

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

Guardrail System

Description

The Guardrail System provides fall protection for personnel and materials, and can be used at some locations in place of, or in addition to safety netting and/or a fall arrest system or a fall restraint system.

The Guardrail System protects workers from leading edge work hazards, unprotected side hazards, holes, and other fall hazards where a passive guardrail system can be applied. It is not designed to be an attachment point for a fall arrest system.

Components are powder coated steel rails, or galvanized steel base plates for added durability. This product meets all applicable OSHA standards for guardrail systems.

Unpacking

1. Remove all packing material.
2. Carefully remove the Guardrail System from the shipping carton, using care.
3. Inspect carefully for any damage that may have occurred during transit. Check for any loose, missing or damaged parts. If the Guardrail System is damaged, promptly inform the dealer where you purchased it.

General Safety Information

DO NOT THROW AWAY THESE INSTRUCTIONS!

READ AND UNDERSTAND BEFORE USING EQUIPMENT!

Specifications

Model No.	Guardrail* Length	Guardrail* Height	Toe Board Length	Toe Board Height
10K024*	6'	42 ¹ / ₅ "	–	–
10K025*	8	42 ¹ / ₅	–	–
10K026*	10	42 ¹ / ₅	–	–
10K027**	6	42 ¹ / ₅	–	–
10K028**	8	42 ¹ / ₅	–	–
10K029**	10	42 ¹ / ₅	–	–
10K030	–	–	24 ¹ / ₂ "	5"
10K031	–	–	10	4 ³ / ₄
10K032	–	–	21 ¹ / ₄	4 ³ / ₄

(*) Transportable

(**) Collapsible

This manual should be read and understood in its entirety, and used as part of a training program as required by OSHA or any applicable state regulatory agency.

All instructions in this manual must be provided to the users of the equipment. The user must understand the proper use of equipment and its limitations.

⚠ WARNING Do not alter this equipment unless approved by manufacturer.

1. Do not use around moving machinery, electrical hazards, surfaces with sharp edges or abrasive surfaces, unless it is specifically designed for that purpose.



Figure 1



Figure 2

2. Do not use in conjunction with other systems or components which could affect the safe operation of both.
3. Do not use the equipment where it will be exposed to harsh chemicals which could be harmful to or degrade the equipment. Consult the manufacturer if in doubt.
4. Always inspect for defects, damage, or deterioration prior to using the equipment and each time thereafter.
5. If damage is found or the manufacturer's label is not legible or is missing, the equipment shall be removed from service. Fall protection equipment shall also be removed from service when the manufacturer's specified service limits expire.

Guardrail System

General Safety Information (Continued)

6. Do not hang, lift or support tools or equipment from the Guardrail System.

▲ WARNING *Consult with a doctor if there is cause to doubt one's fitness to safely install, maintain or use this system. Age, fitness, and health can seriously affect a worker's ability to withstand injury from a fall. Pregnant women or minors must not use this equipment.*

▲ DANGER *Install the Guardrail System according to manufacturer's instructions and recommendations in OSHA regulations. Serious injury or death can occur if instructions are not followed.*

OSHA REGULATIONS

Fall Protection Systems are to be designed to comply with OSHA and all applicable state regulations.

Guardrail Systems must comply with these OSHA regulations: 29 CFR-1910.23, 1910.23 (c)(1), 1910.23 (a)(2), 1926.500, 1926.501 (c), 1926.502 (j)(1)(2)(3)(4), and 1926.32 (f), (m) – the requirements for Guardrail Systems.

Pre-Installation

REQUIRED TRAINING

A training program shall be provided for each employee or user to recognize the hazards of falling and the procedures to be followed to minimize these hazards. Federal, State, and local regulatory requirements shall also be included in the training.

An employer or user must ensure that each employee has been trained by a Competent or Qualified Person in the dangers of fall hazards in the work area; the correct installation, inspection, and maintenance of the fall protection

systems being used; and the correct use of personal fall arrest systems.

It is the responsibility of the user and purchaser of this equipment to assure that training includes an awareness of the operating characteristics, application limits, and the consequences of the improper use of this equipment – without exposing anyone to a fall hazard.

Training should be repeated on a periodic basis in compliance with OSHA regulations.

RESCUE PLANNING

The user is required to devise a rescue plan and the means by which to implement it. All employees shall be trained in self-rescue plans and methods for project-specific rescue events related to fall hazards.

SELECTING A FALL PROTECTION SYSTEM

Selection of fall protection equipment is to be made by a Qualified and Competent Person.

The equipment must be designed for use as part of a personal fall protection system.

The equipment should be purchased new and unused.

