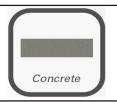


# *V-Line*

## **Vertical Lifeline**

## **Installation and Use**







|   | Figure 1     |                    |                    |                  |
|---|--------------|--------------------|--------------------|------------------|
| Total and total | PRODUCT CODE | SHUTTLE MATERIAL   | KARABINER MATERIAL | KARABINER ACTION |
|   | VLINESHUT001 | Stainless<br>steel | Steel              | Double<br>action |



## 1 Warning

- Improper Use, Installation or Maintenance may result in serious injury or death.
- The building or structure for the anchorages and Lifelines should be assessed by an engineer to ensure that the structure is adequate for V-Line installation works.
- ▲ SafetyLink's Height Safety Systems must only be installed as per our installation guides, to structures as specified in the installation manual for each product.
- All safety procedures must be complied with in accordance with the current safety code(s) of practice(s) for working at heights in your region. Ensure safety at all times by being attached to suitable anchor points and approved safety equipment or approved scaffolding.
- Installation is to be carried out by, or under the supervision of, a competent person.
- A personal energy absorber or a fall-arrest device with a personal energy absorber must be used in conjunction with all SafetyLink Anchorages and Lifeline systems.
- ⚠ Do not carry out any modifications on this system without written permission by SafetyLink Pty Ltd.

## 2 Specification

## 2.1 Description

The SafetyLink V-Line is a Vertical Lifeline suitable for use as part of a personal fall protection system. The V-Line offers a Vertical Lifeline with one or multiple shuttles for users to attach with. The V-Line allows users to climb a vertical structure or ladder along a permanently mounted safety cable system.

#### 2.2 Standard

The V-Line Vertical Lifeline System is compliant with AS/NZS 1891.3, EN353.1.

#### 2.3 User Rating

The V-Line Vertical Lifeline is rated for up to 4 users per system with a maximum user weight of 150kg and a minimum of 50kg.

## 2.4 Material Specification and Components

| Figure 2     |                |  |  |  |  |
|--------------|----------------|--|--|--|--|
| TOP BRACKET  | BOTTOM BRACKET |  |  |  |  |
|              |                |  |  |  |  |
| VLINE.TOP.PM | VLINE.BTM.PM   |  |  |  |  |

|              | Figui   | re 3  |
|--------------|---|-------|
| PRODUCT CODE |   |       |
| MATERIAL     | Stainless Steel 316   | GO CO |
| DESCRIPTION  | Top and Bottom bracket without structural fixing brackets                       |       |
| PRODUCT CODE | VLINE003  | 8     |
| MATERIAL     | Stainless Steel 316   | 5/0   |
| DESCRIPTION  | Top and Bottom bracket with structural fixing brackets for welding to structure |       |

| PRODUCT CODE | VLINE004   |                |
|--------------|--|----------------|
| MATERIAL     | Stainless Steel 316 and                            |                |
|              | Galvanised Steel                                   |                |
| PRODUCT CODE |  |                |
| MATERIAL     | Stainless Steel 316                                |                |
| DESCRIPTION  | Top and Bottom bracket                             |                |
|              | with structural fixing brackets for bolting to the |                |
|              | top rung of a ladder                               |                |
|              |  |                |
|              |  |                |
| PRODUCT CODE | VI INFO05  | _              |
| MATERIAL     | Stainless Steel 316 and                            |                |
|              | Galvanised Steel                                   |                |
| PRODUCT CODE | VLINE005-SS  |                |
| MATERIAL     | Stainless Steel 316                                |                |
| DESCRIPTION  | Top and Bottom bracket                             |                |
|              | with structural fixing brackets for bolting to     |                |
|              | a ladder with 900mm                                |                |
|              | extension above the top                            |                |
|              | rung.  |                |
|              |  |                |
|              |  |                |
|              |  | <b>&amp;</b> J |
| PRODUCT CODE | VLINE012   |                |
| MATERIAL     | Stainless Steel 316 and                            |                |
|              | Galvanised Steel                                   |                |
| DESCRIPTION  | Top and Bottom bracket                             |                |
|              | with structural fixing brackets for bolting to     |                |
|              | a ladder with 1300mm                               |                |
|              | extension above the top                            |                |
|              | rung. Total length 2m.                             |                |
|              |  |                |
|              |  |                |
|              |  | \$             |
|              |  |                |
|              |  |                |
|              |  |                |
|              |  |                |
|              | <u>I</u>   |                |

