



OSHA 1910.140
OSHA 1926.502



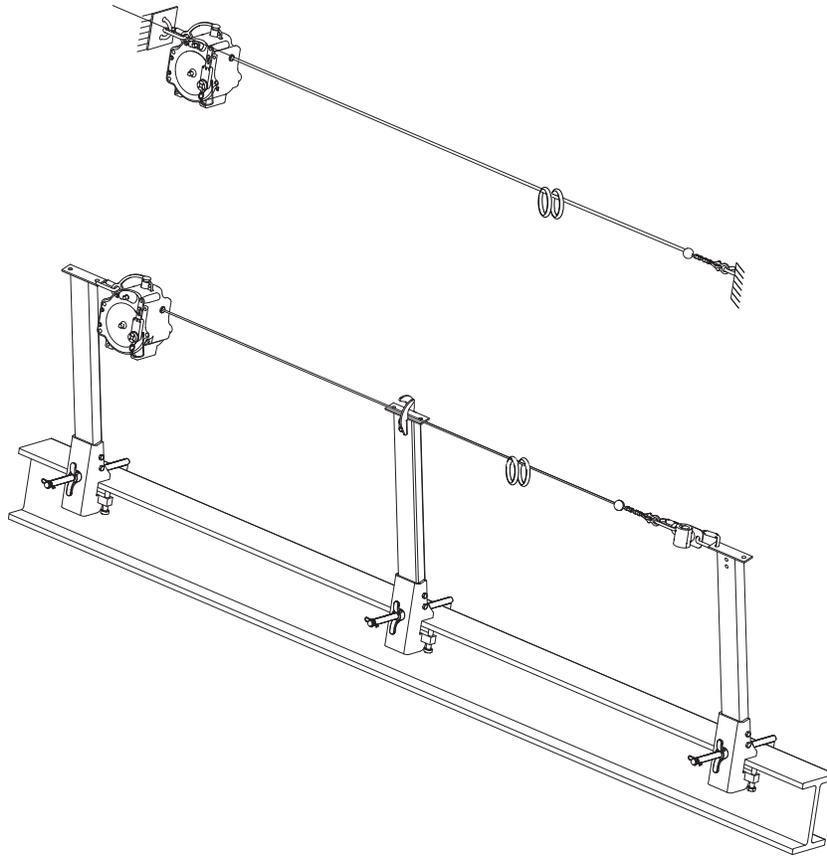
Fall Protection

EZ-LINE Horizontal Lifeline System

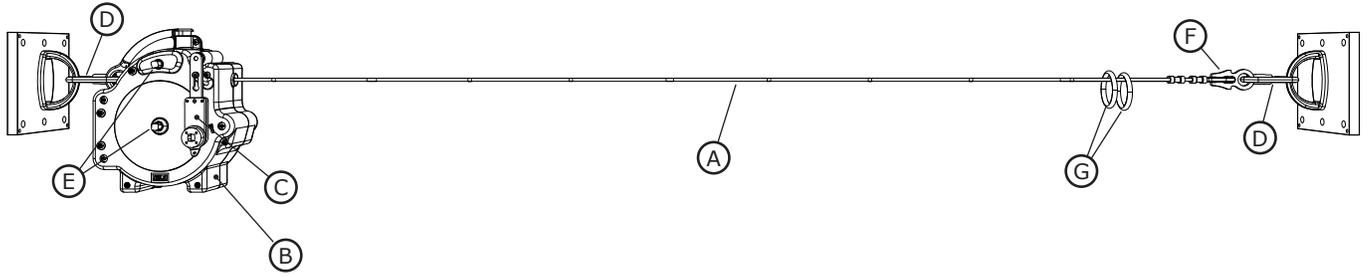
USER INSTRUCTION MANUAL 5902346 REV. G

1

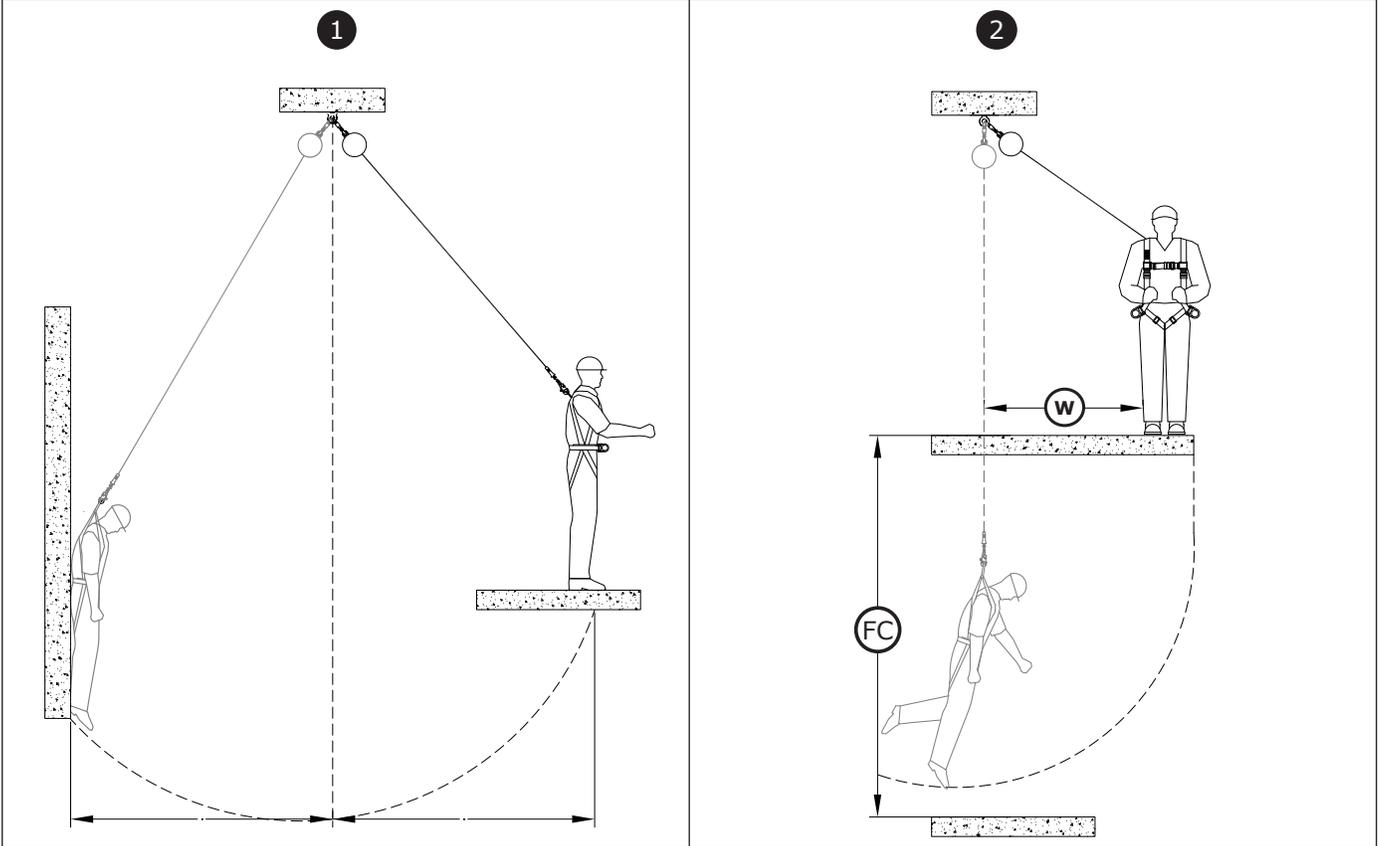
7605060



2

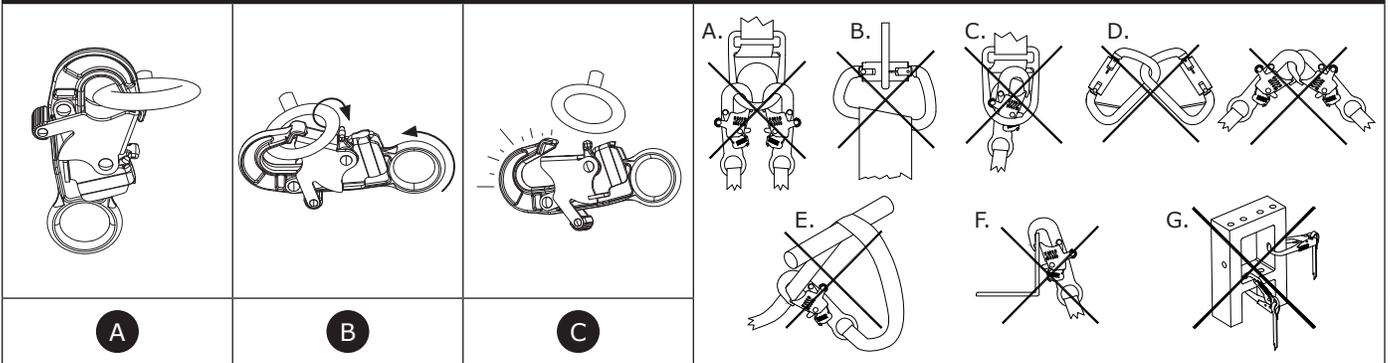


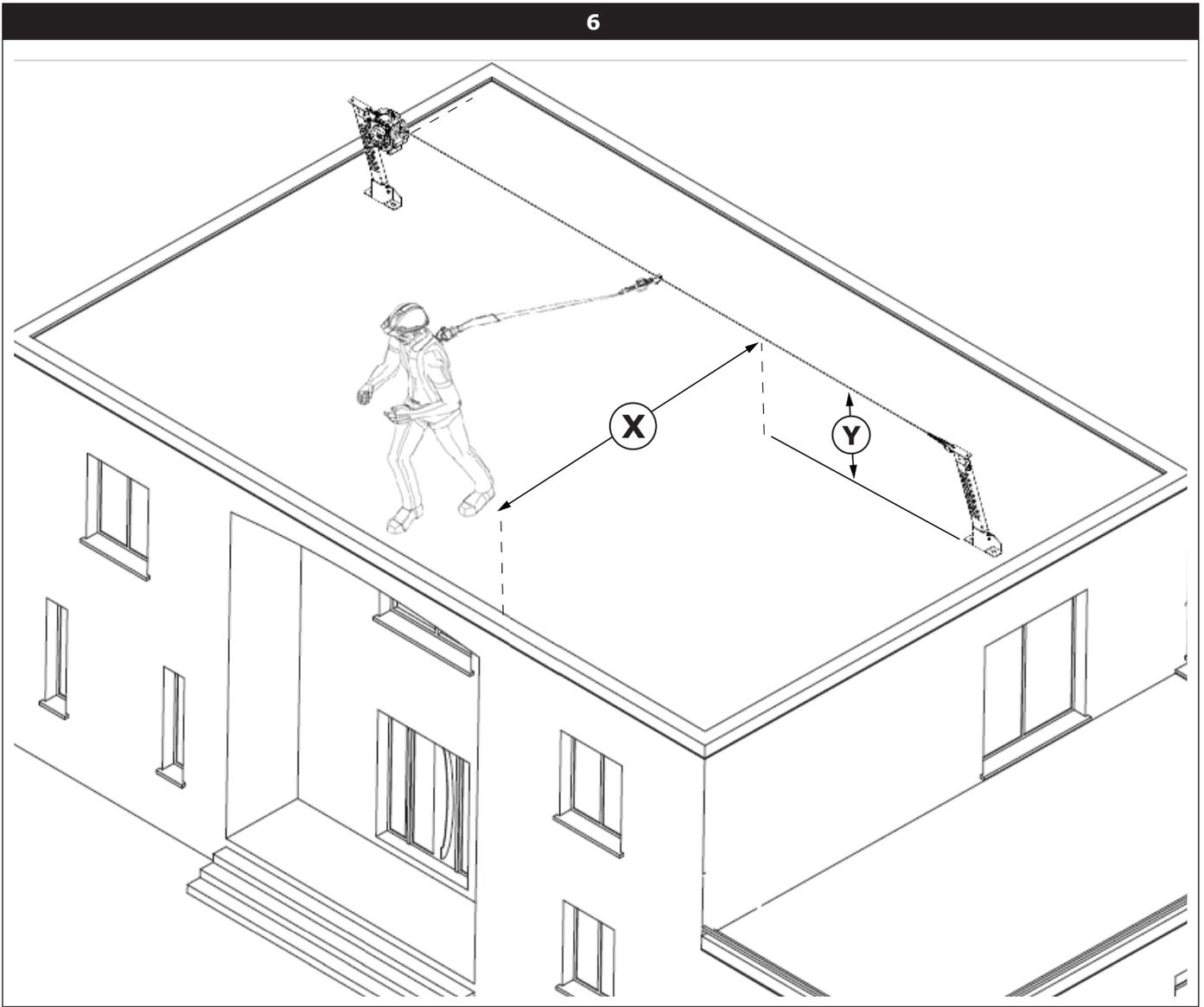
3



4

5



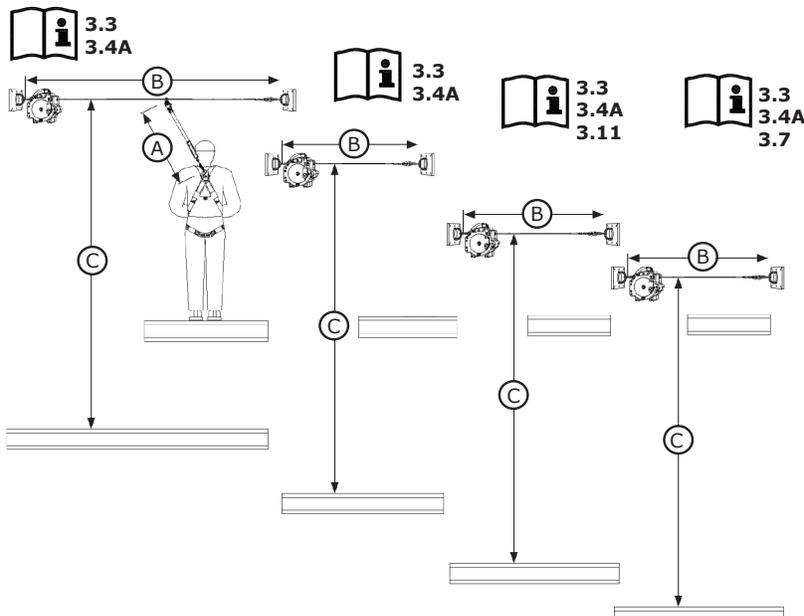


X ≤ 2 ft. or X ≤ Y



	 x 1 ≤ 310 lb. (140 kg)				 x 2 ≤ 310 lb. (140 kg)				
	(A)								
	3 ft. (.91 m)	4 ft. (1.22 m)	5 ft. (1.52 m)	6 ft. (1.83 m)	3 ft. (.91 m)	4 ft. (1.22 m)	5 ft. (1.52 m)	6 ft. (1.83 m)	
(B)	≤ 10.0 ft. (≤ 3.05 m)	15.49 ft. (4.72 m)	16.49 ft. (5.02 m)	17.49 ft. (5.33 m)	18.49 ft. (5.63 m)	16.72 ft. (5.1 m)	17.72 ft. (5.4 m)	18.72 ft. (5.71 m)	19.72 ft. (6.01 m)
	≤ 20 ft. (≤ 6.10 m)	17.06 ft. (5.2 m)	18.06 ft. (5.51 m)	19.06 ft. (5.81 m)	20.06 ft. (6.12 m)	19.53 ft. (5.95 m)	20.53 ft. (6.26 m)	21.53 ft. (6.56 m)	22.53 ft. (6.87 m)
	≤ 30 ft. (≤ 9.14 m)	18.64 ft. (5.68 m)	19.64 ft. (5.99 m)	20.64 ft. (6.29 m)	21.64 ft. (6.6 m)	22.34 ft. (6.81 m)	23.34 ft. (7.11 m)	24.34 ft. (7.42 m)	25.34 ft. (7.72 m)
	≤ 40 ft. (≤ 12.19 m)	20.21 ft. (6.16 m)	21.21 ft. (6.46 m)	22.21 ft. (6.77 m)	23.21 ft. (7.07 m)	25.14 ft. (7.66 m)	26.14 ft. (7.97 m)	27.14 ft. (8.27 m)	28.14 ft. (8.58 m)
	≤ 50 ft. (≤ 15.24 m)	21.78 ft. (6.64 m)	22.78 ft. (6.94 m)	23.78 ft. (7.25 m)	24.78 ft. (7.55 m)	27.93 ft. (8.51 m)	28.93 ft. (8.82 m)	29.93 ft. (9.12 m)	30.93 ft. (9.43 m)
