



*The Safety Company*

Model:

Product Description:

## **MSA Rescue Safe Retrieval System**

### **User Instructions**

#### **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 MAY RESULT IN SERIOUS INJURY OR DEATH.**

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## APPLICATION

The MSA Rescue Safe Retrieval System is a manually operated, personnel rated raising and lowering system. It has been designed as a rescue and work positioning system. MSA Rescue Safe Retrieval System is to be used in the vertical direction in most applications. However, the system can be accompanied with rollers or a protective covering that will reduce friction between the system and the surface to enable the system to work in the horizontal or inclined direction as well. The system can be used by a rescuer or worker to position themselves, or to raise and lower another worker/rescuer.

## FUNCTION

The system is fitted with 11 mm kernmantle rope, which is pre-rigged and is ready for use straight out of the bag. The MSA Rescue Safe Retrieval System is configured into 3:1 or 4:1 mechanical advantage raising system. This gives the operator the ability to raise the loads easily and efficiently with minimum effort. The ascender is attached to the operating rope of the system and makes the gripping of the rope more secure. The ascender is also secured to the operator with the attached securing rope and karabiner. Should the operating rope be accidentally released, the ascender assembly will keep the load from falling out of control and will stop the load.

## SPECIFICATIONS

### Ascender

YOKE Model No:	N-5300 (N-5302 Left Hand)
Description:	Stamping aluminum alloy, anodized finish, blue
Dimension:	204 mm x 90 mm x 28 mm
Total Weight:	200 g
Working Load Range:	1 person, 150 kg
Meets:	EN567, UIAA

### Snatch Block

Sanko Industries Vender P/N:	mkds-13-563157
Description:	Over speed locking brake, there are two operation modes: 1) Ascend: It will autolock the rope when we release the pull force. 2) Descent: Pull the end release the rope, the load descent, but when the descent speed is too fast, it will be locked by this snatch block.
Safe Work Load:	120 kg
Swivel Eye:	Working Load Limit: 220 kg
Sheave:Material:	High tensile steel, Diameter: 70 mm, Thickness: 20mm.
Synthetic Rope Size:	8-13 mm
Weight:	2 kg

### Pulley 1: Single Pulley, Becket, Swivel

Ronstan Industries Vender P/N:	RZ1703	Pin Diameter:	8 mm
Description:	Single Pulley, Becket, Swivel	Max. Work Load:	1500 kg
Sheave Diameter:	75 mm	Broken Load:	3000 kg
Max. Rope Diameter:	14 mm	Weight:	730 g

### Pulley 2: Single Pulley, Swivel Shackle head (used in 3:1 system)

Ronstan Industries Vender P/N:	RZ1700	Pin Diameter:	8 mm
Description:	Single Pulley, Swivel Shackle head	Max. Work Load:	1500 kg
Sheave Diameter:	75 mm	Broken Load:	3000 kg
Max. Rope Diameter:	14 mm	Weight:	630 g

### Pulley 3: Double Pulley, Swivel Shackle head (used in 4:1 system)

Ronstan Industries Vender P/N:	RZ1705	Pin Diameter:	8 mm
Description:	Double Pulley, Swivel Shackle head	Max. Work Load:	1500 kg
Sheave Diameter:	75 mm	Broken Load:	3000 kg
Max. Rope Diameter:	14 mm	Weight:	940 g

### MSA Kernmantle Rope

Part #:	10157153	Length:	30 m to 120 m, as specified
Description:	Kernmantle rope	Total Weight:	Approx. 10.6 kg/100 m
Diameter:	11 mm	Rated Strength:	With knotted termination, 3000kg

