

# **APPLICATION GUIDE**

## **TRAILER SUSPENSION SYSTEMS**

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This guide provides general suspension model recommendations for specific applications, as well as necessary ride height and capacity information. The model recommendations listed are guidelines based on trailer design and usage patterns typical of the given trailer type and may not be suitable for every application. Lift axle recommendations are also provided based on suspension model, total number of axles and country of use. For additional assistance regarding specific trailers or applications, contact the Hendrickson Trailer Commercial Vehicle Systems product engineering department in the United States at 866-RIDEAIR (743-3247), in Canada at 905-789-1030 or in Mexico at +52 (81) 8288 1300.



A- SUSPENSION TYPE

HENDRICKSON PRIMARY SUSPENSION APPLICATION GUIDE

Primary (Fixed) Suspension Application Guide														
Suspension	Converter Dollies		Van Type Trailers				Frame Type Trailers							
	Single Axle*	Tandem Axle*	Van Type Frt. Van Refrig. Van	Drop Frame Van Furniture Van	Chip Van Highway Transprt	Live-stock	Platfrm Trailer Straight Frame	Platfrm Trailer Drop Frame	Curtain -side	Equip -ment Trailer Lowboy	Extend -ible Tandem Axle	Extend -ible Multi-Axle	Con -tainer Chassis	Logging Chassis
<b>Category</b>	<b>Model</b>	<b>Chart A For Highway Use, Good Paved Roads, Well Maintained Unpaved Roads</b>												
INTRAAX® Top Mount	AANT 23K	R		O		R	R	R		R		R		R
	AAT 23K													
	AAT 25K		R									R		
	AAT 30K													
	AAEDT 30K													
INTRAAX Low Mount or Lifiable	AANLS 20K			R										
	AANL 23K	O		O		O	O	O	R	O				O
	AAL 23K										O			
	AAL 25K		O							R		O		
	AAL 30K													
HT™ Top Mount	HT190T													
	HT230	O		O		O	O	O		O		O		O
	HT300		O									O		
HT Lifiable	HT250T			O		O	O		O		O	O	O	
HT Low Mount	HT190U													
	HT250US	O	O		O				O	O	R	O	O	
	HT250YS								O		R			
	HT300YB													
INTRAAX-SP (Plat. Z Rail Sliders)	AAZNT 23K							O		O		O		
	AAZL 23K								O	O		O		
	AAZNT 46/69K							R		O		R		
	AAZL 46K								O	O		O		
CONNEX™-ST Self-Steer	CXSL 25K			R		R	R	R		R		R	R	
<b>Category</b>	<b>Model</b>	<b>Chart B For Switchback, Washboard, Rough and Poorly Maintained Roads; Areas with Underdeveloped Infrastructure</b>												
INTRAAX Top Mount	AAT 25K	R	R	O			R	R		R		R	R	R
	AAT 30K													
	AAEDT 30K					R								R
INTRAAX Low Mount or Lifiable	AAL 25K	O	O	O	R		O	O	R	O	R			O
	AAL 30K													
	AAEDL 30K					O								O
HT Top Mount	HT300	R	R	O		R	O	O		O			O	R
HT Low Mount	HT300US				O					O	O	O		O
	HT300YB								O		R			
<b>Explanation of Chart Use and Legend</b>														
R	These are the most commonly recommended suspension for this trailer type, however, this may not be correct for all applications: <ul style="list-style-type: none"> <li>• Lesser capacity suspensions are not recommended</li> <li>• Higher capacity suspensions in the category can freely be used and should be used as suspension demands are increased.</li> </ul>													
O	*O* is an optional suspension for each suspension category type.													
	These suspensions are not intended for use in this application.													

