30701 model is designed to allow easy placement on a person. Equipped with 4" (10 cm) polyester webbing and 4 - 3" (7.6 cm) D-rings. One size fits all.

The Rescue Cradle, model SRH30703, is designed to be very similar to the SRH30701 model, except it is constructed with 1 - 3/4" (4.4 cm) nylon webbing, 2" (5 cm) attachment ring, and an elastic shoulder strap.

Part No.	Description
SRH30701	Rescue Cradle, 4 D-rings, 4" (10 cm) polyester webbing
SRH30703	Rescue Cradle, 2" attachment ring, 1-3/4" (4.45 cm) nylon webbing

Rescue Ladders

Our Rescue Ladders has synthetic rope with reinforced fiberglass rungs. Applications include: confined space access, theatrical stage rigging, mine access, and many others.

Part No.	Description
SCE400020	Rescue Ladder, synthetic rope, 20 ft (6.1 m)

Rescue Etrier

Etrier is French for a set of ascending web stirrups sewn or tied together. The Etrier is useful for stretcher tending and other vertical activities including getting over difficult edges. The six-foot loops are reinforced/ stiffened for easier foot placement and abrasion resistance.

Length: 7 ft (2.1 m). Weight: 9 oz (280 g).

Part No.	Description
SRS3200	Rescue Etrier, 1" web, 7 ft (2.1 m)

General Accessories



Hands-Off
Chisel Grip
Part No.
10040018

Hands-off™ Chisel Grip

The Hands-Off Chisel Grip keeps hands away from the point of contact. The Hands-Off Chisel Grip is ergonomically designed to match the specific shape of the human hand for a comfortable and firm grip. Additional features of this modern design include:

- Permits faster, safer, more accurate work
- Easy adjustment to hold a variety of chisels and stakes up to 1" in diameter
- Vibration-absorbing handle
- Eases awkward hand positioning
- Economical
- Spark resistant

Part No.	Description
10040018	Hands-Off Chisel Grip



18" Tool Holder Part No. 507005

Ergonomic Tool Holders

- Holds wrenches, chisels, etc.
- Vibration-absorbing design
- Attach to broom handles and mops for better grip
- Eases awkward hand positioning

Part No.	Description
507005	Tool Holder, 18"
507006	Tool Holder, spark resistant, 18"

MSA Training

MSA offers the following ANSI Z359 Compliant Fall Protection training courses:

MSA training courses are compliant to the new ANSI Z359 family of fall protection standards and meet "ANSI Z490.1 2001 Criteria for Accepted practices in Safety, Health, and Environmental Training".

Qualified Person Training

This course will train the Qualified Person in the use of all fall protection equipment and systems encountered in work and includes the following;

- Fall protection regulations
- Equipment use, selection and inspection
- Preparing fall hazard surveys
- Developing engineering system standards
- Determining system clearance requirements
- Designing and selecting anchorages
- Designing new and evaluating existing horizontal systems
- Developing written fall protection procedures and rescue procedures
- Determining potential impact forces

Authorized Person Training

This course will train the Authorized Person to inspect, anchor, assemble and use the fall protection in work applications. The Authorized Person training will include the following information;

- Fall hazard recognition
- Fall hazard control methods
- Fall protection regulations
- How to use written fall protection procedures
- Equipment use, selection and inspection
- Fall protection rescue procedures

Administrator Training

This course will train the Fall Protection Program Administrator to have a working knowledge of current fall protection regulations, standards and fall protection equipment and systems. The fall protection program administrator training will include the following:

- Fall protection regulations
- Developing and maintaining a managed fall protection program
- Fall hazard surveys
- Selection and appointment of safety committee personnel
- Fall protection system selection
- Development of approved equipment purchase lists
- Selection and appointment of qualified and competent people
- Development of engineering system standards

Competent Rescue Training

This course will train the Competent Fall Protection Rescuer how to select, inspect, anchor, assemble and use fall protection and rescue equipment in their work applications. The Competent Fall Protection Rescuer training will include the following:

- Fall hazard control methods
- Fall protection and rescue regulations
- Assessment of fall hazards to determine appropriate rescue methods
- Training on suspension trauma
- Equipment use, selection and inspection
- Rescue system assessment
- Development of written fall protection rescue procedures

Authorized Rescuer Training

This course will train the Authorized Fall Protection Rescuer how to select, inspect, anchor, and use fall protection and rescue equipment in their work applications. The Authorized Fall Protection Rescuer training will include the following:

- Fall hazard recognition
- Fall hazard control methods
- Fall protection and rescue regulations
- Training on suspension trauma
- How to use written fall protection and rescue procedures

Learn from the

Experts

- Inspection of rescue and fall protection equipment components and systems before use

Other courses available include:

- Competent Person for "Safety-At-Heights"
- Fundamentals of safety at heights
- Competent Person for equipment inspection
- Tower climbing safety
- Confined space entry

REGISTRATION INFORMATION

We invite you to attend our next training session, which will prove to be a comprehensive and valuable experience. For registration information, please contact the MSA Customer Service Center by phone (1.800.672.222) or by fax (1.800.967.0398), or log onto our web site at www.MSAnet.com.