**Karabiner (2)**

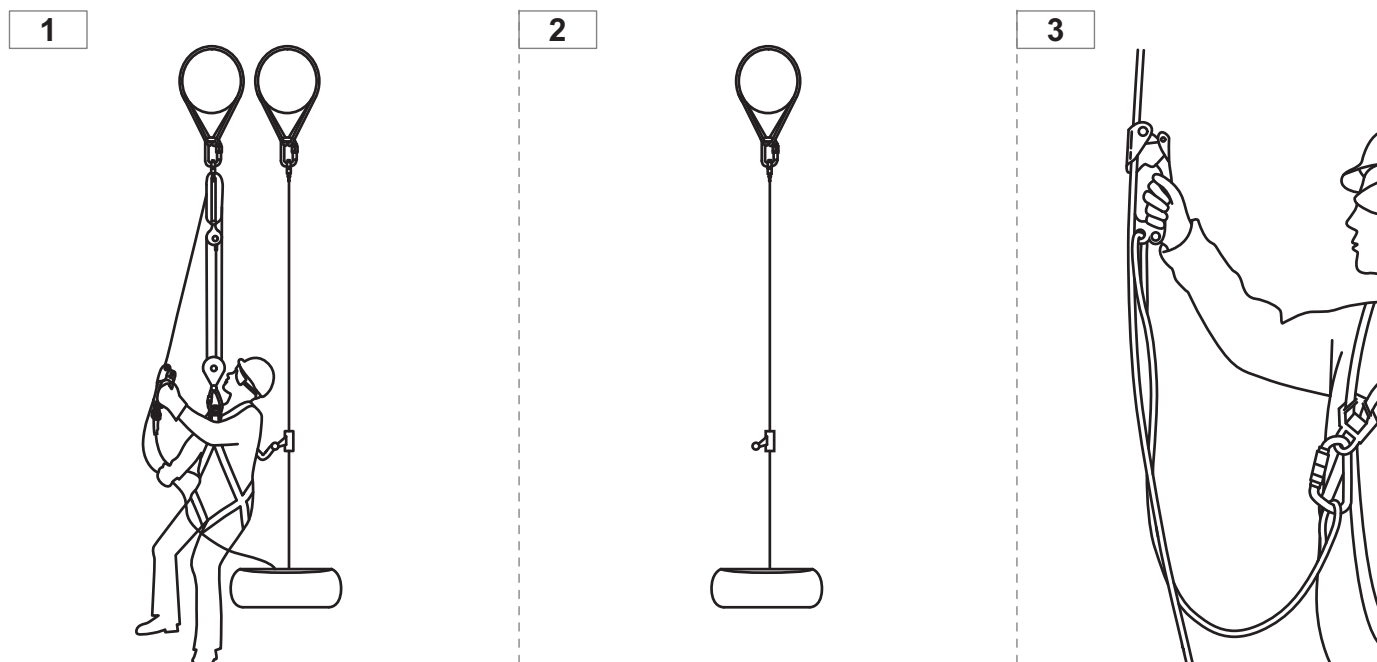
YOKE Model No:	N-270	Total Weight:	81 g
Description:	Triple action auto locking	Rated Strength:	23 kN
Material/ Finish:	Al 7075		
Jaw width Diameter:	19 mm		