| PRODUCT CODE VLINE.PLT.TOP.  PRODUCT CODE VLINE.PLT.BTM  MATERIAL Stainless Steel 316  DESCRIPTION Bottom Weld On support fixing bracket  PRODUCT CODE VLINE.PLT.TOP.POLE  MATERIAL Stainless Steel 316  DESCRIPTION Top Mono Pole Bolt On support fixing bracket  PRODUCT CODE VLINE.PLT.BTM.POLE  MATERIAL Stainless Steel 316  DESCRIPTION Bottom Mono Pole Bolt On support fixing bracket  PRODUCT CODE VLINE.PLT.TOP.POLE.EXT  MATERIAL Stainless Steel 316  DESCRIPTION Top Mono Pole Bolt On support fixing bracket with 100mm extension  PRODUCT CODE VLINE.PLT.TOP.POLE.EXT  MATERIAL Stainless Steel 316  DESCRIPTION Top Mono Pole Bolt On support fixing bracket with 100mm extension  PRODUCT CODE VLINE.PLT.BTM.POLE.EXT  MATERIAL Stainless Steel 316  DESCRIPTION Bottom Mono Pole Bolt On support fixing bracket with 100mm extension  PRODUCT CODE VLINE.PLT.BTM.POLE.EXT  MATERIAL Stainless Steel 316  DESCRIPTION Bottom Mono Pole Bolt On support fixing bracket with 100mm extension  PRODUCT CODE VLINE.POST.300  MATERIAL Galvanised Steel  DESCRIPTION Top or Bottom Timber or Steel Pole Bolt On support fixing bracket  MATERIAL Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   |              | Figui                       | re 4  |
|--|--------------|-----------------------------|---|
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| PRODUCT CODE VLINE.PLT.BTM  MATERIAL Stainless Steel 316  DESCRIPTION Bottom Weld On support fixing bracket  MATERIAL Stainless Steel 316  DESCRIPTION Top Mono Pole Bolt On support fixing bracket  PRODUCT CODE VLINE.PLT.BTM.POLE  MATERIAL Stainless Steel 316  DESCRIPTION Bottom Mono Pole Bolt On support fixing bracket  PRODUCT CODE VLINE.PLT.TOP.POLE.EXT  MATERIAL Stainless Steel 316  DESCRIPTION Top Mono Pole Bolt On support fixing bracket with 100mm extension  PRODUCT CODE VLINE.PLT.BTM.POLE.EXT  MATERIAL Stainless Steel 316  DESCRIPTION Stainless Steel 316  DESCRIPTION Bottom Mono Pole Bolt On support fixing bracket with 100mm extension  PRODUCT CODE VLINE.PLT.BTM.POLE.EXT  MATERIAL Stainless Steel 316  DESCRIPTION Support fixing bracket with 100mm extension  PRODUCT CODE VLINE.POST.300  MATERIAL Galvanised Steel  DESCRIPTION Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   | MATERIAL     | Stainless Steel 316         |   |
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| PRODUCT CODE   VLINE.PLT.TOP.POLE   Stainless Steel 316   DESCRIPTION   Top Mono Pole Bolt On support fixing bracket   Stainless Steel 316   DESCRIPTION   Bottom Mono Pole Bolt On support fixing bracket   DESCRIPTION   Top Mono Pole Bolt On support fixing bracket with 100mm extension   DESCRIPTION   Top Mono Pole Bolt On support fixing bracket with 100mm extension   DESCRIPTION   Stainless Steel 316   DESCRIPTION   Description   Bottom Mono Pole Bolt On support fixing bracket with 100mm extension   DESCRIPTION   Bottom Mono Pole Bolt On support fixing bracket with 100mm extension   DESCRIPTION   Description   Description   Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   Description   Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   Description   Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   Description   Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   Description   Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   Description   Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   Description   Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   Description   Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   Description   Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   Description   Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   Description   Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   Description   Description   Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   Description   Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   Description   Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   Description   Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   Description   Des | MATERIAL     | Stainless Steel 316         |   |
| MATERIAL  DESCRIPTION  Top Mono Pole Bolt On support fixing bracket  PRODUCT CODE VLINE.PLT.BTM.POLE  MATERIAL  DESCRIPTION  Bottom Mono Pole Bolt On support fixing bracket  PRODUCT CODE VLINE.PLT.TOP.POLE.EXT  MATERIAL  DESCRIPTION  Top Mono Pole Bolt On support fixing bracket with 100mm extension  PRODUCT CODE  VLINE.PLT.BTM.POLE.EXT  MATERIAL  DESCRIPTION  Stainless Steel 316  DESCRIPTION  DESCRIPTION  Bottom Mono Pole Bolt On support fixing bracket with 100mm extension  PRODUCT CODE  VLINE.PLT.BTM.POLE.EXT  MATERIAL  DESCRIPTION  Bottom Mono Pole Bolt On support fixing bracket with 100mm extension  PRODUCT CODE  VLINE.POST.300  MATERIAL  Galvanised Steel  DESCRIPTION  Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   | DESCRIPTION  |                             | Settler in Italian in |
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| PRODUCT CODE VLINE.PLT.TOP.POLE.EXT  MATERIAL Stainless Steel 316  DESCRIPTION Top Mono Pole Bolt On support fixing bracket with 100mm extension  PRODUCT CODE VLINE.PLT.BTM.POLE.EXT  MATERIAL Stainless Steel 316  DESCRIPTION Bottom Mono Pole Bolt On support fixing bracket with 100mm extension  PRODUCT CODE VLINE.POST.300  MATERIAL Galvanised Steel  DESCRIPTION Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   | MATERIAL     | Stainless Steel 316         |   |
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| PRODUCT CODE VLINE.PLT.BTM.POLE.EXT  MATERIAL Stainless Steel 316  DESCRIPTION Bottom Mono Pole Bolt On support fixing bracket with 100mm extension  PRODUCT CODE VLINE.POST.300  MATERIAL Galvanised Steel  DESCRIPTION Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   | MATERIAL     | Stainless Steel 316         | <b>//</b>   |
| MATERIAL Stainless Steel 316  DESCRIPTION Bottom Mono Pole Bolt On support fixing bracket with 100mm extension  PRODUCT CODE VLINE.POST.300  MATERIAL Galvanised Steel  DESCRIPTION Top or Bottom Timber or Steel Pole Bolt On support fixing bracket  | DESCRIPTION  | support fixing bracket with |   |
| DESCRIPTION  Bottom Mono Pole Bolt On support fixing bracket with 100mm extension  PRODUCT CODE VLINE.POST.300  MATERIAL Galvanised Steel  DESCRIPTION Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   | PRODUCT CODE | VLINE.PLT.BTM.POLE.EXT      |   |
| PRODUCT CODE VLINE.POST.300  MATERIAL Galvanised Steel  DESCRIPTION Top or Bottom Timber or Steel Pole Bolt On support fixing bracket  | MATERIAL     | Stainless Steel 316         | ACO)  |
| MATERIAL Galvanised Steel  DESCRIPTION Top or Bottom Timber or Steel Pole Bolt On support fixing bracket   | DESCRIPTION  | support fixing bracket with |   |
| DESCRIPTION Top or Bottom Timber or Steel Pole Bolt On support fixing bracket  | PRODUCT CODE | VLINE.POST.300              |   |
| Steel Pole Bolt On support fixing bracket  | MATERIAL     | Galvanised Steel            | / /   |
|  | DESCRIPTION  | Steel Pole Bolt On support  |   |

|              | Figui   | re 5        |
|--------------|---|-------------|
| PRODUCT CODE |   |             |
| MATERIAL     | Galvanised Steel and<br>Rubber                                |             |
| DESCRIPTION  | Straight ladder rung mounted cable guide                      |             |
| PRODUCT CODE | VLINEGDE003   |             |
| MATERIAL     | Galvanised Steel and<br>Rubber                                |             |
| DESCRIPTION  | 90 Degree ladder rung mounted cable guide                     |             |
| PRODUCT CODE | VLINEGDE002   |             |
| MATERIAL     | Galvanised Steel and<br>Rubber                                |             |
| DESCRIPTION  | Straight bolt on cable guide                                  |             |
| PRODUCT CODE | VLINEGDE001   |             |
| MATERIAL     | Galvanised Steel and<br>Rubber                                |             |
| DESCRIPTION  | 90 Degree bolt on cable guide                                 |             |
| PRODUCT CODE | VLINE.PLT.CG  |             |
| MATERIAL     | Galvanised Steel  | <i>/</i> /\ |
| DESCRIPTION  | Bolt on cable guide pole mounting bracket                     |             |
|              | VLINE.PLT.CG.EXT  |             |
| MATERIAL     | Galvanised Steel  | //_>        |
| DESCRIPTION  | Bolt on cable guide pole mounting bracket for 100mm extension |             |
|              | I   |             |

|              | Figu  | re 6 |
|--------------|---|------|
| PRODUCT CODE | VLINE.CABLE.SG.XXX  |      |
| MATERIAL     | Stainless Steel 316   |      |
| DESCRIPTION  | Swaged cable with straight cable guides (XXX = length in metres)  |      |
| PRODUCT CODE | VLINE.CABLE.AG.XXX  | (P   |
| MATERIAL     | Stainless Steel 316   |      |
| DESCRIPTION  | Swaged cable with 90 degree cable guides (XXX = length in metres) |      |
| PRODUCT CODE | VLINE.CABLE.XXX   | Ca   |
| MATERIAL     | Stainless Steel 316   |      |
| DESCRIPTION  | Swaged cable without cable guides (XXX = length in metres)        |      |

## 3 Installation

## 3.1 System Design

#### 3.1.1 General

Systems shall be designed to limit free fall, swing fall and maximise fall clearance. Where possible, systems should be installed as close to the centre of the ladder or climbing zone as possible.

The V-Line Vertical Lifeline shall be installed on an angle no greater than 15° off vertical.

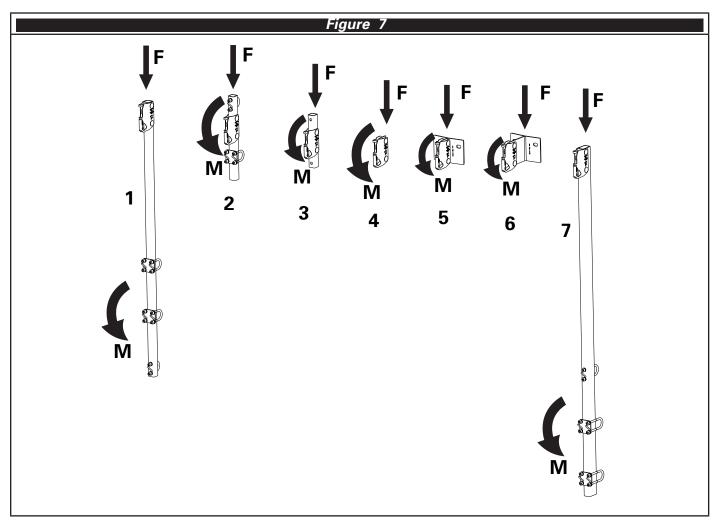
## 3.1.2 System Selection

To install a V-Line Vertical Lifeline, top and bottom brackets, support fixings, cable guides and cables need to be selected from Figure 2 to Figure 6.

