

1 General

The NMRA currently sells five styles of the Type I gauge as follows: N-Scale – Mark VI; HOn3-Scale – Mark III; HO-Scale – Mark V; Sn3-Scale – Mark III and O-Scale – Mark V. The Type II gauge (square gauge) is available for On3, On30, OO, S and Sn3.

1.1 Introduction and Intended Use (Informative)

The difference in the four styles of Type I gauges (III, IV, V & VI) is primarily the location of the tabs and slots on the gauge. The tabs on the top of the O scale Mark V gauge have been renamed from “Flangeways” to “Check-gauge”. Tabs on the HO Mark V gauge remain flangeways.

The instructions contained in RP-2 give you the proper method to check critical dimensions for track, wheels and coupler height. The Type I gauge can check clearance on tangent track.

1.2 References

This standard should be interpreted in the context of the following NMRA Standards, Technical Notes, and Technical Information.

1.2.1 Normative

- S-2 Couplers
- S-3.2 Track-Work Standard Scales
- S-4.2 Wheels Standard Scales
- RP-7.1 Tangent Track Centers and Clearance Diagrams

1.2.2 Informative

- None

1.3 Terminology

Term	Definition
Gauge	Device for measuring the magnitude, amount, or contents of something
Track gauge	Distance between the rails.
Check gauge	The back to back distance between wheels plus the flange width. This dimension is used to keep a wheel properly aligned when traversing a turnout frog or a crossing.
Stock rail	The outside rails of a turnout.
Points	The end of a turnout where one track nestles into the stock rail to determine the route of the train.
Frog	The place where the two rails intersect in a turnout or crossing.
Flangeway	A clearance between the rails where the wheel flange is captured.
Guard rail	A short section of rail parallel to the stock rail forming a flangeway to prevent a wheel from derailling at the frog of a turnout or a crossing.
Wing rail	A flangeway near the turnout frog.

2 Use of the Gauge

2.1 This GAUGE checks the following dimensions;

STANDARD S-3.2 Dimensions G, C, S, F, H, and P Type I or Type II gauge.
STANDARD S-4.2 Dimensions K B, N, and D Type I or Type II gauge.

RECOMENDED PRACTICE RP-7.1 Dimensions A, B, C, D, E, F, G, H, and P Type I gauge only.

The dimensions for RP-7.1 are prototype clearance dimensions from AREA standards circa 1983. Individual railroads have their own clearance diagrams with some differences that are revised from time to time. Clearance for 22 feet above top of rail is required for double stack containers and full-height auto-rack cars. The NMRA has a modern era plastic snap-on clearance gauge. Do not confuse any of these letter designations with the same letters used in track and wheel dimensions. For clarification of dimension designations refer to S-3.2 and S-4.2

