



SUPER ANCHOR SAFETY®

WS-TrussBar™ No. 2835 Instruction/Specification Manual 2018

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.

Specifications

Top Chords: Min. 2x4 spaced 12", 16" or 24" o.c.

Aluminum: Grade 5052.

Thickness: Legs: 3/16", Crossbar: 1/4".

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

Leg Bolts: M12x30mm stainless steel w/lock nut.

Washers: 12mm stainless steel friction type.

Weight: 6.5lb.

The term SAS used in this manual refers to Super Anchor Safety. "Rigging" as used in this manual means to connect PPE together.

⊗ = Inspection points.

Compliance: OSHA1926.502(b)(4)(i)
OSHA 1926.1203(e)(2)(ii) / ANSI Z359.1-07

Specified Use

WS-TrussBar is designed for use as a PPE anchorage point that attaches to the underside of wood top chords in attic spaces as shown on pages 2-3 and Fig.13.0 pg.4.

User Specifications: 1 person max user wt. 340lb(154kg) per Anchor (including tools). May be used with lifelines, lanyards, SRL's and horizontal lifeline system (HLLS).

User PPE: Attach connecting components to the dorsal D-ring of a full body harness as shown on pages 2-3 and Fig.17.0 pg.4. DO NOT use side or front D-rings or body belts. The use of a personal energy absorber with a PPE lifeline or an SRL equipped with an internal or external energy absorber are required for use with the WS-TrussBar. Free Fall Max length: 6ft(1.8m) / Max. Arrest force: 1800lb(8kN). Energy Absorber must be specified for the user's weight.

Non-Specified Use

DO NOT use for window washing or work positioning. DO NOT install onto truss bottom chords unless supported by an interior wall or other framing.

Fastener Specifications

Must be attached to framing with SAS supplied min. 2.0" or 2.5" length WS hex head reusable wood screws only as shown at Fig.5.0. **WARNING!** DO NOT substitute with other types of fasteners unless they have been engineered by a qualified person or supplied by SAS. Use the lowest torque setting to flush mount screws with the leg surface. **WARNING!** Always use eye protection when installing fasteners. DO NOT install screws by hammering. DO NOT pry against the bar legs to remove fasteners.

Installation onto Top Chords

Framing must be capable of supporting 5,000lb(22.5kN) or 2 times the intended fall protection load. Install to the underside of 2x4 or larger dimension top chord with sheathing that is structurally sound and free of defects or damage. Attach 5ea WS 2.0" screws to each leg as shown at Fig.3.0. Install the WS Bar on the underside of a 2x4 or larger dimension top chord approximately 6-8" from a truss mid span web or king post as shown at Fig.8.0. Clamp 1 leg to assist in stabilizing the bar during installation if necessary.

Framing Options: King Post cross framing of at least 3 trusses may be used when engineered by a competent or qualified person. **WARNING!** DO NOT install where top chords are butt jointed. See Fig.16.2. May be installed onto interior or exterior wall studs when sheathing is in place.

Adjusting for Top Chord Spacing

The WS-TrussBar is adjustable for installation onto 12", 16" and 24" o.c. top chords(TC). Bar legs rotate to adjust for imperfect spacing between TC's. The maximum width for leg spacing is 13", 17" and 25". See Figs. 6.0-7.0 as an example for 24" TC's.

Leg Attachment Bolt Pressure Adjustment: To limit unwanted leg movement, increase the attachment bolt pressure against the friction washers as shown at Figs. 1.0-2.0. DO NOT allow bar legs to move freely. Adjust pressure to allow some movement for installation. Friction washers may require replacement due to wear.

Leg Bolts and Friction Washers

Use only SAS supplied replacement bolts, lock nuts and friction washers. DO NOT substitute with other types.

