

DYNA-LINE™ Horizontal Lifeline for Two Workers

User Instructions

WARNING

National standards and state, provincial and federal laws require the user to be trained before using this product. Use this manual as part of a user safety training program that is appropriate for the user's occupation. These instructions must be provided to users before use of the product and retained for ready reference by the user. The user must read, understand (or have explained), and heed all instructions, labels, markings and warnings supplied with this product and with those products intended for use in association with it. FAILURE TO DO SO MAY RESULT IN SERIOUS INJURY OR DEATH.

1.0 SPECIFICATIONS

- The MSA Dyna-Line models identified meet OSHA regulations and ANSI A10.32. These instructions, and markings borne by the products, fulfill the marking and instruction requirements of those standards and regulations.
- The Dyna-Line 2 worker system is rated for two worker capacity, each having a maximum weight of 310 lbs, including tools and clothing. Span length is adjustable up to 30 or 60 ft.*
- The Rope Tensioner is zinc plated, steel fabrication. Minimum breaking strength is 5,000 lbf (22.2 kN).
- The Rope is 5/8 inch diameter (1.6 cm) 12-strand polyester. Minimum breaking strength is 15,300 lbf (68 kN).
- Self locking carabiners are zinc plated, forged alloy steel and proof tested to 3,600 lbf (16 kN). Minimum breaking strength is 5,000 lbf (22.2 kN).
- O-Rings are zinc plated, 1/4 inch (6 mm) X 2 inch (5 cm) diameter, forged alloy steel. Minimum breaking strength is 5,000 lbf (22.2 kN).
- The Shock Absorber is constructed from 1 inch polyester webbing. The green cover tears when the lifeline is loaded in excess of 1,000 lb, indicating that the system has experienced a fall and should be removed from service. Minimum breaking strength is 5,000 lbf (22.2 kN).

2.0 TRAINING

It is the responsibility of the purchaser of the MSA Dyna-Line to assure that product users are made familiar with these user instructions and trained by a competent person. Training must be conducted without undue exposure of the trainee to hazards. MSA offers training programs, please contact for training information.

3.0 DESCRIPTION

The intended purpose of each element of the MSA Dyna-Line is given in sections 3.1 through 3.7 below. See inspection diagram for location of elements.

3.1 LIFELINE:

Enables horizontal travel between two anchorage points.

3.2 ROPE TENSIONER:

Used to adjust the length of the rope, and maintain line tension.

3.3 O-RING:

Used to connect the worker's shock absorbing lanyard, self-retracting lanyard, or rope grab to the horizontal life line.

3.4 SELF LOCKING CARABINERS:

Used to connect the ends of the horizontal life line to an approved anchorage point.

3.5 SHOCK ABSORBER:

Limits line tension below 2,500 lbf. Also provides a warning of when the Dyna-Line has experienced the forces of arresting a fall or equivalent forces. The Shock Absorber cover will tear when loaded in excess of 1,000 lbf.

For More Information, call 1-800-MSA-2222 or Visit Our Website at www.MSAnet.com



MINE SAFETY APPLIANCES COMPANY
PITTSBURGH, PENNSYLVANIA, U.S.A. 15230

3.6 UNFASTENING LEVER:

Used to release tension on the lifeline for disassembly.

3.7 ANCHORAGE CONNECTOR STRAP:

Compatible anchorage for connecting to approved anchorage point.

4.0 DYNA-LINE SELECTION AND APPLICATIONS**4.1 PURPOSE OF MSA DYNA-LINE FOR TWO WORKERS:**

The MSA Dyna-Line Horizontal Life Line is a temporary synthetic system that suspends horizontally between two approved anchorage points. It provides fall protection to two workers while allowing horizontal movement along the span of the line. It is designed for quick and easy installation and removal at temporary work areas. The line tensioner is used for line length adjustment and maintaining line tension during use. The Shock Absorber limits the load delivered to the anchorage points and line components below 2,500 lbf. Applications include buildings, bridges, scaffolds, steel building frames, construction, and transmission towers.

4.2 USAGE LIMITATIONS

The following application limitations must be considered and planned for before using the MSA Dyna-Line Horizontal Lifeline.

4.2.1 PHYSICAL LIMITATIONS

Persons with muscular, skeletal, or other physical disorders should consult a physician before using. Pregnant women and minors must never use the MSA Dyna-Line. Increasing age and lowered physical fitness may reduce a person's ability to withstand shock loads during fall arrest or prolonged suspension. Consult a physician if there is any question about physical ability to safely use this product to arrest a fall or suspend.

4.2.2 ENVIRONMENT

Chemical hazards, heat and corrosion may damage the MSA Dyna-Line. More frequent inspections are required in these environments. Do not use in environments with temperatures greater than 185°F (85°C). Use caution when working around electrical hazards, moving machinery, sharp edges, and abrasive surfaces.

5.0 SYSTEMS REQUIREMENTS**5.1 COMPATIBILITY OF COMPONENTS:****5.1.1 COMPATIBILITY OF COMPONENTS:**

The MSA Dyna-Line for Two Workers is designed to be used with other MSA approved products. Use of the Dyna-Line with products made by other manufacturers that are not approved in writing by MSA may adversely affect the functional compatibility between system parts and the safety and reliability of the complete system. Connecting subsystems must be suitable for use in the application (e.g. fall arrest, climbing protection, restraint, rescue or evacuation). Contact MSA with any questions regarding compatibility of equipment used with the Dyna-Line.

