User Instruction Guide for RoofGuard Kits:

- RGC-RA
- HG-KIT-08
- RGC-KIT-09
- RGC-KIT-18V
- RGC-KIT-27V

Liftsafe Fall Protection Inc.
RoofGuard Classic Kit Instruction Manual

RGC-KM-3.3

TABLE OF CONTENTS

WARNINGS AND CONDITIONS

This system is part of a personal fall protection system. The user must read and follow all guidelines in this manual. These instructions must be provided to the user of this system. The user must read and understand these instructions or have them explained to them prior to using the system.

Alterations or misuses of this system or failure to follow instructions may result in serious injury or death. If you have any questions on the use or care of this system please contact Liftsafe Fall Protection Inc. at
1-800-977-2005.

1.0 APPLICATION

1.1 The RoofGuard Kit systems are designed to be installed on a flat roof (up to 5% grade) to provide protection for workers near the edge or an exposed opening in the roof. Depending on the roof surface, a rubber pad or ultra-light paving stone may be used under the baseplates to facilitate safe/stable contact with the roof surface. As freestanding systems rely on friction between the baseplates and the roofing materials, baseplates MUST NOT be set on ice or snow or other substances which may permit excessive sliding. Users MUST clear the area prior to placing the RoofGuard baseplates. If no parapet or curb is present at the roof edge, contact LFP for a review of the application.

1.2 The RoofGuard Kits are designed to protect workers on rooftop areas or near an opening into which they may fall. It is not intended to protect areas with public access or large gatherings of people.

2.0 RGC-RA SYSTEM REQUIREMENTS

2.1 The RoofGuard Restraint Anchor System is designed to be used on flat roofs (up to 5% grade) where the baseplates can sit flat on the roof surface.

Depending on the roof surface, a rubber pad, or ultra-light paving stone may be used under the baseplates to facilitate safe/stable contact with the roof surface. Baseplates must NOT be set on ice or snow or smooth-wet surfaces; clear the area prior to placing the RoofGuard baseplates.

2.2 The RoofGuard Restraint Anchor system is designed to protect a single worker near an opening or roof edge from which they may fall. The worker must be wearing a CSA-approved full body harness and secured with a lanyard or Self-Retracting Lifeline of sufficient length so that when fully extended, the worker can NOT fall from the working surface in any direction. This may mean the system cannot be placed at roof corners where a worker can reach the very corner, as it may result in them being able to fall from one of the sides.

2.3 Workers using the RoofGuard Restraint Anchor system must have taken a course in Fall Protection that at the very least covers the difference between a Fall-ARREST systems vs. a Fall RESTRAINT system.

3.0 INSTALLATION RGC-RESTRAINT ANCHOR

3.1 COMPONENTS

3.1-A The RoofGuard Restraint Anchor system consists of the Anchor Kit and 12 of the standard RoofGuard System Baseplates.

The Anchor Kit contains:

- 2 pcs of 18” pipe with caps on top
- 1 pc – 24” long anchor plate with D-ring at center
- 2 pcs of locking pins for top of the 18” pipes

3.1-B Inspect all pieces before using, to ensure they are in good condition with no signs of wear or abuse.

3.2 RESTRAINT ANCHOR INSTALLATION

3.2-A Install the Restraint Anchor only on a flat, clean and dry surface. Clean the area where baseplates will be installed, to ensure good contact with the roof surface.

3.2-B The system should be set up at least 9-feet from the roof edge, allowing the worker to be a safe distance from the roof edgezwhile assembling and securing to the anchor point. Check local regulations for other requirements for edge-work, if applicable.

When setting the location of the anchor, the setback distance from the hazard should be at least 3-feet longer than the restraint system. (eg; 6-foot restraint lanyard the Restraint Anchor should be 9-feet from the hazard.)

3.2-C Masticated rubber under-pads are supplied for membrane roofs. For gravel roof material, the steel plates should be placed directly on the gravel.

3.2-D Using the anchor plate as a guide, set two baseplates on the ground and place the anchor plate over the 'inside holes' and the two posts through the holes.

3.2-E Tighten the set screws on the two posts to 25 ft-lbs using the supplied T-handle Allen key (see figure 1).

3.2-F Then, stack another 5 RoofGuard baseplates onto each side, over the aluminum posts (see figure 2).

3.2-G Finally, add the retaining pin to secure the baseplates.

3.2-H Once the pins are in place, a worker may connect to the system with a FALL RESTRAINT system.

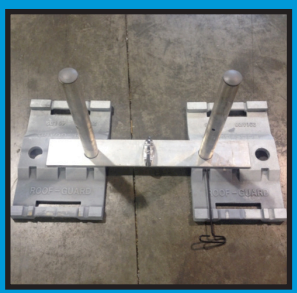


Figure 1: First two baseplates, with anchor plate. T-Handle Allen key to secure the aluminum post to the baseplate.

