SUPER ANCHOR SAFETY®

30º 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2016 manual for this device is no longer valid.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)

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.

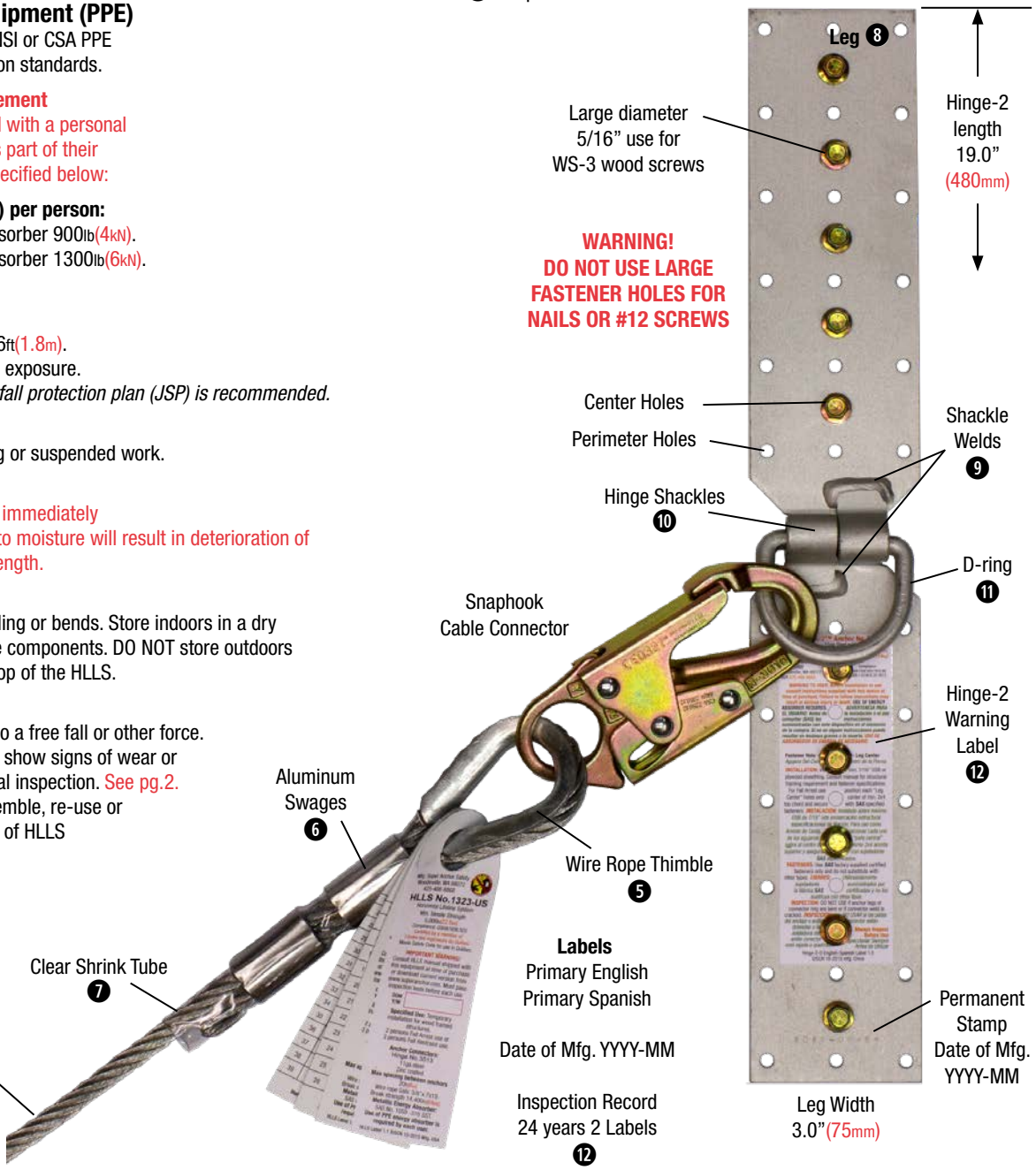
Removal From Service
1) If the HLLS is subjected to a free fall or other force.
2) If any of the components show signs of wear or fail to pass daily or annual inspection. See pg.2.
3) **Disposal:** Do not disassemble, re-use or salvage any components of HLLS

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 sleeves.