Fig.1.0

WS-TrussBar

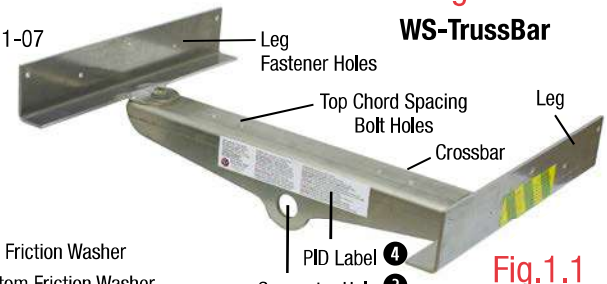


Fig.2.0

Leg Attachment Bolt M12x30mm

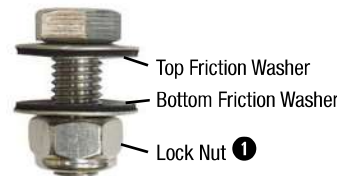


Fig.1.1

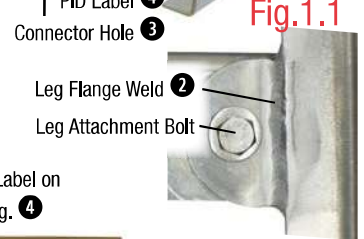


Fig.3.0 Bar Leg

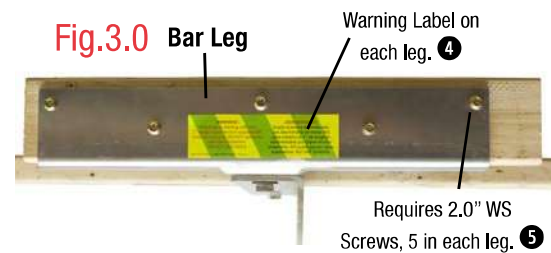


Fig.4.0

Installing Screws

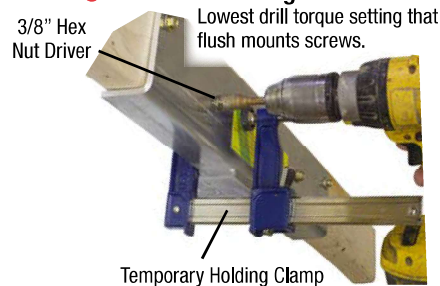


Fig.5.0

WS Screw



Fig.6.0

Bar Leg Adjustments

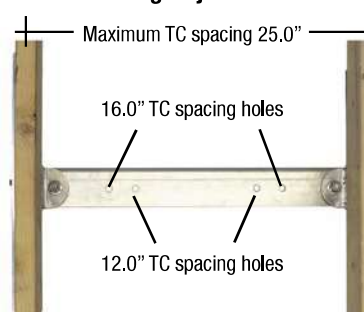


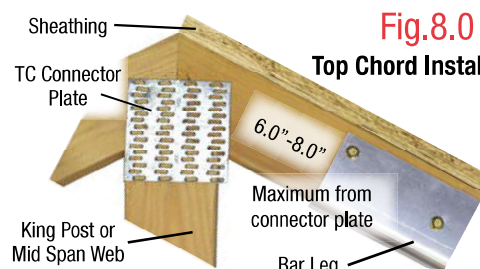
Fig.7.0

Leg Rotation



Fig.8.0

Top Chord Installation



Note: WS-TrussBar may be installed at a King post or mid-span truss web as shown at Fig.14.1 pg 3. Position as closely as possible to the truss web as shown at Fig.8

SAS Sample Length of Fall (LOF) Plans/Attic Fall Hazards

The sample plans shown in this manual are intended as a guideline to assist a competent or qualified person in developing a job specific fall protection plan. The **LOF** includes several factors that can be used to calculate ground clearance between the work surface and a lower level or obstacle below. Three of the most common attic space fall hazards are:

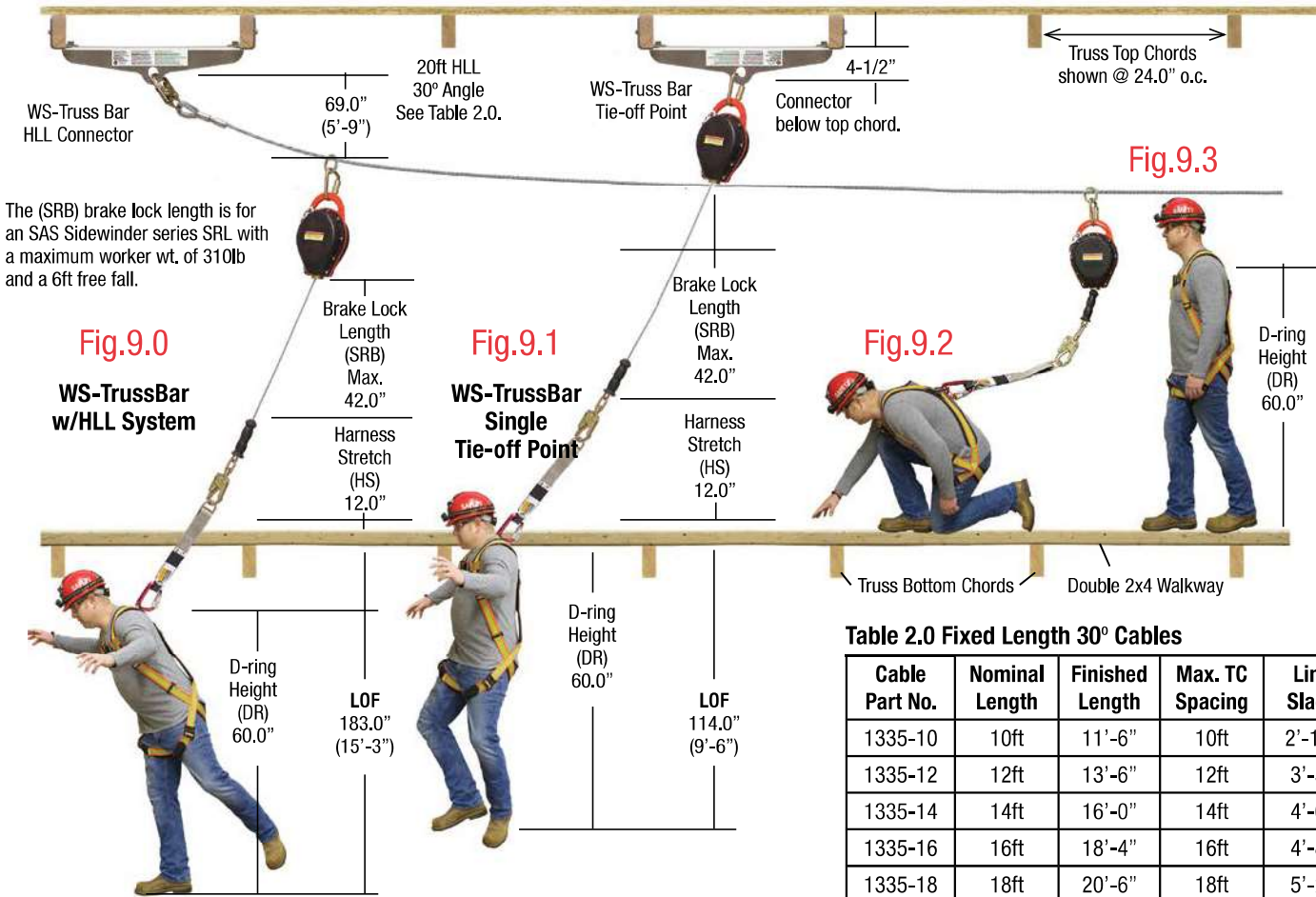
***Plunge Fall:** Minor degree of angle and parallel from the SRL connection point straight through open framing. No significant swing fall. See **Figs. 9.0-9.1**.

***Swing Fall:** A fall that occurs when the tie-off point is directly overhead and the worker has moved a short length perpendicular or parallel to the tie-off point. See **Figs. 11.0-12.0**.

***Compound Swing Fall (CSF):** A fall that occurs at an angle perpendicular to the tie-off point above. See **Figs. 11.0-12.0** shown on page 3.

***X Travel:** The distance the SRL cable slides along the bottom chord toward the tie-off point center of gravity. See **Figs. 11.1-11.2**.

