



Alpaca Carriers, Inc. manufactures multi-purpose carriers or racks in Kimball, Minnesota. The carriers feature a patented system of pins that can be easily relocated on a frame along with our patented Alpaca Cinch™, a fastening system that self adjusts to articles of any shape or size, making our carriers very versatile, and easy to use.

**2 Deltas
1.25 Inch Hitch
Adapter Needed.**



**1500 2 Deltas Customized
This rack must be used with a
1.25 - 2 Inch Receiver hitch adapter.**



Alpaca Trike & Bike Carriers™

**We have a carrier line designed to
carry a combination of trikes & bikes.**

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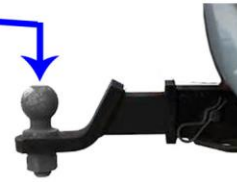
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<http://www.alpacarriers.com>

**Protected by US Patent
#6,772,929 B1**

Why the hitch tongue load rating is reduced by 50% with all Alpaca Racks.

Tongue weight for a hitch is calculated at the location of the ball mount that comes with the hitch. It is the weight pushing down on the hitch.



Tongue load
1500 2 Tadpole 2
Fits 2 inch hitches.



Tongue load
1500 2 Tadpole Adaptable
1.25-2 inch hitch adapter
choice will determine
distance from vehicle.



Tongue load
1500 2 Tadpole Adaptable
Hitch riser choice will
determine distance from
vehicle and hitch size
rack will work with.

A trike rack is an extension of the hitch. The distance the rack extends from the hitch is determined by the vehicle and the item carried. If this distance is more than the location of the ball on the ball mount that comes with the hitch, the capacity of the hitch is reduced by 50% to compensate for the added leverage exerted on the hitch. The same load in the same position behind the vehicle, with racks of equal weight exert the same tongue load on the hitch with or without an adapter. In the examples above the racks with the adapters weigh a few pounds more, so technically the weight of the trikes would need to be reduced to compensate for the added rack weight. When hitch adapters are used, the reduction should technically be more for an adapter that extends 10 inches than one that extends 6 inches. These capacities are a guide. Plenty of choices are available for trikes that are small and light enough or have front tires that can be removed to make them light enough for vehicles with class 1 hitches. Plenty of vehicles are available with class II/III hitches that can handle larger longer trikes. Match the load to the vehicle. With class II/III hitches use the restrictions on the rack. The Fat Tire Tadpole Trikes and 'Vehicle to Carrier' Straps documents provide specific examples.

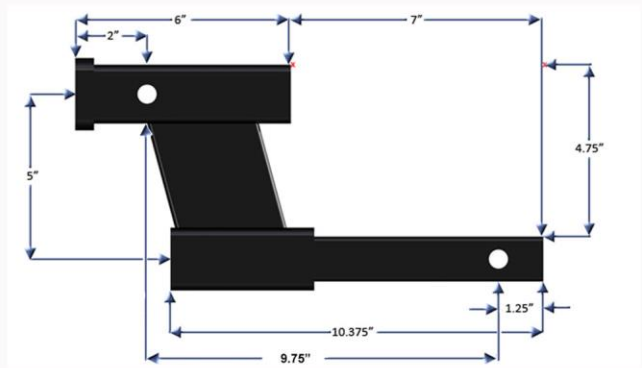
Choosing Adapters

This is a small sample of adapters that can be used with some Alpaca Racks



This hitch riser will fit all vehicles with class I/II 1.25 inch hitches. The Alpaca RSA Racks were designed to use with this adapter. The hitch needs a TW rating of at least 200 pounds.

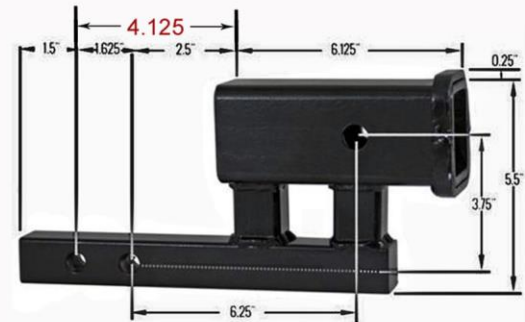
Rola Rise Shank Adapter
1 1/4 Inch Hitch Riser Adapter
For Class I/II Hitches, bike rack use only