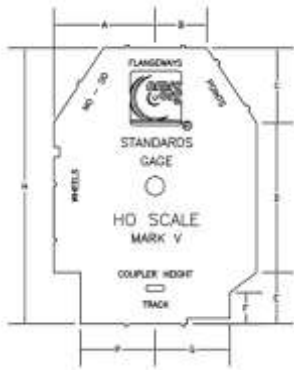


Fig 1 Type I Gauge

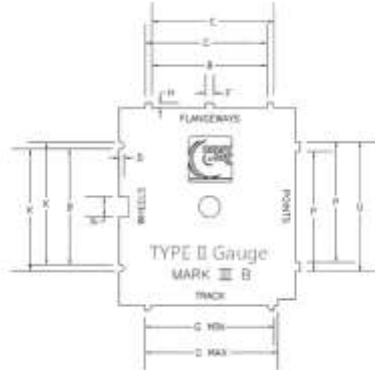


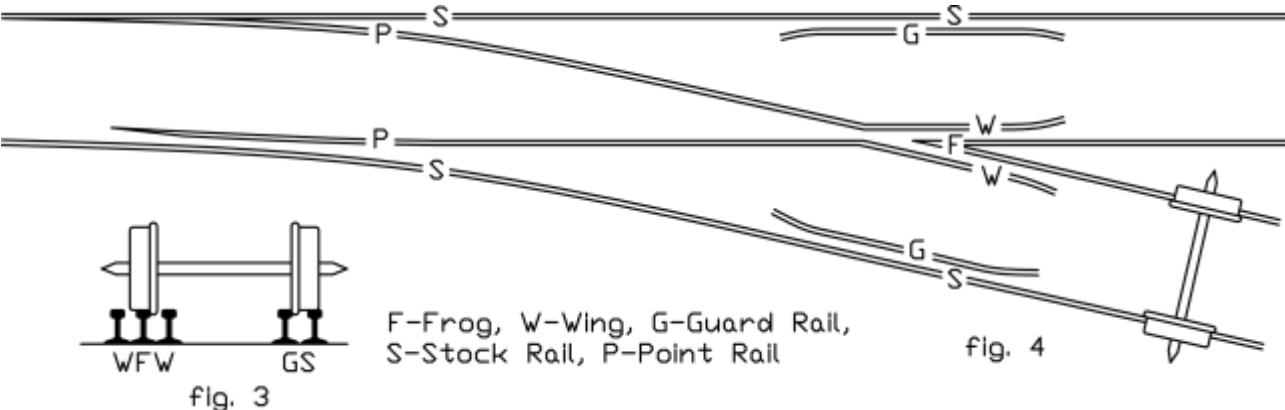
Fig 2 Type II

The Type I, Mark III gauge is not drawn in this RP but has the Flangeway NO-GO tab is between the Flangeway tabs along the top of the gauge.

NOTE: These GAUGES are intended only for checking STANDARD dimensions. For proto and fine scale dimensions refer to S-3.1 and S-4.1. For high rail refer to S-3.3 and S-4.3.

2.2 Components of a turnout

Figures 3 and 4 below identify the different Components of a turnout for use with the Instructions on the reverse side.



2.3 Checking track gauge

NOTE: The drawings below on how to use the NMRA Gauge are for the Type I, Mark V and Type II Mark IIIB gauge. Please check your gauge to insure you know which tab to use when checking a dimension.

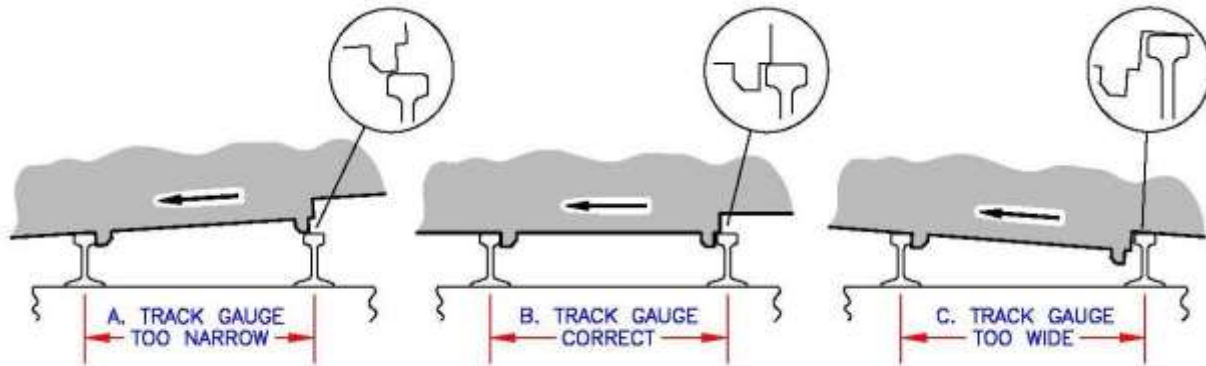


Fig 5

TRACK marks the side of the gauge used for checking Track Gauge through all track-work, including turnouts and other special work. Apply light pressure in the direction of the arrow. See figures A, B and C above for interpretation of results. (Note that the prongs of the Gauge must clear spikes.)