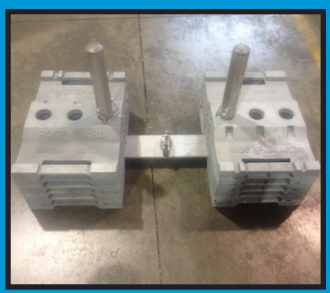


Figure 2: Completed RoofGuard Restraint Anchor

WARNING

WARNING – TEMPORARY RESTRAINT ANCHOR ONLY

READ AND UNDERSTAND THE MANUAL PRIOR TO USE

PRE USE INSPECTION MUST BE COMPLETED PRIOR TO CONNECTING TO THE ANCHOR – REFER TO MANUAL FOR DETAILS

RATED FOR FALL RESTRAINT ONLY – END USER TO ENSURE ANCHOR IS USED IN A TEMPORARY MANNER. ANCHOR MUST STORED IN A LOCKED LOCATION TO PREVENT IT FROM BEING MISTAKENLY USED FOR FALL ARREST

4.0 ROOFTOP GUARDRAIL SYSTEM REQUIREMENTS

4.0-A The HatchGuard Standard System is designed to be used on hatches with a lid opening of up to 36” square or smaller. For larger hatch openings a custom kit can be provided. The roof around the hatch must be relatively flat, and the hatch must be at least 4-feet from the roof edge to allow the system to fit between the hatch and the roof edge, and keep the worker back 6-feet from the roof edge at all times. If the hatch is near the roof edge, the gate should also open away from the roof edge. See 12.0 Appendix Diagram 1

4.0-B RoofGuard Kit RGC-KIT-09 is designed to provide protection along 9-feet of roof edge. The ends of the system (tiebacks) should not be placed within 6-feet of another perpendicular roof edge (corner) as this would require another “leading edge” protection section (see RGC-KIT-09). See 12.0 Appendix Diagram 2

4.0-C RoofGuard Kit RGC-KIT-18V is designed to provide protection along 18-feet of roof edge. The ends of the system (tiebacks) should not be placed within 6-feet of another perpendicular roof edge (corner) as this would require another “leading edge” protection section (see RGC-KIT-09). The kit has variable angle fitting in the center and can be used to fit onto a corner between 90 and 180 degrees or cover an 18-foot straight edge of roof edge. See 12.0 Appendix Diagram 3

4.0-D RoofGuard Kit RGC-KIT-27V is designed to provide protection along 27-feet of roof edge. The ends of the system (tiebacks) should not be placed within 6-feet of another perpendicular roof edge (corner) as this would require another “leading edge” protection section (see RGC-KIT-09). The kit has variable angle fittings at the center two posts and can be used to fit up to two corners between 90 and 180 degrees or cover a 27-foot straight edge of roof. See 12.0 Appendix Diagram 4

4.1 ROOFGUARD KIT COMPONENTS

RoofGuard Kits consist of the following parts

- Baseplates
- Vertical Posts
- Horizontal Pipes
- Gates (HatchGuard Kit Only)

Baseplates are cast steel and hot dipped galvanized for long term outdoor use. Cone point stainless steel set-screws secure the vertical posts into the baseplates the set-screws come installed in each available hole of the baseplates.

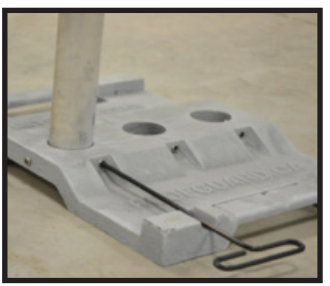


Figure 3: RoofGuard baseplate with set-screw and tool

The RoofGuard Baseplate has 3 large holes, and for RoofGuard Kits, any of the 3 holes is acceptable. Use of the center hole is typical, but for tight areas, or for convenience, an outside hole may be useful.

NOTE: The two outside holes of the baseplate have 2 possible set screw positions, both may be used but only one is required, perpendicular to the post it is holding.

Vertical posts are supplied with fittings and caps for a variety of configurations: Each “Post” is labelled with a letter sticker to identify where it is used in the kit.
A-POST-END: Used at end of counterweighted tieback (return) (2 in each kit)
B-POST-CORNER: Used where leading edge rails join up to tieback (return)
(2 in each kit)
E-POST-VAR: Used in the 18-foot and 27-foot kits to make a straight sections, or with an angle (such as at a corner of a rooftop) (1 in RGC-KIT-18V) & (2 in RGC-KIT-27V).
X-POST-INT: Used where 9-foot sections of rail join together (1 in RGC-KIT-18V) & (2 in RGC-KIT-27V)
Z-HATCH SUPPORT: This horizontal piece is used in the Hatch Kit to keep the two sides of the hatch parallel as one end is open for the gate. (1 in HG-KIT-08)

Figure 4: Labelled Components

A-POST-END

B-POST-CORNER

E-POST-VAR

X-POST-INT

Z-Hatch Support

The self-closing gate is hot-dip galvanized for corrosion resistance and durability.

