User Instructions

MSA Lanyards

Order No.: 10188906/10

Print Spec: 10000005389 (R)

CR: 800000069517

WARNING!

These instructions must be provided to users before use of the product and retained for ready reference by the user. Read this manual carefully before using or maintaining the device. The device will perform as designed only if it is used and maintained in accordance with the manufacturer's instructions. Otherwise, it could fail to perform as designed, and persons who rely on this device could sustain serious injury or death.

The warranties made by MSA with respect to the product are voided if the product is not installed and used in accordance with the instructions in this manual. Please protect yourself and your employees by following the instructions.

Please read and observe the WARNINGS and CAUTIONS inside. For additional information relative to use or repair, call 1-800-MSA-2222 during regular working hours.

The Safety Company

1000 Cranberry Woods Drive
Cranberry Township, PA 16066
USA
Phone: 1-800-MSA-2222
Fax: 1-800-967-0398

For your local MSA contacts, please go to our website www.MSAsafety.com

Contents

1 Safety Regulations

WARNING!

National standards and state, provincial and federal laws require the user to be trained before using this product. Use this manual as part of a user safety training program that is appropriate for the user's occupation. These instructions must be provided to users before use of the product and retained for ready reference by the user. The user must read, understand (or have explained), and heed all instructions, labels, markings and warnings supplied with this product and with those products intended for use in association with it. Do not remove or alter labels.

Failure to follow this warning can result in serious personal injury or death.

WARNING!

- Ensure that fall clearance is sufficient to meet governing standards or subsystem component requirements.
- Keep work area free from debris, obstructions, trip hazards, spills or other hazard which could impair the safe operation of the fall protection system. DO NOT use the MSA Anchorage Connector Extension unless a qualified person has inspected the workplace and determined that identified hazards can neither be eliminated nor exposures to them prevented.
- A full body harness is the only acceptable body holding device that can be used in a fall arrest system.
- DO NOT leave the MSA Lanyard installed in environments which could cause damage or deterioration to the product. Refer to 9 Care, Maintenance and Storage and 11 Inspection and Periodic Examinations for care and inspection details. Do not leave unattended loads on the MSA lanyard.
- DO NOT use where lanyard or energy absorber may be exposed to sharp or abrasive edges or sheared, expanded metal, or frame cut steel. Sharp edges may cut a lanyard or energy absorber during a fall. Cover all sharp or abrasive edges with padding or sheathing before working above edge.
- Chemical hazards, heat and corrosion may damage the MSA Lanyard. More frequent inspections are required in these environments.
- DO NOT use lanyards adjacent to moving machinery, electrical hazards, or in the presence of excessive heat, open flame or molten metal.
- DO NOT use fall arrest or rescue equipment in environments with temperatures greater than 113°F (45°C) or temperatures lower than -30°F (-34°C).
- DO NOT use the MSA lanyard near energized equipment or where contact with high voltage power lines may occur.
- Remove any surface contamination such as, but not limited to, concrete, stucco, roofing material, etc that could accelerate cutting or abrading of attached components.
- MSA Lanyards are to be designated and used solely for approved applications.
- DO NOT alter this equipment or intentionally misuse it. DO NOT use fall protection equipment for purposes other than those for which it was designed. DO NOT use fall protection equipment for towing, hoisting or material handling.
- If PPE is resold, it is essential that instructions for use, maintenance, and periodic examination are provided in the language of destination.
- DO NOT use MSA Fall Protection products if under the influence of drugs or alcohol.
- MSA or persons or entities authorized in writing by the manufacturer, shall make all repairs to the equipment. No unauthorized repairs and/or modifications are permitted.
- Use of combinations of components or subsystems, or both, may affect or interfere with the safe function of components or subsystems.

Failure to follow these warnings can result in serious personal injury or death.

Leading Edge-Specific Product Use

⚠ WARNING!

- Use in edge situations should only be as a last resort. Leading edge configurations shall only be used after all other hierarchy of controls, including restraint systems and overhead anchorages, have been exhausted.
- Avoid working where the lifeline will continuously or repeatedly abrade against sharp, jagged, or abrasive edges.
- Do not work on the far side of an opening opposite the anchorage point or around corners.
- Leading edge configurations shall only be used in accordance with local regulations.
- In leading edge applications with 0 ft (0 m) setback, ensure that setup does not allow housing unit or top connector to contact leading edge in the event of a fall.
- For horizontal (leading edge) applications DO NOT use the device unless a qualified person has inspected the workplace and determined that the identified swing fall hazards have been eliminated or exposures to them prevented.
- The lanyard anchorage point shall be at the user's foot level or above.

Failure to follow these warnings can result in serious personal injury or death.

2 Specifications

Compliance:	**US:** ANSI/ASSE Z359.13, Z359.3; OSHA 29 CFR 1910.66, ASTM F887-005 **CAN:** Z259.11-17 The product may comply with standards shown. See product label for specific compliance notifications. Those designated with a certification mark are listed with the corresponding agency as compliant to at least one of the standards shown.
Snaphooks:	Aluminum or zinc plated steel. Single-hand operation, auto close and lock.
Adjusters:	Zinc plated steel.
Carabiners:	Steel or aluminum.
Pin connectors:	Steel
Minimum breaking strength (MBS):	**Snaphooks:** 5,000 lbf (22.2 kN), proof tested to 3,600 lbf (16 kN). **Adjusters:** 4,000 lbf (17.8 kN).

Weight capacity, lanyard elongation, and arresting forces:

See product label for specific information. A summary of these specifications is provided in Table 1 Standards Met.

NOTE: When it is infeasible to limit free fall distance to 6 ft (1.8 m) or less, U.S. Federal OSHA has provided for exemption from this rule. In an interpretation of 29 CFR 1926.502 (d)(16) dated December 4, 1996, OSHA issued the ruling that personal fall arrest systems may be used in applications where the free fall distance may exceed 6 ft (1.8 m), provided the employer can document that the arresting force limits are maintained and the assembled system will operate properly. MSA 12 ft Free Fall Lanyards meet the requirements of this ruling, when used as part of a compatible personal fall arrest system that includes a qualified anchorage and a full body harness. See product label for specific permissible free fall distance. MSA recommends that users consult national, state, and local regulations for their specific industry application to be assured of compliance.

"Arc Flash Rated" indicates that the product is acceptable for use as part of a Personal Fall Arrest System exposed to potential arc flash situations. Since these products fall outside the scope of ASTM F887, the product has undergone arc exposure and then tested to the appropriate industry standard to ensure reliability in the event of a fall.