**System Specification:**

Rated Capacity of Personnel:	120 kg
Rated Capacity of Material:	120 kg

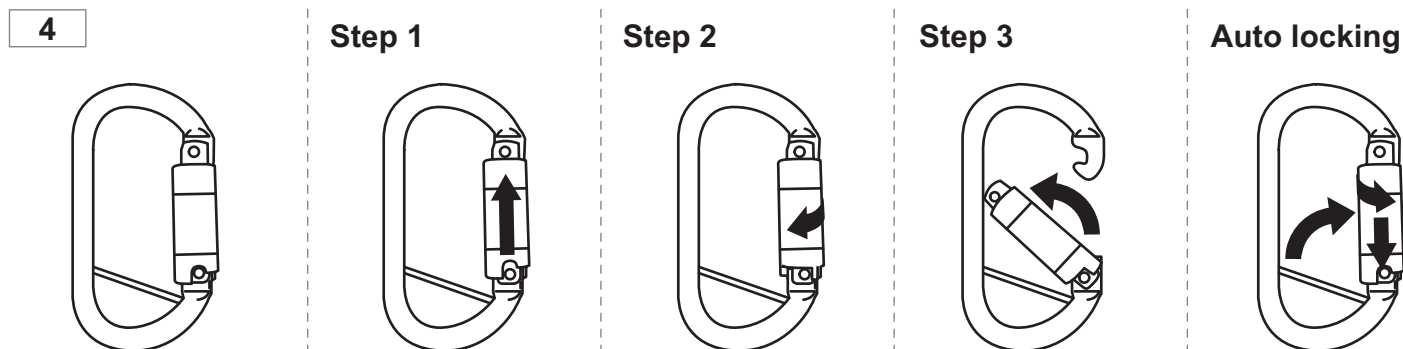
**1. OPERATING INSTRUCTIONS**

It is the responsibility of the user of MSA Rescue Safe Retrieval System to assure that they are familiar with these User Instructions and trained by a competent person. Ensure users have been adequately trained in the use of this MSA Rescue Safe Retrieval System equipment and make sure that users fully understand how it works.

**1.1. ANCHOR SELECTION AND INSTALLATION**

When attaching a MSA Rescue Safe Retrieval System, choose an anchorage point directly above the user's position (FIG. 1) to minimize swing falls. The anchor shall be rated in accordance with AS/NZS 1891.4 and shall be able to support a minimum of 5000 lbs (22KN).

The MSA Rescue Safe Retrieval System is to be connected to the anchor point using the karabiner attached to the upper anti-reversing pulley. An optional anchor sling may be used to attach the system to an appropriately rated anchorage to create an anchor. To open the auto locking karabiner, hold karabiner with the spine in the palm of the hand, first use the thumb and forefinger push the sleeve upwards and rotate sleeve 1/4 turn clockwise and pull back gate with the thumb and forefinger. Insert the jaw of the karabiner over or through the anchor or anchorage connector and release the gate, the karabiner will close and lock automatically. Check to ensure that the karabiner gate is closed and locked before each use (FIG. 4).



## 1.2. FALL PROTECTION

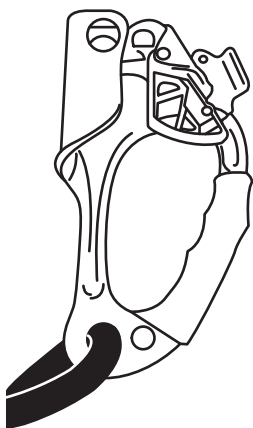
Fall protection must be used with the MSA Rescue Safe Retrieval System during all rescue, work positioning and training sessions. This independent back-up fall arrest system must meet all applicable local regulations. One of the most suitable fall protection systems to use with the MSA Rescue Safe Retrieval System is a vertical lifeline used with a fall arrestor and integral lanyard (FIG. 2). The user must be familiar with the use of this equipment and its limitations. All components connected to this MSA Rescue Safe Retrieval System must be compatible. MSA Rescue Safe Retrieval System is designed to be used with MSA approved components and connecting subsystems.

## 1.3. ATTACHING THE ASCENDER WITH SECURING ROPE

Attach securing rope to the harness of the operator or to an immovable object (FIG. 3). Hold ascender by the handle, use your thumb to pull down on the safety latch and pull the cam assembly fully open. Lay the operating rope (free rope) into the channel of the ascender. Release the safety latch with your thumb. This will close the cam assembly onto the rope (FIG. 5). The ascender serves two purposes when used with the system. It provides a convenient method of gripping the rope when pulling/hauling or hold the line. The handle is large enough to accommodate heavy gloves or mitts and can be used with both hands (FIG. 6).

