



SUPER ANCHOR SAFETY®

30° Angle Fixed Length HLLS No. 1323-US Instruction/Specification Manual 2019

ENGLISH
VERSION

Engineered System for Temporary Installation Only

!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.

WARNING!
2016 manual for this device is no longer valid. Use of multiple HLL legs linked with a center anchor point are not permissible.

System Specifications

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

Specified Use: Fixed Length HLLS for temporary installation on wood framed structures.

Fixed Length: Snaphooks swaged both ends.

User Specifications Per System

Single Length HLL: 1 HLL + 2 Anchors. See pg.2 Fig. 6

Person Capacity: 2 person Fall Arrest or 3 person Fall Restraint.

Maximum Slope: Do not exceed 12/12 (45 degree pitch)

Anchor Connectors Hinge-2 3013-D/S

D=11ga. steel w/forged D-Ring Dacromet coated.

S=11ga. 430 sst.

HLL Cable max. Length 20ft(6m).

Wire rope: Galvanized Steel 3/8"x 7x19.

Breaking strength: 14,400lb(64kN).

Terminations: Thimble splice w/2 aluminum swages.

Compliance: OSHA1926:502/1910.66
Z359.1-07/A10.32-2012

Engineering: DH Glabe & Associates
Report No. 2015-237, November-24-2015.

Personal Protective Equipment (PPE)

All workers must use OSHA, ANSI or CSA PPE that meets current fall protection standards.

PPE Energy Absorber Requirement

Each worker must be equipped with a personal energy absorber component as part of their fall protection equipment as specified below:

Maximum Arrest Force (MAF) per person:

310lb(140kg) w/E-4 Energy absorber 900lb(4kN).

340lb(154kg) w/E-6 Energy absorber 1300lb(6kN).

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.

Note: The use of a job specific fall protection plan (JSP) is recommended.

Non-Specified Use

Do not use for window washing or suspended work.

Temporary Use Only

WARNING! Evacuate the HLLS immediately after use. Prolonged exposure to moisture will result in deterioration of wood framing and fastener strength.

Storage/Maintenance

Coil cable to lay flat. Avoid binding or bends. Store indoors in a dry area to prevent oxidation of the components. DO NOT store outdoors or place materials or tools on top of the HLLS.

