



# SUPER ANCHOR SAFETY®

**!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.

## SAS-No. 1321-5° Angle HLLS Horizontal Lifeline System w/Energy Absorber Instruction/Specification Manual 2020

ENGLISH  
VERSION

### System Specifications

**Min. Tensile Strength:** 5,000lb(22.5kN).

**Specified Use:** Fixed Length, 5° Angle HLLS for installation on wood framed structures.

**WARNINGS!** Temporary use only. Evacuate the HLLS immediately after use. Use only SAS supplied No.1336 series fixed length 5° Angle cables as specified at Table 1, p. 2.

### User Specifications

2 person Fall Arrest or 3 person Fall Restraint. Max. user wt. with tools and equipment 310lb(140kg) per person. See Table 2 p. 3 for number of user specifications.

### Fall Restraint Definition OSHA 1926.751

*"A means of fall protection that prevents the user from falling any distance."*

Compliance: OSHA 1926:502  
ANSI Z359.1-07

### Fall Hazard Exposure

PPE must be rigged as follows:

**Fall Arrest use:** Max. free fall 6ft(1.8m).

**Fall Restraint use:** No free fall exposure.

### Components

**Anchors:** No.3013 Hinge2™ w/forged D-Ring

**HLL Cable:** Galvanized 7x19x3/8" 5°Angle No.1336-20, 20ft USA mfg. at SAS Factory

w/3ea steel O-Rings No.5010

**Eye Thimbles:** No.1057 3/8" Galv.

**Swage:** 2 Aluminum 3/8" oval

**Swage Cover:** Clear PVC

**Snaphooks:** 5005Z

**Carabiner:** 5001Z auto-lock

**Energy Absorber:** 1065-AC

304sst Coil. Max. deployment 54"

**Deployment Force:** 1,250lb

**Fastener Packs:**

WS-3.5 hex drive wood screws

16d duplex nails

### Non-Specified Use

Do not use for window washing or suspended work.

### Personal Protective Equipment (PPE)

All workers attached to the HLLS must be equipped with fall protection equipment compliant with current ANSI, OSHA or CSA standards.

### PPE Energy Absorber Requirement

Each worker is **REQUIRED** to have a personal energy absorber or SRL equipped with an external or internal energy absorber.

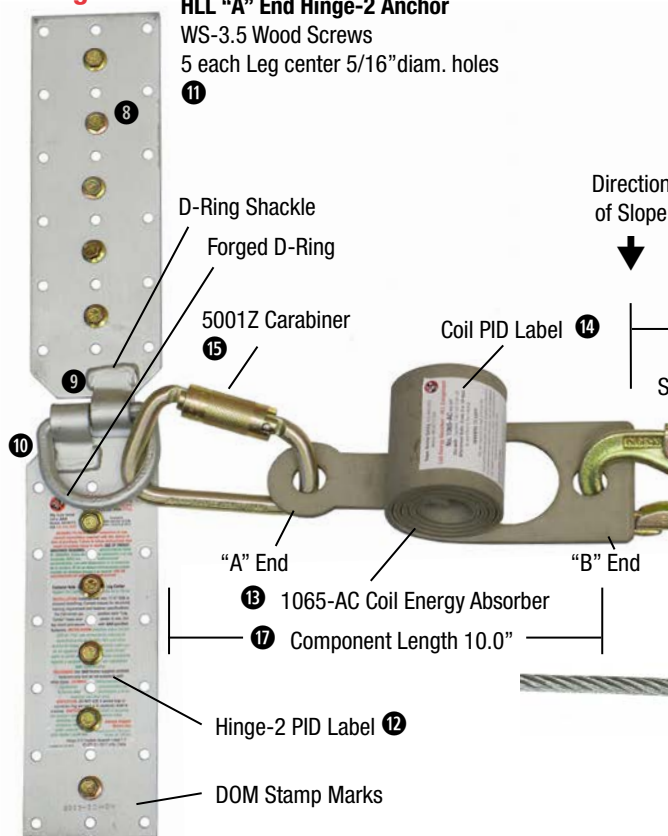
### System Modification

Use only SAS supplied HLL components specified in this manual. DO NOT use components mfg. by others.

### Storage/Maintenance

Coil cable and store all components indoors in a dry area.