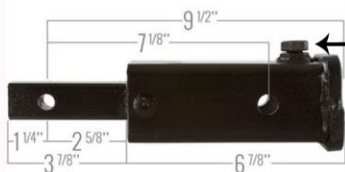
VersaHaul VH-HR2
1 1/4 Hitch Riser Adapter
For Class II Hitches

The Rola Rise Shank Adapter pictured above is our adapter choice for the 1.25RSA Racks because it fit all vehicles with 1.25 inch hitches and the tongue capacity rating of 150 pounds for class I hitches and 200 pounds for class II hitches is more than adequate for our needs. The Versa Haul VH-HR2 adapter will fit the same vehicles as the Rola Rise Shank Adapter, the company rates it for class II hitches only. As vehicles get smaller the hitch ratings on these vehicles are also getting smaller. Class I, 1.25 inch hitches are available with TW ratings as low as 50 pounds, know and do not exceed the capacity of your vehicle, hitch, adapter or rack.

The 1.25-2 inch Apex DRH-2 Hitch Riser pictured on the right is a great way to adapt a vehicle with a class II hitch to a stronger Alpaca Adaptable or Customized Rack and gain some ground clearance. Unfortunately no company builds a 1.25-2 inch hitch riser adapter to fit all vehicles with class II hitches. On many vehicles the bumper prevents the riser from going into the hitch far enough to insert the hitch pin. Make sure the adapter will work with your vehicle before purchasing the rack. It may be necessary to decide between the added ground clearance of the 1.25RSA Rack or the stronger Adaptable or Customized Rack with a 1.25-2 inch hitch adapter extender. **Using a hitch adapter will reduce your hitches capacity. With Alpaca Trike & Bike Racks and class I/II hitches, reduce the hitches capacity by half, with or without the adapter.** If the material on an adapter is not thicker than the material on the Alpaca Rack do not use the adapter.



Apex DRH-2 for Class II Hitches



The set screw on this adapter would tighten this connection and reduce movement.

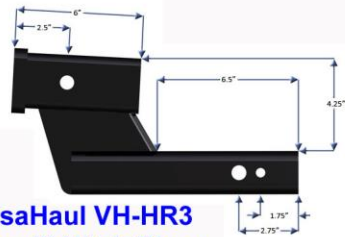


1 1/4 - 2 Inch Receiver Hitch Adapters For Class II Hitches

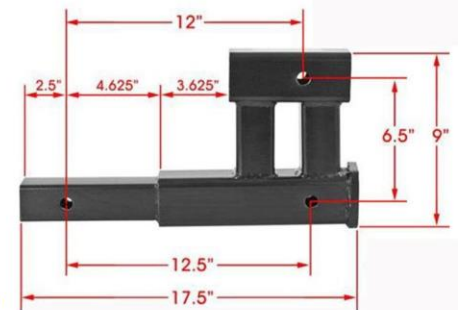
Choose an adapter like these pictured above to adapt a class II hitch to a 2 inch rack. Adjust the distance of the load from the vehicle with the length of the adapter. Look at the distance between the holes to determine how far the adapter extends. The load should be a minimum of 6 inches away from the vehicle.