Table 1 Standards Met

Standards met (see product data card)*	Weight capacity range	Allowable free fall	Maximum arresting force	Average arresting force	Maximum elongation
Positioning Lanyards CSA Z259.11, OSHA	Up to 400 lbs (181 kg)	2 ft (0.6 m)	-	-	-
Restraint lanyards / D-ring Extender (without energy absorber) ANSI Z359.3, CSA Z259.11, OSHA	Up to 400 lbs (181 kg)	0 ft (0.0 m)	-	-	-
ANSI Z359.13 6 ft free fall	130 - 310 lbs (59 - 140 kg)	6 ft (1.8 m)	1800 lbf (8 kN)	900 lbf (4 kN)	48 in (1.2 m)
ANSI Z359.13 12 ft free fall	130 - 310 lbs (59 - 140 kg)	12 ft (3.6 m)	1800 lbf (8 kN)	1350 lbf (6 kN)	60 in (1.5 m)
CSA Z259.11	68 - 140 kg (150 - 310 lb)	1.8 m (6 ft)	1800 lbf (8 kN)	900 lbf - 1000 lbf (4.0 kN - 4.5 kN)	1.5 m (60 in)
CSA Z259.11 - Light weight capacity	50 - 105 kg (110 - 230 lb)	1.8 m (6 ft)	1800 lbf (8 kN)	630 lbf - 720 lbf (2.8kN - 3.2 kN)	1.3 m (51 in)
OSHA only	130 - 310 lbs (59 - 140 kg)	6 ft (1.8 m)	1800 lbf (8 kN)	-	42 in (1.1 m)
400 lb capacity OSHA only	130 - 400 lbs (59 - 181 kg)	6 ft (1.8 m)	1800 lbf (8 kN)	-	42 in (1.1 m)

** Products that list ASTM F887 meet that standard's performance criteria for arc resistance of lanyards for workers who may be exposed to thermal hazards of momentary electric arcs of flame.*

Table 2 Materials

Materials:	Nylon, Polyester, Kevlar or HMPE	3-strand nylon rope	Vinyl-clad galvanized aircraft cable	Low carbon steel link
	Strap: 1 in (25 mm) nominal width Energy absorber: 1 ¾ in (44 mm)	5/8 in (16 mm) ½ in (12.7 mm) minimum	¼ in (6 mm)	#4/0 twist
Terminations	Stitched	5-tuck hand spliced	Swaged fitting	Pin fitting
Weight: (approx.)	1.6 lbs. (720 g)	1.3 lbs. (600 g)	1.9 lbs. (850 g)	3.6 lbs. (1633 g)

3 Training

Purchasers of MSA Lanyards must ensure that users are familiar with the User Instructions and are trained by a competent person in:

- workplace hazard identification, evaluation and control,
- selection, inspection, use, storage and maintenance,
- usage planning including calculation of free and total fall distance; maximum arresting force,
- compatibility and selection of anchorage/anchorage connectors including connection to help prevent accidental disengagement (rollout),
- proper lanyard/harness connection locations,
- evacuation and rescue planning and implementation,
- consequences of improper use.

Training must be conducted without undue exposure of the trainee to hazards.

For confined space applications:

- See OSHA 29 CFR 1910.146 and ANSI Z117.1.

Periodically (at least annually) assess effectiveness of training and determine the need for retraining or additional training. Contact MSA for training information.

4 Description

A lanyard is designed to connect a worker to an anchorage and is part of a personal fall arrest or restraint system. The lanyard consists of rope, webbing, chain link, or cable and self-closing, self-locking snaphooks. Lanyards with integral energy absorbers are designed to dissipate force in a fall. Lanyards are of fixed or adjustable length depending on model.

5 Selection and Applications

5.1 Purpose of an MSA Lanyard

5.1.1 Fall Arrest

The lanyard is part of a fall arrest system when used with an approved energy absorber and attached to the fall arrest attachment of a full body harness. See harness instructions for approved attachment points.

5.1.2 Twin Leg Energy-Absorbing Lanyard

Twin energy-absorbing lanyards allow continuous connection (tie-off) while the user moves between anchorage locations.

5.1.3 Work Restriction/Restraint

The lanyard can be used to restrict a user from reaching a fall hazard.

5.1.4 Work Positioning

The lanyard may be used with a fall arrest system for positioning a user to work at height. Class E lanyards as defined by CSA Z259.11-17 (Rebar assemblies) may be used for work positioning only.

5.1.5 Fall Arrest Attachment Element (D-ring) Extender

An extender can be connected to the back D-ring of the user's harness for better accessibility.

5.2 Physical Limitations

The lanyard is designed for one user whose weight, including clothing, tools, and other user-borne objects is less than the capacity shown on product label. Users with muscular, skeletal, or other physical conditions that could reduce the ability to withstand fall-arrest energy loads or prolonged suspension should consult a physician before using. Increasing age and lowered physical fitness may reduce a person’s ability to withstand shock loads during fall arrest of prolonged suspension. Consult a physician if there is any question about physical ability to safely use this product to arrest a fall or suspend. Pregnant women and minors must never use the lanyard.

5.3 Environment

Chemical hazards, heat and corrosion may damage the lanyard. More frequent formal inspections are required in environments with chemical hazards, heat and corrosion. Do not use in environments with temperatures greater than 113ºF(45ºC). Use caution when working around electrical hazards, moving machinery, abrasive surfaces, and sharp edges.

Table 3 Chemicals

	Resistance			
Chemical	**Nylon**	**Polyester**	**Stainless Steel (304)**	**Galvanized Steel**
Strong acid (dilute)	Poor	Good	Fair	Poor
Strong acid (conc.)	Poor	Fair*	Poor	Poor
Weak acid (dilute)	Poor	Good	Good	Poor
Weak acid (conc.)	Poor	Good	Poor	Poor
Strong alkali (dilute)	Good	Poor	Good	Poor
Strong alkali (conc.)	Fair	Poor	Fair	Poor
Weak alkali (dilute)	Good	Fair	Good	Fair
Weak alkali (conc.)	Good	Poor	Fair	Poor
Alcohol	Good	Fair	Good	Good
Aldehyde	Good	Poor	Good	Good
Ether	Good	Poor	Good	Good
Halogenated hydrocarbons	Good	Good	Good	Good
Phenols	Poor	Poor	Good	Good
Bleaching agents	Poor	Good	Fair	Poor
Ketones	Good	Poor	Good	Fair
Lubricating oils and greases	Good	Good	Good	Good
Soaps and detergents	Good	Good	Good	Good
Seawater	Good	Good	Fair	Poor
Aromatic solvents	Good	Poor	Good	Good

** Concentrated sulfuric acid attacks polyester.*

⚠ WARNING!

DO NOT use lanyards for material handling.

Failure to follow this warning can result in serious personal injury or death.

6 System Requirements

6.1 Compatibility of System Parts

6.1.1 Compatibility of Components and Subsystems

MSA Lanyards are designed to be used with MSA approved components and connecting subsystems. Use of MSA Lanyards with products made by others that are not approved in writing by MSA may adversely affect the functional compatibility between system parts and the safety and reliability of the complete system. Connecting subsystems must be suitable for use in the application (e.g. fall arrest, restraint, climbing protection, rescue or evacuation). MSA produces a complete line of connecting subsystems for each application. Contact MSA for further information. Refer to the manufacturer's instructions supplied with the component or connecting subsystem to determine suitability. For fall arrest applications using the lanyard, the maximum fall arrest force must not exceed 1,800 LBF (8 kN). Contact MSA with any questions regarding compatibility of equipment used with the lanyard.

