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MSA Anthron™ Descent Control Device P/N SDSD25

Application, Operation, Maintenance & Inspection Instructions Manual

Please read this manual.

This information is vital to your safety.



THESE INSTRUCTIONS MUST BE PROVIDED TO THE USER. MANAGEMENT AND USER MUST READ AND UNDERSTAND THESE INSTRUCTIONS; FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.

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Application

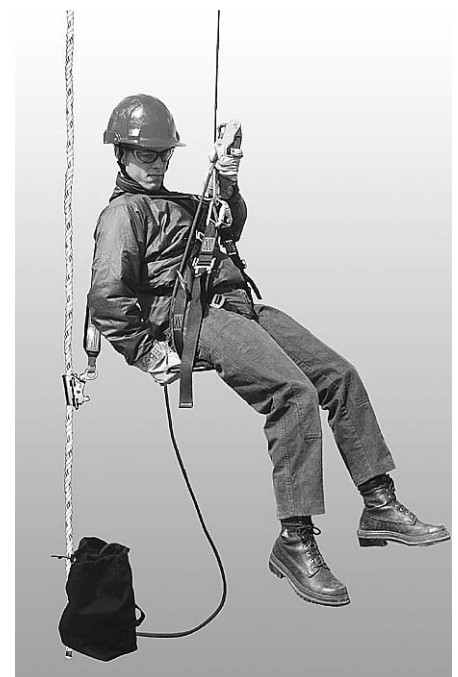
The Anthron™ Descent Controller is a manually operated controlled descent device which is most commonly used for suspended work positioning. In this application it is used with a bosun's chair, full body harness and appropriate fall arrest system for window washing, exterior building maintenance, tower erection and bridge inspection. The device can also be used by trained personnel in an emergency situation for self-evacuation or to lower a casualty from an elevated work station.

Function

The Anthron™ Descent Controller is designed to be used on a single 7/16" (11 mm) approved rope as specified in these instructions. The operator can remove and reinstall the device at any point on the rope. The rope runs inline around a cam assembly which will provide friction to control the descent.

Until the control lever is manipulated, there is sufficient friction through the device to restrict movement of the load. As the control lever is moved, friction on the rope decreases and the load will descend. If the control lever is fully pressed or fully released in a panic situation, the friction increases and the load stops.

In most applications, the Anthron™ operator descends by attaching the rope end to an approved anchor and descends suspended from the device in an approved harness, bosun's chair or cradle. The Anthron™ can be inverted and attached to the anchor. In this orientation a casualty can be lowered while being controlled by a rescuer.



Specifications

MSA Part #: SDSA25
(Anthon model no. SDSA30 replaces the previous Anthon model no. SDSA25 effective on 08/01/01)

Descender

Description: cast aluminum, individually proof tested
Dimension: 190 mm (7.5") x 76 mm (3") x 25 mm (1")
Total weight: 340 g (12 oz)
Working load range: 1 person, 150 kg (330 lbs)
Speed: 2.5 m/s (8.2 ft/s)
Maximum Length of Descent: 100 m (320 ft)
Meets: EN 341 Class A

Patented design

Anthon™ is normally supplied with MSA approved rope. There are other ropes which are approved to use with the Anthon™ Descender (see approved rope list).

MSA Approved Rope

Replacement Part #: SDC716000
Description: Kernmantle, with nylon thimbles both ends
Diameter: 11 mm (7/16")
Length: 16 m (50') to 90 m (300')
Total weight: approx. 10.6 kg/100 m (7 lbs/100')
Rated strength: with knotted termination, 2900 kg (6000 lbs)

Carabiners (2)

Replacement Part #: SRCC643
Description: Pear shaped autolocking
Material/finish: carbon steel/zinc plated
Jaw width dia.: 12 mm (1/2")
Total weight: 275 g (9.7 oz.)
Rated strength: 35 kN (7850 lbs)

Approved Rope List

NOTE: The ropes on this list have been tested with the Anthon™ Descender under laboratory conditions and found to perform satisfactorily. Wear, dirt, foreign substances, and other factors can influence the performance of the Anthon™ Descender under field conditions. When used in accordance with the instructions, an approved rope should perform as observed in test conditions, however, MSA makes no warranty that the ropes listed below will perform satisfactorily for the user.