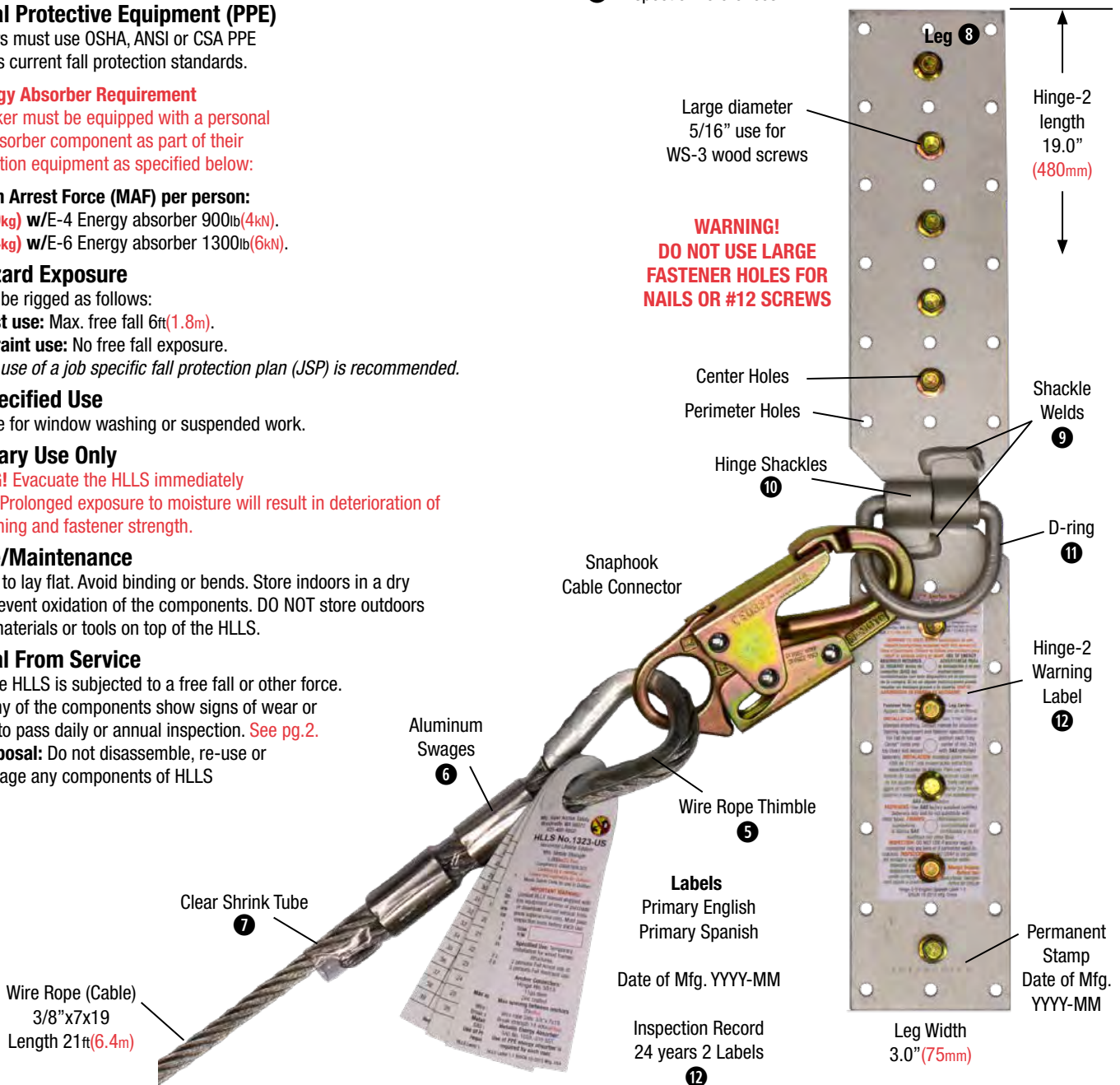
Removal From Service

- 1) If the HLLS is subjected to a free fall or other force.
- 2) If any of the components show signs of wear or fail to pass daily or annual inspection. See pg.2.
- 3) **Disposal:** Do not disassemble, re-use or salvage any components of HLLS