**SAS definitions used for this manual.*



Sample Plan "A" Fig.9.0
Calculate Length of Plunge Fall (LOF)
 SLR line and lanyard are in tension, no slack.

- 69.0" HLL angle
- 0" Service Length (SL)
- 42.0" Maximum Brake Lock Length (SRB)
- 12.0" Harness Stretch (HS)
- 60.0" D-ring height (DR) above the work surface

Sample Plan "B" Fig.9.1
SRL Attached to WS-Bar Connector Hole
Calculate Length of Plunge Fall (LOF)
 SLR line and lanyard are in tension, no slack.

- No HLL System
- 0" Service Length (SL)
- 42.0" Maximum Brake Lock Length (SRB)
- 12.0" Harness Stretch (HS)
- 60.0" D-ring height (DR) above the work surface

Calculating the Length of Fall (LOF)

Sample plans "A" and "B" shown at **Figs. 9.0-9.1** illustrate the length of a plunge fall where there is a minimal amount of travel perpendicular or at an angle from the tie-off point above. See **Fig.9.4**. Traveling more than 4-6ft away from the tie-off point above may result in damage to the framing when the SRL cable comes in contact with a bottom chord, adding to the **LOF**.

Sample Plan "A" Horizontal Lifeline System (HLLS)

Single HLL: Maximum 2 persons.

2 or More HLL in Series: 2 persons 1 leg or 1 person each leg. That means when HLL's are rigged in series, no more than 2 persons may be attached to a single leg at any time. A horizontal line is required to be installed at a 30° angle or optional 5° angle when used with metallic energy absorber No.1059-A. Using a 20ft HLL at a 30° will add 69" to the distance between the WS-Truss Barr connector and the work surface. See **Fig.9.0** and **Table 2.0**. When a worker travels along the HLL, tension in the SRL cable will confine the fall between the bottom chord spacing and will take up any line slack in the HLL. If the entire system is in tension, the line slack will be reduced significantly. **Sample Plan "B"**: The WS-TrussBar is used as a single anchor point, eliminating the HLL line slack and reducing the **LOF**.

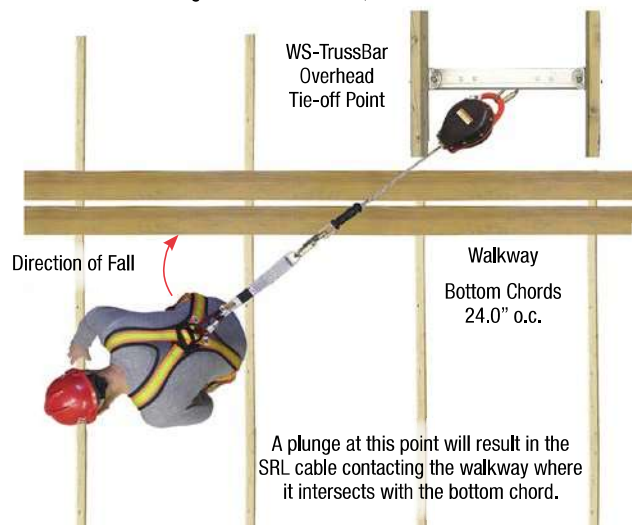
Table 2.0 Fixed Length 30° Cables

Cable Part No.	Nominal Length	Finished Length	Max. TC Spacing	Line Slack
1335-10	10ft	11'-6"	10ft	2'-10"
1335-12	12ft	13'-6"	12ft	3'-5"
1335-14	14ft	16'-0"	14ft	4'-0"
1335-16	16ft	18'-4"	16ft	4'-8"
1335-18	18ft	20'-6"	18ft	5'-2"
1335-20	20ft	23'-0"	20ft	5'-9"

Note: Finished length measured from connector ends.

Fig.9.4

Minimum LOF Low Angle Plunge Fall
 Working near the tie-off point above reduces the swing fall to a minimum, as shown here.