5.1.2 COMPATIBILITY OF CONNECTORS:

The Dyna-Line Horizontal Life Line must only be installed to anchorages capable of supporting a 5,000 lb (22 kN) load in both the vertical and horizontal direction. MSA connectors meet this requirement. Connecting hardware must be compatible in size, shape, and strength. Non-compatible connectors may accidentally disengage ("rollout"). Always verify that the connecting snaphook on the Dyna-Line is compatible with the anchorage connector.

5.1.3 ANCHORAGES AND ANCHORAGE CONNECTORS:

Components used to connect the Dyna-Line to an anchorage must be rated to 5,000 lb (22 kN) minimum breaking strength. Caution must be used to insure compatibility between connectors and attachment elements (i.e. snaphooks or carabiners). MSA polyester anchorage straps (MSA part no. 505298) are provided with this system to connect to appropriately rated anchorage members. MSA Bolt D-rings (sold separately as MSA part no. 10003212 and 10003213) are available to permanently attach to a beam flange. MSA also manufactures a variety of approved anchorage connectors that can be used in conjunction with the Dyna-line system.

Never wrap the lifeline around an anchorage or attach the lifeline snaphook back onto the lifeline.

5.1.4 SHOCK ABSORBING LANYARD AND HARNESS

The Dyna-Line MUST only be used in conjunction with an approved personal shock absorbing lanyard, self-retracting lanyard, or rope grab that limits Fall Arrest Forces to 900 lbf (4.0 kN) or less, and full body harness with a compatible back D-ring. Failure to use an approved SHOCK ABSORBING lanyard or SELF-RETRACTING lanyard could result in overload to the system, resulting in line breakage and injury or death. The shock absorbing lanyard or self-retracting lanyard must have approved connectors (snaphook or Carabiner) compatible with connection to the Dyna-line O-ring and a harnesses back D-ring. The shock absorbing lanyard or self-retracting lanyard should only be connected to the Dyna-Line O-ring, and not to the line itself.

5.1.5 LEVEL OF CONNECTION

The horizontal life line should always be placed at the same level or, preferably higher than the worker's harness back D-ring. A worker situated above the horizontal life line who falls will have an increased fall distance, and could potentially overload the system, resulting in injury or death.

6.0 PLANNING THE USE OF SYSTEMS**6.1 FREE FALL DISTANCE, TOTAL FALL DISTANCE AND SYSTEM ELONGATION**

- 1. Free fall distance.** Limited to 6 ft. (1.8 m) by OSHA and ANSI A10.32. CSA limited to 5 ft. (1.5 m) by Canadian regulations
- 2. Total fall distance.** The sum of the free fall distance and deceleration distance plus a 3 ft safety margin.
- 3. Deceleration distance.** Must not exceed 3.5 ft (1.1 m).

6.2 PENDULUM (SWING) FALLS

Swing fall hazards must be minimized by anchoring directly above the user's work space. The force of striking an object in a pendular motion can cause serious injury. Always minimize swing falls by working as directly below the anchorage point as possible.

6.3 RESCUE AND EVACUATION

The user must have a rescue plan and the means at hand to implement it. The plan must take into account the equipment and special training necessary to effect prompt rescue under all foreseeable conditions.

7.0 CARE, MAINTENANCE AND STORAGE

7.1 CLEANING INSTRUCTIONS:

Clean the Dyna-Line with a solution of water and mild laundry detergent. Do not immerse Shock Absorber. Dry hardware with a clean cloth and hang to air dry. Do not speed dry with heat. Excessive accumulation of dirt, paint or other foreign matter may prevent proper function of the Dyna-Line, and, in severe cases, weaken the rope. Questions concerning lifeline conditions and cleaning should be directed to MSA.

7.2 MAINTENANCE AND REPAIRS:

Equipment which is damaged or in need of maintenance must be tagged as "UNUSABLE" and removed from service. Corrective maintenance (other than cleaning) and repair, such as replacement of elements, must be performed by the MSA factory. Do not attempt field repairs.

The moving parts of snaphooks and carabiners may require periodic lubrication. Use a lightweight (low viscosity) penetrant oil that has good resistance to temperature extremes, moisture and corrosion. Do not over-lubricate. Wipe off excess oil with a clean, dry cloth. Follow the lubricant manufacturer's instructions. Do not allow lubricant to contact the polyester lifeline, or shock absorber.

7.3 STORAGE:

The provided plastic pail and lid are ideal for sealing and storing the Dyna-Line. Store the Dyna-Line in a cool, dry and clean place out of direct sunlight. Avoid areas where heat, moisture, light, oil, chemicals (or their vapors) or other degrading elements may be present. Equipment which is damaged or in need of maintenance should not be stored in the same area as usable equipment. Heavily soiled, wet, or otherwise contaminated equipment should be properly maintained (e.g. cleaned and dried) prior to storage. Prior to using equipment which has been stored for long periods of time, a Formal Inspection should be performed by a competent person. See section 12.

8.0 MARKINGS AND LABELS

8.1 LABELS

The labels on the following page must be present, legible and securely attached to the Dyna-Line. The Formal Inspection Grid must be punched with a date (month/year) within the last six months. If not, remove the Dyna-Line from use and mark it as "UNUSABLE" until a Formal Inspection is performed in accordance with section 11. See Inspection Diagram in section 11 for location of labels.