Fig.1

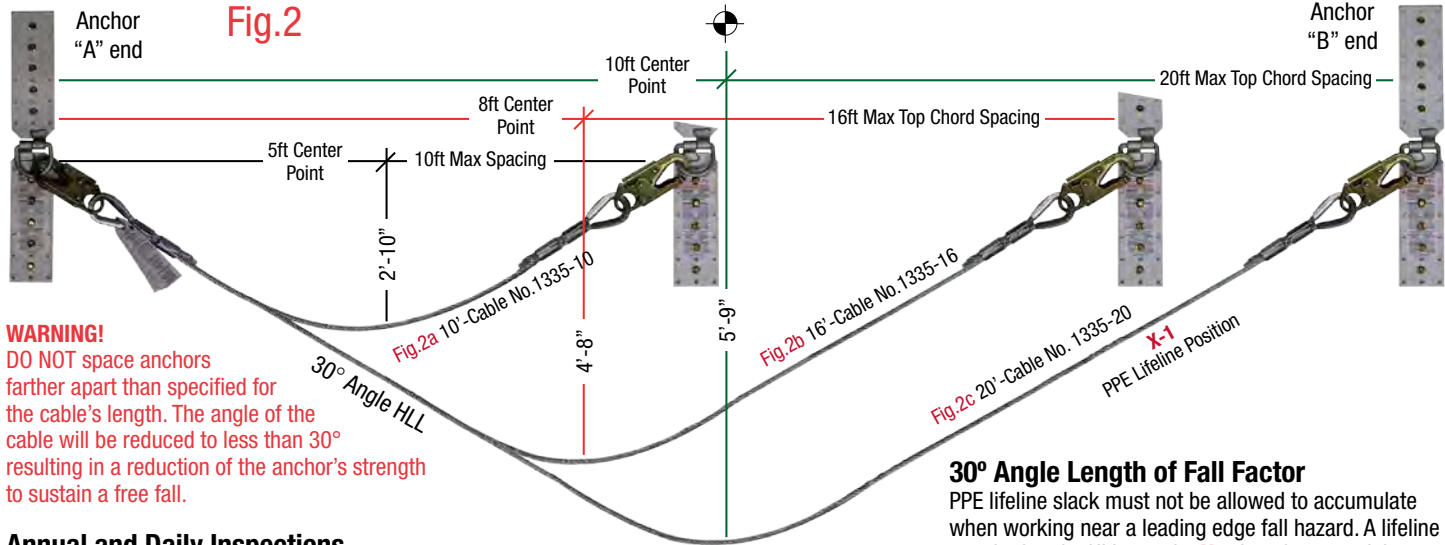
Hinge-2 No. 3013-D

⊗=Inspection references



Rigging HLL for 30° Angle

HLL cable is required to be rigged at a 30° angle between anchor points as shown at Fig.2. Fixed length SAS factory engineered cables in Table 1 installed with No.3013 anchors onto the specified top chord (TC) spacing, will produce a 30° angle. The maximum TC anchor spacing allowable for HLLS No. 1323 is 20ft(6m). Always use the specified cable length for the specified TC anchor spacing. Not all cable lengths are shown at Fig.2.



WARNING!
DO NOT space anchors farther apart than specified for the cable's length. The angle of the cable will be reduced to less than 30° resulting in a reduction of the anchor's strength to sustain a free fall.

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 system's inspection labels. See pg.4. The following supplemental inspection points may be used as a guideline for primary areas of 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 (Wire Rope) Fig.1 and 3

- 4 Cable Strands are cut or hooked. ☒
 - 5 Thimble missing, broken or deformed. ☒
 - 6 Swages are cracked, cut or missing. ☒
 - 7 Shrink tube cover is missing. ☑
- Does not require HLLS removal from service.

Hinge-2 Anchors Fig.1

- 8 Legs are cut, bent or deformed. ☒
 - 9 Hinge shackle welds are cracked. ☒
 - 10 Shackles are deformed. ☒
 - 11 D-ring is cut or deformed. ☒
 - 12 Warning labels missing or not legible. ☑
 - 13 Missing fasteners. See pg.3
- See pg.4 Request replacement labels.

Connector Rings/Snaphooks: Fig.5,9

- 14 Bent, cut, worn or missing. ☒
- 15 Obvious damage/missing rivets. ☒
- 16 Gate is bent or won't close. ☒
- 17 Gate locking device is damaged. ☒
- 18 Gate in closed position does not lock. ☒

Rigging: Fig. 2

Distance between anchors "A" and "B" is greater than specified in Table 1.
☑ Check cable length and rafter spacing to confirm correct installation.

30° Angle Length of Fall Factor

PPE lifeline slack must not be allowed to accumulate when working near a leading edge fall hazard. A lifeline attached to the HLL at point X-1 has the potential to add several feet to the length of a fall. Adjust the lifeline rope grab position to prevent excess line slack. See sample LOFP on page 4.

Table 1: Fixed Length Cables:

Cable Part No.	Nominal Length	Finished Δ Length	Max. TC Spacing
*1335-10	10ft	11'-6"	10ft
*1335-12	12ft	13'-6"	12ft
*1335-14	14ft	16'	14ft
*1335-16	16ft	18'-4"	16ft
*1335-18	18ft	20'-6"	18ft
1335-20	20ft	23'	20ft

*Not included in HLL Kit No.1323-US

Fig.3



Fig.5 Connector Ring

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

Cable cut, worn or broken strands 4



Connector ring worn or cut 14

Fig.4

WARNING!
Non-Compatible Connections.
DO NOT attach more than 1 connector to a Connector Ring.



Compatible Connections

WARNING! Connectors 4c and 4d attached directly to wire cable must be steel 3,600lb(16kN) gate strengths. Do not use Aluminum connectors.



Fig.4a

4b

4c

4d

Steel Snaphook

Steel Carabiner

Installation/Framing Strength Requirement

The wood structure to which an anchorage device is attached must be capable of sustaining static loads applied in the direction of the fall hazard as follows:

- a) *2 times the engineered load or
- b) *5,000lb(22.5kN) without engineering.

Top Chords and Sheathing

Anchor ends must be installed onto framing sheathed with OSB or plywood with a min. thickness of 7/16" attached to a min. 2x4 top chord as shown at Fig.7 pg.3.