6.1.2 Compatibility of Connectors

Connectors, such as D-Rings, snaphooks, and carabiners, must be rated at 5,000 LBF (22 kN) minimum breaking strength. MSA connectors meet this requirement. Connecting hardware must be compatible in size, shape, and strength. Non-compatible connectors may accidentally disengage ("rollout"). When using a snaphook to connect to an anchorage or when coupling components of the system together, be certain accidental disengagement ("rollout") cannot occur. Rollout is possible when interference between a snaphook and the mating connector causes the snaphook's gate or keeper to accidentally open and release. Rollout occurs when a snaphook is snapped into an undersized ring such as an eye bolt or other noncompatibly shaped connector. Always verify compatibility of the connecting snaphook or carabiner with harness D-Ring or anchorage connector. Use only self-closing, self-locking snaphooks, carabiners or pin connectors with the harness.

Use only self-closing, self-locking snaphooks and carabiners to reduce the possibility of rollout. Do not use snaphooks or connectors that will not completely close when attached.

- Do not tie knots in a lanyard.
- Do not hook the lanyard to itself. (Exception: FP5K tie-back snaphook)
- Do not connect snaphooks and carabiners to each other.
- Do not connect two (2) snaphooks to one (1) D-ring.
- Connect only snaphooks and carabiners with a minimum gate strength of 3600 lbf (16 kN) directly to a horizontal lifeline.

⚠ WARNING!

- DO NOT rely on feel or sound to verify proper snaphook engagement. Always check visually for proper engagement. Ensure that gate and keeper are closed before use.
- Ensure Lanyard connectors are compatible with the attachments to which they are connected (to prevent rollout), and are fully closed and locked before use.

Failure to follow this warning can result in serious personal injury or death.

6.2 Anchorages and Anchorage Connectors

Personal fall arrest system anchorages and connectors must be capable of supporting a static load, applied in each direction permitted by the system, of at least 5,000 lbf (22.2 kN).

7 Planning the Use of Systems

7.1 Rescue and Evacuation

⚠ WARNING!

The user must have a rescue plan and the means at hand to implement it. The plan must take into account the equipment and special training necessary to effect prompt rescue under all foreseeable conditions. If the rescue is from a confined space, the provisions of OSHA regulation 1910.146 and ANSI Z 117.1 must be taken into account. Although a rescue plan and the means to implement it must always be in place, it is a good idea to provide means for user evacuation without assistance of others. This will usually reduce the time to get to a safe place and reduce or prevent the risk to rescuers.

Failure to follow this warning can result in serious personal injury or death.

7.2 Free Fall Distance

When using an energy-absorbing lanyard, keep the amount of slack between the anchorage/anchorage connector and the harness/waist belt at a minimum to reduce the free fall distance and the impact force to the user.

⚠ WARNING!

- DO NOT exceed the allowable free fall distance or exceed the maximum fall arrest forces as specified by governing standards or subsystem components.
- Prevent swing falls and impact with objects in or adjacent to the fall path. Always remove obstructions below the work area to ensure a clear fall path. Work directly under the anchorage/anchorage connector at all times. Failure to follow this warning can result in serious injury or death.
- DO NOT use where objects may fall or otherwise interfere with the operation or ability of this device to function properly

Failure to follow these warnings can result in serious personal injury or death.

Table 4 Permissible free fall distance

Permissible free fall distance	US	Canada
With energy absorber	6 ft (1.8 m)	6 ft (1.8 m)
Without energy absorber (Positioning)	2 ft (0.6 m)	2 ft (0.6 m)
Without energy absorber (Restraint)	0 ft (0.0 m)	0 ft (0.0 m)
12 ft free fall energy absorber	12 ft (3.7 m)	

NOTE: The above table provides general guidelines. See lanyard label for specific permissible free fall distances.

ANSI 6 ft Free Fall Energy-Absorbing Lanyards (Non leading-edge use)

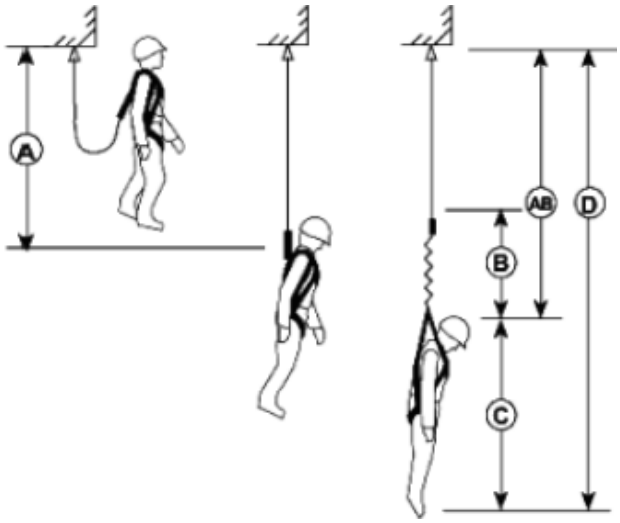


Figure 1 Free fall distance

A	free fall	**C**	user height
B	deceleration distance	**D**	minimum clearance required
AB	total fall distance + 3 ft (0.9 m) safety margin		

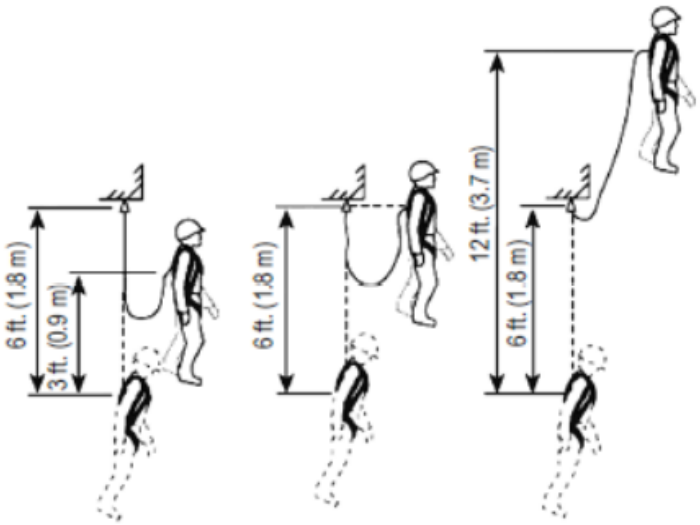


Figure 2 Permissible free fall distance

NOTE: If worker's weight (including tools and clothing) is between increments listed, the next highest weight bracket shall be used.