	≤ 60 ft. (≤ 18.29 m)	23.35 ft. (7.12 m)	24.35 ft. (7.42 m)	25.35 ft. (7.72 m)	26.35 ft. (8.03 m)	30.7 ft. (9.36 m)	31.7 ft. (9.66 m)	32.7 ft. (9.97 m)	33.7 ft. (10.27 m)
(C)									

	 x 1 ≤ 220 lb. (100 kg)				 x 2 ≤ 220 lb. (100 kg)				
	(A)								
	3 ft. (.91 m)	4 ft. (1.22 m)	5 ft. (1.52 m)	6 ft. (1.83 m)	3 ft. (.91 m)	4 ft. (1.22 m)	5 ft. (1.52 m)	6 ft. (1.83 m)	
(B)	≤ 10.0 ft. (≤ 3.05 m)	14.22 ft. (4.33 m)	15.22 ft. (4.64 m)	16.22 ft. (4.94 m)	17.22 ft. (5.25 m)	15.31 ft. (4.67 m)	16.31 ft. (4.97 m)	17.31 ft. (5.27 m)	18.31 ft. (5.58 m)
	≤ 20 ft. (≤ 6.10 m)	15.63 ft. (4.76 m)	16.63 ft. (5.07 m)	17.63 ft. (5.37 m)	18.63 ft. (5.68 m)	17.8 ft. (5.43 m)	18.8 ft. (5.73 m)	19.8 ft. (6.04 m)	20.8 ft. (6.34 m)
	≤ 30 ft. (≤ 9.14 m)	17.03 ft. (5.19 m)	18.03 ft. (5.5 m)	19.03 ft. (5.8 m)	20.03 ft. (6.11 m)	20.3 ft. (6.19 m)	21.3 ft. (6.49 m)	22.3 ft. (6.8 m)	23.3 ft. (7.1 m)
	≤ 40 ft. (≤ 12.19 m)	18.32 ft. (5.58 m)	19.32 ft. (5.89 m)	20.32 ft. (6.19 m)	21.32 ft. (6.5 m)	22.21 ft. (6.77 m)	23.21 ft. (7.07 m)	24.21 ft. (7.38 m)	25.21 ft. (7.68 m)
	≤ 50 ft. (≤ 15.24 m)	19.52 ft. (5.95 m)	20.52 ft. (6.25 m)	21.52 ft. (6.56 m)	22.52 ft. (6.86 m)	23.93 ft. (7.29 m)	24.93 ft. (7.6 m)	25.93 ft. (7.9 m)	26.93 ft. (8.21 m)
	≤ 60 ft. (≤ 18.29 m)	20.67 ft. (6.3 m)	21.67 ft. (6.61 m)	22.67 ft. (6.91 m)	23.67 ft. (7.21 m)	25.64 ft. (7.81 m)	26.64 ft. (8.12 m)	27.64 ft. (8.42 m)	28.64 ft. (8.72 m)
(C)									