Compliance: OSHA1926:502/1910.66
Z359.1-07/A10.32-2012
Engineering: DH Glabe & Associates
Report No. 2015-237, November-24-2015.

Fig.1

Hinge-2 No. 3013-D

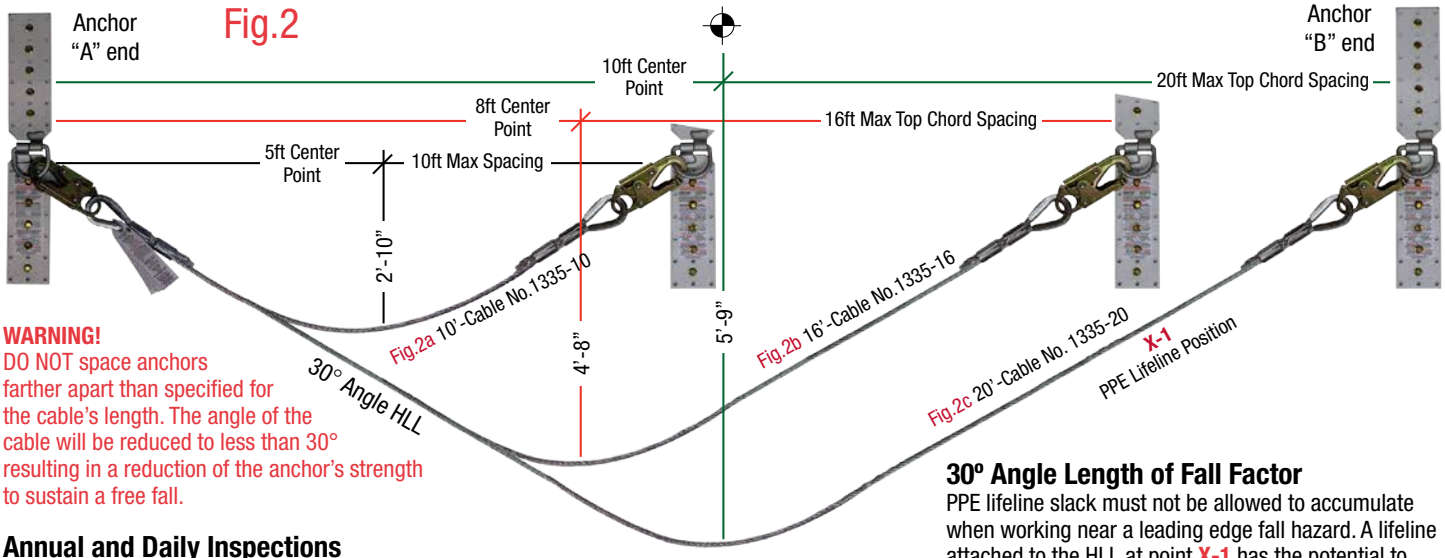


©SCN [MIT]

Rigging HLL for 30º 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.

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 hocked. ☒
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.

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. ☒

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. ☑ See pg.4 Request replacement labels.
13. Missing fasteners. See pg.3

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.

30º 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 △ 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.

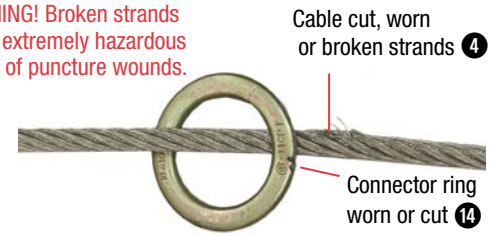


Fig.4

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 Steel Snaphook 4d 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 " 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.