Fig.1



HLL "A" End Hinge-2 Anchor

WS-3.5 Wood Screws

5 each Leg center 5/16" diam. holes

11

D-Ring Shackle

Forged D-Ring

5001Z Carabiner

"A" End

13 1065-AC Coil Energy Absorber

17 Component Length 10.0"

Hinge-2 PID Label 12

DOM Stamp Marks

Direction of Slope



5° Angle Fixed Length HLL No.1336-20 18

Snaphook 15

Eye Thimble 5

PVC Cover 7

Aluminum Swages 6

"B" End

Cable Swage 6

Fig.2

HLL "B" End Hinge-2 Anchor

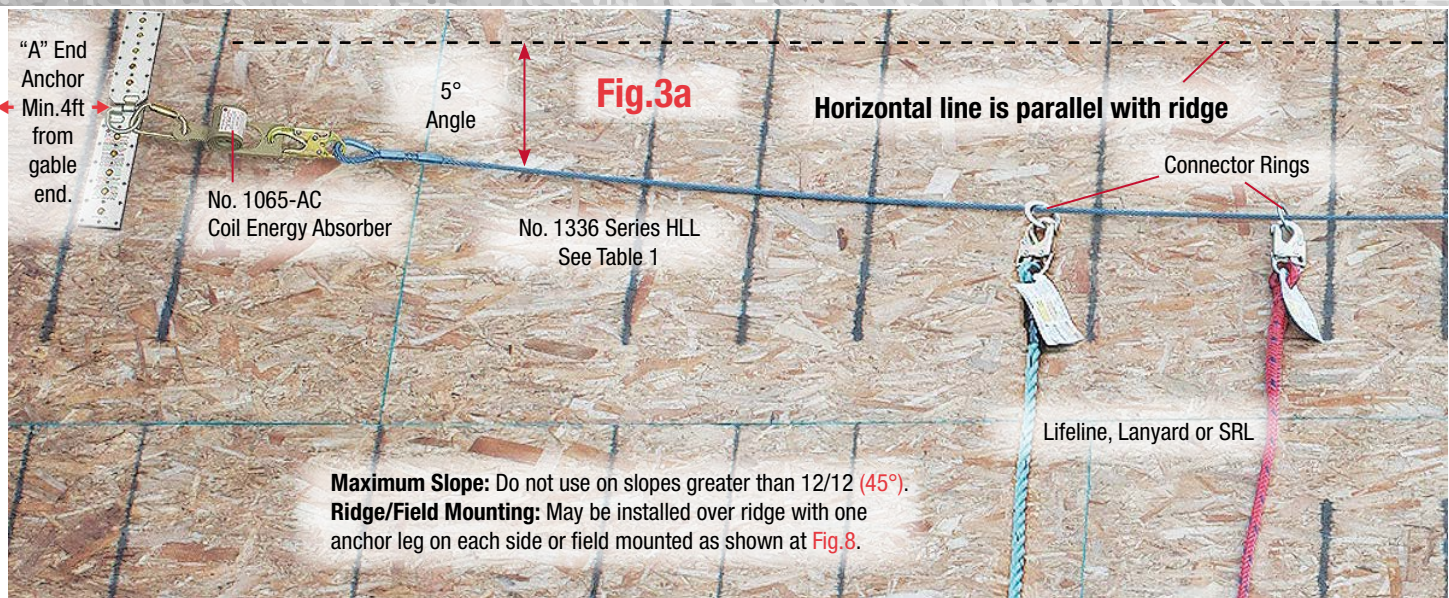
WS-3.5 Wood Screws

Snaphook 15

### Wood Framing and Installation

Framing to which the HLL system is attached must be capable of supporting 5,000lb or 2x the engineered fall protection load.

**Installation:** Install and use only over fully sheathed framing as shown at Figs.3a, 3b and installed over top chord centers as shown at Figs.7a,7b, and 8, p. 3.



**Maximum Slope:** Do not use on slopes greater than 12/12 (45°).  
**Ridge/Field Mounting:** May be installed over ridge with one anchor leg on each side or field mounted as shown at Fig. 8.

**Annual and Daily Inspections:**

All components should be inspected prior to each use and inspected at least once a year by a competent person. Inspections may be recorded on the HLL inspection label. See pg.4. A written plan for equipment service, maintenance, removal from service and user training should be maintained for each component of the HLLS by a competent person. The following inspection points may be used as a guideline to inspect for normal wear, tear and abuse.

**Remove equipment from service if any non-repairable conditions are present:**

- 1 Subjected to a free fall or other force.
- 2 Obvious damage to any component.
- 3 Fails inspections or has not been inspected annually.

