

# SaberTooth<sup>®</sup>

## Portable Derail

U. S. Patent No. 7,753,317

### Tool-Free Installation Guide



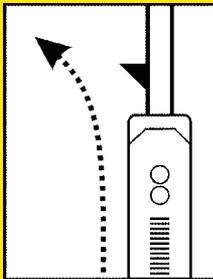
#### ONE-WAY DERAILING

for **FREIGHT CARS** and **ALL LOCOMOTIVES**

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

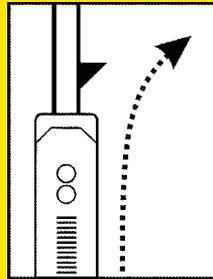
Left Throw

4014-06-S



Right Throw

4014-07-S



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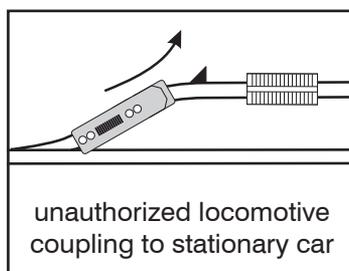
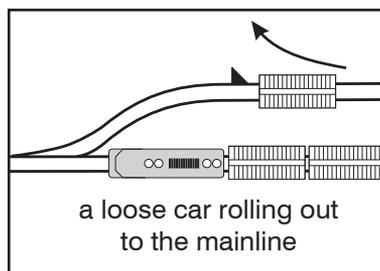
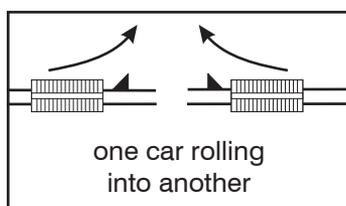
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Revised 9/17

## 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:



## IMPORTANT INFORMATION

### Effective derailing with *SaberTooth® Portable Derails* requires:

1. Proper rail size range. (90-141 lbs/yard)
2. Not installing where train speeds exceed 10 mph.
3. Flat track -- no grades, as acceleration may be too great.
4. 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.
5. Provide ample room off-track for the derailed car or locomotive to come to a stop.
6. 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.
7. In curved track, install derail on the outside rail, not the inner rail.
8. 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 90-141 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.**

# INSTALLATION

## CHOOSING A LOCATION TO INSTALL *SaberTooth*<sup>®</sup> 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

*SaberTooth*<sup>®</sup> Portable Derails fit rails 90 lb/yd to 141 lb/yd. Do not use this derail on rail smaller than 90 lb/yd as derail may not function properly due to loose fit. Rail size/section (9020, 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

#### 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: 90-141 lbs/yd.

#### B) Concrete ties

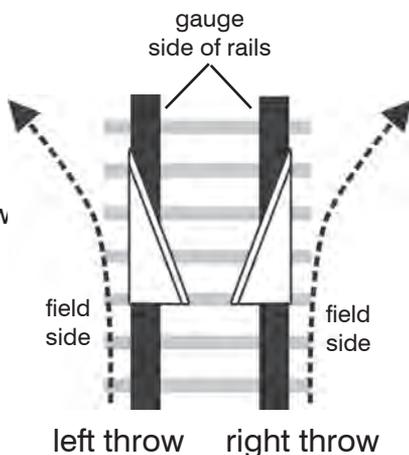
- Must be pre-stressed, full length and of a design used on North American railroads
- Rail size range: 90-141 lbs/yd.

**Do not install portable derails on resin or steel ties**

### DERAIL DIRECTION OF THROW

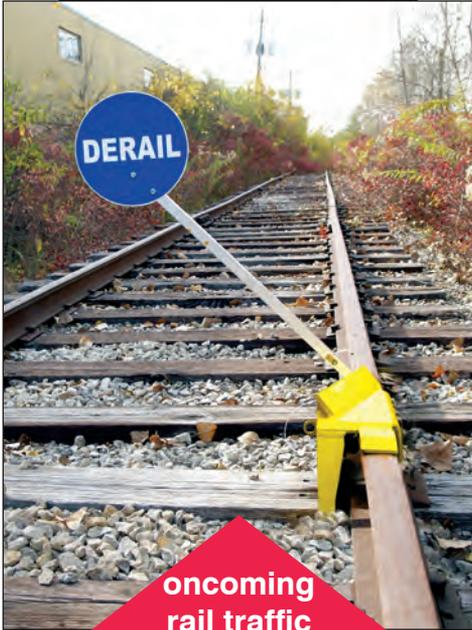
*SaberTooth*<sup>®</sup> Portable Derails are made to throw the car or locomotive to the field side of the track -- to the left of the track (left throw derail) or to the right of the track (right throw derail).

*Note that "left" or "right" is from the viewpoint of the railcar or locomotive going down the track.*



# INSTALLATION

rail cars,  
work crews, buildings, etc.,  
protected by derail

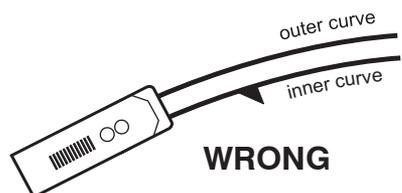
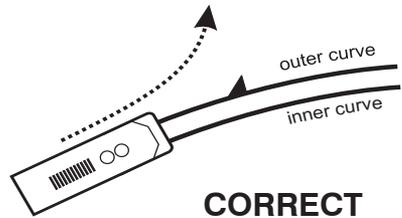


## ORIENTATION OF *SaberTooth*<sup>®</sup> *Portable Derails*

1. The narrow end of the derail should point in the direction of whatever you are protecting with the derail
2. Place a left-throw derail on the left-hand rail. Place a right-throw derail on the right-hand rail.
3. The photo shows a right-throw derail on the right-hand rail; rail traffic comes from the bottom of the picture.

## 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.



# INSTALLATION



**1**  
**BEFORE INSTALLATION:** Remove locking pin, release locking arm, and replace pin.



**2**  
Back off all thumb screws so that 1/2" or less of threading shows inside housing.



**3**  
Dig away enough ballast so derail can lie flat on the rail.



**4**  
Place derail on rail and seat tight against railhead.



**5**  
**FOR WOOD TIES:** Seat tie brace notch against the edge of the tie plate



**6**  
**FOR CONCRETE TIES:** Seat tie brace notch against the edge of full length concrete tie or against the rail anchor clip.



**7**  
Remove locking pin ...



**8**  
... engage locking arm, and replace pin.

# INSTALLATION



**9** Hand-tighten locking arm thumbscrew.



**10** Hand-tighten thumbscrews on field side.



**11** Check that derail sits level on rail.



**12** Test tightness of derail on rail.



**13** Replace and tamp down ballast



**14** Install sign.



**15**

## ***To Padlock Derail:***

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 #6765 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. Use on flat track only – never on a sloped track.
7. Do not re-use derail after a derailment.
8. Limit use of derail to freight cars and locomotives
9. Do not install where train speed exceeds 10 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

#4015-32 Magnet Base Blue Mini-Light



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