9.0 USAGE

9.1 BEFORE INSTALLATION

Before installing the MSA Dyna-Line Horizontal Lifeline, make sure you have read and understand all material contained in this manual, and any instructions provided with all components used in conjunction with this system. Carefully inspect the system prior to installation. Secondary fall protection equipment will likely be required to protect workers who are installing or removing the system.

9.2 MAKING PROPER CONNECTIONS:

Do not use snaphooks or connectors that will not completely close over the attachment object. Do not make knots in the lifeline. Snaphooks and carabiners must not be connected to each other. Do not attach two snaphooks to one D-ring. Do not attach a snaphook directly to the horizontal lifeline. Always follow the manufacturer's instructions supplied with each system component.

9.3 CLEARANCE REQUIRED BELOW THE HORIZONTAL LIFE LINE

Allow for sufficient clearance in the path of a potential fall. Refer to Table 2 in this section to determine the minimum clearance required for a given span distance. Clearance requirements assume the following conditions are met:

- The maximum free fall distance permitted by the fall arrest system is 6 feet (1.8 m) or less.
- The worker is equipped with a MSA personal fall arrest system, or equivalent system meeting the requirements of ANSI Z359.1-1992, which will limit the forces of arresting a fall to 900 lbf (4 kN) or less.
- The lifeline has been properly tensioned according to Section 8.3.

The required clearance in Table 2 includes the following factors involved in determining total fall clearance:

- Free fall distance [6ft (1.8 m)] maximum,
- Vertical displacement of the horizontal lifeline (line stretch and line shock absorber deployment),
- Deployment of the personal fall arrest shock absorber [3.5ft (1.1 m) maximum]
- Harness effect [1ft (0.3 m)], and
- Safety margin [2ft (0.6 m)]

To apply the information in Table 2, determine what length of lifeline will be rigged for your application, measured from bearing-point to bearing-point on the horizontal lifeline. Look up the corresponding Span Distance in the Table. Read across the Table to find the minimum required clearance for your installation. This is the clearance required to the nearest object in the path of a potential fall, measured from the working surface to the top of the obstruction.

CAUTION

The required clearance in these instructions should be used as a guideline. Interpretation of the information contained in this section should be left to the Qualified or Competent Person, one who has a specific knowledge of the worksite conditions and the equipment to be used. When in doubt, consult your resident Qualified or Competent Person before rigging this horizontal lifeline system. Contact MSA for additional information or when conditions at your site do not match the requirements in these instructions.



DYNA-LINE™
HORIZONTAL LIFE LINE
TWO WORKER SYSTEM

Capacity: 2 worker capacity,
310 lbs. (140 kg) each,
weight includes person +
clothes + tools
Material: Polyester
Meets: OSHA, ANSI A10.14

Model: _____
Date of Manufacture: _____
Serial Number: _____

CAUTION

- **MAXIMUM 2 WORKER CAPACITY.**
- **DO NOT** climb above the height of the lifeline.
- Inspect before each use according to instructions provided. Use **ONLY** with compatible personal fall arrest system which limits free fall to 6 ft (1.8 m) or less, maximum arrest force to 900 lbf (4 kN) or less.
- Connect personal fall arrest system only by means of steel rings on the lifeline. Connect opposite end of fall arrest system to full body harness back D-Ring.
- Human tolerance to fall arrest and suspension is reduced by age, unfitness, and pre-existing disorders. If in doubt, **consult a physician** before using this product. Pregnant women and minors **MUST NEVER** use this product.

Label P/N 10013485, Rev. C

MSA (FP) DYNA-LINE™ SHOCK ABSORBER
U.S. Patent No. 4,618,026

WARNING
Read and heed all labels and instructions.
Use only with Rose Horizontal Life Line System.
Remove from use if cover is torn or open.

P/N 10013502, Rev. B

Dyna-Line™ Rope Tensioner

Caution

• Use only as part of the MSA Dyna-Line horizontal life line system. **DO NOT** replace life line material, or attempt field repair of any part of the Dyna-Line system.

• See user instructions to determine required height clearance before installing.

• Remove system from use if exposed to the force of arresting fall, or equivalent forces. Label as "UNUSABLE" until destroyed.

Installation: Open unfastening lever. Remove slack from line by first pulling rope through tensioner. To tension line, pull **FIRMLY** on free end of rope while simultaneously turning nut in direction of arrow. Tighten until tensioning wheel begins to slip against rope. Close unfastening lever. **Removal:** Pry open unfastening lever and extract line.

RIGGING: OSHA requires that all horizontal life line systems be installed and used under the supervision of a Qualified Person. See OSHA Regulations for definitions.

- Secondary fall protection is required during installation and removal.
- Suspend horizontally between 2 approved anchorage points capable of supporting 5,000 lbf (22.2 kN) in horizontal and vertical directions.
- Attach lifeline to anchorage connectors compatible in size, shape and strength.
- Position lifeline at or above height of worker's back D-ring.

P/N 10013477, Rev. B

Unfastening Lever

Leaf 1 - Back

WARNING

USER TRAINING - To meet standards, the user must be trained before using this product. The manufacturer offers training. **SELECTION AND USE** - This product performs as stated when tested to the reference standards. It is part of a fall arrest system. Use only in combination with compatible Rose equipment. A qualified person must select the components, materials and anchorage to match the system application, the work, workplace hazards and the environment. Do not connect or combine with other components in ways which may hinder or defeat function of system. See separate instructions.