Horizontal Rails are available in three standard sizes: 6-foot, 9-foot and 4-foot (for HatchGuard). For other required sizes, the aluminum pipe is suitable for
cut-to-fit on-site with various tools for non-ferrous metals.

4-foot sections are included for the 3 sides of the HatchGuard Kit (6pcs per HG-KIT-08)
The 6-foot sections of rail are used for the tie-backs to provide the counterweight for the system. (4pcs in each of the RGC-KIT-09, RGC-KIT-18V and RGC-KIT-27V)
The 9-foot sections of rail provide the leading edge protection and use a stiffener. (X-POST-INT to connect the top/mid rail)
RGC-KIT-09 has 2 pcs of 9-foot pipe and 1 of the X-POST-INT
RGC KIT-18V has 4 pcs of 9-foot pipe and 2 of the X-POST-INT
RGC-KIT-27V has 6 pcs of 9-foot pipe and 3 of the X-POST-INT
HG-KIT-08 has 6 pcs of 4-foot pipe for 3 sides of the hatch and 1 Z-HATCH-SUPPORT for stability

5.0 SYSTEM LAYOUT

5.1 For the HG-KIT-08, the baseplates are placed in a 4-foot square with the closed hatch at the center. The location of the gate would be determined by the access from the hatch, usually a ladder. Typically the system would be set up so the worker comes up the ladder and exits directly through the Self-Closing Gate (SCG). If gate faces an exposed edge additional railing will be required: be sure to consult LFP.

12.0 Appendix Diagram 1

5.2 For the RGC-KIT-09, RGC-KIT-18V & RGC-KIT-27V, Installers should be using fall protection while working near the roof edge. If curb or parapet is 4” or more above the top of the baseplate, then bases can be positioned against the parapet. If curb or parapet is lower, contact LFP for a review of the application.

12.0 Appendix Diagrams 2, 3 and 4 Respectively

6.0 INSTALLATION HG-KIT-08

Appendix Diagram 1

6.1 When assembling the RoofGuard Kit HG-KIT-08, workers should be a safe distance from the roof edge (per local regulations), have the hatch lid closed, and/or be attached to a suitable fall protection system until the setup is complete.

6.2 Baseplates should be set in a square (4-feet between holes) in piles of 2 with the hatch opening in the center of the square. Care should be taken to see if the hatch lid will contact the rails once assembled. Any of the 3 main holes in the baseplate can be used to adjust how tight the baseplates get to the edge of the hatch.

6.3 One edge of the square is where the Self-Closing Gate will be added (last step), which should be located so workers exiting the hatch can easily exit the system. On each side of the Self-Closing Gate side, one A-POST-END should be
inserted into the baseplates. Baseplate set screws should be torqued to
25ft-lbs.

6.4 The other two areas with baseplates should both have B-POST-END installed. Baseplate set screws should be torqued to 25ft-lb.

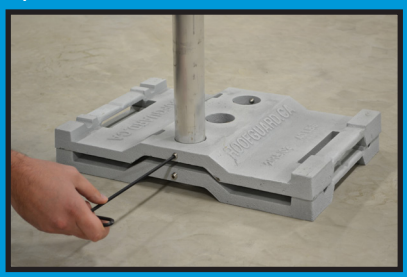


Figure 5: RoofGuard Baseplate

6.5 There are 3 pairs of 4-foot rail for the two sides and the “back” (opposite the gate) of the Hatch system. There is also one Z-HATCH-SUPPORT stiffener to join the two top rails of the sides. This stiffener helps keep the sides parallel and strengthen the gate connection. The Z-HATCH-SUPPORT stiffener should be slid onto the top rails of the sides, prior to placing them between A-POST-END and B-POST-CORNER see figure 6. Do NOT tighten the set-screws in the fittings at this point.