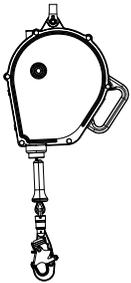


X ≤ 2 ft. or X ≤ Y



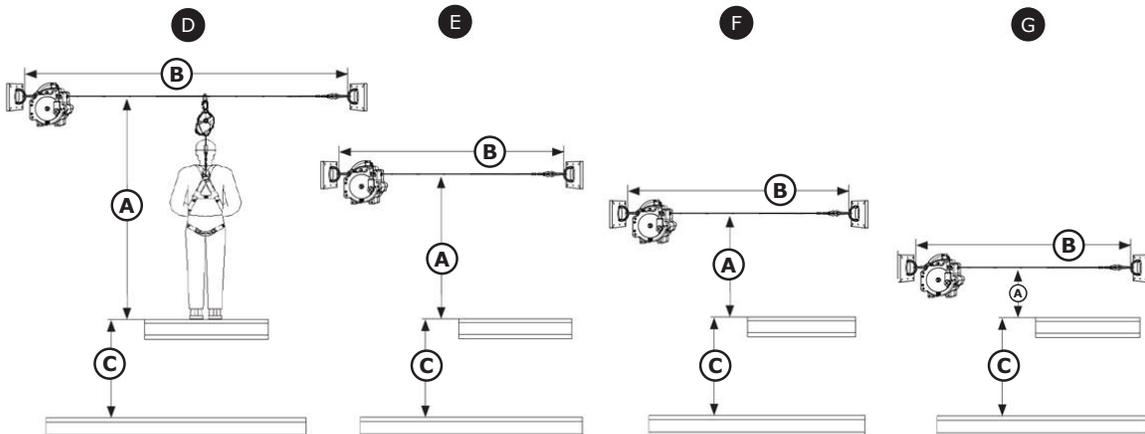
	x 1 ≤ 310 lb. (140 kg)				x 2 ≤ 310 lb. (140 kg)				
	A				A				
	D	E	F	G	D	E	F	G	
	A ≥ 6.5 ft. (A ≥ 1.9 m)	5 ft. ≤ A < 6.5 ft. (1.5 m ≤ A < 1.9 m)	3 ft. ≤ A < 5 ft. (0.9 m ≤ A < 1.5 m)	0 ft. ≤ A < 3 ft. (0 m ≤ A < 0.9 m)	A ≥ 6.5 ft. (A ≥ 1.9 m)	5 ft. ≤ A < 6.5 ft. (1.5 m ≤ A < 1.9 m)	3 ft. ≤ A < 5 ft. (0.9 m ≤ A < 1.5 m)	0 ft. ≤ A < 3 ft. (0 m ≤ A < 0.9 m)	
B	≤ 10.0 ft. (≤ 3.05 m)	7.52 ft. (2.29 m)	10.22 ft. (3.11 m)	13.8 ft. (4.21 m)	17.62 ft. (5.37 m)	8.86 ft. (2.7 m)	11.56 ft. (3.52 m)	15.14 ft. (4.62 m)	X
	≤ 20 ft. (≤ 6.10 m)	8.9 ft. (2.71 m)	11.59 ft. (3.53 m)	15.18 ft. (4.63 m)	19.07 ft. (5.81 m)	11.58 ft. (3.53 m)	14.27 ft. (4.35 m)	17.86 ft. (5.44 m)	
	≤ 30 ft. (≤ 9.14 m)	10.28 ft. (3.13 m)	12.98 ft. (3.95 m)	16.55 ft. (5.04 m)	20.44 ft. (6.23 m)	14.3 ft. (4.36 m)	16.99 ft. (5.18 m)	20.41 ft. (6.22 m)	
	≤ 40 ft. (≤ 12.19 m)	11.65 ft. (3.55 m)	14.34 ft. (4.37 m)	17.92 ft. (5.46 m)	21.81 ft. (6.63 m)	16.97 ft. (5.17 m)	19.7 ft. (6.01 m)	22.94 ft. (6.99 m)	
	≤ 50 ft. (≤ 15.24 m)	13.04 ft. (3.97 m)	15.71 ft. (4.79 m)	19.28 ft. (5.88 m)	23.17 ft. (7.06 m)	19.07 ft. (5.81 m)	22.41 ft. (6.83 m)	25.45 ft. (7.76 m)	
	≤ 60 ft. (≤ 18.29 m)	14.41 ft. (4.39 m)	17.01 ft. (5.2 m)	20.64 ft. (6.29 m)	24.53 ft. (7.47 m)	21.51 ft. (6.45 m)	25.03 ft. (7.63 m)	27.97 ft. (8.52 m)	

C

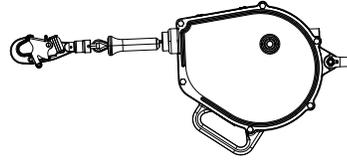
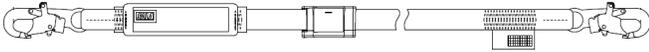


	x 1 ≤ 220 lb. (100 kg)				x 2 ≤ 220 lb. (100 kg)				
	A				A				
	D	E	F	G	D	E	F	G	
	A ≥ 6.5 ft. (A ≥ 1.9 m)	5 ft. ≤ A < 6.5 ft. (1.5 m ≤ A < 1.9 m)	3 ft. ≤ A < 5 ft. (0.9 m ≤ A < 1.5 m)	0 ft. ≤ A < 3 ft. (0 m ≤ A < 0.9 m)	A ≥ 6.5 ft. (A ≥ 1.9 m)	5 ft. ≤ A < 6.5 ft. (1.5 m ≤ A < 1.9 m)	3 ft. ≤ A < 5 ft. (0.9 m ≤ A < 1.5 m)	0 ft. ≤ A < 3 ft. (0 m ≤ A < 0.9 m)	
B	≤ 10.0 ft. (≤ 3.05 m)	6.7 ft. (2.04 m)	8.89 ft. (2.71 m)	11.81 ft. (3.6 m)	14.97 ft. (4.56 m)	7.86 ft. (2.39 m)	10.05 ft. (3.06 m)	12.96 ft. (3.95 m)	X
	≤ 20 ft. (≤ 6.10 m)	7.84 ft. (2.39 m)	10.05 ft. (3.06 m)	12.96 ft. (3.95 m)	16.12 ft. (4.91 m)	9.65 ft. (2.94 m)	12.35 ft. (3.77 m)	15.27 ft. (4.65 m)	
	≤ 30 ft. (≤ 9.14 m)	8.91 ft. (2.71 m)	11.2 ft. (3.41 m)	14.11 ft. (4.3 m)	17.27 ft. (5.26 m)	11.09 ft. (3.38 m)	14.33 ft. (4.37 m)	17.58 ft. (5.36 m)	
	≤ 40 ft. (≤ 12.19 m)	9.92 ft. (3.02 m)	12.33 ft. (3.76 m)	15.27 ft. (4.65 m)	18.43 ft. (5.62 m)	12.63 ft. (3.85 m)	15.81 ft. (4.82 m)	19.89 ft. (6.06 m)	
	≤ 50 ft. (≤ 15.24 m)	10.91 ft. (3.32 m)	13.42 ft. (4.09 m)	16.43 ft. (5.01 m)	19.56 ft. (5.96 m)	14.15 ft. (4.31 m)	17.28 ft. (5.27 m)	21.53 ft. (6.56 m)	
	≤ 60 ft. (≤ 18.29 m)	11.87 ft. (3.62 m)	14.48 ft. (4.41 m)	17.56 ft. (5.35 m)	20.73 ft. (6.32 m)	15.64 ft. (4.77 m)	18.74 ft. (5.71 m)	23.01 ft. (7.01 m)	

C



X > 2 ft. & X > Y

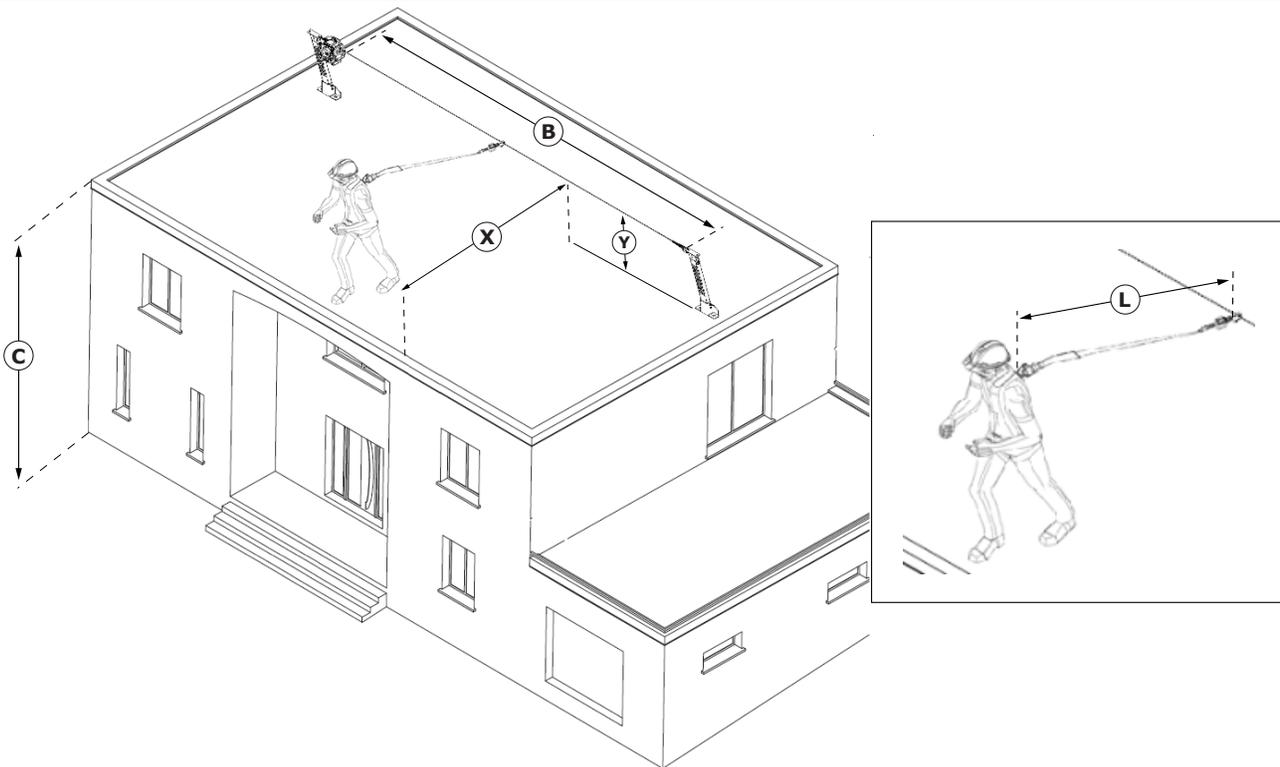


 x 1 ≤ 310 lb (140 kg)		ⓐ
ⓑ	≤10.0 ft. (≤3.05 m)	13.49 ft. (4.11 m)
	≤20.0 ft. (≤6.1 m)	15.06 ft. (4.59 m)
	≤30.0 ft. (≤9.14 m)	16.64 ft. (5.07 m)
	≤40.0 ft. (≤12.19 m)	18.21 ft. (5.55 m)
	≤50.0 ft. (≤15.24 m)	19.78 ft. (6.03 m)
	≤60.0 ft. (≤18.29 m)	21.35 ft. (6.51 m)

 x 1 ≤ 220 lb. (100 kg)		ⓐ
ⓑ	≤10.0 ft. (≤3.05 m)	12.22 ft. (3.72 m)
	≤20.0 ft. (≤6.1 m)	13.63 ft. (4.15 m)
	≤30.0 ft. (≤9.14 m)	15.03 ft. (4.58 m)
	≤40.0 ft. (≤12.19 m)	16.32 ft. (4.97 m)
	≤50.0 ft. (≤15.24 m)	17.52 ft. (5.34 m)
	≤60.0 ft. (≤18.29 m)	18.67 ft. (5.69 m)

