

# Technical Sheets

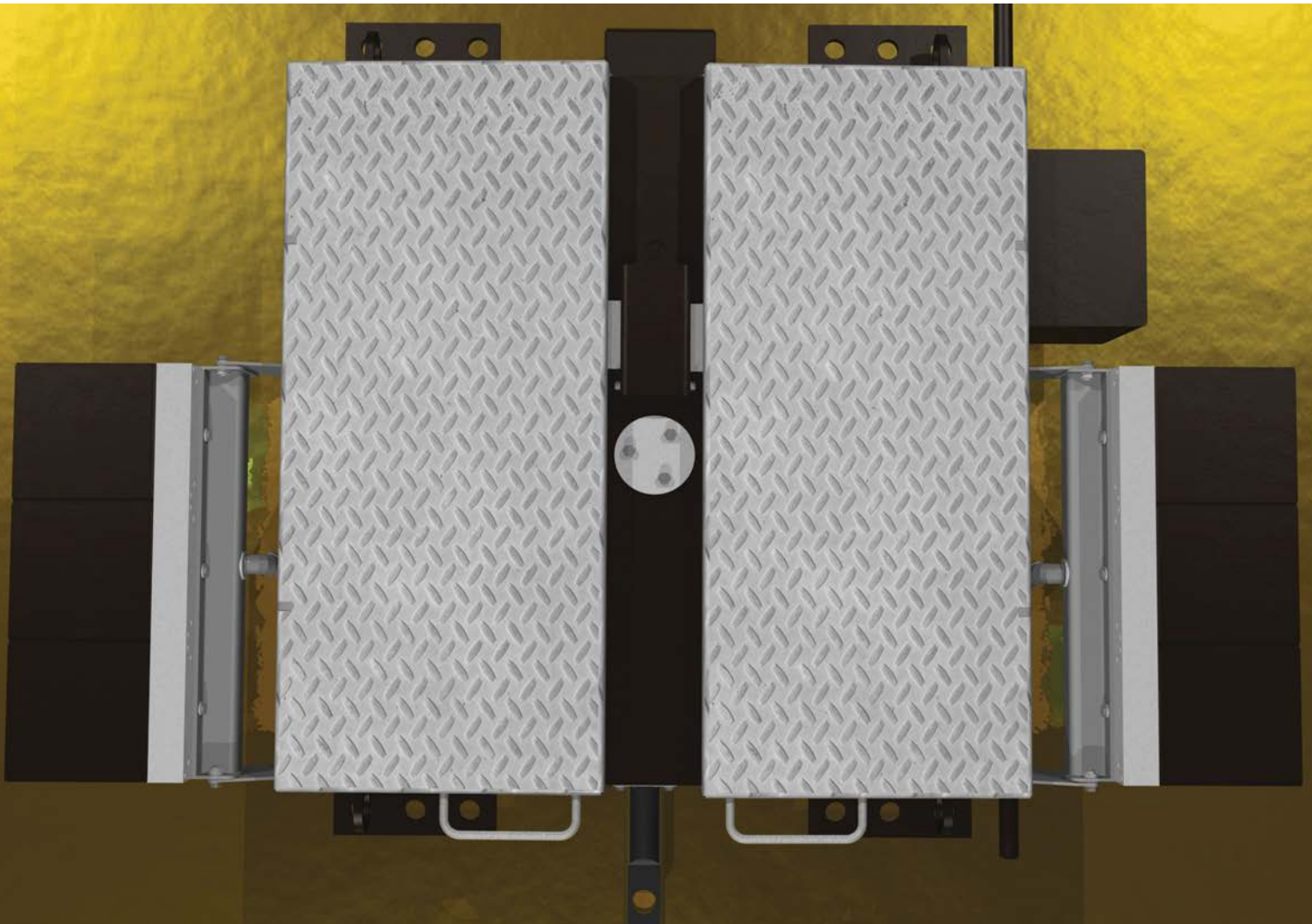
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# Switch Machines





# TS4500 Switch Machine

# The TS-4500 Switch Machine

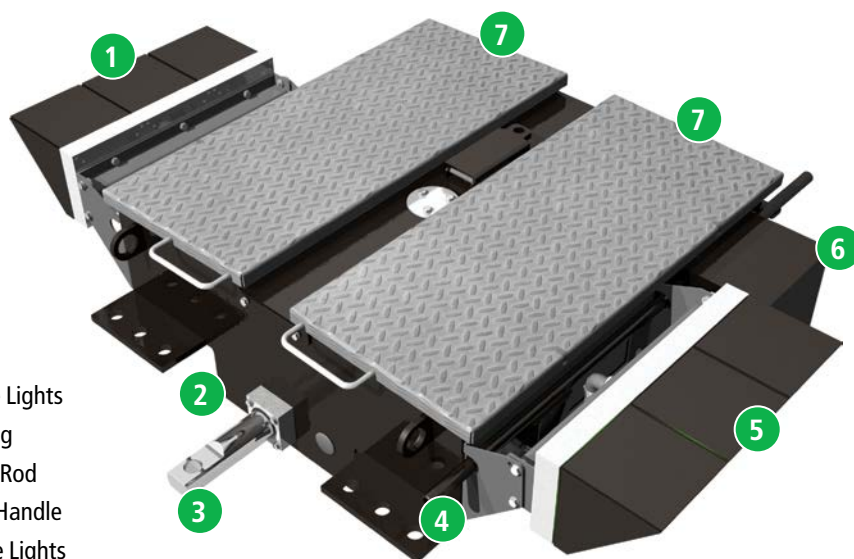
The TS-4500 power switch machine is the latest in technology design, allowing a cost effective solution to increase safety and reliability in yard and mainline switch control applications. The unique patent pending design incorporates the best practices of applied engineering for force generation and switch point holding force. The reduction of linkages and use of sealed bearings ensures increased reliability and minimizes maintenance requirements, lowering the overall cost of ownership. The direct drive design maximizes the available power for throwing any size switch point and spring holding force is easily adjusted. Vossloh Signaling engineers and production managers will work directly with you to deliver the switch you need.

## Features

- Push button, DTMF, or Data Radio control
- AC or Solar charged batteries
- Multiple configurations, including low profile
- Direct drive design
- Can be used as a stand alone switch or expanded into a full yard system

## Benefits

- Two year parts and labor warranty
- Event logging for event reconstruction available
- Lower maintenance costs
- Durable for years of use
- Internal proximity sensors, safe from the elements
- 100% Made in the U.S.A.



