



SUPER ANCHOR SAFETY®

6x6 D-Plate Anchors Instruction/Specification Manual 2021

!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.

ENGLISH
VERSION

Specifications

Minimum Breaking Strength MBS: 5,000lb(22.5kN) in any direction the load is applied to the top fixture.
Proof Loading: Must not exceed 2,500lb(11.3kN).
4-1 Design Load: 1,250lb(567kg).
Service Load: 360°
Low Temperature: -30°F to +130°F

Compliance

ANSI Z359.18-2017 Type A/T / Z359.7
OSHA 1926.502
Note: Use of "qualified and competent person*" in this manual: consult OSHA definition.
Non-Specified Use: Do not proof load, use for HLL or Window Washing, D-Plates No.1038/1303/1037P

Specified Use:

PPE Anchor: 1 person max. user wt. 340lb including tools and equipment. Use for an anchorage connector designed to support a suspended component/tie-back line or an active fall protection system with a maximum free fall exposure of 6ft(1.8m). Users are required to wear current ANSI, CSA or OSHA compliant PPE including a personal energy absorber with a max. fall arrest force of 1,800lb. with the use of this anchor.
PPE Equipment: Users are required to use PPE that comply with current ANSI, OSHA or CSA standards including a full body harness (FBH), and personal energy absorber with a max. arrest force of 1,800lb.
SRL's: Self retracting lifelines must be equipped with an internal or external energy absorber.
Horizontal Lifeline (HLL): Use with SAS pre-engineered, 30° angle fixed length Horizontal Lifelines cables No.1335. See page 4, Table 2.
Hoisting or Lifting: Consult D-Plate Hoisting Addendum 1.

Compatible Connectors

Connect PPE equipment with 3,600lb gate strength snaphooks and carabiners. Do not attach more than 1 connector to the loop top. Ensure connectors are compatible before use.

Attachment Bolt Specifications

Install with 2 or 4 bolts as specified in this manual with certified 1/2"-13 grade 8, 18-8sst bolts or A-307 threaded rod. See Fig.9 for instructions to calculate attachment bolt lengths. Bolt threads must extend 1/8" past the lock nut.

Anchor Locations

Unless specified with a Job Specific Plan, the max. spacing between anchors is 8ft. HLL spacing between anchors is 10-20ft with 2ft increments shown at Table 2.

Structural Support

The anchor attachment point must be structurally capable of supporting 5,000lb or 2x the intended fall protection load per OSHA 1910.140(13). 3rd party structural engineering is available from SAS upon request. For example: 1 person w/energy absorber maximum arrest force of 1800lb x 2= 3,600lb attachment point.

Inspections/Maintenance

Inspected before and after installation to confirm anchors are free of defects. A record of annual inspections by a competent person should be maintained. SAS inspection points may be used as part of the user and building owner's maintenance plan.

D-Plate Inspection Points

- Confirm attachment bolts comply with specifications, and are tightened with lock nuts.
- If rust is present, re-coat w/zinc spray
- Inspect welds and loop tops for cracks.
- PID labels must be intact.
- Inspect Loop Top for deformation.

Warning! Anchors subjected to a free fall or other damage must be tagged to prevent further use until inspected by a qualified person. Remove from service if inspection does not pass and dispose of in a way that will prevent further use.

Table 1 Use Specifications

Use Rating	Part No.	Top Fixture		Base Plate	Type of Coating	See Fig.
		No.	Type			
PPE	1038	Forged D-Ring	Q235 Steel	Q235 Steel	Red Powder	1
	1028				HDG	5
HLL Pass-Thru	1037-PG	1091	Q235	304sst	N/A	3
	1037-PS	1091S	316sst			
WW PPE	1037	1090	Q235	Q235	HDG	2
	1037S	1090S	316sst	304sst	N/A	
SRL HLL End	1301G	1093	Q345	Q345	HDG	4
	1301S	1093S	316sst	304sst	N/A	

