Making the Right *Lift Axle* Choice

Lift axles help fleet managers and owner/operators comply with state and federal regulations designed to protect roads and bridges. The maze of requirements and proliferation of products on the market can be perplexing.

Hendrickson presents a comprehensive guide to help determine the lift axle requirements in the states you serve and how to choose the right equipment.

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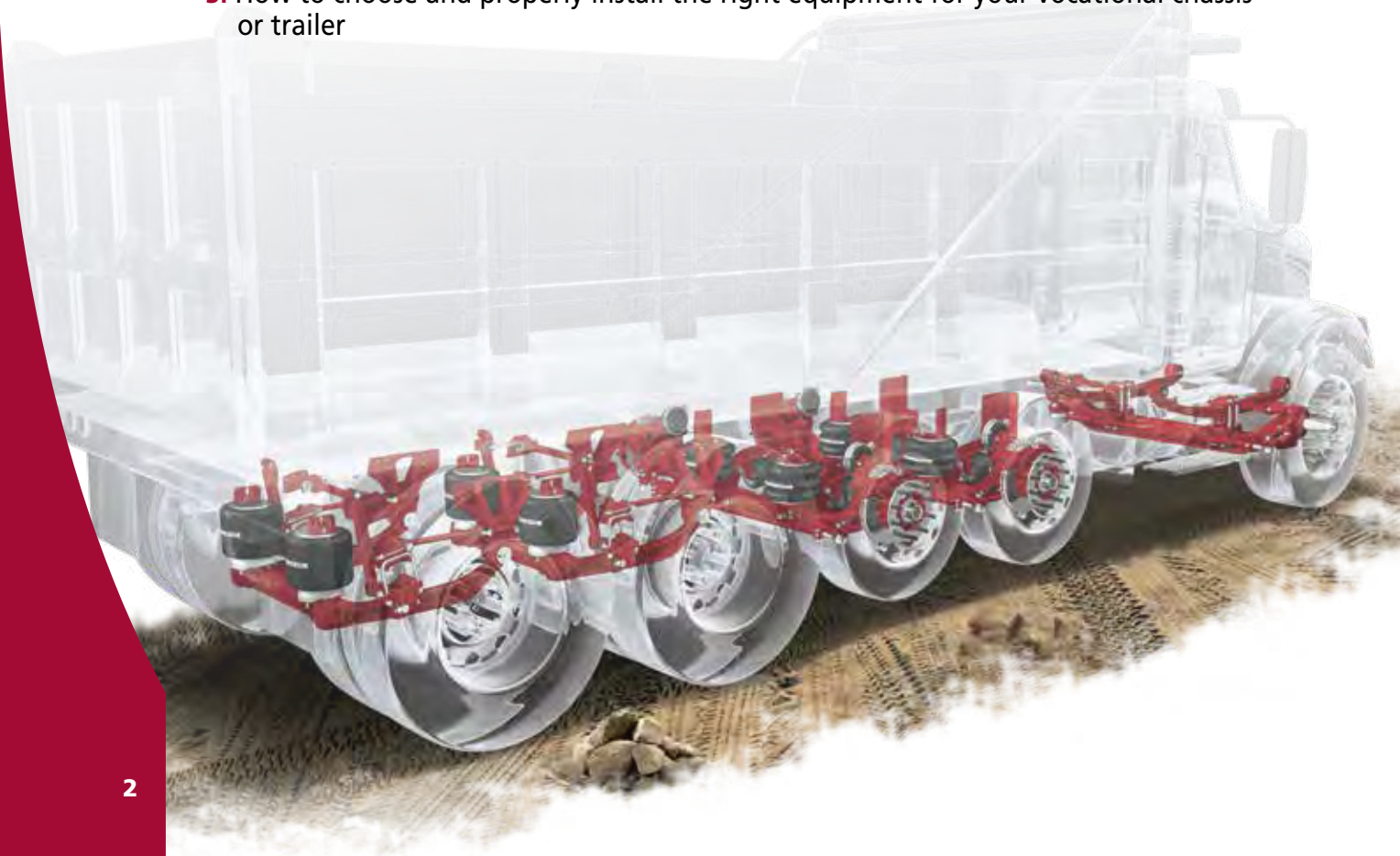
Lift axles are non-powered axles that can be lifted clear of the road surface or lowered to help carry the load on a straight truck or tractor-trailer. Also known as "auxiliary" or "retractable" axles, these systems came into vogue with the advent of specialized hauling vehicles such as dump trucks, waste haulers and concrete mixers. When engaged, their purpose is two-fold: (1) to help the equipped vehicle meet state and federal hauling standards and (2) to help ensure that no single axle or axle tandem bears too much weight.

One might wonder why any regulator would care how a fleet manager or owner/operator chooses to distribute their load, so long as it doesn't exceed the maximum allowable weight. The concern lies with building and maintaining roads and bridges. To this end, regulators have enacted rules to help prevent spikes of excess weight from damaging or unduly stressing America's infrastructure.