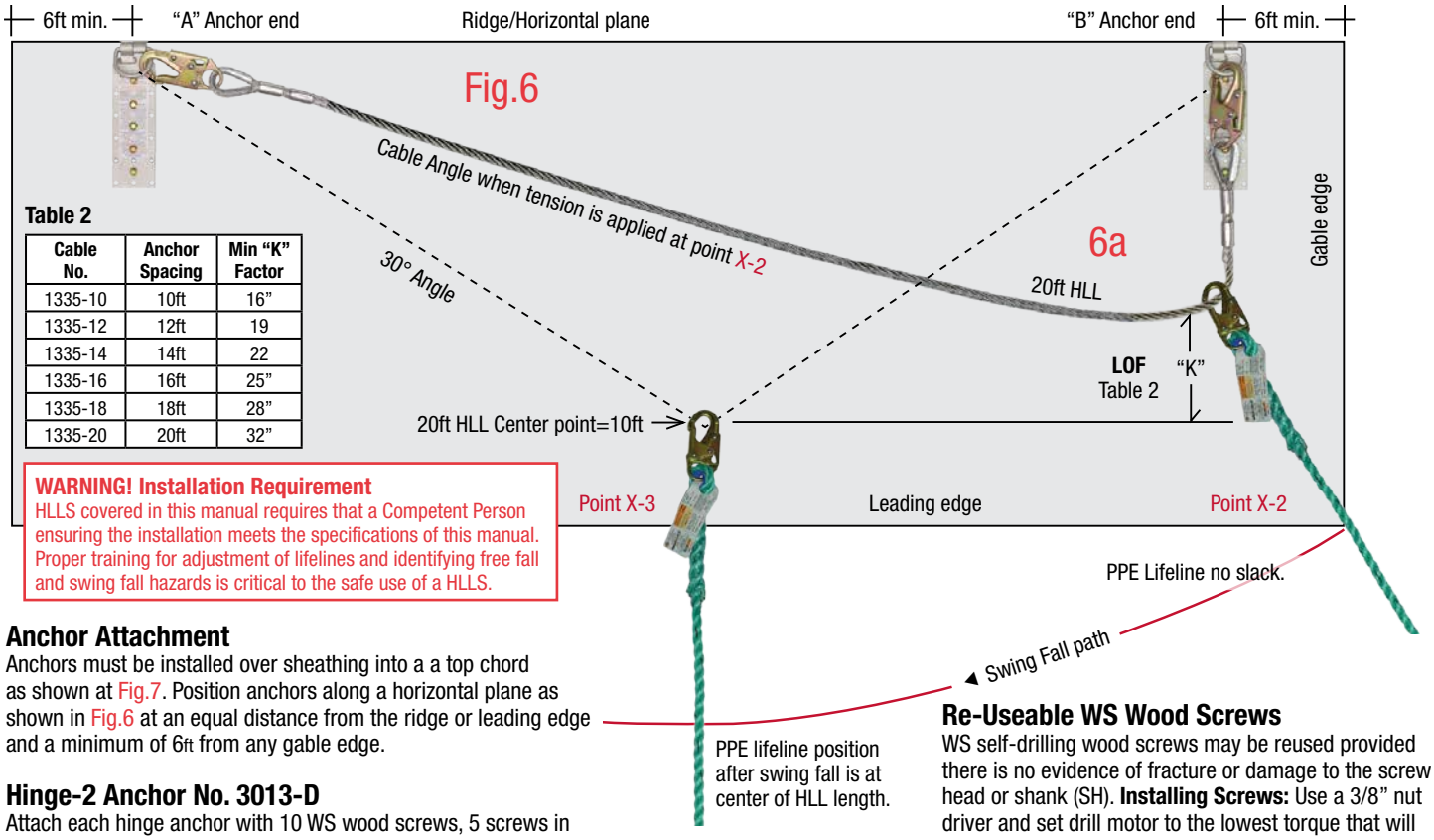


Table 2

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 a top chord as shown at 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.

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.

