

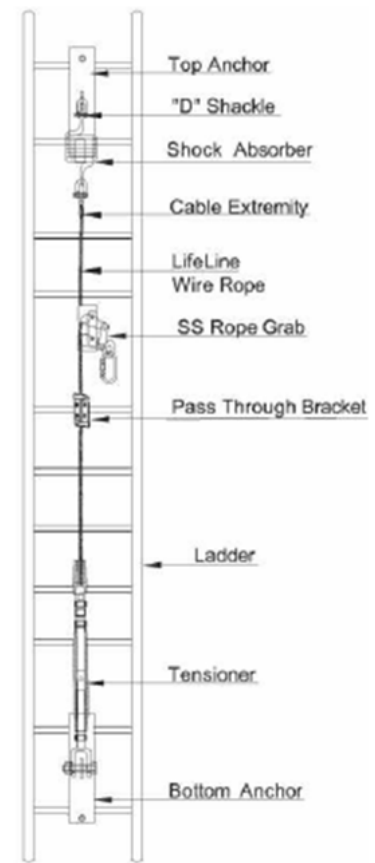


VERTICAL LIFELINE SYSTEM

Model No.: FXFP-VLS

Vertical Lifeline System

This is a permanent installation to provide safe ascent & descent of workmen working on ladders. It consists of a stainless steel rope grab that moves along with the user on a vertical lifeline made up of 8 mm diameter stainless steel wire rope. The rope grab is connected to the workman's harness. In case of a fall, the rope grab automatically locks thereby preventing the person from falling down. The system also consists of a shock absorber which reduces the impact of the fall on the user and the supporting structure on which the system is installed.



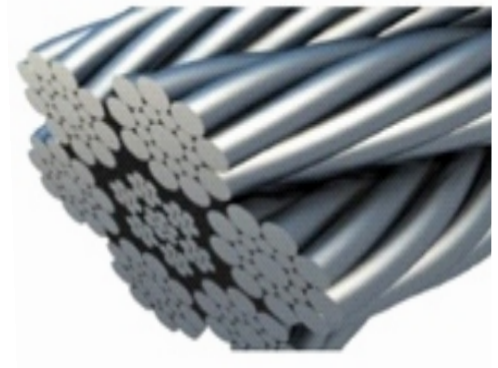
BILL OF QUANTITY

Sr. No:	Component Name	Item Code	Quantity
1.	SS 08mm dia Lifeline Rope	RMFP-FL-OT-00029	As per site requirement
2.	SS Rope Grab	FG-FP-OT-FA-0005	Min. 1 no.
3.	Safety Harness	ESFTB0000001	Min. 1 no.
4.	Top Anchor	RMFP-FL-OT-00095	1 no.
5.	Bottom Anchor	RMFP-FL-OT-00096	1 no.
6.	Pass through Bracket	RMFP-FL-OT-00024	As per site requirement
7.	SS 316 Cable Extremity	RM-FP-FL-SV-0004	1 no.
8.	SS 316 Tensioner	RMFP-FL-OT-00030	1 no.
9.	SS 316 Shock Absorber	RMFP-FL-OT-00033	1 no.

COMPONENTS

1. Wire Rope (Model No: FG-FP-OT-FA-0005)

Vertical lifeline on which the rope grab fall arrestor moves.



Material of Construction (MOC)	SS 316
Diameter	08 mm
Operating Temperature	-40° C TO +60° C
Inspection Frequency	Yearly
Life Span	20 Years
Construction	7 x 19 / 7 x7
Minimum Breaking Strength	35 KN

2. SS Rope Grab (Model No: FG-FP-OT-FA-0005)

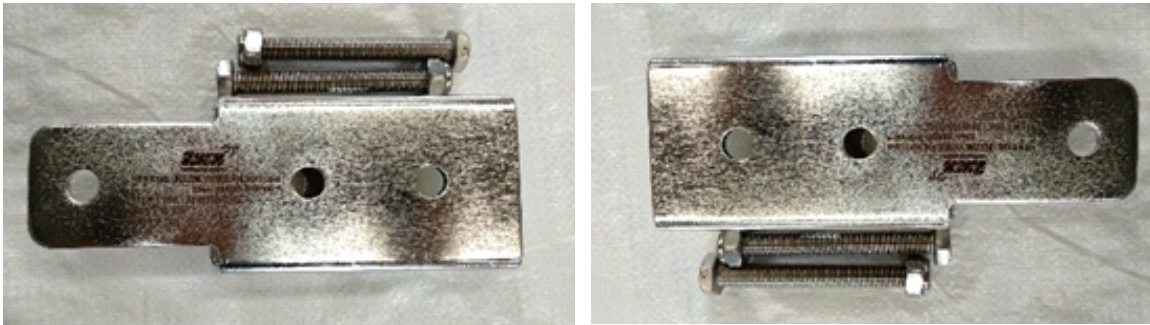
The SS Rope Grab fall arrestor runs through the vertical lifeline while being connected to the user. It ascends & descends along with the user. It locks automatically in case of a fall. The design of the rope grab is such that it cannot be accidentally disengaged.

