



# SUPER ANCHOR SAFETY®

## SAS-Max-Force™ Energy Absorbers (E/A's) Instruction/Specification Manual 07-2021

ENGLISH  
VERSION

**!WARNING TO USER!**  
You are required to read and use the Instruction/ Specification manual supplied at the time this device was shipped. Improper use and installation can result in serious injury or death. Follow inspection requirements before each use.

### Material Specifications

**Tear webbing:** Polyester  
**Cover/Backer:** Polyester  
**Min. Tensile Strength:** 5,000lb  
**Carabiners:** Aluminum Auto-twist lock  
 ⓧ Inspection points

### Absorber Compliance:

ANSI-Z359.13 / CSA Z259.11-17 / OSHA 1926.502

### Connector Compliance:

ANSI-Z359.12-2009 CSA-Z259.12-11

**Snaphooks/Carabiner Gate Strength:**  
3,600lb(16kN)

**Function:** When a fall occurs, the absorber tear webbing will deploy and gradually reduce the fall velocity to a complete stop (fall arrest). The backer/cover webbing limits the deployment length as specified in **Table 1.0**. **WARNING! Not using absorbers as specified in this manual can result in serious injury or death when subjected to a fall.** Note: Backer webbing color may vary from examples shown.

### Specification of Use

Fall Arrest or Work Positioning for one person only (maximum body weight as specified in **Table 1.0**, including tools and equipment). Use with **PPE** (personal protective equipment) mfg. by **SAS** (Super Anchor Safety) or other PPE ensured for compatibility by a qualified or competent person. **Maximum free fall 6ft(1.8m).**

### Absorber "A" end Attachment to PPE

Attach absorber "A" end snaphook or carabiner to a full body harness dorsal D-ring only. Loop end models are required to be connected with a locking type carabiner only. See **Fig.3**.

### Absorber "B" end Attachment to PPE

"B" ends are specified for attachment to rope grabs, fall arresters, lanyards and self-retracting lifelines (SRL's). **Loop Ends** are fitted with PVC or web wear pads and are compatible with **SAS** snaphooks or carabiners. **DO NOT connect absorbers to a side D-ring or body belt for work positioning. Static loads may cause minor deployment.**

**PPE Connectors Supplied by User:** Snaphooks, carabiners or other class 1 connectors attached to the "A" or "B" end must comply with current OSHA, ANSI or CSA fall protection standards and have 3,600lb gate strengths. **Two connectors should not be attached to each other unless compatibility has been ensured by a qualified or competent person.**

### PPE Requirement

All personal protective equipment including full body harnesses, rope grabs, fall arresters, lifelines, lanyards and SRL's used with **SAS** energy absorbers are required to comply with current OSHA, ANSI or CSA fall protection equipment standards.

### Table 1.0 Absorber Specifications

Type	Webbing Color	User Weight Range	Avg. Peak Force	Tear Webbing Deployment	Deployment Length of Fall
ANSI	Gray	130-310lb(59-140kg)	900lb(4kN)	Max.48"(1.2m)	Max. 66"(1.6m) Avg. 54"(1.4m)
CSA		135-310 (61-140kg)			
*6186-HD	Orange	200-340lb(90-154kg)	1,300lb(6kN)	Max.69"(1.75m)	

\* US distribution only.

### Absorber Service Lengths (SL)

E/A service lengths are measured from the "A" to "B" ends as supplied from SAS factory (shown at **Fig.2**). Users are to supply loop end connectors.