P/N 922887

Leaf 1 - Front

WARNING

Attention: Consult your safety director. *Consultar al director de seguridad.*

Attention: Consultez votre directeur de sécurité. *Consultare il direttore di sicurezza.*

Atenção: Pergunte ao seu diretor de segurança. *Consultare il direttore di sicurezza.*

GENERAL - Do not use this product unless a qualified person has inspected workplace and determined that identified hazards can be neither eliminated nor exposures to them prevented. The manufacturer included separate instructions with this product. Copies are available. Read and heed all instructions, labels and warnings for this product and other products intended for use with it. **Failure to do so may result in serious injury or death.**

Leaf 2 - Back

Table provides clearance required below lifeline to nearest obstruction in path of fall. Clearance includes free fall (ft) distance, life line elongation, shock absorber elongation, harness stretch (ft), and a safety margin (ft).

-FOR TWO WORKER SYSTEM-

Span Distances (ft)	Required Clearance (ft)
10	15.9
11	17.2
12	18.3
13	19.3
14	20.3
15	21.3
16	22.2
17	23.2
18	24.1
19	25.1
20	25.9

Rope lengths over 60 ft special order only.

Span Distances (ft)	Required Clearance (ft)
20	27.0
25	30.0
30	32.6
35	34.5
40	36.3
45	38.1
50	39.8
55	41.5
60	43.2
65	44.9
70	46.6
75	48.3
80	50.0
85	51.7
90	53.4
95	55.1
100	56.8
105	58.5
110	60.2
115	61.9
120	63.6
125	65.3
130	67.0
135	68.7
140	70.4
145	72.1
150	73.8
155	75.5
160	77.2
165	78.9
170	80.6
175	82.3
180	84.0
185	85.7
190	87.4
195	89.1
200	90.8

P/N 10013487

Leaf 2 - Front

WARNING

SELECTION & USE: Do not connect or combine with other components in ways which may hinder or defeat function of system. See separate instructions.

- Do not expose to chemicals and corrosives which could weaken parts. Consult manufacturer if in doubt.
- Do not expose to sharp edges, abrasive surfaces, sparks, flame or heat above 185° F. (85° C.)
- Keep safe distance from moving machinery and electrical sources. Metal parts conduct electricity.
- Do not reuse if subjected to fall arrest forces. Remove from use and label "UNUSABLE" until destroyed.
- Do not misuse, abuse, alter or attempt repairs to this product. Disregard voids warranty. Only the manufacturer or persons authorized in writing by the manufacturer are permitted to make repairs.
- Have rescue and evacuation plans and means at hand to implement.

Leaf 3 - Back

Rose Manufacturing Company
2250 South Tejon Street
Englewood, Colorado 80110-1000
USA
Ph: 303-922-8246, FAX: 303-934-9960
Toll Free: 800-722-1231

Dyna-Line™ is a trademark of Rose Manufacturing Company

Made in USA.

P/N 10013476

Leaf 3 - Front

CAUTION

INSPECTION - Inspect for malfunction, torn open cover, or load indicator, cut or damaged rope, and missing, broken, distorted, damaged, corroded, weakened and worn parts. See separate instructions for inspection details. If product inspection or removal fails at Label "UNUSABLE" until repaired, repaired, destroyed.

- User must inspect before each use.
- Separate competent person must formally inspect at least every 6 months while in use.
- Punch inspection grid if product passes formal inspection.

FORMAL INSPECTION GRID

99	J	F	M	A	M	J	J	A	S	O	N	D
00												
01												
02												
03												

PUNCH GRID ON DATE OF FIRST USE

9.4 SYSTEM INSTALLATION

Figure 3 shows a typical Dyna-Line system installation. End anchorages must be chosen to locate the lifeline at, or above the height of the connecting D-ring on a worker's harness. Positioning the Dyna-Line higher will reduce free fall distance. Additionally, the length of the connecting shock absorbing lanyard should be kept as short as possible to reduce free fall distance. End anchorages should be placed at approximately the same height so the Dyna-Line is not installed on a slope greater than 5°. Workers installing or removing the Dyna-Line should connect to a secondary fall arrest system.

STEP 1:

Measure the span length of the proposed anchorage points. Check to see that adequate clearance is available. The strength of the proposed anchorages must be evaluated by a qualified person.

STEP 2:

The MSA Dyna-Line must be installed using approved anchorage connectors. If using a steel cable or synthetic anchorage strap, be sure to wrap the strap twice around a vertical supporting structure to prevent the strap from sliding down. Refer to the manufacturer's instructions provided with the anchorage connectors to insure proper installation. The snaphooks provided with the Dyna-line system may be connected directly to an anchorage, such as an anchorage eye, provided the anchorage meets strength and compatibility requirements.

STEP 3:

Secure the carabiners on either end of the Dyna-Line to the approved anchorage. Make certain that there are no knots in the portion of rope secured between anchorages. Knots will significantly reduce the strength of the lifeline.

STEP 4:

Remove slack from the system by opening the unfastening lever and pulling the free end of the rope through the tensioner by hand (Figure 6).