**ADVISORY!** All equipment removed from service should be tagged and disposed of in a way that prevents further use.

**ACTION REQUIRED:** ☒=Remove ☑=Repair

**HLL Cable Fig.1,2,4.**

- 4 Cable Strands are cut or hooked. ☒
- 5 Thimble missing, broken or deformed. ☒
- 6 Swages are cracked, cut or missing. ☒
- 7 PVC swage cover tubing is missing. ☑

Does not require HLLS removal from service.

**Hinge-2 Anchor Connectors Fig.1**

- 8 Leg(s) are cut, bent or deformed. ☒
- 9 Hinge shackle welds are cracked. ☒
- 10 Shackles or D-Ring are deformed. ☒
- 11 Confirm fastener specification is correct.
- 12 Hinge-2 PID labels missing/not legible. ☑

Request replacement labels.

**Accessory 5° Angle HLL Cables**

No. 1065-AC Coil, absorber and carabiner shown at Fig.1 are required for the cable to be rigged at the specified rafter spacing. **DO NOT Connect 2 cables together.**

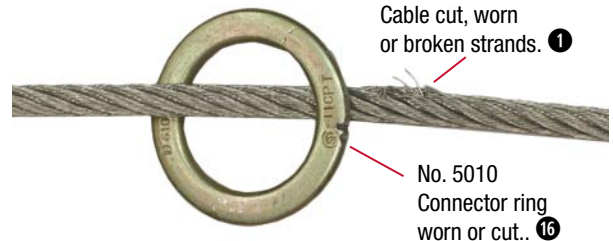
**DO NOT Connect 2 cables together.**

**Table 1. HLL Length Specifications**

Part No.	Rafter Spacing	Cable w/SH's △ Length	5°Angle Rigging Length
1336-10	10ft	9'-4" 112"	10'-3"
1336-12	12ft	11'-4" 136"	12'-3"
1336-14	14ft	13'-4" 160"	14'-3"
1336-16	16ft	15'-4" 184"	16'-3"
1336-18	18ft	17'-4" 208"	18'-3"
1336-20	20ft	19'-4" 232"	20'-3"

△ Requires Energy Absorber and carabiner on the HLL "A" End to fit rigging length.

**Fig.4 Connector O-Rings**



**WARNING!** Broken strands are an extremely hazardous source of puncture wounds

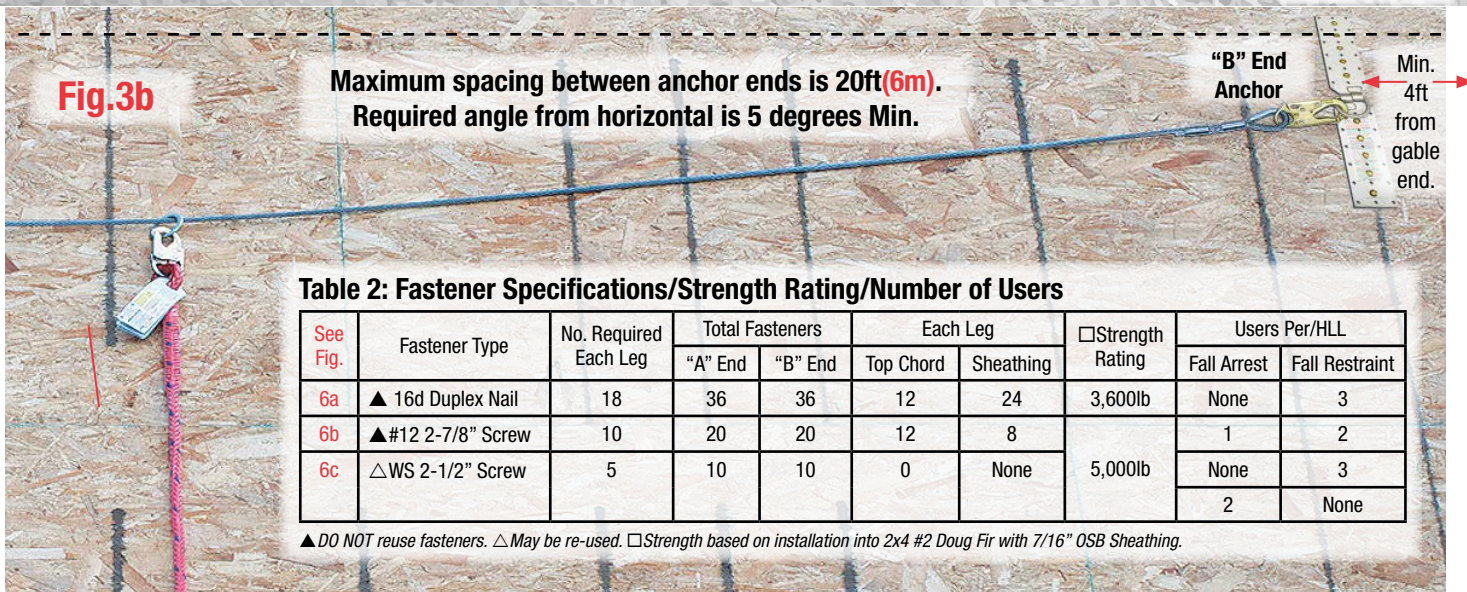
**Fig.5a Coil Energy Absorber (E/A) Not Deployed Top View**



