

TECHNICAL BULLETIN

TRAILER SUSPENSION SYSTEMS

SUBJECT: Wide Base Tires and Wheels

LIT NO: L846

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REVISION: A

Wide Base "super single" tires (such as the 445/50R22.5 and the 455/50R22.5) require a 14" wide rim that is currently available with a zero, 1.13" or 2" offset. The width of the tires, along with the available wheel offsets, result in tire width spacings that should be considered when choosing a trailer suspension. Examples of these variations are described below:

WHEEL SPACING

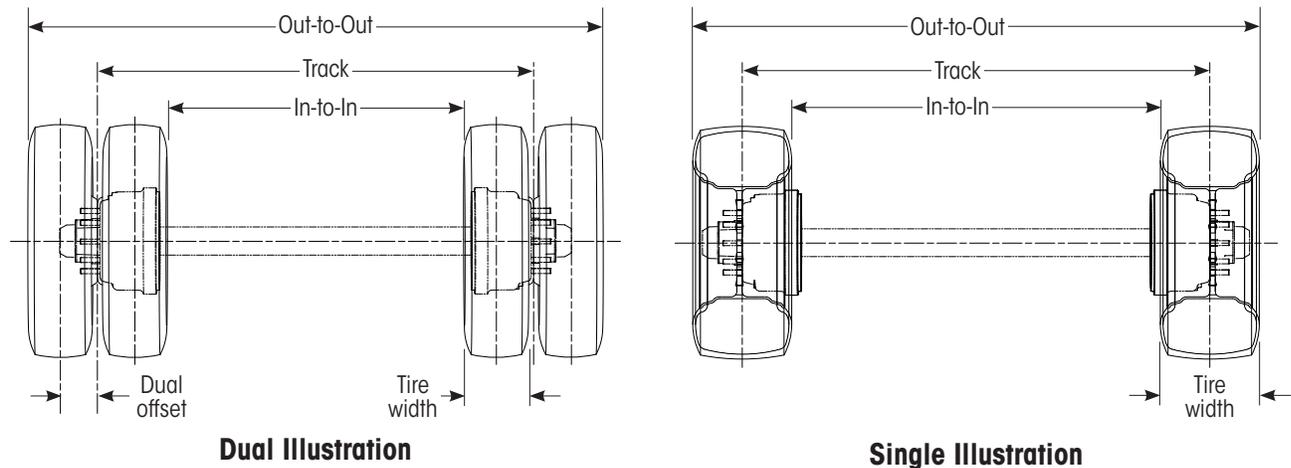


Figure 1: Tire-to-tire dimension

The values in the table on the next page show the dimensions illustrated above with the following wheel arrangements:

- Ductile hub
- Aluminum wheel
- Dual wheels -
 - 275/80R22.5 tire
 - 22.5" x 8.25" rim
 - Zero offset
- Cast Drum
- Wide base single wheels
 - 445/55R22.5 tire (17.6" width)
 - 22.5" x 14" rim
 - Offsets vary as shown

WIDE BASE TIRES AND WHEELS



| WHEEL OFFSET | TIRE WIDTH | OUT-TO-OUT ^{1,2} | TRACK (U.S.) | IN-TO-IN ¹ |
|--|------------|---------------------------|--------------|-----------------------|
| DUAL WHEELS @ 77.5" Axle Track | | | | |
| Zero | 10.89" | 102.55" | 78.42" | 54.29" |
| WIDE BASE SINGLE @ 77.5" Axle Track | | | | |
| Zero | 17.30" | 94.15" | 76.55" | 58.95" |
| 1.13" | | 96.41" | 78.81" | 61.21" |
| 2.00" | | 98.15" | 80.55" | 62.95" |
| WIDE BASE SINGLE @ 83.5" Axle Track | | | | |
| Zero | 17.30" | 100.15" | 82.55" | 64.95" |

¹ The OUT-TO-OUT and IN-TO-IN values will change if a different width tire is used (Figure 1).
² The tire OUT-TO-OUT dimension corresponds to the Canadian Memorandum of Understanding definition of axle track. Canada requires a 2.5 meter (98.4") minimum OUT-TO-OUT (i.e. track) width. Some wheel component combinations may be used to meet this requirement with a 77.5" nominal (U.S.) axle track, but the 83.5" nominal (U.S.) axle track is typically recommended.

