SaberTooth®
Portable Derail

Tool-Free Installation Guide

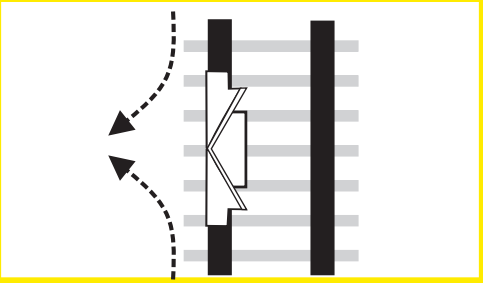


TWO-WAY DERAILING
for FREIGHT CARS and 4-AXLE LOCOMOTIVES

For use on wood ties or full length pre-stressed concrete ties

NOT RECOMMENDED FOR 6-AXLE LOCOMOTIVES

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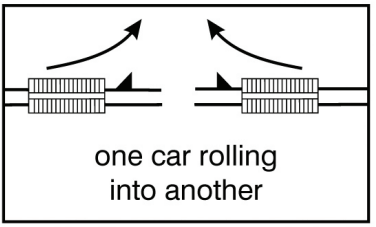


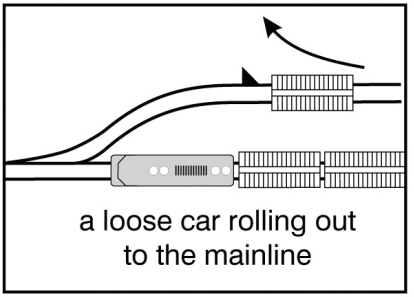
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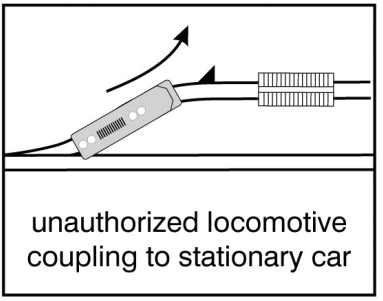
IMPORTANT INFORMATION

***SaberTooth*® Portable Derails** provide temporary protection against unauthorized movement of railcars and protect sidings from unexpected intrusion by rolling stock or locomotives. The derail lifts the flange of the wheel high enough to drop it off the rail and onto the ties. Simultaneously, the wheel opposite the derail is guided off its rail. Once the wheels leave the rails, forward movement is greatly impeded.

DERAILS HELP PREVENT THESE TYPES OF SPUR TRACK ACCIDENTS:







Effective derailing with *SaberTooth*® Portable Derails requires:

1. Proper rail size range. (100-142 lbs./yd.)
2. Not installing where train speeds exceed 5 mph or where 6-axle locomotives operate.
3. Fully exposed track: ties and ballast absorb impact of derailed wheels and help bring the car or locomotive to a stop. If you have flush rail, do not use the portable derail.
4. Provide ample room off-track for the derailed car or locomotive to come to a stop.
5. Derails can be used on sound wooden ties with tie plates in good condition or pre-stressed full length concrete ties made to North American designs. Do not install on resin or steel ties.
6. In curved track, install derail on the outside rail, not the inner rail.
7. Install according to this Installation Guide.

Clearance Above Rail

***SaberTooth*® Portable Derails** project 2¾" above the top of the rail, thus meeting locomotive clearance requirement.

Special Features

***SaberTooth*® Portable Derails** are secured to the rail by means of:

1. **Tie Brace**: A) **Wood tie track**. The notched brace butts up against the tie plate to minimize forward movement. Notches correspond to rail heights from 100-142 lbs./yd. The tie brace ends in a sharp curved point which bites into the tie if the notch slips off a worn or thin tie plate. Any backward movement is limited by the tie brace butting against the tie behind. B) **Concrete tie track**. Notch on tie brace butts up against top edge of tie. Edge must be smooth and uncracked. Notch can also brace against rail anchor clip.
2. **Four thumbscrews** -- three on the field side, one on the gauge side -- prevent side-rolling and lifting during derailing. Blunt end of screws contacts the **underside** of the rail head with no damage to rail surface.

TOOL-FREE INSTALLATION, no wrenches needed.

CHOOSING A LOCATION TO INSTALL *SaberTooth*® Portable Derails

Install derail where there is ample room off-track for a derailed car or locomotive to roll into the ballast and dirt. Do not install derails near buildings, roadways, or other vulnerable objects. Depending on speed, a derailed car or locomotive may slide 50 or more feet before coming to a stop.

RAIL SIZE RANGE

Two-way ***SaberTooth***® **Portable Derails** fit rails 100-142 lbs./yd. Do not use this derail on rail smaller than 100 lbs./yd. as derail may not function properly due to loose fit. Rail size/section (100-ARA-A, etc.) are stamped at intervals on the rail web. If you cannot locate these marks, measure height of rail from top of tie to top of rail, including thickness of tie plate. Contact Aldon for help in determining rail size.