▲ CAUTION *Do not use this equipment for any operation other than that for which it has been designed and approved.*

APPLICABLE TERMINOLOGY

- Guardrail Systems:** A system providing for protection from fall hazards by creating a barrier with limited access.
- Guardrail:** A barrier secured by uprights and placed on the open sides and ends of platforms to prevent a person from falling.

- Continuous Run:** A single or series of guardrail sections installed in a continuous straight line.

- Outrigger:** A 6 foot, 8 foot or 10 foot long guard railing connected to a base plate and installed at a 90° angle to a continuous run. It provides stability for the system and side fall protection.

- Toeboard:** A protective barrier near ground level that prevents materials and equipment from falling or rolling to lower levels.

- Leading Edge:** The edge of a floor, roof, or formwork for a floor or other walking/working surface (as a deck) which changes location as additional floor, roof or deck, or formwork sections are placed or constructed. A leading edge is considered to be an unprotected side and edge.

- Unprotected Side and Edge:** A side or edge other than points of access on a walking or working surface. For example; floor, roof, ramp, or runway having no wall or guardrail system.

- Fall Arrest System:** A system that typically includes a full body harness connected to an energy absorbing line (lanyard). Maximum allowable free fall being six feet.

NOTE: Guardrail Systems are not rated for Fall Arrest!

- Fall Restraint System:** The products used in a restraint system which prevents the user from a vertical free-fall hazard; typically, a full body harness and a restraining line or lanyard.

NOTE: Guardrail Systems are not rated for Fall Restraint!

Models 10K024 thru 10K032

ENGLISH

Pre-Installation (Continued)

10. **Work Positioning System:** Work positioning systems typically include a full body harness, lanyard, and a back-up personal fall arrest system. Maximum allowable free fall is two feet.

NOTE: Guardrail Systems are not rated for Work Positioning!

11. **Rescue System:** The guardrail system is not rated for use as a component part of a rescue system.

OSHA DEFINITIONS

1. **Competent Person:** Defined by OSHA 29 CFR 1926.32 (f) as someone "...capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them."
2. **Qualified Person:** Defined by OSHA 29 CFR 1926.32 (m) as someone "... who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, work, or the project."

Installation

LOCATION REQUIREMENTS

▲ WARNING *Make sure you have read and understand all instructions before installing Guardrail Systems!*

1. The structure and surface at the location must be capable of supporting the Guardrail System and those installing or using it. An assessment of structural integrity must be made by a competent or qualified person to determine if the walking and working surfaces will support the total weight.
2. Never install or use Guardrail Systems on gravel, slippery surfaces or near electrical wires. The base plates cannot be allowed to shift or slide.

▲ WARNING *Keep systems a minimum of ten (10) feet from power lines to prevent injury or damage inherent with electrical hazards.*

3. Guardrail Systems must be installed on stable and clean surfaces where adequate lighting is provided. If there is a danger in installing the Guardrail System, determine how to eliminate that danger before proceeding.

▲ CAUTION *Care should be taken when transporting system components or workers.*

INSTALLING BASE PLATES

The requirements below indicate the proper installation procedures to be followed:

1. Install base plates with the long side perpendicular (at 90° angle) to the guardrails. See Figure 4.

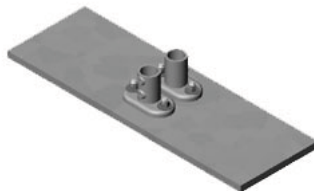


Figure 3 – Base Plate

2. Base plates should be installed a minimum of 24" from an unprotected edge.
3. Never lean against any portion of the Guard Rail System.
4. Use Outriggers at all times and at both ends of any single section of guardrail, and at both ends of a continuous rail section. An Outrigger is a guardrail installed at a 90° angle to a continuous run which is connected to a base plate.



Figure 4 – Guardrail with Base Plate and Outrigger

5. The Guard Rail System is designed to meet OSHA regulations.

▲ WARNING *Guard Rail Systems are not designed for hoisting or for tying off equipment or people.*

▲ WARNING *Rectangular base plates must be installed in the proper position!*

INSTALLING BASE PLATES WITH GUARDRAILS

1. First, lay out the job by spacing the base plates. Locate bases at a minimum of 24" from the edge of any surface, leading edge, or opening.

Guardrail System

Installation (Continued)

▲ CAUTION *Failure to properly measure and plan ahead will make it difficult to move the assembled system to another location. Consult the fall protection plan related to the job in determining the hazards and methods.*

2. Check that the base plates are in the correct position. Install the base plate with the long side perpendicular (at a 90° angle) to the guardrails as mentioned previously.
3. After the layout is set and the base plates positioned, insert the guardrails into the base plate fitting.
4. Use the correct Allen wrench to tighten the set screws of the fittings mounted on the base plate. (Recommended set screw torque is 29 lbs/foot). Double check the tension on set screws to make sure they are tight. When disassembling the system, reverse the process.