Fig.1

No. 1038
Red Powder Coated
Forged D-Ring
DO NOT use for HLLS



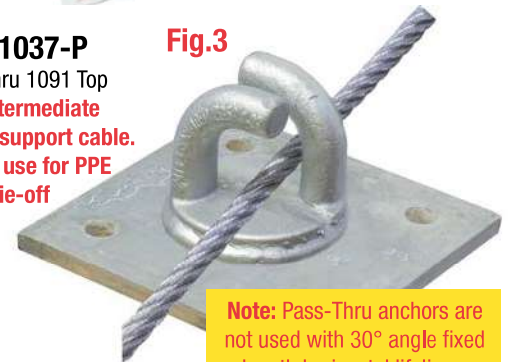
Fig.2

No. 1037
HDG Coating
No. 1090
Cast Loop Top
1-3/8" i.d.
MBS 15,000lb



Fig.3

No. 1037-P
Pass-Thru 1091 Top
HLL intermediate
anchor to support cable.
DO NOT use for PPE
Tie-off



Note: Pass-Thru anchors are not used with 30° angle fixed length horizontal lifelines.

Fig.4

No. 1301
CAL-OSHA 2.0" i.d.
Cast Loop Top
MBS 20,000lb



Fig.5

No. 1303



Swivel D-Plate
2.0" i.d. Forged
D-Ring
Rotates 360°

PID Labels

Primary Inspection	Installation
<p>Label: D-Plate 2.0" 30-200 (5000lb)</p> <p>Super Anchor Safety Monroe, WA 98272 USA 425-488-8868</p> <p>D-Plate No. 1037-G</p> <p>DOM: []</p> <p>Mfg. Date: []</p> <p>Material Specifications Loop Top: No.1090 Q235 Cast Steel 1-3/8" i.d.</p> <p>Base Plate: 6x6x3/8" Q235 Steel Finish: Hot Dip Galvanized Service Temp: -30°F / +130°F</p> <p>Min. Breaking Strength: MBS 10,000lb with load applied to loop top in any direction.</p> <p>Working Load: PPE: 4/1 max. Lifting Loads: 3/1 max. 5,000lb Specified Use: Fall protection for one person w/max user wt. of 340lb. PPE anchor point, Window Washing, Horizontal Lifeline Systems, Lifting. Warning! Max. proof load 2,500lb(1140)</p> <p>Compliance: OSHA 1926.502 ANSI Z359.18 Type A/T ANSI/MCA 1-14.1-2001</p> <p>WARNING! For installation and use consult instructions included at time of shipping. Inspect before each use and annually.</p>	<p>Label: D-Plate 2.0" 30-200 (5000lb)</p> <p>Super Anchor Safety Monroe, WA 98272 USA 425-488-8868</p> <p>Installation:</p> <p>Bolt Attached: Requires 4ea 1/2" d. grade 8 or 18-8 sst. bolts w/lock nuts.</p> <p>PPE Connectors: Use snaphooks or carabiners that comply with ANSI Z359.12 or CSA Z259.12 with 3,600lb gate strengths.</p> <p>Concrete: 1/2" wedge or epoxy bolts installed per bolt mfg. specifications.</p> <p>Field Weld: As specified in SAS D-Plate manual. Welding must be performed by a certified welder and inspected prior to use.</p> <p>Remove From Service: If subjected to a free fall, fails to pass inspections, loop top is deformed or fractured, loop top welds are cracked.</p> <p>Inspection:</p> <ul style="list-style-type: none"> • Deformed Loop Top • Cracked Base plate welds. • Wrong bolt size.
<p>Inspect</p> <p>Year: [] Month: []</p>	<p>Inspect</p> <p>Year: [] Month: []</p>

Installation Examples

D-Plate anchors are installed by bolting, field welding, concrete embedment and wedge bolt. DO NOT use screws or fasteners not specified in this manual. The loop top orientation should be in the direction of the service load and may be installed skewed when used for single person PPE. Where specified, anchors may be attached with a 2-bolt pattern*.

*D-Plate anchors used as HLL end anchors require a 4-bolt pattern.

Fig.6

Min. 3/4" Plywood Substrate

Center base plate over top chord and attach with 4-bolt pattern only. DO NOT install onto OSB.