Figure 6: 4-Foot Rail

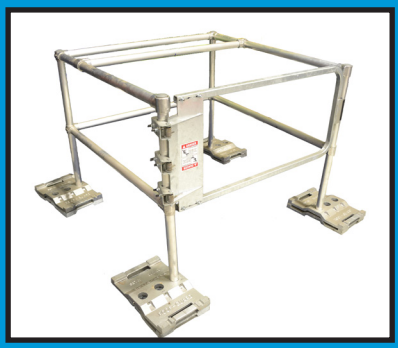


Figure 7: Complete HG-KIT-08

6.6 The mid rails of both sides should also then be inserted between A-POST-END and B-POST-CORNER on both sides, taking care that the top rail does not fall out. Once inserted, the set-screws holding the side rails (both sides) can be tightened to 16ft-lbs.

6.7 Next, install the rear rails between B-POST-CORNER and B-POST-CORNER. Once inserted, the set screws securing the rear rails and Stiffener Z-HATCH-SUPPORT can be tightened to 16ft-lbs, ensuring the side rails are parallel.

6.8 Finally install the gate, mounting the hinges to one of the A-POST-ENDs. The gate can be mounted on either side to accommodate opening in either direction. The hinges on the gate can be rotated around the vertical A-POST-END to adjust the spring tension on the gate. When closed, the tab on the end of the gate should strike the A-POST-END opposite to the hinges.

6.9 Once the system is complete (see figure 7), a second check of each set-screw should be performed and once torqued, each set-screw should be marked with the blue crayon (or other marking system) to help facilitate inspection and provide indications in the event of any tampering. The warning sticker should be placed in a visible location on the top rail with the install date and reference number to assist with inspections.

7.0 INSTALLATION RGC-KIT-09

Appendix Diagram 2

7.1 When assembling the RoofGuard Kit RGC-KIT-09, workers should be back from the roof edge (per local regulations) or be attached to a fall protection system until the setup is complete.

7.2 Clear the area for the RoofGuard baseplates of any snow, ice, or loose dirt/debris. Depending on the roof surface, a rubber pad (for membranes) or paver (for gravel) may be placed on the rooftop as an interface between the baseplates and the roofing material.

7.3 Baseplates should be set out with approximate spacing per the sketch (RGC-KIT-09) with pavers or rubber pads underneath them, as required by the roof
surface; 1 baseplate at the 2 leading edge locations and 3 baseplates at the 2 tie-back locations. Tie-back locations are 6-feet behind the 2 corner posts at the ends of the hazard edge.

7.4 At the ends of the tie-back portions, a A-POST-END should be placed into the stack of 3 baseplates. Depending on the orientation of the baseplate and the hole chosen, there may be one or two set-screws. Torque all contacting baseplate set screws to 25ft-lbs.

7.5 At the corner, a B-POST-END should be placed into the single baseplate. Torque all contacting baseplate set-screws to 25ft-lbs.

7.6 Between A-POST-END and B-POST-END, two of the 6-foot aluminum rails should be secured using the fittings. The top fitting should be flush with the plastic cap, ensuring the top rail is at 42” above the bottom of the post. The mid-rail should be adjusted by the installer so that the center of the fitting is at the mid-point (21” from top or bottom) of the Post. Torque the set-screws in all aluminum fittings to 16ft-lbs.

7.7 Along the “hazard” edge, two 9-foot pieces of rail will be secured. Prior to attachment, the stiffener X-POST-INT should be secured to the center of two 9-foot lengths of pipe where they are marked with an X-POST-INT. The 9-foot rail section can then be inserted in the B-POST-CORNER and secured to the other B-POST-CORNER. All set-screws in the fittings should be torqued to 16ft-lbs.

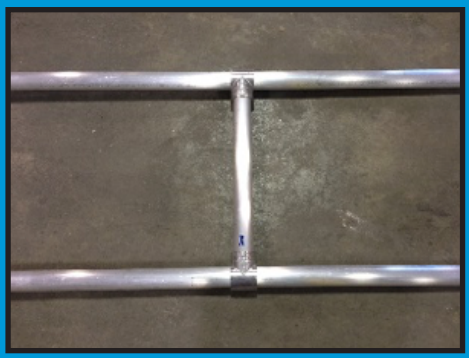


Figure 8: Rails with Stiffener X Post

7.8 At the second B-POST-CORNER, another two 6-foot rails will be connected between the B-POST-CORNER and the second end A-POST-END, which will have 3 baseplates. All baseplate set-screws that contact the post should be torqued to 25ft-lbs.

7.9 Once the system is complete (see figure 9), a second check of each set-screw should be performed, and once torqued, each set-screw should be marked with the blue crayon (or other marking system) to help facilitate inspection and provide indication in the event of any tampering. The warning sticker should be placed in a visible location on the top rail with the install date and reference number to assist with inspections.