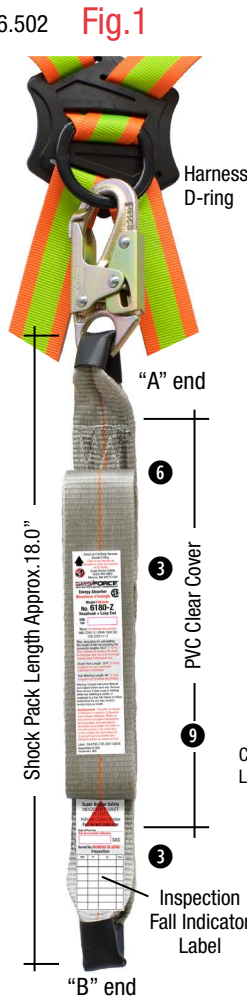
### Table 1.1 E/A Specifications

ANSI	CSA	A-end	B-end	SL	wt(oz)
6180	6180-Z	Snaphook	Loop	23"	21
6181	6181-Z		Snaphook	28"	38
6182	6182-Z		D-ring	26"	30
6183/C*	6183/ZC*	Carabiner	Loop	23"	13
6184/C*	6184/ZC*		D-ring	26"	19
6186	N/A	Snaphook	D-ring	26"	33
6185	N/A	Loop	Loop	18"	8
6188	6188-Z	△Dielectric	SH+D-ring	26"	28

\* Captive carabiner factory attached. N/A=USA distribution only.

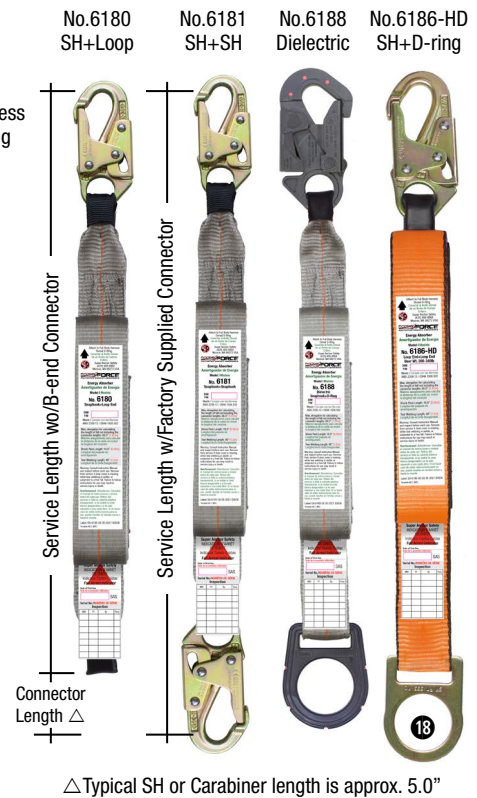
Note: Loop ends require user to supply connector.

△ Dielectric connectors have a min. 9kV dielectric resistance

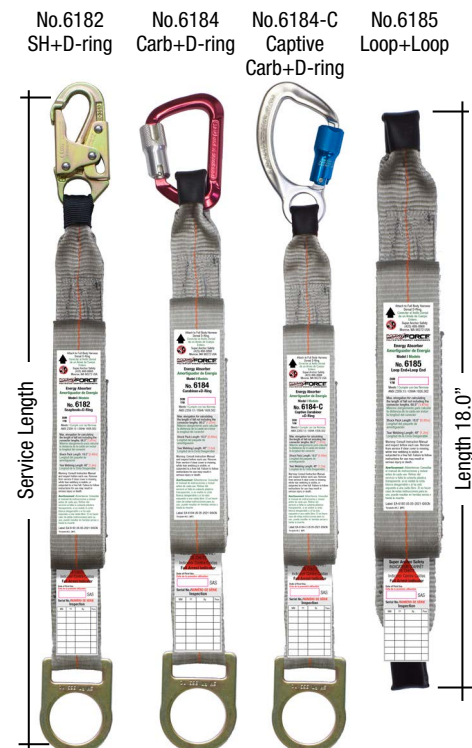


Note: Not all E/A models are shown in this manual. See Table 1.1, 1.2 and 1.3 for specific model types.

### Fig.2 Standard Model E/A's



### Fig.3 Standard Model E/A's



### ANSI versus CSA Model Types

ANSI E/A's have a wider user wt. range and lower production costs. CSA E/A's are specified for use in Canada, display the CSA logo and printed English/French.

- WARNING HAZARD EXPOSURE!**  
**DO NOT CONTACT EQUIPMENT WITH:**
- Sharp, abrasive edges or cutting tools.
  - Electrical sources or power lines.
  - Open flame, high heat or hot asphalt.
  - Solvents, caulking, paint or stains.
  - DO NOT use for animal tether.