## 3.1.3 Structure Capacity

The supporting structure and fixings used shall be capable of sustaining the load cases in Figure 7 and Figure 8 where applicable.

- All load cases shall be considered by a trained engineer.
- ⚠ The below cases represent the standard installation configurations, specific installations may require additional load case investigation.



| Figure 8 |        |                |        |         |        |         |        |       |
|----------|--------|----------------|--------|---------|--------|---------|--------|-------|
| SYSTEM   | 1 U    | 1 USER 2 USERS |        | 3 USERS |        | 4 USERS |        |       |
|          | F (kN) | M              | F (kN) | M       | F (kN) | M       | F (kN) | M     |
|          |        | (kNm)          |        | (kNm)   |        | (kNm)   |        | (kNm) |
| 1        | 15     | 1.125          | 15     | 1.125   | 18     | 1.35    | 22     | 1.65  |
| 2        | 15     | 1.125          | 15     | 1.125   | 18     | 1.35    | 22     | 1.65  |
| 3        | 15     | 1.125          | 15     | 1.125   | 18     | 1.35    | 22     | 1.65  |
| 4        | 15     | 1.125          | 15     | 1.125   | 18     | 1.35    | 22     | 1.65  |
| 5        | 15     | 1.125          | 15     | 1.125   | 18     | 1.35    | 22     | 1.65  |
| 6        | 15     | 2.25           | 15     | 2.25    | 18     | 2.7     | 22     | 3.3   |
| 7        | 15     | 1.575          | 15     | 1.575   | 18     | 1.89    | 22     | 2.31  |

#### 3.1.4 Cable Guide Spacing

Cable guides shall be space no greater than 8m apart.

#### 3.2 Fixings

#### 3.2.1 General

All fixing used to attached the V-Line system to the substrate that were not supplied by SafetyLink shall be M12 (1/2") or M16 (5/8") in diameter. Fixing shall be stainless steel grade 316 or 304 or hot dip galvanised or zinc plated steel grades 8.8 or 8. Fixing shall be installed with spring washers, lock nuts or thread lock adhesive to prevent loosening.

## SafetyLink does not recommended the use of zinc plated fasteners in a corrosive or outdoor environment.

#### 3.2.2 Concrete - DonutLink

SafetyLink's DonutLink M12 Concrete Stud CON-M12X160-DONUT or M16 Concrete Stud CON-M16X160-DONUT are to be installed with chemical adhesive CON-CHEM-FISV.300.

- 1 Mark the location for the hole.
- The location shall be no less than 150mm from any edge.
- Minimum concrete thickness shall be no less than 150mm.
- The stud shall only be installed in concrete 32MPa or greater.
- Consult a structural engineer if there is any doubt of the suitability of the structure.
  - 2 Set the drill depth and diameter hole for the desired stud.
  - 3 Clean the hole, ensuring it is free of moisture and dust.
  - 4 Inject the adhesive in to the hole as per the manufacturer's instruction.
  - 5 Insert the stud to full depth, 35mm of the stud should remain above the surface. Wipe away any adhesive expelled from the hole.

#### Ensure enough adhesive was used, the adhesive should finish flush with the concrete.

6 Once the adhesive is cured, install the spring washer and tighten the Donut to 70Nm.

The DonutLink can be proof loaded with the Pull Test Adaptor (DONUTLINK-ADP) and a Hydrajaws portable tension tester.

#### 3.2.3 Concrete 3rd Party

In addition to the part numbers specified in Section 3.2.2, SafetyLink recommends the use of the following chemical and mechanical fixings for installation of the V-Line Vertical Lifeline into concrete. Refer to the manufacturer's instruction for proper preparation, installation and edge distance.

- All fixing shall meet the load requirements specified in Section 3.1.3. Consult the manufacturer for limitations to assess suitability.
- a Fischer FISH.300 (chemical)
- b Hilti RE 200 (chemical)
- c Hilti RE 500 (chemical)
- d Fischer FAZ II (mechanical)
- e Hilti HST3 (mechanical)
- All chemical and mechanical fixing shall be proof loaded after install as per AS/NZS 1891.4 or the appropriate local regulation.

#### 3.2.4 Steel

For installation on a steel structure, SafetyLink recommends the use of appropriate hex head screws or bolts meeting the requirements of section 3.2.1. Fixing shall be tightened to 70Nm and once tight, a minimum of 2 threads shall extend past the end of the nut.

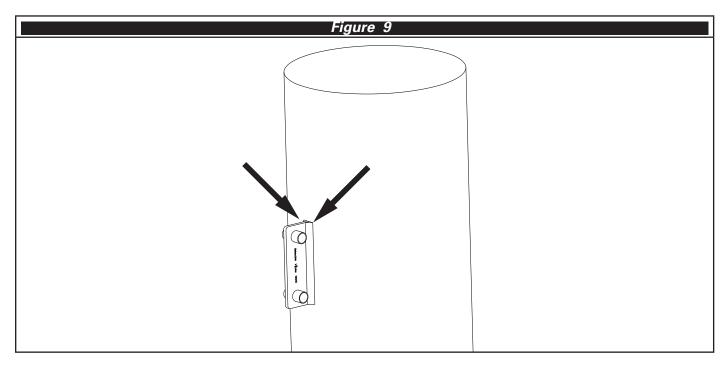
#### 3.2.5 Timber

For installation on a timber structure, SafetyLink recommends the use of appropriate hex head screws or bolts meeting the requirements of section 3.2.1. Alternatively, for bolting through larger timbers, threaded rod and nuts may be used. Fixing shall be tightened to 70Nm and once tight, a minimum of 2 threads shall extend past the end of the nut.

## 3.3 Support Bracket Installation

## 3.3.1 Weld on Plates (top and bottom)

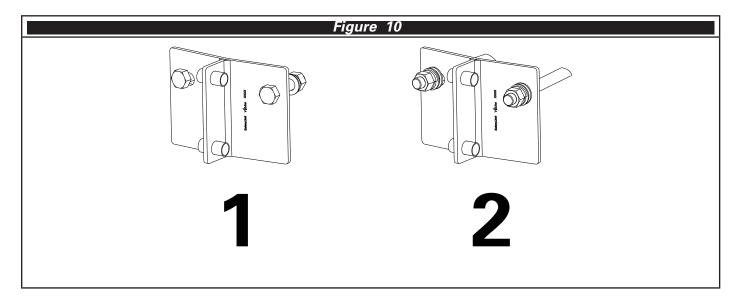
The weld on plates shall be installed with a 6mm fillet weld down each side of the plate (300mm weld per plate). The weld on plates are made from stainless steel 316, an appropriate filler material shall be used depending on the substrate to which the plate is being welded. All welding shall be done in accordance with AS 1554.



## 3.3.2 Bolt on Plates (top and bottom)

The bolt on plate top and bottom brackets are each fixed with 2x fastener specified below.