Manufacturer/Distributor	Name	Nominal Diameter	Strength (lbs)	Product Number	Construction	Materials
Esprit Rope Inc	Suretyman	7/16" (11 mm)	6000 (26.7 KN)	SRP544000	Kernmantle	nylon
Bluewater Ltd. Carrolton, GA	Assault Line	7/16" (11 mm)	6000 (26.7 KN)	SRP508760	Kernmantle	nylon

If your rope is not listed, MSA will test the rope at no cost. Forward 3 rope samples of 6 m (20') to MSA along with a copy of the rope manufacturer's test certificate.

Operation Instructions

Prior to use, the user must engage in practical training in a safe non-intimidating environment conducted by a qualified supervisor. The Anthron™ Descent Controller must be used with an independently anchored fall arrest system including an approved full body harness in accordance with the applicable local regulations. The only exception would be when the system is used by a fully trained user during an emergency evacuation.

Training must include the following components:

- roping
- anchor selection
- use of carabiners*
- use of fall arrest equipment for backup
- descent technique
- maintenance and inspection

* refer to MSA carabiner instructions

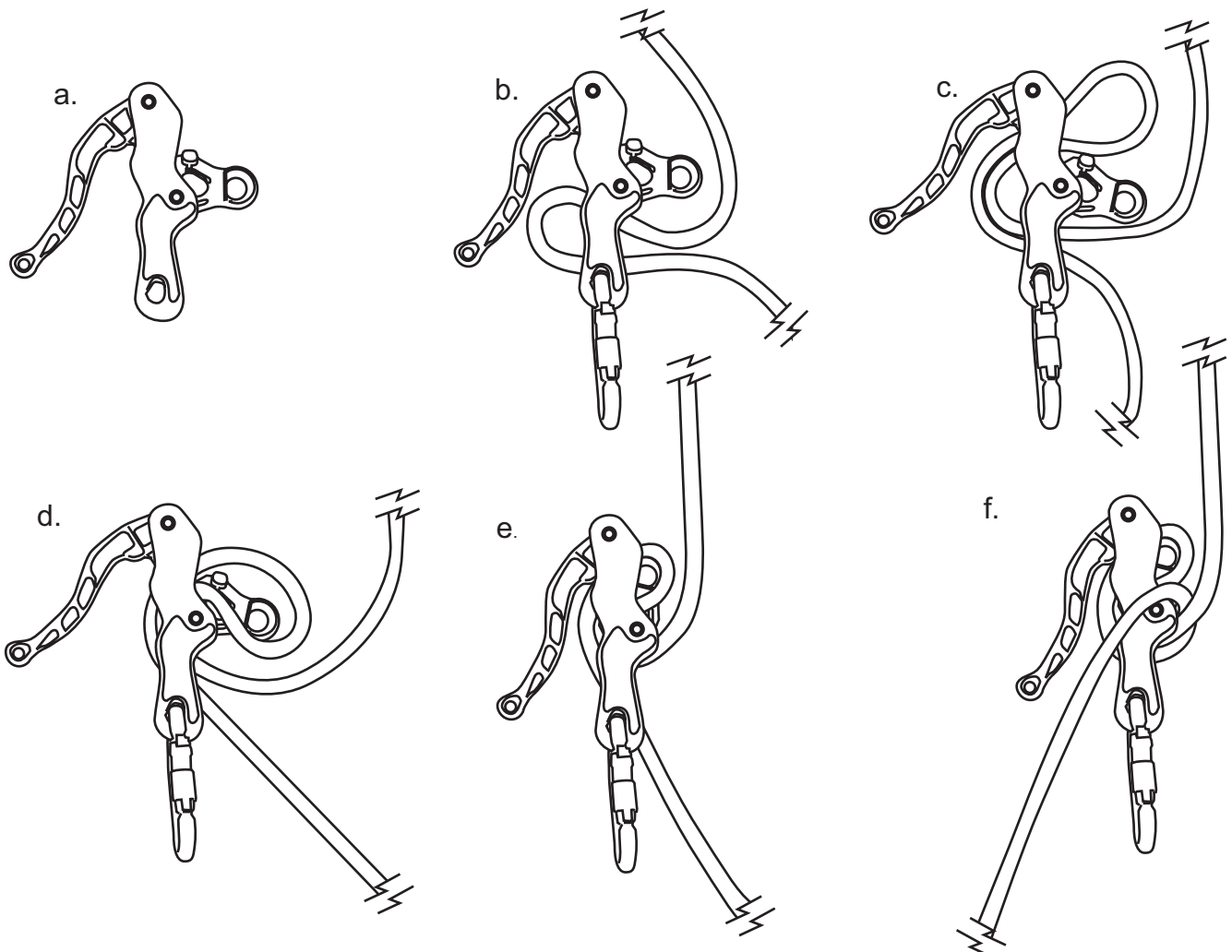
Roping the Anthron™ Descent Controller:

While holding the Anthron™ Descent Controller in one hand, slide the cam assembly out of the main body (fig a).