2 Inch Hitch Extender



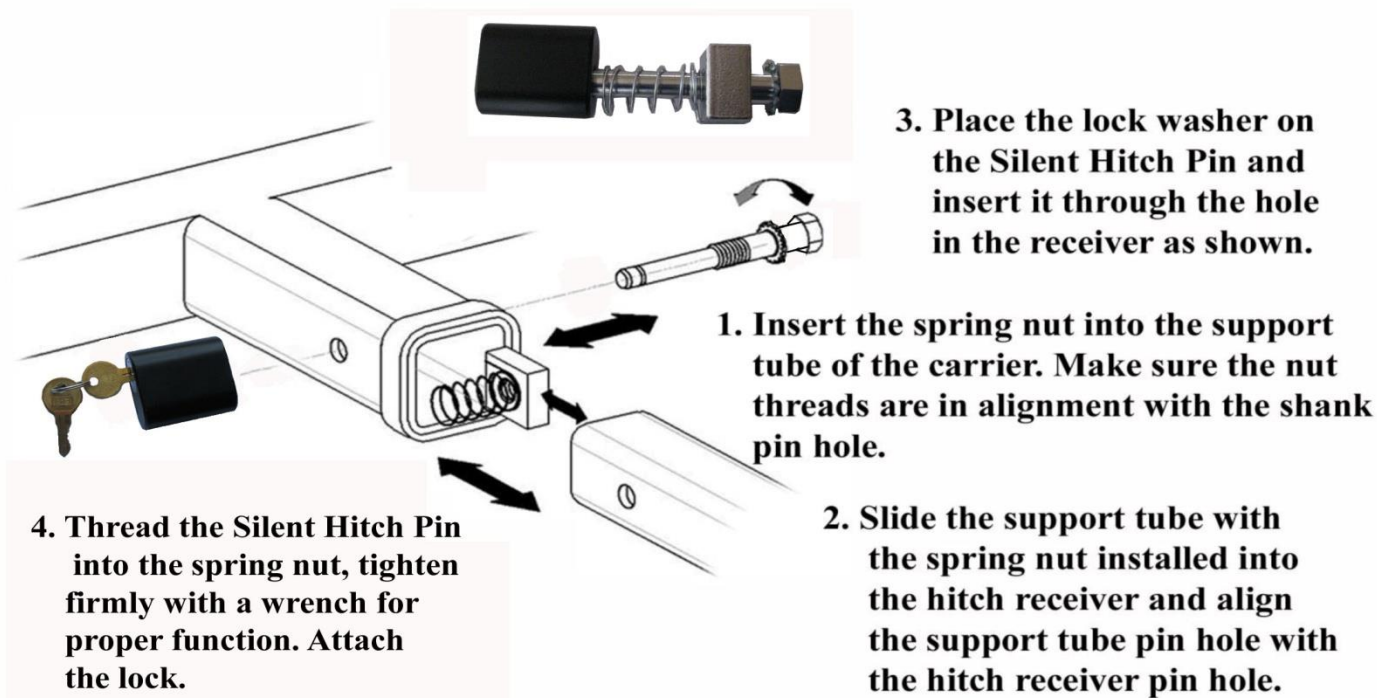
VersaHaul VH-HR3
Class III Hitch Riser



2 Inch Dual Hitch Adapter

Install a class III/IV, 2 inch hitch if possible, the hitches have more capacity, more racks are available, the racks cost less, are stronger and more stable. **Using a hitch adapter with a class III/IV, 2 inch hitch will reduce your hitches capacity. With Alpaca Trike & Bike Racks and class III/IV hitches, reduce the hitches capacity to 65% of the hitch TW rating, with or without the adapter.** All class III hitches have more capacity than the Alpaca Racks, but if a Dual Hitch Adapter is used, an adapter with a TW rating of 400 pounds requires a hitch TW capacity of 600 plus pounds to use the adapter to capacity, the combined load in the two hitches of the adapter can easily exceed the capacity of a very large hitch. Know the TW capacity of your hitch and do not exceed the capacity of the veicle, adapter, hitch or rack.

(OPTIONAL) Silent Hitch Pin Lock Assembly & Use



(OPTIONAL) Anti-Sway Device Assembly & Use

Slide U-Bolt through the slotted holes in the compression plate as shown.



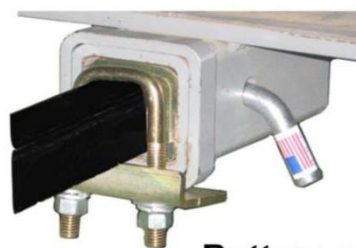
Put flat washer, lock washer and nut on each side of U-bolt.



The anti-sway device is used to tighten the support tube against the receiver hitch reducing sway and rattle. This will work with any 1 1/4 or 2-inch receiver hitch, ball mount or rack. It can be used on the side or bottom of the hitch. Specify the hitch and support tube size and we will furnish the correct U-bolt.



Side use



Bottom use

Assembling the 1500 2Delta Customized Carrier Frame

(1) Insert the load support tube into your receiver hitch. Align hole in receiver hitch with hole in load support tube. Insert hitch pin through the hole. Slide hitch pin clip into hole in hitch pin. If you purchased the silent hitch pin lock as recommended it replaces the hitch pin.

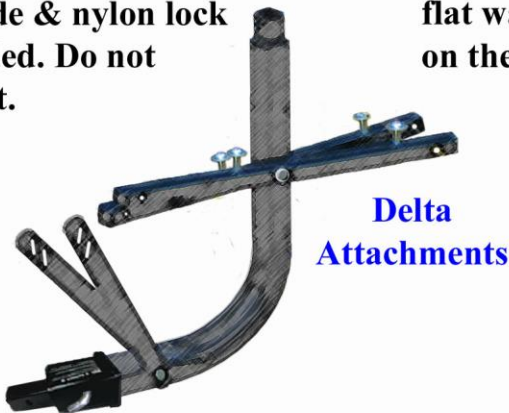


(2) Bolt the delta adjusting braces to the load support tube as shown. Use the 3/8-16 X 3 inch grade 5 bolt & nylon lock nut provided. Do not tighten nut.