Material of Construction (MOC)	Stainless Steel
Total Weight	0.486 kgs
Operating Temperature	-40° C to +60° C
Inspection Frequency	Yearly
Life Span	10 Years
Vital Test: Static Strength:	15 KN held for 3 min
Certification	EN 353-1-2014



3. Top Anchor (RMFP-FL-OT-00095) and Bottom Anchor (RMFP-FL-OT-00096)

These are the anchors fitted on the top and the bottom of the ladder. These anchors can be easily installed with any kind of ladder rungs. These anchors are fixed using just two studs thereby enabling quick & easy installation.



Use:	To provide anchorage to vertical lifeline on a ladder.
Weight	3.5 kgs
Operating Temperature	-40°C to +60°C
Inspection Frequency	Yearly
Life Span	10 Years
Material of Construction	Stainless Steel

4. Pass through Bracket (RMFP-FL-OT-00024)

Pass through brackets are installed at every 10mtrs to 12mtrs. These brackets prevent the wire rope from deflections caused by usage or heavy winds. The design also ensures that the Rope Grab Fall Arrestor can easily pass through it thereby providing continuous movement across the entire length of the ladder.

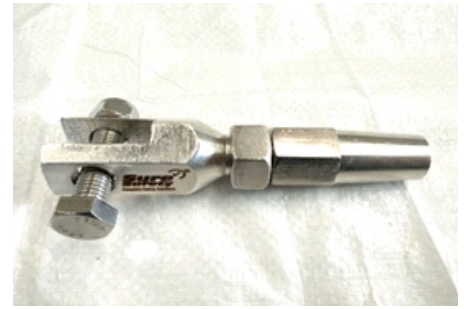


Use:	To provide uninterrupted movement to the rope grab fall arrestor and also preventing deflections of vertical lifeline.
Weight	0.6 kgs
Operating Temperature	-40°C to +60°C
Inspection Frequency	Yearly
Life Span	10 Years
Material of Construction	Stainless Steel SS 316

5. Cable Extremity (RM-FP-FL-SV-0004)

It enables swageless termination of the lifeline at one end.

Use:	Provides smooth travel to the user
Weight	0.5 kgs
Operating Temperature	-40°C to +60°C
Inspection Frequency	Yearly
Life Span	20 Years
Material of Construction	SS 316



6. Tensioner (RMFP-FL-OT-00030)

A Tensioner is a tested device located between the two anchorage points of the vertical life line system (wire rope) and used for providing required tension to it so that the sag in the system is minimum and within the acceptable limit.

Use:	To provide tension to the lifeline and installed at one end of the lifeline.
Weight	1.4 kgs
Operating	-40°C to +60°C
Inspection	Yearly
Life Span	20 Years
Material of	SS 316



7. Shock Absorber (RM-FP-FL-OT-00033)

It is attached to one end of the lifeline. Its function is to absorb the shock generated due to the fall of the user and transfer minimum shock to the user and the structure.

Use:	Reduces shock to the user & structure
Weight	1.3 kgs
Operating Temperature	-40°C to +60°C
Inspection Frequency	Yearly
Life Span	20 Years
Material of Construction	SS 316



INSTALLATION OF THE SYSTEM

The Installation of the system has to be carried out only by authorized personnel of Sure Safety (India) Limited. And should not be carried out by the user. The Installation steps given below are a brief indication of the procedure of the same, only for the purpose of information to the user. Sure Safety (India) Limited does not take any responsibility for consequences of installation of the system if it is carried out against an authorized written recommendation by Sure Safety (India) Limited for the same.

It is necessary to ensure the safety of the installer at all stages of Installation through use of correct PPE. It is also important to use correct tools as recommended by Sure Safety (India) Limited for installation.