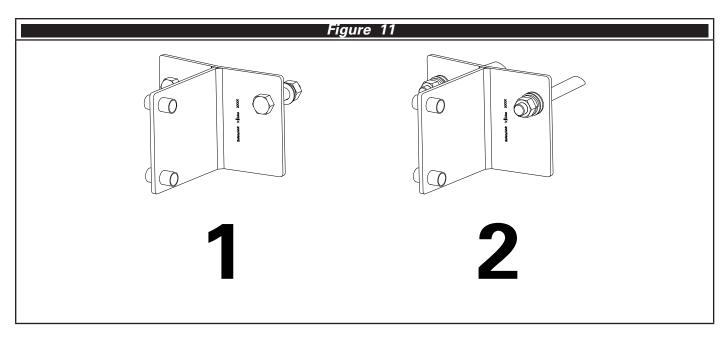
- 1 Steel M12 or M16 as per Section 3.2.4.
- 2 Concrete M16 fastener as per Section 3.2.2 (Drill size 18, embedment depth 95mm)or 3.2.3.



## 3.3.3 Bolt on Plates with 100mm Extension (top and bottom)

The bolt on plate top and bottom brackets are each fixed with 2x fastener specified below.

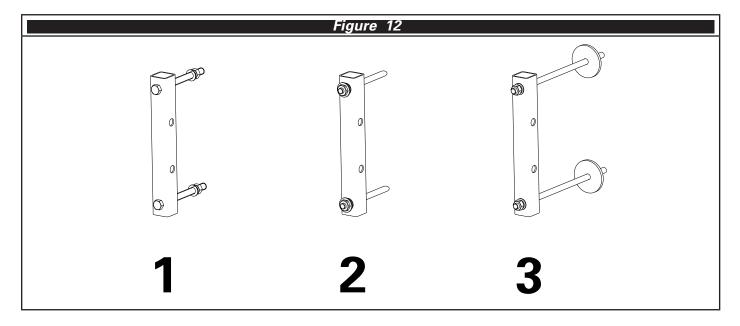
- 1 Steel M16 as per Section 3.2.4.
- 2 Concrete M16 fastener as per Section 3.2.2 (Drill size 18, embedment depth 120mm)or 3.2.3.



## 3.3.4 Bolt on Tube (top and bottom)

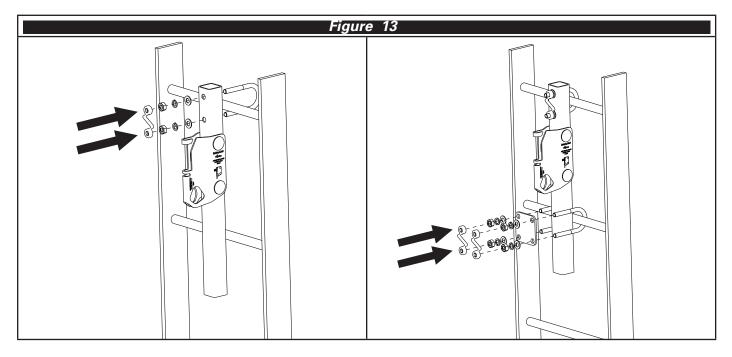
The bolt on plate top and bottom brackets are each fixed with 2x fastener specified below.

- 1 Steel M12 as per Section 3.2.4.
- 2 Concrete M12 fastener as per Section 3.2.2 (Drill size 14, embedment depth 120mm)or 3.2.3.
- 3 Timber M12 as per Section 3.2.5.



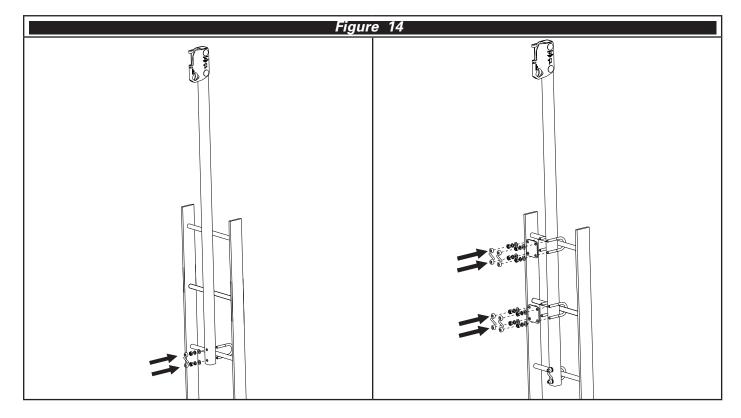
## 3.3.5 Top Bolt on Tube no extension above top rung

- 1 Position the tube with the top rung of the ladder between the top 2 holes. Install the supplied U-bolt with washers, spring washers and nuts and tighten to 35Nm and install nut tension indicators.
- 2 Align the support plate with the next appropriate run and fasten with 2x U-bolt with washers, spring washers and nuts and tighten to 35Nm and install nut tension indicators.



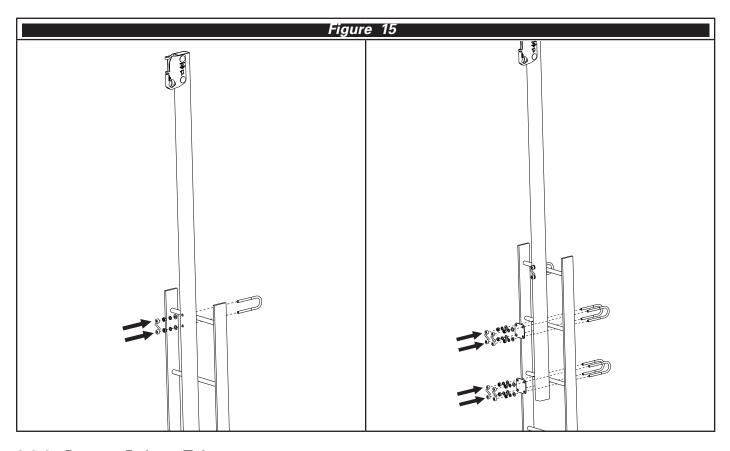
## 3.3.6 Top Bolt on Tube up to 900mm extension above top rung

- 1 Position the tube with the third rung of the ladder between the bottom 2 holes. Install the supplied U-bolt with washers, spring washers and nuts and tighten to 35Nm and nut tension indicators.
- 2 Align the support plates with the first and second rungs and fasten each with 2x U-bolt with washers, spring washers and nuts and tighten to 35Nm and install nut tension indicators.



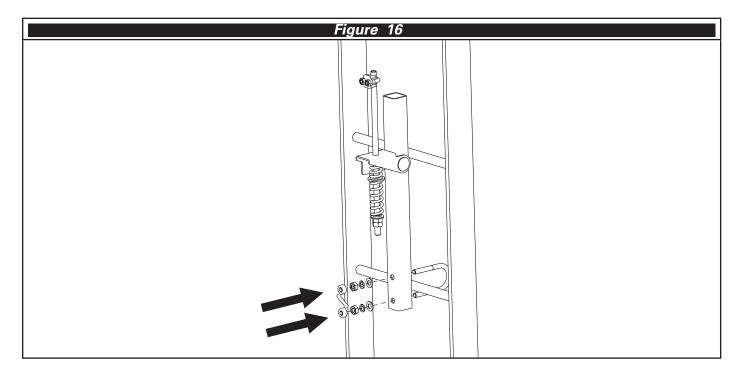
## 3.3.7 Top Bolt on Tube up to 1300mm extension above top rung

- 1 Position the tube with the top rung of the ladder between the top 2 holes. Install the supplied U-bolt with washers, spring washers and nuts and tighten to 35Nm and install nut tension indicators.
- 2 Align the support plates with the second and third rungs and fasten each with 2x U-bolt with washers, spring washers and nuts and tighten to 35Nm and install nut tension indicators.