Delta
Adjusting
Braces.

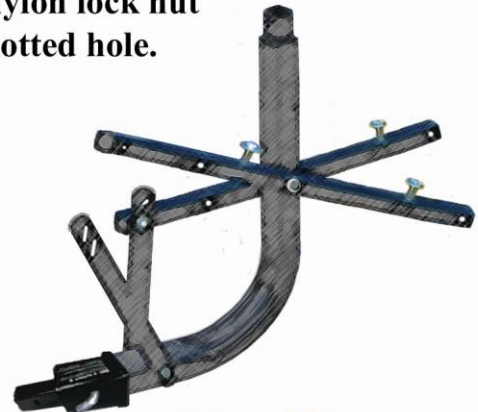


(3) Bolt the delta attachments to the load support tube as shown. Use the 3/8-16 X 5.5 inch grade 5 bolt, a washer on each side & nylon lock nut provided. Do not tighten nut.



Delta
Attachments

(4) Bolt one delta attachment to the bottom slot in the delta attachment adjusting brace as shown. Use the 3/8-16 X 2 inch grade 5 bolt and a flat washer with the nylon lock nut on the side with the slotted hole.



Ring Holder

Bolt the ring holders to the locations shown in the pictures.



Coupling

(5) Repeat for the other side using the top slot in the delta adjusting brace. Do not tighten nuts.



(6) Slide the frame top into the coupling on the support tube to the desired setting, align holes, start with the middle hole, it will usually work best, use the 3/8-16 X 2.25 inch grade 5 bolt, a washer on each side & nylon lock nut provided to tighten the connection. A long shackle padlock can be used to attach straps or provide a loop for a cable lock.



Frame
Top

Ring
Holder

Attaching Pins to Alpaca Trike & Bike Racks

Go to www.alpacacarriers.com and watch the videos. The frames and some components on Alpaca Racks will differ to accommodate different items, hitches and vehicles, but the racks are based on the same system of pins and cinches. The combination of videos will help understand how to use the Alpaca Racks. The video Attaching Pins & Cinches to the Alpaca 1700 Road Trip Adventure Rack demonstrates how to attach a through pin and a cinch to a rack with no strap clip.

Through Pin 36



These pins are used for loads when two 5-inch or two 10-inch pin spacings are needed. One sleeve can be slid on the pin as pictured above, then the pin is slid through the desired hole in the frame top before the second sleeve is slid onto the other side of the pin. The sleeves hold the pins in place.

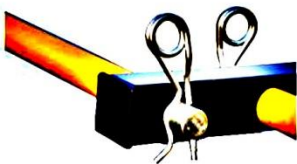
If you hold onto the sleeve at the location of the steel pin it will not slide on, push the sleeve from the end. To remove the sleeve pull it against the hole from the opposite side.

The same material is used on the other pins and spacers, but it is not binded to the pin. The sleeves, are easy and inexpensive to replace. They will not be as durable if cut with a sharp object. The sleeve may move slightly in warm conditions, but will be difficult to remove when temperatures are below 60 degrees.

One of these pins can be used with two of the standard pins to create a different combination of spacings if necessary, however these pins are 1.5 inches longer.



Carrier Pin 18

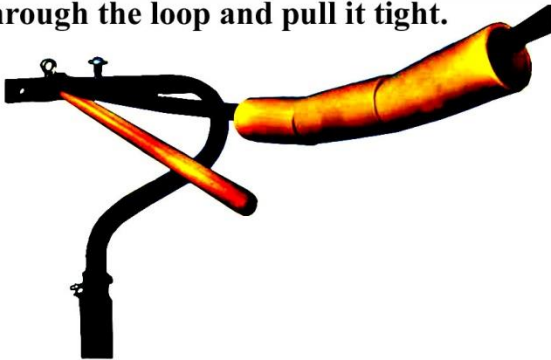


Slide pins through the desired holes from the preferred direction, insert double loop hitch pin clips into the grooves in the pins.