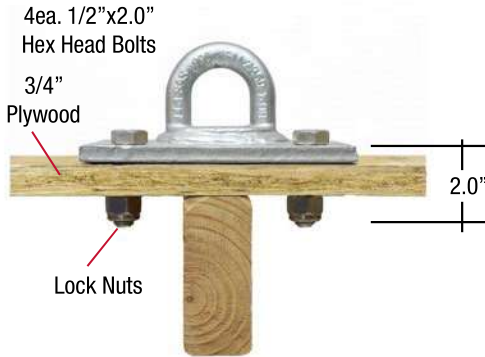


Fig.7

OSB/Plywood Substrates

OSB of any thickness and plywood less than 3/4": install using 2-bolt pattern with base and backer plates centered over the top chord.

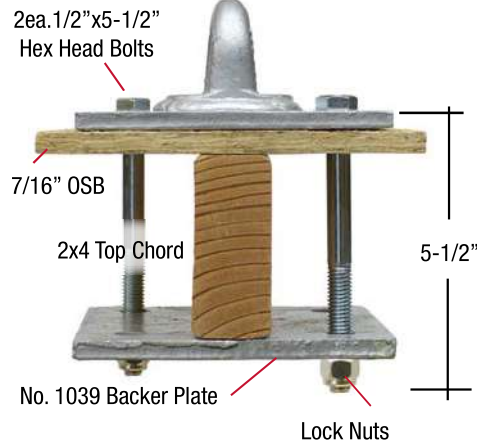
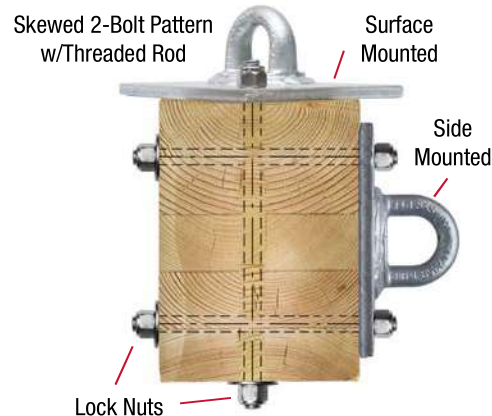


Fig.8

Bolt-Thru Wood Beams/Glu-Lams

Install onto the top, side or bottom of the beam w/2 bolts. For narrow beams, the base plate may be installed skewed.



Loop Top Orientation

Loop tops should be oriented in the direction of the service load.

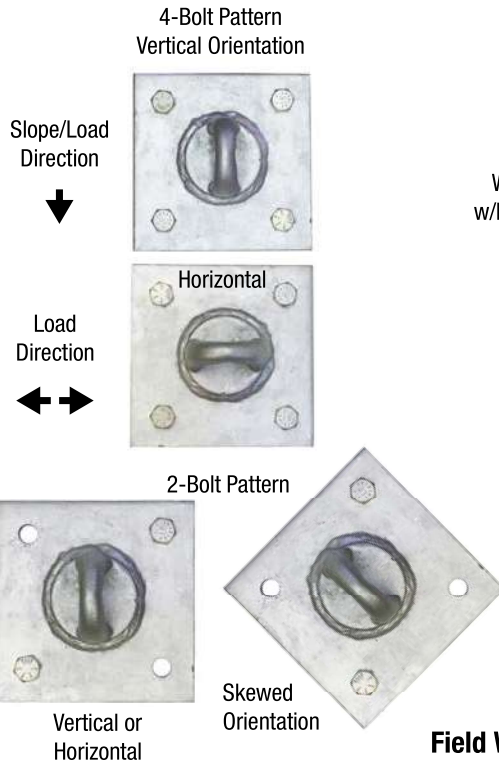


Fig.10

Wood Screws/Lag Bolts

Requires 4-bolt pattern. Flat washers are required for WS and 7/16" lag bolts. Lag bolts require full depth pilot holes.