*ANSI Z359.1-07section 7.2.3/OSHA 1910.66 App C(I)(10)

Swing Fall Hazard

The length of fall (LOF) created by a 30° angle increases with the length of the fixed HLL cable and is specified in this manual as a “K” factor. Example: A PPE lifeline (6a) is attached to a 20ft length HLL. A worker is positioned at the leading edge point X-2, with no slack in the HLL and PPE lifeline. A Swing Fall over the leading edge will move the worker's position to point X-3. The “K” factor will add approximately 32 inches to the LOF. Table 2 specifies the estimated “K” factor for a fixed HLL length to be added to the LOFP sample plan on page 4.

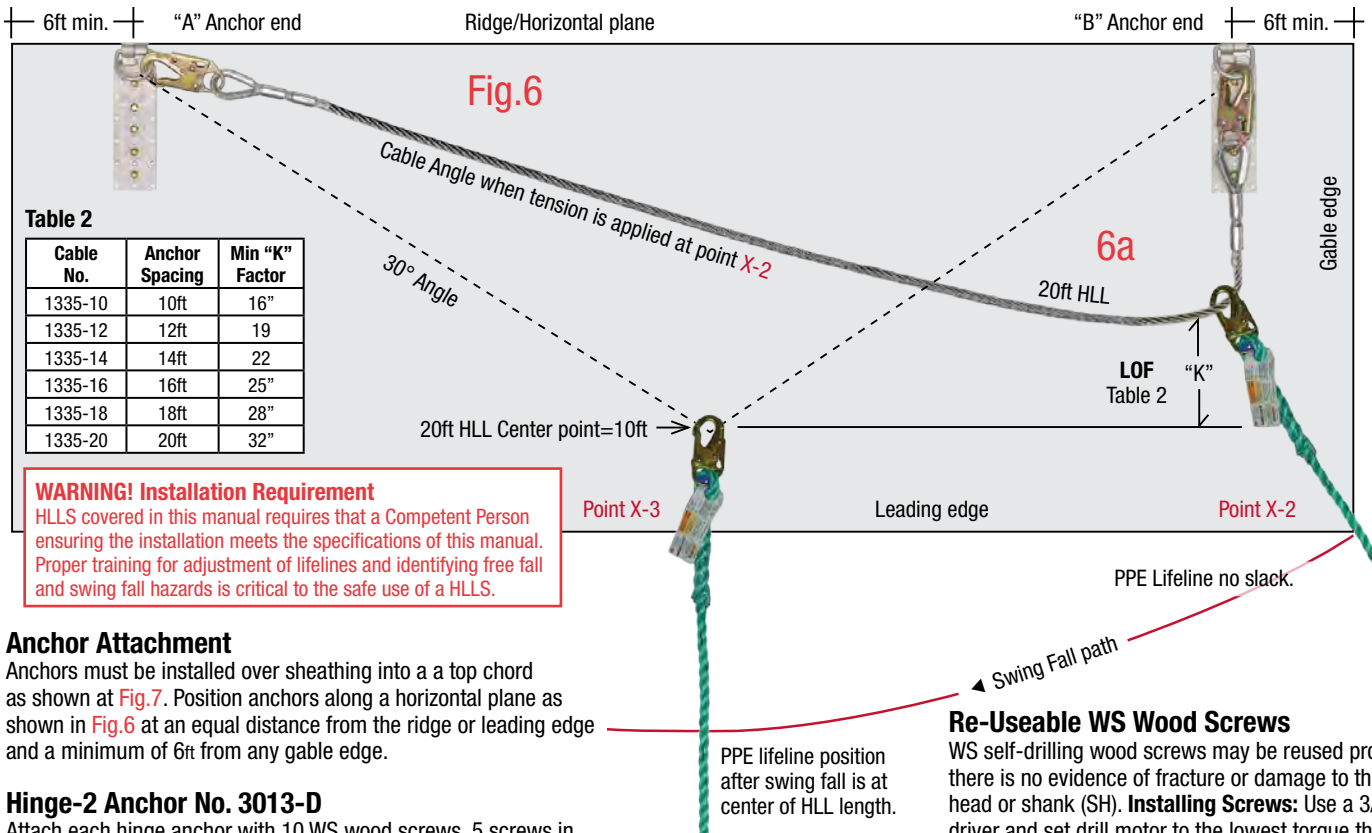


Table 2

Cable No.	Anchor Spacing	Min “K” Factor
1335-10	10ft	16”
1335-12	12ft	19
1335-14	14ft	22
1335-16	16ft	25”
1335-18	18ft	28”
1335-20	20ft	32”