When the ascender is attached to the operator or immovable objects it acts as an additional brake or safety stop to the snatch block, although there is the over speed locking brake mechanism within the snatch block. Should the operating rope be accidentally released the load will only descend the length of the securing rope or the snatch block brake distance. The load will not be “dropped” or allowed to “free fall”, because the securing rope, ascender and over speed locking brake mechanism within the snatch block will stop the descent (FIG. 6). The ascender must be attached to the operating rope and the securing rope attached to the operator or immovable object before operating the MSA Rescue Safe Retrieval System.

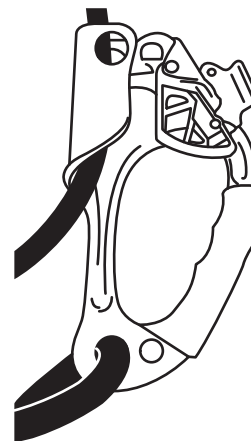
### 5 Step 1



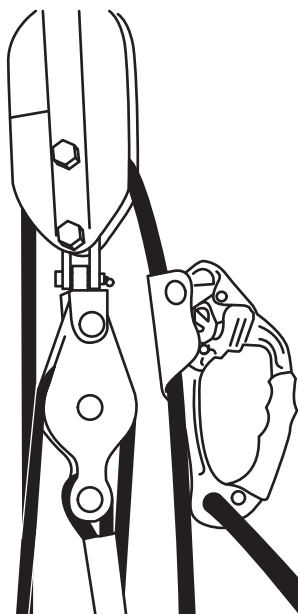
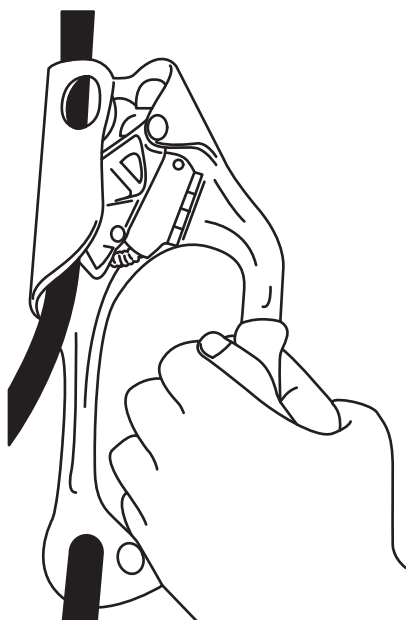
### Step 2



### Step 3



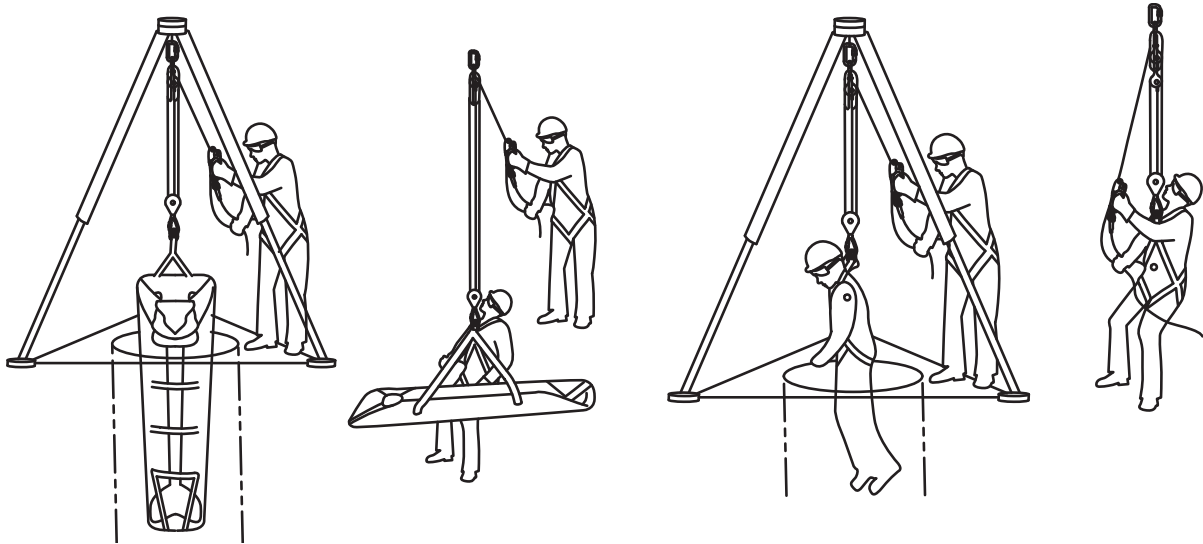
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#### 1.4. ATTACHING THE LOAD TO THE MSA RESCUE SAFE RETRIEVAL SYSTEM