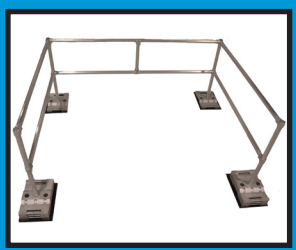


Figure 9: Complete RGC-KIT-09

8.0 INSTALLATION RGC-KIT-18V

Appendix Diagram 3

8.1 When assembling the RoofGuard Kit RGC-KIT-18V, workers should be back from the roof edge (per local regulations), or be attached to a fall protection system until the setup is complete.

8.2 Clear the area for the RoofGuard baseplates of any snow, ice or loose dirt/debris. Depending on the roof surface, a rubber pad (for membranes) or paver (for gravel) may be placed on the rooftop as an interface between the
baseplates and the roofing material.

8.3 Baseplates should be set out with approximate spacing per the sketch (RGC-KIT-18V) with pavers or rubber pads underneath them, as required by the roof surface; one baseplate at the 3 leading edge locations and three baseplate at the 2 tie-back locations. Tie-back locations are 6-feet behind the two corner posts, at the ends of the hazard edge.

8.4 At the ends of the tie-back portions, a A-POST-END should be placed into the stack of 3 baseplates. Depending on the orientation of the baseplate and the hole chosen, there may be one or two set screws. Torque all contacting
baseplate set screws to 25ft-lbs.

8.5 At the corner, a B-POST-CORNER should be placed into the single baseplate. Torque all contacting baseplate set screws to 25ft-lbs.

8.6 Between A-POST-END and B-POST-CORNER, two of the 6-foot aluminum rails should be secured using the fittings. The top fittings should be flush with the plastic cap, ensuring the top rail is at 42” above the bottom of the post. The mid-rail should be adjusted by the installer so that the center of the fittings is at the mid-point (21” from top or bottom) of the post. Torque the set-screws in all aluminum fittings to 16ft-lbs.

8.7 Along the “hazard” edge, two 9-foot pieces of rail will be secured. Prior to attachment, the stiffener X-POST-INT should be secured to the center of two 9-foot lengths of pipe where they are marked with and X-POST-INT. The 9-foot rail section can then be inserted into the B-POST-CORNER and secured to the E-POST-VAR (for RGC-KIT-18V). All set screws in the fittings should be torqued to 16ft-lbs. Refer to Figure 8 (Rails with Stiffener X-POST-INT).

8.8 A second pair of 9-foot rails with the stiffener X-POST-INT will be placed from the center post E-POST-VAR. The angle between the 9-foot rails can be adjusted from 90-180 degrees or anywhere in-between using the fitting. The angles of the fittings can be adjusted as necessary. The other end of the 9-foot rails will be secured to the other corner post B-POST-CORNER.

8.9 At the second B-POST-CORNER, another two 6-foot rails will be connected between the B-POST-CORNER and the second A-POST-END. The A-POST-END will have 3 baseplates. All baseplate set-screws that contact the post should be torqued to 25ft-lbs.

8.10 Once the system is complete (see figure 10), a second check of each set screw should be performed and once torqued, each set-screw should be marked with the blue crayon (or other marking system) to help facilitate inspection and provide indications in the event of any tampering. The warning sticker should be placed in a visible location on the top rail with the install date and reference number to assist with inspections.

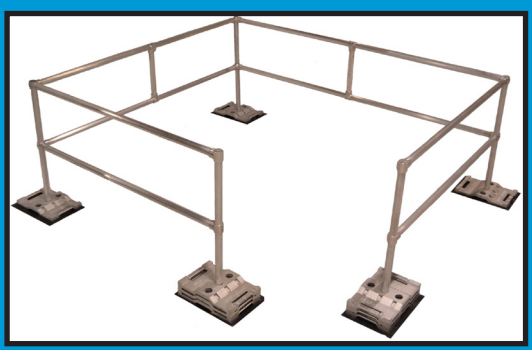


Figure 10: Complete RGC-KIT-18V

9.0 INSTALLATION RGC-KIT-27V

Appendix Diagram 4

9.1 When assembling the RoofGuard Kits RGC-KIT-27V, workers should be back from the roof edge (per local regulations), or be attached to a fall protection system until the setup is complete.

9.2 Clear the area for the RoofGuard baseplates of any snow, ice or loose dirt/debris. Depending on the roof surface, a rubber pad (for membranes) or paver (for gravel) may be placed on the rooftop as an interface between the
baseplates and the roofing material.

9.3 Baseplates should be set out with approximate spacing per the sketch (RGC-KIT-27V) with pavers or rubber pads underneath them, as required by the roof surface; one baseplate at the 4 leading edge locations and three baseplates at the 2 tie-back locations. Tie-back locations are 6-feet behind the two corner posts, at the ends of the hazard edge.

9.4 At the ends of the tie-back portions, a A-POST-END should be placed into the stack of 3 baseplates. Depending on the orientation of the baseplate and the hole chosen, there may be one or two set-screws. Torque all contacting base-plate set screws to 25ft-lbs.