WARNING! Installation Requirement

HLLS covered in this manual requires that a Competent Person ensuring the installation meets the specifications of this manual. Proper training for adjustment of lifelines and identifying free fall and swing fall hazards is critical to the safe use of a HLLS.

Anchor Attachment

Anchors must be installed over sheathing into a top chord as shown in Fig.7. Position anchors along a horizontal plane as shown in Fig.6 at an equal distance from the ridge or leading edge and a minimum of 6ft from any gable edge.

Hinge-2 Anchor No. 3013-D

Attach each hinge anchor with 10 WS wood screws, 5 screws in each leg as shown at Fig.8. Only WS 3” screws are specified for Hinge-2 anchor installation with HLLS 1323-US. Do not substitute with nails or other types of screws.

Fig.8

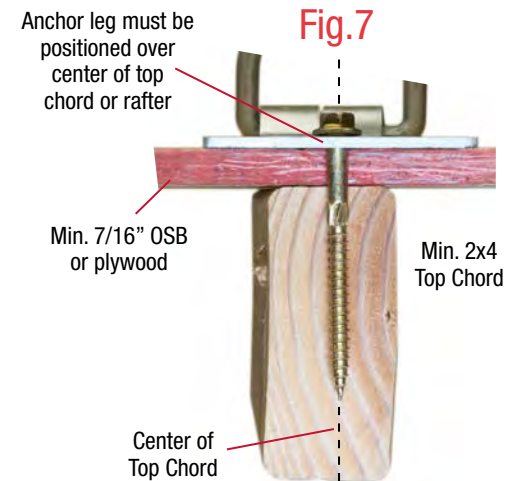


Use large diameter holes

Re-Useable WS Wood Screws

WS self-drilling wood screws may be reused provided there is no evidence of fracture or damage to the screw head or shank (SH). **Installing Screws:** Use a 3/8” nut driver and set drill motor to the lowest torque that will drive the screw.

WARNING! Do not over-tighten screws. Flush mount screw head flange with anchor leg surface.



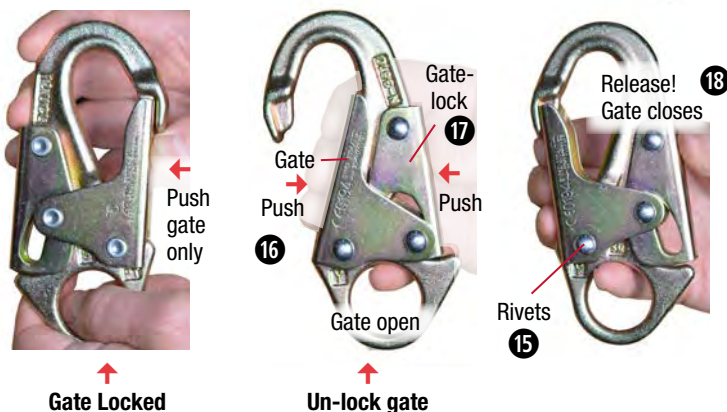
Replacement Bulk Packs

Fastener Type	Part No.	No. Pcs.	Driver No.
WS 3.0” hex	2078-B	33/lb	3/8” Hex 2079

Fig.9a Snaaphook

9b

9c



Snaaphook Function Tests

Snaaphook gates are designed to remain closed during use and are fitted with gate locks to prevent accidental disengagement. Perform tests before each use.

Remove equipment from service if any function test fails.

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

Components Deployment Length of Fall Plan (LOFP)

Components stretch and deceleration values are shown in the sample plan Figs.10. K-factors for HLL 30° angle are shown on page 3, Table 2. A LOFP specific to the equipment being used and type of rigging is required to prevent contact with the ground or lower level in the event of a free fall.