LET US TRAIN YOU
AT YOUR FACILITY!

HANDS-ON
COMPREHENSIVE COURSES

TRAINING CENTERS:
BUTLER, PA
ENGLEWOOD, CO



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

Calculating Total Fall Distance

Knowing how to calculate Total Fall Distance is just as important as selecting the proper harness, lanyard, anchorage connector, and anchorage point for the specific task to be performed. Total Fall Distance (TFD) is defined as the sum of Freefall Distance (FFD), Deceleration Distance (DD), Harness Effects (HEFF), and Vertical Elongation (VEL). It is also wise to include a Safety Factor (SF) of at least one foot in the formula. Total Fall Distance can be calculated using the following formula:

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

Before we can begin to calculate Total Fall Distance, we first need to define the variables in the formula above.

Freefall Distance (FFD): The vertical distance a worker travels between the onset of a fall until just prior to the point where the Fall Arrest System begins to arrest the fall. Federal OSHA limits this distance to 6' or less. To keep FFD to a minimum, you should always try to keep your anchor point as far above the back D-ring of the harness as possible.

Deceleration Distance (DD): The vertical distance a worker travels between the activation of the Fall Arrest System and final fall arrest. Federal OSHA limits this distance to 3.5' or less. The DD that each shock-absorbing fall arrest device will permit is typically stated on the product label.

Harness Effects (HEFF): The stretch of a harness during fall arrest. This is typically one foot or less for a properly-fitted harness. However, some harnesses use elastic-type webbing that can increase the harness effects to two feet or more.

Vertical Elongation (VEL): The stretch in the lifeline of the Personal Fall Arrest System. Vertical Elongation is measured on the part of the lifeline that is under tension during deceleration and final fall arrest. This variable will change drastically depending upon the type of Fall Arrest System you are using. For example, most shock-absorbing lanyards are designed to have a maximum deceleration distance of 3.5', which includes the vertical elongation of the lanyard. However, if you are using a rope grab system or a horizontal lifeline, vertical elongation must be calculated based on the stretch of the vertical or horizontal lifelines in those systems. You will need to check the specific manufacturers' product for exact stretch percentages.

Safety Factor (SF): An additional factor of safety to ensure that you have the required clearance below your working surface. This variable should be at least one foot, but can reflect any number with which you feel comfortable.

For illustration purposes, we will use the following equipment:

- Full Body Harness (non-elastic)
- 6' Shock-Absorbing Lanyard
- Fixed, Rigid Anchorage Connector (such as a D-Plate bolted to a structural I-beam)

In **Figure 1**, we see a worker with a 6' Shock-Absorbing Lanyard on an elevated platform. In this example, let's assume that his attachment point is 2' above the back D-ring of the harness. For every 1' the lanyard attachment point is above the harness back D-ring, 1' is deducted from the Freefall Distance. For every 1' that the lanyard attachment point is below the harness back D-ring, 1' is added to the Freefall Distance (see **Table 1**). In this scenario, if the worker falls, the Freefall Distance (FFD) will equal 4' since the lanyard attachment point is 2' above the back D-ring of the harness.

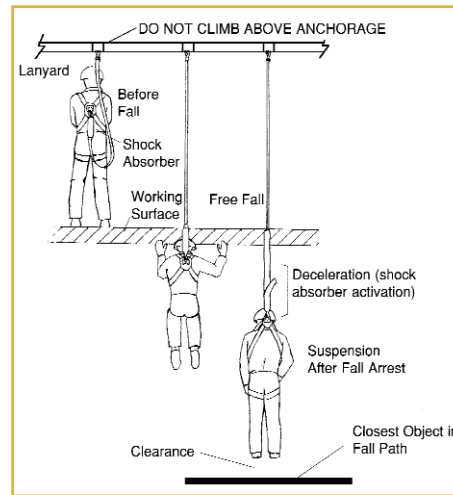


Figure 1.

FreeFall Distance for various Shock-Absorbing Lanyard Lengths and Elevations of Anchorage Connection Point.	Length of Shock-Absorbing Lanyard			
	6'	5'	4'	3'
Distance of Anchorage Connection Point Above (+) or Below (-) Harness Fall Arrest D-Ring				
+3	3	2	1	0
+2	4	3	2	1
+1	5	4	3	2
0	6	5	4	3
-1	7	6	5	4
-2	8	7	6	5
-3	9	8	7	6
-4	10	9	8	
-5	11	10		
-6	12			
	FreeFall Distance			

Table 1.