Authorities in 49 U.S. states (excluding Alaska) follow federal Bridge Law regulations to enforce compliance by drivers using the Interstate Highway System, and many apply the same rules to state and local roads. Complicating matters even more, many states have also created their own standards, which may be stricter than the federal regulations. There are several types of lift axles and controls on the market — each with particular installation and operation requirements.

With these factors in mind, let's take a closer look at:

1. How lift axles work
2. How they figure into gross volume and weight-distribution standards (i.e. when and where lift axles are needed)
3. How to choose and properly install the right equipment for your vocational chassis or trailer



General Lift Axle Knowledge

A lift axle uses airbags or a combination of airbags and springs to lift and lower a set of wheels positioned under a straight truck, trailer, or less commonly, a tractor. Lift axle controls are typically electronic switches or air valves which may be installed inside or outside the cab.

Some lift axles use two sets of airbags; when the system is engaged to the lowered position, the large set of load bearing airbags inflates while the smaller set deflates. When the system is disengaged to the raised position, the smaller set inflates, while the larger set deflates. Other lift axles use a combination of airbags and springs; the springs hold the wheels up and the load-bearing airbags inflate to force them down.

General lift axle categories include the pusher, tag or bridge axle styles. Pusher axles are installed forward of the rear tandem axles on a trailer, straight truck or tractor. Tags and/or bridge axles are positioned behind the rear tandem axles, extending the truck or tractor's wheelbase.

Air systems are added to the vehicle chassis to control the lifting and lowering of the lift axle. Air tanks or reservoirs supply the air pressure through specific control valves – it is recommended to have a separate tank for each lift axle, in order to have enough air supply in case of any emergency braking requirement.

The bridge axle type of lift axle, also known as booster or high lift, is most often seen on concrete mixers and dump trucks. These systems typically use a hinged, dual-swing-arm apparatus to raise and lower the axle. When engaged, the axle is positioned behind the back bumper, typically at distances of 10 to 15 feet. When disengaged, the axle swings up and over the rear-end of the truck, where it can't interfere with unloading.

Hendrickson LC Air Kits

The new Hendrickson LC Air Kit offers enhanced efficiency by increasing the speed of raising and lowering the lift axle. This is critical to lift axle productivity, durability and service life. A faster lift time can assist the driver with conducting a vehicle maneuver more quickly while helping to avoid the possibility of "scrubbing" the tires or damaging other lift axle components.

A faster deploy time means the loads on the drive and front axles can be quickly re-established at their respective levels. This can help reduce damage to the axles and maintain proper braking performance.

OWNER'S MANUAL

LC Auxiliary Lift Axle Control Kits

SUBJECT: Installation and Operation Procedures
LIT NO: OM-H817
DATE: May 2020 **REVISION:** B

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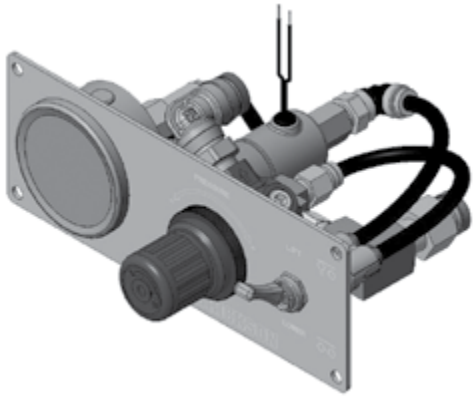

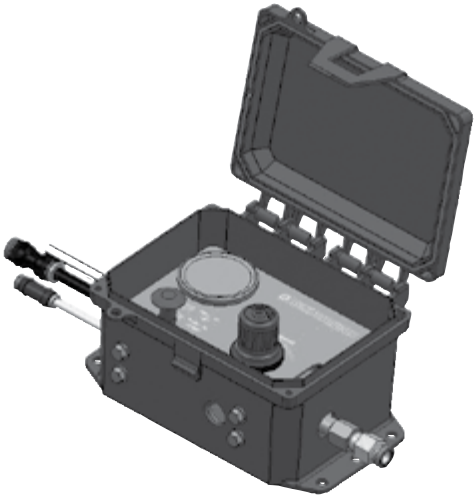

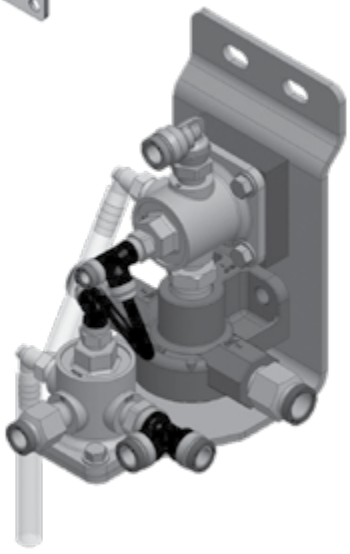

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Steerable vs. Non-Steerable Lift Axles

Pusher and tag style lift axles may be available in steerable or non-steerable configurations. Most steerable systems are intended to turn only when a truck is moving forward, and must be lifted or have their wheel ends locked in place before moving in reverse.