1. Tiltable Lights
2. Housing
3. Throw Rod
4. Pump Handle
5. Tiltable Lights
6. Pump Housing Cover
7. Doors

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# Modular Yard Automation

# Modular Yard Automation

The Modular Yard Automation system (MYA) enables a railroad to implement scalable automated solutions to increase safety, productivity, and efficiency in your rail yard application.

MYA offers a flexible communication solution to conform to the needs of your railroad, providing wired or wireless controls. Our MYA system utilizes Genesis as a standard serial protocol. MYA offers ground crew control of switches, control from a centralized location, or control from decentralized locations. The system is scalable for future expansion and also offers derail control with name and trade event logging to satisfy FRA requirements.

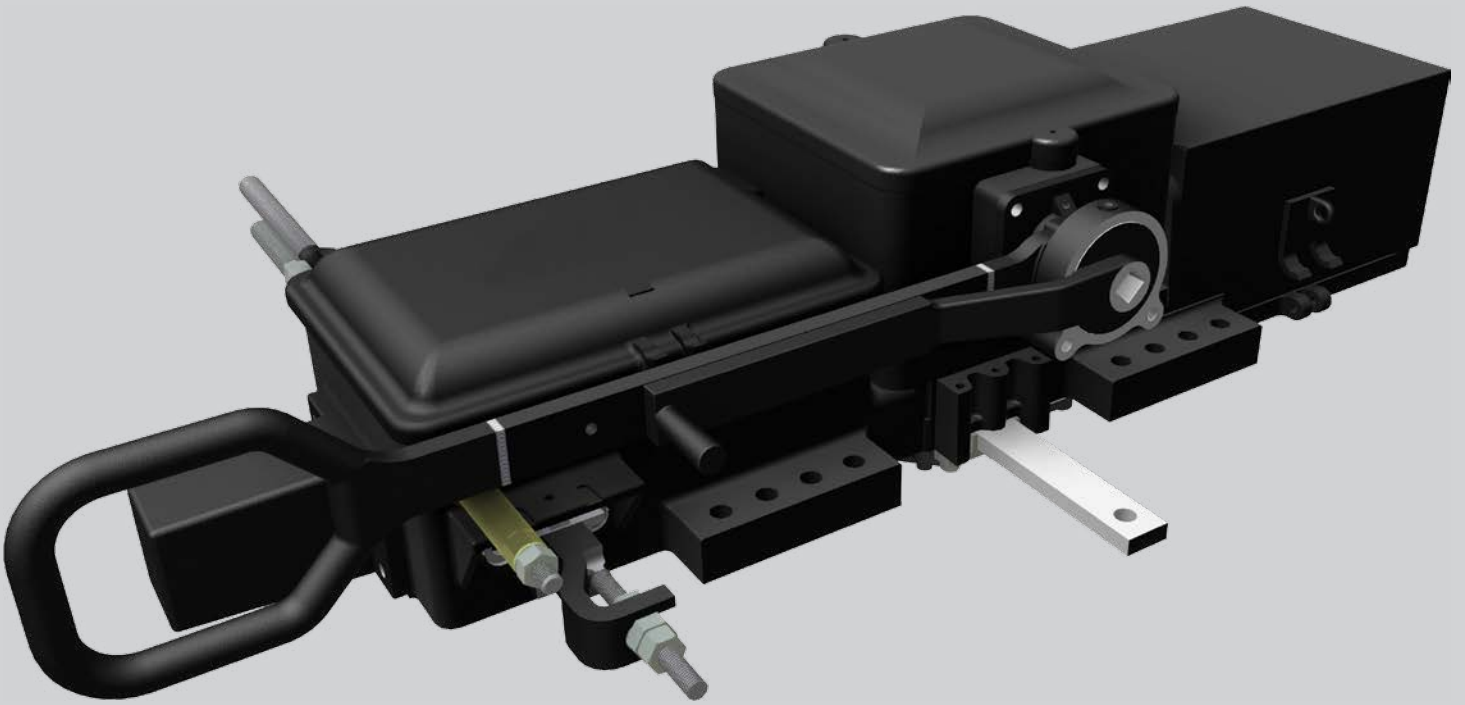
## Features

- Conformance to AREMA specifications
- Ability to monitor equipment in the field
- Onboard terminal communication to the train
- Expandable from a single switch to a full yard system
- Derail control available

## Benefits

- Ground level maintenance of all components
- Increases throughput
- Reduces dwell times
- Available with UVP to provide vital yard systems
- Simple routing with Easy Route subsystem
- Made in the U.S.A.





# The VSM-24 Mainline Switch Machine: An M-23 Replacement

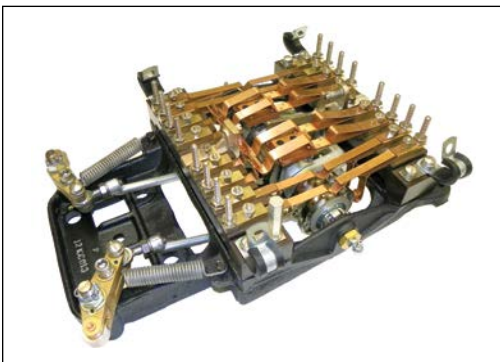
# The VSM-24 Mainline Switch Machine: An M-23 Replacement

The VSM-24 Mainline Switch Machine is a full OEM replacement unit for the M-23 Switch Machine. It contains the improved Indication Circuit Controller (ICC) which has an indication design to provide lost motion of .010" or less.

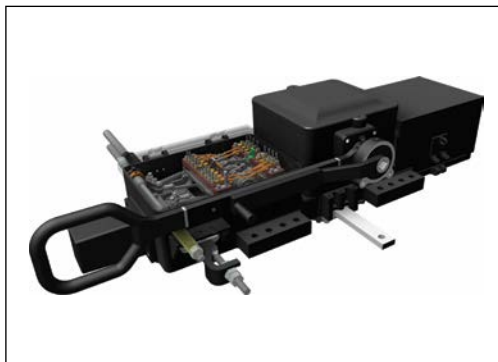
## Benefits

The VSM-24 Mainline Switch Machine components are completely interchangeable for use in the OEM switch machines.