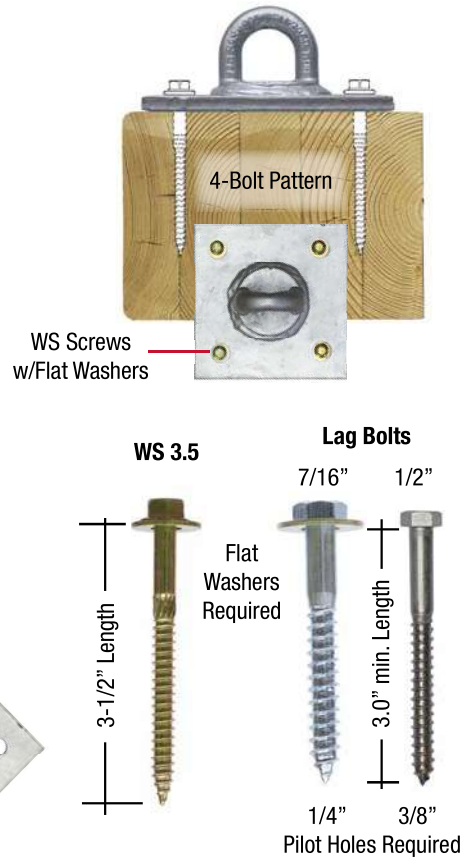
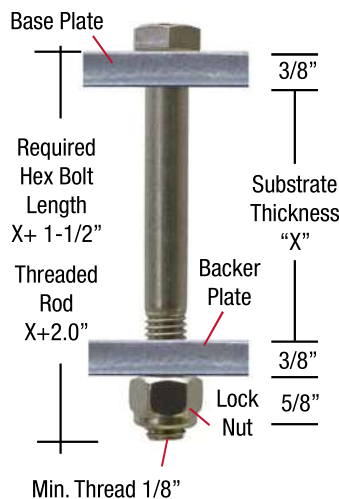


Fig.9

Bolt Length Calculation

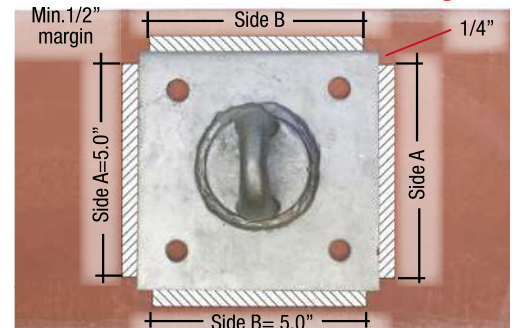
Example: add 1-1/2" to the "X" substrate thickness. Add 1/8" for flat washers.



Field Welded to Structural Steel

Welding must be performed by a certified welder and inspected by a qualified person* prior to use. 6x6 D-Plates require a min. weld length of 5" for sides A or sides B for a 10" total weld length. Narrow flange beams less than 5" wide will require Top and underside welds to =10" total length. See example 11.1.

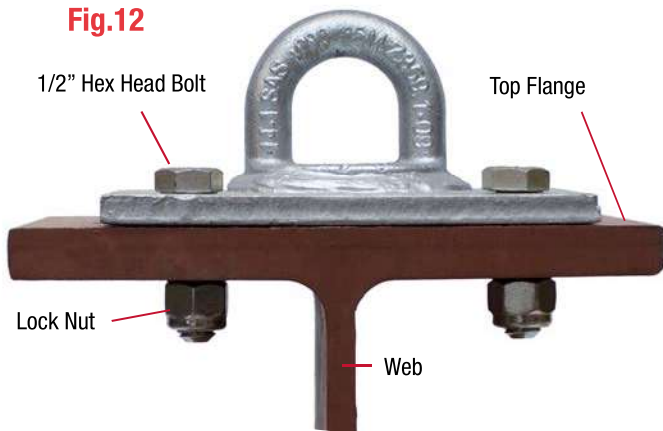
Wide Flange Beam 5.0" Weld (Sides A or B) **Fig.11**



Narrow Flange Beam **Fig.11.1**



Fig.12



Structural Steel Bolt Attached

Bolt holes should be a min. of 1.0" from any edge. Center base plate over beam web and attach to top or bottom flange or web. Consult project engineer before drilling bolt holes.