Installation Of The System

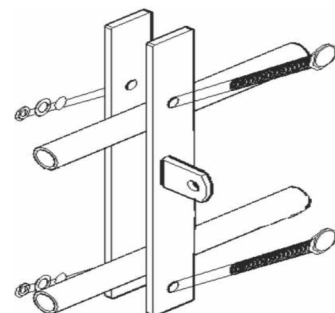
Step 1: Receiving structure:

- The Metal receiving structure should be strong enough to hold an impact load of more than 10 KN. Sure Safety (India) Limited may not be held responsible in any failure arising out of the failure of the Structure.
- It is essential to calculate the strength of the receiving structure before installation. If in doubt a competent person or a qualified structural engineer may study the drawings or visit the site and verify the adequacy of strength of the receiving structure.

Step 2: Ensure safety of the installer at all stages. Use correct PPE while installation.

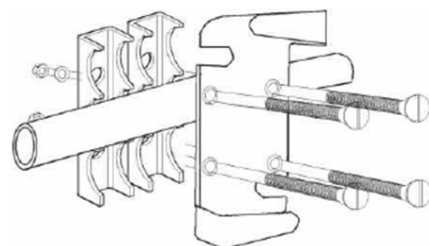
Step 3: Installing the Bottom Anchor with ladder rung at the bottom of the ladder.

The bottom anchor can be fixed with different sections of ladder rungs. It is fixed using two studs as per the drawing.



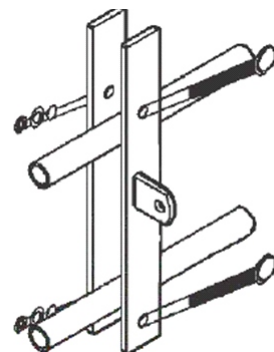
Step 4: Installing Pass Through Bracket

First fix the ladder clamps (2nos) of the pass through bracket on the back of the ladder rung. Fix the main plate with the ladder clamps with the fasteners. Always ensure that the vertical lifeline is always running in between the two arms of the pass through bracket. The pass through bracket should be installed at every 10mtrs on the ladder.



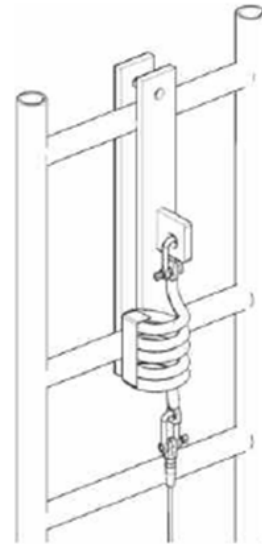
Step 5: Installing Top Anchor

The top anchor can be fixed with different sections of ladder rungs. It is fixed using two studs as per the below drawing.



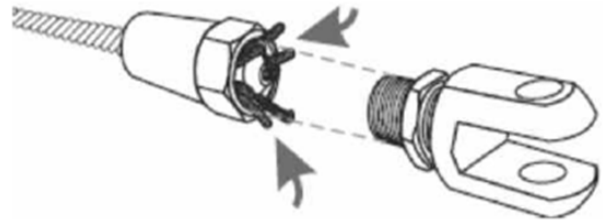
Step 6: Installing Shock Absorber

Fix the shock absorber with the top anchor of the system via the fasteners provided. The top end of the shock absorber will be fixed with the Top Anchor and the bottom end will be fixed with cable extremity as per the drawing.



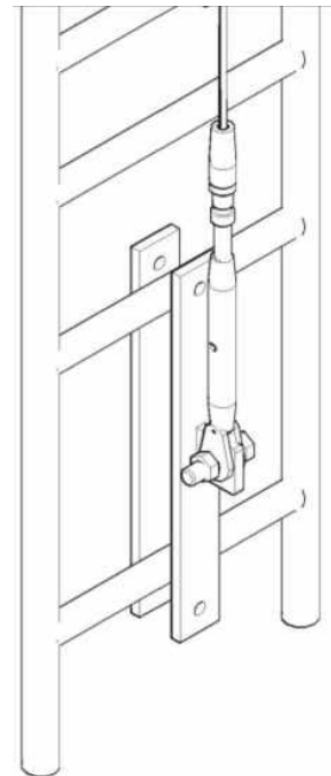
Step 7: Assembling the Cable Extremity

- Open the wire rope roll and insert it into the housing of the cable extremity.
- Open the strands of the wire.
- Insert the core of the wire rope in the poke pin. The core is the straight strand, all other strands are twisted.
- With a hollow Center-punch hammer the poke pin deep inside the housing of the cable extremity.
- Tighten the connector of the extremity to the housing of the cable extremity.
- Connect the cable extremity to the lower end of the shock absorber.



