

F A S T T R A C K S H O B B Y W O R K S

# Trifecta

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## Three-Point Track Gauge

User Documentation & Reference Guide

### Trifecta 3 Point Track Gauge HO CODE 70/83



**Optional 8-32 Sholder Bolt Shown**

*HO Code 70/83 shown with optional brass sholder bolt handle*

[handlaidtrack.com](http://handlaidtrack.com)

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## Introduction

The Fast Tracks Trifecta is a precision three-point track gauge designed for model railroaders who hand-lay their own trackwork. Billet machined from a single piece of 6061-T6 aluminum, the Trifecta provides the most accurate and reliable way to hold rail at the correct gauge while spiking or soldering track to ties.

A three-point track gauge works by contacting each rail at three specific points: one point on the inside of one rail, and two points on the inside of the opposite rail. This triangulated grip holds both rails firmly at the correct distance apart, keeping them perfectly parallel on both straight and curved sections of track.

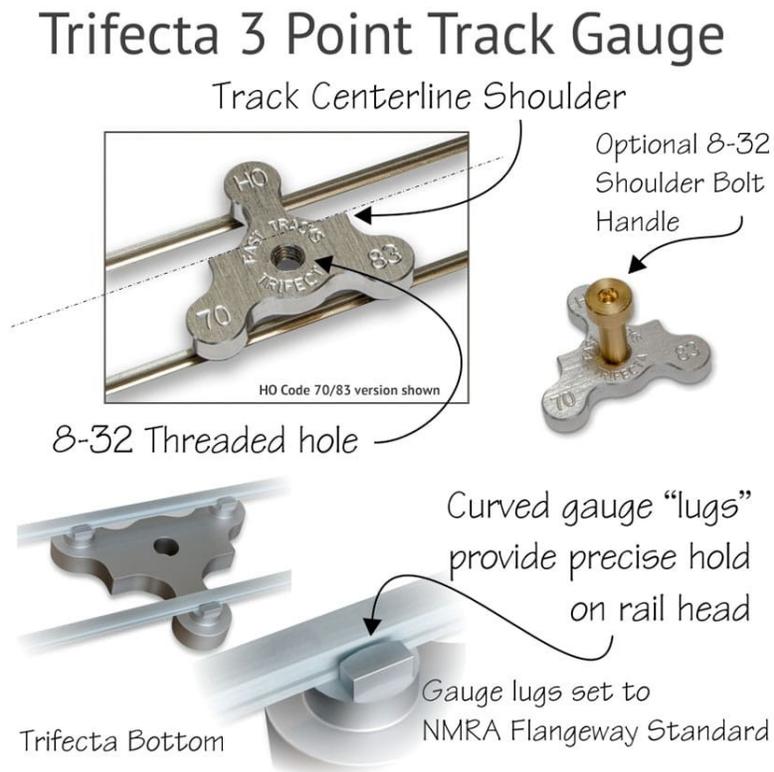


Figure 1: Trifecta anatomy and key features (HO Code 70/83 version shown)

The Trifecta is available for all popular modeling scales and rail codes, from Z scale through O scale, including narrow gauge variants. Each gauge is precision set to the applicable NMRA standards for its respective scale.

## What You Receive

Each Trifecta track gauge includes:

- One (1) Trifecta three-point track gauge, *billet machined from solid 6061-T6 aluminum*
- One (1) threaded 8-32 hole for optional shoulder bolt handle (bolt sold separately as TRI-BOLT)

**Important:** Trifecta track gauges are designed to work with Micro Engineering rail. Rail from other manufacturers may not be compatible. However, some other brands of rail do share compatible profiles with Micro Engineering rail. See the **Rail Cross-Reference Table** later in this document for a guide to compatible rail from other manufacturers. We strongly recommend ordering at least three gauges, as using three or more simultaneously is essential for efficient and accurate track building.

## Anatomy of the Trifecta

Understanding the key features of the Trifecta will help you get the most out of the tool. The gauge incorporates several thoughtful design elements:

### Rail Lugs (Gauging Points)

The three precision-machined lugs are the points that contact the rail heads. Two lugs are on one side of the gauge and one lug is on the opposite side, forming the three-point contact that gives the gauge its name. The lugs grip the inside face of each rail head securely, holding both rails at the exact specified gauge distance.

The lugs feature a curved profile at their contact surfaces. This curved design ensures the smallest possible gauging contact point on each rail, which prevents the gauge from binding or wedging when used on curved sections of track. The rail simply pivots against the minimal contact point as the curve changes direction.