Attaching Alpaca Cinch™ to Trike & Bike Carriers

Go to www.alpacacarriers.com and watch the videos. The frames and some components on Alpaca Racks will differ to accommodate different items, hitches and vehicles, but the racks are based on the same system of pins and cinches. The combination of videos will help understand how to use the Alpaca Racks. The video Attaching Pins & Cinches to the Alpaca 1700 Road Trip Adventure Rack demonstrates how to attach a through pin and a cinch to a rack with no strap clip.

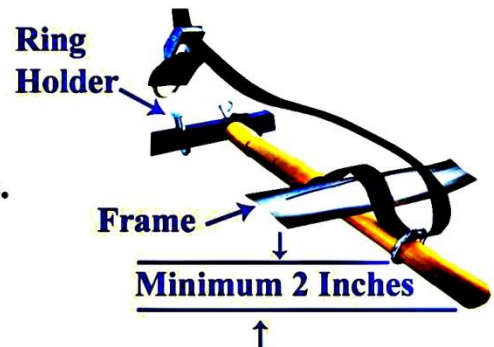
Slide the loop on the end of the strap over the pin and against the carrier frame, run the other end of the strap around the carrier frame from the bottom so the strap is on the side of the pin toward the center of the rack between the double loop hitch pin clip and the frame. Take the end without the loop, run it through the loop and pull it tight.



The desired number of spacers are slid over the end of the strap to space the trike from the carrier frame and other trike. With delta trikes start with two spacer/pin on the top pins and three spacers/pin on the bottom pins. Make the necessary adjustments after you try the trikes on the carrier.

Then slide the spacers over the end of the pin. They hold the strap close to the pin and the trike at the desired location on the pins. The spacers remain on the pin. Slide a steel ring onto the strap.

Press the clasp on the cam-buckle, slide the end of the strap through the opening from the bottom as shown and let go of the clasp. The cinch is ready to use. Repeat the process for the other cinches.



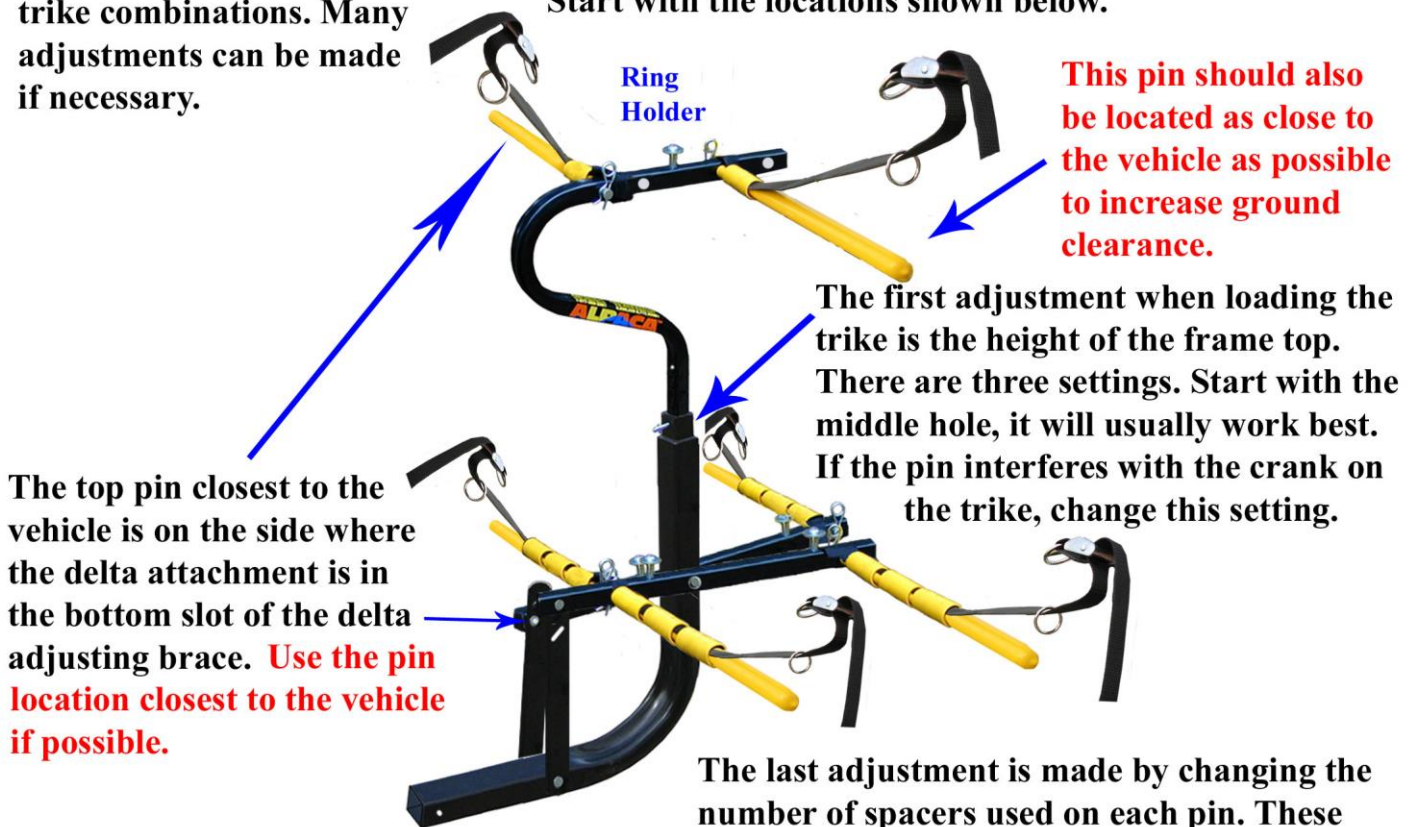
After the carrier is set up with the desired number of spacers and the buckle is attached to the strap as shown, the carrier is ready to load.