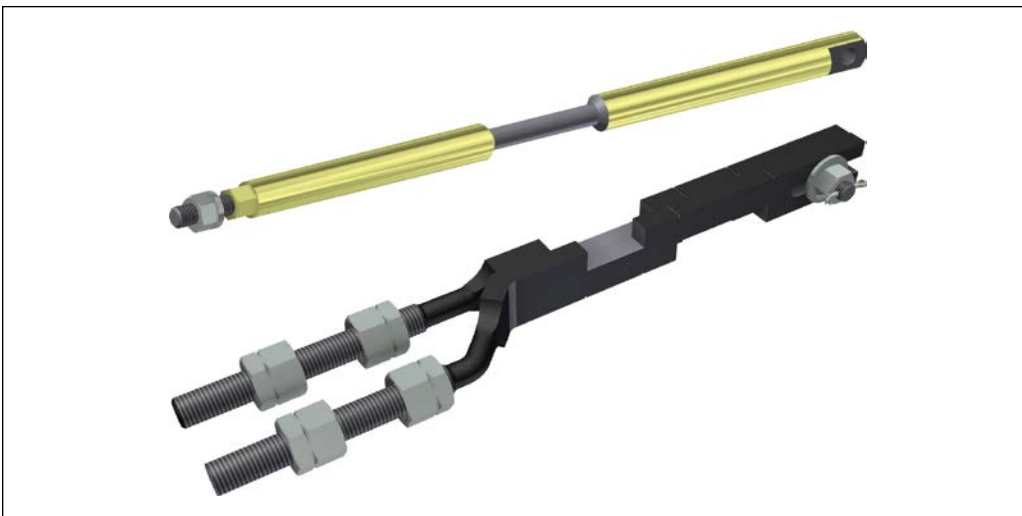
Vossloh Signaling Switch Machines are assembled per the customer specifications, such as motor voltage requirements, gear ratios, wiring configurations, etc.