NOTE: One Allen wrench is provided with each system and should be kept in the instruction tube along with instructions.

NOTE: Toeboards are an optional accessory and sold separately from the Guardrails.

APPLICATION OF THE ACCESSORY TOEBOARDS

A Toeboard is a low protective barrier that will prevent materials and equipment from falling to lower levels and provide protection for people (for systems mounted on sloped roofs). (OSHA 1926.500).

WHEN USING TOEBOARDS IS REQUIRED:

Guardrail Systems should be used with a Toeboard in the following situations:

1. When the unprotected edge does not have a substantial barrier (such as a parapet wall [retaining wall or railing] on a roof).
2. When falling materials and equipment are potential hazards at a work area (such as a mechanical unit near the edge of a roof).
3. Wherever, beneath the open sides:
 - a. People can pass;
 - b. There is moving machinery; or
 - c. There is equipment present onto which falling materials could create a hazard. (OSHA 1910.23 (c)(1))
4. At every ladder way, floor opening or platform ...shall be guarded by a standard railing with standard TOEBOARD on all exposed sides (except at entrance to opening), with the passage through the railing either provided with a swinging gate or so offset that a person cannot walk directly into the opening (OSHA 1910.23(a)(2)).
5. On a Continuous Run – the TOEBOARD protection shall extend one GUARD RAIL unit on either side of a work area.
6. In the "Protection from falling objects" regulation: When an employee is exposed to falling objects, the employer shall have each employee wear a hard hat and shall implement one of the following measures:
 - a. Erect TOEBOARDS, screens, or guardrail systems to prevent objects from falling from higher levels; or,

- b. Erect a canopy structure and keep potential fall objects far enough from the edge of the higher level so that those objects would not go over the edge if they were accidentally displaced; or,
- c. Barricade the area to which objects could fall, prohibit employees from entering the barricaded area, and keep objects that may fall far enough away from the edge of a higher level so that those objects would not go over the edge if they were accidentally displaced. (OSHA 1926.501(c)).

USING PORTABLE TOEBOARDS

When used for protection from falling objects:

OSHA 1926.502(j)(1)

1. Toeboards shall be installed along the edge of the overhead walking/working surface at a distance sufficient to protect employees below.

OSHA 1926.502(j)(4)

2. Where tools, equipment, or materials are piled higher than the top edge of a Toeboard, paneling or screening shall be erected from the walking/working surface or Toeboard to the top of a guardrail system's top rail or midrail, for a distance sufficient to protect employees below.

OSHA 1926.502(j)(2)

3. Toeboards shall be capable of withstanding, without failure, a force of at least 50 pounds (222 N) applied in any downward or outward direction at any point along the Toeboard.

Models 10K024 thru 10K032

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Installation (Continued)

OSHA 1926.502(j)(3)

4. Toeboards shall be a minimum of 3½ inches (9 cm) in vertical height from their top edge to the level of the walking/working surface. They shall have not more than 1/4 inch (0.6 cm) clearance above the walking/working surface. They shall be solid or have openings not over 1 inch (2.5 cm) in greatest dimension.

INSTALLATION OF TOEBOARDS AND BASE PLATE

See Figures 5, 6 and 7.

1. After laying out the job and placing baseplates, slide the Toeboard into the baseplate fitting.
2. Make certain that the Toeboard and base plate are properly positioned (long or short direction).
3. Then insert the Guardrail sections into the base plate fitting on the base plate.
4. By lifting up the Toeboard assembly at this point will make it easier to tighten the set screws for the fittings mounted on the base plate.

NOTE: Toeboard short fits inside guardrail post the same as it is inserted into base plate. For use along short width of base plate. Insert Toeboard into this fitting. See Figure 5.

NOTE: Toeboard long fits inside guardrail post the same as it is inserted into base plate. For use on the long length of base plate. Insert Toeboard into this fitting beginning at the end of the base plate. See Figures 6 and 7.



Figure 5 – Toeboard Short



Figure 6 – Base Plate



Figure 7 – Toeboard Long

Maintenance

Repairs to equipment can be made only by an authorized representative or person.

CLEANING

Cleaning is important for maintaining the safety and life of the equipment. Clean the equipment of dirt and corrosives. If the equipment cannot be wiped clean, use a mild soap and water to rinse and wipe dry. Store equipment where it cannot be affected by heat, moisture, oil, chemicals, etc.