STEP 5:

Tension the lifeline by pulling **FIRMLY** on the free end of the rope while simultaneously turning the tensioner nut in the direction of the arrow (Figure 6). Tighten the nut until the tensioning wheel begins to slip against the rope. Once slipping occurs, do not continue to tighten the tensioner, as this will cause excessive wear on the rope. A large wrench or connecting bar is required to tighten the tensioner. It is important that the line is tensioned as taut as possible using the above procedure. This will reduce the fall distance due to line stretch.

STEP 6:

Close the unfastening lever to prevent unintentional loosening of line tension during use (Figure 6).

STEP 7:

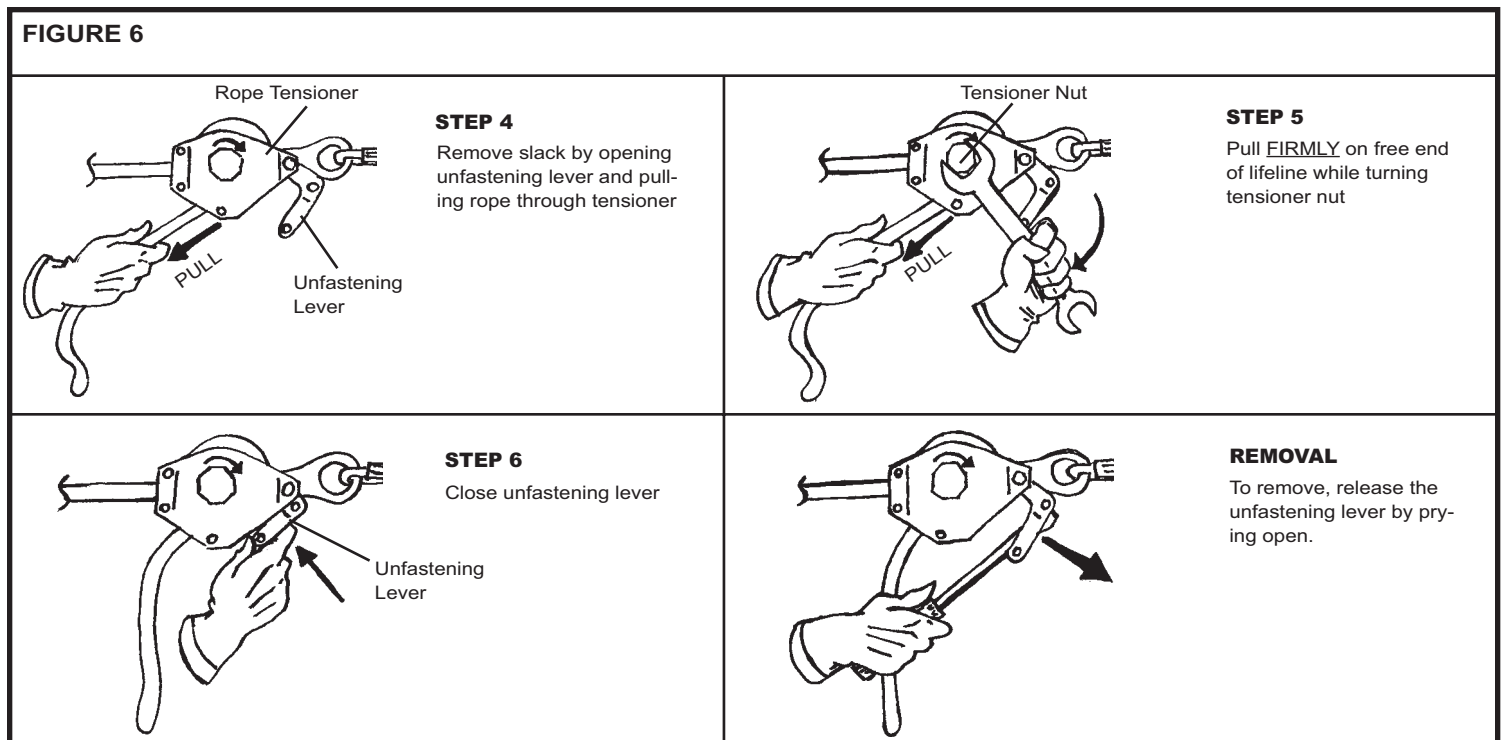
Check the system to make certain that connecting hardware is properly oriented along the intended axis of loading. Make certain that cross-gate loading is not present in any connecting snaphooks or Carabiners. Check that the Shock Absorber has not been partially deployed.

STEP 8:

Prior to each use, inspect the Dyna-Line. Occasional re-tensioning of the lifeline may be required if loosening of the lifeline occurs during prolonged suspension.

9.3 REMOVAL

Workers removing the Dyna-Line should connect to secondary fall arrest systems. Release the rope tension by manually extracting the unfastening lever, and then prying the unfastening lever open (Figure 6). Disconnect the remaining anchorage hardware.