TRACK CONDITION

Do not install portable derails on resin or steel ties.

A) Wood Tie Track

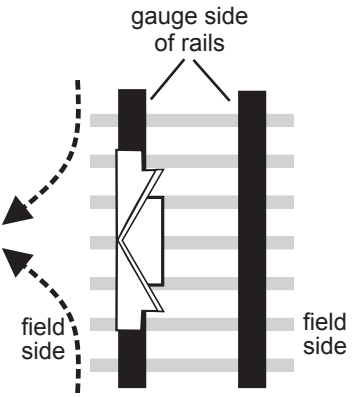
- Track should be well laid with exposed rails, sound wooden ties, and fully-tamped ballast. Tie plates must have good edge for tie brace contact.
- Rail size range: 100-142 lbs./yd.
- Tie spacing 19”-24” on centers

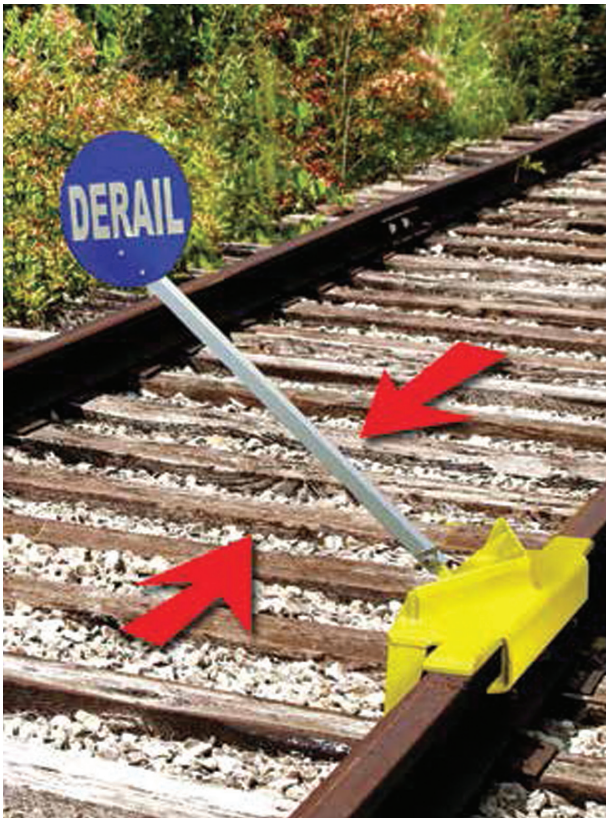
B) Concrete Tie Track

- Ties must be sound, pre-stressed, full length, and of a design used on North American railroads.
- Rail size range: 100-142 lbs./yd.
- Tie spacing 19”-24” on centers

DERAIL DIRECTION OF THROW

Two-way ***SaberTooth***® **Portable Derails** are made to throw the car or locomotive to the field side of the track for both directions of travel. Derail can be installed on either rail.



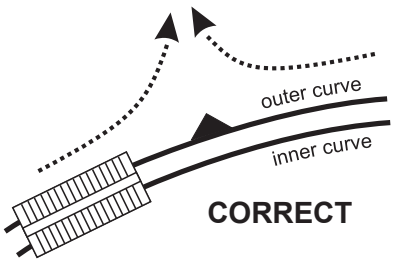


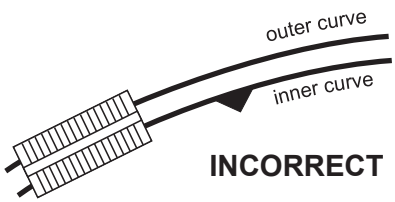
ORIENTATION OF Two-Way *SaberTooth*® Portable Derails

1. Derail can be placed on either rail.
2. In this illustration, car or engine approaching in either direction will be thrown to the right of the track.

CURVED TRACK

- In curved track, for more assured derailing, always install the derail on the **outer** curved rail. Wheels naturally hug the outer rail as they round into the curve, and thus are more likely to climb over the rail and down to the ballast. Conversely, wheels tend to draw away from the inner curved rail on entering the curve, thus reducing the likelihood that a derail installed on the inner rail will carry the wheel over the rail.

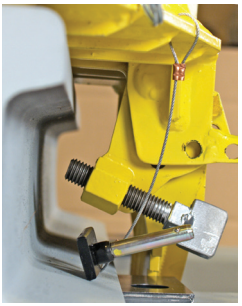




SECURING *SaberTooth*® Portable Derails TO THE RAIL

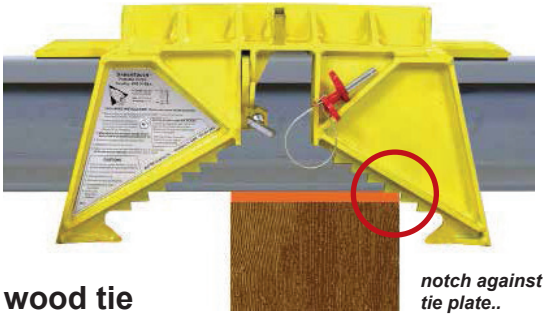
Follow these steps in sequence to insure a proper installation.