9.5 At the corner, a B-POST-CORNER should be placed into the single baseplate. Torque all contacting base-plate set screws to 25ft-lbs.

9.6 Between A-POST-END and B-POST-CORNER, two of the 6 foot aluminum rails should be secured using the fittings. The top fitting should be flush with the plastic cap, ensuring the top rail is at 42” above the bottom of the post. The mid-rail should be adjusted by the installer so that the center of the fitting is at the mid-point (21” from top or bottom) of the Post. Torque the set-screws in all aluminum fittings to 16ft-lbs.

9.7 Along the “hazard” edge, two 9-foot pieces of rail will be secured. Prior to attachment, the stiffener X-POST-INT should be secured to the center of the two 9-foot lengths of pipe where they are marked with an X-POST-INT. The 9-foot rail section can then be inserted into the corner B-POST-CORNER and secured to the center E-POST-VAR. All set-screws in the fittings should be torqued to 16ft-lbs. Refer to Figure 8 (Rails with Stiffener X-POST-INT) for more details.

9.8 A second pair of 9-foot rails with the stiffener X-POST-INT will be placed from the center post E-POST-VAR The angle between the 9-foot rails can be adjusted from 90-180 degrees or anywhere in-between using the fittings. The angles of the fittings can be adjusted as necessary. The other end of the 9 foot rails will be secured to a second center E-POST-VAR. This step gets repeated with the third set of 9-foot rails ending at a corner post B-POST-CORNER.

9.9 At the second B-POST-CORNER, another two 6-foot rails will be connected between the B-POST-CORNER and the second A-POST-END. The A-POST-END will have 3 baseplates. All baseplate set-screws that contact the post should be torqued to 25ft-lbs.

9.10 Once the system is complete (see figure 11), a second check of each set screw should be performed and once torqued, each set-screw should be marked with the blue crayon (or other marking system) to help facilitate inspection and provide indications in the event of any tampering. The warning sticker should be placed in a visible location on the top rail with the install date and reference number to assist with inspections.

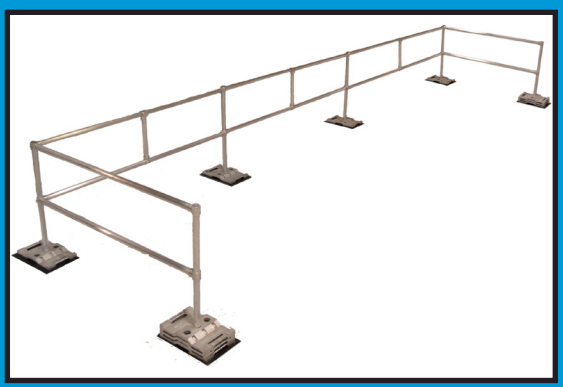


Figure 11: Complete RGC-KIT-27V

WARNING

Warning – Do NOT lean on, or climb on guardrails.
Guardrails MUST NOT be used as an anchor for fall restraint or fall arrest, and shall not be used for hoisting or tie-off.
Attachment of banners / signs / equipment is not permitted.
Excess force applied to the top rail could cause tipping, resulting in injury or death.

OSHA Reference 29 CFR 1910.23 Guarding of floor and wall openings and holes (a)(2) Every ladder-way floor opening or platform shall be guarded by a standard railing with standard toe-board on all exposed sides (except at entrance to opening), with passage through the railing either provided with a swing gate or offset so that a person cannot walk directly into the opening.

10.0 DETAILED INSPECTION AND MAINTENANCE LOG

	Inspection Items Noted	Corrective Action Taken		

11.0 LIFTSAFE FALL PROTECTION WARRANTY

Equipment offered by Liftsafe Fall Protection (LFP) is warranted against factory defects in workmanship and materials for a period of one year from date of installation or use by the owner, provided that this period shall not exceed 18 months from date of shipment. Upon notice in writing, LFP will promptly repair or replace all defective items. LFP reserves the right to elect to have any defective item returned to its plant for inspection before making a repair or replacement. This warranty does not cover equipment damages resulting from abuse, damage in transit, or other damage beyond the control of LFP. This warranty applies only to the original purchaser, and is the only one applicable to our products, and is in lieu of all other warranties, expressed or implied.