Today, some steerable lift axle designs are equipped with optional reverse operating features. Such features are intended for applications in which the operator prefers to leave the lift axle down while backing up. One type of reverse operating feature is a lock straight system, which helps prevent the wheels on a steerable lift axle from cocking in either direction while the vehicle is backing up. These systems can contribute to tire scrub in extreme sharp turns in reverse. Nonetheless, lock straight systems are quite popular and are often found on tag-style lift axles since the rear axle becomes the lead axle while backing up. Alternatively, non-steerable lift axles have become more popular in tag positions to help eliminate possible wheel end cocking issue.

Steerable lift axle demand has grown and accounts for about 75 percent of lift axles currently used in North America. Regulations in many west coast states and provinces require the use of steerable lift axles over non-steerables under certain conditions. For example, in Ontario, Canada, steerable lift axles are required mainly in capacities up to 20,000-pounds as part of the Safe, Productive, Infrastructure-Friendly (SPIF) Vehicles regulations. There are similar steerable lift axle capacity regulations in New York and other states.

Although steerable lift axles are typically more expensive than non-steerable units, given the choice, many operators have found that the benefits of reduced tire scrubbing and tire wear are worth the added cost.

To minimize premature tire wear or possible damage to lift axle components, a non-steerable or "rigid" lift axle may be raised to the "up" position prior to navigating to a 90-degree or tighter curve or turn. Remember to comply with all federal, state/provincial and/or local weight, dimension and configuration regulations under loaded and unloaded conditions. Regardless, non-steerable lift axles are the choice for some owner/ operators and for certain heavy-duty vocational applications. They still serve the main purpose of a lift axle, to carry the load when required and to be stowed when it is not.

When installed behind the drive axles, non-steerable units typically provide enhanced lateral stiffness compared to steerable models. In such configurations, the lift axle should be mounted at a proper distance from the primary rear drive axles to help ensure proper operation and performance.

Know Your Lift Axles

LIFT AXLE TYPE

Pusher: Pushers are positioned ahead of the rear tandem axles on a straight truck, roll-off, tractor or trailer to redistribute or help carry the load.

Tags: Tags are installed behind the rear tandem axles. They help redistribute weight and extend a truck's wheelbase, referred to as the "outer bridge" in Formula B in the U.S. Federal Bridge Formula (also known as Bridge Formula B and described on the next page).

Bridge Axles: Bridge axles, also known as "boosters," swing up from the road surface to stow over the back end of the rig and "high lifts" in the tag position.

STEERABLE VS. NON-STEERABLE

Steerable: The wheels on a steerable lift axle turn with the vehicle, allowing the axle to remain engaged through turns and improving the turning radius when installed in the tag position.

Non-Steerable: The wheels on a non-steerable lift axle remain locked or rigid in the straight position and must be disengaged when turning sharply to help reduce tire wear or vehicle and road surface damage.

State Data – Bridge Formula

Lift axles need to be properly installed and operated to satisfy applicable national, state, provincial and local regulations pertaining to permissible vehicle loads, the number of axles, the distances between axles, and the wheelbase they create.

EXAMPLE CALCULATION

At the federal level in the U.S., such requirements are partially addressed by the Federal Bridge Formula (also known as Bridge Formula B) that was enacted in 1975 through federal regulations. The formula may appear a bit complicated at first glance but requires only basic math skills to complete. Please note that this weight allowance of 80,000 "W" as listed below was authorized many years ago and times and calculator/regulations have changed. Please refer to the important more current State data highlighted below.

The U.S. Federal Highway Administration's website has an online Bridge Formula Weights Calculator available at: http://ops.fhwa.dot.gov/freight/sw/brdgcalc/calc_page.htm

Bridge Formula

$$W = 500 \left[\frac{LN}{N-1} + 12N + 36 \right]$$

"W" refers to the maximum weight (in pounds) that can be carried on a group of two or more axles to the nearest 500 pounds.

"L" is the length (distance in feet) between the outer axles of any two or more consecutive axles.

"N" is the number of axles considered.

Example Calculation

$$80{,}000 = 500 \left[\frac{51 \times 5}{5-1} + 12(5) + 36 \right]$$

W = 80,000 pounds
L = 51 feet
N = 5 axles

The U.S. federal gross weight limit for interstate highways is 80,000 total pounds. The Bridge Formula may dictate a lower gross weight limit, depending on the axle configuration:

- A single axle could be one axle or multiple axles whose centers are not more than 40 inches apart. The weight limit on a single axle is up to 20,000 pounds.
- A tandem axle refers specifically to two or more axles that are more than 40 inches apart but less than 96 inches apart. The weight limit on a tandem axle is up to 34,000 pounds.
- Two axles that are more than 96 inches apart can carry up to 38,000 pounds; three axles with more than 96 inches between the centers of the outermost pair can carry up to 42,000 pounds.

All these numbers lead to a series of values – a handy chart that provides a maximum load based on the distance in feet between a truck's outermost axles referred to as the "outer bridge" and the total number of axles.

Here, the utility of lift axles becomes crystal clear. Extending the outer bridge with a tag lift axle or increasing the number of axles with a lift axle of any type can add hundreds, thousands or tens of thousands of pounds to a truck's maximum allowable load. Moreover, a properly placed lift axle can help prevent a single or tandem axle from exceeding its individual weight limit, making it easier for carriers to stay in compliance with the road and bridge regulations.