So, our formula looks like this:

$$TFD = 4' + DD + HEFF + VEL + SF$$

The next variable to consider is Deceleration Distance (DD). Federal OSHA requires that this distance not exceed 3.5'. Since all manufacturers' product is slightly different, you should read the label on the product you intend to use to determine the maximum deceleration distance of that product. When calculating Total Fall Distance, the maximum deceleration distance that a product will permit should always be used. In our example, the maximum deceleration distance would be 3.5'. $TFD = 4' + 3.5' + HEFF + VEL + SF$

The Harness Effects variable is relatively constant at less than one foot. This will vary slightly due to the adjustment of the harness, so we generally use one foot to account for these slight differences. However, elastic-type harnesses can have more than one foot of stretch, possibly two feet or more, and that additional

distance must be accounted for in your calculation. In our example, we are using a non-elastic harness to keep our Total Fall Distance to a minimum.

$$TFD = 4' + 3.5' + 1' + VEL + SF$$

Most manufacturers design their Shock-Absorbing Lanyards so that the vertical elongation of the lanyard is included in the OSHA mandated 3.5' maximum deceleration distance. However, if we were using a rope grab or horizontal lifeline, or if you were attaching to a non-rigid anchorage connector, VEL would need to be calculated based on the specifications of those components in your Fall Arrest System. Since we are using a 6' Shock-Absorbing Lanyard in our example and the VEL is already considered in the lanyard design, we will enter a "0" for the VEL variable.

$$TFD = 4' + 3.5' + 1' + 0' + SF$$

The final variable of the formula is the Safety Factor. It is always a good idea to include at least a 1' safety factor; however, the safety factor could reflect any number that makes you comfortable with your calculation.

Now we can solve our Total Fall Distance Formula:

$$TFD = 4' + 3.5' + 1' + 0' + 1'$$

$$TFD = 9.5'$$

Now we know that if the worker in **Figure 1** would happen to fall, his Total Fall Distance will be 9.5'.

But what does this number really mean?

It means that the clearance between the working surface and the next closest object in the fall path must be at least 9.5'. It is important to remember that Total Fall Distance is not always measured from the working surface to the ground, because sometimes the ground is not the closest object in the fall path of the worker (see **Figure 2**), your available clearance is measured from the top of that obstruction.

Sometimes these distances can be very short, and a fall protection means other than a 6' shock-absorbing lanyard is necessary. Total Fall Distance calculations can become more complex than those demonstrated here. The numbers and variables will change depending upon the type of Personal Fall Arrest System used. For example, when calculating Total Fall Distances for Horizontal Lifeline Systems you have additional variables to consider, such as cable deflection and the number of people on the system. The important thing to remember is that calculating Total Fall Distance is just as important as selecting the right product for the job. Forgetting to calculate Total Fall Distance is just as dangerous as forgetting to put on your harness before you begin to perform any work at heights.

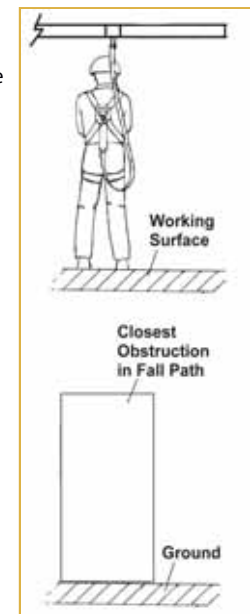


Figure 2.

MSA Custom Solutions



Every business is unique, and MSA recognizes that YOUR Fall Protection systems need to be custom-designed and installed to meet YOUR needs.

To help you, we have carefully selected and trained specially qualified contractors, who can personally work with YOU to deliver exactly the services your hazardous situations demand.

These MSA Fall Protection System Integrators are independent organizations throughout North America whose local specialists can provide one or more customized MSA Fall Protection solutions for your business. Your MSA System Integrators will combine their experience and knowledge of practical applications with MSA Fall Protection products to meet your specific needs for any industry, including forestry, construction, oil & gas, petrochemical, mining, manufacturing, utilities, entertainment, and transportation.

Whether you choose complete turnkey services or individual services, you'll receive experienced application and design, fabrication, and installation of whatever MSA Fall Protection systems you need.



For more information call MSA Customer Service Center at 1-800-672-2222 and request the Custom Solutions Catalog (Bulletin #2300-100).