INSPECTION

1. A formal inspection of system components must be performed at least every six months by a qualified person.
2. The frequency of formal inspections should be determined by the conditions of use and exposure. Record the inspection results in a maintenance log.

DISASSEMBLY

1. If it is necessary to remove the Guard Rail System at the time of use on a particular job, make sure the unit is resecured before starting work.
2. If the Guard Rail System is damaged, loosen all screws on the base plate fittings. Realign the guardrails and base plates, and then tighten all screws. Replace damaged parts with new ones.

Guardrail System

Features

COMPLETED SYSTEM WITH TOEBOARDS

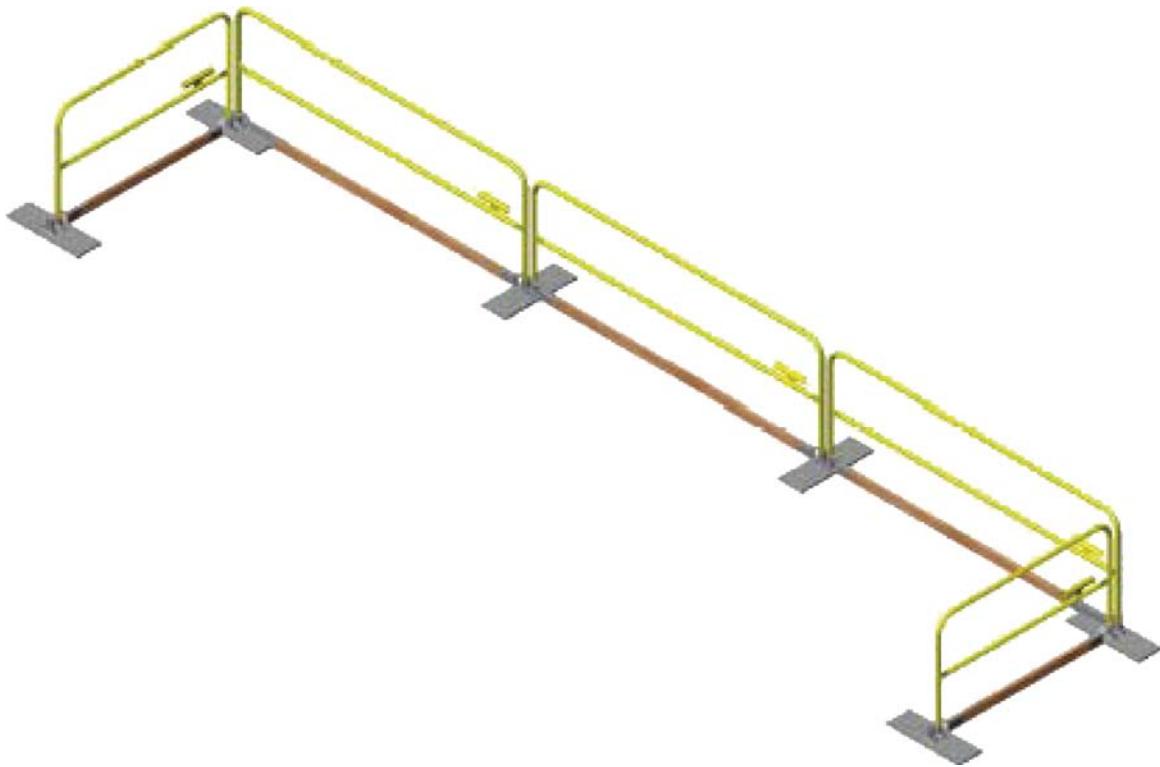


Figure 8 – Completed Guardrail System

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For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