***Compound Swing Fall (CSF)**

Open spaces between the framing at the work surface and angular or perpendicular travel away from the tie-off point above as shown at Figs. 11.0-12.0 will result in a CSF, a combination of a plunge fall and swing fall. **Sample plan "C":** Shown at Fig.11.1, the worker has traveled at an angle of about 7ft(84") from the tie-off point above. Shown at Fig.12.0, the tie-off point is 4-1/2ft(54") above work surface. Deduct the SRL service length of 30" (84"-54"=30") added to the LOF. *SAS term used for illustration purposes.

Horizontal Lifeline Systems: There are two primary SAS HLL systems that are compatible with the WS-TrussBar. Both require the use of SAS mfg. SRL's Sidewinder™ or TossR™ series.

- 1) Fixed length HLL No.1335 @ 30° angle max. 2 workers w/SRL's **Table 2.0**
 - 2) Fixed length HLL No.1336 @ 5° angle max. 2 workers w/SRL's **Table 3.0**
- HLLS No.1336 requires the use of SAS metallic energy absorber No.1059-A shown at Fig.10.0.

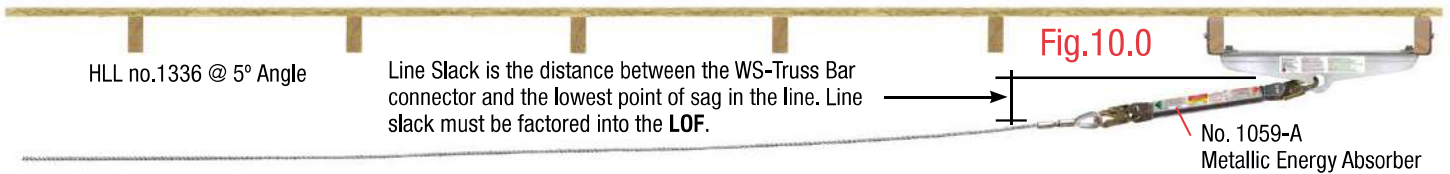


Table 3.0 No.1336 HLL System@ 5°

Cable Part No.	Nominal Length	Finished Δ Length	Max. TC Spacing	Line Slack
1336-10	10ft	96"	10ft	6.0"
1336-12	12ft	131"	12ft	7.0"
1336-14	14ft	155"	14ft	8.0"
1336-16	16ft	179"	16ft	9.0"
1336-18	18ft	203"	18ft	10.0"
1336-20	20ft	227"	20ft	11.0"

△ Requires Metallic Energy Absorber 1059-A on the "B" end to fit the truss spacing.

Using an SRL with the WS-Truss Bar

SRL's are designed for use with an overhead tie-off point as shown at Fig.12.0 and may be used at lower tie-off points or near the work surface when a fall protection plan has been engineered by a competent or qualified person. Swing falls and compound swing falls are the primary hazard when working in attic spaces over unsheathed trusses. The SRL service length, the amount of cable deployed and the angle of the cable in relation to the tie-off point increase the severity of a CSF while also increasing the LOF. Most residential top floors have a ceiling height of 8ft and many interior walls. These factors need to be included in a job specific fall protection plan.

Fig.11.0

Compound Swing Fall (CSF) Top View
Red----- lines indicate CSF pathway as it cuts through the drywall ceiling.