Improved Design Indication Circuit Controller

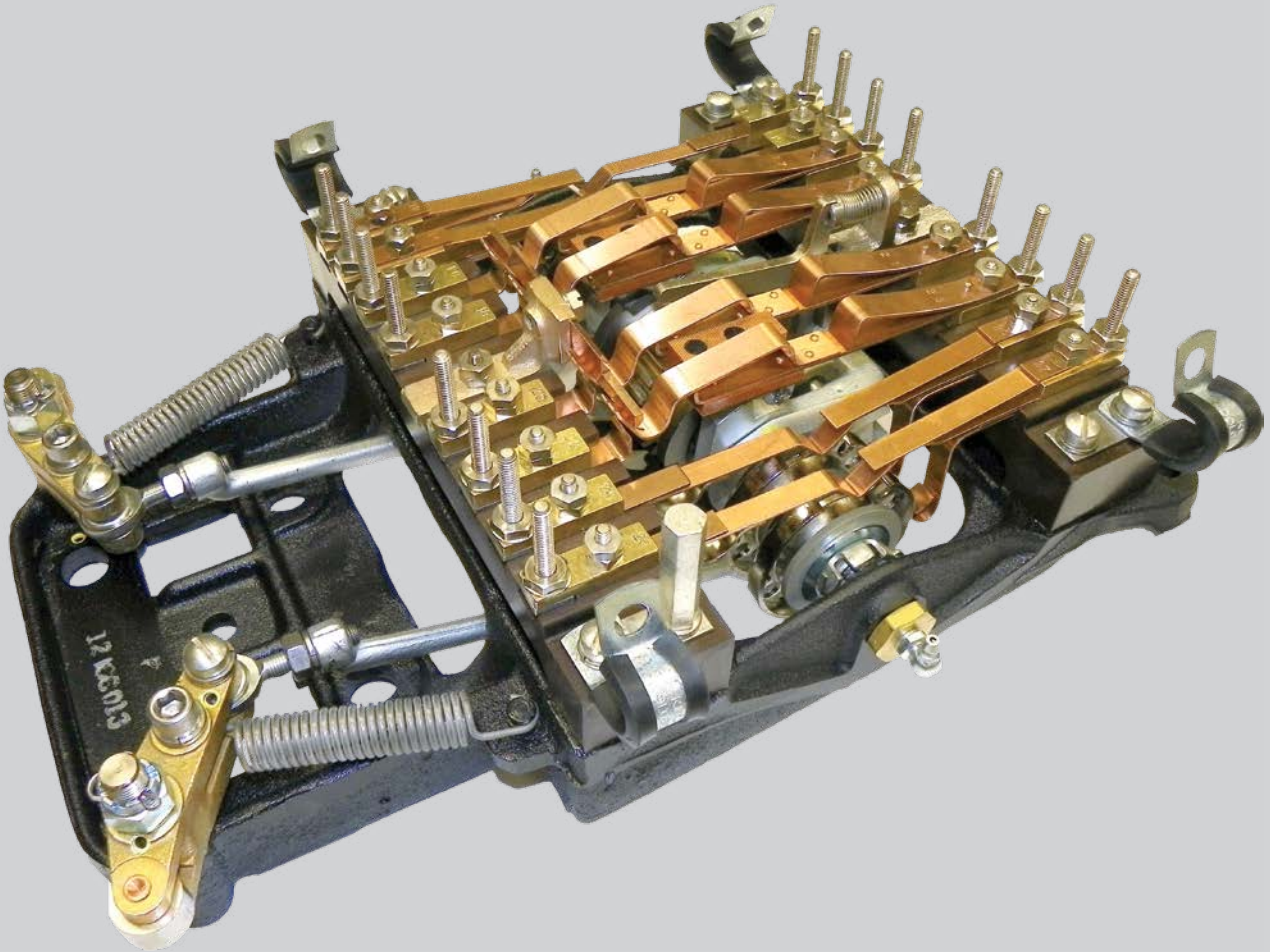


The VSM-24 Mainline Switch Machine



All internal components are also available





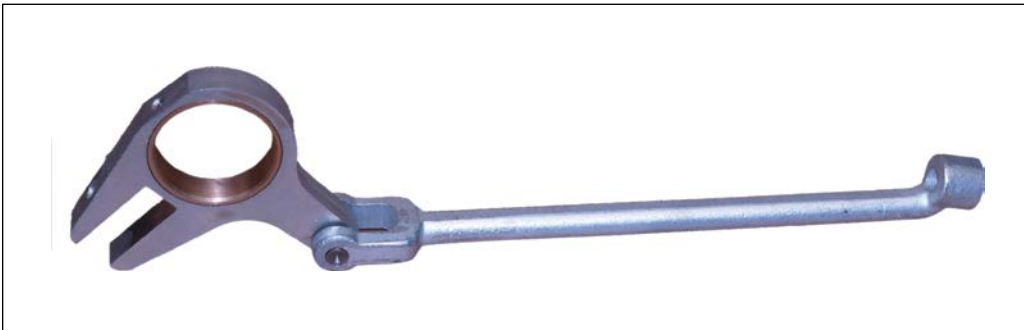
# Indication Circuit Controller

# Indication Circuit Controller

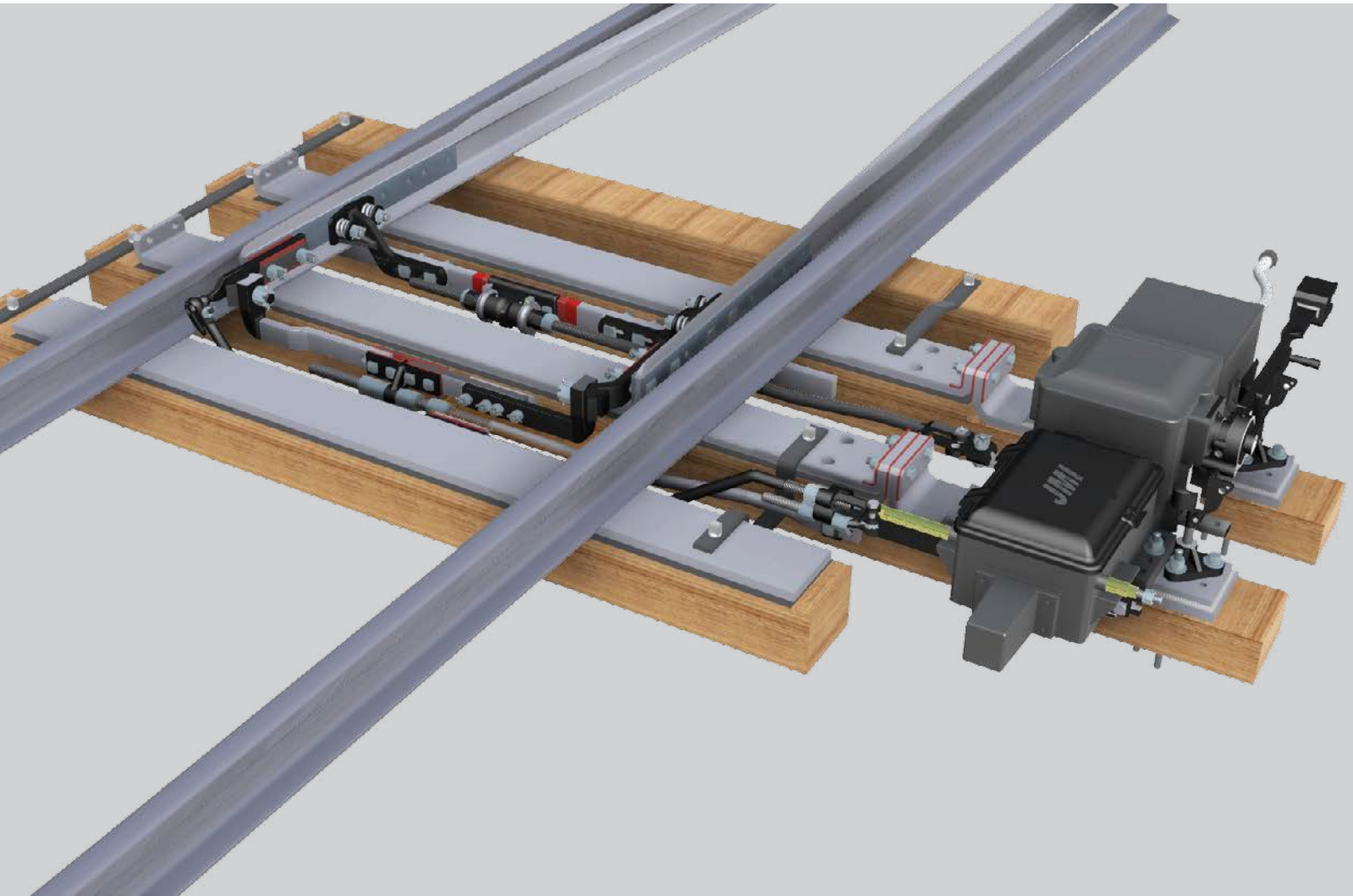
The Indication Circuit Controller is a full OEM replacement unit for use in M-23 Switch Machines. The enhanced indication design provides lost motion at .101" or less.

## Benefits

The Indication Circuit Controller components are completely interchangeable to use in OEM Indication Circuit Controllers.



All critical components are manufactured in such a way that the resulting lost motion is .010 (ten thousandths) or less.



# Connecting Rods, Gage Plates, Extension Plates and Full Switch Layout Rodding Packages

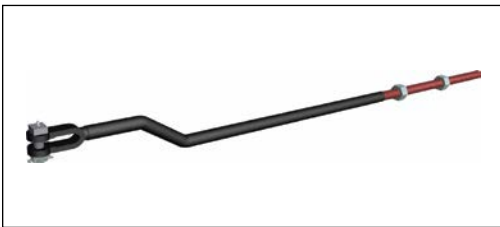
# Connecting Rods, Gage Plates, Extension Plates and Full Switch Layout Rodding Packages

Vossloh Signaling provides everything from a single connecting rod or gage plate assembly to full switch rod packages for Power Switches (single point, double slip, and equilateral turnouts), hand throws and helper rod assemblies.

## Benefits

Vossloh Signaling only uses forged connecting rods, front rods, & switch rods (engineered to meet AREMA standards) that are machined and assembled to meet railroad customer specifications.

Vossloh Signaling has an on-site engineering staff to design connecting rods, front rods, switch rods and gage plates/extension plates to meet customers' specific switch layout standards. 3D Modeling Technology is used to verify that all components have proper fit and function.



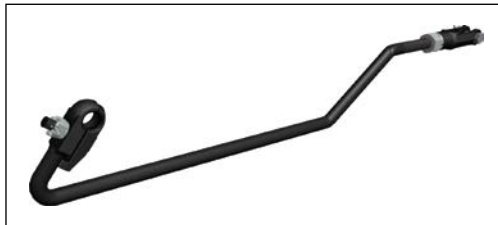
Operating Rods



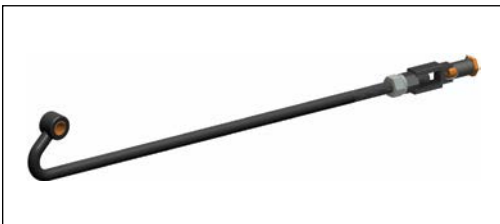
Switch and Basket Rods



Lock Rod Connecting Rods



Point Detector Connecting Rods



Switch Circuit Controller Connecting Rods



Gage Plates



Extension and Saddle Plates



Our rods are forged, not welded.

