



Backhoe Tie Switcher Attachment Systems



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Backhoe Tie Switcher Front Rail Gear



The front Rail Gear bolts to the front backhoe frame through an adapter plate that is welded to the front frame.

The front Rail Gear pivots through a pivot pin that will allow the front Rail Gear axle to compensate for uneven track.



The front machine axle is spring loaded to stay level as the backhoe self-propels down the track.

Standard features include 8 inch hardened steel rail wheels with heavy duty Timken bearings. Raise and lower pins.

The front tires that are elevated above the track are spaced out using special wheel adapters that allow the front tires to straddle the track. Calcium is filled in the front tires to provide extra front weight to improve backhoe stability on and off rail.



Backhoe Tie Switcher Rear Rail Gear



The rear Rail Gear pins where the standard backhoe wing down stabilizers were attached to the backhoe frame.

Attached to the rear Rail Gear frame are the Parallel Linkage Out & Down Outriggers and Rail Clamps that fold up as a compact unit when retracted. Different Rail Clamps arms are available to fit different size rail.



Standard features include 8 inch hardened steel rail wheels with heavy duty Timken bearings and independent suspension that will compensate for uneven track conditions.

When the rear Rail Gear is lowered, the backhoe can be securely clamped the rail. Once the backhoe is clamped to the rail the rear jack cylinders of the parallel linkage out & down outriggers can be extended to raise the rail enough to be able to remove the tie plates. When the backhoe is clamped to the rail the machine can perform functions such as removing ties, tamping, ballast regulating, digging, grading, brush cutting and lifting materials on rail.



Backhoe Tie Switcher Tie Head



The Attachment used to remove in insert railroad ties is the 360° rotating Tie Head.

The Tie Head quick attaches to the backhoe boom and hydraulically quick attaches to the hydraulic lines on the boom.

The controls are set up to rotate with foot pedals and open with e-stick controls via a switching valve that is foot pedal activated.

The Tie head can be fitted with jaws for wood, concrete or rail. The Tie Head has two positions, one that closes to zero for wood ties and rail and a wider position for switch ties and concrete ties.

The attached scarifer blade is used to remove ballast, push out ties, push new ties in and backfill ballast once the new tie is in position.





Backhoe Tie Switcher Tamper



The Attachment used to tamp the ballast under the tie is the Tamper.

The Tamper quick attaches to the backhoe boom and hydraulically quick attaches to the Tie Head lines on the boom to squeeze and rotate 45° and vibrates by using the hammer circuit.



The Tamper is capable of tamping one side of the tie at a time. A production rate of 60 ties per hour (Single Squeezes) can be achieved.

The tamping unit insert 21 inches deep and can vibrate the tamping tools at 70-110 Hz with tip displacement of 3/16 inch and generate a down force of 300 lbs and a squeeze force of 675 lbs per tool.

A production rate of 60 ties per hour (single squeezes) per hour can be achieved.



Backhoe Tie Switcher Ballast Regulator



The Attachment used to regulate the ballast on the ties and track shoulder is the Ballast regulator.

The Ballast Regulator quick attaches to the backhoe boom and hydraulically quick attaches to the Tamper lines on the boom rotate and tilt.



The Ballast regulator can be positioned to either go down the center, over each rail or rotate tilted over the track shoulder.

The Ballast elements are durable hard rubber elements that are replaceable.



Backhoe Tie Switcher Tool Circuit



The Attachment used to operate hand held tools is the Tool Circuit with Hose Reel Mount.

The Hose Reel Mount clamps to the standard multi-purpose bucket and can hold a hydraulic spike puller and a hydraulic spike driver.

Both tools can be securely chained and locked when not in use.

While the operator is removing or inserting ties the ground man can be operating the hand held hydraulic tools and the same time safely out of harms way.





Backhoe Tie Switcher Attachment Systems

The Mitchell Backhoe Tie Switcher Attachment System is designed to replace labor intensive manual tie spot maintenance with an efficient way to perform complete tie replacement that will deliver a final product comparable to a class one tie gang. All the attachments are designed to cost effectively perform each operation from removing ties, replacing ties, removing spikes, tamping ties, repacing spikes and ballast regulating with minimal manpower.