For more current up-to-date documentation from the Government that explains State Bridge exceptions please refer to the following Link - regarding "Questions and Answers About Vehicle Size and Weight". For example: As long as you meet the Table B requirements - No state (since 1982) can reduce the 80K on the interstate highway system.
https://ops.fhwa.dot.gov/freight/sw/faqs/qa.cfm?category=9#SO-100

23 CFR 658.17 Weight Distribution

What is the minimum/maximum gross weight limit that States must enforce on the Interstate System?
It is 80,000 pounds, unless a lower weight is derived from the bridge formula, or a higher weight is grandfathered.

May States set weight limits on the Interstate System at less than the Federal maximum weight limits?
No. When Interstate System weight limits were raised to the current levels in 1974 (20,000 pounds single axle, 34,000 pounds tandem axle, 80,000 pounds overall gross weight limits, plus bridge formula limits), States were not required to raise their limits accordingly, although most did. However, six contiguous States in the Mississippi Valley, referred to as the "barrier States," did not and effectively limited the weight for all vehicles moving across them to their own limits. This was changed in 1982 when Congress established Interstate System weight limits as minimums as well as maximums.

Are grandfathered weights minimums?
No. States may lower grandfathered weights (but not below Federal minimum weight limits) and raise them to the grandfathered maximum at a later date if they wish.

What is the definition of a single axle?
It is one or more axles not more than 40 inches apart. If two axles are less than 40 inches apart, they are considered to be a single axle.

What is the minimum/maximum single axle weight limit that States must enforce on the Interstate System?
It is 20,000 pounds or a higher grandfathered weight.

What is the definition of a tandem axle?
It is two or more consecutive axles over 40 inches but not over 96 inches apart. If there were 3 axles within that distance, they would be considered a tandem axle for the purpose of Interstate weight limits.

What is the minimum/maximum tandem axle weight limit that States must enforce on the Interstate System?
It is 34,000 pounds or a higher grandfathered weight.

What is the bridge formula?
It is a mathematical formula designed to protect bridges by establishing a maximum weight for all groups of two or more consecutive axles on a vehicle.

Are weights derived from the bridge formula minimums as well as maximums?
Yes.

For more detailed assistance on State Regs, Vehicle size and Weights, Please contact the Z-factor Consultation.

Additional Benefits

Lift axles help fleet managers and owner/operators comply with the rules of the road, but they also bring several additional benefits:

Reduced tire wear: Lift axles can be disengaged after the vehicle is unloaded, helping to keep tires in service longer.

Increased fuel economy: When the load allows, lift axles can be disengaged to help reduce drag, optimize the load share of the fixed axles, and improve braking response.

Increased payload: Properly configured, lift axles can effectively increase a vehicle's gross vehicle weight rating without violating federal guidelines.

Improved vehicle maneuverability: Lift axles that extend the vehicle's wheelbase can improve the vehicle's turning radius or wheel cut.

Important Note

As on our COMPOSILITE® EX platform, Hendrickson strives to provide enhanced suspension performance and features that include:

- Lower vehicle life cycle costs
  - Zero-torsion rubber bushing design
- Improved durability
  - Inset lower beams to provide greater lateral stiffness
- Adaptable products that will work in a multitude of applications
- Bolt-on axle seats for an easy, fast, and less expensive way to adjust the ride height to accommodate various frame specs or tire sizes.
- Instant information can be accessed through the PARTS Plus lookup tool on Hendrickson's website to provide the mechanic or end-user with fast, accessible component data.

STEP 1

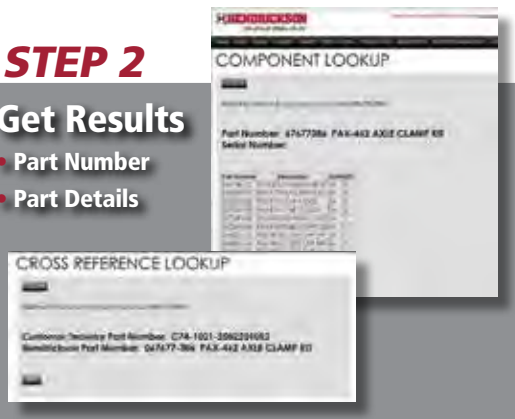
Configure Your Lift Axle Suspension

Configure your Lift Axle Suspension to your specifications with a few simple drop down menu picks.

STEP 2

Get Results

- **Part Number**
- **Part Details**

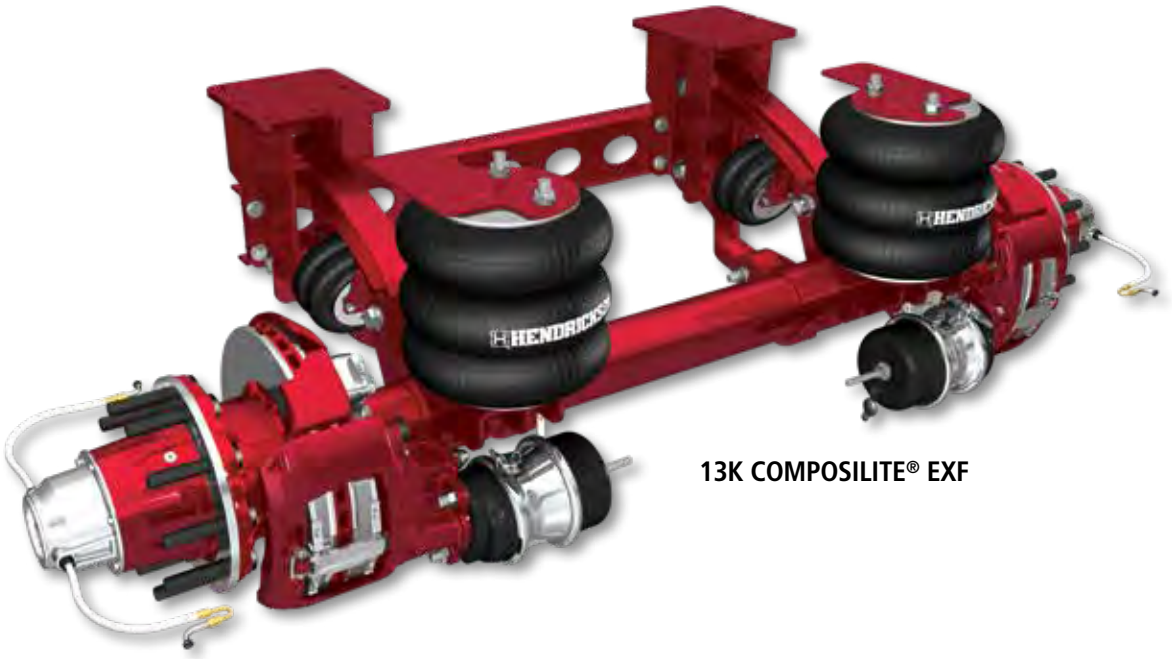


Results will give you a part number and details about your Lift Axle Suspension.

- For trailer applications on the new COMPOSILITE EXF (non-steerable) or EXS (steerable) models – there are now extensive wheel-end options for your desired axle requirements

EXF – Trailer Wheel-End Options

COMPOSILITE® EXF trailer lift axles now have blended wheel-end options similar to those available on our INTRAAX® family of lift axle suspensions. With N- or P-Spindles, you can now have the equivalent TIREMAAX® tire pressure control system, Hendrickson MAXX22T™ air disc brake and HXL packages across all trailer positions.



13K COMPOSILITE® EXF

Wheel-End Options for Drum Brake Options

Spindle / Hub Material	TIREMAAX®	HXL3® / HXL5® Wheel-Ends	[H] Standard Wheel-End
N-Spindle / DI Single Wheels Dished In	**Yes** 13,500 lbs. Axle Rating	**Yes** 13,500 lbs. Axle Rating	**Yes** 13,500 lbs. Axle Rating
P-Spindle / DI Single Wheels Dished Out	**Yes** 13,200 lbs. Axle Rating	**Yes** 13,200 lbs. Axle Rating	**Yes** 13,200 lbs. Axle Rating
FF-Spindle / DI or AL Single Wheels Dished In	**Not Available**	**Not Available**	**Yes** 13,500 lbs. Axle Rating

Wheel-End Options for Disc Brake – Hendrickson MAXX22T™

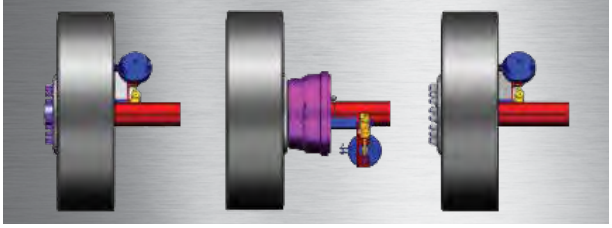
Spindle / Hub Material	TIREMAAX®	HXL3® / HXL5® Wheel-Ends	[H] Standard Wheel-End
P-Spindle / DI Single Wheels Dished Out	**Yes** 12,200 lbs. Axle Rating	**Yes** 12,200 lbs. Axle Rating	**Yes** 12,200 lbs. Axle Rating

Wheel-End Options for Disc Brake Options – Bendix ADB22X

Spindle / Hub Material	TIREMAAX®	HXL3® / HXL5® Wheel-Ends	[H] Standard Wheel-End
P-Spindle / DI Single Wheels Dished Out	**Yes** 11,000 lbs. Axle Rating	**Yes** 11,000 lbs. Axle Rating	**Yes** 11,000 lbs. Axle Rating
FF-Spindle / DI or AL Single Wheels Dished In	**Not Available**	**Not Available**	**Yes** 13,500 lbs. Axle Rating