Coil Absorber deployed. Remove From Service. 13  
 Length of deployment will vary.

**Fig.5b**





**Table 2: Fastener Specifications/Strength Rating/Number of Users**

See Fig.	Fastener Type	No. Required Each Leg	Total Fasteners		Each Leg		Strength Rating	Users Per/HLL	
			"A" End	"B" End	Top Chord	Sheathing		Fall Arrest	Fall Restraint
6a	▲ 16d Duplex Nail	18	36	36	12	24	3,600lb	None	3
6b	▲ #12 2-7/8" Screw	10	20	20	12	8		1	2
6c	△ WS 2-1/2" Screw	5	10	10	0	None		None	3
								2	None

▲ DO NOT reuse fasteners. △ May be re-used. □ Strength based on installation into 2x4 #2 Doug Fir with 7/16" OSB Sheathing.

**Fastening Specifications**

Required number and type of fasteners for each anchor leg are shown at Figs. 6a, 6b, 6c.

**WARNING!** Use only SAS supplied fasteners. DO NOT substitute with other types.

**Torque Setting: WARNING!** To prevent damage to the fasteners DO NOT overtighten screws.

Flush mount screws to anchor leg surface with the minimum torque necessary.

**Fig. 6a**



36-16d Duplex Nails: 18 each leg. Use small diam. holes only.

**6b**



20-#12 x2-7/8" Hex Head screws: 10 each leg. Use small diam. holes only.

**6c**



10-WS-2-1/2" Hex Head screws: 5 each leg. Use large diam. holes only.

**Replacement Fastener Packs**

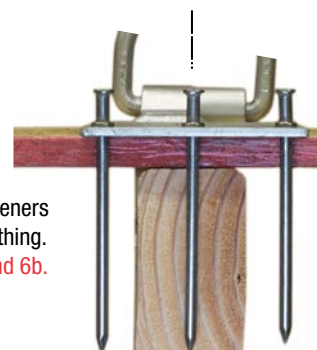
Fastener Type:	Part No.	No. Pcs.	Driver No.
16D Duplex	2012	36	Hammer
#12x2-7/8" hex	2009	36	1/4" Hex
WS 2-1/2" hex	2084-2.5	24	3/8" Hex

**WS Wood Screws**

WS series wood screws may be used several times over provided the drill torque is set at the minimum required to install the fastener. If any re-used WS hex heads shear off during installation remove all used screws and replace with new.

**Fig. 7a**

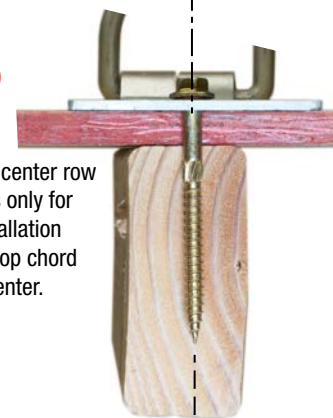
Min. 7/16" Sheathing



Perimeter Fasteners Through Sheathing. See Figs 6a and 6b.

**7b**

Use leg center row holes only for installation over top chord center.



Center of Top Chord

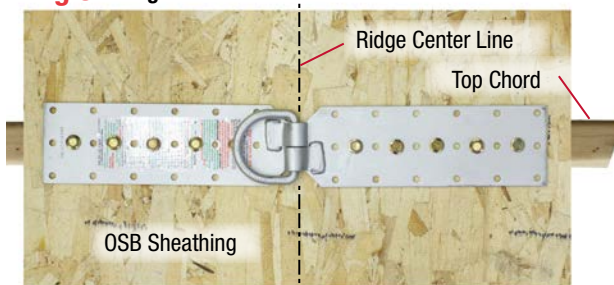
**Fig. 9** **WARNING!**  
NON COMPATIBLE CONNECTIONS  
DO NOT attach more than 1 connector to a connector ring.