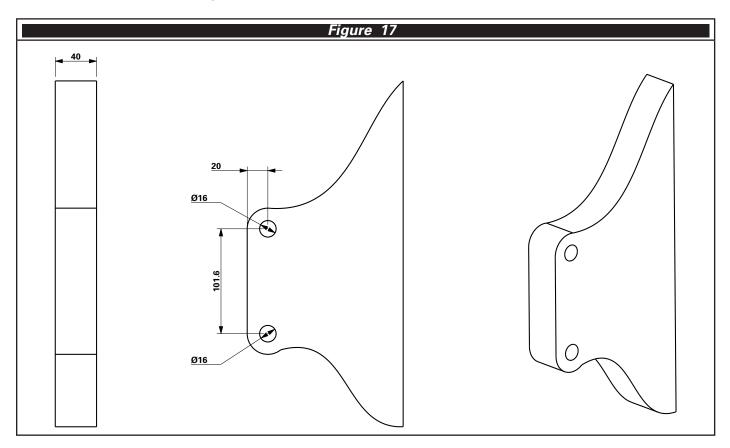
#### 3.3.8 Bottom Bolt on Tube

1 Position the tube with the bottom rung of the ladder between the bottom 2 holes. Install the supplied U-bolt with washers, spring washers and nuts and tighten to 35Nm and install nut tension indicators.



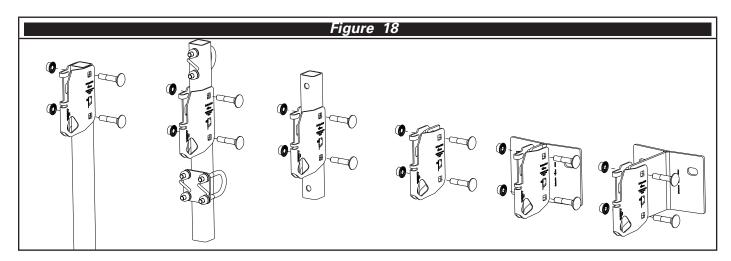
#### 3.3.9 Custom Structure

For structures being fabricated or installer manufactured brackets, hole spacings should be set at 101.6mm with a hole size of 16mm. The thickness the top and bottom brackets can span is 40±1mm. Centreline edge distance to the front of the structure shall not exceed 20mm.



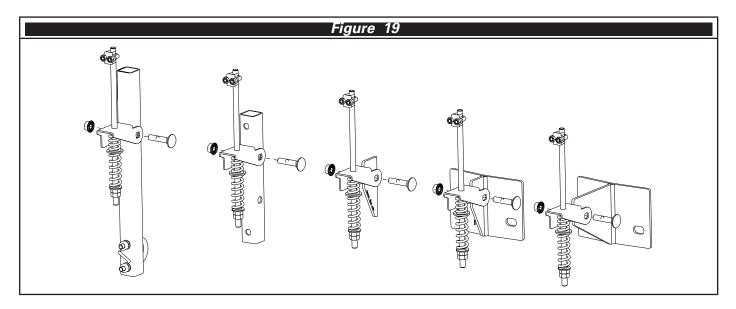
#### 3.4 Top Bracket

The top bracket is installed with 2x M12 bolts supplied with the bracket. The supplied bolts are stainless steel and suitable for securing the top bracket to any of the support brackets above. The fixings shall be tightened to 40Nm (30ftlb) and once tight, a minimum of 2 thread shall extend past the end of the nut.



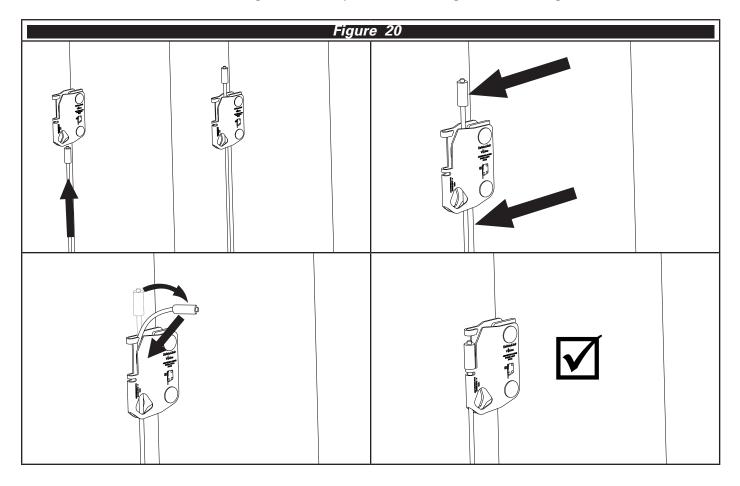
#### 3.5 Bottom Bracket

The Bottom bracket is installed with 1x M12 bolts supplied with the bracket. The supplied bolts are stainless steel and suitable for securing the top bracket to any of the support brackets. The fixing shall be tightened to 40Nm and once tight, a minimum of 2 thread shall extend past the end of the nut.



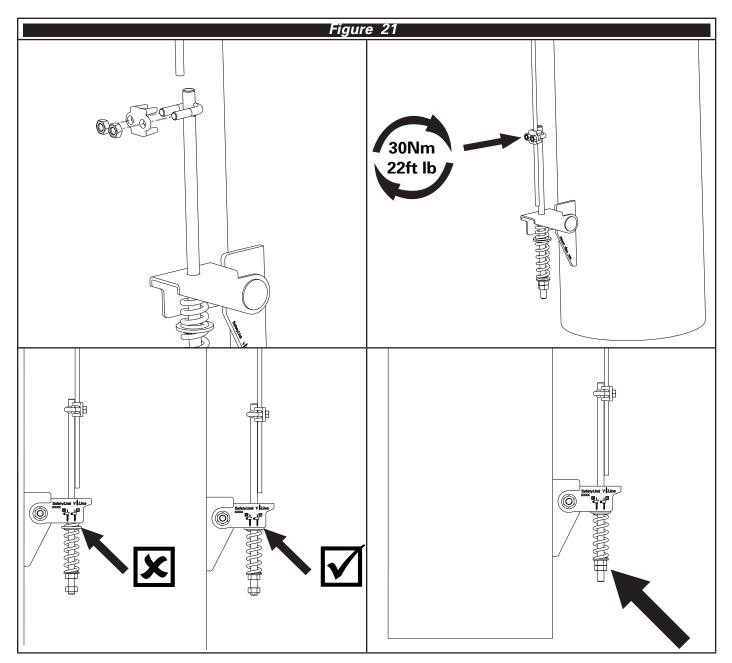
#### 3.6 Cable

- 1 From the bottom of the top bracket, slide the cable up through the top bracket until the lug extends above the top bracket.
- 2 Pull the cable forward until it clips past the spring gate.
- 3 Feed the cable down through the cable path until the lug sits on the lug seat.