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# Remanufacturing





## Re-manufacturing Program

# Re-manufacturing Program

Vossloh Signaling re-manufactures switch machines, circuit controllers and switchman buffers. Vossloh Signaling provides re-manufactured products that either meet, or exceed, the original OEM specifications. Vossloh Signaling re-manufactured products have the same fit, function, longevity and appearance of new equipment, at a significantly lower price.

**Just a few of the items we re-manufacture:**



**Buffers Before**



**Buffers After**



**Switch Circuit Controllers Before**



**Switch Circuit Controllers After**



**Indication Circuit Controllers Before**



**Indication Circuit Controllers After**

## Design & Engineering

Vossloh Signaling Engineering utilizes the latest CAD Design, technologies and Geometric Dimensioning & Tolerancing (GD&T), with proven methods of reverse engineering.

Vossloh Signaling components meet or exceed OEM specifications, our components are interchangeable with OEM equipment.

## Quality Control M-1003

Vossloh Signaling has been M-1003 Certified for nearly 20 years.

## Warranty/Customer Satisfaction

Vossloh Signaling has been re-manufacturing since 1994 and provides a 5-year warranty on all re-manufactured products.

## Core Retrieval

Contact Vossloh Signaling about the details of our Core Retrieval Program; including logistics, lead time and emergency expediting service.

## Scope of Work

Scope of work can be submitted upon request of the customer, detailing the re-manufacturing processes.

# Electronic Systems & Yard Automation







# Universal Vital Platform

# Universal Vital Platform

The Universal Vital Platform, or UVP, is a combination of a master communications control processing core and one or more signal system interface modules. Each module is small in size and mounts directly to a DIN-Rail. All signal system interface modules integrate into the UVP core processor through an integrated DIN-Rail bus system. The Global UVP - Series Embedded Computer as a CPP (Communications Control Processor) is PTC ready for direct connection to the PTC radio interface unit. Minimum configuration UVP systems are ideally suited for dark territory switch control or grade crossing applications. Designed to AREMA standards, the UVP provides vital signal system control with the communications interface for the demands of PTC systems.

## Features

- 8.0 VDC Minimum, 16.2 VDC Maximum
- -40°F to plus 160°F Operating temperature
- DIN rail mounted modular design (no chassis necessary)
- All modules designed for simplicity, expandable for more complex systems

## Benefits

- Easily configurable to meet your specific needs
- Cold filament checks on any LED without strobing the light
- Familiar compiler tools
- Programmed using lateral logic
- 100% Made in the U.S.A.





# Failsafe Audible Signal Power Assisted Switch



# FAS-PAS

## Failsafe Audible Signal - Power Assisted Switch

The patented FAS-PAS provides a low-cost alternative to implementing full CTC systems when traffic needs to be increased on selected dark territory lines. This allows railroads to gain safety and efficiency levels that would otherwise be only available using CTC solutions, and at a fraction of the cost. The FAS-PAS system provides a vital message back to the train engineer and is therefore suitable for mainline applications. Dark Territory presents challenges to safety, fuel, conservation, and velocity; all key indicators of a railroad's success. FAS-PAS meets these challenges, making it a practical solution to a complex issue.

### Features

- Switch machine sub-system
- Communication sub-system
- Zone occupancy sub-system
- Indication sub-system
- Control sub-system
- System housing and packaging

### Benefits

- Cost-effective mainline switch control in dark territory
- Increases throughput
- Will help reduce costs and improve operating ratios
- Low cost approach to increasing traffic in dark territory
- Made in the U.S.A.







# Broken Rail Detection

# Broken Rail Detection

A Broken Rail Detection (BRD) system is PTC ready. BRD is an easy transition, and the return on safety is immediate. A broken rail can happen anywhere, at any time, for a variety of reasons. Broken rails are the second leading cause of all railroad accidents.

The BRD system provides indications to the train crew, via wayside indicators, as to whether or not the block ahead is free of broken rails. All indications are programmable to satisfy the operational needs of the customer. The unique Universal Vital Platform (UVP) system allows the customer to easily expand their system for higher levels of automation.

## Features

- LED indicators for high visibility, day or night
- Rugged aluminum housing for years of operation
- Low power consumption allows solar applications
- Logic performed vitally by dual redundant processing
- UVP easily allows expansion

## Benefits

- An immediate return on safety
- Allows for cost-effective automation in low density traffic areas, typical in dark territory
- Increased safety and capacity when combined with the FAS-PAS system
- Made in the U.S.A.