### Fall Arresters/Integral Adjusters (Rope Grabs)

Fall Arresters and Integral Adjusters have a single direction locking function and must be installed onto the lifeline in the correct direction or they will not lock up in the event of a fall. A direction arrow → on the device must point toward the lifeline anchorage point as shown at Figs. 5, 6a and 10c. **Service Range:** use on flat surfaces or overhead.

**ADP Type Fall Arresters(FA's) No.4015C/Z** can be removed from the lifeline as shown at Fig.10c and have a panic grab function that prevents accidental disengagement by the user in the event of a fall. **Integral Adjusters (IA's) No.4015M** are captive to the lifeline and not removable. See Table 2.0 for performance specifications.

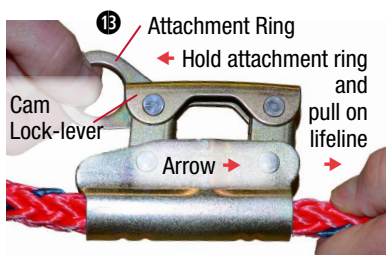
### Lifeline Specifications

FA's and IA's are specified for use with SAS mfg. 5/8" (16mm) diam. lifelines. See Table 2.0. Component compatibility must be ensured by a qualified or competent person when using other mfg. lifelines.

### Integral Adjuster (IA) 4015M Function Tests

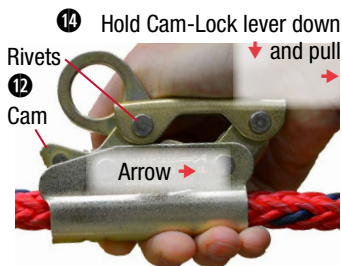
Dual spring loaded cam-locks produce constant pressure on the lifeline that requires manual adjustment to move position. Mobility is achieved by pushing or pulling the IA up or down the lifeline. Hold the cam-lock lever down to release pressure as shown at Fig.6b. **DO NOT use on X-Lines.**

#### Fig.6a Cam-Lock Test



No movement = Pass ✓  
Any movement = Fail ✗

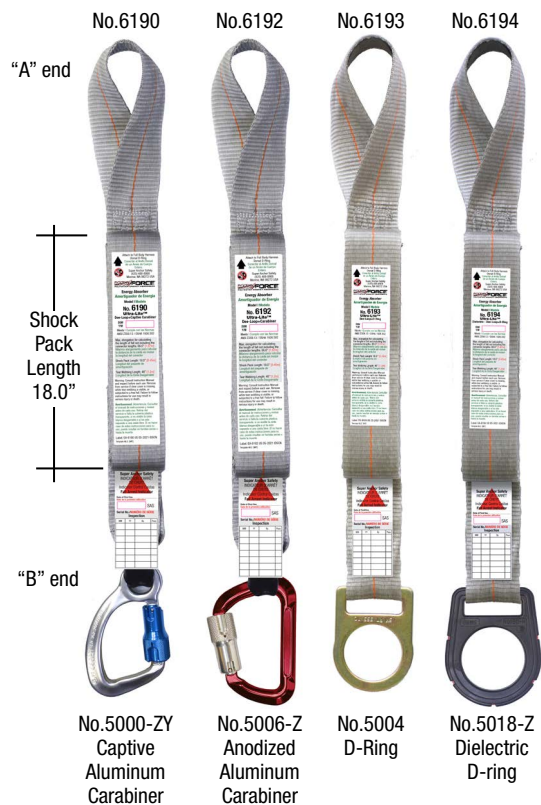
#### Fig.6b Mobility Test



Moves easily = Pass ✓  
Release Cam-Lock lever.  
Any movement = Fail ✗  
Lever Snaps back closed = Pass ✓  
Lever does not close = Fail ✗

### Fig.7 Ultra-Lite™ Dee-Loop E/A's

Attach Dee-Loop "A" end to the dorsal D-ring of a full body harness as shown at Figs. 7a, 7b and 7c. Dee-Loops are designed for captive installation when removal of the absorber is not required. Follow instructions for inspection.