**Compatible Connections**

**WARNING!** Connectors must have 3,600lb (16kN) gate strengths. 10c use steel only..



**Fig. 8 Ridge Mounted**



### Sample Length of Fall Plan (LOFP)

Components shown in this sample plan are mfg. by SAS and do not apply to PPE mfg. by others. LOFP must be calculated to prevent contact with the ground or lower level in the event of a fall. Users are required to engineer their own Job Specific Plan (JSP).



### Fall Arrest Sample LOF Plan

Calculation is based on the max. deployment length of all components. Free fall "A" = B + C 72" (1.8m)

Factor	Description	Length
"B"	D-Ring Ht.	52" (1.3m)
"C"	Line Slack	20" (0.5m)
"D"	PPE-E/A static length	24" (0.5m)
"E"	Fall Arrester	24" (0.6m)
"F"	Absorber	48" (1.2m)
"G"	Harness	12" (0.3m)
"H"	Coil Absorber	52" (1.3m)
"I"	△5° Cable	10" (0.2m)

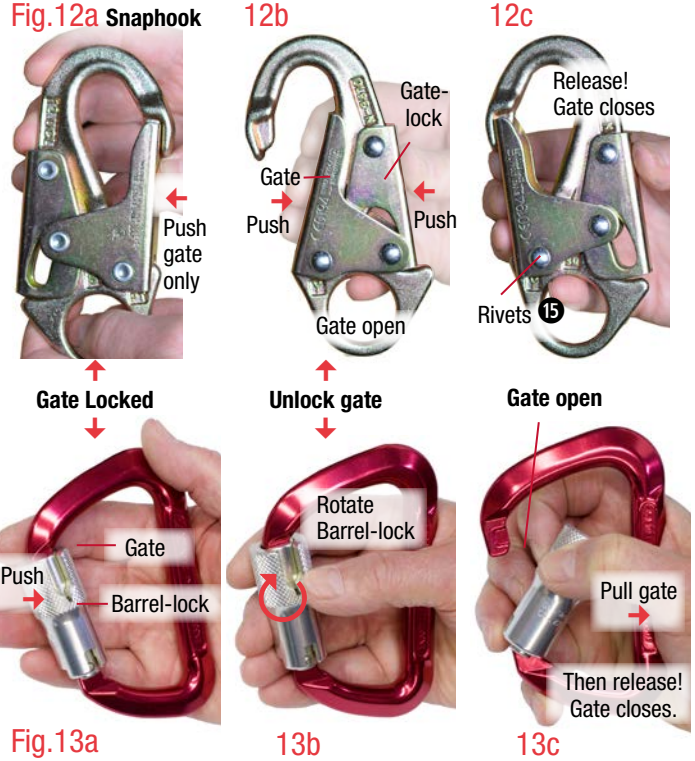
**Total (LOF) 242"/20ft 2" (6.1m)**  
 △ If a fall occurs when the O-Ring position is at or near anchor point ("A" or "B" End), the O-Ring will travel to the HLL center point increasing the length of fall. See Fig.2b.

**WARNING WHEN A FALL OCCURS! Prompt Rescue:**  
 A plan for immediate rescue is required to avoid serious injury or death from suspension trauma. As a safety precaution, equip workers' full body harnesses with SAS No. 6060 Trauma Strap and train workers on how to use it.

**Ground Clearance:**  
 A failure to calculate the LOF+ ground clearance and correctly rig PPE can result in striking the ground or a lower level and may result in serious injury or death.

### Snaphooks/Carabiner Function Tests 15

Connectors must pass inspection and function tests before each use.