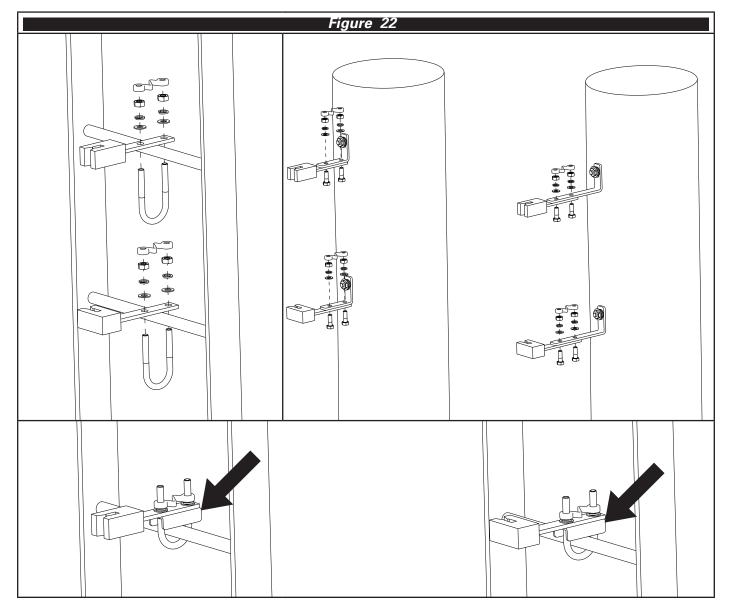
## 3.7 Tensioner

- 1 Loosen the top nuts enough to insert the cable.
- 2 Pull the cable down through the assembly and tighten the nuts to 30Nm.
- 3 Tension the cable by tightening the first nut until the washer is level with the lower edge of the bottom bracket.
- 4 Lock the tension by tightening the lock nut.



#### 3.8 Cable Guides

1 Position the cable guide with the appropriate rung of the ladder. Install the supplied U-bolt/ Hex Bolts with washers, spring washers and nuts and tighten to 35Nm and install nut tension indicators.



- On systems greater than 20m or installed in high wind areas, every other cable guide should be installed in the alternate direction (ie left facing, right facing left facing, etc.).
- ⚠ Cable guides should be installed at irregular intervals no greater than 8m to prevent cable harmonic vibration.
- **Cable guides installed on small diameter rungs shall be installed with the supplied spacer to ensure they can be tightened correctly.**

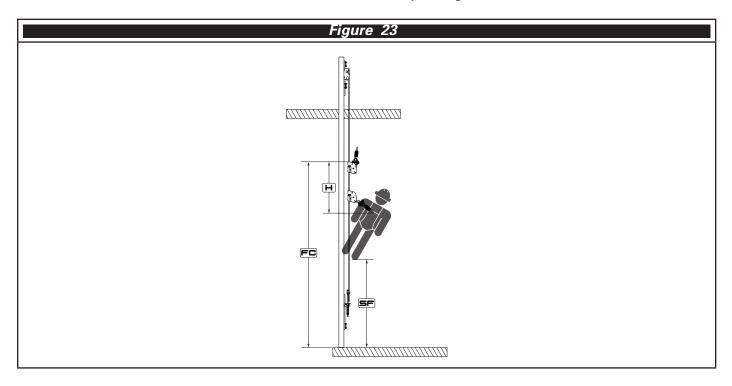
## 3.9 Cable Guide Pole Supports

The cable support brackets for pole installation can be fastened with any M12 fastener capable of supporting 200kg. Alternatively, the brackets may be welded to metal poles. Any welds shall be suitably protected from corrosion with a minimum 75um coat of zinc rich primer.

## 4 Limitations of Use

#### 4.1 Fall Clearance

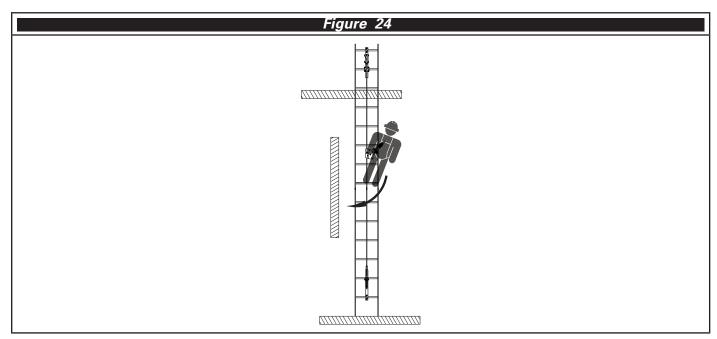
When planning your fall protection system, it is important to accurately assess all components of your system in order to avoid injury. Figure 23 provides guidance on how to calculate fall clearance. In Figure 5, (H) represents free fall for the shuttle (0.3m), energy absorber deployment (0.4m), as well as the estimated D-ring side of the harness (Refer the manufacturer's information), (SF) represents the recommended safety factor of 1m, (FC) represents the total allowable fall clearance. For safe use (FC) shall always be greater than H + SF.



## 4.2 Swing Fall

Working off centre of a Vertical Lifeline may cause a swing fall. See Figure 24. Fall protection systems shall be setup in such a way to limit swing fall.

⚠ The force of striking an object during a swing fall may result in serious injury or death.



#### 4.3 Hazards

Use of this equipment in the presence of hazards may cause damage to the equipment and/ or result in the function of the equipment being impeded. These hazards include but are not limited to; extreme temperature, sharp edges, chemical reagents, electrical conductivity, abrasion, cutting, climatic exposure and rotating or moving machinery.

## 4.4 Training

It is essential that all users are trained in the proper inspection, setup and use of this equipment. It's the responsibility of the user to ensure they are trained in the correct use of this equipment and understand the limitations of its use.

1

Incorrect use of this equipment may result in serious injury of death.

#### 4.5 Rescue

It is the responsibility of the user of this equipment and their employer to have a suitable rescue plan and the ability to implement it at any time during setup and use of this equipment.

#### 5 Connections

## 5.1 Making Connection

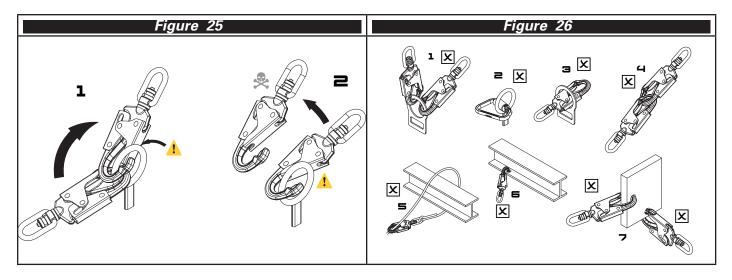
Only make compatible connections. Always ensure connectors close and lock correctly before use. Below and Figure 25 are examples of unsuitable connections;

- 1 To an anchor or D-ring which has another connector attached.
- 2 In a position that will apply load to the gate mechanism.
- 3 By passing the connection through the attachment.
- 4 Connecting a connector to another connector.
- 5 Around a structure and back to the lifeline.
- 6 To an attachment that will limit the function of the gate.
- 7 To a location that will not load the connector as designed.

#### 5.2 Compatibility of Connections

Connection made to and with this equipment shall be compatible. Connector shall be compatible shape, size and equivalent rating in order to ensure a compatible connection is made. Incompatible connections may cause loading of the gate mechanism leading to unintentional disengagement. See Figure 26. Connectors shall be compliant with EN362 and auto closing and locking.

Making incompatible or unsuitable connection may result in unintentional disengagement of the connector resulting in serious injury or death.