Insert a 40 cm (15.5") bight of rope between the carabiner and the lower cam towards the control lever (fig b), bend the bight up around the lower cam passing between the control lever swivel rivet (fig c). Place the remainder of the bight around the upper cam ensuring the guide pin between the upper and lower cam is positioned between the two rope strands.

When the device is roped properly (fig d) the anchored rope end should wrap around the lower cam and up towards the anchor, the free end of the rope should flow towards the ground. (fig e)

To double lock the descender, bring the lower rope strand around the controller body and between the anchored rope strand and the controller (fig f). To release the double lock feature, simply reverse the locking procedure.



Anchor Selection

The employer is responsible for ensuring that anchor points meet the local requirements and are available in a location appropriate for the descent to be attempted. At each descent location, there must be anchor points for both the Anthron™ System (working rope) and accompanying fall arrest system. The working rope must be suspended away from the platform or roof starting point. If the suspension point does not meet the local requirements for anchor strengths the working rope must be anchored to an approved anchor as well (Fig. 9).

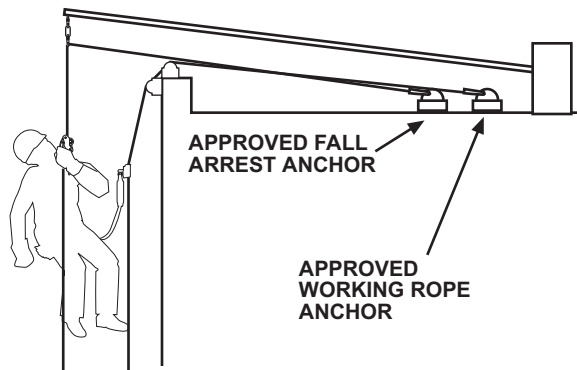


Figure 9
Rigging of a Working Rope and Separate Vertical Lifeline, Harness, and Fall Arrester

Descending

Practice or training sessions should be conducted by a qualified person who can safely supervise candidates and capable of providing assistance in the event of emergency. The users must demonstrate competent descent technique and proper re-rigging of the device prior to unsupervised use.

The Anthron™ Descent Controller is designed to use with a 7/16" (11 mm) low stretch (static) kernmantle ropes indicated on the approved rope list.

Descent length must be limited to a maximum of 100 m (320 ft) of total vertical distance traveled at maximum working load. For applications involving longer lengths, contact MSA for guidance.

Fall Arrest

The most suitable fall arrest equipment for use with the Anthron™ Descent Controller is a vertical lifeline used with an integral lanyard and fall arrester (Fig. 10). The user must be familiar with the use of this equipment and its limitations. In the unlikely event that the working rope or primary anchor fails or the Anthron™ Descent Controller is roped incorrectly, the fall arrest system must arrest the user and any equipment suspended from the system.

