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MSA Sure-Rail™ System

Application, Operation, Maintenance & Inspection Instructions Manual

Please read this manual.

This information is vital to your safety.

APPLICATION

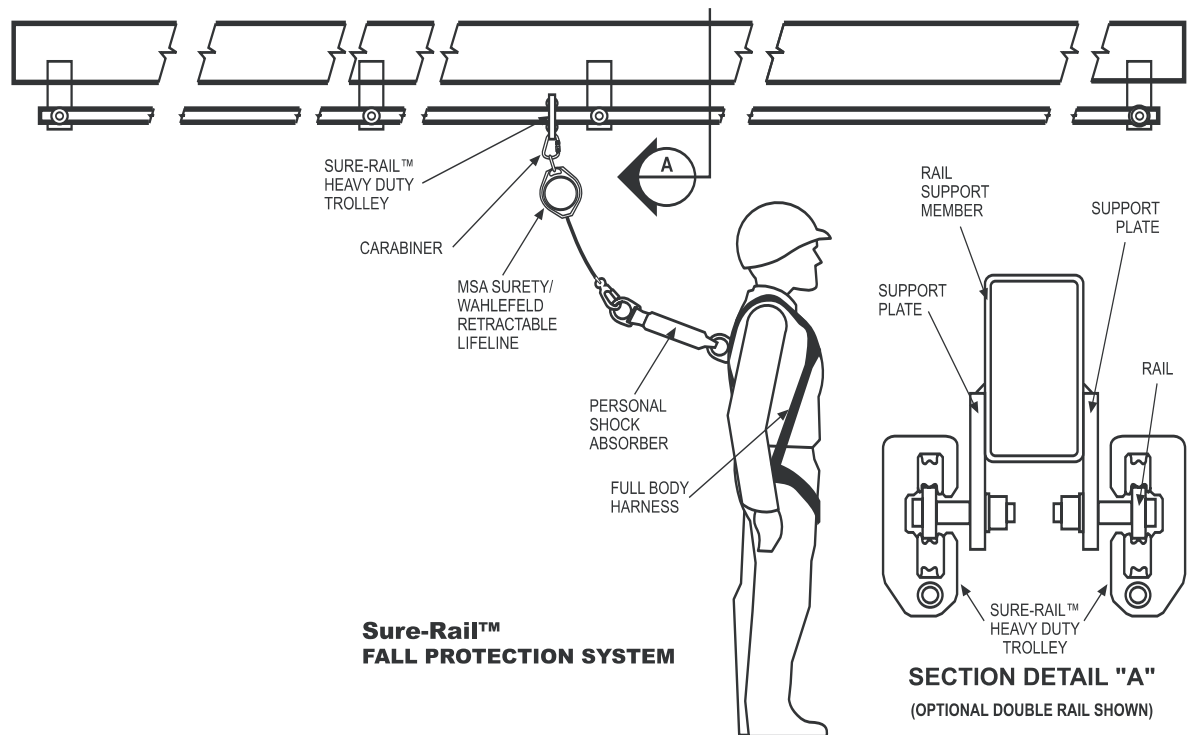
WARNING

THESE INSTRUCTIONS MUST BE PROVIDED TO THE USER. MANAGEMENT AND USER MUST READ AND UNDERSTAND THESE INSTRUCTIONS; FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.

The MSA Sure-Rail is a permanently installed anchorage connector that provides freedom of movement in a frequently used horizontal work area. The Sure-Rail fall protection system consists of a rail(s), joining hardware, "end stops", and a trolley.

The rail(s) is anchored to a supporting structure while the trolley provides a moveable connecting point for the person using the fall arrest system. Rail sections are affixed to an engineer-approved anchorage support at five (5) foot intervals.

The system will accommodate low friction trolleys that are installed or removed from the rail as required. Anti-slip off collars or "end stops", prevent accidental trolley detachment at either end of the system. The anti-slip off collar is spring-loaded, making manual trolley removal easy.



For More Information: Call (1-800-MSA-2222) or Visit Our Website at (www.MSAnet.com)



Be Sure.
Choose MSA.