12.0 APPENDIX DIAGRAMS

Diagram 1: HG-KIT-08

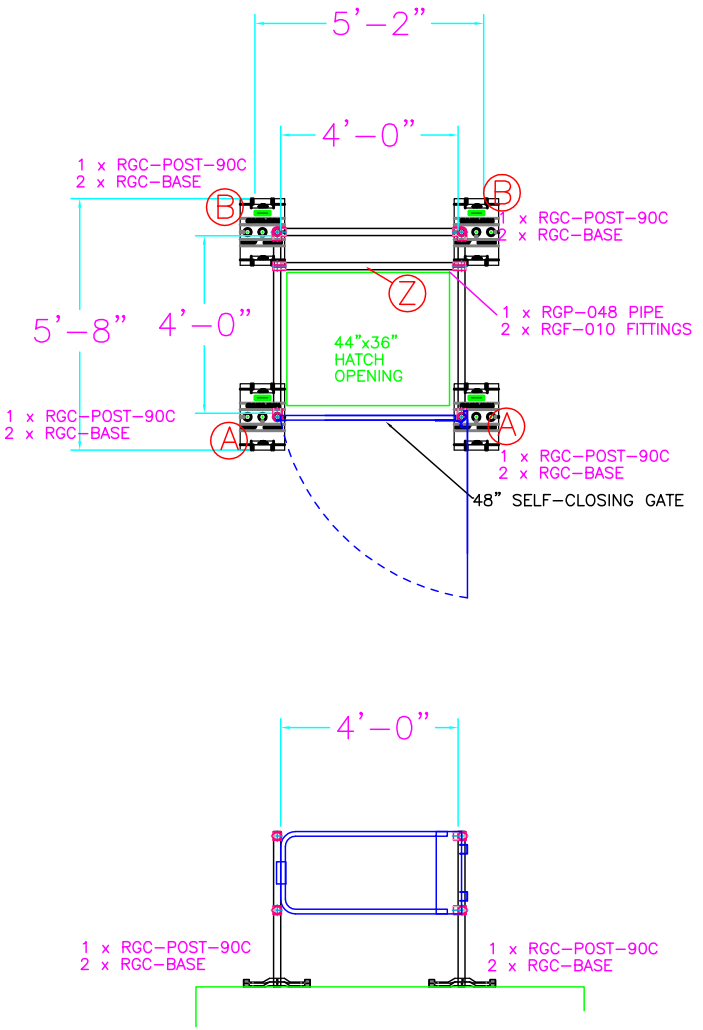
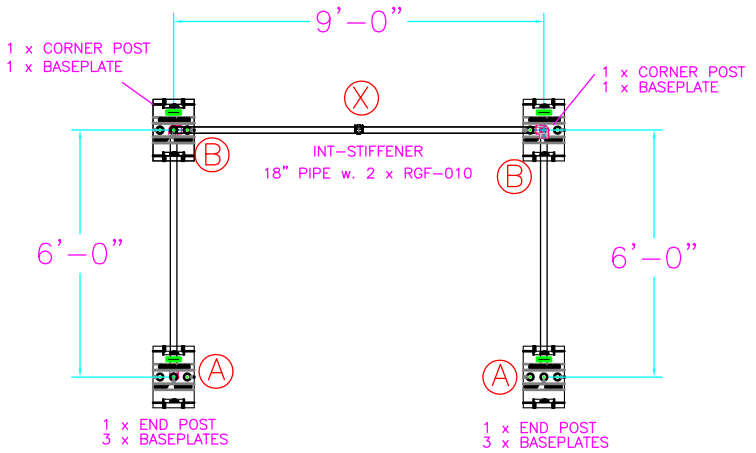


Diagram 2: RGC-KIT-09



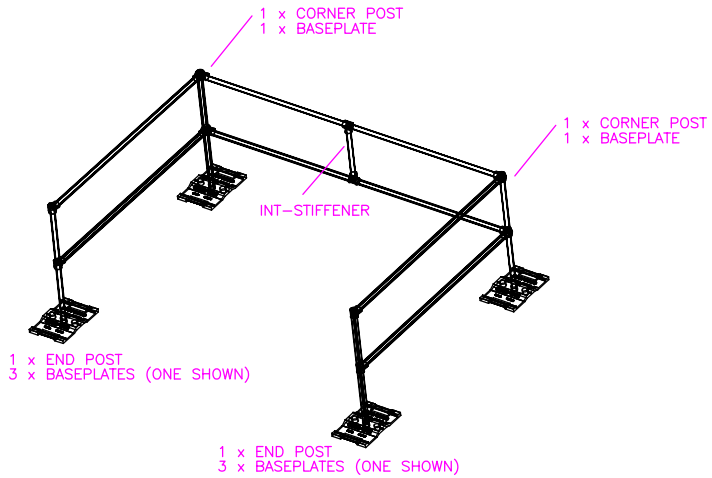
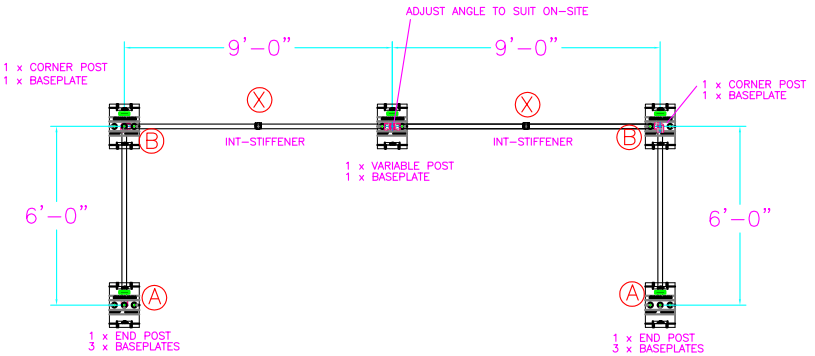