NOTE: Reductions in the tire track spacing could have an impact on overall trailer stability and should be reviewed for each application.

considered. Hendrickson INTRAAX[®], VANTRAAX[®] and ULTRAA-K[®] axle and axle components are rated for these wheel offsets as follows:

In addition to the tire spacing, the impact of the wheel offset on the axle and axle components must be

AXLE RATINGS

For 1.13" and 2.00" wheel offsets

| ORIGINAL RATING (ZERO OFFSET) | OFFSET RATING ¹ | | | | | |
|--|----------------------------|--------------------------|------------------------|------------------------|------------------------|------|
| | DUTY | 5" Dia. Axle | Axle Wall | LDA (5.75" Dia.) | Axle Wall | |
| ULTRAA-K[®] (HP spindle only) | | | | | | |
| 40K | STD | N/A | N/A | 40K² | .310 | |
| VANTRAAX[®] (HP spindles only) | | | | | | |
| 23K | STD | 20K^{2,3} | .460" | 20K² | .310 | |
| 40K | | 34K^{4,3} | .420" | | | |
| 46K | | 40K^{2,3} | .460" | 40K² | | |
| 50K | | 40K^{2,3} | .562" | | | .367 |
| 69K23 | | | .460" | | | .310 |
| 69K25 | | | .562" | | | .367 |
| 40K | HVY | 40K^{2,3} | .562" | 40K² | .310 | |
| 46K | | | .562" | | .310 | |
| 50K | | | .625" | | .367 | |
| INTRAAX[®] (HP spindles only) | | | | | | |
| 20K (AANLS) | STD | 20K² | .460 | N/A | N/A | |
| 23K | STD | 20K^{2,3} | .460" | 20K² | .310 | |
| 25K | | 20K^{2,3} | .562" | | 20K² | .367 |
| 30K (AAL & T) | | | .562" | .367 | | |
| 30K (EDL & T) | | 20K² | .625" | N/A | | |
| 23K | | HVY | 20K² | .562" | 20K² | .310 |
| 25K | 20K^{2,3} | | .625" | .367 | | |
| 30K (AAL & T) | | | .625" | .367 | | |
| 30K (EDL & T) | 20K² | | N/A | N/A | | |

¹ No change in the suspension component ratings (e.g., suspension beams, air springs, etc.) unless otherwise noted below.
² Rating limited by the spindle bearing rating.
³ No longer an available option.
⁴ Capacity limited by axle rating.



SPINDLE BEARING RATINGS

| SPINDLE TYPE | WHEEL OFFSET | LOAD RATING |
|--------------|--------------|---------------------|
| HN | Zero | Same as axle rating |
| | 1.13" | Not Approved |
| | 2.00" | |
| HP | Zero | Same as axle rating |
| | 1.13" | 20,000 lbs. max |
| | 2.00" | |
| P90 | Zero | Same as axle rating |
| | 1.13" | 20,000 lbs. max |
| | 2.00" | |

The above rating limits apply to systems where Hendrickson supplies the spindle bearings. For components not supplied by Hendrickson, we recommend that the anticipated component performance be reviewed with the respective component manufacturer.

BRAKE RATINGS

For 1.13" and 2.00" Wheel Offsets

Use of offset wheels does not affect Hendrickson’s brake ratings. See *L809 Brake Certifications* for a complete listing of brake types and their ratings.

OTHER WHEEL OFFSET AMOUNTS

Contact Hendrickson’s Product Engineering Department for reduced axle ratings when other wheel offsets are used. Hendrickson cannot provide a revised rating for the spindle bearings. Spindle bearings used with offset wheels should be inspected more frequently due to the reduction in predicted operating life of the bearing.

NOTE:

- The actual axle rating should be determined by reviewing all of the components attached to the axle including the hubs and tires.
- The standard suspension system warranty as stated in Hendrickson literature number *L583 Comprehensive Warranty Statement* will continue to apply to those components supplied by Hendrickson when the system is operated within the parameters noted above and installed and operated per Hendrickson’s recommendations. This would include the standard one-year coverage for wheel hubs and bearings when installed by Hendrickson.
- Contact Hendrickson concerning the availability of extended service warranty options for offset wheels.

Call Hendrickson at **866.RIDEAIR (743.3247)** for additional information.



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