Fig.8

8a

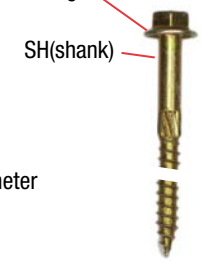
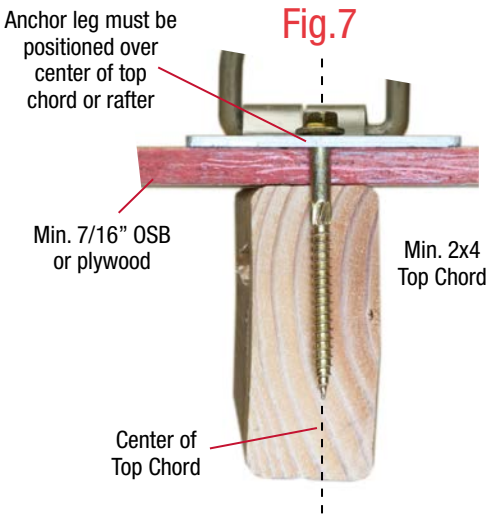


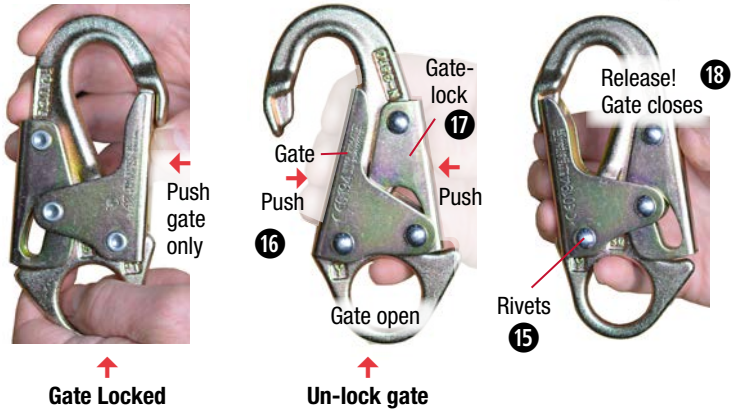
Fig.7



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 **Snaphook** 9b 9c



Snaphook Function Tests

Snaphook 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 ☑	Fail. ☒
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.10a

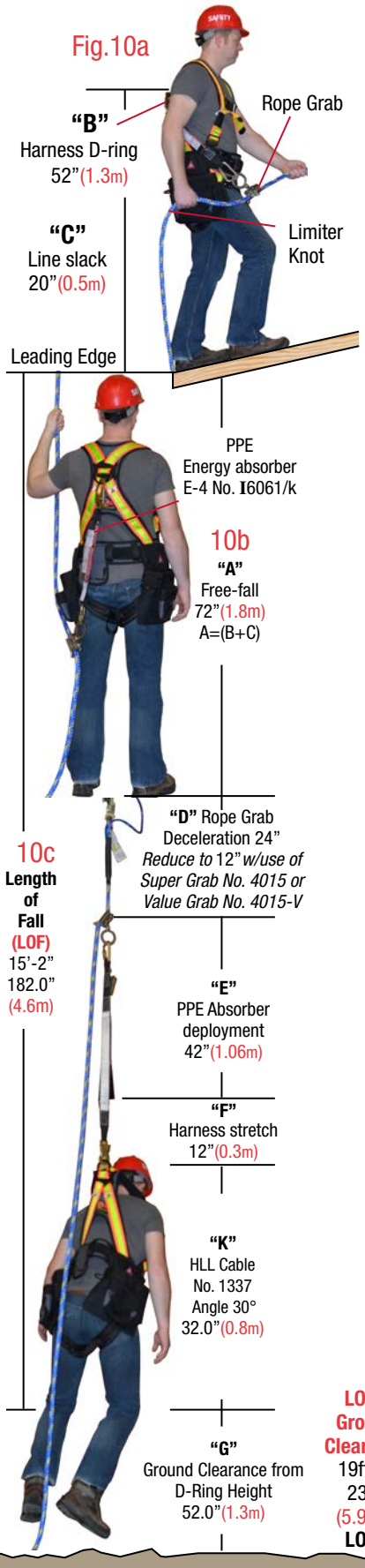
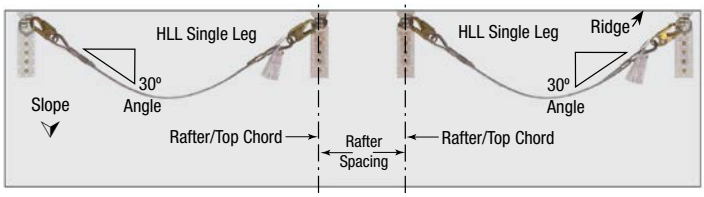
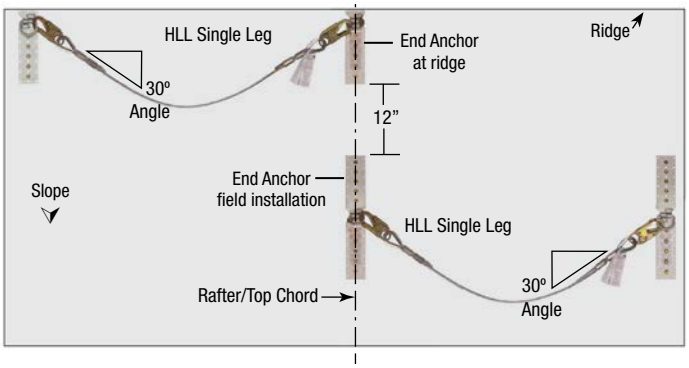