### Flangeway Tabs

The width of the gauge lugs is precisely set to NMRA standards for flangeways. This means the Trifecta serves double duty: in addition to gauging running rails, you can use the lugs to set the correct flangeway spacing when positioning guard rails, wing rails, and other components that require a specific flangeway clearance. Simply place the lug between the guard rail and the running rail, and the flangeway gap will be set to the NMRA standard.

## Trifecta 3 Point Track Gauge HO CODE 70/83



Figure 2: Close-up of the Trifecta seated on rail, showing the centerline shoulders visible between the rails

### Centerline Shoulders

Large, clearly visible shoulders are machined along the track centerline of the gauge body. These shoulders make it easy to visually center the gauge over the ties while working. When the shoulders are evenly aligned with the edges of the tie, you know the gauge (and therefore the rails) are centered on the roadbed. This is especially helpful when laying the first rail on a new section of track.

### Flat Top Surface

The top of the Trifecta is machined flat. This allows you to place a small weight on top of the gauge to hold it and the rail in position while you work with both hands. Fast Tracks PointForm tools make excellent weights for this purpose due to their size and heft. **Note: If you have the optional shoulder bolt handle installed, you will need to remove it before placing a weight on the gauge.**

### 8-32 Threaded Hole

A threaded 8-32 hole is provided in the top of the gauge body. This accepts an optional brass shoulder bolt handle (sold separately as part number TRI-BOLT), which makes the gauge much easier to pick up, reposition, and maneuver, especially when working with smaller scales. The shoulder bolt can be quickly threaded in and out by hand as needed.

# How to Use the Trifecta

## Basic Track Gauging

The fundamental use of the Trifecta is to hold two rails at the correct gauge while you spike or solder them in place. For best results, always use at least three gauges simultaneously. Follow these steps:

1. **Orient the gauge.** On straight track, the orientation of the Trifecta does not matter and the gauge can be placed in any direction. On curved track, orient the single-lug side (the pointed end) toward the inside of the curve. This allows the gauge to pivot smoothly on its minimal contact points without binding against the rail.
2. **Seat the rails.** Slide the gauge down over both rails so that the lugs grip the inside faces of the rail heads. The rails should click gently into the lugs. If you have to force the rails, check that you are using the correct gauge for your rail code and scale.
3. **Center using the shoulders.** Align the centerline shoulders of the gauge body with the center of the ties beneath. This ensures the rails are evenly positioned on the roadbed.
4. **Place all three gauges.** Position at least three Trifecta gauges along the section of rail you are about to secure. Space them several tie spacings apart to hold a generous length of rail at the correct gauge simultaneously.
5. **Weigh down if needed.** If the gauges tend to lift or shift, place a small weight on the flat top surface of each to hold everything steady while you work. Remember to remove the shoulder bolt handle before placing a weight on any gauge that has one installed.
6. **Spike or solder.** With the gauges holding the rails at the correct spacing, drive spikes or apply solder to secure the rail to the ties adjacent to the gauges.
7. **Advance the gauges.** Slide the rearmost gauge forward along the rails past the leading gauge and repeat the process, leapfrogging your way along the track.



Figure 3: Multiple Trifecta gauges in use on hand-laid track. Note the optional shoulder bolt handle installed on one gauge.

## Building Straight Track

When building straight track, it is good practice to **alternate the orientation of the gauges**. Place the first gauge with its single-lug pointed end facing one direction, then orient the next gauge with its pointed end facing the opposite direction, and continue alternating. This helps counteract any tiny directional bias in the gauging and produces the straightest, most consistent track possible.

## Gauging on Curves

The Trifecta is specifically designed to work on curves as well as straight track. To use it on curved sections:

1. **Orient the pointed end (single lug) toward the inside of the curve.** This allows the gauge to pivot smoothly on its minimal contact points without binding against the rail.
2. **Use at least three gauges.** On curves, the rail is under spring tension and will try to straighten itself. Three or more gauges spaced closely together help maintain the desired gauge across a broader arc.
3. **Check frequently.** After spiking a section on a curve, slide a gauge along the completed track to verify gauge consistency before moving on.

## Gauging Guard Rails and Flangeways

Because the lug width is set to NMRA flangeway standards, the Trifecta can be used to set guard rail spacing:

1. Position the running rail as normal in one set of lugs.
2. Place the guard rail against the outside face of the lug on the same side. The lug itself becomes the spacer, setting the flangeway gap to the correct NMRA dimension.
3. Secure the guard rail in place while the gauge holds the spacing.