The cinch is quick and easy to use. Load the trike or bike, run the strap over the frame, slide the ring over the end of the pin to the frame, pull the strap tight, run the strap back over the frame, hook the ring on the short strap with the cambuckle over the ring holder and tighten the strap. Repeat for all cinches. This method of cinching will hold the trike or bike very secure and can be used for other items. The pin must extend at least 2-inches past the last ring and the strap must be tight enough so the last ring or spacer cannot slide off the end of the pin for the item to be secure.

Delta Carrier Setup and Loading

The carrier set up this way will work with most delta trike combinations. Many adjustments can be made if necessary.

There are two extra pin locations on the top frame if needed. The delta attachment will pivot to the proper location to use any pin location and any side of the pin. Start with the locations shown below.



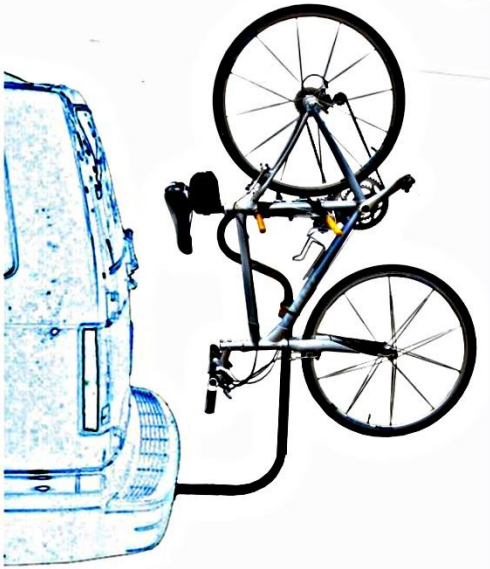
The last adjustment is made by changing the number of spacers used on each pin. These adjustments make it possible to avoid the obstacles on the trike frame. A spacer can be used between the ring and trike frame if the ring touches the frame.

Load the delta trike on the side of the carrier with the pin closest to the vehicle first, as shown. Run the top strap over the frame of the trike avoiding as many obstacles as possible, slide the ring over the end of the pin to the trike frame, pull the strap tight, run the strap back over the frame, hook the ring on the short strap with the cambuckle over the ring holder and tighten the strap. Repeat for the bottom two cinches.

Load the narrower trike with the smallest tires last. Use the pin location as close to the vehicle as possible for maximum ground clearance. This is very important as a lot of clearance is necessary because of the distance from the vehicle. If you set this so the tire is too close to the ground you will damage your trike.