See footnotes at top of page 4



HENDRICKSON PRIMARY SUSPENSION APPLICATION GUIDE (CONTINUED)

Primary (Fixed) Suspension Application Guide														
Suspension	Open Top Trailers							Shell Type Trailers <sup>2</sup>						Skeleton Type Trailers
	Chip Van Logging Use	Transfer Trailer Tilt or Walking Floor	Belt Unload Rear Discharge	Grain Trailer Hopper Style Highway Use	Grain Trailer Hopper Style Farm Use	Dump Trailer <sup>1</sup> (Rear and Side Discharge)	Dump Trailer <sup>1</sup> (Bottom Discharge)	Bulk Hopper Tandem Axle	Bulk Hopper 3+ axles and/or B-Train	Tanker Tandem Axle	Crude Oil Tanker	Pup Trailer with single lunette eye	Tanker 3+ axles and/or B-Train and/or "High C.G."	Auto Hauler
Category Model		<b>Chart A For Highway Use, Good Paved Roads, Well Maintained Unpaved Roads</b>												
INTRAAAX <sup>®</sup> Top Mount	AANT 23K			R	R			R	R		R			
	AAT 23K													
	AAT 25K		R			R	R			R		R	R	R
	AAT 30K													
	AAEDT 30K													
INTRAAAX Low Mount or Liftable	AANLS 20K													R
	AANL 23K			O	O			O	O		O			
	AAL 23K													
	AAL 25K		O			O	O			O		O		
	AAL 30K													
	AAEDL 30K													
HT <sup>™</sup> Top Mount	HT190T													
	HT230			O	O			O						
	HT300		O			O	O		O	O	O	O	O	
HT Liftable	HT250T		O	O			O							
HT Low Mount	HT190U													O
	HT250US			O	O	O		O						
	HT250YS													
	HT300YB													
	HT300US								O	O	O	O	O	
INTRAAAX-SP (Flat, Z Rail Sliders)	AAZNT 23K													
	AAZL 23K													
	AAZNT 46K													
	AAZL 46K													
CONNEX <sup>™</sup> -ST Self-Steer	CXSL 25K			R	R			R			R			
Category Model		<b>Chart B For Switchback, Washboard, Rough and Poorly Maintained Roads; Areas with Underdeveloped Infrastructure</b>												
INTRAAAX Top Mount	AAT 25K		R	R			R		R	R				
	AAT 30K													
	AAEDT 30K	R					R			R	R	R	R	R
INTRAAAX Low Mount or Liftable	AAL 25K		O	O			O		O	O				R
	AAL 30K													
	AAEDL 30K	O					O		O	O	O	O	O	
HT Top Mount	HT300	R	O	O			O	O		O	O	O	O	
HT Low Mount	HT300US	O						O		O	O	O	O	O
	HT300YB													
<b>Explanation of Chart Use and Legend</b>														
R	These are the most commonly recommended suspension for this trailer type, however, this may not be correct for all applications: <ul style="list-style-type: none"> <li>• Lesser capacity suspensions are not recommended</li> <li>• Higher capacity suspensions in the category can freely be used and should be used as suspension demands are increased.</li> </ul>													
O	*O* is an optional suspension for each suspension category type.													
	These suspensions are not intended for use in this application.													

See footnotes at top of page 4



## GENERAL NOTES (PRIMARY SUSPENSIONS)

Important application information (Footnotes for chart on pages 2-3):

1. Use of a suspension air exhaust (dump) valve is required for dump trailer applications.
2. Cap style bushing tube spacers are required for logging and tanker applications using AAT and AAL suspensions.
3. For severe operation conditions, the use of a higher capacity suspension is recommended.
4. High Control versions of suspension models are recommended for dollies, single axle pups and single axle/multi-trailer applications.

Contact Hendrickson application engineering for:

- Suspensions used more than three per group
- Special applications/applications not shown
- INTRAAX® AAL and AAEDL in applications where axle loads may exceed the rated capacity such as rear position on end dumps (Do Not Use)
- Review of INTRAAX AANT and AANL applications
- Trailer applications unique to local markets and/or markets outside the USA, Canada and Mexico
- Use of HT™ Series suspensions for liftable/steerable applications
- Oil/Gas Field applications

Application information needed for suspension recommendations:

- Trailer type
- Area of operation
- Load per suspension
- Road conditions
- Duty cycle (24/7 or 8/5)
- Number of suspensions per trailer
- Ride height (bottom of frame to axle center)
- Number of lift axles, position on trailer and when they are lifted
- Wheel and tire sizes
- 5. The 46K is recommended for applications with higher continuous loading or use on unimproved road surfaces.