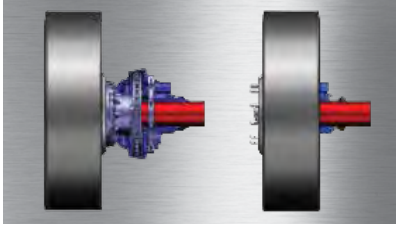
DRUM BRAKE OPTIONS

N-SPINDLE WITH DISHED IN WHEELS | P-SPINDLE WITH DISHED OUT WHEELS | FF-SPINDLE WITH DISHED IN WHEELS



DISC BRAKE OPTIONS

P-SPINDLE WITH DISHED OUT WHEELS | FF-SPINDLE WITH DISHED IN WHEELS



EXS – Trailer Wheel-End Options

The COMPOSILITE® EXS trailer lift axles now have blended wheel-end options similar those available on our IN-TRAAX® family of lift axle suspensions. With N- or P-Spindles, you can now have the equivalent TIREMAAX® tire pressure control system and HXL packages across all trailer positions.

13K COMPOSILITE® EXS

20K COMPOSILITE® EXS

Wheel-End Options for 13K Drum Brakes			
Spindle / Hub Material	**TIREMAAX®**	**HXL3® / HXL5® Wheel-Ends**	**[H] Standard Wheel-End**
N-Spindle / DI Single Wheels Dished In	**Yes**	**Yes**	**Yes**
FF-Spindle / DI, ADI or AL Single Wheels Dished In	**Not Available**	**Not Available**	**Yes**

Wheel-End Options for 13K Disc Brakes – Bendix			
Spindle / Hub Material	**TIREMAAX®**	**HXL3® / HXL5® Wheel-Ends**	**[H] Standard Wheel-End**
FF-Spindle / DI or AL Single Wheels Dished In	**Not Available**	**Not Available**	**Yes**

Wheel-End Options for 20K Drum Brakes			
Spindle / Hub Material	**TIREMAAX®**	**HXL3® / HXL5® Wheel-Ends**	**[H] Standard Wheel-End**
FL-Spindle / DI Single Wheels Dished In	**Not Available**	**Not Available**	**Yes**

Wheel-End Options for 20K Disc Brakes – Bendix			
Spindle / Hub Material	**TIREMAAX®**	**HXL3® / HXL5® Wheel-Ends**	**[H] Standard Wheel-End**
FL-Spindle / DI Single Wheels Dished In	**Not Available**	**Not Available**	**Yes**

Guidelines

When the U.S. federal guidelines described above were enacted, states could maintain stricter or looser standards already in place. To the dismay of fleet managers and owner/operators nationwide, that meant the 80,000-pound gross weight limit was able to be reduced in several states – even on interstate highways. However, several states were also allowed to keep or enact more liberal weight standards for certain vehicle configurations. States with harsher standards include Illinois, Missouri and West Virginia. Illinois maxes out at 73,280 pounds on non-NM highways (these are considered "supplemental" or non-main roads); Missouri has the same limit with a 2,000-pound tolerance. West Virginia allows up to 73,500 pounds on some highways but sets a limit of 65,000 pounds for all others.

Many more states allow heavier loads. The most striking examples are Alaska, Michigan, Nevada and Wyoming. Alaska is exempt from interstate weight regulation and allows up to 145,000 pounds on at least 11 axles. Michigan allows up to 164,000 pounds on 11 axles and Wyoming allows up to 117,000 pounds on eight axles. In Nevada, there is no weight limit for longer combination vehicles.

Consult the Bridge Law Information page on Hendrickson's website for a more detailed explanation of Bridge Formula B, the federal Table B, and a state-by-state review of state guidelines, along with contact information for the appropriate regulatory body in each state: http://www.hendrickson-intl.com/Bridge-Laws

Things to Know:

Whether you are ordering a new truck or adding a lift axle to an existing rig, there are several factors to consider when selecting a product and spec'ing the configuration.

First, much like weight standards, lift axle requirements vary from state to state. In New York and Utah, for example, lift axles must be steerable. New York is also one of several states that require lift axle controls to be located outside the cab, presumably to discourage drivers from disengaging them while underway. Consult your state's department of transportation or DMV website for more information.

Second, you must determine where your lift axle should be installed and how much weight it will have to bear. Capacities of lift axles on the market today range from about 7,000 pounds up to about 20,000 pounds. And of course, you must be sure the vehicle's frame can handle the stress of additional axles.

Once you know which lift axle you need and where you need it, Hendrickson recommends this four-step procedure:

1. If the vehicle is loaded, which is preferred, determine the proper suspension travel and lifting performance by measuring the distance from the ground to the bottom of the frame at the installation point.

2. If the vehicle is unloaded, start by identifying the primary rear suspension type (walking beam, leaf spring, mechanical, rubber block, air-ride, etc.), each of which has a different deflection dimension. When loaded, a mechanical or leaf-spring suspension can deflect by up to 3 inches. Deflection is not a concern for air suspensions, which constantly self-adjust with height control valves.