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

TROLLEY:

P/N: SHLSR00104
 Material - Body: T5160 Aluminum
 Material - Wheels: 316 Stainless Steel
 Dimensions - Body: 7.38" (18.8 cm) x 3" (7.6 cm)
 x 0.75" (2 cm) thick
 Dimensions - Wheel: 1.68" dia. (4.3 cm)
 Weight: 1.5 lbs (0.68 kg)

RAIL & RAIL COMPONENTS:

RAIL

P/N: SHLSR0021000
 Material: Galvanized Steel
 Dimensions: 1/2" (12 mm) x 2" (50 mm)
 x 10' (3.05 m)
 Weight: 35 lbs (16 kg)

Corner rail for inside or outside corners is also available.
 Contact MSA Surety for specifications.

RAIL SPLICE

P/N: SHLSR00501
 Material: Galvanized Steel
 Weight: 2.5 lbs (1.1 kg)

RAIL SPACER

P/N: SHLSR00601
 Material: Galvanized Steel
 Weight: 0.2 lbs (0.10 kg)
Required every 5' (1.5 m)

ANCHORAGE BOLT

P/N: SHLSR007003
 Material: Galvanized Steel
 Weight: 1.0 lbs (0.46 kg)
Required every 5' (1.5 m)

ANTI SLIP OFF COLLAR

P/N: SHLSR00801
 Material: Painted Steel
 Weight: 0.5 lbs (0.2 kg)
Required at each end of system

OPERATING INSTRUCTIONS

The MSA Sure-Rail system is designed to be virtually maintenance free and easy to use. The following notes below will reduce the risk of injury and keep the Sure-Rail™ system in top working order.

1. All potential users of the Sure-Rail equipment and user's management must read and understand all instructions related to the system fully; prior to use of the system. Failure to do so could result in serious injury or death. MSA recommends all users have proper training in the use of the Sure-Rail™ system and related personal protective equipment.
2. All persons using the fall protection system should be equipped with a full body harness, personal shock absorber, auto-locking carabiner, and a retractable lifeline or lanyard.
3. A spacing of six (6) feet or more must be maintained between any two (2) trolleys on one Sure-Rail track. This ensures no two (2) users occupy the same span between anchor bolts. The optional "twin track" Sure-Rail system will allow users to bypass each other without having to disconnect. This system also allows users to work side by side.
4. To minimize the potential for injury, it is strongly recommended that the user stand or crouch-down when using the system and **avoid lying prone**. This will allow proper fall clearances to be maintained.
5. MSA recommends the user keep the trolley as directly overhead as possible to minimize swing fall hazards. This can be achieved by locking the retractable lifeline with a tug, and applying steady tension when walking along the top of the work area.
6. Retractable lifelines should always be in the retracted position when not in use. Use the removable tagline for retrieval of the lifeline. Taglines should be kept out of the path of the work area when not in use.
7. Ensure anti-slip off collars are in good working order (spring still has tension, bolt is tightened, trolley can't slide past, etc. . .).

OPERATING INSTRUCTIONS...continued

8. Ensure yellow safety lockout clips have been placed over the spring of the anti-slip off collar and the locking pin has been secured.
9. A visual inspection should be performed on the Sure-Rail™ system and personal protective equipment prior to each use (See inspection section of this manual and follow all instructions for inspection provided with all Personal Protective Equipment).
10. The Sure-Rail™ system should be thoroughly inspected on a regular basis and at least every twelve (12) months by a certified MSA representative.
11. It is recommended that retractable lifelines be returned to MSA for a complete inspection after 24 months when new and at least every twelve (12) months thereafter.
12. Report any safety concerns, regarding the Sure-Rail™ system to the on-duty supervisor so that any equipment not working properly can be taken out of service immediately. The supervisor should notify MSA as soon as possible.
13. If a fall has occurred on the Sure-Rail™ system, the system must be taken out of service immediately. The system will require an inspection by MSA or one of their certified representatives.