Table 5 CSA Z259.11-2017 Energy Absorber Deployment – Based on worker weight and 6 ft max. free fall (Non leading-edge use)

	Deployment Length, X_{pea} (m)	
Weight (kg)	**Standard EAL**	**Light Weight EAL**
50	-	0.34
55	-	0.38
60	-	0.42
65	-	0.47
70	0.43	0.51
75	0.45	0.56
80	0.48	0.61
85	0.52	0.67
90	0.56	0.72
95	0.60	0.78
100	0.65	0.84
105	0.69	0.90
110	0.74	-
115	0.79	-
120	0.84	-
125	0.89	-
130	0.94	-
135	1.00	-
140	1.06	-

Table 6 Acceptable Anchor Locations - Vertical and horizontal use and fall clearance **

ANSI 12 ft free fall energy-absorbing lanyard models - 130 to 310 lbs (Non leading-edge use)
Clearance between working surface and nearest obstruction (ft)

Horizontal Distance

Vertical Distance	6	5	4	3	2	1	0	1	2	3	4	5	6	
6							3							6
5				5	5	5	5	5	5	5				5
4			6	6	6	7	7	7	6	6	6			4
3		7	7	8	8	8	8	8	8	8	7	7		3
2		9	9	9	9	10	10	10	9	9	9	9		2
1		10	10	11	11	11		11	11	11	10	10		1
0	11	12	12	12	12	13		13	12	12	12	12	11	0
-1		13	13	14	14	14	14	14	14	14	13	13		-1
-2		15	15	15	15	15	16	15	15	15	15	15		-2
-3		16	16	17	17	17	17	17	17	17	16	16		-3
-4			18	18	18	18	18	18	18	18	18			-4
-5				19	20	20	20	20	20	19				-5
	6	5	4	3	2	1	0	1	2	3	4	5	6	

OSHA heavy worker, 6 ft free fall energy absorbing lanyard models - 311 to 400 lbs (Non leading-edge use)
Clearance between working surface and nearest obstruction (ft)

Horizontal Distance

Vertical Distance	6	5	4	3	2	1	0	1	2	3	4	5	6	
6							3							6
5				5	5	5	5	5	5	5				5
4			6	7	7	7	7	7	7	7	6			4
3		7	8	8	9	9	9	9	9	8	8	7		3
2		9	10	10	11	11	11	11	11	10	10	9		2
1		11	11	12	12	12	13	12	12	12	11	11		1
0	11	13	13	14	14	14		14	14	14	13	13	11	0
-1														-1
-2														-2
-3														-3
-4														-4
-5														-5
	6	5	4	3	2	1	0	1	2	3	4	5	6	

** The clearance provided is for the user working in a standing position. If the user is kneeling or bending down, an additional 3 ft (0.9 m) of clearance is required.

For leading edge lanyards, the minimum clearance is 20 ft (6 m). For further details on leading edge usage, see applicable leading edge sections.

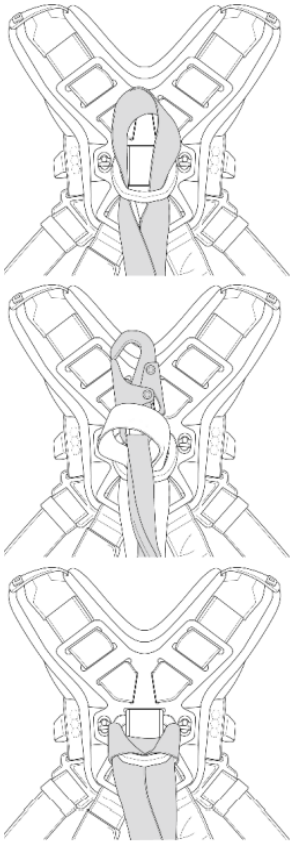
8 Use

⚠ WARNING!

Lanyards that have been damaged or subjected to fall arrest forces cannot be repaired and must be destroyed. If a lanyard is subjected to fall arrest or impact forces, immediately remove it from service and tag “UNUSABLE.” until it has been destroyed.

Failure to follow this warning can result in serious personal injury or death.

8.1 Connection



1. To attach hitch loop models, pass hitch loop through harness D-ring.
2. Pull lanyard through hitch loop.
3. Pull lanyard taut.

Figure 3 Hitchloop Connection

8.1.1 Restraint Lanyard

Connect one end to a suitable anchorage and the other end to the back D-Ring (or CSA Class A connector) of an approved full body harness or CSA Class P connector.

8.1.2 Energy-Absorbing Lanyard

Connect energy absorber to back D-ring of an approved full body harness (or CSA Class A connector) and other end to a suitable anchorage.

8.1.3 Twin Leg Energy-Absorbing Lanyard

Connect the middle snaphook of the twin lanyard to the back D-ring of an approved full body harness. Connect the snaphooks on the ends of the lanyard legs to suitable approved anchorages. Connect the snaphook at the end of one leg to an initial anchorage. Connect the snaphook at the end of the other leg to a secondary anchorage before moving and/or disconnecting from the initial anchorage.

See 8.1.9 Connection Instructions for Pin Connector for instructions on pin connector installation.

8.1.4 Rebar Positioning Lanyards

Connect the two small snaphooks to the hip or waist attachment points on the harness with the large snaphook in front of your body. Attach the large snaphook to a suitable anchorage.

⚠ WARNING!

- When using a twin leg energy-absorbing lanyard, connect the center-mounted snaphook to the harness back D-Ring. Do not connect the snaphooks on the ends of the lanyard leg to your body support, as this can increase the possible free fall distance beyond allowable limits. Maintain tie-off while moving between anchorage locations. Do not disconnect from your initial position until you have first connected to another anchorage. When one leg is not in use, only attach to lanyard keeper on harness, not side or front D-ring. Do not allow lanyard legs to pass under arms, between legs or around neck.
- When using rebar positioning lanyards, the user must be attached to an independent fall arrest system simultaneously.

Failure to follow these warnings can result in serious personal injury or death.

8.1.5 Anchorage Connection

Tie-back Lanyard: connect the snaphook on the energy absorber to the back D-ring of the user's full body harness. Be sure the snaphook's gate is completely closed and locked. The user then connects the FP5K snaphook to the anchorage connector. Be sure the snaphook's gate is completely closed and locked.

8.1.6 Tie-Back Connection

1. Connect the snaphook on the energy absorber to the back D-ring of the user's full body harness. Wrap the leg of the lanyard around a suitable anchorage.
2. Tie-back Lanyard: Connect the FP5K snaphook to the leg of the lanyard to create a closed loop.

   Floating D-ring: Connect the snaphook at the end of the leg to a floating D-Ring back on the leg of the lanyard to create a closed loop.
3. Be sure the snaphook gate is completely closed, locked, and captures the leg of the lanyard. Inspect anchorage to assure the tie-back loop on the leg of the lanyard cannot be accidentally disengaged from the anchorage during use.

8.1.7 Fall Arrest Attachment Element (D-ring) Extender

⚠ WARNING!

An attachment element extender is not to be attached directly to an anchorage or anchorage connector for fall arrest. An energy absorber must be used to limit maximum arrest forces to 1800 pounds (8 kN). The length of the attachment element extender may affect free fall distances and free fall clearance calculations.

Failure to follow this warning can result in serious personal injury or death.

Pass hitchloop through back D-ring, then pull lanyard through hitchloop and pull taut. For fall arrest, always attach other elements of a personal fall arrest system to the free D-ring at the end of the extender. Do not attach two (or more) snaphooks or carabiners to the harness back D-ring (see Figure 3 Hitchloop Connection).

8.1.8 Leading Edge

The V-SERIES LEADING EDGE LANYARD has been tested for horizontal (Leading Edge) use over a steel edge without burrs using the methods in ANSI Z359.14-2014. Therefore the V-SERIES LEADING EDGE LANYARD may be used where a fall may occur over similar edges.