This technique works for guard rails in turnouts, wing rails at frog points, and any other location where a flangeway must conform to NMRA standards.

## Tips for Best Results

- **Always use at least three gauges.** Three is the minimum recommended number for effective track building. Having three or more gauges on the rail simultaneously holds a longer run in gauge, dramatically improving both accuracy and speed.
- **Alternate orientation on straight track.** Flip the direction of every other gauge when laying straight track. This practice cancels out any minor directional bias and results in the most consistent gauge across the length of the track.
- **Install the shoulder bolt handle.** The optional TRI-BOLT brass shoulder bolt screws into the 8-32 hole and provides a convenient grip for repositioning the gauge, especially in smaller scales. Remember to remove it when you want to place a weight on the flat top surface.
- **Use Micro Engineering rail.** The Trifecta is machined to work with Micro Engineering rail profiles. Rail from other manufacturers may have slightly different head profiles and may not seat properly in the lugs. Consult the Rail Cross-Reference Table in this document if you wish to use rail from another manufacturer.
- **Keep the gauge clean.** Flux residue and solder spatter can build up on the lugs over time. Wipe the gauge periodically with a clean cloth or a cotton swab dipped in isopropyl alcohol to maintain precise fit.
- **Weight the gauge during soldering.** Placing a small weight on the flat top keeps the gauge and rails firmly in position, freeing both hands for soldering. Be sure to remove the shoulder bolt handle first if one is installed, so the weight sits flat and stable.

## Available Scale and Rail Code Combinations

The Trifecta is available in a wide range of scale and rail code combinations. The table below lists some of the most common variants. Visit [handlaidtrack.com](http://handlaidtrack.com) for the complete and current product listing.

Scale	Rail Code(s)	Gauge Setting	Part Prefix
Z	Code 40	0.263" (6.7mm)	TRI-Z
Z	Code 55	0.263" (6.7mm)	TRI-Z
Zm	Code 40	See website	TRI-ZM
N	Code 40	0.36" (9.1mm)	TRI-N
N	Code 55	0.36" (9.1mm)	TRI-N
N	Code 80	0.36" (9.1mm)	TRI-N
Nn3	Code 40	See website	TRI-NN3
TT	Code 70/83	0.473" (12mm)	TRI-TT
HO	Code 40	0.66" (16.8mm)	TRI-HO
HO	Code 70/83	0.66" (16.8mm)	TRI-HO
HO	Code 100	0.66" (16.8mm)	TRI-HO

HOn2	Code 70/83	0.28" (7.1mm)	TRI-HON2
HOn30	Code 40	0.36" (9.1mm)	TRI-HON30
HOn30	Code 70/83	0.36" (9.1mm)	TRI-HON30
HOn3	Code 70/83	0.421" (10.7mm)	TRI-HON3
HOn3.5	Code 70/83	0.479" (12.2mm)	TRI-HON3.5
S	Code 55	0.894" (22.7mm)	TRI-S
S	Code 70/83	0.894" (22.7mm)	TRI-S
S	Code 100	0.894" (22.7mm)	TRI-S
S Hi-Rail	Code 125	0.894" (22.7mm)	TRI-S-HI
S P64	Code 55	See website	TRI-S-P64
Sn2	Code 55	See website	TRI-SN2
Sn3	Code 70/83	0.574" (14.6mm)	TRI-SN3
O	Code 100	1.267" (32.2mm)	TRI-O
On2	Code 70/83	See website	TRI-ON2
On2	Code 100	See website	TRI-ON2
On3	Code 100	0.764" (19.4mm)	TRI-ON3
On30	Code 70/83	0.66" (16.8mm)	TRI-ON30
On30	Code 100	0.66" (16.8mm)	TRI-ON30
P:48 O	Code 100	1.18" (30mm)	TRI-P48
P:48 O	Code 125	1.18" (30mm)	TRI-P48
P:48 O	Code 148	1.18" (30mm)	TRI-P48

**Note:** Where “See website” appears in the Gauge Setting column, please visit [handlaidtrack.com](http://handlaidtrack.com) for the exact dimension. Additional rail code variants within certain scales may also be available. Visit the Trifecta product category for the complete and most current product listing.

## Rail Cross-Reference Table

Trifecta track gauges are designed to work with Micro Engineering (ME) rail. However, rail from certain other manufacturers shares a compatible head profile and can be used with the Trifecta. The table below shows which alternative rail brands are compatible with each Micro Engineering rail code. If your Trifecta is cut for a particular ME code, you may substitute any rail listed in the Compatible With column.