CONNECTING TO THE SURE RAIL™ SYSTEM

1. To attach a Sure-Rail™ heavy-duty trolley to the Sure-Rail™ system, pull the anti-slip off collar away from the rail after removing the safety lockout clip.
2. With the collar pulled away, push the trolley onto the rail until it is past the anti-slip off collar.
3. Release the anti-slip off collar and the collar should return to its original position.
4. Re-connect safety lockout clip over the spring of the anti-slip off collar.
5. Note that the trolley should be orientated such that the bottom end has the connecting hole to attach the carabiner and retractable lifeline into. Check the trolley's movement along the rail. If there are any concerns, notify the on-duty supervisor.
6. Remove the trolley by removing the safety lock-out clip and by pulling the anti-slip off collar away from the rail and push the trolley off the rail. It is unnecessary to remove the trolleys from the system under normal use unless there is a concern with clearance (i.e. overhead crane interference).

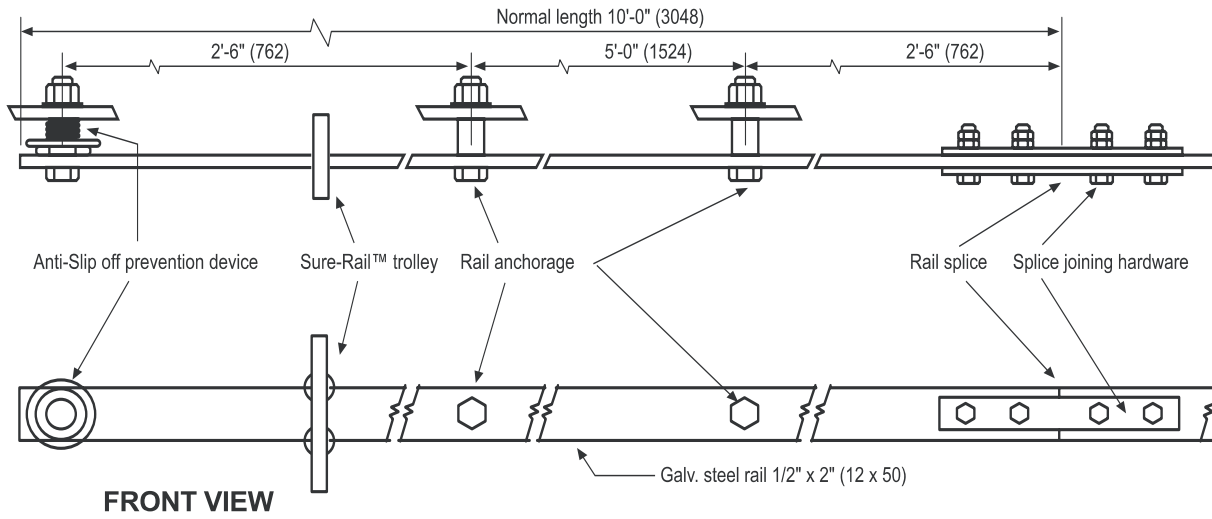
DESIGN STATEMENTS

Each Sure-Rail™ fall protection system must be individually engineered for the specific application required to ensure that the supporting structure can properly withstand the forces that may develop if a fall were to occur. Therefore, rail support anchorages must be specifically designed by a professional engineer for each application of Sure-Rail™.