### Dee-Loop Attachment

#### Fig.7a

Feed Dee-Loop thru harness D-ring

#### Fig.7b

Slide E/A Shock Pack thru Dee-Loop

PID label faces out

Dee-Loop

#### Fig.7c

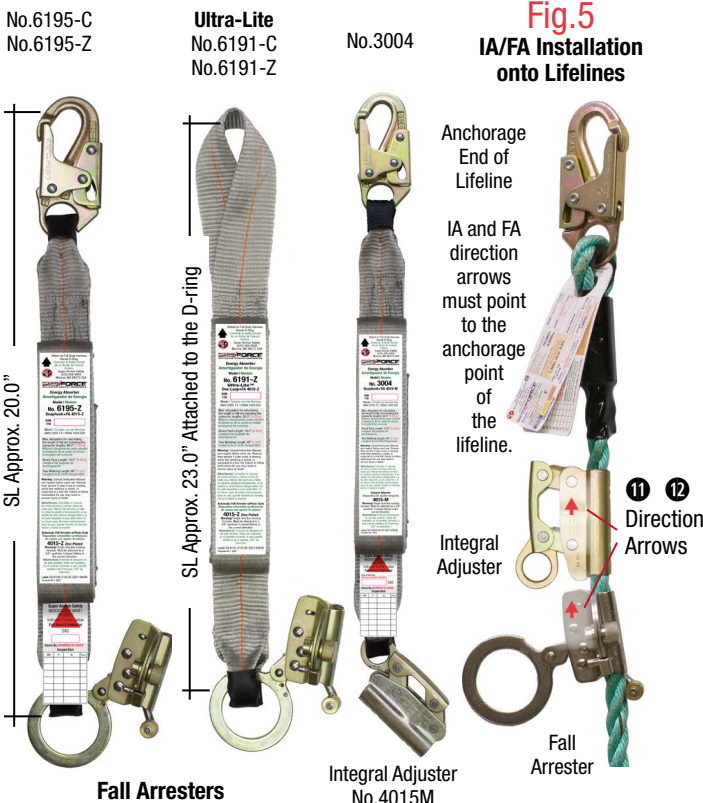
Cinch Tightly

### Table 2.0 SAS mfg. Lifeline Specifications

Model	Type	△4015C/Z	4015M	▲Deceleration
Maxima	3 strand	Yes	Yes	24"
Poly-dac	3 strand			
Duraplex	12 strand			
X-Line	12 strand		No	

△4015C=Stainless Steel. 4015Z=Zinc Plated Steel  
▲The distance required for the device to arrest a fall.

### Fig.4 Energy Absorbers w/FA's and IA's



Fall Arresters

Integral Adjuster No.4015M

Fall Arrester

### Table 1.2 E/A Models w/Rope Grabs

ANSI	CSA	A-end	B-end	SL	wt(oz)
6195-C	N/A	Snaphook	FA 4015-C	23"	43
6195-Z	N/A	Snaphook	FA 4015-Z	23"	43
6196-C	N/A	Carabiner	FA 4015-C	23"	35
6196-CC	N/A	*Carabiner	FA 4015-C	23"	35
6196-Z	N/A	Carabiner	FA 4015-Z	23"	35
6196-ZC	N/A	*Carabiner	FA 4015-Z	23"	35
6196-M	N/A	Carabiner	FA 4015-M	23"	35
6196-M C	N/A	*Carabiner	FA 4015-M	23"	35

\*Captive carabiner factory attached. N/A=USA distribution only.