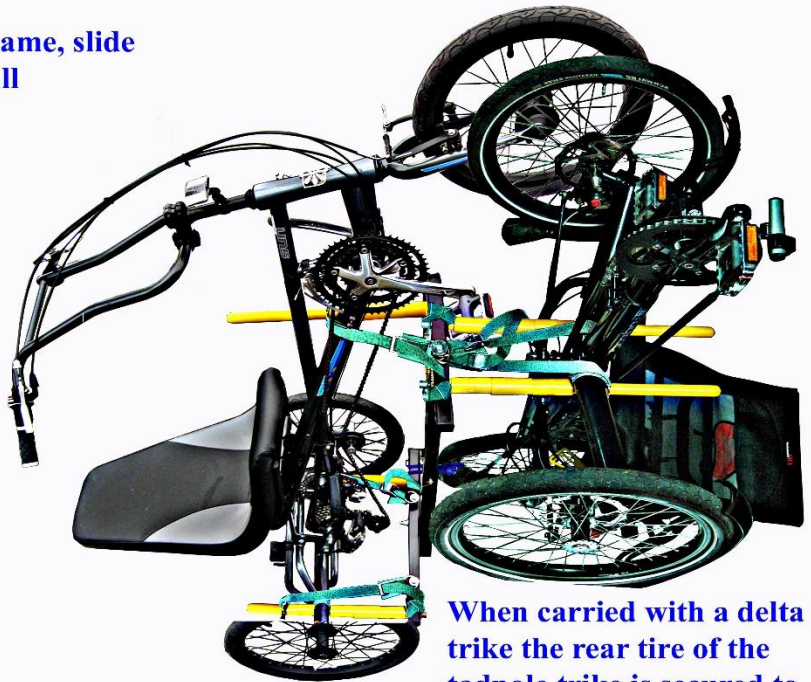
Using the Alpaca Cinch™ with Trikes & Bikes

Load the trike or bike, run the strap over the frame, slide the ring over the end of the pin to the frame, pull the strap tight, run the strap back over the frame, hook the ring on the short strap with the cambuckle over the ring holder and tighten the strap. Repeat with all cinches. This method of cinching can be used for all item.



A bike can be carried with a trike.

There may be situations when it is easier or better to use the cinching method shown bottom right picture. There is no right or wrong method. Every load is different. This carrier is built to last. Like a trailer if you can stay within the vehicle, hitch and carrier load limits and secure the item to the carrier you can carry it. If you feel an extra strap is necessary for your load use it.



In the cutaway view on the delta rear tire notice how a spacer is used to prevent the ring from touching paint if necessary.

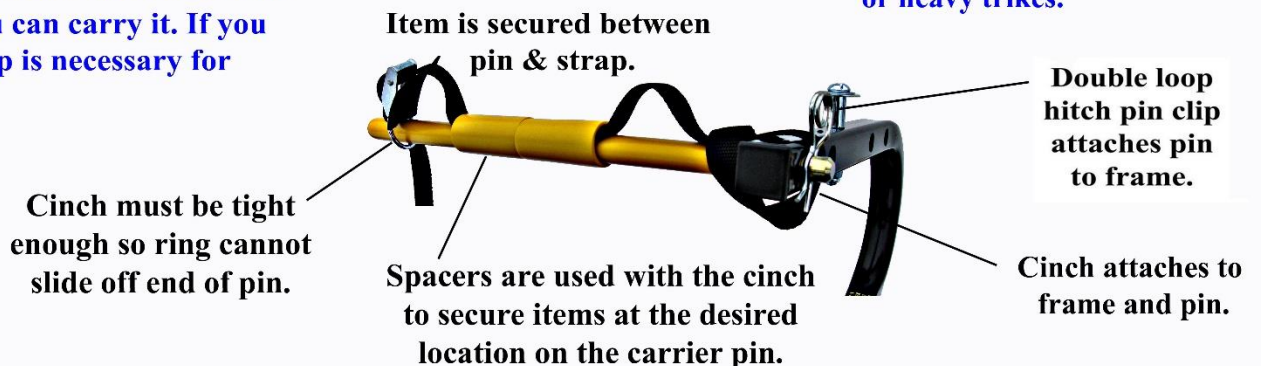
When carried with a delta trike the rear tire of the tadpole trike is secured to the delta attachment with the spring buckle strap provided.



Do not carry a single large heavy trike as pictured above. This works fine with small light trikes.



This centered approach is a better way to transport a single large trike. With the load centered there will be less stress on the vehicle, hitch and rack. Use 'vehicle to carrier' straps with large or heavy trikes.