Fig.12.1

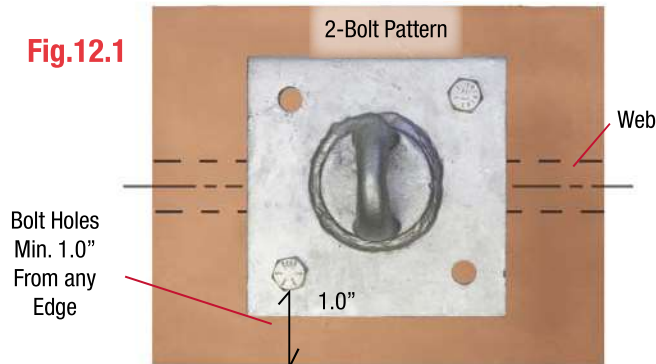
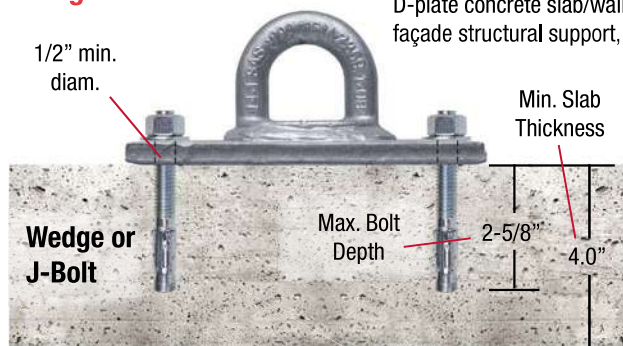


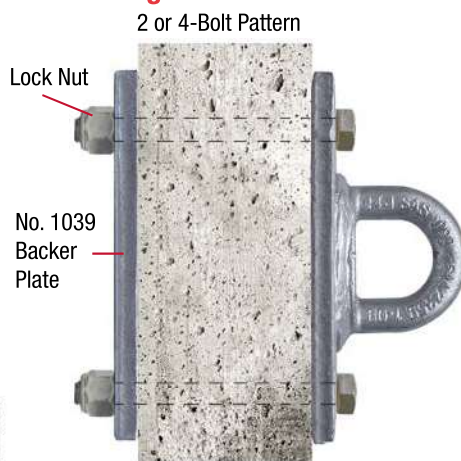
Fig.13



Concrete Installations

D-plate concrete slab/wall installations used for horizontal lifelines, work positioning, window washing or façade structural support, must be specified by the project architect, engineer or 3rd party engineering.

Fig.13.1



Concrete Specifications

Embedment or wedge bolt installations require a min. 2500 psi and a slab thickness of 4.0". Concrete must be cured sufficiently to support the fall protection load prior to use.

Bolt-Thru w/Backer Plate

- Slab thickness less than 4.0"
- HLL end anchors require 4-bolt attachment.

Install with No.1039 backer plate

Fig.13.2



Model 1037 shown use for Single Person PPE only.

2-Bolt Installations/Vertical Walls

Any model D-Plate may be installed with the loop top orientation horizontal, skewed or vertical as shown at Fig.13.2. Use only for single person PPE. Not rated for window washing or HLL end anchors. Skewed installation provides a higher degree of waterproofing by eliminating a horizontal edge and does not affect the use of PPE connectors. **Waterproofing:** apply project specified caulking to all edges of the base and backer plate.

CMU Block Walls

Install D-plates for fall protection or façade structural support using thru-bolt as shown at Fig.14.2 or J-bolt embedment. Installations for 2 or 4-bolt pattern require project specific engineering with rebar and grout. Grout filling must be sufficiently cured to support the intended load prior to use. Anchors may be centered over the block cavity as shown at Fig.14 or over the center web shown at Fig.14.1. Block example is 8x8x16.

Retro-Fit Existing Walls

Existing CMU walls that are structurally capable of supporting anchorage devices can be retro-fitted using thru-bolts with backer plates. Rebar and grout not shown in the example.

Fig.14

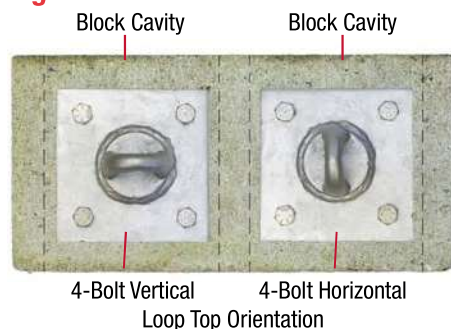
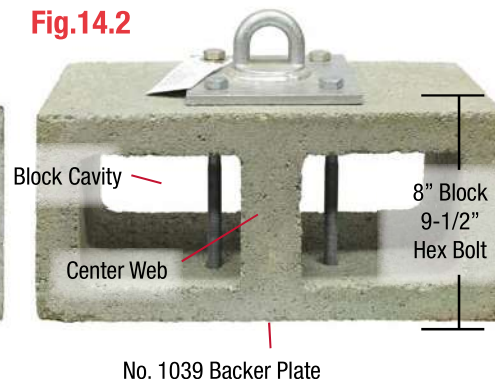