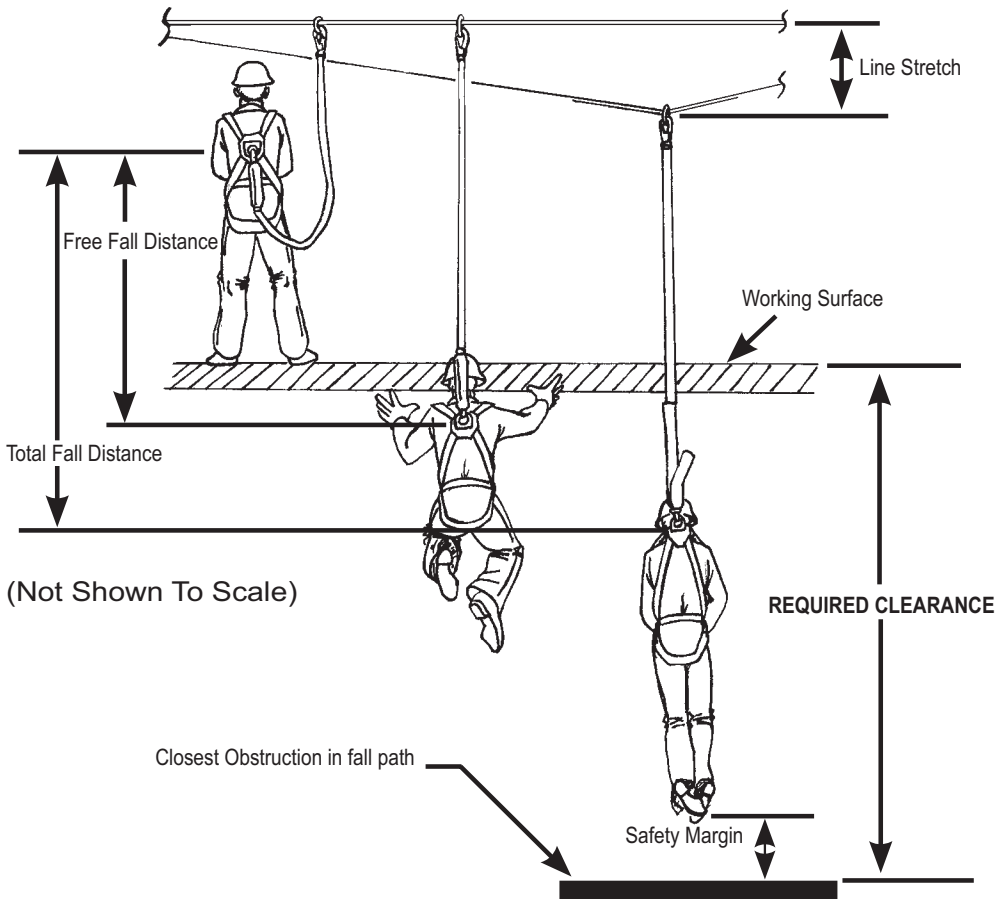
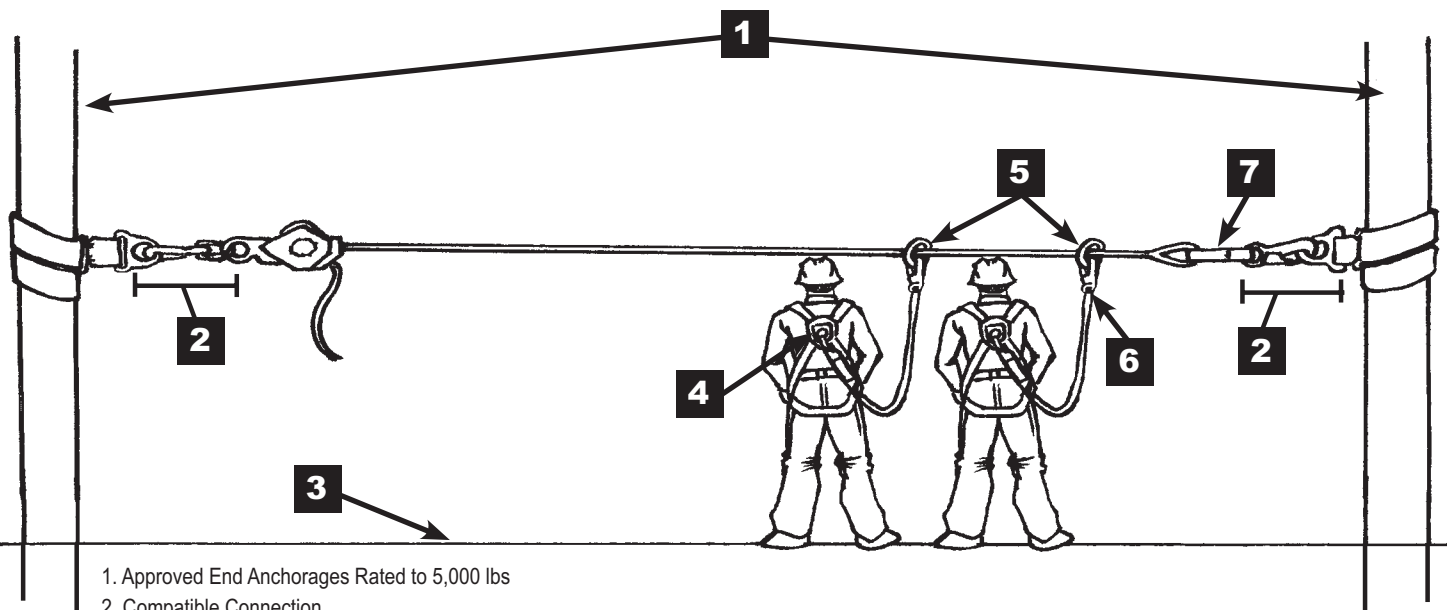


TABLE 2:

Table provides clearance required below lifeline, measured from working surface to closest obstruction in fall path.