Engineering Services

Registered professional engineers will visit your site to analyze and determine the scope of work. Then they will design and draft engineering drawings, and later, follow up with a construction site review to ensure that your Fall Protection system has been installed as designed.

Installation

Factory-trained and certified installation technicians will execute the design specifications and carry out the manufacturer's instructions. Technicians can also inspect and re-certify an existing MSA Fall Protection system.

Fabrication

Knowledgeable fabricators will build all structural components that are required to support your primary MSA Fall Protection system, from simply connecting brackets that attach to your building columns or beams, to assembling complete free-standing support structures. You can trust that your fabricated components will comply with all applicable governing codes and standards.

Training

High quality training programs at a reasonable cost will be tailored to the unique issues of your industry and installation. MSA's commitment to increasing demands for technical training in Fall Protection, post-fall retrieval, and rescue will be fulfilled at your facility.

Why Choose MSA Custom Solutions?

- You get the broadest product range, to ensure the best possible fall hazard solution for your specific application.
- MSA System Integrators work directly for you and are responsive to your project requirements.
- MSA System Integrators offer cost-effective services direct to you, the MSA customer.
- You will benefit from dedicated regional System Integrators as well as nationally prominent organizations that specialize in particular industry applications.

How? It's easy!

To receive your quotation from MSA CUSTOM SOLUTIONS:

1. Contact your local MSA distributor, MSA Sales Associate, or call our MSA Customer Service at 1-800-672-2222.
2. Your request will be forwarded to the MSA System Integrator, who will contact you about your project's specific requirements.
3. You will receive a written estimate for your system.

Single-Gas Detectors

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, and many others
- Great RFI performance
- Adjustable alarm set points are offered for LOW, HIGH, TWA and STEL
- Alarms are indicated by flashing LEDs, an audible alarm, and an internal vibrating alarm.
- Replaceable battery and sensor
- MSA Link™ Software displays logs, adjusts alarm set points, and disables/activates options

The ALTAIR Pro Single-Gas Detector will provide worry-free performance and stand up to the roughest handling in even the toughest industrial environments. The sensors and battery can easily be replaced to keep the unit performing for years.

Altair Pro Single-Gas Detectors

Instrument Type	Part No.	Low Alarm	High Alarm	STEL	TWA
O ₂	10074137	19.50%	23.00%	N/A	N/A
CO	10074135	25 ppm	100 ppm	100 ppm	25 ppm
H ₂ S	10074136	10 ppm	15 ppm	15 ppm	10 ppm

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.

Altair Single-Gas Detectors

Instrument Type	Part No.	Low Alarm	High Alarm
CO	10082522	25 ppm	100 ppm
H ₂ S	10092521	10 ppm	15 ppm
O ₂	10092523	19.5% Vol	23% Vol
Alternate Set Point Models	Part No.	Low Alarm	High Alarm
CO	10071334	30 ppm	60 ppm
CO	10071335	35 ppm	100 ppm
CO	10071336	35 ppm	400 ppm
CO	10071337	50 ppm	200 ppm
CO	10071338	100 ppm	300 ppm
H ₂ S	10071340	10 ppm	20 ppm
H ₂ S	10071361	5 ppm	10 ppm
H ₂ S	10071362	8 ppm	12 ppm
H ₂ S	10071363	7 ppm	14 ppm
O ₂	10071364	19.5% Vol	18% Vol

Durability Features

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

Alarm System

The triple-alarm system featuring two bright flashing LEDs, a piercing audible alarm, and a vibrating alarm ensures that no alarm condition goes unnoticed.

- 95 dB audible alarm (distinct sounds for High and Low alarms)
- Dual LEDs positioned to be seen from all angles
- Standard vibrating alarm and standard event logging

Warranty

Two years or 18 hours of alarm (1080 minutes)

Accessories and Parts

710882	Cylinder, 60 ppm CO
473180	Cylinder, 300 ppm CO
467897	Cylinder, 40 ppm H 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

ALTAIR QuickCheck® Station



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

ALTAIR® QuickCheck Station

Manual Regulator	Automatic Regulator	Gas Type
10076692	10076704	O ₂ /CO/H ₂ S

Replacement and Accessory Parts

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

Multigas Detectors



ALTAIR 4X Multigas Detector – charcoal

ALTAIR 4X Multigas Detector – phosphorescent

ALTAIR 4X Multigas Detector

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

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

Exclusive Safety Features Unique to Gas Detection:

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

Specifications

Gas	Range	Resolution
LEL	0–100%	1%
O ₂	0–30% vol	0.1% vol
CO	0–1999 ppm	1 ppm
H ₂ S	0–200 ppm	1 ppm