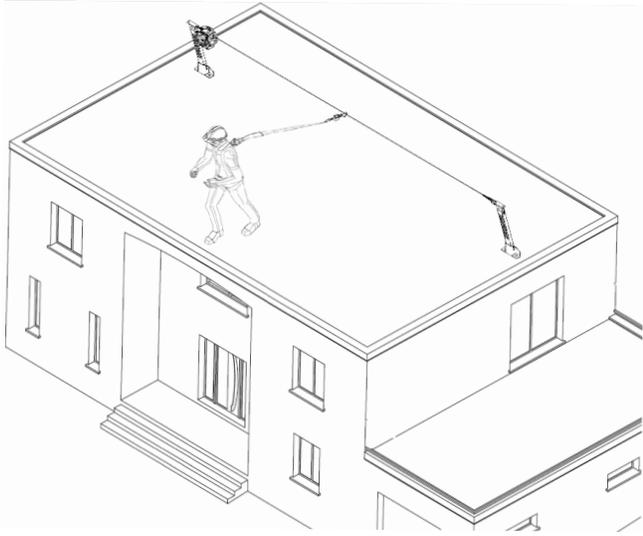
 x 1 ≤ 310 lb (140 kg)		ⓐ
ⓑ	≤10.0 ft. (≤3.05 m)	13.96 ft. (4.25m)
	≤20.0 ft. (≤6.1 m)	15.34 ft. (4.67 m)
	≤30.0 ft. (≤9.14 m)	16.72 ft. (5.1 m)
	≤40.0 ft. (≤12.19 m)	18.1 ft. (5.52 m)
	≤50.0 ft. (≤15.24 m)	19.48 ft. (5.94 m)
	≤60.0 ft. (≤18.29 m)	20.86 ft. (6.36 m)

 x 1 ≤ 220 lb (100 kg)		ⓐ
ⓑ	≤10.0 ft. (≤3.05 m)	11.93 ft. (3.64 m)
	≤20.0 ft. (≤6.1 m)	13.08 ft. (3.99 m)
	≤30.0 ft. (≤9.14 m)	14.24 ft. (4.34 m)
	≤40.0 ft. (≤12.19 m)	15.39 ft. (4.69 m)
	≤50.0 ft. (≤15.24 m)	16.55 ft. (5.04 m)
	≤60.0 ft. (≤18.29 m)	17.68 ft. (5.39 m)

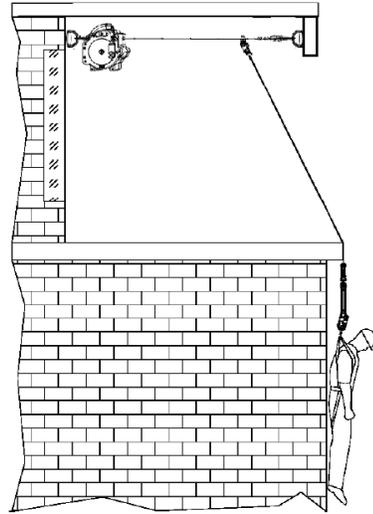


10

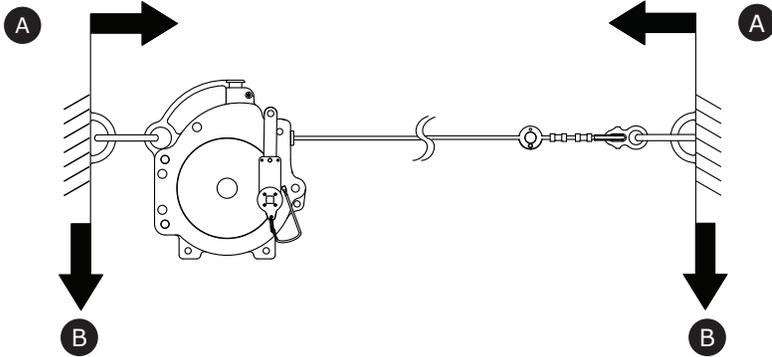
1



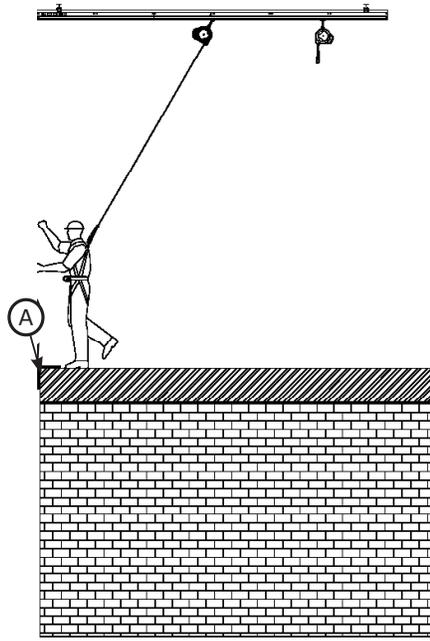
2



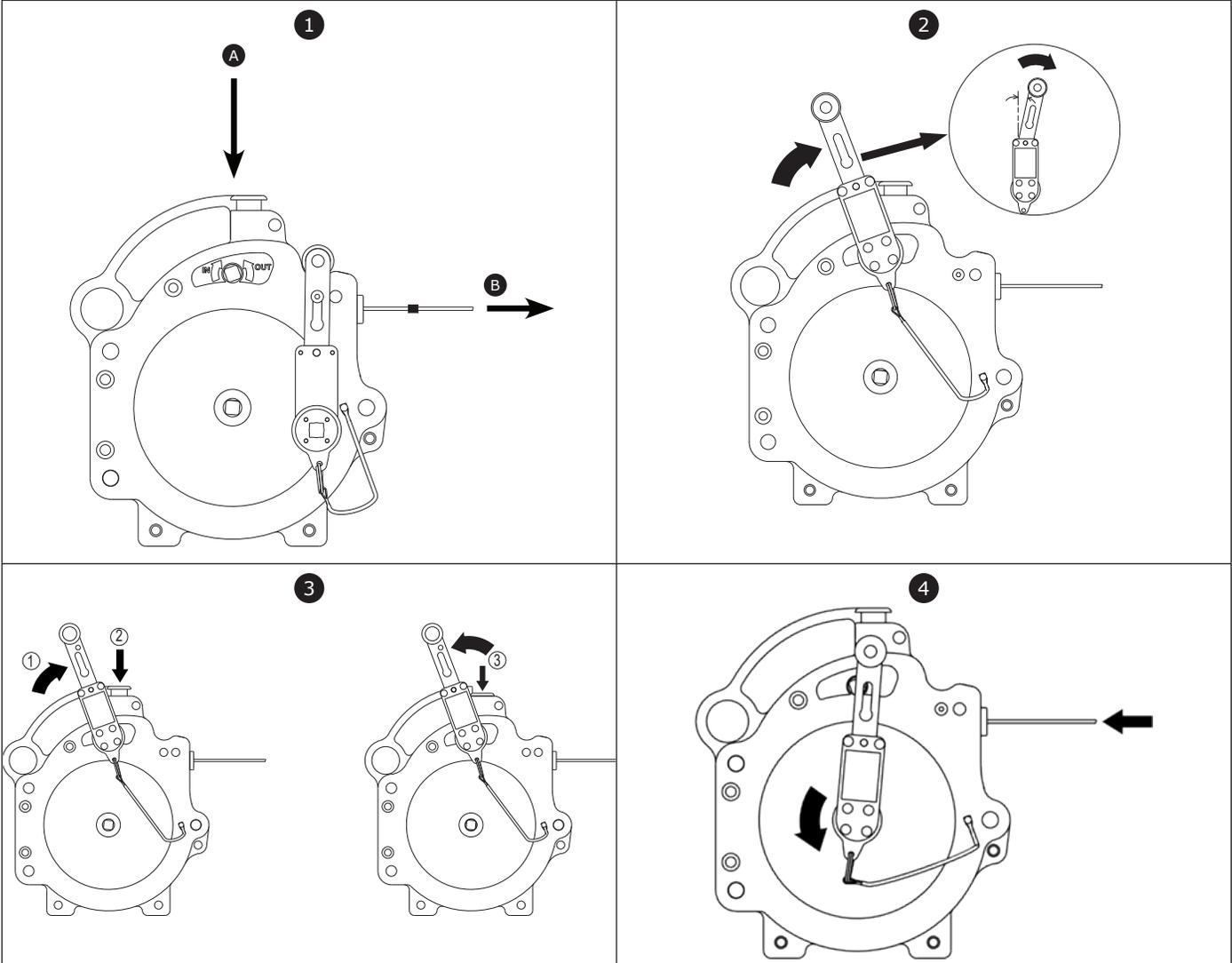
11



12



13






USA 800-328-6146
CANADA 800-367-7444
MEX 4-97-10-00-10
NF 170
+54-1928-37-13-24
800-292-0381
8278423
800-245-002

9502372 Rev. E
www.capitalsafety.com

WARNING / AVERTISSEMENT
 Manufacturer's instructions must be read and understood prior to use. Instructions supplied with this product at time of shipment must be followed for proper use, maintenance, and inspection. Attention or misuse of this product, or failure to follow instructions may result in serious injury or death. Make only compatible connections. Exercise caution using this equipment near hazardous, thermal, electrical or chemical sources. Do not use as a personal energy absorber. Do not remove this label. Les instructions du fabricant doivent être lues et comprises préalablement à l'utilisation. Ne se servir qu'avec les précautions fournies avec ce produit au moment de l'expédition pour être sûr de l'utiliser. L'attention et l'inspection. Une modification ou un usage abusif de ce produit, ou le fait de ne pas observer les instructions peut entraîner des blessures graves, voire mortelles. Éviter soigneusement des sources dangereuses. Ne pas utiliser comme absorbeur d'énergie personnel. Ne pas enlever cette étiquette.

USE / UTILISATION: Anchorage strength requirement 5000 lbs (222kN). Full body harness is required for use with this device. Ensure horizontal lifeline is located at an elevation which will limit free fall to a maximum of 6 feet when using shock absorbing lanyards, and located overhead when using self-retracting lifelines. Avoid direct contact with sharp edges. For use by trained persons only. Ensure connection to anchorage is secured properly before use. The lifeline must be correctly tensioned for optimal performance, see user manual for more detail.
 Résistance des points d'ancrage minimum 5000 lbs (222kN). L'utilisateur doit porter un harnais complet et fonctionner avec cet appareil. S'assurer que la ligne de vie est située à une élévation qui limitera la chute libre à 1,80 mètre de hauteur avec un absorbeur d'énergie, et située au-dessus de la tête de l'utilisateur avec un rétracteur à rappel automatique. Éviter tout contact avec la ligne de vie de ses angles vifs. À utiliser uniquement par des personnes formées. S'assurer de la bonne connexion aux points d'ancrage avant utilisation. La ligne de vie doit être correctement tendue avant utilisation. Voir le manuel pour plus de détails. Déconnecter la manivelle des verrous avant utilisation.
 Non réparable par l'utilisateur.

INSPECTION: Before each use inspect device in accordance with user manual including loading condition (pull strength to test), condition of lifeline, function and condition of connector, housing and fasteners, integrity of block, and any evidence of defects, damage, or fraying parts. Inspection by competent personnel must be done annually, see user manual. Inspect lifeline indicator at the center and end of the lifeline a required section by an indicator that an impact has occurred and the unit must be removed from service for repair. If used to arrest a fall, remove from service for repair. Do not use if inspection reveals an unsafe condition. Not user-reparable. Avant chaque utilisation inspecter l'appareil selon la notice en indiquant le fonctionnement du mécanisme de blocage (tirer la manivelle pour tester), l'état de la ligne de vie, le fonctionnement et l'état des connecteurs, des câbles et de la housse, le bon état des attaches, et toute évidence de défauts, dommages, ou pièces manquantes. Inspection par une personne compétente nécessaire au moins une fois par an, voir le manuel. Inspecter le témoin de chute à l'extrémité de la ligne de vie ainsi qu'une section au centre de la ligne de vie. Vérifier l'indicateur d'impact au milieu et aux extrémités de la manivelle pour réparation. Si l'appareil est utilisé pour arrêter une chute, il doit être retiré du service. Ne pas utiliser si l'inspection révèle un état dangereux. Non réparable par l'utilisateur.

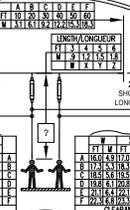
SERIAL NO. / NUMERO DE SERIE

WIND (TR. NO.)	LOT (TR. NO.)	MODEL NO.	LENGTH (FT)	LIFELINE TYPE (see book)
VENT (TR. NO.)	LOT (TR. NO.)	N° DE MODELE	LONGUEUR (m)	TYP. DE LIGNE DE VIE (voir livr.)

1 USER / UTILISATEUR
SHOCK ABSORBING LANYARD
LONGUE A ABSORBEUR D'ENERGIE



2 USERS / UTILISATEURS
SHOCK ABSORBING LANYARD
LONGUE A ABSORBEUR D'ENERGIE



LIFELINE CHARACTERISTICS
CARACTERISTIQUES DE LA LIGNE DE VIE
TYPE 2 / V.2. dernier chapitre des règ. obs et code généré de données 4.3 mm

SPECIFICATIONS	
Min. breaking strength / Résistance à la rupture	5000 LBS (222 kN)
CAPACITY (CHARGE MAXIMUM)	300 lbs per user / 136 kg par utilisateur
(2 users maximum by span - 3 separate) (2 utilisateurs maximum par portée - 3 parties séc.) (Équipement supplémentaire nécessaire pour un usage multi-portée)	

SELF-RETRACTING LIFELINE
ANTICHUTE A RAPPEL AUTOMATIQUE

1 USER / UTILISATEUR

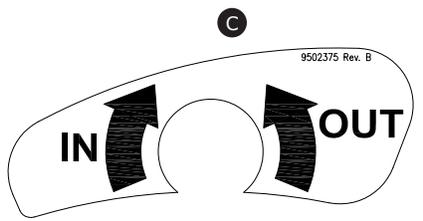
2 USERS / UTILISATEURS

CLEARANCE / TRANT D'AIR

SERVICE DATES / DATES DE REPARATION

9502374 REV A

Patent pending / Breveté

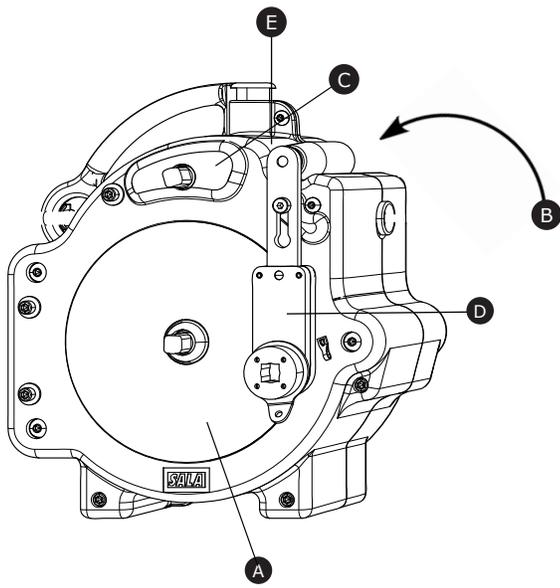


Use this crank to tension the lifeline by connecting it to the top output as shown. Wind lifeline in until a "click" occurs. The lifeline is now correctly tensioned.

Utiliser cette manivelle pour tendre la ligne de vie en la connectant à la sortie la plus haute comme montré ci-joint. Enrouler la ligne de vie jusqu'à ce qu'un "click" se fasse entendre. La ligne de vie est alors correctement tendue.

RELEASING THE IN-LINE TENSION / ENLEVER LA TENSION DANS LA LIGNE / DAS SEIL ENTPANNEN:

- Connect crank to TOP output shaft and rotate clockwise for about 20°. Connecter la manivelle sur la sortie SUPÉRIEURE et tourner dans le sens des aiguilles d'une montre sur 20° environ. Verbinden Sie den Dreharm mit der OBEREN Antriebswelle und drehen Sie ca. 20° im Uhrzeigersinn.
- Press top button down. Appuyer sur le bouton supérieur. Drücken Sie den oberen Knopf herunter.
- Rotate counterclockwise while holding top button down. Tourner dans le sens inverse des aiguilles d'une montre tout en appuyant sur le bouton supérieur. Drehen Sie gegen den Uhrzeigersinn, während Sie den oberen Knopf gedrückt halten.



Please read, understand, and follow all safety information contained in these instructions prior to the use of this Horizontal System. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.

These instructions must be provided to the user of this equipment. Retain these instructions for future reference.

Intended Use:

This Horizontal System is intended for use as part of a complete personal fall protection system.

Use in any other application including, but not limited to, material handling, recreational or sports related activities, or other activities not described in the User Instructions, is not approved by 3M and could result in serious injury or death.

This system is only to be used by trained users in workplace applications.

WARNING

This Horizontal System is part of a personal fall protection system. It is expected that all users be fully trained in the safe installation and operation of their personal fall protection system. **Misuse of this device could result in serious injury or death.** For proper selection, operation, installation, maintenance, and service, refer to these User Instructions and all manufacturer recommendations, see your supervisor, or contact 3M Technical Service

- **To reduce the risks associated with installing a Horizontal System which, if not avoided, could result in serious injury or death:**
 - Do not connect to the system while it is being installed.
 - The substrate or structure to which the anchorage connector is attached must be able to sustain the static loads specified for the anchor in the orientations permitted in the User Instructions.
 - Ensure this system is installed under the supervision of an OSHA-defined Qualified Person, an Authorized Person, or a 3M certified installer.
 - Use only cables or rail described and approved in the Product Instructions.
 - Always wear a personal fall protection system when installing a horizontal system.
 - Always use appropriate energy absorbers per requirements in the Product Instructions for your system.
 - (CABLE SYSTEMS) Use proper safety procedures and appropriate personal protective equipment when handling cable.
 - (CABLE SYSTEMS) Never rigidly mount Zorbit energy absorber to the structure or stanchion. Zorbit must be mounted such that it can pivot and move freely.
 - (EZ-LINE SYSTEMS) Always maintain control of the crank handle when adding or removing tension from the system.
 - (POUR IN PLACE) Ensure the sleeve embedment is at least 12 inches into the concrete to support fall arrest loads.
 - (POUR IN PLACE) Do not install the stanchions until the concrete has cured to a compressive strength of at least 2000 psi.
- **To reduce the risks associated with working with a Horizontal System which, if not avoided, could result in serious injury or death:**
 - Inspect the system before each use, at least annually, and after any fall event. Inspect in accordance with the User Instructions.
 - If inspection reveals an unsafe or defective condition, remove the system from service and repair or replace according to the User Instructions.
 - Any system that has been subject to fall arrest or impact force must be immediately removed from service and all components must be inspected by a Competent Person prior to being used again.
 - Ensure system is appropriate for the number of simultaneous users.
 - Work as closely to the horizontal lifeline as possible to prevent swing fall and limit fall clearance requirements. Refer to connecting device User Instructions for more information.
 - Ensure that fall protection systems/subsystems assembled from components made by different manufacturers are compatible and meet the requirements of applicable standards, including the ANSI Z359 or other applicable fall protection codes, standards, or requirements. Always consult a Competent or Qualified Person before using these systems.
 - (EZ LINE SYSTEMS) Ensure the crank handle is in the resting position when the system is in use.
 - (SYSTEMS REQUIRING TIE-BACK) Do not use the system if the Tie-Back component is not connected.
- **To reduce the risks associated with working at height which, if not avoided, could result in serious injury or death:**
 - Ensure your health and physical condition allow you to safely withstand all of the forces associated with working at height. Consult with your doctor if you have any questions regarding your ability to use this equipment.
 - Never exceed allowable capacity of your fall protection equipment.
 - Never exceed maximum free fall distance of your fall protection equipment.
 - Do not use any fall protection equipment that fails pre-use or other scheduled inspections, or if you have concerns about the use or suitability of the equipment for your application. Contact 3M Technical Services with any questions.
 - Some subsystem and component combinations may interfere with the operation of this equipment. Only use compatible connections. Consult 3M prior to using this equipment in combination with components or subsystems other than those described in the User Instructions.
 - Use extra precautions when working around moving machinery (e.g. top drive of oil rigs) electrical hazards, extreme temperatures, chemical hazards, explosive or toxic gases, sharp edges, or below overhead materials that could fall onto you or the fall protection equipment.
 - Use Arc Flash or Hot Works devices when working in high heat environments.
 - Avoid surfaces and objects that can damage the user or equipment.
 - Ensure there is adequate fall clearance when working at height.
 - Never modify or alter your fall protection equipment. Only 3M or parties authorized in writing by 3M may make repairs to the equipment.
 - Prior to use of fall protection equipment, ensure a rescue plan is in place which allows for prompt rescue if a fall incident occurs.
 - If a fall incident occurs, immediately seek medical attention for the fallen worker for the worker who has fallen.
 - Do not use a body belt for fall arrest applications. Use only a Full Body Harness.
 - Minimize swing falls by working as directly below the anchorage point as possible.
 - If training with this device, a secondary fall protection system must be utilized in a manner that does not expose the trainee to an unintended fall hazard.
 - Always wear appropriate personal protective equipment when installing, using, or inspecting the device/system.

Prior to installation and use of this equipment, record the product identification information from the ID label in the Inspection and Maintenance Log (Table 2) at the back of this manual.

Always ensure you are using the latest revision of your 3M instruction manual. Visit the 3M website or contact 3M Technical Services for updated instruction manuals.

PRODUCT DESCRIPTION:

Figure 1 illustrates the 3M™ DBI-SALA® EZ-Line™ Horizontal Lifeline (HLL) system. The HLL System is secured between two anchorage points and provides connections for up to two users as part of a Personal Fall Arrest or Fall Restraint System.

Figure 2 illustrates components of the 3M™ DBI-SALA® EZ-Line Horizontal Lifeline. See Table 1 for Component Specifications. The EZ-Line Horizontal Lifeline is a tensioned steel cable lifeline terminated between Anchorage Connectors. The cable housing contains an internal energy absorber to limit forces on the system and absorb energy in a fall arrest. Attachment O-rings provide moving anchorage connection points for the user’s Personal Fall Arrest or Personal Fall Restraint system.

Table 1 – Specifications

System Specifications:			
Anchorage Requirements:	Figure 11 Reference	Description	Anchorage Requirements
	Ⓐ	In line with axis of HLL	5000 lbf (22.2 kN)
	Ⓑ	Perpendicular to axis of HLL	3600 lbf (16 kN)
	<p>End Anchors: Structure supporting the horizontal lifeline system must be rigid and capable of supporting at least 5000 lbf (22.2 kN) along the axis of the horizontal lifeline. Anchorages must also support at least 3600 lbf (16 kN) applied in all potential directions of fall arrest that are perpendicular to the axis of the horizontal lifeline.</p> <p>Intermediate Anchors (if used): Intermediate anchorages and supporting structure must support at least 3600 lbf (16 kN) applied in all potential directions of fall arrest.</p>		
Capacity:	<p>Single Span System: The maximum capacity of a single span EZ-Line HLL is two persons. The maximum weight of each person including tools and clothing is 310 lb. (140 kg).</p> <p>Multi-span System: The maximum capacity of a Multi-span EZ-Line HLL is two persons per span with a maximum of 6 persons provided the requirements of ANSI Z359.6 or CSA Z259.16 are met. The maximum weight of each person including tools and clothing is 310 lb. (140 kg).</p>		
Connecting Subsystems and Fall Arrest System Limits:	Energy Absorbing Lanyards or Self Retracting Devices (SRDs) connected to the system must weigh no more than 15 lb. (6.8 kg). Each person’s connecting subsystem must limit maximum fall arrest forces (MAF) to 1,350 lbf (6.0 kN) or less. Connecting subsystems must be used at anchorage heights consistent with their instruction manuals.		
Energy Absorber Performance:	Peak Dynamic Pullout Load: 2,500 lbf (11.1 kN) Average Dynamic Pullout Load: 2,000 lbf (8.9 kN) Maximum Pullout (Span length): 4 ft. 6 in. + 60 ft. (1.4 m + 18.3 m) Minimum Tensile Strength: 5,000 lbf (22.2 kN)		
Operating Temperature:	-58 F to 140 F (-50C to 60C)		
Standards:	OSHA 1910.140, OSHA 1926.502		
Span Length:	<p>Single Span System: 0-60 ft.</p> <p>Multi-span System: 0-60 ft. with a Zorbit Energy Absorber installed on end of the system opposite the housing.</p>		
Minimum Breaking Strength:	5,000 lbf (22.2 kN)		
Maximum Free Fall	6.0 ft. (1.8 m). See Section 3.7 “Knee-Level Tie-Off and Leading Edge” for special cases requiring 12 ft. (3.65 m) of Free Fall, and Section 3.11 “HLL Installation on 3M Stanchion Posts” for special cases requiring 8 ft. (2.4 m) of Free Fall.		

COMPONENT SPECIFICATIONS:

Figure 2	Description	Material
Ⓐ	Lifeline	Wire Rope, 1/4 inch diameter, 7x19 galvanized steel
Ⓑ	Housing	Low density polyethylene
Ⓒ	Crank Handle	Steel, aluminum, plastic
Ⓓ	Carabiner	Zinc plated high tensile alloy steel
Ⓔ	Output Shafts	Steel
Ⓕ	Impact Indicator	Zinc plated steel
Ⓖ	Attachment O-rings	Zinc plated steel

1.0 PRODUCT APPLICATION

- 1.1 **PURPOSE:** These Horizontal Lifeline (HLL) Anchorage Systems provide multiple anchorage connection points for Fall Arrest and Fall Restraint systems along the entire length of the lifeline. They use a flexible anchor line installed between two anchorage connectors, and are equipped with one or more Energy Absorbers to limit forces on the system and absorb energy in a fall arrest.
- 1.2 **STANDARDS:** Your product conforms to the national or regional standard(s) identified on the front cover of these instructions. If this product is resold outside the original country of destination, the re-seller must provide these instructions in the language of the country in which the product will be used.
- 1.3 **SUPERVISION:** Horizontal Lifeline systems must be installed and used under the supervision of a Qualified Person¹.
- 1.4 **TRAINING:** This product must be installed and used by persons trained in its correct application. These instructions are to be used as part of an employee training program as required by national, regional, or local standards. It is the responsibility of the users and installers of this equipment to ensure they are familiar with these instructions, trained in the correct care and use of this equipment, and are aware of the operating characteristics, application limitations, and consequences of improper use of this equipment.
- 1.5 **RESCUE PLAN:** When using this equipment and connecting subsystem(s), the employer must have a written rescue plan and the means to implement and communicate that plan to users², authorized persons³, and rescuers⁴. A trained, on-site rescue team is recommended. Team members should be provided with the equipment and techniques necessary to perform a successful rescue. Training should be provided on a periodic basis to ensure rescuer proficiency. Rescuers should be provided with these instructions. There should be visual contact or means of communication with the person being rescued at all times during the rescue process.
- 1.6 **ENVIRONMENTAL HAZARDS:** Use of this equipment in areas with environmental hazards may require additional precautions to prevent injury to the user or damage to the equipment. Hazards may include, but are not limited to: high heat, chemicals, corrosive environments, high voltage power lines, explosive or toxic gases, moving machinery, sharp edges, or overhead materials that may fall and contact the user or equipment. Contact 3M Technical Services for further clarification.

2.0 SYSTEM REQUIREMENTS

- 2.0 **CAPACITY:** The user capacity of a complete Fall Protection system is limited by its lowest rated maximum capacity component. For example, if your connecting subsystem has a capacity that is less than your harness, you must comply with the capacity requirements of your connecting subsystem. See the manufacturer instructions for each component of your system for capacity requirements.
- 2.1 **ANCHORAGE:** Anchorage requirements vary with the Fall Protection application. The mounting structure on which the equipment is placed must meet the Anchorage specifications defined in Table 1.
- 2.2 **FALL ARREST SYSTEM LIMITS:** Ensure the arresting forces of your Fall Arrest system are limited to the values in Table 1.
- 2.3 **BODY SUPPORT:** A Full Body Harness must be used in conjunction with the HLL System. For general Fall Protection use, connect to the dorsal D-Ring of the harness. Consult the harness manufacturer's instructions for details regarding use of the harness connection points.
- 2.4 **FREE FALL:** Fall Protection systems used with this equipment must be rigged to limit free fall to the values listed in Table 1. See your connecting subsystem for more information.
- 2.5 **FALL PATH AND SRD LOCKING SPEED:** Do not use in applications that have an obstructed fall path. A clear path is required to lock the SRD. Working on slowly shifting materials (e.g. sand or grain), or within limited spaces, may not allow the worker to reach sufficient speed to lock the SRD.
- 2.6 **SHARP EDGES:** Avoid using this equipment where system components will be in contact with, or scrape against, sharp edges and abrasive surfaces. All sharp edges and abrasive surfaces must be covered with protective material when contact is unavoidable.
- 2.7 **AFTER A FALL:** If this equipment is subjected to fall arrest or impact force, remove it from service immediately. Clearly tag it "Do Not Use." See Section 5 for more information.
- 2.8 **COMPONENT COMPATIBILITY:** 3M equipment is designed for use with 3M-approved components and subsystems only. Substitutions or replacements made with non-approved components or subsystems may jeopardize compatibility of equipment and may affect the safety and reliability of the complete system.

¹ **Qualified Person:** An individual with a recognized degree or professional certificate, and extensive experience in Fall Protection. This individual must be capable of design, analysis, evaluation, and specification in Fall Protection.

² **User:** A person who performs activities while protected by a Fall Protection System.

³ **Authorized Person:** A person assigned by the employer to perform duties at a location where the person will be exposed to a fall hazard.

⁴ **Rescuer:** Person or persons other than the rescue subject acting to perform an assisted rescue by operation of a rescue system.

2.9 CONNECTOR COMPATIBILITY: Connectors are compatible with connecting elements when the size and shape of either component does not cause the connector to inadvertently open, regardless of orientation. Connectors must comply with applicable standards. Connectors must be fully closed and locked during use.

3M Connectors (snap hooks and carabiners) are designed to be used only as specified in each instruction manual. Ensure connectors are compatible with the system components to which they are connected. Do not use equipment that is non-compatible. Use of non-compatible components may cause the connector to unintentionally disengage (see Figure 4). If the connecting element to which a connector attaches is undersized or irregular in shape, a situation could occur where the connecting element applies a force to the gate of the connector (A). This force could then cause the gate to open (B), disengaging the connector from the connecting element (C).

2.10 MAKING CONNECTIONS: All connections must be compatible in size, shape, and strength. See Figure 5 for examples of inappropriate connections. Do not attach snap hooks and carabiners:

- A. To a D-Ring to which another connector is attached.
- B. In a manner that would result in a load on the gate. Large-throat snap hooks should not be connected to standard-size D-Rings or other connecting elements, unless the snap hook has a gate strength of 16 kN (3,600 lbf) or greater.
- C. In a false engagement, where size or shape of the connector or connecting element is not compatible and, without visual confirmation, would seem to be fully engaged.
- D. To each other.
- E. Directly to webbing or rope lanyard or tie-back material, unless the instruction manuals for both the lanyard and connector specifically allow such a connection.
- F. To any object whose size or shape does not allow the connector to fully close and lock, or that could cause connector roll-out.
- G. In a manner that does not allow the connector to align properly while under load.

3.0 INSTALLATION

3.1 PLANNING: Plan your Fall Protection system before starting your work. Account for all factors that may affect your safety before, during, and after a fall. Consider all requirements and limitations defined in this manual.

Non-rigid anchorages which deform under load will affect System performance. Large deformations of the anchorage may increase the required Fall Clearance below the HLL System, increasing the potential for serious injury or death unless adequate clearance is provided.

3.2 SYSTEM ELEVATION: Both end anchorage points for the HLL System must be set at approximately the same elevation level, such that the HLL System has a slope of five degrees (5°) or less.

Do not use the system if it exceeds this slope. The HLL System must be installed such that its height and setback from the edge of the working platform will limit free fall to no greater than 6.0 ft. (1.8 m), when used in combination with the connecting subsystem. Connecting subsystems will be either an Energy Absorbing Lanyard or Self-Retracting Device (SRD).

It is recommended that the end anchorage points be placed above the user, such that the HLL System is positioned overhead. If overhead positioning is not practical, the lifeline may be installed at lower elevations, but care must be taken to ensure that the free fall limitations and anchorage height requirements of the connecting subsystems are met.

3.3 FALL CLEARANCE: There must be sufficient clearance below the user to arrest a fall before the user strikes the ground or other obstruction. Fall Clearance is influenced by the following factors:

- Deceleration Distance
- Worker Height
- Elevation of Anchorage Connector
- Free Fall Distance
- Movement of Harness Attachment Element
- Connecting Subsystem Length

The specifics for how each of these factors affect Fall Clearance calculation is also determined by what type of connecting subsystem is used. See the manufacturer instructions for your connecting subsystem for further information on Fall Clearance factors.