The load (120 kg) can be attached to the system using the karabiner attached to the lower anti-reversing pulley. To open the autolock 1 karabiner, hold karabiner with the spine in the palm of the hand, use thumb and forefinger to rotate sleeve 1/4 turn clockwise and pull back gate with the thumb and forefinger. Insert the jaw of the karabiner through the attachment point of the load and release the gate, the karabiner will close and lock automatically (FIG. 4). Check to ensure that the karabiner gate is closed and locked before each use. If person is to be suspended from the MSA Rescue Safe Retrieval System they must be wearing an approved full body harness or be suspended in appropriate rescue sling or stretcher (FIG. 7). There should be direct or indirect visual contact or some other means of communication with the rescuer at all times during the rescue process.

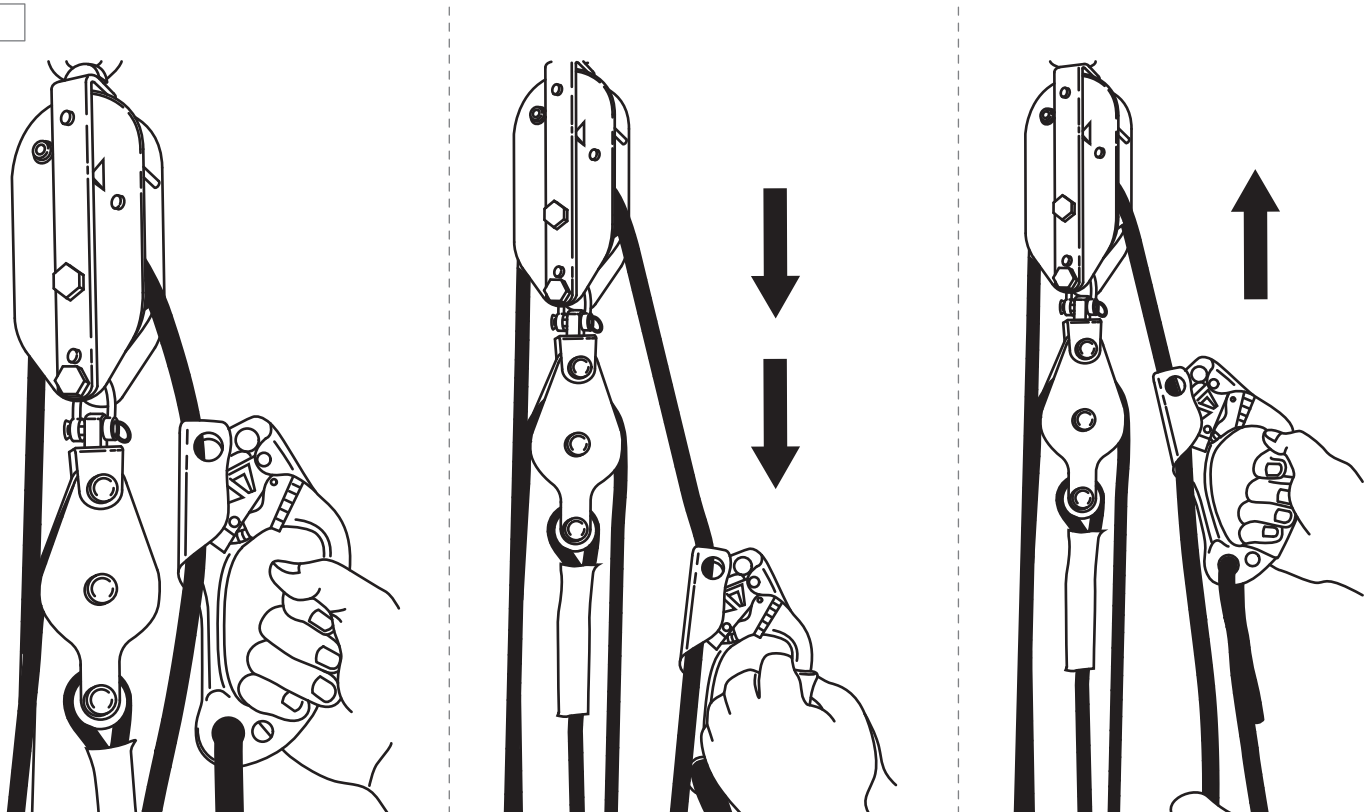
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#### 1.5. RAISING THE LOAD