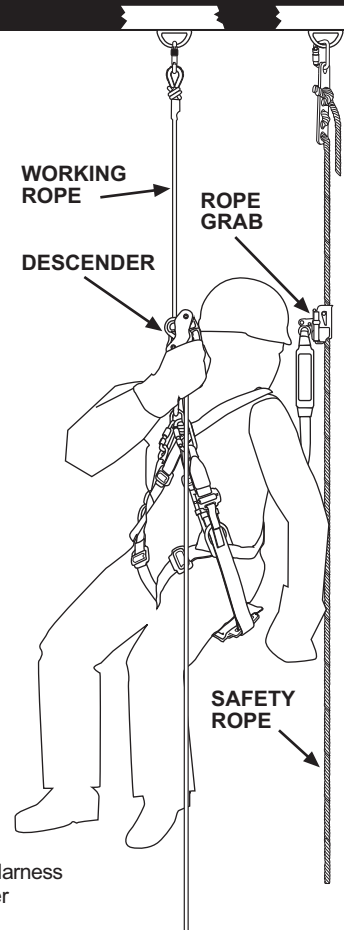


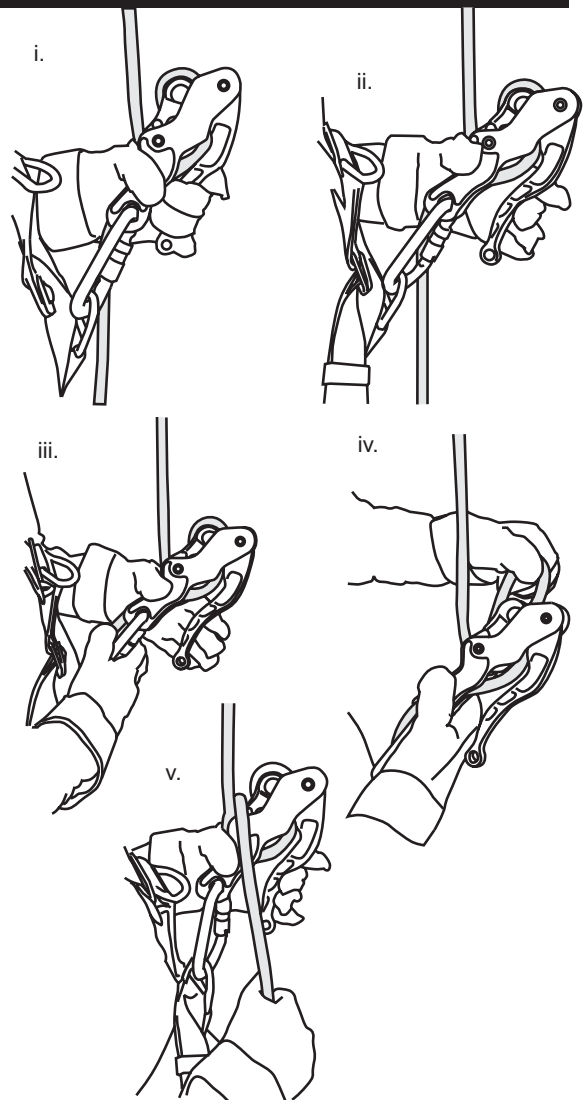
Figure 10
Attachment of Bosun's Chair or Harness to Anthron™ Descent Controller

Descent speed and braking capability must be evaluated for each new rope, changing environmental conditions, condition of Anthron™ Descent Controller prior to long descents. This evaluation should be done no more than five feet off the ground.

Descent speed is regulated by varying position of the control lever of the Anthron™. Descent should be initiated without difficulty and braking action immediate.

Procedure

1. Connect to fall arrest system and approved fall arrest anchor according to manufacturers recommendations.
2. Rope the device with just enough rope from the device to the anchor to allow easy harness attachment.
3. Connect rope end to anchor and Anthron™ Descent Controller to front attachment point on harness or to bosun's chair with recommended autolock carabiners.
4. Check all equipment for correct installation before weighting system. Taking the appropriate precautions, throw rope bag to bottom. Ensure that rope is long enough to reach the ground and is free of tangling and knots.
5. Sit in harness or bosun's chair adjusting for comfort at the edge of the building roof, framework, structure or platform. If possible, stabilize stance with feet up against structure.
6. While supporting the free end of the rope with one hand grasp the control lever with the other hand depress the control lever completely against the controller body (fig i). Slowly release pressure and descent will be initiated (fig ii). If the control lever is released the descent will stop, if the control lever is fully depressed the descent will stop. Thus feathering the pressure of the control lever will vary the speed of the descent (fig iii). Should there be a need to remove some slack above the Anthron™ Descent Controller pinch the rope above the upper cam and pull up the free end of the rope to remove the slack rope in the device (fig iv). To double lock the descender, bring the lower rope strand around the controller body and between the anchored rope strand and the controller (fig v). To release the double lock feature, simply reverse the locking procedure.



Design Statements

1. Shock loading the system should be avoided at all costs, however, the controller has been designed to slip on the rope in the event of a shock load. In the event that a free fall is allowed on the system, the resulting force is reduced to acceptable levels as the rope is pulled through the controller. Descent can continue after the fall, however, damage to the rope is likely and rope subjected to such a fall should be removed from service.
2. Use only equipment supplied with the product and described in these instructions. If the user disregards this warning, the user and users management accepts the liability.
3. Reduction in rope strength can result from sharp edges, abrupt edges, knots, incorrect storage, handling or for uses other than it's intended function. Rope strength can be compromised sufficiently to cause rope failure.
4. The rope must be free of kinks, splices, knots or heavily tarred sections. Anything on the rope which may get caught or increase friction in the mechanism may render the descent impossible. Tar on the cam surface even with a clean rope will have the same effect.
5. The Anthron™ Descent Controller will operate safely when exposed to sand and dust, however, it is recommended to rinse the controller with water prior to continued use.
6. Only ropes on the "Approved Rope List" have been tested to ensure correct operation. If you have questions on the suitability of another rope contact MSA 1-800-672-2222. A sample of the rope in question can be supplied to MSA.