Fig.14.1



Fig.14.2



Type B Metal Decking

Requires a 4-bolt pattern installation. Center bolt holes over top flute. Install w/flat washers and lock nuts. Use any model 6x6 D-plate anchor.

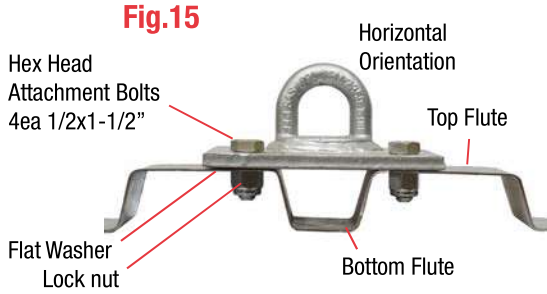


Fig.15.1



Fig.16

DO NOT use nails to attach a D-Plate Anchor.



Horizontal Lifeline Systems (HLLS) w/D-Plate Anchors

The number of workers attached to a single or multiple leg HLL without a Job Specific Plan (JSP) are specified in Tables 3 and 4 and are based on SAS pre-engineered cable lengths. User specifications may be varied when engineered by a qualified or competent person* using SAS components.

Temporary Installations

The HLL examples shown here are intended for temporary use only and must be installed perpendicular to the slope. End anchors must be a min. of 6ft from any gable, eave edge or fall hazard. Consult SAS D-Plate HLL Rigging manual for permanent installation specifications.

Fig.17

HLL 30° Angle: Spacing Between Anchors 20ft Max.

Min. 6ft. Gable Edge/Free Fall Hazard

Slope ↓

30° Angle

HLL's rigged without an integral energy absorber are required to sag at a 30° angle as shown at Figs. 17-18. SAS pre-engineered cables in Table 2 are compatible with all 6x6 base plate anchors**. Always use the specified cable length for the anchor spacing. **Do not use with D-Plate No. 1038.

PPE Connector Rings

D-Plate No. 1037 Vertical Orientation 4-Bolt Pattern

Cable Part No.	Nominal Length	Finished Δ Length	Max. Loop Top Spacing	No. Users per/leg
1335-10	10ft	11'-6"	10ft	2 Persons Fall Arrest or
1335-12	12ft	13'-6"	12ft	
1335-14	14ft	16'	14ft	3 Persons Fall Restraint
1335-16	16ft	18'-4"	16ft	
1335-18	18ft	20'-6"	18ft	
1335-20	20ft	23'	20ft	

Δ Finished length measured Snaphook to Snaphook

	Plan A	Plan B	Plan C
Max Workers:			
Fall Arrest:	2 persons	1 person	None
Fall Restraint:	None	2 persons	3 persons

Fig.18 Multiple Leg HLL

Min. 6ft. Gable Edge/Free Fall Hazard

Leg 1 Max. Spacing 20ft

Leg 2 Max. Spacing 20ft

Leg 3

End Anchor

Intermediate Anchors

Slope ↓

30° Angle

D-Plate No. 1037 Horizontal Orientation 4-Bolt Pattern

Installation

Multiple HLL legs are installed in series using intermediate anchors. End anchors must be a min. of 6ft from any gable, eave edge or fall hazard. The number of workers attached to each leg at the same time is specified in Table 4.

	Leg 1	Leg 2	Leg 3
Fall Arrest or	1	1	1
Fall Restraint	2	2	2

Fig.19 Permanent HLLS

Consult SAS D-Plate Rigging Manual and D-Plate2 Manual for permanent HLLS specifications. Permanent HLL's are engineered with integral metallic energy absorbers, turnbuckles and Pass-Thru anchors. Example:

