

TECHNICAL PROCEDURE

TRAILER SUSPENSION SYSTEMS

SUBJECT: Recommended Ride Height Settings

LIT NO: L388

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REVISION: J

The tables in this publication list the recommended or “designed” ride heights for all current Hendrickson trailer suspensions. The designed ride height helps optimize suspension performance and helps maintain load equalization among the axles.

NOTE: Ride height is just one of many factors that influence load equalization. Even small adjustments in ride height (within the specified range) can impact the way the load is distributed among the axles.

Operating an air suspension outside its specified ride height range can reduce ride quality, damage cargo and increase suspension wear. To take full advantage of the benefits an air-ride suspension has to offer, each suspension on the trailer should be operated at its designed ride height.

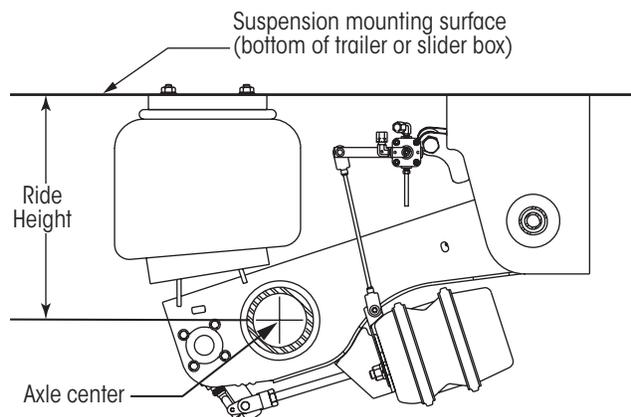


Figure 1: Ride height defined

A suspension’s designed ride height is defined as the distance from the suspension mounting surface (the bottom of the trailer frame or slider box) to the center of the axle. See [Figure 1](#).

There are two easy ways to determine a suspension’s ride height:

For safety and precautionary statements, refer to Hendrickson literature number T12007, available at www.Hendrickson-intl.com/TrailerLit.

I. USING A HENDRICKSON RIDE HEIGHT GAUGE

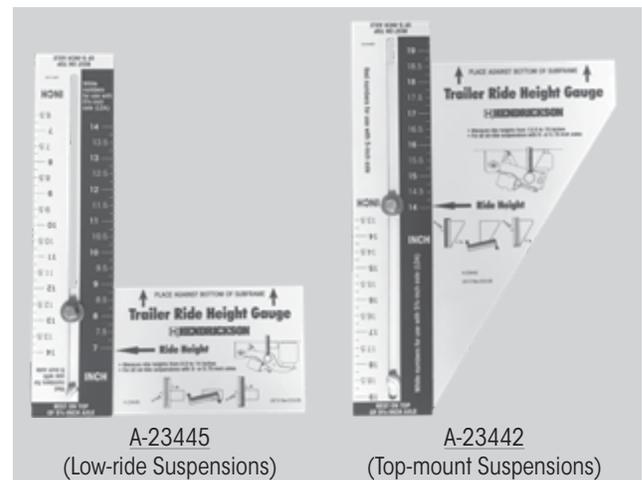


Figure 2: Hendrickson ride height gauges

Follow instructions on the gauge (Figure 2) to measure the distance between the axle and the mounting surface of the suspension. A ride height gauge works with both 5-inch and LDA™ Large-Diameter Axles. Just make sure you are using the proper scale on the ride height gauge. The tool can also be used as a GO/NO-GO gauge.

NOTE: To order a Ride Height Gauge, contact the Hendrickson customer service department at 866.RIDEAIR (743.3247) and specify:

- A-23442 Ride Height Gauge for conventional top-mount suspensions
- A-23445 Ride Height Gauge for low-ride suspensions.

II. USING A TAPE MEASURE

1. **Measure** the distance from the top of the axle to the mounting surface of the suspension (Figure 3).
2. **Add** half of the axle diameter to this measurement to determine your suspension's ride height.

For example: on 5-inch axles, add 2½ (2.5) inches to the measured distance, and on LDAT™ Large Diameter Axle, add 2⅞ (2.88) inches to the measured distance.

3. **Compare** this measured ride height with the listing in the appropriate table (see page 4 through page 6).

NOTE: While we recommend that our suspensions operate at their designed ride height, they can be satisfactorily operated within the range listed in the table applicable to your suspension model or type.

If the measured ride height does not fall within the range listed in the table, the suspension's ride height must be adjusted. Refer to Hendrickson publication *L459 Checking Trailer Ride Height*, for complete ride height adjustment instructions.

If your suspension model number is not listed in the tables, contact the Hendrickson technical service department in the United States and Canada at 866.RIDEAIR (743.3247) for ride height range information.

DESIGNED RIDE HEIGHT AND SURELOK®

SURELOK® is a ride height locking device that uses mechanical support arms to maintain the trailer's height for efficient trailer loading. When engaged, the mechanical support arms help limit trailer "drop" and "walk" during the loading/unloading process.

NOTE: Refer to Hendrickson publications L816, DOCK SOLUTIONS or T15001, TRAILER AIR SUSPENSIONS CONCEPT AND FUNCTIONS for a complete description of trailer drop and walk.

If a suspension is equipped with SURELOK, it should be operated as close as possible to its designed ride height. Suspension ride height is the primary consideration for optimal SURELOK performance (not the amount of clearance between the SURELOK support arms and the suspension beam). When the suspension is operated at its designed ride height, the SURELOK support arms will have the proper clearance from the suspension beams.

Any increase above the specified maximum ride height can reduce the effectiveness of SURELOK to limit trailer drop and/or walk. See Figure 4. Conversely, any ride height set below the specified minimum ride height value will prevent the SURELOK support arms from properly engaging. See Figure 5.

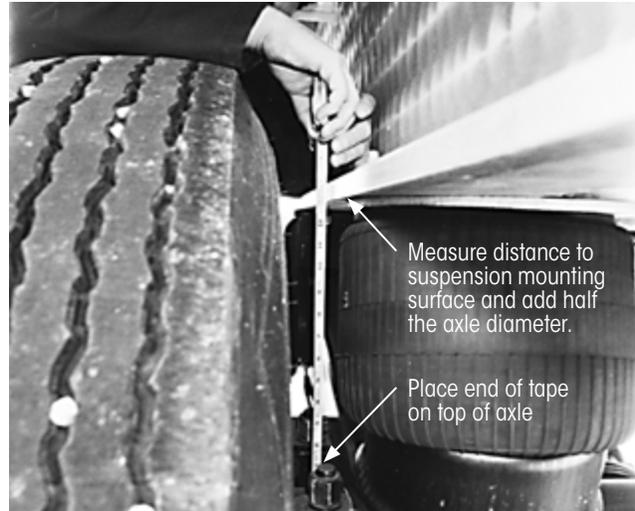


Figure 3: Measuring ride height using tape measure

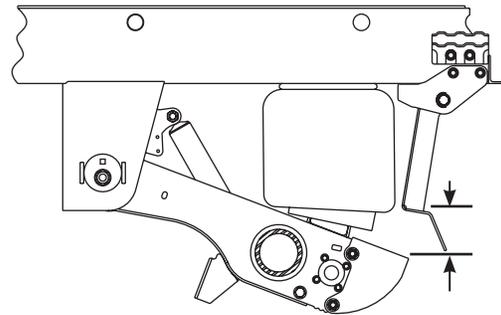


Figure 4: Ride height set too high

- A. If ride height is set **above the specified maximum** value (Figure 4), the trailer has the potential to exhibit excessive "walk" and/or drop before the SURELOK support arms can contact the beam and maintain trailer height.

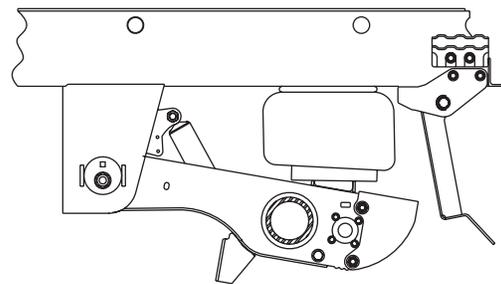


Figure 5: Ride height set too low

- B. If ride height is set **below the specified minimum** value (Figure 5), the SURELOK support arms (shown in retracted position) cannot contact and properly engage the beam.



INTRAAX® AAT 23K, AAT 25K & AAT 30K LARGE DIAMETER AXLE RIDE HEIGHT SETTINGS*

SUSPENSION TRAVEL	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
STANDARD	13.5"	13.25"	15.75"
	14"	13.25"	15.75"
	15"	14.25"	15.75"
	16"	15.25"	17.75"
	17"	16.25"	17.75"
	18"	17.25"	19.75"
	19"	18.25"	19.75"
HIGH CONTROL	13.5"	13.5"	16"
	14"	13.5"	16"
	15"	14.5"	16"
	16"	15.5"	18.5"
	17"	16.5"	18.5"
LIMITED REBOUND	14"	13.25"	14.5"
	16"	15.25"	16.5"
	18"	17.25"	18.5"
LIMITED JOUNCE	14"	14"	15.75"
	15"	15"	15.75"
	16"	16"	17.75"
	17"	17"	17.75"
ZMD® Standard ¹	14"	13.5"	14.5"
	15"	14.5"	15.5"
	16"	15.5"	16.5"
	17"	16.5"	17.5"
	18"	17.5"	18.5"
	19"	18.5"	19.5"
ZMD® Limited Rebound ^{1,2}	14"	13.5"	14.5"
	16"	15.5"	16.5"

¹ Option available for AAT 23K & 25K models only. 18" & 19" not available for 23K models.
² Option available for RCA Raised Center Axle only.

* If any of these suspensions are equipped with SURELOK®, they should be operated as close as possible to the designed ride height. Refer to the section titled **DESIGNED RIDE HEIGHT AND SURELOK®** on page 2 for details on how an improper ride height can reduce the effectiveness of SURELOK to limit trailer drop and/or walk, or prevent the SURELOK support arms from properly engaging.



INTRAAX® AANT 23K, AAZNT 23K, AAZNT 46K & AAZNT 69K RIDE HEIGHT SETTINGS*

SUSPENSION TRAVEL	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
STANDARD	12"	11.75"	13"
	13.5"	13.25"	15.75"
	14"	13.25"	15.75"
	15"	14.25"	15.75"
	16"	15.25"	17.75"
	17"	16.25"	17.75"
	18" ¹	17.25"	19.75"
	19"	18.25"	19.75"
ZMD® Standard²	14"	13.5"	14.5"
	15"	14.5"	15.5"
	16"	15.5"	16.5"
	17"	16.5"	17.5"
HIGH CONTROL	13.5"	13.5"	16"
	14"	13.5"	16"
	15"	14.5"	16"
	16"	15.5"	18.5"
	17"	16.5"	18.5"
LIMITED JOUNCE	14"	13.25"	14.5"
	16"	15.25"	16.5"
LIMITED REBOUND	14"	13.25"	14.5"
	16"	15.25"	16.5"
	18"	17.25"	18.5"

¹ Ride height not available on AANT 23K models.
² Option available for AANT 23K models only.

INTRAAX® AAEDT 30K RIDE HEIGHT SETTINGS

SUSPENSION TRAVEL	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
STANDARD (FRONT SHOCKS)	14"	13.75"	15.25"
	15"	14.5"	15.75"
	16"	15.25"	17.75"
	17"	15.25"	17.75"
STANDARD (REAR SHOCKS)	14"	13.75"	14.75"
	15"	14.5"	15.5"
	16"	15.25"	17.5"
	17"	15.25"	17.5"

* If any of these suspensions are equipped with SURELOK®, they should be operated as close as possible to the designed ride height. Refer to the section titled DESIGNED RIDE HEIGHT AND SURELOK® on page 2 for details on how an improper ride height can reduce the effectiveness of SURELOK to limit trailer drop and/or walk, or prevent the SURELOK support arms from properly engaging.



INTRAAX® AAL 23K, AAL 25K, AAL 30K, AAEDL 30K, AAZL 23K & AAZL 46K RIDE HEIGHT SETTINGS

SUSPENSION TRAVEL	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
STANDARD	6.5"	6.5"	7.5"
	7.5"	6.5"	7.5"
	8"	7.25"	10"
	9"	7.25"	10"
	12"	10"	13.5"
	14"	11.25"	15"
	15"	12.75"	15"
	16"	13.5"	17"
	17"	14.25"	17"
	19"	16.5"	19"
	21"	18.5"	21"
LIMITED JOUNCE	9"	8.5"	10"
	12"	11"	13.5"
	14"	12.5"	15"
	15"	13.5"	15"
	16"	14.5"	17"
	17"	15.5"	17"
	19"	17.5"	19"
21"	19.25"	21"	

INTRAAX® AANL 23K RIDE HEIGHT SETTINGS

SUSPENSION TRAVEL	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
STANDARD	6.5"	6.5"	8"
	7.5"	6.5"	8"
	8" ¹	7.5" ¹	10" ¹
	9"	7.5"	10"
	12"	10"	13"
	14"	11.5"	15"
	15"	12.75"	15"
	16"	13.75"	17"
	17"	14.5"	17"
LIMITED JOUNCE	8"	8"	10"
	9"	8.5"	10"
	12"	11"	13.5"
	14"	12.5"	15"
	15"	13.5"	15"
	16"	14.5"	17"
	17"	15.5"	17"

RECOMMENDED RIDE HEIGHT SETTINGS



INTRAAX® AANLS 20K RIDE HEIGHT SETTINGS

SUSPENSION TRAVEL	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
STANDARD	6.25"	6.25"	8"
	7"	6.25"	8"
	9"	8"	9.5"
	12"	10.5"	12"

ULTRAA-K® UTKNT 40K RIDE HEIGHT SETTINGS*

16" Ride height - No adjustments allowed.

VANTRAAAX® HKAT 18K, HKAT 20K AND HKAT 40K RIDE HEIGHT SETTINGS*

SUSPENSION TRAVEL	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
STANDARD	14"	13.75"	15.25"
	15"	14.75"	15.25"
	16"	16"	17.25"
	16.5"	16.5"	17.25"
	17"	17"	17.25"
	18"	18"	19.25"
	19"	19"	19.25"

VANTRAAAX® HKAT 46K RIDE HEIGHT SETTINGS*

SUSPENSION TRAVEL	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
STANDARD	14"	13.75"	15.75"
	15"	14.75"	15.75"
	16"	16"	17.75"
	16.5"	16.5"	17.75"
	17"	17"	17.75"
	18"	18"	19.75"
	19"	19"	19.75"

VANTRAAAX® HKAT 25K AND HKAT 50K RIDE HEIGHT SETTINGS*

SUSPENSION TRAVEL	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
STANDARD	16"	16"	17.5"
	16.5"	16.5"	17.5"
	17"	17"	17.5"
	18"	18"	19.75"
	19"	19"	19.75"

* If any of these suspensions are equipped with SURELOK®, they should be operated as close as possible to the designed ride height. Refer to the section titled DESIGNED RIDE HEIGHT AND SURELOK® on page 2 for details on how an improper ride height can reduce the effectiveness of SURELOK to limit trailer drop and/or walk, or prevent the SURELOK support arms from properly engaging.

**VANTRAAX® HKAT 50K & 69K25 RIDE HEIGHT SETTINGS***

SUSPENSION TRAVEL	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
STANDARD	16"	16"	17.5"
	16.5"	16.5"	17.5"
	17"	17"	17.5"
	18"	18"	19.75"
	19" ¹	19"	19.75"

¹ Ride height not available on HKAT 69K25 models

VANTRAAX® HKANT & HKAT 69K23 RIDE HEIGHT SETTINGS*

SUSPENSION TRAVEL	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
STANDARD	16"	16"	17.5"
	16.5"	16.5"	17.5"
	17"	17"	17.5"
	18"	18"	19.5"

VANTRAAX® HKANT 23K AND 46K RIDE HEIGHT SETTINGS*

SUSPENSION TRAVEL	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
49" AXLE SPACING	16"	16"	18"
	17"	17"	18"
121" AXLE SPACING	16"	16"	17.25"
	17"	17"	17.25"

VANTRAAX® HKARL 46K (RAMP-READY SLIDER) & HKAL 46K RIDE HEIGHT SETTINGS

SUSPENSION TRAVEL	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
STANDARD	9"	8.5"	11.5"
	10"	9.5"	11.5"
	11"	10.5"	12"
	12"	11.5"	12"

VANTRAAX® HKANL 23K RIDE HEIGHT SETTINGS

SUSPENSION TRAVEL	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
STANDARD	16" & 17"	14"	17"

* If any of these suspensions are equipped with SURELOK®, they should be operated as close as possible to the designed ride height. Refer to the section titled DESIGNED RIDE HEIGHT AND SURELOK® on page 2 for details on how an improper ride height can reduce the effectiveness of SURELOK to limit trailer drop and/or walk, or prevent the SURELOK support arms from properly engaging.



HT™ SERIES HT190 RIDE HEIGHT SETTINGS

SUSPENSION MODEL NUMBER	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
Underslung Primary Fixed Suspensions			
HT190UB6-020	6"	6"	8.25"
HT190UB7-001	7"	7"	8.25"
HT190UB7.5-001	7.5"	7.25"	8.75"
HT190UB9-001	9"	8.75"	10.25"
HT190UB12-001	12"	11.75"	12.75"
Top Mount Primary Fixed Suspensions*			
HT190TA14-005	14"	14"	15.25"
HT190TA15-005	15"	14.75"	16.25"
HT190TA16-005	16"	16"	17"
HT190TA17-005	17"	16.75"	18.25"
HK Slider Suspensions (HT190T Suspension on K-2® Slider Box)*			
HK190T-16	16"	15.75"	16.25"
HK190T-16.5	16.5"	16.5"	16.75"
HK190T-17	17"	16.75"	17.25"
HK190T-18	18"	17.75"	18.25"
HK190T-19	19"	18.75"	19.25"
HK RAMP-READY SLIDER Suspensions (HT200U Suspension on K-2 RAMP-READY SLIDER Box)			
HTHKR200U9	9"	8.75"	10"
HTHKR200U10	10"	9.75"	11"
HTHKR200U11	11"	10.75"	12.5"
HTHKR200U12	12"	11.75"	12.5"
HT190TA Suspensions on Non-Hendrickson Slider Box*			
HT190TA14-001	14"	14"	15"
HT190TA15-001	15"	14.75"	16.25"
HT190TA16-001	16"	16"	17"
HT190TA17-001	17"	16.75"	18.25"

HK™ SERIES HK190 / HK230 RIDE HEIGHT SETTINGS*

SUSPENSION TRAVEL	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
STANDARD	16"	15.75"	16.25"
	16.5"	16.5"	16.75"
	17"	16.75"	17.25"
	18"	17.75"	18.25"
	19"	18.75"	19.25"

* If any of these suspensions are equipped with SURELOK®, they should be operated as close as possible to the designed ride height. Refer to the section titled **DESIGNED RIDE HEIGHT AND SURELOK®** on page 2 for details on how an improper ride height can reduce the effectiveness of SURELOK to limit trailer drop and/or walk, or prevent the SURELOK support arms from properly engaging.

**HT™ SERIES HT230 RIDE HEIGHT SETTINGS**

SUSPENSION MODEL NUMBER	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
Primary Fixed Suspensions*			
HT230TA14-001, -002 & -007	14"	14"	16"
HT230TA15-001, -002 & -007	15"	15"	17"
HT230TA16-001, -002 & -007	16"	16"	17.75"
HT230TA17-001, -002 & -007	17"	17"	19"
HT230TA19-001 HT230TB19-001	19"	19"	20.75"
HK Slider Suspensions (HT230 Suspension on K-2® Slider Box)*			
HK230-16	16"	15.75"	16.25"
HK230-16.5	16.5"	16.5"	16.75"
HK230-17	17"	16.75"	17.25"
HK230-18	18"	17.75"	18.25"
HK230-19	19"	18.75"	19.25"
HT230 Suspensions on Non-Hendrickson Slider Box*			
HT230TA14-004 HT230TB14-003	14"	14"	15.75"
HT230TA15-009 HT230TB15-009 HT230TB15-010	15"	15"	16.75"
HT230TA16-004 HT230TB16-003 HT230TB16-004	16"	16"	17.75"
HT230TB17-009 HT230TB17-010	17"	17"	18.75"
Liftable Suspensions			
HT230TB15-003	15"	14.25"	16"
HT230TB17-003	17"	16"	18"