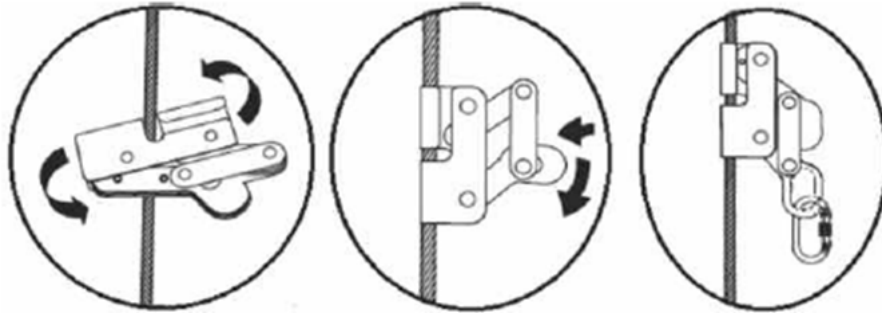
Step 8: Installing Tensioner:

- The Tensioner is installed at the lower end of the system.
- Open the threads of the extension rod of the tensioner from both ends.
- Ensure that 75% of the thread is open.
- The loose end of the wire rope is inserted into the housing of the tensioner.
- Open the strands of the wire.
- Insert the core of the wire rope in the poke pin. The core is the straight strand, all other strands are twisted.
- With a hollow Center-punch hammer the poke pin deep inside the housing of the tensioner.
- Tighten the connector of the extremity to the housing of the tensioner.
- Insert the eye of the tensioner to the bottom anchor at the lower ladder rung.
- Insert the stainless steel locking pin so as to pass through the eye of the tensioner and the mounting brackets.
- Insert the pin ring in the locking pin to lock it.
- If it is necessary to cut the cable, seal the loose end of the cable by adhesive tape after cutting it.
- Provide tension to the wire rope:
- Rotate it until reasonable tension is achieved in the cable.



Step 9: Installation of the Rope Grab Fall Arrestor:

- Hold the Rope Grab as shown in the figure.
- Push the Rope Grab through the cable and rotate it counter clockwise.
- Insert the karabiner of the shock absorbing lanyard in the eye of the Rope Grab.
- Connect the other end of the shock absorbing lanyard to the harness of the user by the other Karabiner.

**Step 10: Connect the Harness to the Rope Grab:**

- Check that all the straps of harness are connected and buckles are secured and the Harness has been adjusted to give it a snug fit.
- Connect the Rope Grab to the front attachment point of the Full Body Harness with the help of the Karabiner of the Connecting Lanyard.
- Ensure that the gate of the karabiner is closed and locked properly.

INSPECTION OF SYSTEM BEFORE USE**1. Post Installation Inspection**

- Once installed, it is important to inspect the complete line by climbing up and down the entire length. A Third party Inspection (TPI), on expenses borne by the Client, may be provided by a competent agency like SGS, BVQI etc, at the Testing Laboratory of Sure Safety (India) Limited in Vadodara.
- Onsite testing of the receiving Structure may be provided at an extra cost.

2. Pre Use-Checks:

It is mandatory for the Site Inspector/ Supervisor and the actual users of the system to perform a thorough check of the same before carrying out work. Sure safety (India) Limited conducts a brief Training of all concerned personnel on the subject of Pre-Use Inspection of the System as per the defined guidelines after the System has been installed by Sure Safety (India) Limited. personnel.

The following points are considered for the Pre-Use check:

2.1 Checking the Receiving Structure

Where the System is to be installed if the receiving structure found weak do not climb.

2.2 Checking the System

- Clean the system from dust/dirt. Check for any mechanical defects.
- Check for wear and tear in all components or unusual bending or deformation.
- Check for any modifications done by the user.
- Check for any missing component.
- Check for any damages that may have been caused due to welding while maintenance of other equipment.

2.3 Checking the Rope Grab Fall Arrestor

- Check the movement of the Rope Grab Fall Arrestor and its grip before using.
- Check for excessive wear and tear or any mechanical defects on the locking mechanism of the rope grab fall arrestor.

2.2 Checking the Shock Absorber

Check that the shock absorber has not deployed. If it has then the system should not be used strictly.