To raise the load, grip the ascender with both hands and pull down (note: to avoid fatigue, use body weight, do not just rely on upper body strength to pull the rope). Grasp the rope below the ascender and hold the rope. Slide the ascender further up the rope to reset for the next pull. Repeat the process until the load has been raised to the desired height (FIG. 8.)

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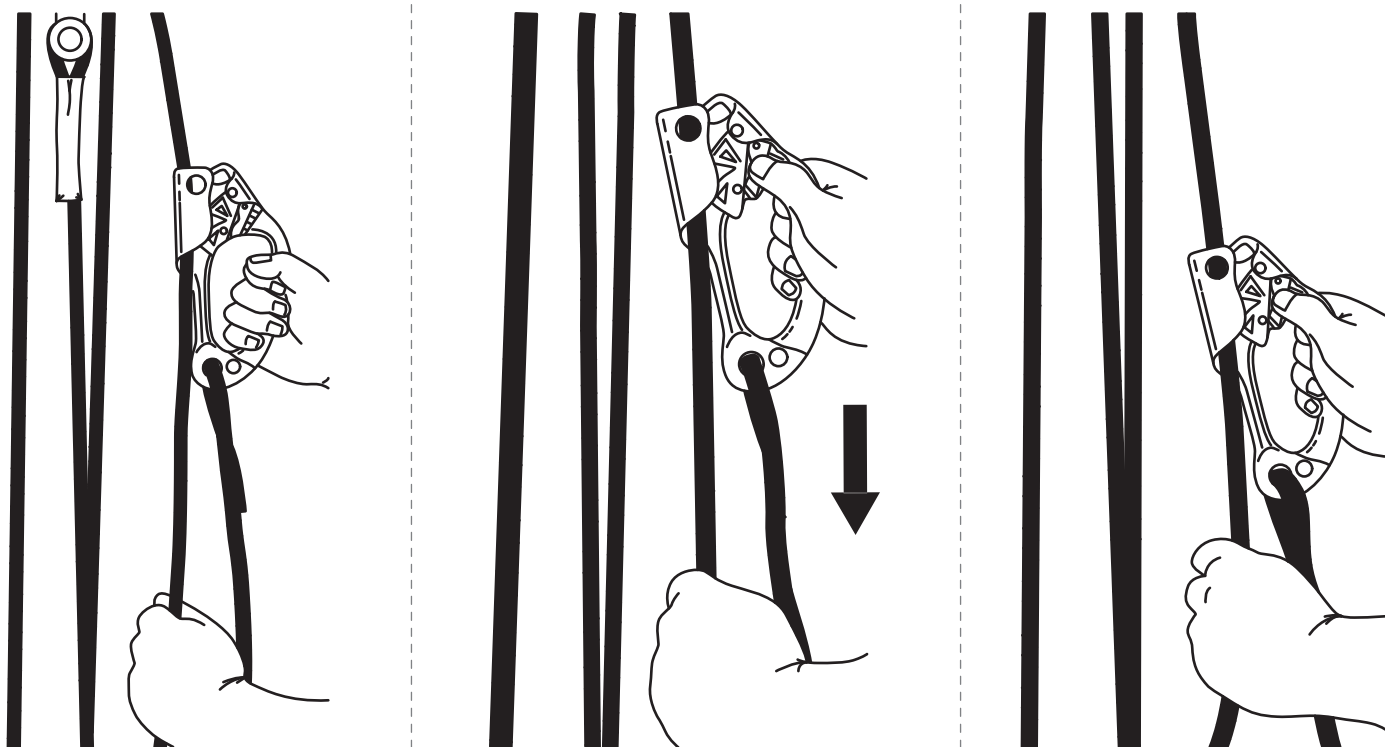