ALTAIR 4X Multigas Detector

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

Part No.	Description
10107602	ALTAIR 4X Multigas Detector (LEL, O ₂ , CO, H ₂ S) Charcoal
10110443	ALTAIR 4X Multigas Detector (LEL, O ₂ , CO) Charcoal
10110444	ALTAIR 4X Multigas Detector (LEL, O ₂) Charcoal
10107603	ALTAIR 4X Multigas Detector (Detector (LEL, O ₂ , CO, H ₂ S) Phosphorescent
10110445	ALTAIR 4X Multigas Detector (LEL, O ₂ , CO) Phosphorescent
10110446	ALTAIR 4X Multigas Detector (LEL, O ₂) Phosphorescent

Accessories

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

ALTAIR 4 QuickCheck Station

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



ALTAIR 4 QuickCheck Station

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

Multigas Detectors



ALTAIR® 5 Multigas Detector

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

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

A call for help when you need one

Ideal for confined space applications or when working alone, exclusive MotionAlert™ feature, when enabled, activates a “man down” alarm if no motion is detected for 30 seconds. Exclusive InstantAlert™ feature allows users

to manually activate an audible alarm to alert those nearby to potentially dangerous situations.

Easy to understand & operate

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

Reliable sensors

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

Calibration, simplified

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

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

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

Options

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

ALTAIR® 5 Multigas Detector

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

UL	ANZ	CSA	
----	-----	-----	--

Industrial Kits - includes monochrome display, integral pump, 10 ft sampling line, 1 ft probe

10094739	10094959	10094929	ALTAIR 5 Multigas Detector (LEL, O ₂ , H ₂ S)
10094740	10094960	10094930	ALTAIR 5 Multigas Detector (LEL, O ₂ , CO, H ₂ S)
10094901	10094961	10094931	ALTAIR 5 Multigas Detector (LEL, O ₂ , H ₂ S, SO ₂)
10094902	10094962	10094932	ALTAIR 5 Multigas Detector (LEL, O ₂ , CO, H ₂ S, SO ₂)

Deluxe Kits - includes color display, integral pump, 10 ft sampling line, 1 ft probe

10094909	10094969	10094939	ALTAIR 5 Multigas Detector (LEL, O ₂ , H ₂ S)
10094910	10094970	10094940	ALTAIR 5 Multigas Detector (LEL, O ₂ , CO, H ₂ S)
10094911	10094981	10094941	ALTAIR 5 Multigas Detector (LEL, O ₂ , H ₂ S, SO ₂)
10094912	10094982	10094942	ALTAIR 5 Multigas Detector (LEL, O ₂ , CO, H ₂ S, SO ₂)

Economy Kits - includes monochrome display, integral pump

10094919	10094989	10094949	ALTAIR 5 Multigas Detector (LEL, O ₂ , H ₂ S)
10094920	10094990	10094950	ALTAIR 5 Multigas Detector (LEL, O ₂ , CO, H ₂ S)
10094921	10094991	10094951	ALTAIR 5 Multigas Detector (LEL, O ₂ , H ₂ S, SO ₂)
10094922	10094992	10094952	ALTAIR 5 Multigas Detector (LEL, O ₂ , CO, H ₂ S, SO ₂)

Calibration Gas

10045035	58L Quad gas mix RP 60 ppm CO, 20 ppm H ₂ S, 15% O ₂ , 1.45% CH ₄
10048280	34L Econocal Quad gas 60 ppm CO, 20 ppm H ₂ S, 15% O ₂ , 1.45% CH ₄
711070	34L (10 ppm SO ₂ , balance air)

Accessories

10082834	USB IR receiver
10088099	MSA Link Software CD

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
SO ₂	0–20 ppm	0.1ppm
Cl ₂	0–20 ppm	0.1ppm
NH ₃	0–100 ppm	0.5ppm
PH ₃	0–5 ppm	0.1ppm
HCN	0–30 ppm	0.1ppm
CIO ₂	0–1 ppm	0.01ppm
NO ₂	0–20 ppm	0.1ppm

Calibration/Detector Tube Pumps

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

- Wired-network interface available with calibration overdue email alerts
- Inventive system door also functions as dust cover
- Guaranteed to work in the harshest environments
- In-line gas cylinder holster available; keeps the work area clean and orderly

Value-Driven Performance

- All-inclusive, 2-year warranty
- High quality, cost-effective solution
- Very low total cost of ownership

Galaxy System Kits

	ALTAIR 5 Pumped	ALTAIR 5 Diffusion	ALTAIR 4	ALTAIR
Basic Standalone Kit				
Basic System	10090589	10090552	10089964	10078252
Standard Standalone Kit (Includes Regulator)				
Standard System	10090603	10090618	10089998	10078253
Standard System + Charging	10090600	10090615	10089995	—
Standard System + Cylinder Holder	10090602	10090617	10089997	10078254
Standard System + Charging, Cylinder Holder	10090601	10090616	10089996	—

Accessories

710288	Demand Flow Regulator
10047342	North American Power Supply
10047343	Global Power Supply



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).