2.4 Check-gauge

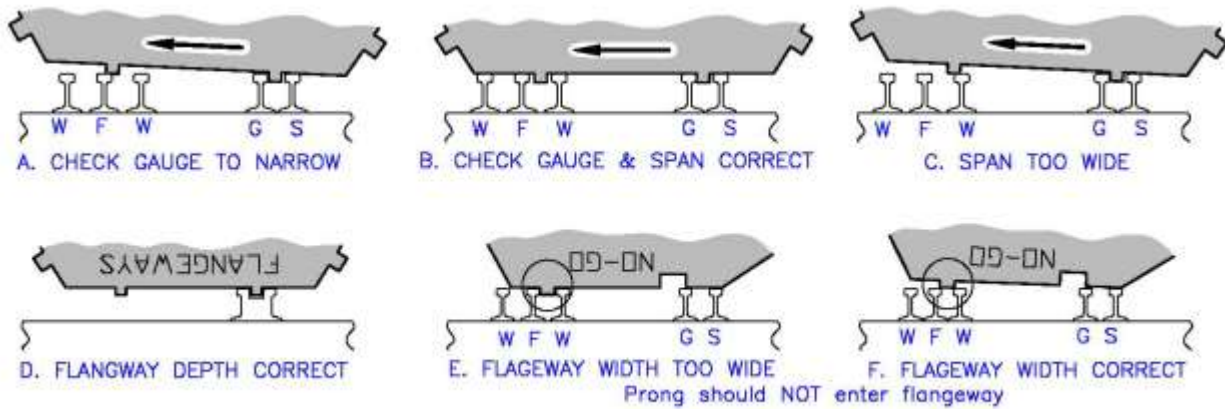


Fig. 6

Spacing of Guard Rails, Wing Rails and Frogs are checked with this side of the Gauge. Apply light side pressure toward the Frog and against the Guard Rail (see arrow). See figures A, B and C above for interpretation of results. Gauge prongs must clear all obstructions below the rail head as in figure D. Use NO-GO prong of Gauge to check Flangeway width at the Frog in figures E and F.

2.5 Points

POINTS are checked against excessive Spread by applying light side pressure against the Gauge side of the closed switch point rail as shown by the arrow. The opposite prong on the GAUGE dropping fully into the gap between the open switch point rail and the adjacent stock rail ensures adequate “Electrical Spread”, while dropping only to the step on the inside of the prong shows adequate Mechanical Spread. Clearance of the outside of the prong checks Track Gauge. Make this check along the entire length of the switch point rail.

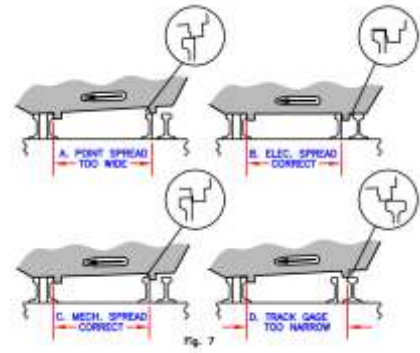


Fig 7

2.6 Wheels

Wheels are checked by applying light side pressure in the direction of the arrow. Each wheel must be checked - reverse the direction of pressure and check the other wheel. On Mark VI gauges, the flange notches are on the left with one in the lower left corner. See figures A, B, C and D below for interpretation of results. Use the wide NO-GO slot to check Tire Width as in E and F.

In checking wheels be sure that;

Wheel treads and flanges are free of “flash” and other projections.

Wheel flanges have proper contour, (see figure D).

Wheels spin freely in their trucks and free of wobble.

Where wobble is observed, check the wheel at several points to ensure that the wheel is within limits.