#### 6 Use

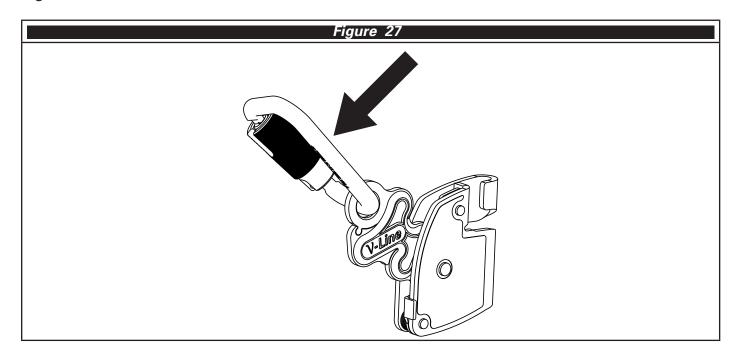
## 6.1 Planning

Before starting work, plan your working at heights and rescue systems by accounting for all hazards present in the work place and allowing for the available fall clearance. Ensure all users are fit, healthy and capable of safely operating this equipment as well as implementing the rescue plan.

⚠ During use always allow for the required fall clearance, swing fall and hazards present in the work place.

#### 6.2 Connection to the V-Line Shuttle to the User

The V-Line is supplied with an integral connector for connection to the users harness. See Figure 27.

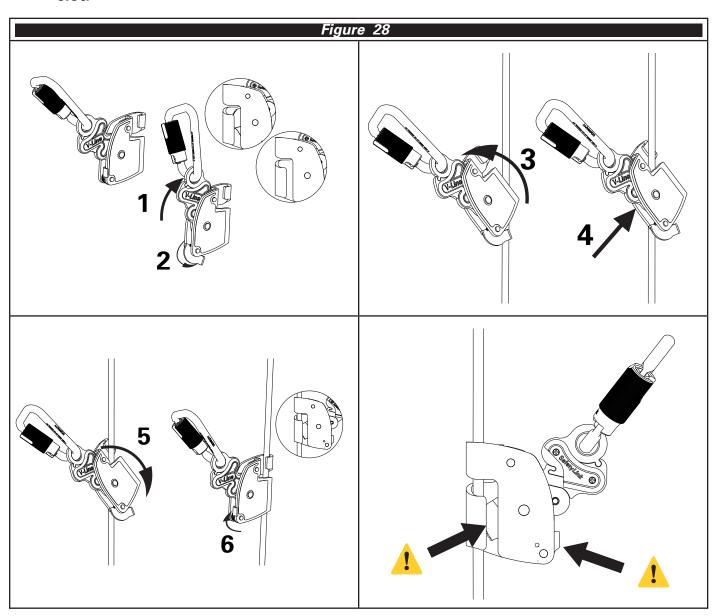


- **Leach** Each shuttle is for a single user. Do not attach multiple users to a single shuttle.
- ⚠ Do not attach to any other point on the V-Line Shuttle or Vertical Lifeline.
- **⚠** Do not extend the V-Line shuttle with additional connectors or lanyards.

## 6.3 Connecting the V-Line Shuttle to the System

- 1 Lift the attachment lever to the top position.
- 2 Rotate the latch to fully open.
- 3 Tilt the device 45 degrees till the slot in the front aligns with the cable.
- 4 Push the device on to the cable.
- 5 Rotate the device back in to the vertical plan.
- 6 Release the latch.

**Ensure** the latch completely closes automatically and the cam covers the cable entry slot.

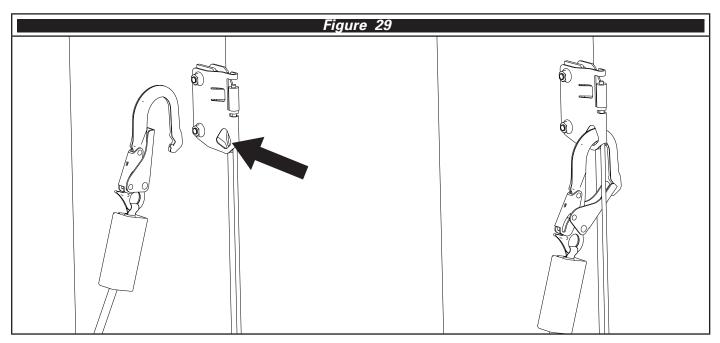


#### 6.4 Connecting to the V-Line System

The V-Line top bracket has a single point anchor to assist the transition from the V-Line system to another fall protection system. See Figure 29.

## 1

## Do not connect to any other part of the system.



## 7 Storage, Transport and Maintenance

## 7.1 Storage and transport

This equipment shall be stored and transported in a cool, dry environment, away from any hazards and out of direct sunlight.

#### 7.2 Maintenance

- 7.2.1 The V-Line system is serviceable only by trained and authorised installers. Contact SafetyLink to find your nearest available installer. The service interval will be determined by the condition in which it is used. Harsher conditions will require more frequent servicing. The equipment may remain in service until it fails an inspection or is involved in a fall.
- 7.2.2 The V-Line Shuttle is non serviceable. The equipment may remain in service until it fails an inspection or is involved in a fall.

Do not attempt to modify or disassemble this product.

## 7.3 Cleaning

1

The V-Line Vertical Lifeline may be cleaned by the end user periodically to increase service life. After cleaning, the product shall undergo the pre-use inspection.

Cable and Brackets - Clean with a rag and warm water to remove dirt and grit. A mild detergent may be used to remove grease or oils from the product.

Shuttle - Clean Shuttle with a rag and warm water to remove dirt and grit. A mild detergent may be used to remove grease or oils from the product.

Do not store this product when wet. Allow the product to dry and conduct a pre-use inspection prior to return the item to service.

## 8 Inspection

#### 8.1 Before and After Use

The V-Line Vertical Lifeline shall be inspected before and after each use by the user.

#### 8.2 Competent Person

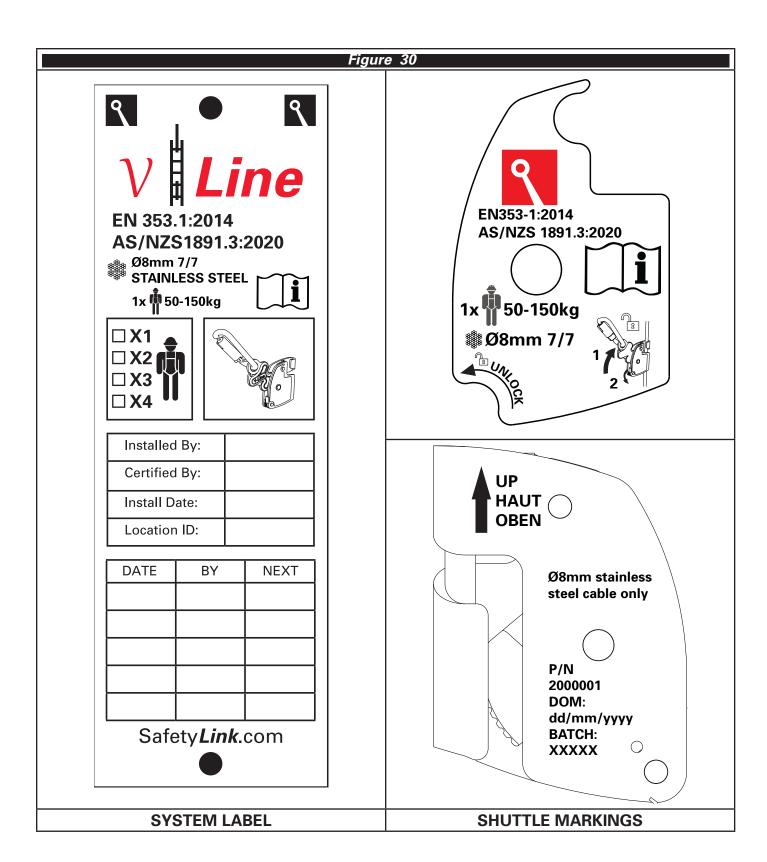
A competent person shall inspect the shuttle at least every 12 months.