Leading Edge configurations shall only be used after all other hierarchy of controls, including restraint systems and overhead anchorages, have been exhausted.

Prior to use, leading edges must be evaluated by a qualified person (a person with a recognized degree or professional certificate and with extensive knowledge, training and experience in the fall protection and rescue field who is capable of designing, analyzing, evaluating and specifying fall protection and rescue systems). Avoid working where the lifeline will continuously or repeatedly abrade against sharp, hard, or abrasive edges. If the risk assessment indicated that an edge could damage the lifeline then eliminate such contact or protect edges using a pad or other means before the start of work.

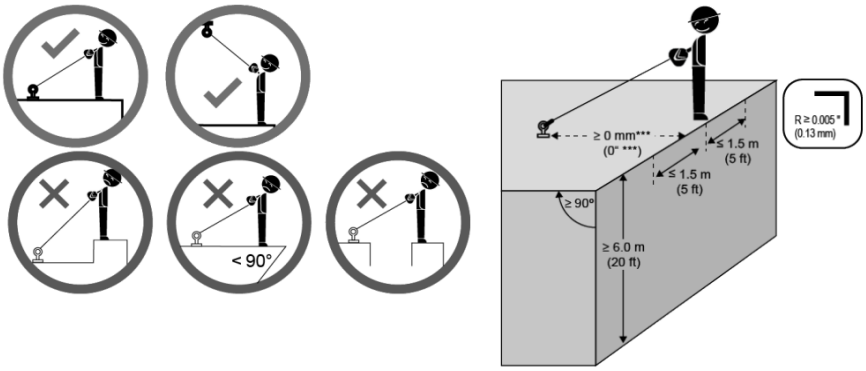
Horizontal use or anchoring at the feet of the user should be limited wherever possible to avoid the potential for a swing fall and the possibility of the user striking a structure, potentially causing serious injury. To reduce the risk of a swing fall, it is preferable to anchor directly above the user.

Anchor locations shall adhere to Figure 4 , including a redirection angle ≥ 90 degrees and set back ≥ 0 mm*** (0 ft ***); ensuring the correct function of the device in the event of a fall. Lateral movements to both sides of the center axis shall be limited to a maximum of 1.5 m (5 ft) as shown. The V-SERIES LANYARD anchorage point shall be at the user's foot level or above. Climbing above the anchorage point is not permitted (see Figure 4). Measures shall be taken to prevent use over unintended edges (such as on the opposite side of the anchorage or around corners).

If a fall over an edge is possible, special rescue measures shall be defined and trained. Consideration shall be given to assessing a suspended user without further loading or moving the lifeline over an edge.

A minimum fall clearance of 20 ft (6 m) is required for leading-edge use.

Figure 4 Acceptable Anchor Locations – Horizontal use with edge consideration



*** Ensure that setback distance meets requirements in anchorage connector manual and that the set-up does not allow lifeline connector to contact leading edge in the event of a fall.

8.1.9 Connection Instructions for Pin Connector

⚠ WARNING!

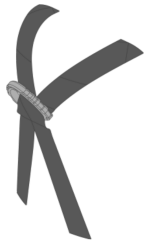
The pin connector must only be used with the MSA Leading Edge Energy-absorbing Lanyard. Do not connect any other lifeline to the pin connector. Harnesses with split D-ring attachments are not suitable. For further information, or if doubt exists regarding the suitability of a specific harness type, contact MSA.

Do not use a harness with split D-ring.

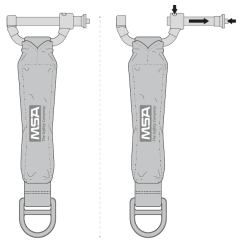
Failure to follow this warning can result in serious personal injury or death.

The Leading Edge Lanyard attachment bracket allows connection to a full body harness just below the rear D-ring. The bracket shall only be used to connect the Leading Edge Lanyard to the harness. Any other devices shall be connected directly to the harness D-ring.

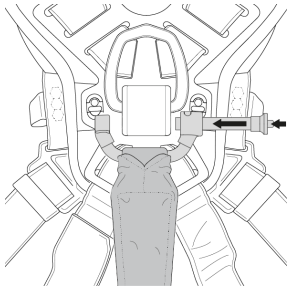
To Install the Leading Edge Lanyard to a Full Body Harness:



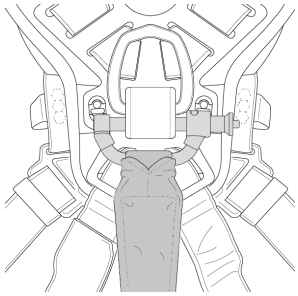
1. Lift the rear dorsal D-ring on the harness and pull the webbing straps through the dorsal D-shim until there is sufficient space to feed the attachment pin between the webbing and dorsal D-shim.



2. Press the button on the right side of the pin and press the button on the top of the right side of the bracket.
3. Pull the pin to the right to open the connector.



4. Place the bracket arms over the torso straps of the harness and with the button on the pin depressed, feed the harness connector pin behind the torso straps and into the left side of the bracket.
    a. Release the button on the pin and pull on the end of the pin slightly to ensure it has locked into place.



5. Pull the harness straps back through the dorsal pad to eliminate slack in the webbing.

Following installation, and prior to use, the Leading Edge Lanyard shall be inspected by a second user.

- Ensure the harness connector pin is passed behind both harness webbing straps between two slots in the dorsal D-shim.
- Ensure the harness connector pin is fully housed through both bracket arms and locked in position; no red marking shall be visible on the pin.
- Ensure the Leading Edge Lanyard is installed in the correct orientation, such that the Energy absorber hangs below the attachment bracket.
- Ensure both harness straps are pulled tight and equally through the dorsal D-shim.

9 Care, Maintenance and Storage

9.1 Cleaning

Clean the lanyard with a solution of water and mild laundry detergent. Do not use chemicals, harsh detergents or pressure washers. Rinse with clear water. Dry hardware with a clean cloth and hang to air dry. Do not speed dry with heat. Excessive accumulation of dirt, paint or other foreign matter may prevent proper function of the lanyard, and, in severe cases, weaken the webbing. Contact MSA with questions concerning lanyard conditions and cleaning.

9.2 Maintenance and Repairs

Tag damaged equipment or equipment needing maintenance as “UNUSABLE” and remove from service. Repair and maintenance (other than cleaning) must be performed by MSA. Do not attempt to repair an MSA lanyard. The moving parts of snaphooks and carabiners may require periodic lubrication with low viscosity penetrating oil. Follow lubricant manufacturer’s instructions. Do not over-lubricate. Wipe excess with a clean, dry cloth.

9.2.1 Storage

Store the lanyard in a cool, dry and clean place out of direct sunlight. Avoid areas where heat, moisture, light, oil, and chemicals or their vapors or other degrading elements may be present. Equipment which is damaged or in need of maintenance should not be stored in the same area as usable equipment. Heavily soiled, wet, or otherwise contaminated equipment should be properly maintained (e.g. dried and cleaned) prior to storage. Prior to using equipment which has been stored for long periods of time, a formal inspection (see 11.2 Formal Inspection) should be performed by a competent person.