# Switch Circuit Controller & Other





## Switch Circuit Controller: A U5 replacement

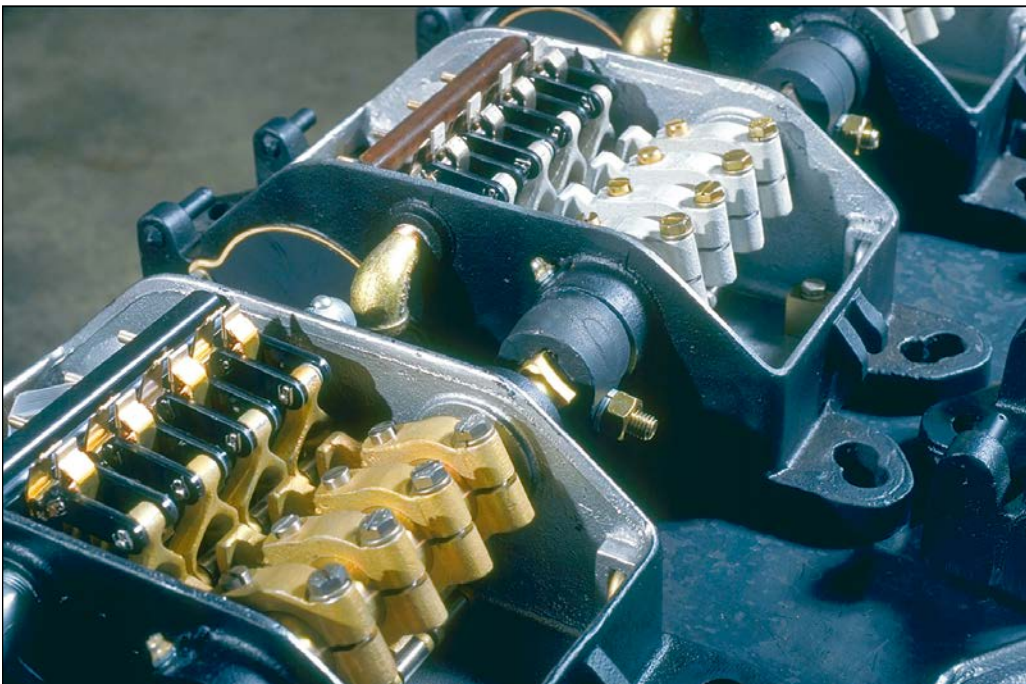
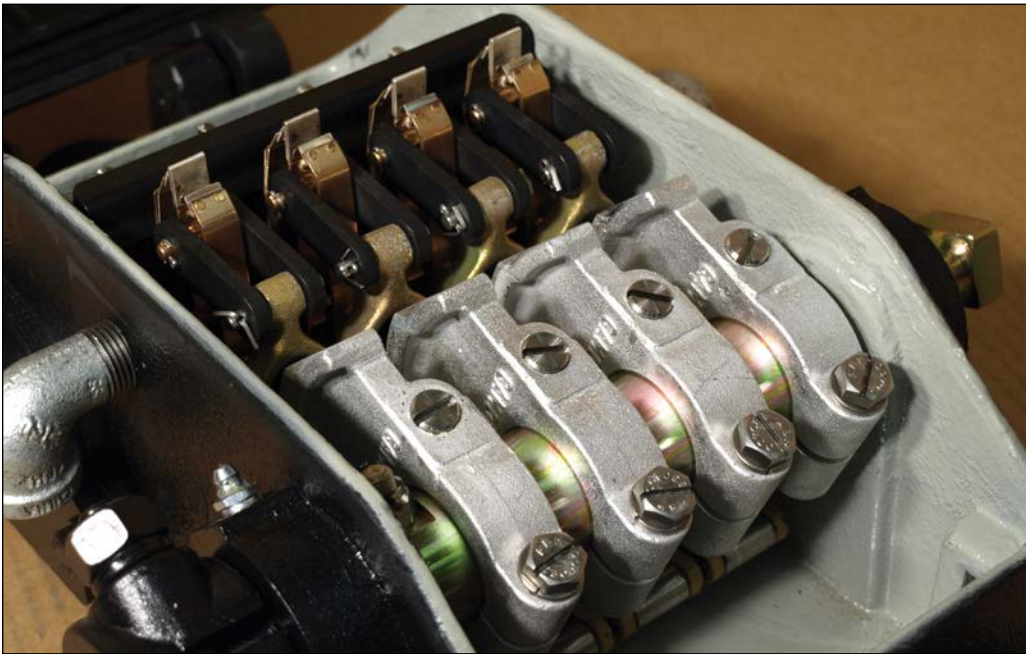


# Switch Circuit Controller: A U5 replacement

The Switch Circuit Controller is a direct OEM replacement for the U5 with the same features, options and configurations as the OEM. The Switch Circuit Controller gives the customer a high quality product at a reduced cost.

## Benefits

Vossloh Signaling Components are completely interchangeable to use in the OEM U5 Switch Circuit Controllers. All Switch Circuit Controllers can be configured to meet the customer's specific needs.



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## Rail Mounted Tie Extension

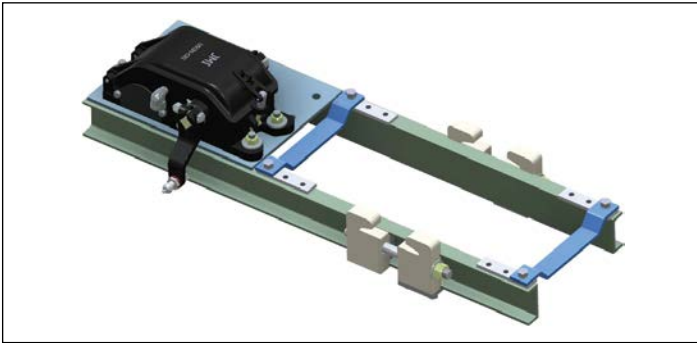
# Rail Mounted Tie Extension

The Rail Mounted Tie Extension System provides a retrofit-able solution for mounting a switch circuit controller to an existing tie where tie length would not accommodate conventional installation.

This is particularly well suited to switch point layouts in dark territories that require switch point indication for PTC (Positive Train Control) signaling. This lowers the retrofit cost by eliminating the need to use manpower and machinery to install a new tie.

## Benefits

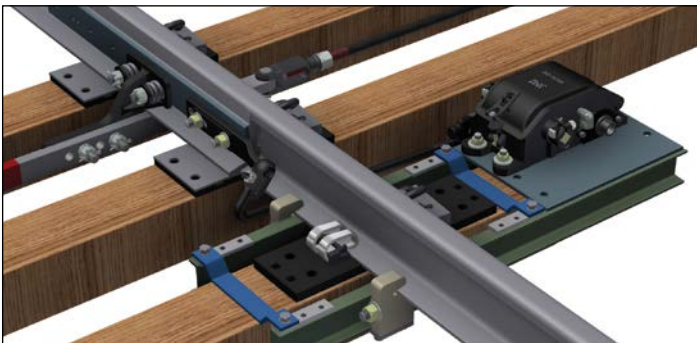
**The Rail Mounted Tie Extension benefits include fast and easy field assembly by a single installer, no need to install a new tie, saving time and manpower - an excellent solution for the customer's PTC Signaling needs.**