**Note:** Compatibility means the rail head profile will seat properly in the gauge lugs. Rail from manufacturers not listed below has not been verified and may not fit correctly.

Trifecta Cut For	Rail Size	Also Compatible With
ME Code 55	Code 55	Atlas Code 80
ME Code 55	Code 55	Atlas Code 55
ME Code 55	Code 55	Peco Code 80
ME Code 70	Code 70	ME Code 83
ME Code 70	Code 70	Peco Code 83 (IL-115)
ME Code 70	Code 70	Peco 75
ME Code 70	Code 70	Pilz Code 83
ME Code 70	Code 70	Tillig 83
ME Code 83	Code 83	ME Code 70
ME Code 83	Code 83	Peco Code 83 (IL-115)
ME Code 83	Code 83	Peco 75
ME Code 83	Code 83	Pilz Code 83
ME Code 83	Code 83	Tillig 83
ME Code 100	Code 100	Walthers Code 83
ME Code 100	Code 100	Roco Line 83
ME Code 100	Code 100	Atlas Code 83
ME Code 100	Code 100	Atlas Code 100
ME Code 125	Code 125	C & L 125
ME Code 148	Code 148	Right-O-Way 148

**Key takeaway:** ME Code 70 and ME Code 83 rail are cross-compatible with each other and with several European rail profiles. ME Code 55 Trifectas will also accept Atlas Code 55, Atlas Code 80, and Peco Code 80 rail. ME Code 100 Trifectas accept several Code 83 brands as well as Atlas Code 100.

## Troubleshooting

### Rail does not fit into the gauge lugs

Verify you have the correct Trifecta for your rail code and scale. Each Trifecta is machined to a specific rail profile. Also confirm that you are using Micro Engineering rail or a compatible brand listed in the Rail Cross-Reference Table. Rail from manufacturers not listed in that table may have a different head profile and may not be compatible.

### Gauge binds on curves

Make sure the pointed end (single lug) of the gauge is facing toward the inside of the curve. If you orient it the other way, the wider two-lug end can wedge against the rails as they converge on the inner radius. Also ensure the rail is free of burrs or debris at the gauging points.

### Gauge feels loose on the rail

If the gauge does not grip the rail head securely, first verify that you are using the correct Trifecta for your rail code and scale. Each variant is machined to precisely fit a specific rail profile, and using the wrong combination will result in a loose fit. If you are using rail from a manufacturer other than Micro Engineering, check the Rail Cross-Reference Table to confirm compatibility. It would take an extraordinary amount of use for lug wear to reach a level that would produce out-of-spec track.

### Track is out of gauge after spiking

This usually occurs when spikes are driven at an angle that pushes the rail inward or outward. Ensure spikes are driven vertically. Use the Trifecta to check gauge after every few spikes and make corrections immediately. On curves, rail spring-back after removing the gauge can also cause gauge errors; use three or more gauges spaced closely together to counteract this.

## Care and Maintenance

The Trifecta is machined from 6061-T6 aluminum, which is durable and corrosion-resistant under normal workshop conditions. To keep it performing accurately:

1. Wipe the gauge lugs clean after each session, particularly if soldering flux or adhesive has come into contact with the gauge.
2. Avoid dropping the gauge onto hard surfaces. While aluminum is resilient, a hard impact on the lugs could affect gauging accuracy.
3. Store in a dry location. If storing for extended periods, a light wipe of the gauge with a slightly oiled cloth will prevent oxidation.
4. Do not file or modify the gauge lugs. Any alteration to the lug dimensions will compromise the gauge accuracy.

## Support & Resources

Fast Tracks offers a comprehensive set of resources for track builders:

1. **Video Library:** Visit the Fast Tracks YouTube channel for demonstration videos, including a video showing the Trifecta being machined from solid aluminum billet stock.

2. **Knowledgebase:** An extensive Q&A section and document library are available at [handlaidtrack.com/kb](http://handlaidtrack.com/kb) covering all Fast Tracks products and general hand-laid track building techniques.
3. **Builder's Guides:** Printed and downloadable builder's guides are available for turnout construction, soldering techniques, spiking methods, and more.
4. **Customer Service:** Contact Fast Tracks at [service@fast-tracks.net](mailto:service@fast-tracks.net) or through the contact page at [handlaidtrack.com/contact-us](http://handlaidtrack.com/contact-us) for any questions about the Trifecta or other products.

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