HT™ SERIES HT250 RIDE HEIGHT SETTINGS

SUSPENSION MODEL NUMBER	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
Top Mount Liftable Fixed Suspensions *.1			
HT250TB12-001	12"	11.75"	14.5"
HT250TB14-001	14"	11.75"	14.5"
HT250TB15-001	15"	13"	15"
HT250TB16-001	16"	14"	16"
HT250TB17-001	17"	15"	17"
HT250TB19-001	19"	16"	19"
Underslung Primary Fixed Suspensions			
.1 The HT250T is intended for use as a liftable suspension, in combination with other HT primary fixed suspension models.			

* If any of these suspensions are equipped with SURELOK®, they should be operated as close as possible to the designed ride height. Refer to the section titled DESIGNED RIDE HEIGHT AND SURELOK® on page 2 for details on how an improper ride height can reduce the effectiveness of SURELOK to limit trailer drop and/or walk, or prevent the SURELOK support arms from properly engaging.

RECOMMENDED RIDE HEIGHT SETTINGS



HT™ SERIES HT250 RIDE HEIGHT SETTINGS

SUSPENSION MODEL NUMBER	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
HT250UB7.5-DB1	7.5"	7.0"	9.75"
HT250UB9-DB1	9"	7.0"	9.75"
Underslung Y-Beam Suspensions			
HT250YS-6.5-001	6.5"	6.25"	8.0"
HT250YS-7.5-001	7.5"	6.75"	9.0"
HT250YS-9-001	9"	7.25"	10.5"
HT250YB-7.5-DB1	7.5"	7.5"	10.0"
HT250YB-9-DB1	9"	8"	10.0"

¹ The HT250T is intended for use as a liftable suspension, in combination with other HT primary fixed suspension models.

HT™ SERIES HT250US RIDE HEIGHT SETTINGS

SUSPENSION TRAVEL	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
STANDARD	3.5"	3.5"	3.75"
	4"	4"	4"
	5.5"	5.5"	7"
	6.5"	6.5"	7"
	7.5"	7.5"	10.75"
	9"	7.5"	10.75"
	12"	10.25"	13.25"
	14"	12.25"	15.25"
STEERABLE	7.5"	7.5"	10.75"
	9"	8.25"	10.75"
	12"	10.75"	13.25"
	14"	12.25"	15.25"
LIMITED JOUNCE	3.5"	3.5"	3.5"
	6.5"	6.5"	10.75"
	7.5"	7.5"	10.75"
	9"	9"	10.75"
	12"	12"	15.25"
EXTENDED REBOUND	6.5"	6.5"	8.5"
	7.5"	7.5"	10.0"
	9"	7.5"	10.25"

**HT™ SERIES HT300T RIDE HEIGHT SETTINGS**

SUSPENSION MODEL NUMBER	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
Top Mount Primary Fixed Suspensions - Standard			
HT300TB15-001	15"	14.75"	16.25"
HT300TB17-001	17"	16.75"	18.25"
HT300TB19-001	19"	18"	19"
Top Mount Primary Fixed Suspensions - Liftable			
HT300TB17-003	17"	15.75"	17.75"
HT300T19-001	19"	18"	19"

HT™ SERIES HT300US RIDE HEIGHT SETTINGS

SUSPENSION TRAVEL	DESIGNED RIDE HEIGHT	MINIMUM RIDE HEIGHT	MAXIMUM RIDE HEIGHT
STANDARD	5.5"	5.5"	7.0"
	6.5"	6.5"	7.0"
	7.5"	7.5"	10.5"
	9"	7.75"	10.5"
	12"	10.5"	13"
	14"	12"	15"
	17"	14.5"	17.5"
LIMITED JOUNCE	6.5"	6.5"	7.0"
	7.5"	7.5"	10.5"
	9"	8.75"	10.5"
	12"	11.25"	13"
	14"	13.25"	15"
EXTENDED REBOUND	17"	15.5"	17.5"
	6.5"	6.5"	8.5"

Actual product performance may vary depending upon vehicle configuration, operation, service and other factors.

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



www.hendrickson-intl.com

TRAILER COMMERCIAL VEHICLE SYSTEMS

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