Inspection

1. The MSA Anthron™ Descent Controller System shall be inspected by the user prior to each installation, and additionally by a competent person other than the user at intervals of not more than one year. Inspections of the rope must be recorded in the “Inspection Checklist”.
2. When inspection reveals defects, damage, or inadequate maintenance of any component in the system, the component affected shall be removed from service and undergo adequate corrective maintenance before return to service. Removal from service may imply that defects or damage will result in retiring and replacing some components.
3. Remove a unit from service if:
 - markings (labels) are illegible or absent;
 - there is evidence of excessive wear or damage to the rope;
 - there is evidence of defects or damage to hardware elements including cracks, sharp edges, deformation, corrosion, chemical attack, excessive heating, alteration or excessive wear;
 - there is evidence of improper function, improper fit or alteration of any mechanical component;
 - there are parts missing.
4. MSA or persons or entities authorized in writing by the manufacturer, shall make repairs to equipment. No unauthorized repairs and/or modifications are allowed.

Procedure

1. Harness should be inspected in accordance with instructions supplied with the product.
2. Repeated use of the controller will result in wear on one or more of the aluminum surfaces.
3. Inspect the rope prior to use and each time the system is moved to a new anchor location. Look for evidence of cuts, wear, fraying, grease, oil, glue, tar, or any other condition which could affect the performance of the controller or strength of the rope. If the rope is still serviceable, correct operation of Descender must be confirmed by performing a low level descent (ie 10 ft) prior to use. Inspect shrink seal and thimble on both ends of rope for damage. If shrink seal is missing, knot may have been tampered with. If knot, thimble and shrink seal is missing on either end of rope, rope is shorter than original length. It may not be long enough for application.
4. Discard rope any time there has been a fast or long continuous descent. Look for melting, glazing, burning, or excessive wear.
5. Discard the rope any time there has been a fall or drop which would place a shock load on the rope.
6. Inspect the carabiners for smooth gate action. A sticky gate or gate jaw which does not engage properly might be deformed or have a faulty gate mechanism and should be removed from service (follow inspection procedure in carabiner instructions).









Maintenance and Storage

1. Maintenance and storage of equipment shall be conducted by the user's organization in accordance with MSA instructions. Unique issues, which may arise due to conditions of use, shall be addressed with MSA.
2. Equipment which is in need of or scheduled for maintenance shall be tagged as “do not use” and removed from service.
3. Store in a clean dry area free from excessive heat, steam, sunlight, harmful fumes, corrosive agents and rodents.
4. Periodically lubricate carabiner gate with a light oil. Remove excess to avoid contamination.

Do not perform any maintenance or make any modification to the device. Consult MSA for special applications and uses.

Warnings

THESE INSTRUCTIONS MUST BE PROVIDED TO THE USER. MANAGEMENT AND USER MUST READ AND UNDERSTAND THESE INSTRUCTIONS; FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.

-  Descend slowly and under control. Long rapid descents will heat the controller which may damage the rope.
-  Avoid quick stops. Rapid deceleration over stresses the anchor point.
-  Do not use knots for rope terminations unless tied and sealed by manufacturer. Knots will decrease the strength of the rope and may inadvertently release if not tied correctly.
-  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 controller. If the controller gets caught up on an obstruction, the operator will be stranded and rescue may be very difficult.
-  Use only approved rope with the system. Undersized rope may move through the Descender uncontrollably or the braking action may be unpredictable. Oversized rope will not fit through the cam assembly area.
-  Protect the rope from sharp or abrupt edges. Rope strength will be seriously reduced or rope may fail.
-  Use approved anchor points which meet local government regulations.
-  If the rope used does not have a thimble at both ends put a knot at the end of the rope to prevent accidentally falling off the rope.

Inspection Checklist

Location _____

Date _____

Inspected By _____

Quantity	Description					Comments
		Good	Damaged, worn, altered	Missing	Remove from service	
length	ROPE					
2	SHRINK SEAL					
2	THIMBLE					
2	CARABINERS					
1	DESCENDER					
	OTHER					

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