Any Switch Circuit Controller may be mounted onto the Rail Mounted Tie Extension

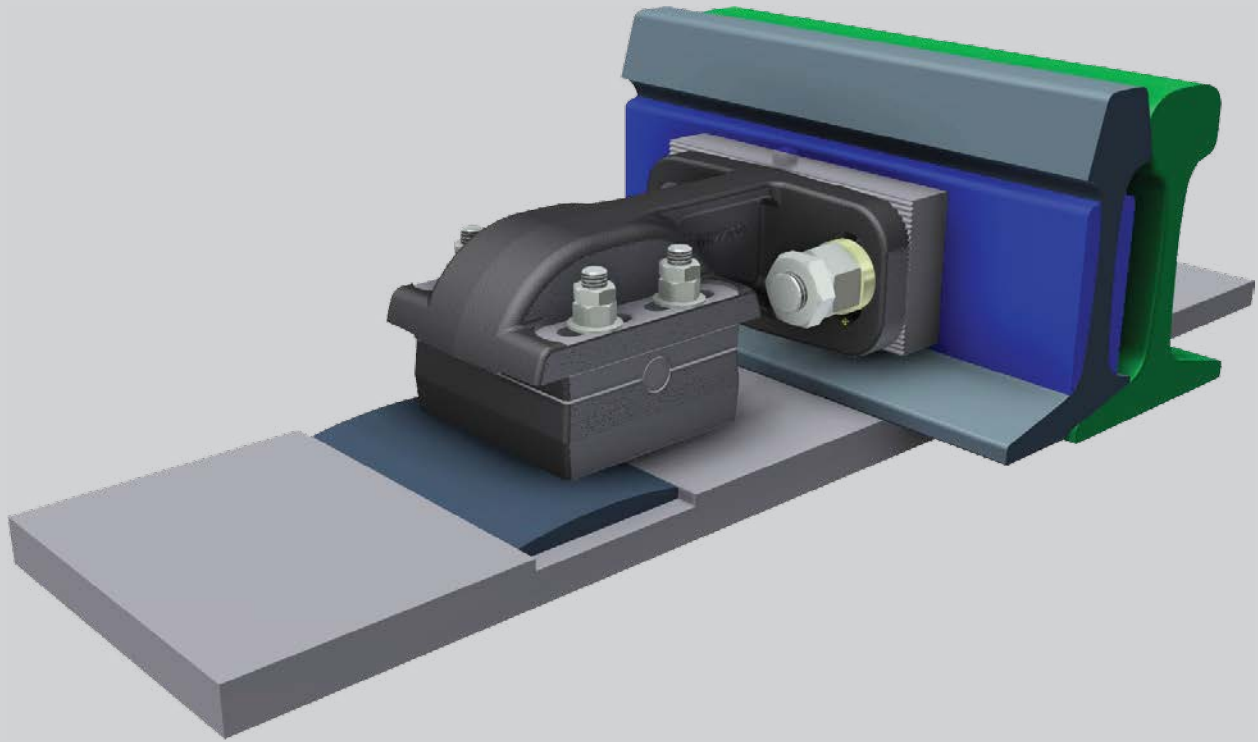


As shown above, the tie required for mounting a switch circuit controller is too short. Conventional installation would require a new tie be installed.



Replacing the existing tie with a new, longer tie, is not required when using the Rail Mounted Tie Extension System.





# Adjustable Height Switch Point Roller



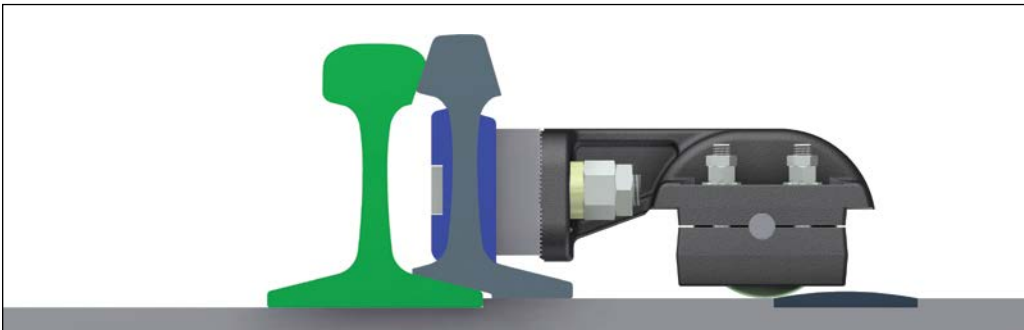
# Adjustable Height Switch Point Roller

The Adjustable Height Switch Point Roller (Patent Pending) has rough and fine adjustments utilizing serrations and roller cam functionality, which solve the typical problems associated with the conventional switch point roller systems.

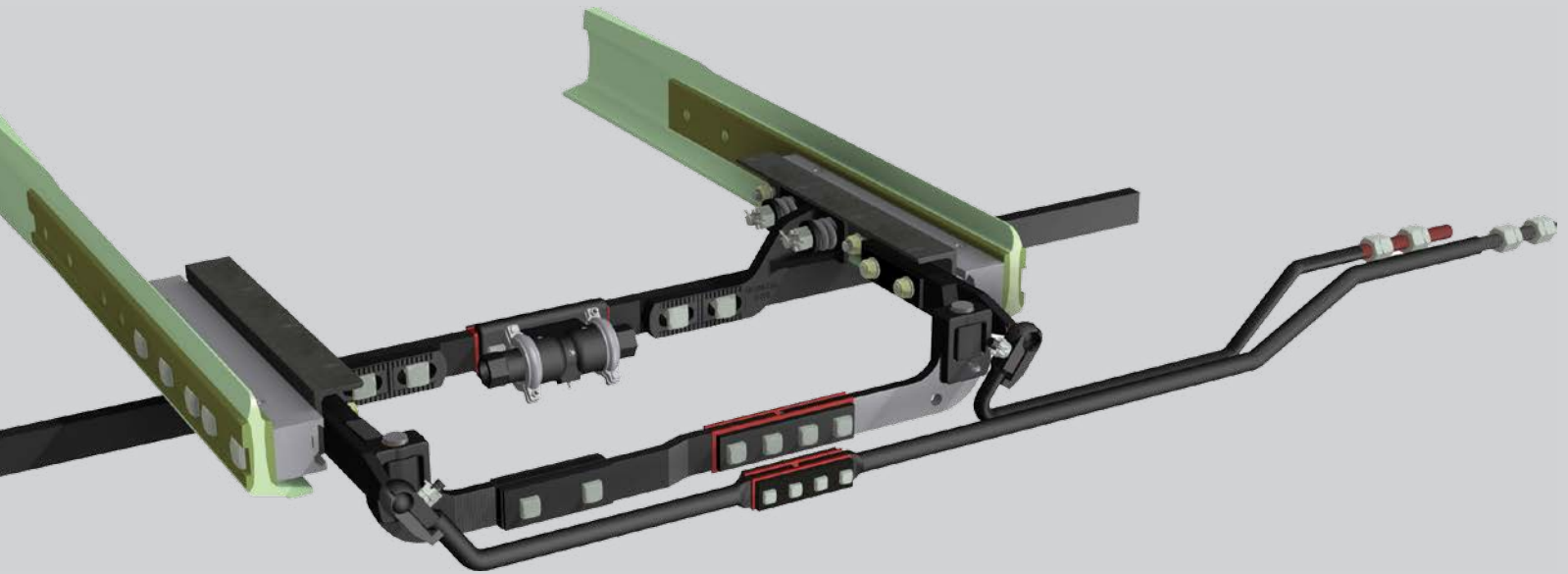
## Benefits

**The Switch Point Roller allows for fine adjustment, giving the perfect fit and function.**

**it is easily installed into new or existing switch layouts without having to disturb tie placement, unlike roller systems placed under the switch points that require the ties to be lowered.**