1. Release locking arm pin. Back out all four thumbscrews so that 1/2” or less of threading shows inside housing. Put derail on rail.



field side

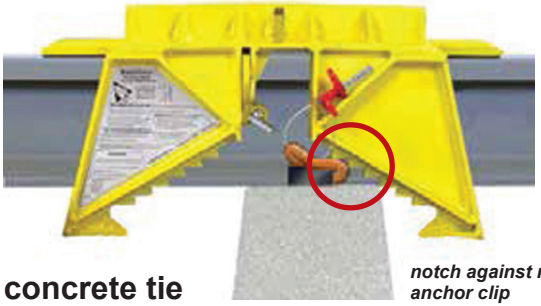
gauge side (toward other rail)



wood tie

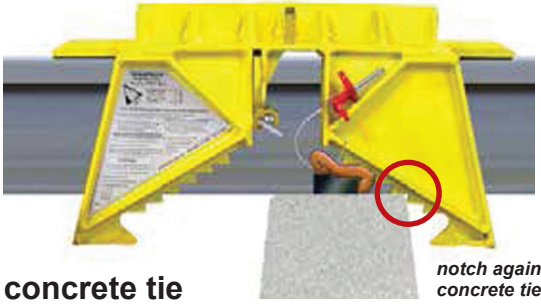
notch against tie plate..

For any installation, wood or concrete, derail needs something solid to butt against: tie plate, tie, tie clip, or anchor clip.



concrete tie

notch against rail anchor clip



concrete tie

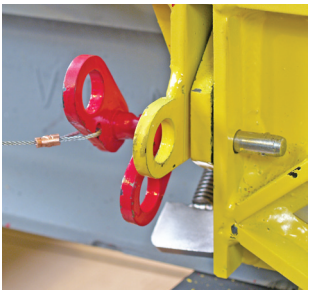
notch against concrete tie edge

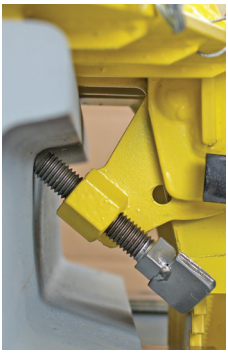
2. For wood or concrete tie track, ties must be at least 19 in. apart on centers. Dig away enough ballast on each side of the tie so derail can lie flat on the rail and a tie brace notch of either step bar can engage the edge of the tie plate or a tie clip (wood tie) or edge of concrete tie or the rail anchor clip.

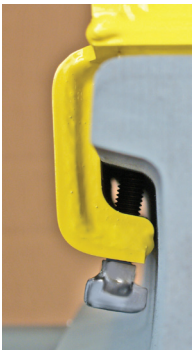
   The double step bar of this derail is designed to accommodate a variety of rail heights. For this reason, only one of the two step bars will butt against the tie plate or concrete tie edge. The *SaberTooth*® Derail hook at the bottom of each of the step bars will ensure that the derail does not move more than a few inches in either direction during derailing.

INSTALLATION

3. Draw derail snug against field side (outside) of rail.
4. Swing locking arm up and re-insert locking pin.







5. Tighten locking arm screw and then tighten all three screws on field side. **All four screws must be tight. Derail must be level and straight.**
6. Refill hole and tamp ballast with your foot to prevent derail kick-back.

7. Install sign holder.
8. To Padlock Derail: Install derail (steps 1-6). **Do not remove locking pin**. Red rings on locking pin accept short-length or long-length padlock. Line up red ring with yellow ring on derail and insert padlock.



CAUTIONS

1. Use locking pin supplied with derail. Do not use any other pinning device. If lost, reorder #9000 pin.
2. Do not install on flush rail.
3. Install on wooden tie or full length pre-stressed concrete tie track.
4. Do not use on steel or resin ties.
5. On curved rail, install on outside rail.
6. Do not re-use derail after a derailment.
7. Limit use of derail to freight cars and 4-axle locomotives
8. Do not install where train speed exceeds 5 mph.

MAINTENANCE and REPLACEMENT

1. Keep derail freshly painted in yellow gloss enamel. Besides maintaining good visibility, the glossy paint surface acts as a lubricant in the event of a derailment, easing the wheels' passage.
2. ***Do not reuse*** a portable derail after a derailment.

ACCESSORIES



#4124-97 Derail Padlock
Steel, leaf-built



#4015-32 Magnet Base Blue Light.
Steel clip is screwed into aluminum holder to provide place for magnet to adhere



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