10 Markings and Labels

All labels must be present, legible and securely attached.

NOTE: Details on the following lanyards can vary for different models. For energy-absorbing and restraint models, labels may be located on user end or anchorage end, depending on configuration. On some models, labels may be under a protective cover.

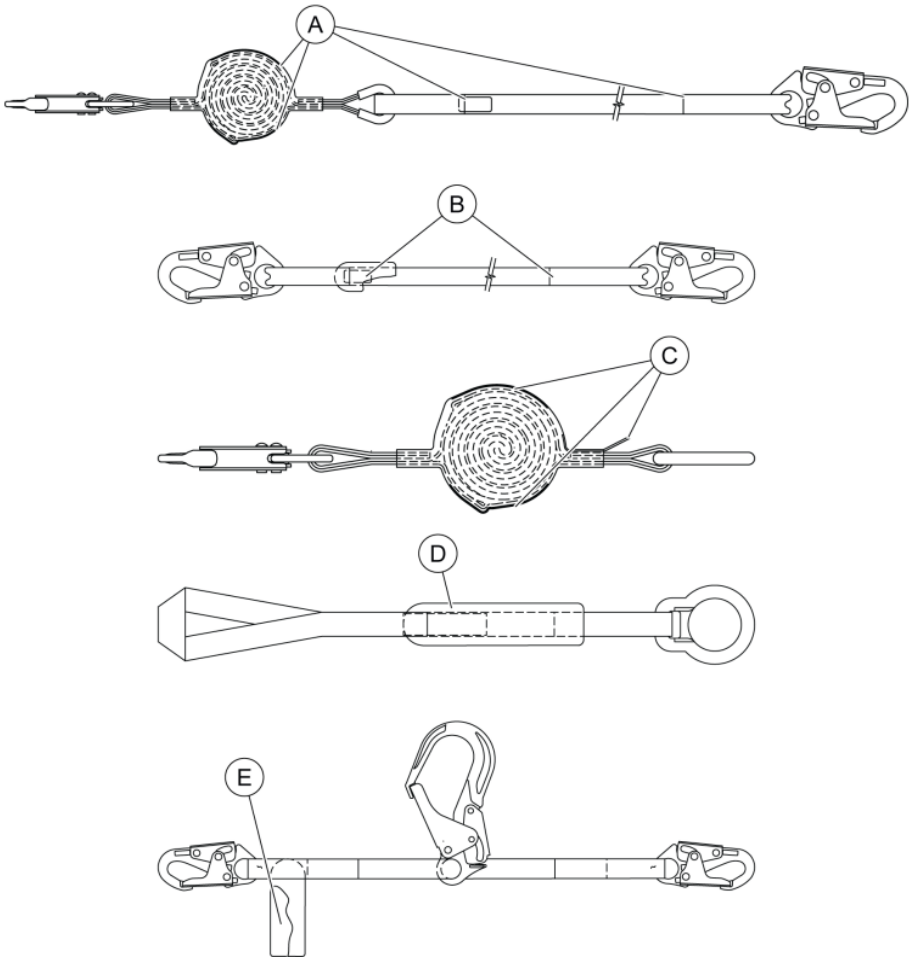


Figure 5 Label Locations

A Label Location for Energy-Absorbing Lanyards
B Label Location for Restraint Lanyard
C Label Location for Restraint Lanyard
D Label Location for D-ring Extender
E Label Location for Rebar Positioning Lanyard

10.1 Labels

INSPECTION GRID

YR	J	F	M	A	M	J	J	A	S	O	N	D
1st												
2nd												
3rd												
4th												
5th												

PUNCH GRID ON MONTH OF FIRST USE

803 Rev. 4 10083667

Warning: Maximum User Weight 130-310 lbs.

6ft. Maximum Free Fall

900lbs. Average Arresting Force

Maximum Deployment Distance 48”
Force may increase when cold and/or wet

Read Instructions Before Use

Warning: Maximum User Weight 130-310 lbs.

12ft. Maximum Free Fall

1350lbs. Average Arrest Force

Maximum Deployment Distance 60”
Force may increase when cold and/or wet

Read Instructions Before Use

OSHA Compliance:
Maximum User Weight 400 lbs.

6ft. Maximum Free Fall

1800lbs. Maximum Arrest Force

Maximum Deployment Distance 42”

Read Instructions Before Use

Warning: Maximum User Weight 130-310 lbs.

12ft. Maximum Free Fall

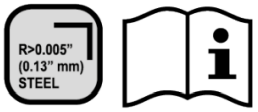
1350lbs. Average Arrest Force

Maximum Deployment Distance 60”
Force may increase when cold and/or wet

Read Instructions Before Use

This lanyard has been tested for horizontal (Leading Edge) use over a steel edge without burrs using the methods in ANSI Z359.14-2014.Therefore this lanyard may be used where a fall may occur over similar edges.

Refer to users instructions for acceptable anchorage locations and minimum clearance required.



Read Instructions Before Use

024 Rev. 1 10212529

Read instructions before use / Lire les instructions avant utilisation

Maximum free-fall distance
Maximum de chute libre

1.8 m
6 ft

Maximum deployment
Déploiement maximum

1.5 m (4.8 ft)

Weight range including tools
Gamme de poids incluant les outils

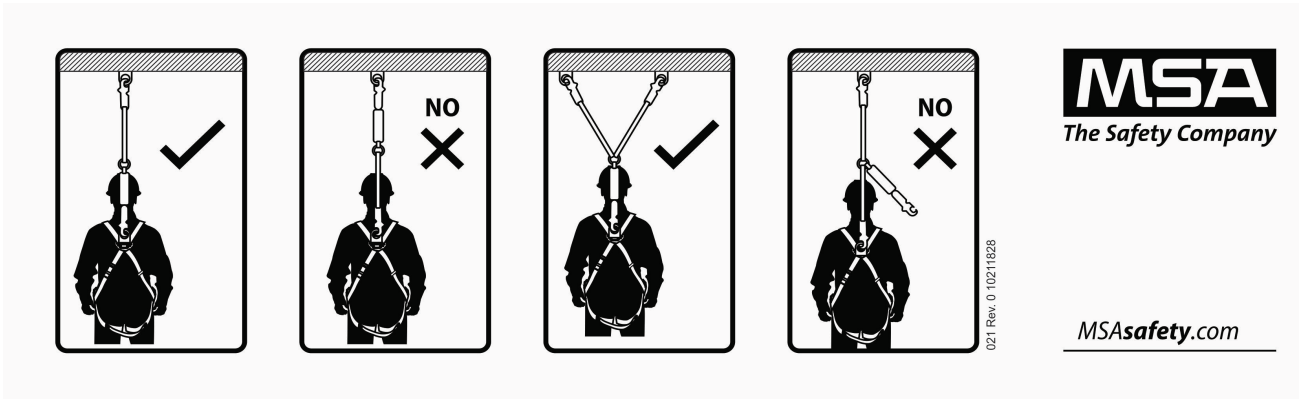
68-140 kg
150-310 lbs

Maximum deployment factor
Facteur de déploiement maximum

D_{310}=0.5

See user instructions
Voir les instructions aux utilisateurs

10188908 815 Rev. 3



⚠WARNING

CONNECT UNUSED LANYARD LEG TO A LANYARD CLIP FOUND ON HARNESS. DO NOT CONNECT UNUSED LANYARD LEG TO SIDE, HIP, FRONT, OR BACK D-RINGS.