Note: The MSA/Auer Detector Tube Handbook (Part No. 813919) and the MSA/Auer Kwik-Ref Detector Tube and TLV Database (P/N 655930) list tubes for over 170 gases. They also include facts on chemical reaction and color changes, interferences, cross-sensitivities, and more. For more complete information see Data Sheet 08-00-02.

Kwik-Draw Detector Tube Pumps

488543	Kwik-Draw Basic Pump, with remote sampling adapter and carrying pouch
487500	Kwik-Draw Deluxe Pump, with remote sampling adapter, carrying pouch and end-of-stroke indicator

Accessories

73067	Sampling line, 10 ft
73068	Sampling line, 25 ft
73069	Sampling line, 50 ft
87970	Remote Sampling Adapter, required for above sampling line
488780	Solvent-Resistant Sampling Line, 25 ft, with reel
488872	Tube Holder, required for 488780 line above

Half-Mask Respirators



Advantage 420 (P/N 10102183) with P100 particulate filters (P/N 815369)

Completely Latex-Free!

Advantage® 420 Half-Mask Respirator

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

Top 5 reasons why you should purchase the Advantage 420

- Patent-pending one-piece UniBond over-mold facepiece** offers stability, comfort, and superior fit. The intelligent design eliminates multiple leak paths and with only three major components, the Advantage 420 significantly reduces the cost of ownership.
- AnthroCurve™ II face-seal** adapts perfectly to multi-ethnic head sizes and facial contours. The facepiece design is based upon the new proposed NIOSH fit test panel and provides users in many global regions with excellent fit, and superior comfort.
- Patent-pending yoke and harness design** enables quick and easy switch between lock-down and drop-down modes. Drop-down mode allows user to remove the facepiece and rest it safely against the chest while maintaining use of head protection. Lock-down harness mode allows the user to lock in a personal fit; respirator can be donned without further adjustments.
- Low-profile design integrates extremely well with other personal protective equipment (PPE)**, such as hardhats, eyewear, goggles, and faceshields. Unique, one-piece ComforTop headband and harness assembly eliminates pressure points when head protection is worn.
- Comfort and adjustability** with our form-fitting neck buckles and wide straps that eliminate discomfort around the neck, and the adjustable crown strap which adapts to different head sizes.

Advantage 420 Respirator

Description	Small	Medium	Large
Advantage 420 Assembly (includes facepiece, head cradle, elastic straps, buckle set, yoke with lever, two (2) inhalation valves, one (1) exhalation valve)	10102182	10102183	10102184
Advantage 420 Threaded Cartridge Assembly (Includes facepiece, head cradle, elastic straps, buckle set, yoke with lever, two (2) inhalation valves, one (1) exhalation valve, two (2) threaded cartridge adapters)	10119574	10119575	10119576

Advantage 420 Accessories	Part No.
Storage poly bag	10097887
Vinyl storage bag with belt loops	468730
Advantage Adapter for threaded cartridges, package of 2	809999
Advantage Quantitative Fit Test Adapter	10056424
Instruction Manual, CD Format	10097899

Note: See page 70 for bayonet-style filters and cartridges and page 71 for threaded cartridges and flexible pad-style filters.



Advantage 200 LS (P/N 815692) with P100 particulate filters (P/N 815369)

Advantage 200 LS Respirator

The Advantage 200 LS Respirator's lighter and softer facepiece is made from a clear blue formulation of thermoplastic rubber to give workers more comfort and stability than ever. The AnthroCurve™ Sealing Surface instantly conforms to each wearer's unique facial characteristics, and the patented MultiFlex® System that equalizes pressure on the face seal area, while delivering exceptional stability, so the respirator will not collapse during wear.

Advantage 200 LS (Facepieces only)

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

Advantage 200 LS Accessories	Part No.
Advantage Adapter for threaded cartridges, package of 2	809999
Advantage Quantitative Fit Test Adapter	10056424
Carrying pouch for half-mask respirators	468730

Note: See page 70 for bayonet-style filters and cartridges and page 71 for threaded cartridges and flexible pad-style filters.

Full-Facepiece Respirators



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

Advantage® 4000 Series Respirator

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

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

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

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

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

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

Advantage 4200 Facepieces (Twin Port)

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

Note: See page 70 for bayonet-style filters and cartridges and page 71 for flexible pad-style filters.



Advantage 3200 Respirator with rubber harness and chemical cartridges

Advantage® 3000 Series Respirators

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

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

The Advantage 3200 Respirator uses Advantage cartridges and filters.