## 1.6. LOWERING OF THE LOAD

To lower the load, grasp the operating rope below the ascender. Pull the cam assembly back from the operating rope with your thumb. While holding the cam assembly off the operating rope with your thumb, allow the operating rope to slide through the hand holding the rope below the ascender. The operator can easily control the rate of descent by controlling the speed with which the rope is allowed to slide through the hand holding the operating rope. Releasing the grip on the ascender will stop the lowering (FIG. 9).

When the descent speed is too fast or the ascender detaches from the rope accidentally, the rope will be locked by the auto-speed lock mechanism within the snatch block (FIG. 8).

9



## 2. WARNINGS

A full body harness is the only acceptable body holding device that can be used in a fall arrest system. A fall arrest system (AS/NZS 1891.4), **MUST ONLY** be connected to the harness back D-ring or front D-ring only with the fall arrest attachment tag "A". These points can also be used for connecting a rescue system. Never use the hip D-ring for fall arrest or climbing protection. The hip D-ring of a harness **MUST ONLY** be used for connecting a work positioning system (e.g. Pole Strap) and **NEVER** a fall arrest system or climbing protection. Always use both side D-rings together, for work positioning applications. Positioning type restraint systems must be backed up by a separate and independent fall arrest system. Adjust work position lanyard so that the anchorage point is maintained at or above waist level. Ensure the lanyard is kept taut and movement is restricted to a maximum distance of 0.6 meters.

Use only approved rope with the system. Protect the rope from sharp or abrupt edges. Or rope strength may be seriously reduced or rope may fail. Do not use knots unless tied and sealed by manufacturer. Knots will decrease the strength of the rope. The entire length of rope must be free of tar, glue, tape, knotting, pilling, twists or anything which may prevent it from moving through the pulleys. Ensure karabiner gates are closed and locked before use. Clothing or webbing may get caught in the gate and prevent it from closing completely. A karabiner loaded with the gate partially or fully open can fail at values well below the rated strength.

No person should be attached or suspended from the MSA Rescue Safe Retrieval System until the ascender is attached to the operating rope (free rope) and the securing rope is attached to the operator or secure immovable object. Shock loading should be avoided at all costs; however, the system has been designed to have a large strength safety margin. In the event of shock loading, damage to the rope is likely and any rope subjected to shock loading must be removed from service. Reduction of the rope strength can be caused by sharp edges, overloading, shock loading and/or incorrect storage. Care of the rope is critical to avoid damage to the rope which could greatly reduce system strength. The system should be used as supplied by the manufacturer. Only qualified individuals are to re-rig or re-rope the MSA Rescue Safe Retrieval System. A small force is all that is required to hold or lower a load using the MSA Rescue Safe Retrieval System. Should the rope become heavily soiled this friction could increase. A slightly soiled or wet rope should not effect the systems function, however if the rope becomes extremely soiled the MSA Rescue Safe Retrieval System may become inoperable. Always try to keep the rope clean and dry.