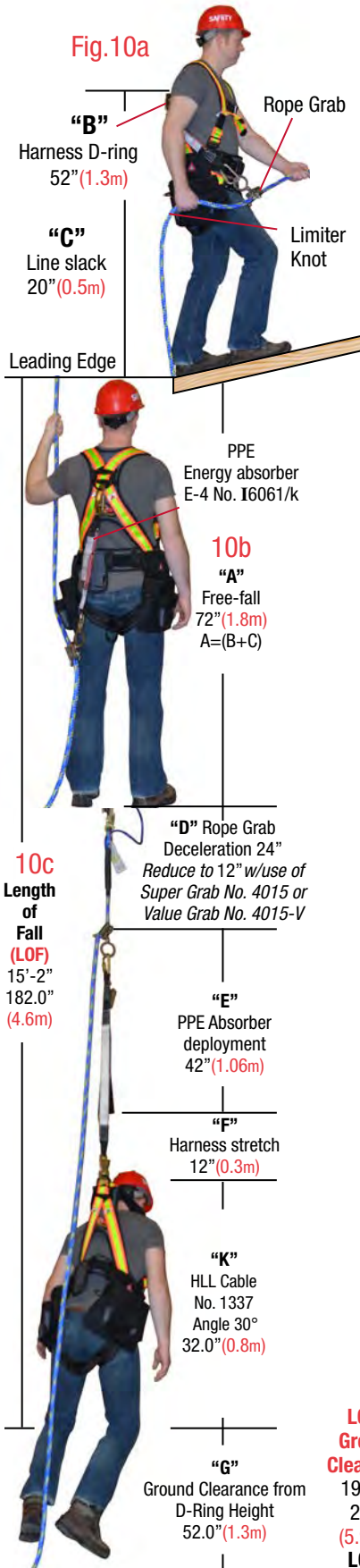


Fig 11a Ridge Installation/Horizontal Spacing

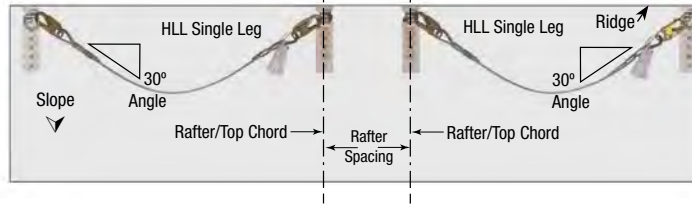
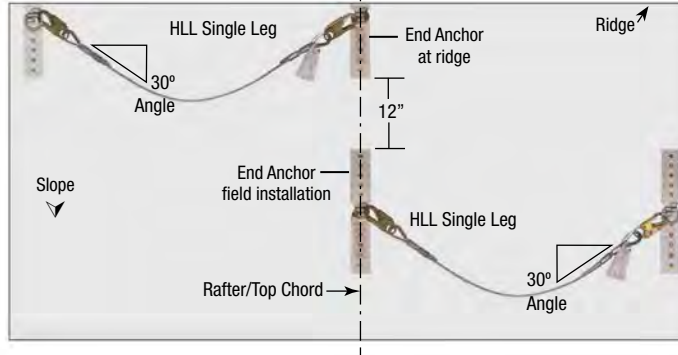


Fig 11b Ridge/Field Installation/Vertical Spacing



Multiple Fixed HLL's

The maximum length for a single HLL leg is 20ft. Multiple legs can be rigged using different fixed length cables as specified on page 2 Table 1.

Ridge Installation:

Shown at Fig.11a, end anchors of each HLL leg are separated by the rafter/top chord spacing.

Field Installation:

Shown at 11b, HLL legs may be installed onto the same top chord. Position end anchors of each leg at least 12" apart. Any combination of ridge and field installations may be used provided the vertical and horizontal end anchor spacing is observed.

Hinge-2 No. 3013-D
Product I.D. Label

Hinge-2™ Anchor No. 3013-D
1 ga. Steel wide/cromet plating
Min. tensile strength: 5,000lbs (22.5k)
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 consultar (SAS) las instrucciones suministradas con este dispositivo en el momento de la compra. Si no se siguen instrucciones puede resultar en lesiones graves o la muerte. **USO DE ABSORBEDOR DE ENERGIA 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 center of min. 2x4 top chord and secure with SAS specified fasteners. **INSTALACION:** Instalado sobre mínimo OSB de 7/16" o empujamiento estructural especificaciones de fijación. Para uso como Arresto de Caída, posicionar cada uno de los agujeros "pierna central" sobre el centro de mínimo 2x4 acorde con sujetadores SAS especificados.