Span Distance (ft)	Required Clearance (ft)
1 - 10	15.9
11 - 20	17.2
21 - 30	19.3
31 - 40	21.3
41 - 50	23.2
51 - 60	25.1
Rope lengths over 60 ft special order only	
61 - 70	27.0
71 - 80	28.9
81 - 90	30.8
91 - 100	32.6
101 - 110	34.5
111 - 120	36.3
121 - 130	38.1
131 - 140	40.0
141 - 150	41.8
151 - 160	43.6
161 - 170	45.5
171 - 180	47.3
181 - 190	49.1
191 - 200	50.9

FIGURE 3



1. Approved End Anchorages Rated to 5,000 lbs
2. Compatible Connection
3. Working Surface
4. Full Body Harness Back D-ring
5. O-Rings
6. Shock Absorbing Lanyard with Approved Connectors
7. Line Shock Absorber

(Drawing Not To Scale. Detail Not Shown.)

10.0 INSPECTION BEFORE EACH USE

10.1 INSPECTION FREQUENCY:

The Dyna-Line must be inspected by the user before each use. Additionally, it must be inspected by a competent person other than the user at intervals of no more than six months. The competent person inspection is referred to as Formal Inspection. An inspection log must be filled out during the Formal Inspection, see section 11.0. In addition, the inspection log on the MSA Dyna-Line label must be marked or punched to indicate when the last Formal Inspection occurred.



CAUTION

If the Dyna-Line has been subjected to fall arrest or impact forces, it must be immediately removed from service and marked as "UNUSABLE" until destroyed.

10.2 PROCEDURE FOR INSPECTION BEFORE EACH USE:

Perform the following steps in sequence. If in doubt about any inspection point, consult MSA or a competent person who is qualified to perform Formal Inspection.

- Step 1: Inspect the Dyna-Line labels to verify that they are present and legible. Check the Formal Inspection Grid to be sure a Formal Inspection has been performed within the last six months. If the Grid does not indicate that a Formal Inspection has been performed within the last six months (by being punched), or if any labels are missing or illegible, remove the Dyna-Line from use and mark it as "UNUSABLE" until a Formal Inspection is performed by a competent person.
- Step 2: Inspect all fabric (fibrous) parts, including the Dyna-Line rope, webbing, and stitching. Look for cuts, pulled or broken fibres, excessive abrasion, wear or aging, excessive elongation, reduction of rope diameter, altered or missing rope segments, burns, and damage from heat or chemical attack. Inspect for knots, loosening or unbraiding of splices, and excessive fuzziness of fibres.
- Step 3: Inspect all metallic parts for evidence of defects, damage, alteration and missing parts.(a) Inspect snaphooks for deformation, fractures, cracks, corrosion, deep pitting, burrs, sharp edges, cuts, deep nicks, loose parts, and evidence of excessive heat or chemical exposures. Inspect snaphook function by cycling their unlocking, opening, closing and locking features several times. Gates must automatically close and snugly seat against the nose. The locking mechanism must retain the gate tip within 1/8 inch (3 mm) of the nose when finger pressure is firmly applied to the gate in any direction. Inspect for weak springs, loose rivets and binding of the gate or lock.
- Step 4: Inspect all plastic parts (i.e. rope thimbles and labels) for cuts, broken parts, alteration, excessive wear, missing and loose parts. (Labels are to be additionally checked in accordance with Step 1 above.) Inspect for evidence of burns, excessive heat and chemical attack.
- Step 5: Inspect the Shock Absorber cover to verify that both ends are sealed and binding tape with stitching intact. A torn cover indicates that the system has been subject to the forces of arresting a fall. If torn, remove from use immediately and mark as "UNUSABLE" until destroyed. Inspect the cover for cuts, tears, burns, alteration, broken or loose stitching. Inspect for signs of exposure to excessive heat, abrasion (wear) and chemical attack. In addition, inspect the webbing and stitching in the Shock Absorber in accordance with 2(b) above.
- Step 6: Inspect each component and subsystem of the complete system in accordance with the associated manufacturer's instructions. See section 6 for a description of the make-up of the different types of subsystems and systems.

10.3 CORRECTIVE ACTION:

When inspection in accordance with section 10.2 reveals signs of inadequate maintenance, the Dyna-Line must be immediately removed from service and marked as "UNUSABLE" until destroyed or subjected to corrective maintenance by the user's organization. Defects, damage, excessive wear, malfunction, and aging are generally not repairable. If detected, immediately remove the Dyna-Line from use and mark it as "UNUSABLE" until destroyed. For final disposition, submit the Dyna-Line to a competent person who is authorized to perform Formal Inspection. If there is any question as to repairability, contact MSA or a service center authorized in writing by MSA before further use of the product.



CAUTION

Only MSA or parties with written authorization from MSA may make repairs to the Dyna-Line.