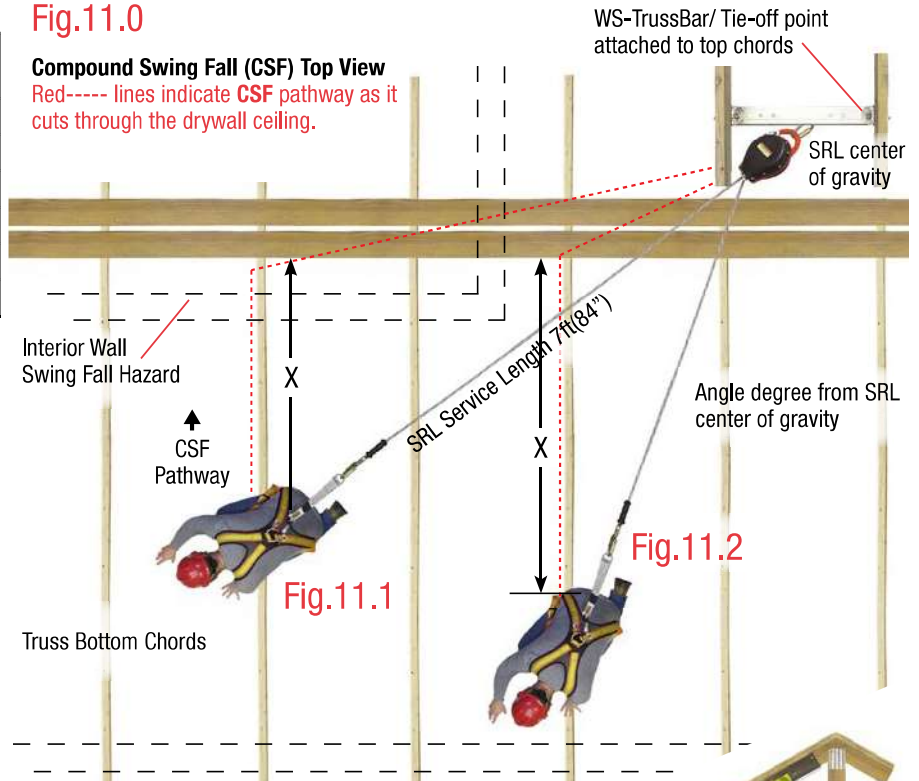


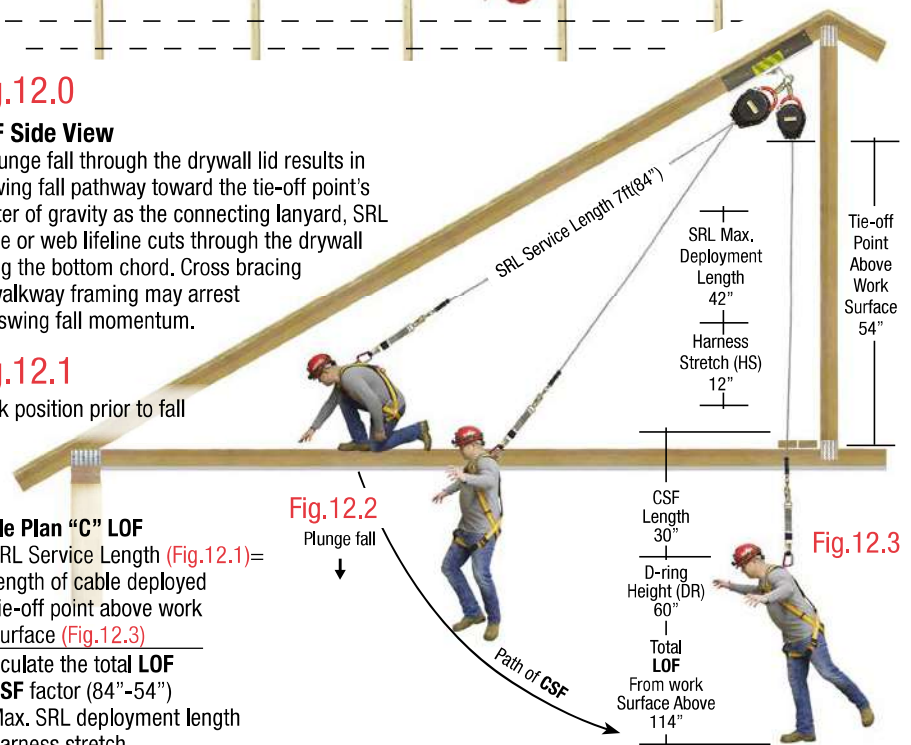
Fig.12.0

CSF Side View

A plunge fall through the drywall lid results in a swing fall pathway toward the tie-off point's center of gravity as the connecting lanyard, SRL cable or web lifeline cuts through the drywall along the bottom chord. Cross bracing or walkway framing may arrest the swing fall momentum.