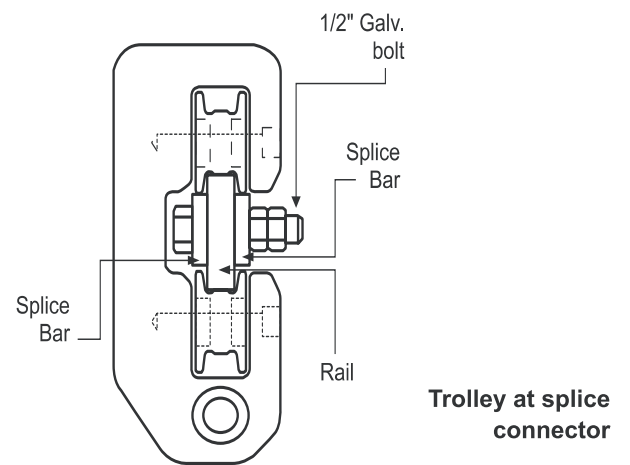
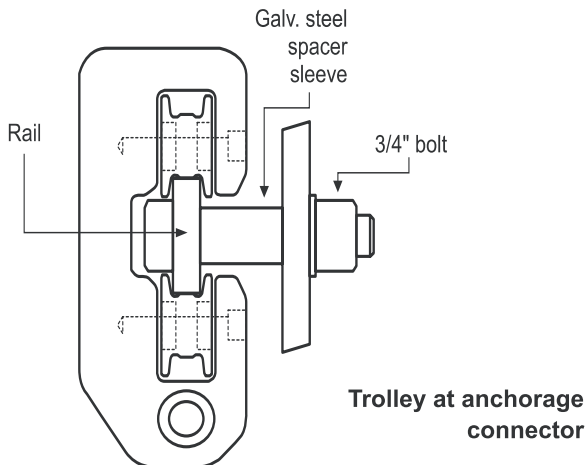
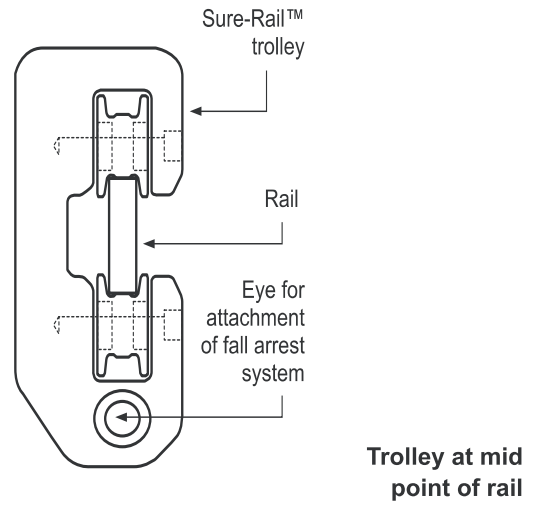
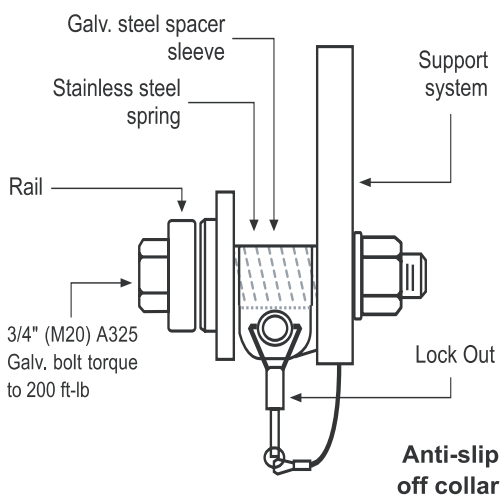
A rule of thumb to follow is the supporting structure must be able to withstand 5000 lbs. of force per person (usually designed for two [2] users) using the two to one safety factor.

Contact MSA for design statements and information.

SURE RAIL™ SYSTEM: PLAN VIEW



SURE RAIL™ SYSTEM: SIDE ELEVATIONS



INSTALLATION

1. The Sure-Rail™ system should be installed at waist level or higher to minimize free fall distances.
2. All nuts and bolts should be installed using Teflon wrap to minimize loosening of nuts. Nuts should be installed to the proper torque (3/4" bolts torqued to 165 ft. lbs., 1/2" splice joining bolts should be torqued to 90 ft. lbs.) and should not be over-tightened.
3. Rail sections should be installed such that each piece is level, straight, and end to end – matches up to each other.
4. Splice spacing between rails cannot be anymore than 1/16". When installing in warm weather (10°C to 40°C), it is recommended to install the splice closer to 0" to allow for contraction due to a cold temperature change. If the system is installed in cold weather (-40°C to 10°C), the splice spacing should be closer to 1/16".
5. It is recommended to store the Sure-Rail™ components with the structural support steel for a few hours prior to installation to allow steel contraction/expansion to synchronize.
6. **The rail must be installed such that there are two (2) support connections at each piece.** This may require the first length installed to be modified. See figure 1.1.
7. **Bolt head of anchor bolts must be installed on the side of the rail where the inside face of the trolley passes.** This prevents the trolley from "catching" on the bolts.
8. Any remaining length of rail past the anti-slip off collar should be sheared off and touched up with galvanizing paint to prevent the trolley from being placed outside the anti-slip off collar.
9. All bolt holes must be centered on the rail to ensure proper trolley passage.