When calculating HLL Fall Clearance, 3M Fall Protection defines two different application types based on the physical set-up of the system. See Figure 6 for an illustration of the setback distance (X) and HLL height (Y). The application type determines the correct Fall Clearance charts to use. The two application types are:

1. Application Type A - Small System Setback: This application type applies when the setback distance (X) between the HLL System and the fall edge is 2 ft. (0.6 m) or less, **OR** the HLL height (Y) above the walking/working surface is greater than or equal to the setback distance (X). When these conditions are true, use Fall Clearance charts in Figures 7 and 8, and instructions for these charts in Section 3.4.

2. Application Type B - Large System Setback: This application type applies when the setback distance (X) between the HLL System and the fall edge is greater than 2 ft. (0.6 m) **AND** the HLL height (Y) above the walking/working surface is less than the setback distance (X). When these conditions are true, use Fall Clearance charts in Figures 9 and instructions for these charts in Section 3.5.

- A. ENERGY-ABSORBING LANYARDS:** Lanyards should be selected for use with consideration of their length and the resulting free fall distance from use. When the anchorage is located below the worker's harness attachment point, free fall distance will exceed the lanyard length, up to as much as twice the lanyard length.
- B. SELF-RETRACTING DEVICES (SRDs):** Any SRDs used with the HLL System must be approved for use with deformable anchorage systems.

All Fall Clearance values in these instructions were calculated using the maximum free fall distances stated in Section 3.2. Greater free fall distances will require more Fall Clearance.

When the connecting subsystem used with the HLL system is a non-3M product, 1 ft. (0.3 m) of additional Fall Clearance must be added to the values in the Fall Clearance charts to account for unknown variation in product performance.

Connecting subsystems used with the HLL System must meet all local and regional requirements.

3.4 FALL CLEARANCE FOR APPLICATION TYPE A - SMALL SYSTEM SETBACK:

A. ENERGY-ABSORBING LANYARDS: For Energy-Absorbing Lanyards, Required Fall Clearance (C) is measured from the anchorage and is determined by Lanyard Length (A), HLL System Span (B), and the number of users connected to the HLL System. See Figure 7 for reference.

To determine Required Fall Clearance (C) using Figure 7 for Energy-Absorbing Lanyards:

1. Select the chart that has a capacity fitting your combined weight (including clothing, tools, etc.) and number of users.
2. Find the column in the chart that matches your Lanyard Length (A).
3. Find the row in the column to the far left that matches your System Span (B).
4. Find the corresponding Required Fall Clearance (C) where the column for your Lanyard Length (A) and the row for your System Span (B) intersect.

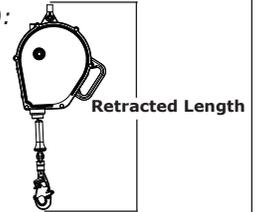
B. SELF-RETRACTING DEVICES (SRDs): Any SRDs used with the HLL System must be approved for use with deformable anchorage systems.

Retracted Length: SRDs should have a retracted length of 2 ft. (0.61 m) or less. For SRDs with a retracted length longer than 2 ft. (0.61 m), the difference in retracted length of the SRD must be subtracted from the HLL System Height (A) when selecting the proper height range (D,E,F, or G) to use when determining Required Fall Clearance. See Figure 8.

Example:

For an SRD with a retracted length of 5 ft. (1.5 m) and HLL System height of 6 ft. (1.8 m):

- 1.** *5 ft. (1.5 m) - 2 ft. (0.61 m) = 3 ft. (0.91 m) for the SRD length difference*
- 2.** *6 ft. (1.8 m) HLL System height - 3 ft. (0.91 m) = 3 ft. (0.91 m)*
- 3.** *Use Figure 8 chart columns with height range "F" (3 ft. ≤ A < 5 ft.)*



For Self-Retracting Devices (SRDs), Required Fall Clearance is measured from the walking/working surface and is determined by HLL System Height (A), HLL System Span (B), and the number of users connected to the HLL System. See Figure 8 for reference.

To determine Required Fall Clearance (C) using Figure 8 for Self-Retracting Devices:

1. Select the chart that has a capacity fitting your combined weight (including clothing, tools, etc.) and number of users.
2. Find the column in the chart that matches your System Height (A). The height ranges in these columns are labeled D, E, F, and G, and are illustrated in the images below the chart.
3. Find the row in the column to the far left that matches your System Span (B).
4. Find the corresponding Required Fall Clearance (C) where the column for your System Height (A) and the row for your System Span (B) intersect.

3.5 FALL CLEARANCE APPLICATION TYPE B - LARGE SYSTEM SETBACK: An HLL System installed with a setback distance from the edge greater than its height above the working platform creates a high angle between the connecting subsystem and the direction of fall. In such cases, a fall causes the connecting subsystem to contact the edge before significant deflection of the HLL. This limits the impact of HLL installation height in controlling free fall distance, as well as its effect on Fall Clearance.

See Figure 9 for reference. If the Setback Distance (X) of the system is greater than its System Height (Y), then the following guidelines should be observed:

A. ENERGY-ABSORBING LANYARDS:

- Lanyard Length (L) must not exceed Setback Distance (X) during use. When possible, design your Fall Protection system for Fall Restraint instead of Fall Arrest.
- Reduce the system capacity to one user per span.
- Figure 9 must be used for determining Required Fall Clearance below the working surface. Use the Figure 9 charts instead of Figure 7.

To determine Required Fall Clearance (C) using Figure 9 for Energy-Absorbing Lanyards:

1. Select the chart that has a capacity fitting your combined weight (including clothing, tools, etc.) within the box with the lanyard shown.
2. Find the row in the column on the left that matches your HLL Span Length (B).
3. Find the corresponding Required Fall Clearance (C) in the column to the right.

B. SELF-RETRACTING DEVICES (SRDS):

- SRDs used in a Large System Setback application must be rated for knee-level tie-off applications, in addition to meeting the requirements specified in Table 1.
- Reduce the system capacity to one user per span.
- All Section 3.7 "Knee-Level Tie-Off and Leading Edge" criteria for SRDs must be observed.
- For systems less than 2 ft. (0.6 m) from the edge, refer to Figure 8 for Required Fall Clearance. For systems greater than 2 ft. (0.6 m) from the edge, which meet the X>Y criteria, refer to Figure 9 for Required Fall Clearance.

To determine Required Fall Clearance (C) using Figure 9 for SRDs:

1. Select the chart that has a capacity fitting your combined weight (including clothing, tools, etc.) within the box with the SRD shown.
2. Find the row in the column on the left that matches your HLL Span Length (B).
3. Find the corresponding Required Fall Clearance (C) in the column to the right.

3.6 SWING FALLS: Swing falls occur when the anchorage point is not directly above the point where a fall occurs (see Figure 3). The force of striking an object in a swing fall may cause serious injury or death. Do not permit a swing fall if injury could occur. Minimize swing falls by working as directly below the anchorage point as possible. The required Fall Clearance (FC) of the user increases as User Work Radius (W) increases, since the total fall distance will be greater than if the user had fallen directly below the anchorage point.

3.7 KNEE-LEVEL TIE-OFF AND LEADING EDGE: If the HLL System is installed at a height of less than 3.0 ft (.9 m) above the working platform, then it is considered a knee-level tie-off application. The following criteria should be observed with knee-level tie-off applications:

- Connecting subsystems used with the HLL System must be rated for knee-level tie-off applications, in addition to meeting the requirements specified in Table 1.
- Energy-Absorbing Lanyards should be kept as short as possible. The length of the Lanyard should not extend over the edge when connected to the HLL System to maintain 6 ft. (1.8 m) free fall limitations. Longer lengths could expose the worker to greater free fall distances. If it is not possible to maintain 6 ft. (1.8 m) of free fall distance, free falls up to 12 ft. (3.6 m) by a single user with a 6 ft. (1.8 m) lanyard and a maximum arrest force of 1800 lbf (8.0 kN) can be accommodated by adding 5 ft. (1.5 m) of Fall Clearance to the values in Figure 7.
- Reduce the system capacity to one user per span.
- For Leading Edge applications, a Leading Edge SRD must be used as the connecting subsystem. 10 ft. (3.0 m) of setback should be maintained. Users must stay within 30 degrees (30°) of perpendicular to the HLL System while working, in order to minimize swing falls and cutting actions during a swing fall.

3.8 SINGLE SPAN SYSTEMS: For a single span system, the maximum horizontal lifeline span length is 60 ft. (18.3 m). The span length must be reduced when clearance is limited.

3.9 CONVERSION TO A MULTI-SPAN SYSTEM: To reduce the amount of fall clearance required, the EZ-Line HLL system can be converted to a multiple span system. The below guidelines must be followed:

1. The maximum span length for multiple-span systems is 60 ft. (18.3 m), and the system may contain up to three spans. Span lengths must be reduced when clearance is limited.
2. Intermediate anchorages and end anchorages must meet the loading requirements specified in Table 1.
3. A Zorbit Energy Absorber must be added to the end of the system opposite the winch assembly.
4. Brackets and connectors used to create intermediate anchorages must be compatible with the HLL system (see Sections 2.6 and 2.7) such that it is not possible for unintentional disengagement of the horizontal lifeline to occur.
5. The swaged connections of the EZ-Line HLL system should not be disassembled or removed to permit passage through intermediate anchorage brackets or connectors. Consequently, brackets or connectors used to create intermediate anchorages must have sufficiently large openings to receive the assembled lifeline, or be capable of mid-line attachment without needing to thread the cable end.
6. Connectors and brackets used to create intermediate anchorages must allow free passage of the horizontal lifeline such that it is not held tightly or restricted from sliding along the HLL's axis.
7. Connectors and brackets used to create intermediate anchorages must not contain sharp or abrasive edges which could come in contact with the horizontal lifeline.
8. 100% tie-off is required when using the HLL system. If intermediate brackets and connectors do not permit the connecting subsystem to bypass, it will be necessary to use twin lanyards to maintain connection to the system when moving between spans.
9. The maximum capacity for multi-span EZ-Line HLL system is 2 users per span with a maximum of 6 users. If used for knee-level tie-off, capacity is reduced to 1 user per span.

In multiple-span HLL systems designed under ANSI Z359.6 or CSA Z259.16 to permit multiple users in multiple spans, it is the responsibility of the Qualified Person (and not of 3M) to evaluate and document the design considerations and details which ensure a single event or circumstance will not cause multiple users in multiple spans to fall within a very short period of time.

3.10 HLL INSTALLATION WITH 3M ROOF-TOP ANCHOR POSTS: When the EZ-Line HLL system is installed on 3M Roof-Top Anchor Roof Posts (model numbers: 2100138, 2100139, 2100140, 2100142), the following accommodations must be made:

1. The maximum span length of an HLL used between Roof-Top Anchor posts is 60 ft. (18.3 m).
2. Ensure each anchor is properly installed following the manufacturer's instructions and the connection of the Roof-Top Anchor Baseplate to the roof structure meets the anchorage requirements specified in table 1.
3. Additional fall clearance of 4 ft. (1.2 m) must be added to the values listed in the Fall Clearance charts to account for deformation of the Roof-Top Anchor
4. The wire rope should only be tensioned enough to raise it above the roof surface 2-3 in. (5.08-7.62 cm) to allow free passage of the attachment O-rings to avoid unintentional deployment of the Roof-Top Anchor.