Fig.12.1

Work position prior to fall



Sample Plan "C" LOF

- 84" SRL Service Length (Fig.12.1)= length of cable deployed
- 54" Tie-off point above work surface (Fig.12.3)
- To calculate the total LOF
- 30" CSF factor (84"-54")
- 42" Max. SRL deployment length
- 12" Harness stretch
- 60" D-ring height
- 114" LOF

WARNING: PROMT RESCUE!
A plan for immediate rescue is necessary to avoid serious injury, excruciating pain or death resulting from suspension trauma. Ladders strategically stationed on the floor below the work area can provide an immediate means of rescue. Use SAS S.T.E.P. 6060 suspension ladder and provide training in its use for each worker.

WARNING! Insufficient Ground Clearance!
A failure to calculate the LOF and connect PPE correctly can result in striking the ground or a lower level in the event of a fall and may cause serious injury or death.

Fig.13.0

Standard Installation
Attached to top chords.



Fig.14.0

Belay Rigging Wrong
DO NOT attach to angle web.

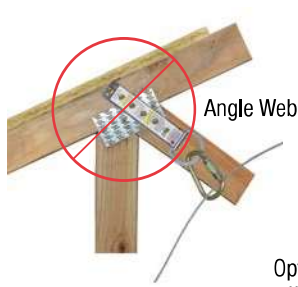


Fig.14.1

Belay Rigging Correct

RS-10
WS-Screws
Steel Carabiner
Vertical Web

Attach RS-10 or Hinge anchor to the vertical web only with 6pc WS-2.0" or 2.5" screws.

Optional WS-TrussBar attachment locations

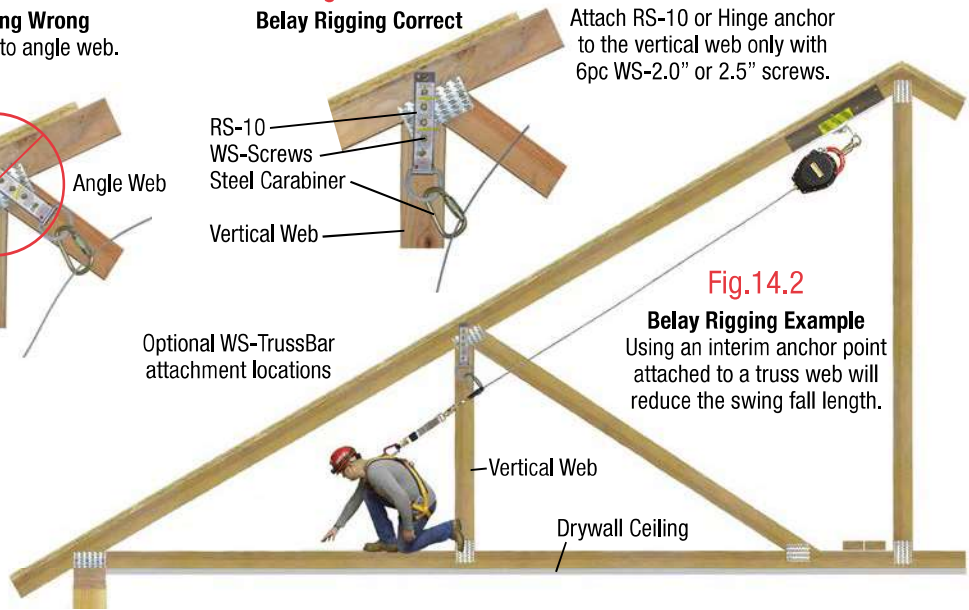


Fig.14.2

Belay Rigging Example
Using an interim anchor point attached to a truss web will reduce the swing fall length.

Compatible Connection Examples

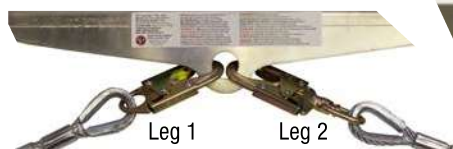
Fig.15.0

Single SRL w/Carabiner



Fig.15.1

Single or Double HLL



When 2 HLL are used in series only 2 persons may be attached to 1 leg of a HLL at one time or 1 person each leg.

Fig.15.2

Single Lifeline Only



Fig.15.3

Metallic Energy Absorber



For use with 5° HLL systems. Two absorbers may be attached to a single anchor when 2 HLL are rigged in series.