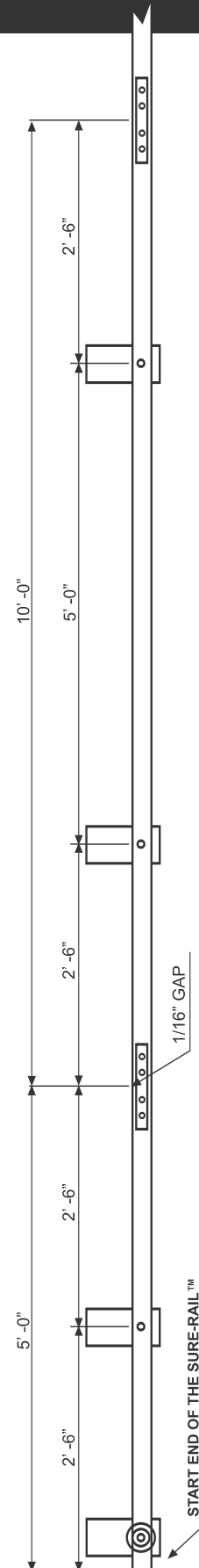


FIGURE 1.1.

INSPECTION

The Sure-Rail™ system should be thoroughly inspected on a regular basis and at least every twelve (12) months by a certified MSA representative.

The Sure-Rail™ system itself should be visually inspected for the following prior to each use:

1. Trolley is properly mounted on the rail and none of the splice connections or anchor bolts interfere with trolley passage.
2. Check for deformations or cracking on the trolley and rail that may indicate a fall has occurred.
3. Ensure the anti-slip off collar components (bolt, spring, collar) are in good condition and prevent the trolley from coming off the ends of the system. Ensure the collar returns to its original position after being pulled away from the rail.
4. Ensure the safety lockout clip has been placed on the spring of the anti-slip off collar and that the locking pin is secured.
5. All anchorage bolts and splice connection bolts should be tight and free from corrosion.
6. Ensure the rail is free of obstructions (i.e. debris, snow, nests, etc. . .), or burrs and check the rail for track warping, alignment, and gap spacing.

7. The personal protective equipment connected to the Sure-Rail™ should also be inspected prior to each use following the operation and maintenance manual provided for each piece of equipment.

i.e. Harnesses webbing should be free of major abrasions or tears. Harness hardware (buckles, sliders, etc. . .) should be clean and damage free.

8. Contact the on-duty supervisor if there are any deficiencies found with the Sure-Rail™ system or the personal protective equipment.

INSPECTION CHECK LIST

Location _____

Date _____

Inspected By _____

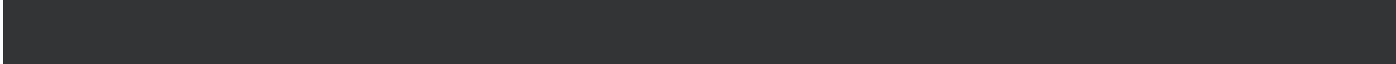
SURE-RAIL™ COMPONENTS

Description	<div style="display: flex; justify-content: space-between;"> Good Cracked, Worn, Deformed Torque Alignment, Spacing Warping Welds Dimensions Remove From Service </div>								Comments
Anchor Plates									
Anchor Bolts									
Rail									
Anti-Slip Off Collars									
Trolley									
Spacers									
Safety Lockout Clips									

PERSONAL PROTECTIVE EQUIPMENT

Description	<div style="display: flex; justify-content: space-between;"> Good Cracked, Worn, Deformed Corrosion Burns Discolorations Tears, Cuts, Frays Stiffness Illegible or absence of tags Expiration Date Kinks Mechanical Operation </div>										Comments
Harness											
Retractable Lifeline											
Lanyard											
Carabiner											

Additional Comments: _____



Notes:

Horizontal lines for taking notes.



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