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

Fig.	Test Type	Function	Pass <input checked="" type="checkbox"/>	Fail <input type="checkbox"/>
12a-13a	Gate-lock	Push against gate only	Won't open	Opens
12b	Gate-open	Push gate-lock and gate at the same time	Opens	Won't open
12c	Gate-close	Release gate and gate-lock at same time	Snaps shut	Won't close and lock
13b-13c	Unlock gate	Rotate barrel lock	Gate opens	Won't open
13a	Gate closes	Release gate/barrel	Snaps shut	Won't close

### Component PID (product i.d.) Labels

Hinge2 No. 3013

**Hinge-2™ Anchor No. 3013-D**  
 1 1/4" Steel w/dacromet plating  
 Min. tensile strength: 5,000lb (22.5kN)  
 Capacity: 1 person 340lb (154kg)

**WARNING TO USER:** Before installation or use consult instructions supplied with this device at time of purchase. Failure to follow instructions may result in serious injury or death. **USE OF ENERGY ABSORBER REQUIRED.** **ADVERTENCIA PARA EL USUARIO:** Antes de la instalación o el uso consulte las instrucciones suministradas con este dispositivo en el momento de la compra. Si no se siguen las instrucciones puede resultar en lesiones graves o la muerte. **USO DE ABSORBEDOR DE ENERGÍA ES NECESARIO.**

**FASTENER HOLE → Leg Center**  
 Agujero Del Centro → Centro de la Pierna

**INSTALLATION:** Installed over min. 7/16" OSB or plywood sheathing. Consult manual for structural framing requirement and fastener specifications. For Fall Arrest use position each "Leg Center" holes over with SAS specified fasteners. **INSTALACION:** Instalado sobre mínimo OSB de 7/16" o de emanicación estructural especificaciones de fijación. Para uso como Arresto de Caída, posicionar cada uno de los agujeros sobre el centro de superior y asegurar con sujetadores SAS especificados.

**FASTENERS:** Use SAS factory supplied certified fasteners only and do not substitute with other types. **CERROS:** Utilicacionamiento sujetadores suministrados por la fábrica SAS certificados y no los sustituya con otros tipos.

**INSPECTION:** DO NOT USE if anchor legs or connector ring are bent or if connector weld is cracked. **INSPECCION:** NO USAR si las patas del anclaje o anillo dobladas o la soldadura del anillo connector está rajado o quebrada. **Antes de Utilizar Inspeccionar Siempre**

Hinge-2-D English-Spanish Label 1.3 ©SCN 04-2018 mfg. China

Coil E/A (Energy Absorber) No. 1065-AC

**Super Anchor Safety** 425-488-8868  
 Monroe, WA 98272 USA

**Coil Energy Absorber - HLL Component**  
**No. 1065-AC 304 SST.**  
 Use with: Couplers 1087-SA 1087-SB  
 Attachment Bolts: Grade 8 or 18-8sst. as specified in the manual.

**WARNING TO USER!**  
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**Specification of Use:**  
 Use only for Horizontal Lifeline systems with a maximum length of 20ft per anchor spacing. 1 person max.wt. 340lbs (whole and equipment).  
 Required to use a personal energy absorber with max. arrest force of 1,800lb.

**Performance Specifications:**  
 Min. Tensile Strength: 5,000lb (22.5kN)  
 Max. Deployment Length: 52" (1330mm)  
 Min. Deployment Force: 2,800lb (12.3kN)  
**WARNING:** Do not use as a personal energy absorber.

**WARNING:** Sharp edges. Wear gloves when handling.  
 Absorb-Label AC.1 ©SCN 05-2020Mfg.China (m)

5° Angle HLL

**5° Angle Fixed Length Cable**  
 Use with SAS Horizontal Lifeline Systems rigged at 5° angle.

**Material:** Galvanized, 3/8" x 7x19. Break strength 14,400lb (64kN).  
**Snaphook Compliance:**  
 ANSI Z-359.12-09 CSA Z-259.12-11 and OSHA 1926.502

**Part No. 1336-20**  
**Finished Length Rafter Spacing 232"/19ft4" 20ft**  
 Snaphook and to snaphook and. Required to use with Coil Energy absorber No. 1065-AC-No.5001Z auto-lock steel carabiner.

**SAS Specified HLL Systems**  
 1) No. 1321 HLL  
 2) No. 2835 WS-TussBars  
 3) All HLL systems mfg. by SAS that specify 5° angle HLL's

**WARNING!** DO NOT EXCEED or REDUCE specified rafter spacing. Consult 5° HLL system manual before installation and use. Must pass inspection prior to each use.  
**If HLL is subjected to a free fall remove from service and do not use.**

**DOM** Date of mfg.

**Max. User wt. 310lb**  
 per person. (140kg)  
 Use of PPE energy absorber or SRL's with internal or external energy absorber are required by each user attached to this cable.

**Inspection Record**

Year:	Month:	By:	Pass