### Table 1.3 Ultra-Lite E/A Specifications

ANSI	CSA	A-end	B-end	SL	wt(oz)
6190	6190-Z	Dee-Loop	*Carabiner	29"	23
6191-C	N/A	Dee-Loop	FA 4015-C	24"	34
6191-Z	N/A	Dee-Loop	FA 4015-Z	24"	34
6192	6192-Z	Dee-Loop	Carabiner	29"	23
6193	6193-Z	Dee-Loop	D-Ring	27"	18
6194	6194 -Z	Dee-Loop	△Die-D-Ring	27"	19

\*Captive carabiner factory attached. N/A=USA distribution only.  
Note: Z models= zinc plated. C models=stainless steel  
△ Dielectric connectors have a min. 9kV dielectric resistance



### Snaphooks/Carabiner Function Tests

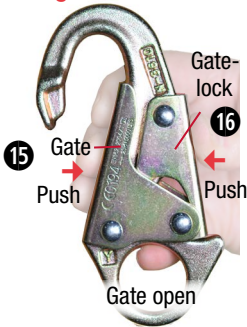
Lock gates are designed to remain closed during use. Perform **Table 3.0** function tests before each use.

**Fig.8a Snaphook**



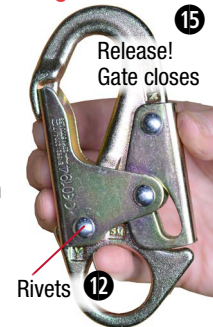
**Gate Locked**

**Fig.8b**



**Unlock gate**

**Fig.8c**



**Gate open**



**Fig.9a**



**Fig.9b**



**Fig.9c**

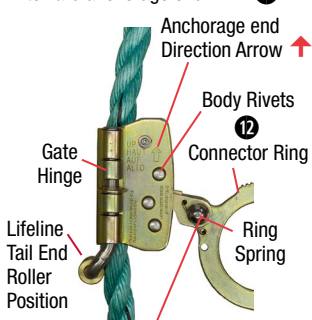
### Fall Arrester Function Tests

The locking cam is activated when force is applied to the connector ring. Move position by pulling or pushing the **FA** up or down on the lifeline.

**Fig.10a**

#### FA orientation on lifeline

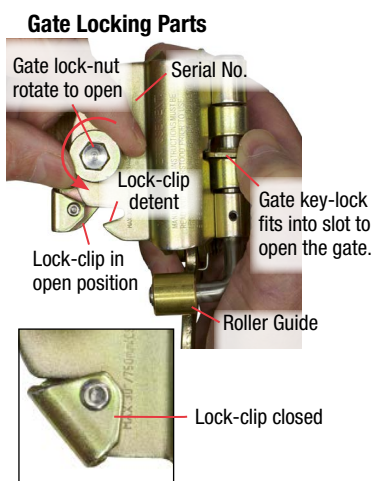
Direction arrow points toward anchorage end.



**Fig.10b**

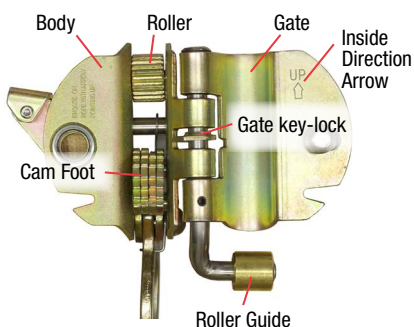
#### Removing FA from Lifeline

Gate must remain in locked position during use.



**Fig.10c**

FA Interior must be free and clean of any debris or contamination.



**Table 3.0** Remove from service if any test fails.

Fig.	Test Type	Function	Pass <input checked="" type="checkbox"/>	Fail <input checked="" type="checkbox"/>
8a-9a	Gate-lock	Push against gate only	Won't open	Opens
8b	Gate-open	Push gate-lock and gate at the same time	Opens	Won't open
8c	Gate-close	Release gate and gate-lock at same time	Snaps shut	Won't close and lock
9b-9c	Unlock gate	Rotate twist-lock	Gate opens	Won't open
9a	Gate closes	Release twist-lock	Snaps shut	Won't close

### Absorber Storage/Maintenance/Service Life

Store in a clean dry area. DO NOT expose to cleaning agents or chemicals. **DO NOT** repair or modify absorbers in any way. **WARNING!** Synthetic fibers are damaged by mildew, extreme temperatures, extended exposure to UV, water submergence and vermin. **Service Life:** determined by frequency of use, environmental conditions and normal wear. It is recommended to replace equipment after 3-5 years of service. **Disposal of Equipment:** PPE removed from service must be disposed of in a way that will prevent further use.