## HENDRICKSON AIR SLIDER SUSPENSION SYSTEMS APPLICATION GUIDE

Air Slider Suspension Systems Application Guide														
Category	Model	Pup Trailers		Dry Freight				Reefer				Miscellaneous <sup>8</sup>		
		Single Axle	Tandem Axle	Single Axle	Tandem Axle 49"	Tandem Axle 102"	Tridem Axle 49", 60" & 72"	Single Axle	Tandem Axle 49"	Tandem Axle 102"	Tridem Axle 49", 60" & 72"	Liftable <sup>10</sup>	Drop Frame Tandem	Ramp Storage Tandem
VANTRAAX® Top Mount Narrow Pivot	HKANT 23K	R		R				R						
	HKANT 40K		R		R				R					
	HKANT 46K <sup>5</sup>		O		O	R			O	R				
VANTRAAX Top Mount Wide Pivot	HKAT 50K <sup>6</sup>		O		O				O					
	HKANT 69K23						R				R			
	HKAT 69K25						O <sup>9</sup>				O <sup>9</sup>			
VANTRAAX Low Mount or Liftable	HKANL 23K <sup>7</sup>											R		
	HKAL 46K												R	
	HKARL 46K													R
ULTRA-K® Top Mount Narrow Pivot	UTKNT 40K		R		R				R					
R	These are the most commonly recommended suspension for this trailer type, however, this may not be correct for all applications: • Lesser capacity suspensions are not recommended. • Higher capacity suspensions can freely be used and should be used as suspension demands are increased.													
O	Optional suspension for each suspension category type.													

6. The 50K is required for trailers domiciled in Mexico.
7. The trailer must be designed to allow for sufficient clearance above the tire for liftable applications.
8. Contact Hendrickson for recommendations for applications not shown.
9. 49" spacing not available.
10. All VANTRAAX sliders can be used with an axle lift kit for minimal tire ground clearance. Contact Hendrickson for more information.
11. Capacity of primary suspension system: axle, brakes, wheels and tires rated separately.

**B– AVAILABLE RIDE HEIGHTS****INTRAAX® PRIMARY SUSPENSION SYSTEMS**

Model	Suspension Capacity <sup>11</sup>	Axle Rating <sup>12</sup>	Ride Height <sup>13,16</sup>
	pounds	pounds	inches
<b>AANLS 20K</b>	20,000	20,000	6.25 - 12
<b>AANT 23K</b>	23,000	23,000	12 - 19
<b>AANL 23K</b>			6.5 - 17
<b>AAT 23K</b>			13.5 - 19
<b>AAL 23K</b>			6.5 - 19
<b>AAT 25K</b>			25,000
<b>AAL 25K</b>	6.5 - 19		
<b>AAT 30K</b>	30,000	25,000	13.5 - 19
<b>AAL 30K</b>			9 - 19
<b>AAEDT 30K</b>	30,000	30,000	14 - 17
<b>AAEDL 30K</b>			9 - 19

**HT™ SERIES PRIMARY SUSPENSIONS**

Model	Suspension Capacity <sup>14</sup>	Ride Height <sup>13,16</sup>
	pounds	inches
<b>HT190T</b>	20,000	14 - 17
<b>HT190U</b>		6 - 12
<b>HT230T</b>	23,000	14 - 19
<b>HT250T<sup>15</sup></b>	23,000	12 - 19
<b>HT250US</b>	25,000	3.5 - 14
<b>HT250YS</b>		6.5 - 9
<b>HT300T</b>	30,000	15 - 23
<b>HT300US</b>		5.5 - 17
<b>HT300YB</b>		6.5 - 9