Fig 11a **Ridge Installation/Horizontal Spacing**



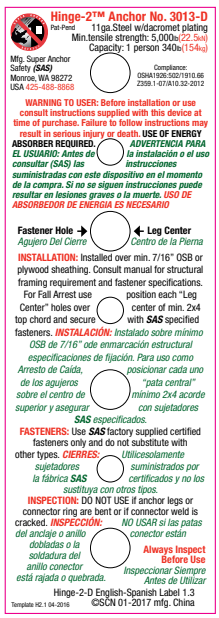
Multiple Fixed HLL's
The maximum length for a single HLL leg is 20ft. Multiple legs can be rigged using different fixed length cables as specified on page 2 Table 1.
Ridge Installation:
Shown at Fig.11a, and end anchors of each HLL leg are separated by the rafter/top chord spacing.

Fig 11b **Ridge/Field Installation/Vertical Spacing**

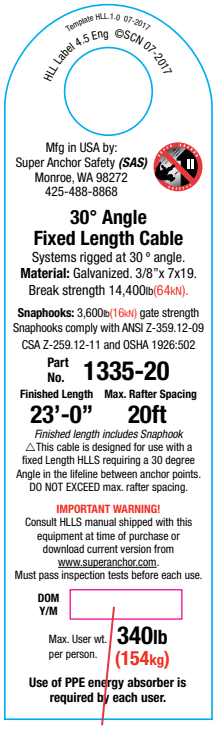


Field Installation:
Shown at 11b, HLL legs may be installed onto the same top chord. Position end anchors of each leg at least 12" apart. Any combination of ridge and field installations may be used provided the vertical and horizontal end anchor spacing is observed.

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

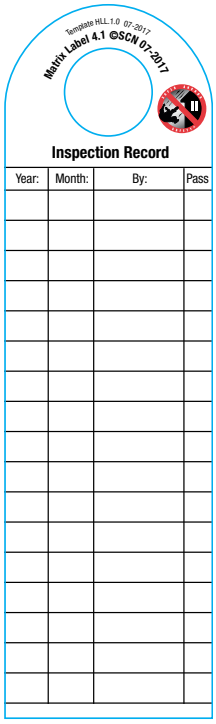


Fixed length Cable
English Label



Fixed length Cable
Spanish Label

Inspection Label



Date of Mfg.

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.