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

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

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

Advantage 3200 Facepieces (Twin Port)

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

Note: See page 70 for bayonet-style filters and cartridges and page 71 for flexible pad-style filters.



Advantage 3200 Respirator with European-style harness

MSA Products for Construction

Bayonet-Style Respirator Cartridges

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

MSA Cartridge Description	Re-Order Part Number	Color Coding	Acid Gases											Filter Type & Efficiency			See Notes below		
			Organic Vapor	Chlorine	Sulfur Dioxide	Chlorine Dioxide	Hydrogen Chloride	Hydrogen Sulfide*	Ammonia	Methylamine	Formaldehyde	Hydrogen Fluoride	Mercury Vapor	P100	R95	N95			
Organic Vapor (GMA)	815355																		2,3
Organic Vapor w/N95 Prefilter (GMA)	815355 w/815394 or 816357																		2,3
Organic Vapor w/R95 Prefilter (GMA)	815355 w/815397																		2,3
Organic Vapor/P100 (GMA)	815362																		2,3,4
Acid Gas (GMB)	815356																		2
Acid Gas w/N95 Prefilter (GMB)	815356 w/815394 or 816357																		2
Acid Gas w/R95 Prefilter (GMB)	815356 w/815397																		2
Acid Gas/P100 (GMB)	815363																		2,4
Organic Vapor/Acid Gas (GMC)	815357																		2,3
Organic Vapor/Acid Gas w/N95 Prefilter (GMC)	815357 w/815394 or 816357																		2,3
Organic Vapor/Acid Gas w/R95 Prefilter (GMC)	815357 w/815967																		2,3
Organic Vapor/Acid Gas/P100 (GMC)	815364																		2,3,4
Ammonia/Methylamine (GMD)	815358																		2,3
Ammonia/Methylamine w/N95 Prefilter (GMD)	815358 w/815394 or 816357																		2,3
Ammonia/Methylamine w/R95 Prefilter (GMD)	815358 w/815397																		2,3
Ammonia/Methylamine/P100 (GMD)	815365																		2,3,4
Multigas (GME)	815359																		2,3
Multigas w/ N95 Prefilter (GME)	815359 w/815394 or 816357																		2,3
Multigas w/R95 Prefilter (GME)	815359 w/815397																		2,3
Multigas/P100 (GME)	815366																		2,3,4
Iodine Vapor/P100 (GMI)	815641																	2,4	
Chlorine/Mercury Vapor (Mersorb)	815361																		2,4
Chlorine/Mercury Vapor w/N95 Prefilter (Mersorb)	815361 w/815394 or 816357																		2,4
Chlorine/Mercury Vapor w/ R95 Prefilter (Mersorb)	815361 w/815397																		2,4
Chlorine/Mercury Vapor/P100 (Mersorb)	815368																		2,4
Low-Profile P100	815369																		1,4

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

R95 Snap-On Prefilter and Cover
815397 Box of 20
815401 Reusable Snap-On Cover, 2 in a Package

Definitions

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

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

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

* Escape only.