**CONNEX™-ST SELF-STEER SUSPENSIONS**

Model	Suspension Capacity <sup>11</sup>	Axle Rating <sup>12</sup>	Ride Height <sup>13,16</sup>
	pounds	pounds	inches
<b>CXSL 25K</b>	25,000	25,000	14 - 19

- <sup>12</sup>. Axle structure rating only; suspension, brakes, wheels and tires rated separately. For Raised-Center Axle (RCA) option, the axle is rated only for 23,000 pounds.
- <sup>13</sup>. Suspension ride heights must be set within Hendrickson specifications in order to ensure proper suspension performance. Failure to maintain proper ride height settings can lead to suspension, axle or trailer damage. Varying ride heights between suspensions may impact equalization.
- <sup>14</sup>. Capacity of primary suspension only, axle not included.
- <sup>15</sup>. The HT250T is intended for use as a liftable suspension, in combination with other HT primary air suspension models. It may also be used in place of an HT230T when the application calls for high travel or lower ride height.
- <sup>16</sup>. Due to the wide variety of suspension frame bracket options, there may be some ride heights that are not supported by certain frame bracket options. Please contact Hendrickson application engineering if considering other frame bracket options outside your current usage.
- <sup>17</sup>. Capacity of slider suspension system includes slider box, suspensions and axles. Brakes, wheels and tires rated separately.



**INTRAAAX®-SP PLATFORM SLIDER SUSPENSION SYSTEMS**

Model	Slider Capacity <sup>17</sup>	Number of Axles	Axle Spacing	I-beam Centers	Ride Height <sup>13</sup>
	pounds		inches	inches	inches
<b>AAZNT 23K</b>	23,000	1	N/A	37 38 43 44	13.5 - 17
<b>AAZNT 46K</b>	46,000	2	49, 60, 72		
<b>AAZL 23K</b>	23,000	1	N/A		6.5 - 12
<b>AAZL 46K</b>	46,000	2	49, 60, 72		
<b>AAZNT 69K23</b>	69,000	3	60, 72		13.5 - 17

**VANTRAAX® SLIDER SUSPENSION SYSTEMS**

Model	Slider Capacity <sup>17</sup>	Number of Axles	Axle Spacing	Box Width	Ride Height <sup>13,18</sup>
	pounds		inches	inches	inches
<b>HKANT 23K</b>	23,000	1	N/A	42	16 - 17
<b>HKANL 23K</b>	23,000	1	N/A	48 54	
<b>UTKNT 40K</b>	40,000	2	49	48	16
<b>HKANT 40K</b>	40,000	2	49	42	16 - 17
<b>HKANT 46K</b>	46,000	2	49	48 54	
<b>HKANT 46K Widespread</b>	46,000	2	121	48 54	
<b>HKAL Low Mount</b>	46,000	2	49	42 48	10 - 11
<b>HKARL 46K Ramp-ready</b>	46,000	2	49	48	9 - 12
<b>HKAT 50K</b>	50,000	2	49	42 48	16 - 19
<b>HKANT 69K23<sup>19</sup></b>	69,000	3	49 60 72	42 48 54	16 - 18
<b>HKAT 69K25<sup>19</sup></b>	69,000	3	60 72		

**ULTRAA-K® SLIDER SUSPENSION SYSTEMS**

Model	Slider Capacity <sup>17</sup>	Number of Axles	Axle Spacing	Box Width	Ride Height <sup>13,18</sup>
	pounds		inches	inches	inches
<b>UTKNT 40K</b>	40,000	2	49	48	16

<sup>18.</sup> To calculate total system height for HKANT, HKAT and ULTRAA-K sliders, add the suspension ride height and 8.5 in. for the slider box. For HKARL ramp-ready sliders, add the suspension ride height and 14 in. for the slider box.

<sup>19.</sup> For tri-axle sliders, the first value indicates slider box capacity, the second value indicates axle capacity. The higher capacity is intended for higher duty cycle applications. The maximum slider capacity should not be exceeded.



Call Hendrickson at **330.489.0045** or **866.RIDEAIR (743.3247)** for additional information.



[www.hendrickson-intl.com](http://www.hendrickson-intl.com)

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