A competent person shall inspect the system at least every 5 years. Systems installed in harsher conditions will require more frequent inspection. Installations in marine, coastal or other extreme corrosive environments should be inspected at least every 2 years.

#### 8.3 Procedure

- 8.3.1 Cable inspect the cable for damage, deformation, broken wires or strands, or debris that may affect the strength of the cable or impede the Shuttle.
- 8.3.2 Top Bracket inspect all fasteners are present and tight. Inspect the stainless steel for chips, cracks, discolouration, damage to the protective coating, bending or warping. Inspect any welds for corrosion, discolouration or damage. Inspect any steel tubes for damage of the galvanising, deformation or corrosion.
- 8.3.3 Bottom Bracket inspect all fasteners are present and tight. Inspect the stainless steel for chips, cracks, discolouration, damage to the protective coating, bending or warping. Inspect any welds for corrosion, discolouration or damage. Inspect any steel tubes for damage of the galvanising, deformation or corrosion.
- 8.3.4 Tension inspect all fixings are present and tight. Inspect fixings are free of damage, debris, cracks, and corrosion.
- 8.3.5 Cable Guides inspect all fixings are present and tight. Inspect the galvanised coat is free of chips, cracks, corrosion or damage. Inspect the rubber end accepts and holds the cable, is free of cracks and missing piece.
- 8.3.6 Shuttle-inspect the housing is free of cracks, damage or deformation. Inspect the energy absorber is not deployed. Inspect the connector is free of cracks, damage or deformation and functions correctly. Ensure all screws are present and not loose. Inspect the latch opens freely and closes automatically.
- 8.3.7 Proof Load for competent person inspections only, concrete fixings that do not extend through the concrete shall be proof loaded to 50% of the design load and held for 30 seconds.
- 8.3.8 Label inspect the system label is present and legible as per Figure 30.

|                     | INSPECTION RECORD  |      |                     |
|---------------------|--|------|---------------------|
| Product Code        | Date of Manufacture  |      |                     |
| Serial or Batch No. | Date of Install  |      |                     |
| Inspector           | Date of Inspection   |      |                     |
| PROCEDURE           | INSPECTION   | USER | COMPETENT<br>PERSON |
| 8.3.1               | Cable - inspect the cable for damage, deformation, broken wires or strands, or debris that may affect the strength of the cable or impede the Shuttle.  Comments:  |      |                     |
| 8.3.2               | Top Bracket - inspect all fasteners are present and tight. Inspect the stainless steel for chips, cracks, discolouration, damage to the protective coating, bending or warping. Inspect any welds for corrosion, discolouration or damage. Inspect any steel tubes for damage of the galvanising, deformation or corrosion.  Comments: |      |                     |
| 8.3.3               | Bottom Bracket - inspect all fasteners are present and tight. Inspect the stainless steel for chips, cracks, discolouration, damage to the protective coating, bending or warping. Inspect any welds for corrosion, discolouration or damage. Inspect any steel tubes for damage of the galvanising, deformation or corrosion.         |      |                     |
| 8.3.4               | Tension - inspect all fixings are present and tight. Inspect fixings are free of damage, debris, cracks, and corrosion.  |      |                     |
|                     | Comments:  |      |                     |
| 8.3.5               | Cable Guides - inspect all fixings are present and tight. Inspect the galvanised coat is free of chips, cracks, corrosion or damage. Inspect the rubber end accepts and holds the cable, is free of cracks and missing piece.  |      |                     |
|                     | Comments:  | r    | ,                   |
| 8.3.6               | Shuttle - inspect the housing is free of cracks, damage or deformation. Inspect the energy absorber is not deployed. Inspect the connector is free of cracks, damage or deformation and functions correctly. Ensure all screws are present and not loose. Inspect the latch opens freely and closes automatically.                     |      |                     |
|                     | Comments:  |      |                     |
| 8.3.7               | Proof Load - for competent person inspections only, concrete fixings that do not extend through the concrete shall be proof loaded to 50% of the design load and held for 30 seconds.  | NI/A |                     |
|                     | Comments:  |      |                     |
| 8.3.8               | Label - inspect the system label is present and legible as per Figure 29.  |      |                     |
|                     | Comments:  |      |                     |



## **Warranties**

#### **EXTRACT: SAFETYLINK PTY LTD STANDARD TERMS AND CONDITIONS**

- 1.1 To the extent permitted by law all implied conditions, warranties and undertakings are expressly excluded.
- 1.2 Except as provided in this clause the Company shall not be liable for any loss or damage, whether direct or indirect (including consequential losses or damage) arising out of any breach of contract by the Company or any negligence of the Company, its employees or agents.
- 1.3 Should the Company be liable for a breach of a guarantee, condition or warranty implied by the Australian Consumer Law (not being a guarantee, condition or warranty implied by sections 51, 52 and 53 of that Law) then its liability for a breach of any such condition or warranty express or implied shall be limited, at its option, to any one or more of the following.
- A in case of Goods
  - I the replacement of the Goods or the supply of equivalent Goods.
  - Il the repair of the goods,
  - III the payment of the cost of replacing the Goods or acquiring equivalent Goods.
  - IV the payment of the cost of having the Goods repaired. Provided that any such Goods are returned to the Company by the Purchaser at the Purchaser's expense.
- B in the case of services
  - I the supply of the services again,
  - If the payment of the cost of having the services supplies again.
- 1.4 The Company is not liable for the costs of recovery of the Goods from the field, loss of use of the Goods, loss of time, inconvenience, incidental or consequential loss or damage, nor for any other loss or damage other than as stated above, whether ordinary or exemplary, caused either directly or indirectly by use of the Goods.
- 1.5 The Company warrants that at the time of shipment, Products manufactured by it will be free from defects in material and workmanship. In the absence of a modified written warranty, the Company agrees to making good any such defects by repairing the same or at the Company's option by replacement, for a period of (1) one year from the date of shipment. This limited warranty applies provided that:
- a defects have arising solely from faulty materials or workmanship;
- b the Products have not received maltreatment, inattention or interference;
- c the Products have been installed in accordance with the Company's Installation Handbooks using only products supplied by the Company;
- d accessories used with the Products are manufactured by or approved by the Company
- e the Products are maintained in accordance with Australian Standard 1891.4 (section 9).
- f you notify any claim under this warranty to SafetyLink in writing to the address below no later than 14 days after the event or occurrence concerning the produce giving rise to the claim and you pay all costs related to your claim.

This warranty does not apply to any defects or other malfunctions caused to the Goods by accident, neglect, vandalism, misuse, alteration, modification or unusual physical, environment or electrical stress.

Please note that the benefits to the purchaser (as a consumer) given by this warranty are in addition to your other rights and remedies under the Australian Consumer Law. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

- 1.6 If any goods are not manufactured by the Company, the guarantee of the manufacturer thereof shall be accepted by the Purchaser as the only express warranty given in respect of the goods.
- 1.7 Except as provided in this clause 11, all express and implied warranties, guarantees and conditions under statute or general law as the merchantability, description, quality, suitability or fitness of the Products for any purpose or as to design, assembly, installation, materials or workmanship or otherwise are hereby expressly excluded (to the extent to which they may be excluded by law).

#### PLEASE SEE SAFETYLINK PTY LTD FULL STANDARD TERMS OF CONDITIONS OF SALE FOR FURTHER REFERENCE.







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