3.11 HLL INSTALLATION ON 3M STANCHION POSTS:

When the 3M™ DBI-SALA® Temporary Cable HLL system is installed on 3M Stanchion systems (I-beam stanchion, perpendicular I-beam stanchion, pour-in-place stanchion, stud/rebar stanchion) the following accommodations must be made:

- The maximum span length of an HLL used between stanchion posts is 60 ft.
- Ensure each stanchion is properly installed following the manufacturer's instructions and the structure meets the anchorage requirements specified in table 1.
- A common setup involving 3M Stanchion Posts places the HLL at a height 3 ft. (0.9 m) above the walking surface. A 6 ft. (1.8 m) lanyard used in combination with the Stanchion HLL System can result in a Free Fall of 8 ft. (2.4 m). To account for this increased Free Fall distance, 1 ft. (0.3 m) of additional Fall Clearance must be added to the values in Figure 7 when a 6 ft. (1.8 m) lanyard is used to connect to a 3 ft. (0.9 m) high Stanchion HLL system.
- If the system setback from the fall edge is greater than the height of the HLL above the working surface, use fall clearance criteria specified in section 3.3 plus an additional 5 ft. (1.5 m) fall clearance to account for potential deflection of the post due to side-loading.

3.12 USER CAPACITY GREATER THAN 310 LB. (140 KG) GUIDELINES:

If a user's total weight, including tools and clothing, exceeds the 310 lb. (140 kg) capacity limit, adaptations can be made to accommodate a single user weighing up to 420 lb. (190 kg), including tools and clothing.

For users weighing between 310 lb. and 420 lb. (140 kg and 190 kg), including tools and clothing, the following guidelines must be followed:

1. Capacity is reduced to one user per span.
2. Ensure the connecting subsystem is rated for total weight of the user.
3. Use the two-user Fall Clearance values from the 310 lb. (140 kg) capacity Fall Clearance charts, but apply to a single user that weighs up to 420 lb. (190 kg).

3.13 HLL INSTALLATION:

Step 1. Determine the locations of the anchorages and evaluate their strengths in accordance with the anchorage requirements listed in Table 1. Determine the span length and evaluate the required clearance using Figure 7 or 8. Figures 7 and 8 apply to one or two users connected to the system.

Step 2. Press on the button (A) on top of the housing and hold it down to pay out the required amount of lifeline by pulling out the line. Ensure the crank handle is not connected to any output during this operation. When the button is released, it will spring back up and the lifeline will lock in place. If the lifeline does not lock, do not use. The unit must be returned to an authorized dealer for service. See Figure 13.1.

Step 3. Install the horizontal lifeline to end anchorage connectors using the carabiners provided. See Figure 2. If the EZ-Line is installed as a multi-span system, a Zorbit energy absorber must be added to the end of the system as shown in Figure 2. Refer to manufacturer's instructions provided with the anchorage connectors for installation requirements. The horizontal lifeline system may be secured directly to the anchorage if the anchorage incorporates a connecting element that meets the requirements specified in table.

Zorbit Energy Absorber: Mount so Zorbit can pivot and move freely as shown in Figure 2. Do not rigidly mount Zorbit HLL Energy absorber to structure or stanchion because this may cause failure due to bending.

Step 4: Connect the crank handle to the top output and remove excess slack by rotating clockwise. The lifeline must be tensioned until a "click" and a slight rotation of the crank arm relative to the crank body occur. When the crank handle is released, it will return to its original position in line with the crank body. In the special case of the HLL installed on 3M Roof-Top Anchors, the tensioning procedure must be modified to prevent pre-deployment of the Roof-Top Anchor. For these applications, the wire rope should only be tensioned enough to raise it above the roof surface 2-3 inches and allow free passage of the attachment O-rings. See Figure 13.2.

Step 5: If slack is needed to make an adjustment to the system, or for ease in removing the system, connect the crank handle to the top output and rotate clockwise for about 20 degrees (20°), press the top button simultaneously and allow the crank handle to rotate counterclockwise. See Figure 13.3.

Step 6: After use, retract the lifeline back into the casing by connecting the crank handle to the bottom output and rotating it counterclockwise. See Figure 13.4.

4.0 USE

4.1 BEFORE EACH USE: Verify that your work area and Fall Protection system meet all criteria defined in Section 2 and that a formal Rescue Plan is in place. Inspect the HLL System per the 'User' inspection points defined on the "Inspection & Maintenance Log" (Table 2). If inspection reveals an unsafe or defective condition, do not use the system. Remove the system from service, clearly tag it "DO NOT USE", and either destroy the system or forward to 3M for replacement or repair. See section 5 for more information.

4.2 CONNECTING TO THE HLL SYSTEM: Appropriate Fall Protection equipment must be worn when installing or connecting to the HLL System. Connect your Fall Protection system to one of the attachment O-rings on the HLL System. When using an Energy Absorbing Lanyard, the length of the connecting subsystem should be kept as short as possible in order to reduce the potential free fall and required fall clearance.

4.3 SYSTEM CONNECTIONS: Figure 10 indicates typical system connections when using the HLL System. Figure 10.1 illustrates application as a Fall Restraint system. Figure 10.2 illustrates application as a Fall Arrest system. When possible, work at or below the level of the HLL System. To avoid swing fall hazards, do not work too far from either side of the HLL System.

Horizontal Lifeline Connections: See the product instruction for your Horizontal Lifeline (HLL) for proper connection of the Lanyard or SRD to the HLL.

4.4 CONNECTING TO THE HLL SYSTEM: Approach the work area using the appropriate access equipment. Connect the personal fall arrest system to one of the attachment O-rings on the HLL or another connector meeting the requirements of Section 2.7. Connectors must meet the specified compatibility and strength requirements.

4.5 USE WITH TWO PERSONS: When one person falls while connected to the HLL System, the system will deflect. If two persons are connected to the same HLL System and one person falls, the second person may be pulled off the working surface due to deflection. The risk of the second person falling increases as the span length of the HLL System increases. The use of independent HLL Systems for each person, or a shorter span length, is recommended to minimize risk.

4.6 USE WITH AN SRD: When using an SRD to connect to the system, the SRD must meet the weight requirements specified in Table 1. To reduce potential swing fall, it is recommended that the end anchorages be located above the user, such that the SRD is positioned directly above the user. If overhead positioning is not possible, the lifeline may be installed at a lower position as long as the free fall limits and anchorage height requirements of the connecting subsystems are met. The SRD connection between the user and HLL System must remain taut to limit free fall distance. • SRDs must be approved by the manufacturer for use with deformable anchorage systems.

4.7 SHARP EDGES: The HLL System must be installed so deflection of the anchor line in a fall arrest does not bring the anchor line into contact with a sharp edge (A) or any other object that may damage the anchor line (see Figure 12).

5.0 INSPECTION

5.1 INSPECTION FREQUENCY: The HLL System must be inspected at the intervals defined in Section 2. Inspection procedures are described in the "Inspection & Maintenance Log" (Table 2). Inspect all other components of the Fall Protection system per the frequencies and procedures defined in the manufacturer's instructions.

5.2 DEFECTS: If inspection reveals an unsafe or defective condition, immediately remove the HLL System from service, clearly tag it "DO NOT USE", and either destroy the system or forward to 3M for replacement or repair.

Only 3M or parties authorized in writing my make repairs to this equipment.

Remove all attached RFID Tags before disposing of this product. RFID Tags must be disposed of according to the restrictions specified in Section 7.

5.3 PRODUCT LIFE: The functional life of the HLL System is determined by work conditions and maintenance. As long as the product passes inspection criteria, it may remain in service.

6.0 MAINTENANCE, SERVICING, STORAGE

6.1 CLEANING: Periodically clean the EZ-Line Horizontal Lifeline's metal components with a soft brush, warm water, and a mild soap solution. Ensure parts are thoroughly rinsed with clean water.

6.2 SERVICE: Only 3M or parties authorized in writing by 3M may make repairs to this equipment. If the HLL System has been subject to fall arrest force or if inspection reveals an unsafe or defective condition, remove the system from service and destroy or contact 3M regarding replacement or repair.

6.3 STORAGE AND TRANSPORT: When not in use, store and transport the EZ-Line Horizontal Lifeline and associated fall protection equipment in a cool, dry, clean environment out of direct sunlight. Avoid areas where chemical vapors may exist. Thoroughly inspect components after extended storage. When not in use, slacken the HLL by connecting the crank to the top output and rotate clockwise for about 20 degrees (20°), press the top button simultaneously, and allow the crank to rotate counterclockwise. Disconnect the HLL system from the anchorages. Retract the lifeline back into the housing by connecting the crank handle more likely to the bottom output and rotate counterclockwise. Ensure there are no knots or kinks in the lifeline as you retract it.

7.0 LABELS

Figure 14 shows the labels that should be present on the EZ-Line Horizontal Lifeline. All labels must be present on the EZ-Line Horizontal Lifeline. If labels are missing or are not fully legible, they must be replaced.

A	Warning/Use/ID Label
B	Clearance Label
C	Crank Direction Label
D	Crank Handle Label
E	Release In-Line Tension Label

**U.S. PRODUCT WARRANTY, LIMITED REMEDY
AND LIMITATION OF LIABILITY**

WARRANTY: THE FOLLOWING IS MADE IN LIEU OF ALL WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Unless otherwise provided by applicable law, 3M fall protection products are warranted against factory defects in workmanship and materials for a period of one year from the date of installation or first use by the original owner.

LIMITED REMEDY: Upon written notice to 3M, 3M will repair or replace any product determined by 3M to have a factory defect in workmanship or materials. 3M reserves the right to require product be returned to its facility for evaluation of warranty claims. This warranty does not cover product damage due to wear, abuse, misuse, damage in transit, failure to maintain the product or other damage beyond 3M's control. 3M will be the sole judge of product condition and warranty options.

This warranty applies only to the original purchaser and is the only warranty applicable to 3M's fall protection products. Please contact 3M's customer service department at 800-328-6146 or via email at 3MFallProtection@mmm.com for assistance.

LIMITATION OF LIABILITY: TO THE EXTENT PERMITTED BY APPLICABLE LAW, 3M IS NOT LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO LOSS OF PROFITS, IN ANY WAY RELATED TO THE PRODUCTS REGARDLESS OF THE LEGAL THEORY ASSERTED.



Fall Protection

Distributed by Engineered Fall Protection
Sales@EngineeredFallProtection.com
www.EngineeredFallProtection.com
Tel: (314) 492-4422