Attaches to the point utilizing existing point holes



# Dual Switch Point Indication System

# Dual Switch Point Indication System

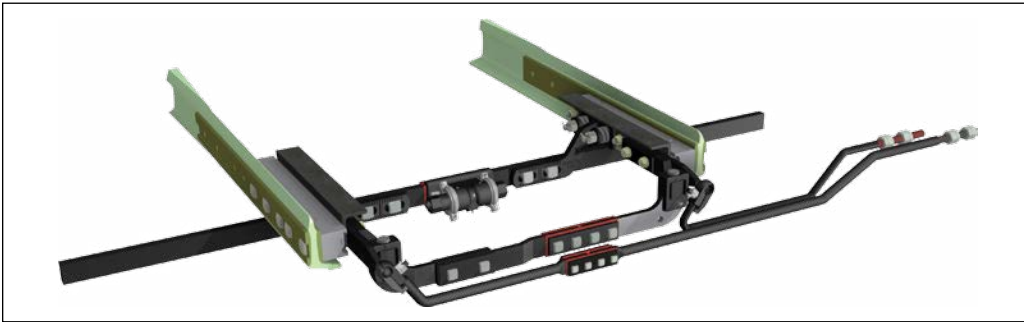
The Dual Switch Point Indication System (Patent Pending) is a retrofit-able product which can be installed to the customer's new or existing conventional switch layouts and allows for detecting both near and far side switch points simultaneously using a conventional single point indicating switch machine.

Conventional point lugs and connecting rods indicate only one switch point movement on either near side or far side.

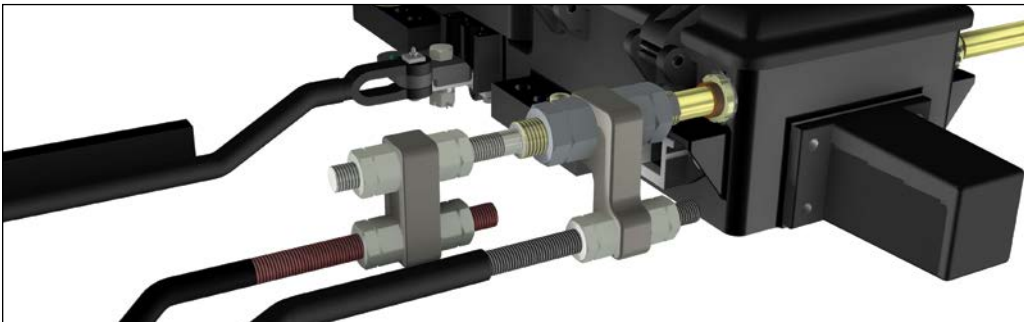
When used in conjunction with the Switch Point Slider Mechanism (Patent Pending) you allow the rail to run without the connecting rods being pushed in and gouging the ties.

## Benefits

The Dual Switch Point Indication System allows indication on both near-side and far-side switch points using a single point indicating switch machine. This saves the cost of purchasing and maintaining a dual point indicating switch machine.



Point lugs are attached to both near and far side points, allowing two connecting rods to be attached.



Both Point Detector Connecting Rods are connected to the Dual Point Detector Bar with two drop lugs.



Typical Dual Point Detection Layout



# Switch Point Slider Mechanism

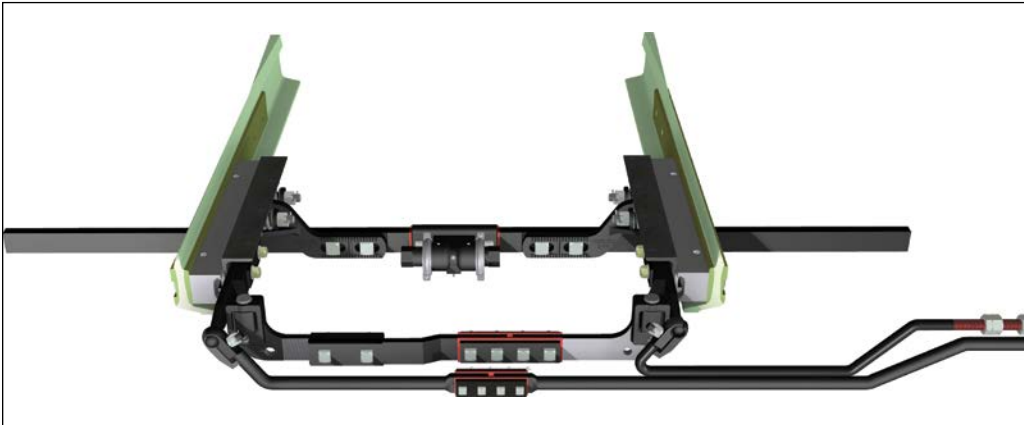


# Switch Point Slider Mechanism

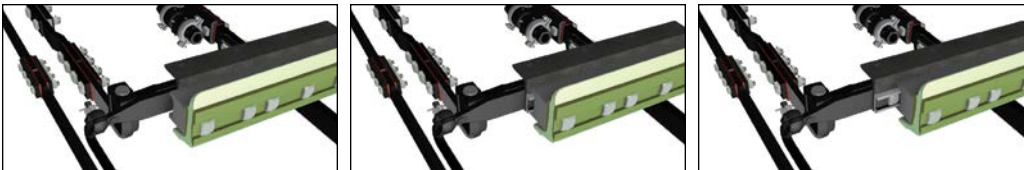
The Switch Point Slider Mechanism (Patent Pending) is a retrofit-able product which can be installed into the customer's new or existing conventional switch layout. The Switch Point Slider Mechanism allows for all switch machine rods to remain correctly aligned with the switch machines in the presence of running rail. This prevents binding or breaking of the rods, or tie damage. The result is continued correct point detection for turnouts affected by running rail.

## Benefits

**The Switch Point Sliding Mechanism lets the Switch Points to run inward and outward along the track rail, while still allowing connecting rods to stay in place.**



**Switch Point Slider Mechanism**  
Shown with dual point indication



Notice the position of the point in relation to the point lug from left to right.  
The connecting rods, and point lug stays in place as the rail is allowed to run.