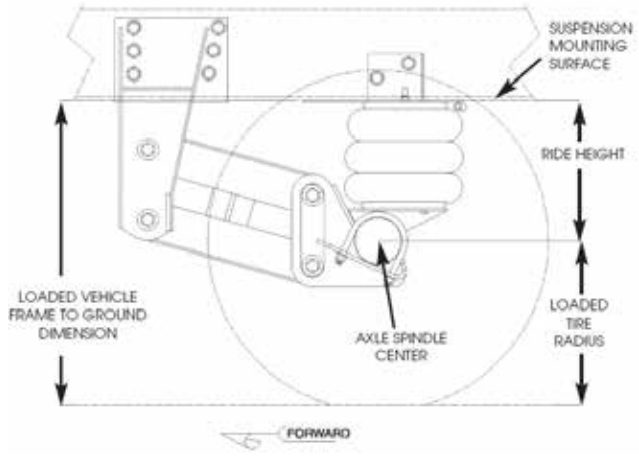
3. Check the lift axle's tire size and rating to be sure they match the capacity of the suspension. A 13,500-pound lift axle would use a pair of 255/70R 22.5 or 11R 22.5s, while a 20,000-pound lift axle could be equipped with 11R 22.5s or a flotation or "super single" 385 or 425 size tires on each end. Please note that axles are rated based on their weakest components, so some tire and rim combinations can significantly reduce their capacity. Hendrickson offers online rating sheets for the KIC and CONMET wheel-ends it provides to end-users.

4. When the vehicle is loaded, determine the final ride height by subtracting the radius of the tire from the height of the frame, which is measured from the bottom of the frame to the ground once the lift axle location has been established. The suspensions of some lift axles can be shimmed to achieve the desired ride height. To maximize the lifting portion of the lift axle checks the suspension's total travel range. On the aforementioned 13,500-pound capacity self-steering Hendrickson lift axle, the total travel is 13 inches.

As an example, consider an unloaded distance between the frame and the ground as 31 inches. If the truck's drive axle suspension is a mechanical or rubber block design it will have approximately 1.5 inches of deflection. If using a low-profile 255/70R 22.5, tire which has a loaded tire radius of approximately 17 inches you can approximately calculate the ride height dimension.

Note: If the drive suspension is not mechanical, but air-ride, then you do not need to calculate deflection, as its height control valve is intended to maintain the same standard ride height.

Summary: Take the 31 inches, frame to ground dimension, and subtract the 1.5" mechanical load deflection and then subtract the loaded tire radius, in this case 17 inches. This will yield (31 – 1.5 – 17) equals 12.5 inch ride height.



Steerable Lift Axle Suspensions

Hendrickson offers COMPOSILITE® and TOUGHLIFT® families of lift axles for steerable applications. The new COMPOSILITE EX series of lift axles delivers the advantages haulers have come to expect with Hendrickson products with new and exciting features and benefits providing reliability, cost-effectiveness and innovation. The TOUGHLIFT LK offers a round tube axle design and the ability to accommodate various ride heights in a dual tire steerable series. Both steer families offer a full range of capacities from 8,000 to 25,000 pounds.

The EXS 13K, our new, most popular capacity offering, is rated at 13,500 pounds and minimized package space of 22.1 inches. Hendrickson has implemented an inset lower beam design to provide built-in lateral stiffness. A traditional tie rod comes standard - however, the popular CTR Compliant Tie Rod system is still available as an option, especially for lift axles in the tag or rear position on the chassis.

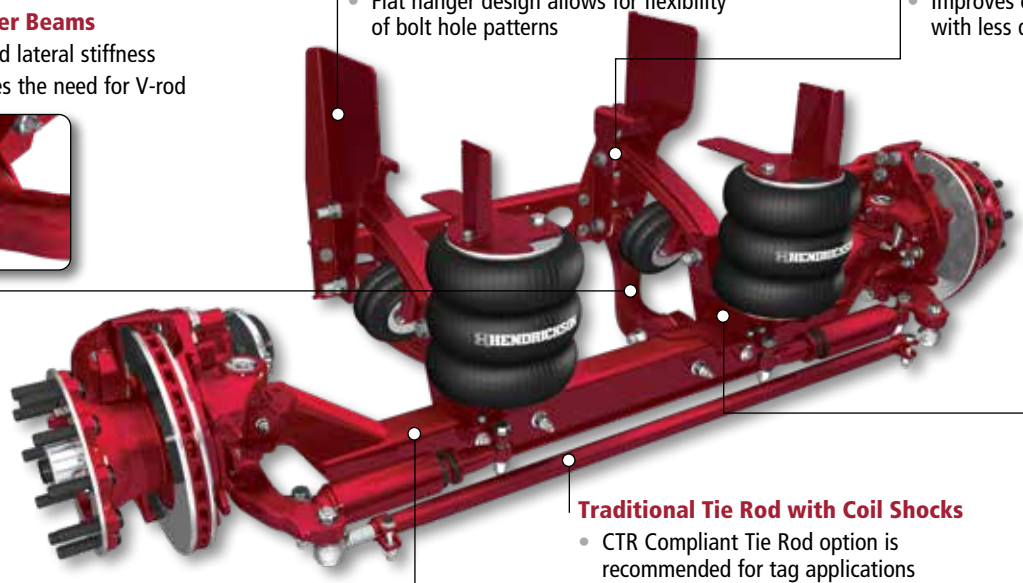
COMPOSILITE®

EXS 13.5K

Weld-Free Hanger Design
- No welding on front side rail hangers minimizes stress risers
- Flat hanger design allows for flexibility of bolt hole patterns