### Inspect Components Before Each Use!

Inspect and perform function tests for all components prior to each use. Inspection points, black circles **X** are intended as guidelines only. Employers/PPE equipment owners are required to draft their own inspection outline. SAS requires  $\Delta$  annual inspections by a competent person with the date entered on the absorber inspection label. See Fig.12.

$\Delta$  Greater frequency of inspections may be specified by the equipment owner.

**Remove equipment from service if any of the following conditions are present:**

**X** = Inspection points **ACTION REQUIRED:** =Remove =Repair

- 1 Subjected to a free fall or other force.
- 2 Obvious damage to any component.
- 3 Warning labels missing or not legible.
- 4 No annual inspection.
- 5 Fails inspection/function tests.
- 6 Webbing/Stitches cut or abraded.

### Energy Absorber

- 7 Fall indicator Label is visible or missing.
- 8 Tear webbing is deployed.
- 9 Absorber clear cover is missing or damaged.
- 10 Wear pads are missing or worn through to backer webbing.

### Fall Arresters/Integral Adjusters

- 11 Arrow position is upside down.
- 12 Body or Locking Cam bent, twisted or missing rivets.
- 13 Won't hold static position on lifeline.
- 14 Grab is locked onto lifeline or won't move position easily. **Clean lifeline and retest. If no change:**

### Snaphook/Carabiner/D-ring

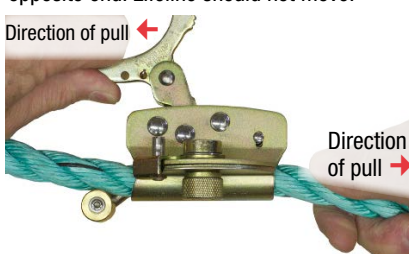
- 15 Gate is bent or won't close.
- 16 Gate locking device is damaged.
- 17 Carabiner won't lock or close.
- 18 D-ring is bent, cut, gouged or cracked.

Zinc plated connectors corrode easily when exposed to salt air and do not require removal from service provided they pass inspections. Severe corrosion should be inspected by a competent person to determine if removal from service is required.

**Fig.10d**

#### Cam Foot Lock Function Test

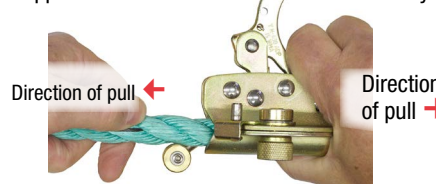
Hold connector ring and pull lifeline from opposite end. Lifeline should not move.



**Fig.10e**

#### Mobility Test

Hold connector ring down. Pull lifeline in opposite direction. Lifeline should move freely.





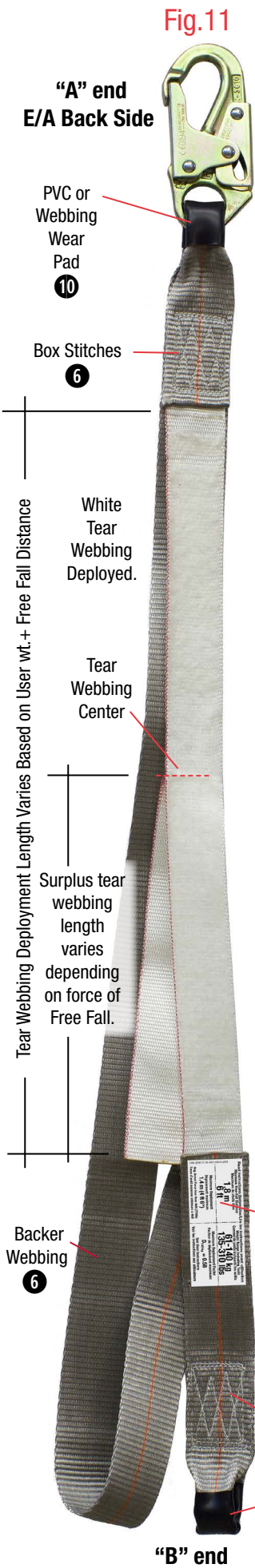


Fig.11

“A” end  
E/A Back Side

PVC or  
Webbing  
Wear Pad  
10

Box Stitches  
6

Tear Webbing Deployment Length Varies Based on User wt. + Free Fall Distance

Surplus tear  
webbing  
length  
varies  
depending  
on force of  
Free Fall.