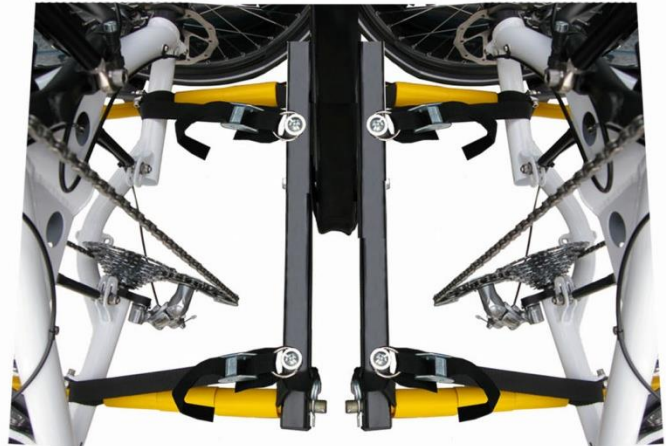
Using the Alpaca Cinch™ with Delta Trikes

Notice the difference in the two cinches in the picture below they both will work, but the one on the right will tighten best.



TOP CINCH LOADED & TIGHT

If the trike has two large tubes on the frame cinch the one closest to the carrier frame and the cinch will work better. If the trike is on the same side of the pin as the ring holder so the strap runs a straighter path back to the ring holder, the cinch will tighten better. See picture above.



BOTTOM CINCHES LOADED & TIGHT

It is not necessary to have an equal number of spacers on each pin.

With these Hase Trikes the steering mechanism runs along the frame to the front tire, by simply adding an extra spacer to the bottom pin farthest from the vehicle the trike is rotated enough so the strap doesn't interfere with this mechanism.

ONCE THE TRIKES ARE LOADED AND CINCHED TO THE CARRIER TIGHTEN ALL BOLTS. The carrier is set up for this trike combination. Load them the same each time and no additional adjustments are needed.

Warning: When loaded the carrier will exceed the height of most vehicles. Do not go where there is not enough clearance.

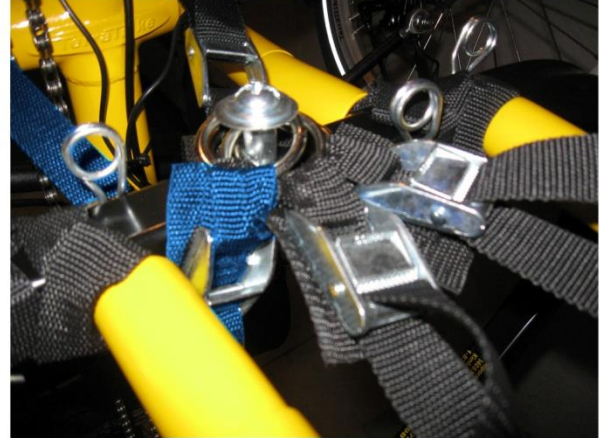
Warning: Remove luggage bags from trikes before transporting.

Cinch Possibilities.

Go to www.alpacacarriers.com. Watch the videos to learn how the cinch works. The pictures show variations of the cinch that will help in some situations.



The method used in most situations. Steel ring goes over end of pin, tight against object, strap takes direct path to ring holder, ring on end of strap placed over ring holder and strap is tightened.



Run the last strap (the blue one in this picture) under the frame, then hook the ring over the ring holder, when pulled tight all rings are secure to the ring holder.



Hooking the ring so the buckle faces down makes the strap easier to reach for tightening high loads.



When it is too difficult to get back to the ring holder go over the end of the pin.

Do not get hung up on the idea that everything needs to be done a certain way. The load dictates what you do. The difference between our cinch and a strap used to secure an item to a trailer, the ring has infinite adjustment on the pin, forcing the strap to perfectly conform to the item carried, making it much more secure. Choose the straightest return path to the ring holder for the strap that avoids the obstacles and tightens the bikes to the carrier. Sometimes it is better to hook the ring over the end of the pin. A simple adjustment or change can make a huge difference, especially on larger loads. People do different things to adapt the carrier to their particular situation. You are responsible for your load, do what works for you. If you intend to carry multiple items on a set of pins, go to www.alpacacarriers.com; Alpaca Compact Carrier; Using the Cinch.

Warning: This carrier has been designed to carry trikes & bikes on vehicle receiver hitches. User must inspect components for tightness, wear, deformation, cracks or elongation before each use. It is the user's responsibility to attach the carrier correctly to the vehicle, and secure the articles to the carrier. The manufacturer and seller expressly disclaim any and all liability for personal injury, property damage, or loss whether direct, indirect or incidental, resulting from the incorrect attachment, improper use, inadequate maintenance, or neglect of the carrier.

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