⚠ ADVERTENCIA

CONECTAR LA PIERNA NO USADA DEL LANYARD AL CLIP DEL ARNÉS. NO CONECTAR LA PIERNA DEL LANYARD A LOS ANILLOS D LATERALES, FRONTAL NI DE ESPALDA.

⚠ ADVERTISSMENT

RACCORDER LA LONGE NON UTILISÉE DU CORDON DE SÉCURITÉ À UNE ATTACHE POUR LONGE QU'ON TROUVE SUR LE HARNAIS. NE PAS RACCORDER DE LONGE DE CORDON NON UTILISÉE À DES ANNEAUX EN "D" PLACÉS SUR LES CÔTÉS, AUX HANCHES, À L'AVANT OU SUR LE DOS.

2211 REV. 4 10107789

MSA **PRODUCT NAME**

Shock Absorbing Lanyard
Lanière Absorbante de Choc

Part Number/ Numéro — PART NUMBER
Material/Matière — MATERIAL
Serial Number/ Numéro de Série — SERIAL NUMBER
Date Made/ Date de Fabrication — DATE MADE
Length/Longueur — LENGTH
Capacity/ Capacité — CAPACITY
Meets Standards/ Satisfait aux normes — APPLICABLE STANDARD — XXXXXXXXXX
Model/ Modèle — MODEL NUMBER

⚠ WARNING

Read and heed all instructions in user manual supplied with lanyard. Remove from service if subjected to fall arrest. Avoid sharp edges and abrasive surfaces. Make only compatible connections. Failure to follow warnings and instructions can result in serious injury or death.

⚠ AVERTISSEMENT

Lire et tenir compte de toutes les instructions de manuel de l'utilisateur fourni avec ce cordon. Retirer du service si le produit a été soumis à des forces d'arrêt de chute. N'effectuer que des raccords avec des pièces compatibles. Tout manquement aux avertissements et aux instructions pourrait entraîner des blessures graves ou même la mort.

DO NOT REMOVE THIS LABEL /
NE PAS RETIRER CET ÉTIQUETTE
MSA The Safety Company
1000 Cranberry Woods Dr. • Cranberry Twp., PA 16066
Ph: 1-800-672-2222 • Fax: 1-800-967-0398
Made in Country • Made in Country

222 Rev. 7 10188907

MSA **PRODUCT NAME**

Shock Absorbing Lanyard
Cordon de Amortiguacion

Part Number/ Numero de Parte — PART NUMBER
Material/Material — MATERIAL
Serial Number/ Número de Serie — SERIAL NUMBER
Date Made/ Fecha de Fabricacion — DATE MADE
Length/Longitud — LENGTH
Capacity/ Capacidad — CAPACITY
Meets Standards/ Cumple con los Estándares — APPLICABLE STANDARD
Model/ Modelo — MODEL NUMBER
Max Elongation/ Alargamiento max. — MAX. ELONGATION
Max. Free Fall Distance Distancia De la Caida libre max. — MAX. FREEFALL DISTANCE

⚠ WARNING

Read and heed all instructions in user manual supplied with lanyard. Remove from service if subjected to fall arrest. Avoid sharp edges and abrasive surfaces. Make only compatible connections. Failure to follow warnings and instructions can result in serious injury or death.

⚠ ADVERTENCIA

Lea y siga todas las instrucciones del manual del usuario que acompaña el acollador. Retire de uso si ha sido sometido a la detención de una caída. Solamente haga conexiones compatibles. El no seguir las advertencias e instrucciones puede producir lesiones graves o la muerte.

DO NOT REMOVE THIS LABEL /
NO QUITE ESTA ETIQUETA
MSA The Safety Company
1000 Cranberry Woods Dr. • Cranberry Twp., PA 16066
Ph: 1-800-672-2222 • Fax: 1-800-967-0398
Made in Country • Made in Country

228 Rev. 2 10212539

Read instructions before use / Lire les instructions avant utilisation

Maximum free-fall distance Maximum de chute libre	Weight range including tools Gamme de poids incluant les outils
1.8 m **6 ft**	**68-140 kg** **150-310 lbs**
Maximum deployment Déploiement maximum	Maximum deployment factor Facteur de déploiement maximum
1.5 m (4.8 ft)	D_{310}=0.5 See user instructions Voir les instructions aux utilisateurs

10188908 815 Rev. 3

⚠ WARNING /ADVERTENCIA /AVERTISSEMENT

Read and heed all instructions in user manual supplied with product. Remove from service if subjected to fall arrest. Avoid sharp edges and abrasive surfaces. Make only compatible connections. Failure to follow warnings and instructions can result in serious injury or death.

Lea y siga todas las instrucciones del manual del usuario que acompaña el producto. Retire de uso si ha sido sometido a la detención de una caída. Solamente haga conexiones compatibles. El no seguir las advertencias e instrucciones puede producir lesiones graves o la muerte.

Lire et tenir compte de toutes les instructions de manuel de l'utilisateur fourni avec ce produit. Retirer du service si le produit a été soumis à des forces d'arrêt de chute. N'effectuer que des raccords avec des pièces compatibles. Tout manquement aux avertissements et aux instructions pourrait entraîner des blessures graves ou même la mort.

Expiration Date
Fecha De Vencimiento
Date d'échéance N/A

MSA The Safety Company
1000 Cranberry Woods Drive • Cranberry Twp., PA 16066
Ph: 1-800-672-2222 • Fax: 1-800-967-0398

INSPECTION GRID

YR	J	F	M	A	M	J	J	A	S	O	N	D
1st												
2nd												
3rd												
4th												
5th												

PUNCH GRID ON MONTH OF FIRST USE

222 Rev. 5 10083663

MSA PRODUCT NAME

Shock Absorbing Lanyard
Cordon de Amortiguacion

Part Number/ Numero de Parte — PART NUMBER
Material/Material — MATERIAL
Serial Number/ Número de Serie — SERIAL NUMBER
Date Made/ Fecha de Fabricacion — DATE MADE
Length/Longitud — LENGTH
Capacity/ Capacidad — CAPACITY
Meets Standards/ Cumple con los Estándares — APPLICABLE STANDARD
Model/ Modelo — MODEL NUMBER

⚠ WARNING

Read and heed all instructions in user manual supplied with lanyard. Remove from service if subjected to fall arrest. Avoid sharp edges and abrasive surfaces. Make only compatible connections. Failure to follow warnings and instructions can result in serious injury or death.

⚠ ADVERTENCIA

Lea y siga todas las instrucciones del manual del usuario que acompaña el acollador. Retire de uso si ha sido sometido a la detención de una caída. Solamente haga conexiones compatibles. El no seguir las advertencias e instrucciones puede producir lesiones graves o la muerte.