Fig.16.0

Multiple Lifelines



2 lines may be attached if they are used for relay by 1 person only.

Relay is when 1 person uses 2 lifelines or SRL's to facilitate movement without changing anchor points.

WARNING!
DO NOT allow a lifeline, lanyard, HLL or SRL cable to cross over the top of the WS-TrussBar.

Fig.16.1



Fig.16.2 Truss Chord Butt Splice

DO NOT attach the WS-TrussBar or belay anchors to chord splices.



PPE Attachments

Fig.17.0

Extender Lanyard No. 6002



Fig.17.1

Extender Lanyard No. 6002-C w/Carabiner



Fig.17.2

SRL's Sidewinder



Harness Dorsal D-Ring

Maintenance/Inspection

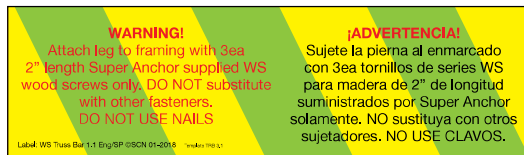
Inspect before each use and remove from service if any of the following conditions are present:

- 1 Friction washers or lock nuts are missing. Request replacement parts.
- 2 Leg Flange weld is cracked. Cross-bar or legs are damaged or deformed.
- 3 Connector hole is cracked, cut or deformed.
- 4 PID/Warning labels are missing. Request replacement labels.
- 5 5ea WS screws in each anchor leg.

DO NOT store materials or tools on top of the WS-TrussBar. Store inside when not in use. DO NOT allow the bar to come in contact with electrical lines.

Removal From Service: Dispose of in a way that prevents further use. It is recommended to cut off the connector hole and disassemble.

Product I.D (PID) and Warning Labels
Warning Label attached to each leg.



PID Label

WS Truss-Bar™ No. 2835
Material: 6mm 5052 grade Aluminum
Min. breaking strength: 5,000lb
(Resistencia mínima de rotura: 22,5kn)
Cross-Bar Bolts: 12mm X 1-1/4"-316sst
Compliance: Compliant to:
OSHA 1926.902/1918.66
ANSI Z359.1-07/1A10.32-2012
Super Anchor Safety®
Monroe, WA 98272 USA
Label WS Truss Bar 1.1 Eng/SP ©SCN 01-2018

WARNING: Before use read the instruction manual included with this anchor at time of shipping.
User Specifications: One person max wt. 340lb.
Max Free Fall Length: 6ft. Max Arrest Force: 1,800lb
PPE Attachment: Personal energy absorber required.
2 Anchors May be used for a Horizontal Lifeline System.
FASTENERS: Use S&S factory supplied WS Screws only. Do not substitute with other types. DO NOT USE NAILS.
Requires 3ea WS 2.0" length screws in each leg.
REMOVE FROM SERVICE: If anchor is subjected to a fall or other force or evidence of damage to legs or cross-bar
Framing: Attach to fully sheathed min. 2x4 top chord that is capable of withstanding 2x the max. fall arrest force.

ADVERTENCIA: Antes de usar, lea el manual de instrucciones suministrado con el envío de esta ancla.
Especificaciones para el usuario: Una persona, peso máximo 340lb.
Máxima longitud de caída libre: 6ft. Fuerza máxima de arresto: 1,800lb.
Equipo PPE: Se requiere componente de amortiguador personal.
Se pueden usar 2 anclas para el sistema de Cuerdas Salvavidas Horizontales (HLL).
SUJETADORES: Use solamente tornillos de series WS suministrados por la fábrica S&S. No sustituya con otros tipos de tornillos. NO USE clavos.
Requiere 3ea tornillos de series WS de 2.0" de longitud en cada pierna.
RETIRE DE SERVICIO: Si el ancla se somete a una caída u otra fuerza o evidencia de daño a las piernas o la barra transversal.
ENMARCADO: Sujete a la cuerda superior completamente entubada de min. 2x4 que es capaz de aguantar 2x la fuerza máxima de arresto de caída.