



## ERAIL MAINTENANCE INSTRUCTIONS

The quality of the running surface is important for the proper function of Knight's Electrified Rail.

Accumulation of dust, foreign objects, and oxidation on the rail's conductors could affect the continuity of the system, resulting in possible failure.



### TYPES OF OXIDATION

#### 1. Patina\*

(Image 1)



\*Patina (natural oxidation) is not pollution and MUST NOT BE REMOVED.

#### 2. Verdigris

(Image 2)



#### 1. Patina and oxidation of the running surface:

A patina film will be formed on the running surface of the conductor rail during operation. This supports the proper function of the conductor rail (*Image 1*).

The patina film is made up of the natural oxidation from atmospheric oxygen and graphite remnants of the collector brush, which allows a large constant electric transition. This layer should not be removed or destroyed.

**2. Verdigris (extreme oxidation)** is pollution, and clearly differs from the desired patina film by its green color (*Image 2*). This type of extreme oxidation may require replacement of the copper conductor.

#### Other Types of Pollution

- Loose and slightly adherent dusts and deposits
- Strong pollution such as greases, oils and leaked stock goods

### Recommended Maintenance Schedule:

- Normal Production Environment - **QUARTERLY**
- Highly Contaminated Production Environment - **MONTHLY**



#### Prior to carrying out maintenance procedures:

- Disconnect the conductor rail from the power supply using the main disconnect switch.
- Lock-out, Tag-out and other common safety procedures should be utilized.
- Confirm that power has been disconnected using a multimeter.



## ERAIL MAINTENANCE INSTRUCTIONS

### Maintenance Directions:

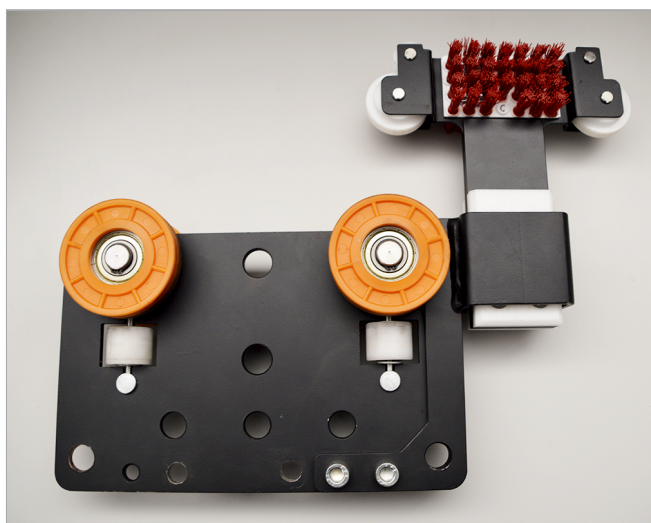
Maintenance prevents both hazard to operational safety as well as conductor continuity interruptions. Maintenance of electrified rail will increase the lifespan and reduce faults. These steps will help to maintain operational security, protect conductor continuity and functional efficiency of the Electrified Rail.

### Removing loose and slightly adherent dusts / deposits:

- Brush off loose and slightly adherent dusts and deposits with a soft brush (e.g. a nylon brush).
- Remove stirred-up dust directly with a vacuum cleaner (equipped with a fine filter class H or higher).
- Remove abraded material and debris on the collector brushes and the rail conductors.
- Remove particles with insulating properties from the conductor surface (extreme oxidation of the conductor surface, condensation and film formation).
- Remove any gross pollution coming from the environment (dusts, spider webs, liquids such as oils / syrup, etc.).

### NEVER USE

- Contact cleaner / sprays
- Moisture-suppressing cleaning agents.
- Solvents.
- Grinding fleece with or without polishing agents.



### Maintenance / Cleaning Trolley

Part# KSAA1080 (Full assembly)

A maintenance trolley with nylon brushes is available for use with the Electrified Rail System. It is used in conjunction with a modified Servo Trolley. Please contact a Knight representative for more information.



Part# KSAA1081  
(Cleaning Trolley only)

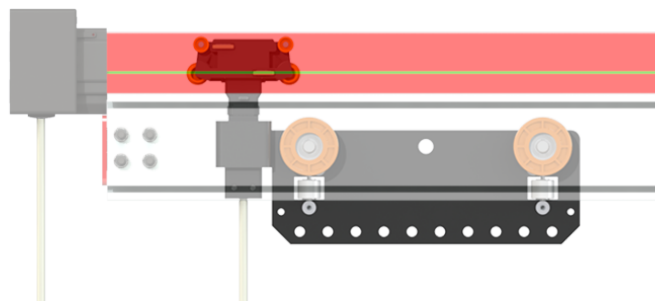




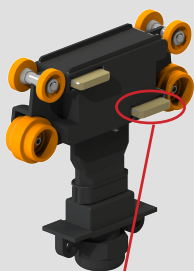
## ERAIL MAINTENANCE INSTRUCTIONS

### Maintenance of Components:

Vacuuming off any accumulated dust is the predominant component of maintenance. On installations where the current collector engages from underneath, the running surface must not be cleaned with cleaning agents.



### CONDUCTOR TROLLEY\*



**Wear Indicator**  
(Image 3)

### Removal of Adherent Deposits:

- **Power Feeds** - Assure connections are clean, free of debris, and making appropriate contact.  
(replacement part #: EMRAA4183, EMRAA6183, EMRAA7183)
- **Conductor Trolleys\*** - Remove the conductor trolley from the electrified rail housing and assure the connections and contact shoes are clean and free of debris. Also assure that the contact shoes are appropriately making contact by verifying that they have not been worn down past the definable wear indicator (Image 3).  
(replacement part #: EMRTA6196)
- **Disconnect Enclosures** - Assure fusing has continuity and that the connections are clean and making appropriate contact.
- **Electrified Rail Housing** - Assure the rail conductors are clean and free of debris.

Solid pollutants that are adherent or not loose should be removed using a nylon brush and vacuumed off.



ANY/ALL ELECTRICAL COMPONENTS FOR THE ELECTRIFIED RAIL SYSTEM SHOULD ONLY BE MAINTAINED BY A TRAINED PROFESSIONAL IN ELECTRICAL CONCEPTS/APPLICATIONS AND STATE/LOCAL CODES.

### **OFF CIRCUIT CONDITIONS**

ALL MAINTENANCE AND CLEANING OPERATIONS REGARDING THE CONDUCTOR RAIL SYSTEM ARE ONLY PERMISSIBLE UNDER OFF-CIRCUIT CONDITIONS AND WITH THE APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) BEING UTILIZED.