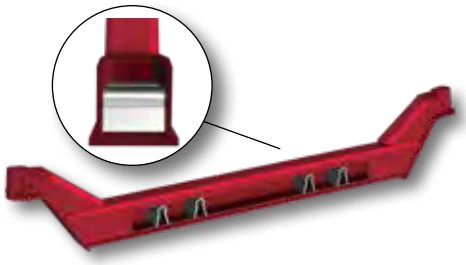
Zero-Torsion Rubber Bushings
- Provides increased durability and bushing life
- Improves overall cost of ownership with less downtime

Inset Lower Beams
- Optimized lateral stiffness
- Eliminates the need for V-rod



Bolt-On Axle Seats
- Easier serviceability for ride height changes or altering tire sizes
- Less costly repairs — change seats, not axle

Traditional Tie Rod with Coil Shocks
- CTR Compliant Tie Rod option is recommended for tag applications



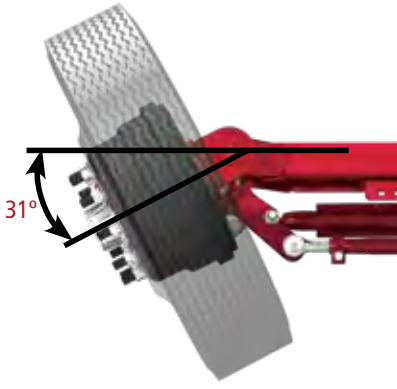
Patented▲ STEERTEK™ Axle Technology
- Proven design on front steer applications
- Weld-free axle connection
- Increased structural durability and warranty coverage

EXS 13.5K Specifications

Capacity:	Up to 13,500 pounds
Weight:	913 pounds
Travel:	13 inches
Lift:	10 inches
Wheel Cut:	31 degrees
Packaging Space:	22.1 inches

COMPOSILITE® EXS Steerable Turning Angle

It is important that you choose the suspension brand that provides the maximum turning capability before scrubbing, which is approximately 31 degrees on an 8, 10, or 13.5K capacity lift axle and about 25 degrees on 20K steerable lift axles.



▲ *This product is covered by at least one or more U.S. and/or foreign patents and/or pending U.S. and/or foreign patent applications. See Hendrickson for details.*

Lift Axle Options

Also, note in the pictures above and below – when it comes to multiple lift axles installed on a vocational chassis – turning radius is critical. The lead lift axle will see the greatest turning radius, compared to the lift axle closest to the drives. It is important that you choose the suspension brand that provides the maximum turning capability before scrubbing, which is approximately 31 degrees on an 8, 10, or 13.5K capacity lift axles and about 25 degrees on 20K steerable lift axles.

Hendrickson Lift Axles —
We'll put it all together for you

Customer Service
1.800.660.2829

Puzzled? Not sure of your application requirements? Hendrickson's customer support team will help guide you through the process, getting you the right auxiliary lift axle for the job!

Hendrickson offers a wide variety of lift axles to help meet the requirements of demanding applications. Our technical support team is dedicated to helping you find the right lift axle to fit your needs.

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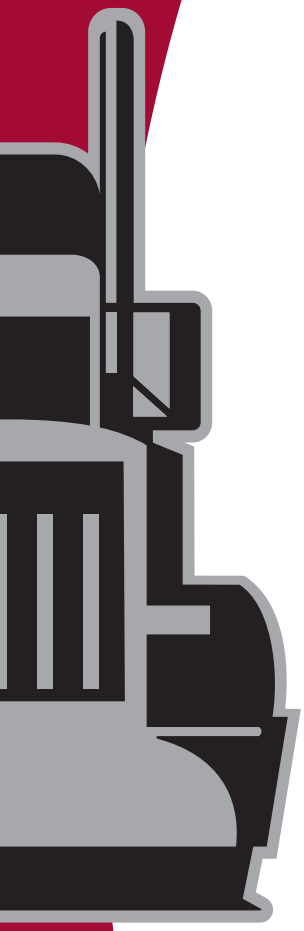
Conclusion

The math, state-by-state standards and the product-selection process may seem daunting, but it is just a matter of finding the lift axle that meets your needs and satisfies the requirements set forth by the applicable governing bodies. Fleet managers and owner/operators across the nation face the same challenges of finding workable solutions.

Hendrickson is here to help. Contact our customer service department at 800-660-2829 or liftaxle@hendrickson-intl.com



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ABOUT HENDRICKSON

Hendrickson, a Boler company, is a leading global manufacturer and supplier of medium- and heavy-duty mechanical, elastomeric and air suspensions; integrated and non-integrated axle and brakes systems; tire pressure control systems; auxiliary lift axles systems; parabolic and multi-leaf springs; stabilizers; bumpers; and components to the global commercial transportation industry. Hendrickson, based in Itasca, Ill., USA, continues to meet the needs of the transportation industry for more than 100 years. Visit Hendrickson at www.hendrickson-intl.com.

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