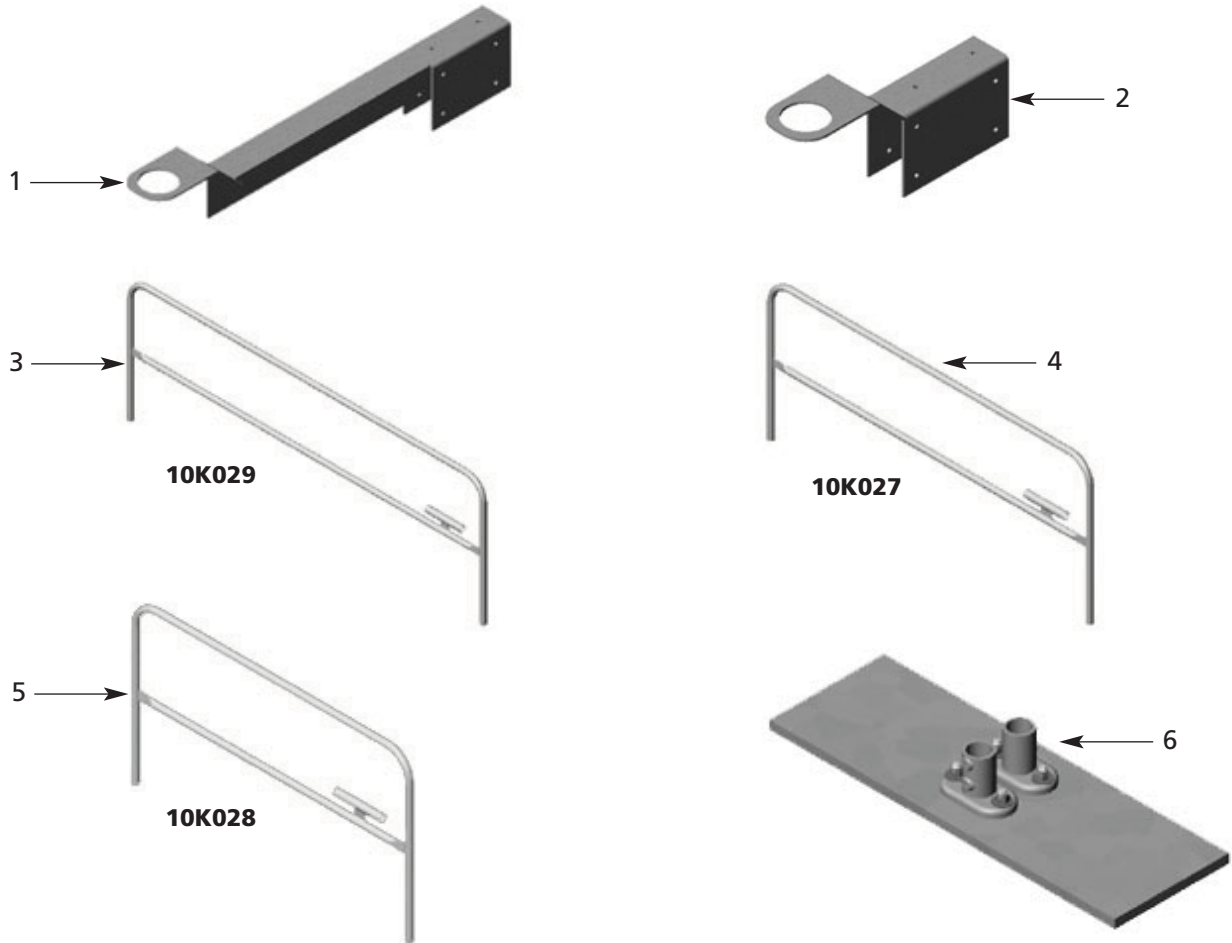


Figure 9 – Repair Parts Illustration for Guardrail System

Repair Parts List for Guardrail System

Ref. No.	Description	Part No.	Qty.	Ref. No.	Description	Part No.	Qty.
1	Toeboard Long	#	#	4	Guardrail 8 ft.	#	#
2	Toeboard Short	#	#	5	Guardrail 6 ft.	#	#
3	Guardrail 10 ft.	#	#	6	Base Plate 3 ft. length	#	#

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Guardrail System

LIMITED WARRANTY

DAYTON ONE-YEAR LIMITED WARRANTY. DAYTON® GUARDRAIL SYSTEM, MODELS COVERED IN THIS MANUAL, ARE WARRANTED BY DAYTON ELECTRIC MFG. CO. (DAYTON) TO THE ORIGINAL USER AGAINST DEFECTS IN WORKMANSHIP OR MATERIALS UNDER NORMAL USE FOR ONE YEAR AFTER DATE OF PURCHASE. ANY PART WHICH IS DETERMINED TO BE DEFECTIVE IN MATERIAL OR WORKMANSHIP AND RETURNED TO AN AUTHORIZED SERVICE LOCATION, AS DAYTON DESIGNATES, SHIPPING COSTS PREPAID, WILL BE, AS THE EXCLUSIVE REMEDY, REPAIRED OR REPLACED AT DAYTON'S OPTION. FOR LIMITED WARRANTY CLAIM PROCEDURES, SEE "PROMPT DISPOSITION" BELOW. THIS LIMITED WARRANTY GIVES PURCHASERS SPECIFIC LEGAL RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION.

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Manufactured for Dayton Electric Mfg. Co., 5959 W. Howard St., Niles, Illinois 60714-4014 U.S.A.

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Niles, Illinois 60714 U.S.A.**