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

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

Notes

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



Threaded Respirator Cartridges

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

MSA Cartridge Description	Re-Order Part Number	Color Coding	Acid Gases											Filter Type & Efficiency			See Notes on p. 74		
			Organic Vapor	Chlorine	Sulfur Dioxide	Chlorine Dioxide	Hydrogen Chloride	Hydrogen Sulfide*	Ammonia	Methylamine	Formaldehyde	Hydrogen Fluoride	Mercury Vapor	P100	R95	N95			
Organic Vapor (GMA)	464031 (10 in pkg.)		☑														☑ with R95	☑ with N95	2,3
Organic Vapor/P100 (GMA)	815178 (6 in pkg.)		☑														☑		2,3,4
Organic Vapor/P100 Short Stack (GMA)	815186 (6 in box)		☑														☑		2,3,4
Acid Gas (GMB)	464032 (10 in box)			☑	☑	☑	☑	☑	☑								☑ with R95	☑ with N95	2
Acid Gas/P100 (GMB)	815179 (6 in box)			☑	☑	☑	☑	☑	☑								☑		2,4
Organic Vapor/Acid Gas (GMC)	464046 (10 in pkg.)		☑	☑	☑	☑	☑	☑	☑								☑ with R95	☑ with N95	2,3
Organic Vapor/Acid Gas/P100 (GMC)	815180 (6 in box)		☑	☑	☑	☑	☑	☑	☑								☑		2,3,4
Organic Vapor/Acid Gas/P100 Short Stack (GMC)	815188 (6 in box)		☑	☑	☑	☑	☑	☑	☑								☑		2,3,4
Ammonia/Methylamine (GMD)	464033 (10 in box)									☑	☑						☑ with R95	☑ with N95	2,3
Ammonia/Methylamine/P100 (GMD)	815181 (6 in box)									☑	☑						☑		2,3,4
Multigas (GME)	492790 (10 in box)		☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑				☑ with R95	☑ with N95	2,3
Multigas/P100 (GME)	815182 (6 in box)		☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑				☑		2,3,4
Iodine Vapor/P100 (GMI)	815184 (6 in box)		☑														☑		2,4
Chlorine/Mercury Vapor (Mersorb)	466204 (10 in box)			☑										☑			☑ with R95	☑ with N95	2,4
Chlorine/Mercury Vapor/P100 (Mersorb)	815185 (6 in box)			☑										☑			☑		2,4
P100	815175 (10 in box)																☑		1,4
Sparkfoe® P100	815176 (10 in box)																☑		1,4
Low-Profile P100	815177 (10 in box)																☑		1,4
Stand-alone and cover N95 and covers required for Comfo Respirators	816662 N95 (10 in pkg.) 816661 N95 (50 in box) 489353 Reusable snap-on cover (1 in pkg.; 2 req.)																	☑	1
Pre-filter and Cover N95	816662 N95 (10 in pkg.) 816661 N95 (50 in pkg.) 489353 Reusable snap-on cover (1 in pkg.; 2 req.)																	☑	1
Pre-filter and Cover R95	816287 R95 (20 in box) 489219 R95 Reusable snap-on cover (1 in pkg.; 2 req.)																☑		1

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

Flexi-Filter® Pads for Advantage Respirators

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

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

See **Notes** on p. 74

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



Powered Air-Purifying Respirators (PAPRs)



OptimAir Mask-Mounted PAPR Assembly with Advantage 4100 Facepiece

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

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

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

Complete OptimAir Mask-Mounted PAPR Assemblies (with facepiece)

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

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

OptimAir Mask-Mounted PAPR Upgrade Kit (less facepiece)

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

OptimAir Mask-Mounted Upgrade Kit	10095166
-----------------------------------	----------

Replacement Facepieces

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

*Also requires RD40 Adapter P/N 10065330

OptiFilter Cartridges for OptimAir Mask-Mounted PAPR

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

Parts and Accessories

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



Battery pack



Charger

OptimAir® TL PAPP

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

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

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

NOTE: cartridges and other accessories on next page.

NIOSH-Approved

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

Smart Design Features

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

Cartridges and Accessory Options

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



OptimAir TL PAPP
with Advantage
4100 Facepiece

OptimAir TL Kits

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

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

Facepiece Accessories

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



White Hood for
OptimAir TL PAPP

Facepieces Only

Advantage 3100 Facepieces Only (Single Port)

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

Advantage 4100 Facepieces Only* (Single Port)

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

Ultra Elite Facepieces

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

*Also requires RD40 Adapter P/N 10065330

Powered Air-Purifying Respirators (PAPRs)

OptimAir TL Accessories

OptimAir TL Hoods

Note: all hoods are white except where noted.

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

Hood Suspensions

10103864	20-pack
10078469	1 each

Hoods for use with the OptimAir 6A PAPR

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

Hood Accessories

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

Cartridges

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

Battery and Charger

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

Decon Accessories

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

Miscellaneous Accessories

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



Respirator Cleaning Accessories

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.

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

Customer Service

Award-Winning Customer Service

Every customer wants it. Every good business has it.

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

Ask us the name of your nearest authorized MSA distributor, who can:

- Place your orders
- Obtain prices and quotes
- Provide product information and technical assistance
- Check delivery and expedite shipments
- Order catalogs and product literature
- Obtain return authorizations

Great International Sales

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

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

Toll-free in the U.S.: 1-800-MSA-7777
Outside the U.S.: (+1) 724-776-8626
FAX: (+1) 724-741-1559
Email: International@MSAnet.com



To reach our Customer Service Center:

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



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 warnings 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.



ID 5555-77-MC / May 2011
© MSA 2011 Printed in U.S.A.

MSA Corporate Center
1000 Cranberry Woods Drive
Cranberry Township, PA 16066 USA
Phone 724-776-8600
www.MSAnet.com

U.S. Customer Service Center
Phone 1-800-MSA-2222
Fax 1-800-967-0398

MSA Canada
Phone 1-800-672-2222
Fax 1-800-967-0398

MSA Mexico
Phone 01 800 672 7222
Fax 52 - 44 2227 3943

MSA International
Phone 724-776-8626
Toll Free 1-800-672-7777
Fax 724-741-1559

Offices and representatives worldwide

For further information:

