User Instructions

MSA Harness
V-FLEX®, V-FIT®, V-FORM®, Vest Style, Pullover®, Crossover, and Riggers Harnesses

PLACE LABEL
P/N 10112705
HERE

Doc./Mat.: 10083963/11
Print Spec.: 10000005389 (F)
CR 800000033520
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. FAILURE TO DO SO CAN RESULT IN SERIOUS INJURY OR DEATH.

V-FLEX, V-FIT, V-Form, and Pullover are registered trademarks of MSA Technology, LLC in Europe and in other countries. For more information see www.MSASafety.com/Trademarks.
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1 Safety Regulations

1.1 Correct Use

An MSA full body harness is a primary component of a personal fall arrest system. It may also be used for positioning and travel restriction when the appropriate attachments are present. The harness straps are arranged to contain the torso and distribute the forces of fall arrest to the thighs, chest, and shoulders of the wearer.

**WARNING!**

- DO NOT use fall protection equipment for towing or material handling. 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.
- If PPE is resold, it is essential that instructions for use, maintenance, and periodic examination are provided in the language of destination.
- MSA Fall Protection products may not be used while under the influence of drugs or alcohol. Failure to follow these warnings can result in serious personal injury or death.

1.2 Harness Specifications

- All MSA harnesses with these instructions meet ANSI Z359.11 and/or CSA Z259.10 standards (as noted on label) and/or applicable OSHA regulations. These instructions, and markings on the harness, fulfill the instruction and marking requirements of those standards and regulations.
- All alloy steel D-rings are zinc plated. All aluminum D-rings are anodized. All D-rings are 100% proof tested to 3,600 lbf (16 kN). Minimum breaking strength is 5,000 lbf (22.2 kN).
- All alloy steel buckles and adjusters are zinc plated. All aluminum buckles and adjusters are anodized.
- Webbing is minimum 1.75 in (44 mm) nominal width. Minimum breaking strength of 5,500 LBF (24.3 kN) when new. Check harness label for material type.
- When used as part of a personal fall arrest system, fall arresting forces must not exceed 1,800 lbf (8.0 kN).
- Capacity is 400 lb (181 kg) including weight of the user plus clothing, tools and other user-borne objects. ANSI Z359.11 does not recognize weight capacities over 310 lbs while applicable CSA and OSHA regulations allow for the manufacturer to adjust test methods to simulate capacities over 310 lbs (140 kg).

1.3 Usage Limitations

1.3.1 Physical Limitations

The harness 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 shock loads or prolonged suspension should consult a physician before using. Pregnant women and minors must never use the harness. See Table 1 below for proper sizing.
1.3.2 Environment

**WARNING!**

- Chemical hazards, heat and corrosion may damage the MSA Harness. More frequent inspections are required in these environments.

- Avoid using the MSA Harness adjacent to moving machinery, electrical hazards or abrasive surfaces or in the presence of excessive heat, open flame or molten metal.

- Do not use the harness near energized equipment where contact with high voltage power lines may occur unless harness is rated to ASTM F887. Metal components of the harness may provide a path for electrical current to flow, resulting in an electrical shock or electrocution. Failure to follow these warnings can result in serious personal injury or death.

- Chemical hazards, heat, and corrosion may damage the harness. More frequent formal inspections are required in environments with chemical hazards, heat and corrosion. Other than harnesses constructed of Kevlar®/Nomex® webbing, do not use in environments with temperatures greater than 185 °F (85 °C). Use caution when working around electrical hazards, moving machinery, abrasive surfaces, and sharp edges.

- For harnesses that have Secure-Fit Buckles or Quick Connect Buckles, special care must be taken around dusty environments, as small particles may prevent proper function of the buckle. (See section 4.1 "Cleaning Instructions").

- Harnesses constructed of Kevlar®/Nomex® webbing are recommended for applications such as exposure to welding spatter or similar high temperature (temperatures greater than 185 °F) hazards.

- Harnesses that are rated for arc flash protection are specially designed for use by electrical workers that may be exposed to an electrical arc flash. The following application limitations must be considered and planned for before using this type of “harness.”

**WARNING!**

In electrical environments, the lanyard with hitch loop must be used to eliminate metal parts. Failure to follow this warning can result in serious injury or death.

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Nylon</th>
<th>Polyester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong acid (dilute)</td>
<td>Poor</td>
<td>Fair *</td>
</tr>
<tr>
<td>Strong acid (conc.)</td>
<td>Poor</td>
<td>Good</td>
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<td>Weak acid (dilute)</td>
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<td>Weak acid (conc.)</td>
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<td>Strong alkali (dilute)</td>
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<td>Strong alkali (conc.)</td>
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<tr>
<td>Ether</td>
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</tr>
<tr>
<td>Halogenated Hydrocarbons</td>
<td>Poor</td>
<td>Poor</td>
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</tbody>
</table>

* Concentrated sulfuric acid attacks polyester
1.4 Liability Information

MSA accepts no liability in cases where the device has been used inappropriately or not as intended. The selection and use of the device are the exclusive responsibility of the individual operator.

Product liability claims, warranties and guarantees made by MSA with respect to the device are voided, if it is not used, serviced or maintained in accordance with the instructions in this manual.

1.5 Warranty

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Resistance</th>
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<tr>
<td>Phenols</td>
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<tr>
<td>Bleaching agents</td>
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<td>Ketones</td>
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<tr>
<td>Lubricating Oils &amp; Greases</td>
<td>Good</td>
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<tr>
<td>Soaps &amp; Detergents</td>
<td>Good</td>
</tr>
<tr>
<td>Seawater</td>
<td>Good</td>
</tr>
<tr>
<td>Aromatic Solvents</td>
<td>Poor</td>
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</tbody>
</table>

* Concentrated sulfuric acid attacks polyester

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 contact the Customer Service Department at 1-800-MSA-2222 (1-800-672-2222).
1.6 Training

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

- workplace hazard identification, evaluation and control
- usage planning including calculation of free and total fall distance; maximum arresting force
- evacuation and rescue planning and implementation
- compatibility and selection of anchorage/anchor connectors including connection to help prevent accidental disengagement (rollout)
- selection, inspection, use, storage and maintenance
- proper lanyard/harness connection locations
- consequences of improper use
- ANSI/ASSE Z359.2, Minimum Requirements for a Comprehensive Managed Fall Protection Program establishes guidelines and requirements for an employer's managed fall protection program, including policies, duties and training; fall protection procedures; eliminating and controlling fall hazards; rescue procedures; incident investigations; and evaluating program effectiveness

⚠️ WARNING!

RESCUE AND EVACUATION: the user must have a rescue plan and the means at hand to implement it. The plan must take into account the equipment and specific training necessary to affect prompt rescue under all foreseeable conditions. Suspension intolerance, also called suspension trauma or orthostatic intolerance, is a serious condition. Prompt rescue and use of post fall suspension relief devices can help to reduce the likelihood of suspension intolerance. If the rescue be from a confined space, the provisions of OSHA regulation 1910.146 and ANSI Z117.1 must be taken into account. It is recommended 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.
2 Description

2.1 CSA Classes

**CSA CLASS A**
Designed to support the body during and after the arrest of a fall.

**CSA CLASS D**
Designed for suspension or controlled descent from a height.

**CSA CLASS E**
Designed to support a worker in a position that reduces the worker's profile during passage through a limited access area. Hoisting of the worker is usually involved.

**CSA CLASS L**
Designed for use with fall restrict systems involving the use of Class AS or FRL fall arrester that travels on a vertical lifeline or rail, as described in CSA Z259.2.5 and CSA Z259.2.4. These systems are typically mounted on or adjacent to ladders or towers.

**CSA CLASS P**
Designed to position the worker during a work operation.
2.2 Attachment Elements (D-Rings)

When soft loops are present, it is recommended that these attachments only be connected with other soft loops or carabiners.

2.2.1 Fall Arrest Attachment (Qty 1)

Also called back D-Ring [CSA class A], present on all MSA Harnesses. For fall arrest. For CSA Compliance use only the back D-Ring for connection to the other elements of a personal fall arrest system. The back D-Ring may also be used as an attachment element for travel restriction.

2.2.2 Hip Attachments (Qty 2, if present)

Also called hip D-Rings. For restraint (work positioning and travel restriction) [CSA class D and P]. Never use the hip D-Rings for fall arrest or for climbing protection. Always use both hip D-Rings together, for work positioning applications. When work positioning, use a separate fall arrest system attached to the back D-Ring.

2.2.3 Front Attachment other than Sternal (Qty 1, if present)

For controlled descent, lifting and lowering (by hoisting), and for ladder climbing protection systems (provided the potential free fall distance is very short, footing can be easily gained, and there is no chance to fall in a direction other than feet first) [CSA class D and L]. The chest D-Ring may also be used for rescue, retrieval, and evacuation.

2.2.4 Shoulder Attachments (Qty 2, if present)

Also called shoulder D-Rings. For rescue and retrieval lifting and lowering (by hoisting) [CSA class E]. Never use the shoulder D-Rings for fall arrest or climbing protection. Use both shoulder D-Rings together, never only one.

2.2.5 Back D with integral shock absorber (Qty 1, if present)

Integral shock absorbers are sewn into the harness with a D-Ring on both ends of the pouch. If the shock absorber shows any signs of activation DO NOT USE THE HARNESS.

2.2.6 Sternal Attachment (Qty 1, if present)

Also called chest attachments [CSA Class D and L]. Sternal attachments may be used as an alternative fall arrest attachment in applications where the dorsal attachment is determined to be inappropriate by a competent person, and where there is no chance to fall in a direction other than feet first. The sternal attachment element should be used only when the likely fall distance is not greater than 2 ft (0.6 m). The sternal attachment may also be used for travel restraint, or rescue for controlled descent, lifting and lowering (by hoisting), and for ladder climbing protection systems.

2.2.7 Waist, Rear Attachment (Qty 1, if present)

The waist, rear attachment shall be used solely for travel restraint. The waist, rear attachment element shall not be used for fall arrest. Under no circumstances is it acceptable to use the waist, rear attachment for purposes other than travel restraint. The waist, rear attachment shall only be subjected to minimal loading through the waist of the user, and shall never be used to support the full weight of the user.

2.2.8 Fall Arrest Attachment Element Extender (Qty. 1, if present)

Also called a D-Ring Extender. For fall arrest. Always attach other elements of a personal fall arrest system the free D-Ring at the end of the extender. Do not attach anything to the harness back D-Ring.

**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 personal injury or death.
2.2.9 Lanyard Parking Attachment (Qty 1 or 2, if present)

Allows snap hook of lanyard to be stowed when not in use.

2.3 Buckles And Adjusters

2.3.1 Tongue Buckle leg straps (Qty 2, if present)
Used for securing thigh straps around the user’s thigh. The buckle tongue must pass through a grommet on the leg strap and the free end must be tucked into the keeper.

2.3.2 Qwik-Fit™ Buckle leg straps (Qty 2, if present)
Used for securing thigh straps around the user’s thigh. The free end of strap must extend beyond the buckle and be tucked into the keeper.
2.3.3 Quick Connect Buckle Leg Straps (Qty 2, If Present)
Used for securing thigh straps around user’s thigh. Two halves must be fully connected with both locking pawls engaged.

![Quick Connect Buckle Leg Straps Diagram]

2.3.4 Torso Sizing Adjuster (Qty 2 on Vest style, crossover, and Riggers models, Qty 1 on pullover style models)
Used in the harness shoulder straps to adjust fit to user’s torso.

2.4 Chest Strap Buckle (Qty 1, Vest style only)
2.4.1 RaceFLEX Chest Buckle (If Present)
Used to secure shoulder straps across user’s chest.

![RaceFLEX Chest Buckle Diagram]

2.4.2 Qwik-Fit Buckle (If Present)
Used to secure shoulder straps across user’s chest. The free end of the chest strap must extend beyond the buckle and be tucked into the keeper.

2.4.3 Tongue Buckle (If Present)
Used to secure shoulder straps across user’s chest. The buckle tongue must pass through the grommet hole and the free end must be tucked into the keeper.

2.4.4 RaceFORM Chest Buckle (If Present)
Used to secure shoulder straps across user’s chest.

![RaceFORM Chest Buckle Diagram]
2.4.5  Single Pass Buckle (if present)
Used to secure shoulder straps across user’s chest. The free end of the strap must extend beyond the buckle and be tucked into keeper.

2.4.6  Quick Connect Buckle (if present)
Used to secure shoulder straps across user’s chest. The free end of the chest strap must extend beyond the buckle and be tucked into the keeper.

2.4.7  Double Pass Buckle (If Present)
Used to secure shoulder straps across user’s chest. The free end of the strap must extend beyond the buckle and be tucked into keeper.

2.5  Accessories
2.5.1  Tool Belt Support Straps (if present)
Used for attachment of tool belts and accessories.

2.5.2  Lanyard retainer Clip
Allows snaphook of lanyard to be clipped out of the way, when not in use.

2.5.3  Shoulder Pad & Sub-Pelvic Pad (if present)
Shoulder pad provides comfort while carrying heavy loads in tool bags or work positioning. Sub-Pelvic pad provides comfort during work positioning or personnel riding applications.

2.5.4  RFID Chip (if present)
Provides a unique alpha numeric code for use in inventory control and inspection tracking.

2.5.5  Dedicated PFL attachment (if present)
Provides a pre-formed webbing loop to easily attached and detach PFLs, such as the V-EDGE PFL and Workman Mini PFL.

2.5.6  Adjustable Height Waist Pad (if present)
Allows height of the waist pad to be set depending on preference and use application.
2.5.7 Suspension Seat (if present)
The suspension seat attachment elements shall be used as a pair, and shall be used solely for work positioning. The suspension seat attachment elements shall not be used for fall arrest.

Suspension seat attachments are often used for prolonged work activities where the user is suspended, allowing the user to sit on the suspension seat formed between the two attachment elements. An example of this use would be window washers on large buildings.

2.6 Compatibility of System Parts

2.6.1 Compatibility of Components and Subsystems
MSA Harnesses are designed to be used with MSA approved components and connecting subsystems. Use of MSA Harnesses 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 or restraint). 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 harness, 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 harness.

2.6.2 Compatibility of Connectors

**WARNING!**

Do not rely on feel or sound to verify proper snaphook or carabiner engagement. Ensure that gate and keeper are closed before use. Failure to follow this warning can result in serious personal injury or death.

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”). Always verify compatibility of the connecting snap hook or carabiner with harness D-Ring or anchorage connector. Use only self-closing, self-locking snaphooks and carabiners with the harness.

2.7 Anchorages and Anchorage Connectors

Personal fall arrest system anchorages and connectors must be capable of supporting a static load, applied in all directions permitted by the system, of at least:

- a) 3,600 lbf (16 kN) when certified as defined by ANSI Z359.18
- b) 5,000 lbf (22.2 kN) when uncertified

Anchor structures and anchorage connecting devices for personal fall arrest systems must have a minimum static strength of 5000 lbf (22.2 kN) in all directions of load permitted by the system; or they must be part of a complete system for fall arrest that is designed, installed and used under the supervision of a Qualified Person and maintain a safety factor of at least two (2) as required by OSHA. When more than one person is attached to an anchor, the minimum anchor strength must be multiplied by the number of personal fall arrest systems attached.
3 Use

**WARNING!**

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

3.1 Planning the Use of Systems

3.1.1 Rescue and Evacuation

The user must have a rescue plan and the means at hand to implement it. The plan must take into account equipment and special training necessary to effect prompt rescue under all foreseeable conditions. For confined space rescue, see OSHA regulation 1910.146 and ANSI Z117.1.

**Integral Safety Step, V-Flex harness only:** As soon as practical, after a fall, open the pouches of the V-flex harness and release the safety step. Place feet in the loops in order to straighten the legs as far as practical.

**PRD:** For harnesses equipped with a PRD, reference the instructions that come with the PRD.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
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<tbody>
<tr>
<td>A</td>
<td>Free Fall</td>
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<tr>
<td>B</td>
<td>Deceleration Distance</td>
</tr>
<tr>
<td>AB</td>
<td>Total Fall Distance + 3 ft. (0.9m) safety margin</td>
</tr>
<tr>
<td>C</td>
<td>User height</td>
</tr>
<tr>
<td>D</td>
<td>Minimum Clearance Required</td>
</tr>
</tbody>
</table>
3.1.2 Free Fall Distance, Total Fall Distance and System Elongation

**WARNING!**

- DO NOT exceed the allowable free fall distance or exceed the maximum fall arrest forces as specified by governing standards or subsystem components.
- Work directly under the anchorage/anchorage connector at all times. A full body harness is the only acceptable body holding device that can be used in a fall arrest system.
- Ensure that fall clearance is sufficient to meet governing standards or subsystem component requirements.

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

When using a shock 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.

1) Do not exceed the allowable free fall distance or exceed the maximum fall arrest forces as specified by governing standards of subsystem components.

2) Total fall distance. The sum of the free fall distance and deceleration distance plus a 3 ft safety margin.

3) Harness stretch is considered in the 3 ft (0.9 m) safety margin.

4) The length of D-ring extenders must be added when calculating the minimum fall clearance.

Example: 6 ft (1.8 m) free fall + 3.5 ft (1.0 m) deceleration distance + 3 ft (0.9 m) safety margin (harness stretch and additional safety factor) = 12.5 ft (3.8 m) total fall distance.

**WARNING!**

- 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. 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 Harness unless a qualified person has inspected the workplace and determined that identified hazards can neither be eliminated nor exposures to them prevented. Failure to follow these warnings can result in serious injury or death.

3.1.3 Pendulum (Swing) Falls

Minimize swing fall hazards by anchoring directly above the user. Swing impact can cause serious injury. Always minimize swing falls by working as close to directly below the anchorage point as possible.

3.1.4 Harness Stretch

Fall arrest forces cause harness stretch. Always account for harness stretch when calculating free fall clearance. Harness stretch will be less than 18 inches (0.46 m).
3.2 Donning The Harness

Users must follow instructions for proper fit and sizing, paying particular attention to ensure that buckles are connected and aligned correctly, leg straps and shoulder straps are kept snug at all times, chest straps are located in the middle chest area and leg straps are positioned and snug to avoid contact with the genitalia should a fall occur.

**WARNING!**

- Thoroughly inspect the harness before each use.
- Examine all harness straps and stitches for severe wear, tears, fraying, abrasion, or other damage.
- Do not use damaged harnesses. Failure to follow these warnings can result in serious injury or death.

(1) Lift the harness by the back D-Ring and straighten twisted straps.
(2) With sub-pelvic straps behind you, hang the harness on your shoulders.

**Rigger Harness:** Thigh and sub-pelvic straps cannot be unbuckled.
- Step into straps one leg at a time with padded sub-pelvic straps behind legs.
- Slide harness up your body and pass front D-ring.
- Pass front D-Ring over head so that shoulder straps rest on shoulders.

(3) Adjust harness to position sternal (chest) D-Ring and chest strap (if present) at sternum.
- Attach chest buckle (if present).

**Crossover & Rigger Harness:**
- Adjust position of sternal (front) D-Ring before donning.
- Push webbing through slots to position front D-Ring at sternum.
(4) Adjust sliding Back D-ring (Present on all harnesses) to center, between shoulder blades.

(5) Reach between legs and wrap appropriate strap around each thigh.
(6) Buckle the thigh straps.
(7) Ensure that straps are not twisted or crossed.
(8) Adjust for a loose fit and fasten the buckle.

Rigger Harness:
- Adjust thigh straps for snug, comfortable fit.
- Buckle torso straps.

⚠️ CAUTION!
Crossed or twisted thigh straps can cause injury in the event of a fall.
- Do not cross thigh straps (i.e. fasten right thigh strap around left thigh and vice versa).
- Ensure that thigh straps are not twisted and lay flat against thighs.
WARNING!
Free end of adjusting strap must extend at least 3 inches (8 cm) beyond adjusting buckle. Retain excess webbing in the keeper and under the thigh strap at hip. Failure to follow this warning can result in serious injury or death.

(9) Tighten the chest strap (if present) until snug

(10) Adjust torso straps for proper fit. Position the:
   a) Sternal (chest) D-Ring and chest strap (if present) at sternum (see step (3)).
   b) Sub-pelvic strap at crease between buttocks and thigh.
   c) Shoulder D-Rings (if present) directly above shoulders.
   d) Hip D-Rings (if present) at hips with rings forward.

(11) Tighten leg strap for a snug comfortable fit.
(12) Fasten waist belt (if present).
3.3 Tighten Torso Straps

**WARNING!**

- The harness must be close-fitting with the sternal and dorsal connections in their proper positions as shown.
- The D-rings on the waist adjustment Belt are not to be used for Fall protection. Failure to follow these warnings can cause serious personal injury or death.

Crossover & Rigger Style

1. Slide keeper away from buckle.
2. Lengthen or shorten strap by feeding or drawing webbing through adjusters.

Pullover Style

Adjust the torso straps by feeding webbing to/from the right side, through right hip, chest and left hip hardware to the torso sizing adjuster on left.

V-FLEX, V-FIT, V-FORM

Lengthen or shorten torso straps by sliding webbing through adjusters.
Vest Style without Front D-Ring

![Vest Style without Front D-Ring Diagram]

Lengthen or shorten torso straps by sliding webbing through adjusters.

**NOTE:** Depending on harness model, this adjustment may be in a downward or upward direction.

Vest Style with Front D-Ring

![Vest Style with Front D-Ring Diagram]

Lengthen or shorten by feeding webbing through the adjuster and D-Ring plate.

3.3.1 Attaching/Removing the Saddle
(TechnaCurv, Evotech, V-FiT Tower Harness only)

1. Pass the Quick-Fit buckle through the waist buckle by turning it at an angle.
2. Pass the Quick-Fit buckle through the saddle retaining buckle by turning it at an angle.
3. Make sure the Quick-Fit buckle is correctly seated in the saddle retaining buckle.

**NOTE:** To remove saddle reverse these steps.

3.4 Doffing

1. Unbuckle thigh straps and chest strap.
2. Slip harness off shoulders.
3. After use, ensure that harness is properly cleaned and stored.
4 Care, Maintenance and Storage

4.1 Cleaning Instructions

WARNING!
Remove any surface contamination such as, but not limited to, concrete, stucco, roofing material, etc. that could accelerate cutting or abrading of attached components. Failure to follow this warning can result in serious personal injury or death.

Clean the harness with a solution of water and mild laundry detergent. Dry hardware with a clean cloth and hang harness to air dry. Do not speed dry with heat. Excessive accumulation of dirt, paint, or other foreign matter may prevent proper function of the harness and, in severe cases, weaken the webbing. To clean RaceFLEX Buckles and Quick Connect Buckles remove foreign material with a cotton swab. In dusty environments: fine particles can prevent proper function of the buckle. Dip the buckle in clean water to flush fine particles. Remove excess water and allow to air dry. Questions concerning harness conditions and cleaning should be directed to MSA.

4.2 Maintenance and Service

Equipment which is damaged or in need of maintenance must be tagged "UNUSABLE" and removed from service. Corrective maintenance (other than cleaning) and repair, such as replacement of elements, must be performed by the MSA factory. Do not attempt field repairs. For harnesses that have RaceFLEX Buckles or Quick Connect Buckles, a light penetrating oil can be applied to the locking tabs to ensure smooth operation. Wipe any excess oil off with a clean rag.

4.3 Storage

WARNING!
Do not leave the MSA Harness in environments which could cause damage or deterioration to the product. Refer to sections 4 "Care, Maintenance and Storage" and 5 "Inspection" for care and inspection details. Failure to follow this warning can result in serious personal injury or death.

Store the harness 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 should be performed by a competent person. For harnesses with RaceFLEX Buckles or Quick Connect Buckles, store the harness with the buckles connected.
5 Inspection

5.1 Inspection Frequency

(1) Inspect the harness before each use. Harnesses with a CSA logo on the label have a fall-arrest force indicator.

(2) Check the fall-arrest force indicator before each use. All stitches through the fold must be intact.

5.2 Formal Inspection

MSA requires that all harnesses be inspected by a competent person other than the user at intervals of no more than six months per applicable standard or as specified by a formal fall protection program. Record formal inspections in the provided Inspection Log. Punch or indelibly mark the inspection grid attached to the harness. Do not use a harness with a formal inspection date older than six (6) months unless under provision of formal inspection program. MSA recommends that harnesses with formal inspection dates older than six (6) months be tagged “UNUSABLE” and removed from service until after formal inspection.
5.3 Inspection Procedure

(1) Inspect all webbing (straps) and stitching for cuts, fraying, pulled or broken threads, abrasion, excessive wear, altered or missing straps, burns, UV damage, and heat and chemical exposures.

(2) Inspect all parts for deformation, cracks, corrosion, deep pitting, burrs, sharp edges, cuts, nicks, exposure to excessive heat or chemicals or other damage. Check for missing, loose or improperly functioning parts.

(3) Buckles:
   a) **RaceFORM** (if present): Make sure both buckles and adjuster bars are not deformed or damaged.
   b) **Quick Connect Buckle** (if present): Make sure both pawls are engaged and operate smoothly.
   c) **RaceFlex** (if present): Make sure both pawls are engaged and operate smoothly.

(4) Inspect all labels.

\[Labels\text{ }must\text{ }be\text{ }present\text{ }and\text{ }legible.\]

**WARNING!**

Only MSA or persons or entities with written authorization from the manufacturer may make repairs to the MSA Harness. No unauthorized repairs, modifications, alterations, relocations, and/or additions are permitted. Failure to follow this warning can result in serious personal injury or death.

5.4 Corrective Action

Damage, excessive wear, and aging are generally not repairable.

(1) Tag damaged or excessively worn harnesses "UNUSABLE" and remove from service immediately.

(2) Destroy unusable harnesses.

5.5 Inspection Log

<table>
<thead>
<tr>
<th>Model No.:</th>
<th>Inspector:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial No.:</td>
<td>Inspection Date:</td>
</tr>
<tr>
<td>Date Made:</td>
<td>Disposition:</td>
</tr>
<tr>
<td>Comments:</td>
<td></td>
</tr>
</tbody>
</table>

6 Markings And Labels

All the previous labels must be present, legible and securely attached to the harness. The labels are located in the label pack (See figure Fig. 1 "Load indicator/Label pack"). Replacement label packs are available. Contact MSA for ordering information.
Class D & L - Caída libre Del Límite < .61 m

Distancia Limite de Caida Libre:
Capacidad:
- ArrestAttachment)

Z359.11

absorbing lanyard is present, refer to capacity
Free Fall Limit:
Capacity:
- ArrestAttachment)

WARNING /PRECAUCIÓN/ MIS EN GARDE
MSA Harness

Capacité: 405 lbs (181 kg) (210 lbs (140 kg), ANSI Z359.1); (Indiquez le poids maximum de charge), si l'attache d'absorbeur de chocs est présent, se référer aux capacités d'absorbeur de chocs.

Poids de dépassage: 6 ft (1.8 m) OSHA, CSA (utilisant un harnais de longueur appropriée).

Capacité: 181 kg (400 lbs), ANSI Z359.1 (incluant le poids du système, le poids du lien de maintien), se référer aux capacités d'absorbeur de chocs.

Limites de charge libres: 1.8 m OSHA, ACNOR (communiqué non-réalisable de télévision de câble et satellite)

User ID

DO NOT REMOVE THIS LABEL
NE PAS RETIRER CET ÉTIQUETTE