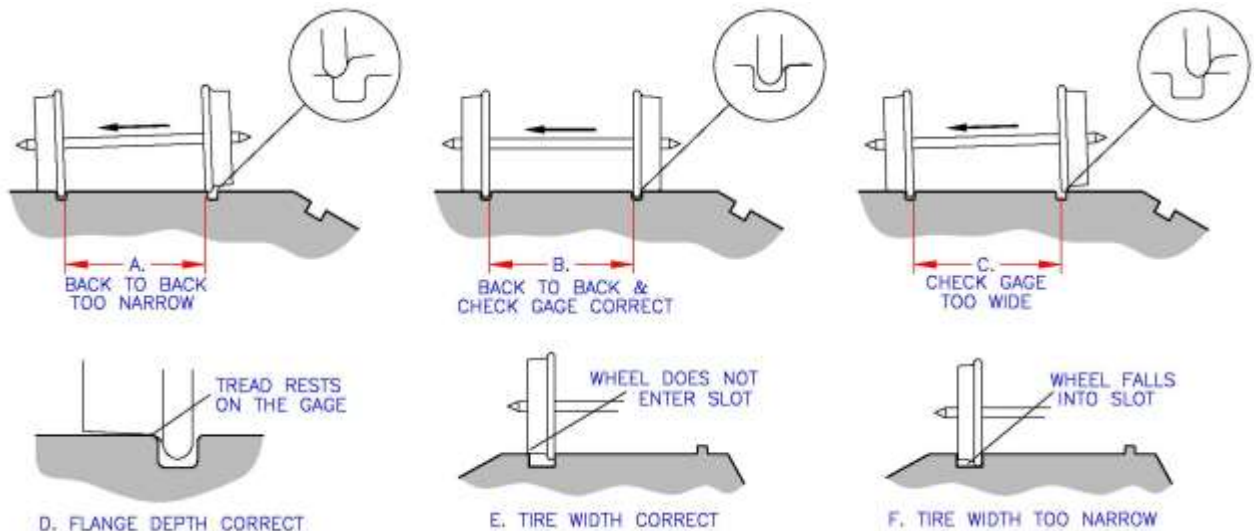


Fig 8

2.7 Clearance

Clearance may be checked only with the Type I GAUGE in the position shown in 2.3B above, seeing that no obstruction interferes with passage of the GAUGE along the track. **CAUTION:** This check is valid only for tangent track and curves of very wide radius. Refer to NMRA Recommended Practice RP-7.3 for increased clearances in sharper curvatures.

For oversized rolling stock and modern equipment snap on the plastic modern clearance gauge for your scale.

- 90 **2.8 Coupler height**
Coupler height is checked by mounting a coupler of your choice in the center of the slot and matching all other couplers to this height when the GAUGE is in the position shown in figure to the right.

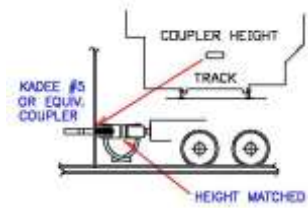


Fig 9

WARNING: WHILE THESE GAUGES ARE VERY DURABLE, THEY ARE MEASURING DEVICES AND NOT METAL CUTTING TOOLS. THE USE OF THE GAUGE TO REMOVE METAL (EVEN SOFT SOLDER) WILL CAUSE WEAR ON THE MEASURING SURFACES AND DESTROY THE DEVICE AS A MEASURING INSTRUMENT.

95 3 Document History

Date	Description
July 2019	Previous release
19-Aug-2023	Migrated to new template. Spelling, punctuation errors corrected and various clarifications added. New Fig 1 and Fig 2. Added a Note that the gauge is for standard dimensions check. Added text that for modern equipment add snap on plastic clearance gauge to check RP-7. For fine scale or proto refer to S-4.1 Created TN-2 from this version of RP-2 to have a two page one sheet of paper instruction to pack with gauges for shipping. Errors on gauge envelope were addressed. Approved by Board of Directors. JM Juett
15-Jan-2024	Improved drawings sections 2.3, 2.4, 2.5 & 2.6. Added drawing in section 2.8 JM Juett
3-Dec-2024	Corrected Figure 7 drawing. JM Juett
11-Dec-2025	Corrected check-gauge Figure 6 drawing in section 2.4. Improved drawings Fig 3 & Fig 4. Spelling of gage changed to gauge. Various typos corrected. New NMRA logo. Retired TN-2 in favor of this document with more complete information and to reduce potential errors in maintaining two documents where some of the content must be the same. JM Juett
25-Jun-2026	Added explanation in Section 2.6 for checking wheel gauge on Mark VI gauges. Corrected Fig 8. Other minor format changes. JM Juett Approved by NMRA Board 27-Jly-2026

The most current version of this RP can be found at

https://www.nmra.org/sites/default/files/standards/sandrp/General/RP/rp-2_track_gauges.pdf

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