PRECAUTION WHILE USING THE SYSTEM

1. The following points of precautions needs to be considered for safe use of the system:

- The life line is for the purpose of fall protection while climbing up or down the system. A back up fall arrest system is required when transitioning on and off the lifeline system while working at height.
- The user should not suspend himself on the Rope Grab Fall Arrestor. The intended use of the Rope Grab is fall protection and not a work positioning device.
- Never disengage the Rope Grab while working.
- Prevent the Rope Grab from falling from a height.
- Avoid using grease to lubricate the system.
- If any fall is reported put the system out of use. Contact the manufacturer for repairs and re-validation.
- Only certified Sure Safety (India) Limited full body harness with front attachment anchorage points should be worn while using the fall protection system.

Do not alter or misuse this equipment. Always take an advice from Sure Safety (India) Limited personnel while using this equipment in combination with components or subsystems other than those described in this manual.

Usage of certain component/sub system may interfere with the proper functioning of this equipment and the system may not deliver the working as per its intended use. In such case Sure Safety (India) Limited may not be held responsible for any malfunction.

The lifelines must be kept free from dust, grease etc., by periodic cleaning. The system can be cleaned by a soft dry cloth.

2. Hazards existing in immediate environment may require additional precautions to limit the possibility of injury to the user or damage to the equipment. Hazards may include but are not limited to, extreme temperatures, caustic chemicals, corrosive environments, high voltage power lines, explosive or toxic gases, moving machinery, sharp edges, high velocity winds Etc. Do not expose the equipment to any hazard which it is not designed to withstand. Consult the manufacturer if in doubt.

3. Rescue Plan: It is mandatory to ensure that the user shall have a rescue plan and means to execute it while using this equipment. The rescue plan needs to be project specific. The employees must be trained in self-rescue or alternative means shall be provided for prompt rescue in an event of a fall.

4. Always work in a pair to ensure that in an event of a fall your partner may help in rescue.

5. It is recommended that the user is medically fit while using the system and is trained to work at height.

AFTER SALES SERVICE, INSPECTION & MAINTENANCE

1. After sales Service

- Spares are available easily with very less lead time.
- Sure Safety (India) Limited provides quick and quality maintenance to your fall protection system.
- It is mandatory to inspect the lifeline once a year.
- **Sure Safety (India) Limited Annual Inspection and Maintenance Program covers:**
 1. Servicing and Cleaning of the system.
 2. Tightening of all fasteners to the recommended torque Re-Validation of the system.
 3. Identifying Malfunctions which may happen and offering Corrective and Preventive Measure.
 4. This service is chargeable.
- **The benefits of Annual Maintenance:**
 1. Extended life of the system
 2. Identification of any malfunction waiting to happen and hence avoiding accidents that may happen.

2. Maintenance & Storage:

- The accessories of the system should be stored in a clean & dry place.
- The system should not be lubricated with grease.
- It should be cleaned with a clean dry cloth.
- Sharp objects should be kept away from the system.

MANUFACTURER'S DISCLAIMER & WARRANTY

Warranty: The system is produced with extreme precision. Should there arise a manufacturing defect within a period of 1 year of supply Sure Safety (India) Limited stands to repair the components or replace if necessary.

Warranty does not cover

- Deficiency arising out of misuse of equipment.
- Malfunction due to faulty installation/wrong usage of product.
- This equipment is not user maintainable. The warranty stands void if an attempt is made to repair or open the equipment.
- Sure Safety (India) Limited does not provide the product functioning warranty; the warranty stands for the workmanship of the products only.

Disclaimer

The receiving structure on which the system is installed should withstand a minimum impact load of 10 KN. If in doubt kindly get load calculation done from a competent authority or a certified structural engineer. Sure safety (India) Limited does not take responsibility for malfunction due to inadequacy in the receiving structure. Please ensure that the entire system is compatible with the other personal fall protection equipment used, and is in conformance with those recommended for use by Sure Safety (India) Limited.

Sure Safety (India) Limited is not responsible for any changes which may be done in the system without a prior confirmation by Sure Safety (India) Limited authorized personnel. Third Party Installations by uncertified installers is not recommended for these products. In case of third party installations, Sure Safety (India) Limited will not be held responsible for any failure of the product in its intended use.

EXPLORE MORE AT: WWW.SURESAFETY.COM

DISCLAIMER: Manufacturer will not be responsible for any mishandling and wrong usage of the product shown picture is just for representative purposes only, actual product may differ.