FASTENERS: Use SAS factory supplied certified fasteners only and do not substitute with other types. **CIERRES:** Utilice únicamente 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 de conexión están rajadas o quebradas.

Always inspect Before Use
Inspeccionar Siempre Antes de Utilizar

Hinge-2-D English-Spanish Label 1.3
©SCN 01-2017 mfg. China

Fixed length Cable
English Label

Template HLL 1.0 07-2017
HLL Label 4.5 Eng ©SCN 07-2017

Mfg in USA by:
Super Anchor Safety (SAS)
Monroe, WA 98272
425-488-8868

30° Angle Fixed Length Cable
Systems rigged at 30° angle.
Material: Galvanized. 3/8" x 7x19.
Break strength 14,400lb (64kN).

Snaphooks: 3,600lb (16kN) gate strength
Snaphooks comply with ANSI Z-359.12-09
CSA Z-259.12-11 and OSHA 1926.502

Part No. 1335-20
Finished Length **Max. Rafter Spacing**
23'-0" **20ft**

Finished length includes Snaphook
This cable is designed for use with a fixed length HLLS requiring a 30 degree Angle in the lifeline between anchor points. **DO NOT EXCEED max. rafter spacing.**

IMPORTANT WARNING!
Consult HLLS manual shipped with this equipment at time of purchase or download current version from www.superanchor.com.

Must pass inspection tests before each use.

DOM _____
Y/M _____

Max. User wt. per person. **340lb (154kg)**

Use of PPE energy absorber is required by each user.

Fixed length Cable
Spanish Label

Template HLL 1.0 07-2017
HLL Label 4.5-SP ©SCN 07-2017

Mfg in USA by:
Super Anchor Safety (SAS)
Monroe, WA 98272
425-488-8868

Ángulo de 30° Cable de Longitud Fija
Utilice con la cuerda salvavidas de Sistema SAS aparejado a un ángulo de 30°.
Material: Galvanizado. 3/8" x 7x19.
Fuerza de rotura de 14,400lb (64kN).

Conectores: Fuerza de compuerta de los Ganchos de Seguridad de 3,600lb (16kN) cumplen con ANSI Z-359.12-09 CSA Z-259.12-11 y OSHA 1926.502

Parte No. 1335-20
Longitud Acabada **Espaciamiento Máximo de la Viga**
23'-0" **20ft**

La longitud acabada incluye el Gancho de Seguridad
Este cable está diseñado para utilizarse con HLLS de longitud fija requiriendo un ángulo de 30 grados en la cuerda salvavidas entre los puntos de anclaje. **NO EXCEDER** el espaciamiento máximo de la viga.

¡AVISO IMPORTANTE!
Consulte el manual de HLLS enviado con este equipo al momento de su compra o descargue una versión actualizada de www.superanchor.com. Debe pasar pruebas de inspección antes de cada uso.

Peso máximo del usuario por persona. **340lb (154kg)**

Se requiere el uso de un amortiguador PPE para cada usuario.

Inspection Label

Template HLL 1.0 07-2017
Inspection Label 4.1 ©SCN 07-2017

Inspection Record

Year:	Month:	By:	Pass

SAMPLE LENGTH OF FALL PLAN

- 1) Free fall length "A" 72" (1.8m)
 - 2) Rope grab "D" 24" (0.6m)
 - 3) Absorber "E" 42" (1.06m)
 - 4) Harness "F" 12" (0.3m)
- HLL Factors:**
- 5) 20ft HLL Cable "K" 32" (0.8m)
 - 6) Ground "G" 52" (1.3m)
- Total (LOF) 234" (5.9m)**

WARNING! IN THE EVENT A FALL OCCURS:

Prompt Rescue:
A plan for immediate rescue is required to avoid serious injury or death from suspension trauma. Fit harnesses w/SAS No. 6060 Trauma Strap and train workers in its use.

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 cause serious injury or death.