to avoid any unwanted increases in friction. DO NOT modify or attempt repairs on the MSA Rescue Safe Retrieval System. Do not use MSA Rescue Safe Retrieval System until confirmed in writing by a competent person if inspection reveals an unsafe condition. The lifting/lowering function of MSA Rescue Safe Retrieval System is for rescue/work positioning purposes only and not for lifting/lowering loads. The system shall not be used outside its limitations, or for any purpose other than that for which it is tended. It is essential for the safety of the user that if the MSA Rescue Safe Retrieval System is re-sold outside the original country of destination the reseller shall provide instructions and additional relevant information for use, for maintenance, for periodic examination and for repair in the language of the country in which the device is to be used. Failure to follow these warnings or misuse can cause serious personal injuries or death.

### 3. MAINTENANCE AND STORAGE

Strictly adhere to the cleaning instructions in this section to prevent adverse effects on the materials used in the MSA Rescue Safe Retrieval System. Questions concerning MSA Rescue Safe Retrieval System conditions for safe use and cleaning should be directed to MSA.

Equipment which is damaged or in need of maintenance must be tagged as “UNUSABLE” and removed from service.

Corrective maintenance (other than cleaning) and repair, such as replacement of elements, must be performed by the MSA factory or approved service agents. Do not attempt field repairs. Moving parts of snaphooks and karabiners 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. Store the device 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.

Transport the device in a package to protect it from cuts, moisture, chemicals and their vapors, extreme temperatures, and ultraviolet rays.

### 4. INSPECTION

MSA Rescue Safe Retrieval System MUST be inspected by user prior to each installation and additionally by a competent person authorized other than a user at intervals of not more than 12 months, Inspections of the product must be recorded in the Inspection Checklist.

Removal from service may imply that defects or damage will result in retiring and replacing some components.

Remove a unit from service if any of the components fall into a category below:

- (1) Markings (labels) are illegible or absent;
- (2) There is evidence of excessive wear or damage to the rope;
- (3) There is evidence of defects or damage to hardware elements including cracks, sharp edges, deformation, corrosion, chemical attack, excessive heating, alteration or excessive wear;
- (4) There is evidence of improper function, improper fit or alteration of any mechanical component;
- (5) There are parts missing.

Look for evidence of cuts, wear, fraying ease, oil, glue, tar, or any other conditions which could affect the performance of the controller or strength of the pulleys. Inspect shrink seal and thimble on both ends of rope for damage. If shrink seal is missing, knot may have been tampered with Chemical hazards, heat and corrosion may damage the MSA Rescue Safe Retrieval System. More frequent inspections are required in these environments.

#### 4.1. FUNCTIONAL INSPECTION

##### Function test before each use, inspected by users:

Attach the MSA Rescue Safe Retrieval System to an anchorage point, let the operating rope free, grip the lower karabiner and pull quickly, check the locking performance and the descent distance. Remove from service if the Rescue Safe Retrieval System cannot lock.

**4.2. INSPECTION CHECKLIST**

Product Information:

Serial Number: \_\_\_\_\_

Date of Manufacture: \_\_\_\_\_

Remove from Service Date: \_\_\_\_\_

Location: \_\_\_\_\_

Inspected by: \_\_\_\_\_

	Description	Product Condition					Comments
		1st	2nd	3rd	4th	5th	
<b>1</b>	Inspection Date						
<b>2</b>	Rope						
<b>3</b>	Snatch Block						
<b>4</b>	Shrink Seal						
<b>5</b>	Thimble						
<b>6</b>	Karabiners						
<b>7</b>	Lower Pully						
<b>8</b>	Upper Pully						
<b>9</b>	Ascender						
<b>10</b>	Ascender Rope Thimble						
<b>11</b>	Ascender Rope						
<b>12</b>	Ascender Karabiner						
<b>13</b>	Ascender Shrink Seal						
<b>14</b>	Function Test						

NOTES: \_\_\_\_\_

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**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.