Backer  
Webbing  
6

“B” end

Fig.12

Serviceable Condition.  
Backer webbing covers  
the Fall Indicator

**WARNING**



Red warning  
arrow is  
visible.

User enters  
date of  
First use.  
MM-YYYY  
Serial No.

Record annual  
Inspections.

Fig.13  
Fall Indicator



**WARNING is visible.  
Absorber is deployed.  
DO NOT USE!  
REMOVE FROM  
SERVICE!**

8

## Absorber Deployment

When subjected to a fall, the absorber tear webbing will rip in half and gradually come to a full stop (Fall Arrest). The length of the deployment will vary depending on the Free Fall distance and the user's weight. As show at Fig.11 an E/A subjected to a free fall will partially deploy as evidenced by surplus tear webbing.

**Warning!** In the event that a free fall exceeds the E/A's performance specifications, the backer webbing will engage fully arresting the fall and limiting the tear webbing maximum deployment to approx. 48" (1.2m). If the maximum fall arrest force (MAF) is greater than 5,000lb, the backer webbing or stitching may fail resulting in serious injury or death. For that reason it is critical that a workers PPE, which includes the lifeline and rope grab, are adjusted to limit free falls to 6ft (1.8m) or less.

## Length of Fall

When standing at the edge of a free fall hazard with the E/A in a vertical position, the max. deployment length is 66.0" (1.67m) as shown on the PID label.

## Fall Indicator

When subjected to a fall or other force, the fall indicator "Warning" label shown at Fig.13 will be visible, requiring that the absorber be removed from service. In the normal service condition the "Warning" is covered by the backer webbing held in place by the PVC cover.

**Inspection:** The visible section of the label displays the serial number and a space to enter the date of **First Use** (MM-YYYY) which is required prior to use.

## Product I.D. Labels (PID)

Primary labels placed on the front of the E/A shock pack, specify the absorber model No., "A"/"B" end fittings, date of mfg, performance specifications and a warning to consult instructions prior to use. E/A's mfg. with Fall Arresters or Integral Adjusters, have an additional warning at the lower half of the label. The E/A back sides will display the ANSI and CSA specification label.

**DO NOT USE absorbers if any labels are missing.**

## Factory Attached E/A Warning and Instruction Labels

### Primary Labels Standard E/A



Model No. **No. 6181**  
A/B end Fittings **Snaphook+Snaphook**  
Date of mfg. **DOM**   
Compliance **Y/M**   
Meets | Cumple con las Normas ANSI Z359.13 / OSHA 1926.502

Deployment Lengths  
Shock Pack Length: 18.0" [0.45m]  
Longitud del paquete de amortiguación

ANSI or CSA  
Specification  
Label  
3

Instructions

Box  
Stitches  
6

Wear Pad  
10

### English/Spanish E/A w/Rope Grab



Model I Modelo  
**No. 3004**  
Snaphook+RG 4015-M  
DOM   
Y/M   
Meets | Cumple con las Normas ANSI Z359.13 / OSHA 1926.502

Shock Pack Length: 18.0" [0.45m]  
Longitud del paquete de amortiguación

Tear Webbing Length: 48" [1.2m]  
Longitud de la Cinta Desgarrable

**Integral Adjuster**  
Dispositivo de ajuste integrado  
**4015-M**  
Warning! Single direction locking function. Must be attached to a 5/8" synthetic 3 strand lifeline in the correct direction.

Label: EA-3004 US 05-2021 ©SCN Template AB.2 (MIT)

Rope Grab Model

Rope Grab  
Instructions

### ANSI Label US Distribution



### CSA PID Label English/French Canadian Distribution



CSA Logo

CSA Label