DO NOT REMOVE THIS LABEL / NO QUITE ESTA ETIQUETA

MSA The Safety Company
1000 Cranberry Woods Dr. • Cranberry Twp., PA 16066
Ph: 1-800-672-2222 • Fax: 1-800-967-0398
Made in Country • Made in Country

222 Rev. 3 10187629

TWIN LEG LANYARDS, ATTACH CENTER SNAPOOK TO BACK D

CUERDAS AMORTIGUADORAS DOBLES, CONECTE EL GANCHO DE SEGURIDAD AL ANILLO DE ESPALDA EN D.

CORDONS AMORTISSEURS DOUBLES, FIXER LE CROCHET À RESSORT DU CENTRE À L'ANNEAU EN D ARRIÈRE.

707 REV. 4 10012315

117 REV 2
10107327

MSA

REBAR CHAIN ASSEMBLY

Model
Material — Steel, zinc plated
Length
Capacity — 310 lbs (140 kg) (includes person + clothes + tools)
Free Fall Limit — 2 ft (0.6m)
Meets Standard
Date Made

Product of Taiwan

Read instructions before use / Lire les instructions avant utilisation

Maximum free-fall distance Maximum de chute libre	Weight range including tools Gamme de poids incluant les outils
1.8 m **6 ft**	**50-105 kg** **110-230 lbs**
Maximum deployment Déploiement maximum	Maximum deployment factor Facteur de déploiement maximum
1.3 m (4.3 ft)	D_{105}=0.5 See user instructions Voir les instructions aux utilisateurs

10190402 8111 Rev. 1

11 Inspection and Periodic Examinations

11.1 Inspection Frequency

Inspect the lanyard before each use.

11.2 Formal Inspection

Periodic examinations shall be completed by a person, other than the user, competent in the examination of the lanyards, in accordance with the manufacturer's instructions. The interval will be dictated by the usage, local regulations, and environmental conditions, and will be at least annually. See Table 7 Periodic Examination Interval for more information. A record shall be kept of the results of the examination.

⚠ WARNING!

Only MSA or parties with written authorization from MSA may repair the lanyard. Do not attempt to repair or alter an MSA Lanyard.

Failure to follow this warning can result in serious personal injury or death.

Table 7 Periodic Examination Interval

Usage	Interval
Infrequent to light	Annually (12 months)
Moderate to heavy	Semi-annually to annually (6-12 months)
Severe to continuous	Quarterly to semi-annually (3-6 months)

Usage shall be determined by a competent person. A competent person is defined as a person, other than the user, competent in the examination of PPE in accordance with MSA instructions.

MSA Lanyards are not repairable. Maximum product life: Continued use is dependent upon passing pre-use checks and periodic examinations. Service life may be reduced by frequency and conditions of use or local regulations.

⚠ WARNING!

- MSA Lanyards shall not be altered or added to. No unauthorized repairs, modifications, alterations and/or additions are permitted.
- MSA Lanyards that have arrested a fall or are unable to pass an inspection shall be tagged "UNUSABLE" and disposed of in accordance with local regulations.
- Due to the nature of some fall arrest events, it is possible for the load indicator to not deploy. In the event that an MSA Lanyard is subjected to fall arrest forces and the load indicator does not deploy, the lanyard still must be removed from service and marked as "UNUSABLE" until it has been destroyed.
- If the load indicator is deployed, immediately remove the lanyard from service and mark it as "UNUSABLE" until it has been destroyed.

Failure to follow these warnings can result in serious personal injury or death.

11.3 Inspection Procedure

Perform the following steps in order. If in doubt about any inspection point, consult MSA or a competent person qualified to perform formal inspection. Do not use the lanyard if inspection of it reveals an unsafe condition.

1. Inspect the lanyard labels to verify that they are present and legible. Check the formal inspection grid to be sure a formal inspection has been performed within six (6) months.
2. Inspect energy absorbers for evidence of deployment. Remove from service and destroy energy absorbers with evidence of deployment.
3. Inspect for elongation and/or separation of webbing layers and/or appearance of webbing outside the pouch.

4. Inspect all fabric parts, including webbing and stitching. Remove the lanyard from service if significant fraying, severe wear, cuts, burns, abrasion, discoloration or other damage occurs.
5. Inspect all metallic parts for evidence of damage, alteration and missing parts.
    - Inspect snaphooks for deformation, fractures, cracks, corrosion, deep pitting, burrs, sharp edges, cuts, loose parts, and evidence of excessive heat or chemical exposure.
    - Check snaphook function. Unlock, open, close, and lock several times. Gate must automatically close and snugly seat against nose. The locking mechanism must retain the gate tip within 1/8 inch (3 mm) of the nose when firm pressure is applied to the gate.
6. Inspect all plastic parts for cuts, breaks, alteration, excessive wear, missing and loose parts. Inspect for evidence of burns, excessive heat or chemical attack.
7. Inspect each component and subsystem of the complete system in accordance with the associated manufacturer's instructions.

11.4 Corrective Action

Damage, excessive wear, and aging are generally not repairable. Tag damaged or excessively worn lanyards "UNUSABLE" and remove from service immediately. Destroy unusable lanyards.

11.5 Inspection Log

Model No.:	_____	Inspector:	_____
Serial No.:	_____	Inspection Date:	_____
Date Made:	_____	Disposition:	_____

Comments:

_____

12 Warranty

Express Warranty – MSA warrants that the product furnished is free from mechanical defects or faulty workmanship for a period of one (1) year from first use or eighteen (18) months from date of shipment, whichever occurs first, provided it is maintained and used in accordance with MSA's instructions and/or recommendations. Replacement parts and repairs are warranted for ninety (90) days from the date of repair of the product or sale of the replacement part, whichever occurs first. MSA shall be released from all obligations under this warranty in the event repairs or modifications are made by persons other than its own authorized service personnel or if the warranty claim results from misuse of the product. No agent, employee or representative of MSA may bind MSA to any affirmation, representation or modification of the warranty concerning the goods sold under this contract. MSA makes no warranty concerning components or accessories not manufactured by MSA, but will pass on to the Purchaser all warranties of manufacturers of such components. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, AND IS STRICTLY LIMITED TO THE TERMS HEREOF. MSA SPECIFICALLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Exclusive Remedy – It is expressly agreed that the Purchaser's sole and exclusive remedy for breach of the above warranty, for any tortious conduct of MSA, or for any other cause of action, shall be the repair and/or replacement, at MSA's option, of any equipment or parts thereof, that after examination by MSA are proven to be defective. Replacement equipment and/or parts will be provided at no cost to the Purchaser, F.O.B. Purchaser's named place of destination. Failure of MSA to successfully repair any nonconforming product shall not cause the remedy established hereby to fail of its essential purpose.

Exclusion of Consequential Damages – Purchaser specifically understands and agrees that under no circumstances will MSA be liable to Purchaser for economic, special, incidental, or consequential damages or losses of any kind whatsoever, including but not limited to, loss of anticipated profits and any other loss caused by reason of the non-operation of the goods. This exclusion is applicable to claims for breach of warranty, tortious conduct or any other cause of action against MSA.

For additional information, please use your local contacts on our website www.MSAsafety.com.