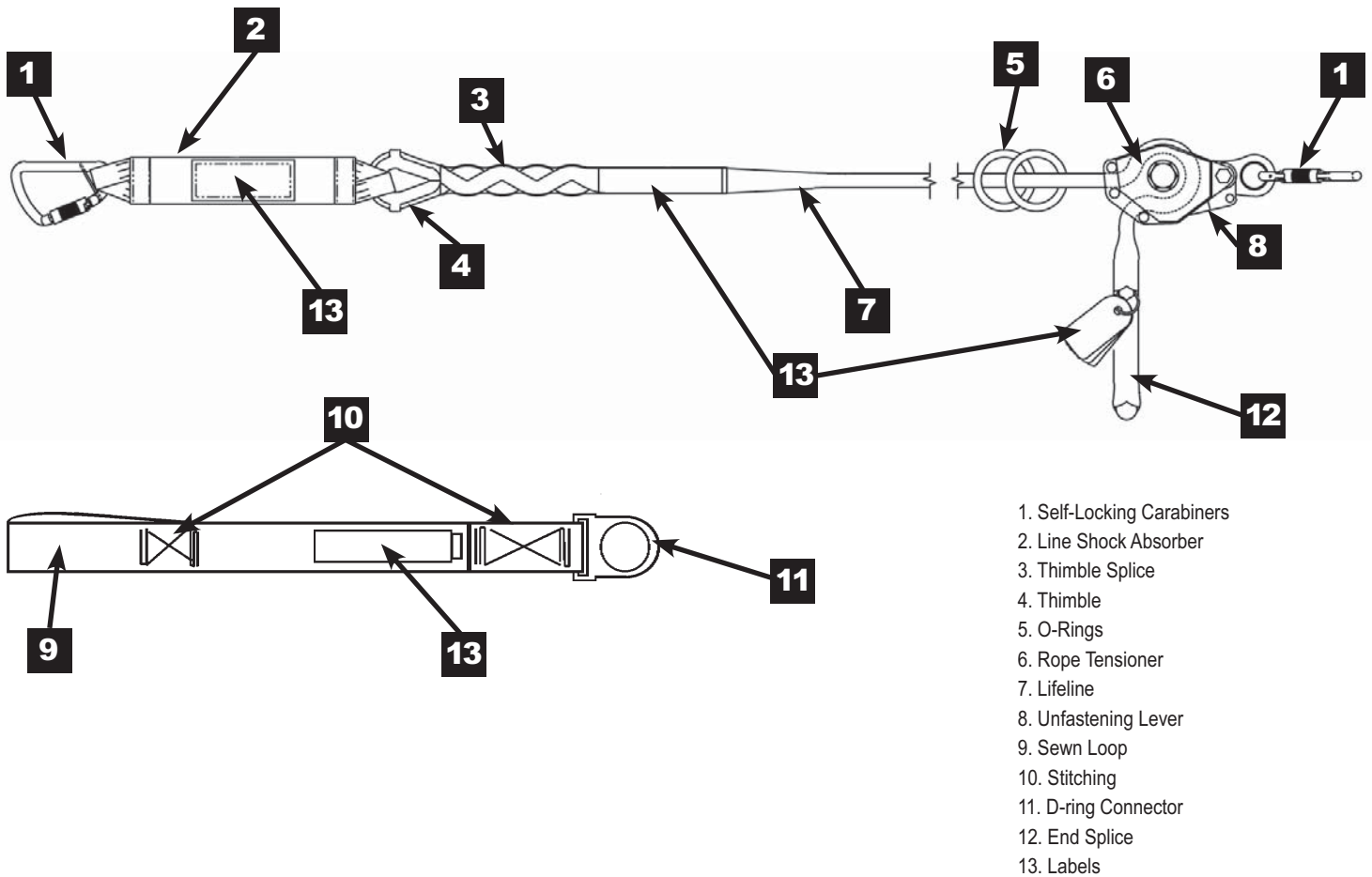
11.0 FORMAL INSPECTION LOG

Model No.: _____ Inspector: _____

Serial No.: _____ Inspection Date: _____

Date Made: _____ Disposition: _____

Comments: _____



WARRANTY

Express Warranty – MSA warrants that the product furnished is free from mechanical defects or faulty workmanship for a period of one (1) year from first use or eighteen (18) months from date of shipment, whichever occurs first, provided it is maintained and used in accordance with MSA's instructions and/or recommendations. Replacement parts and repairs are warranted for ninety (90) days from the date of repair of the product or sale of the replacement part, whichever occurs first. MSA shall be released from all obligations under this warranty in the event repairs or modifications are made by persons other than its own authorized service personnel or if the warranty claim results from misuse of the product. No agent, employee or representative of MSA may bind MSA to any affirmation, representation or modification of the warranty concerning the goods sold under this contract. MSA makes no warranty concerning components or accessories not manufactured by MSA, but will pass on to the Purchaser all warranties of manufacturers of such components. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, AND IS STRICTLY LIMITED TO THE TERMS HEREOF. MSA SPECIFICALLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Exclusive Remedy - It is expressly agreed that the Purchaser's sole and exclusive remedy for breach of the above warranty, for any tortious conduct of MSA, or for any other cause of action, shall be the repair and/or replacement, at MSA's option, of any equipment or parts thereof, that after examination by MSA are proven to be defective. Replacement equipment and/or parts will be provided at no cost to the Purchaser, F.O.B. Purchaser's named place of destination. Failure of MSA to successfully repair any nonconforming product shall not cause the remedy established hereby to fail of its essential purpose.

Exclusion of Consequential Damages - Purchaser specifically understands and agrees that under no circumstances will MSA be liable to Purchaser for economic, special, incidental, or consequential damages or losses of any kind whatsoever, including but not limited to, loss of anticipated profits and any other loss caused by reason of the non-operation of the goods. This exclusion is applicable to claims for breach of warranty, tortious conduct or any other cause of action against MSA.

For additional information please contact the Customer Service Department at 1-800-MSA-2222 (1-800-672-2222).