Diagram 3:RGC-KIT-18V



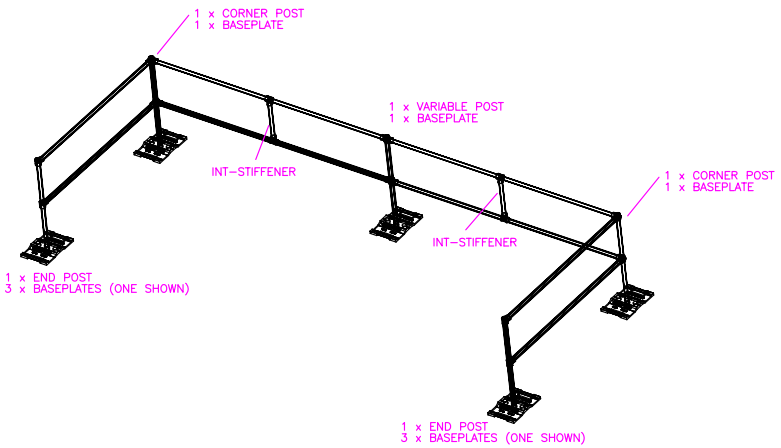
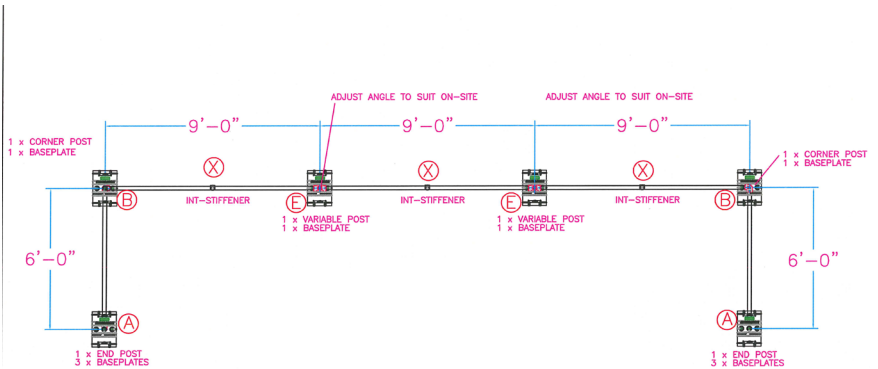
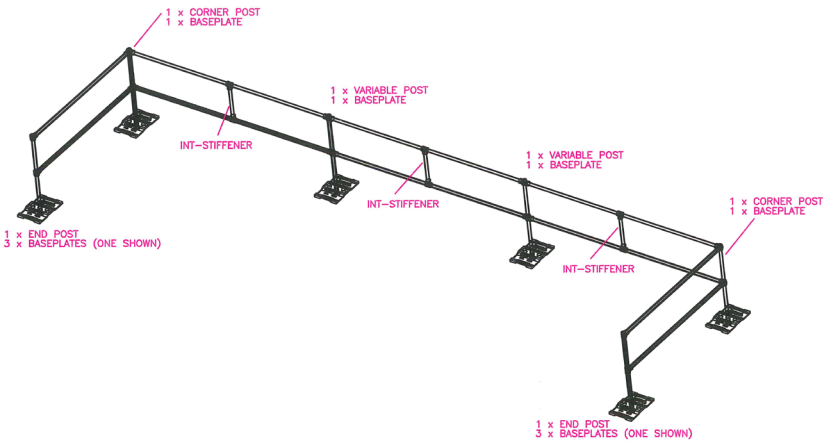


Diagram 4: RGC-KIT-27V





Liftsafe Fall Protection Inc.

409 Harmony Road
Ayr, Ontario N0B 1E0

TF.: 1(800) 977-2005
T.: (519) 896-2430
F.: (519) 896-2085

E.: info@liftsafeinspections.com
W.: www.fallsafetysolutions.com