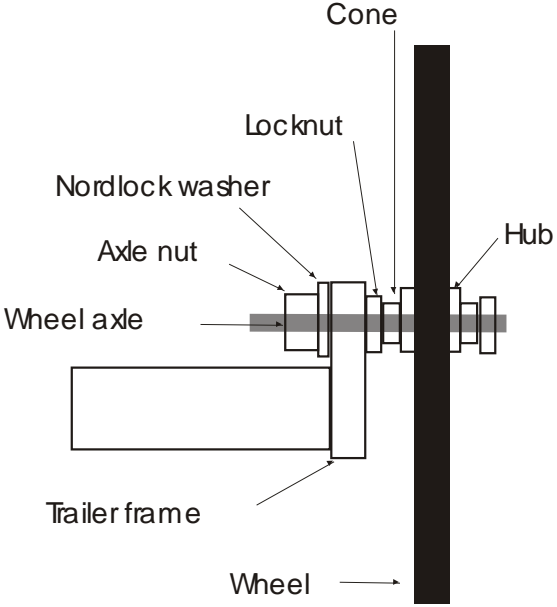
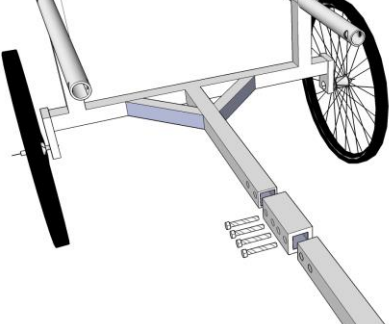
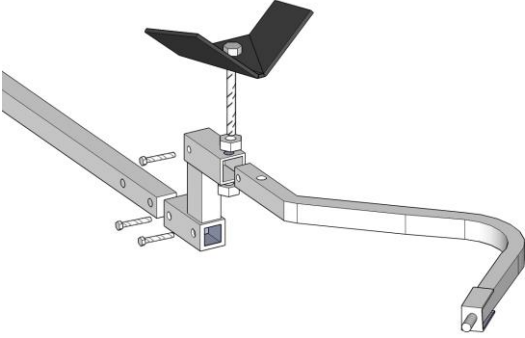


# Assembling Your Kayaks Trolley and Tow Bar

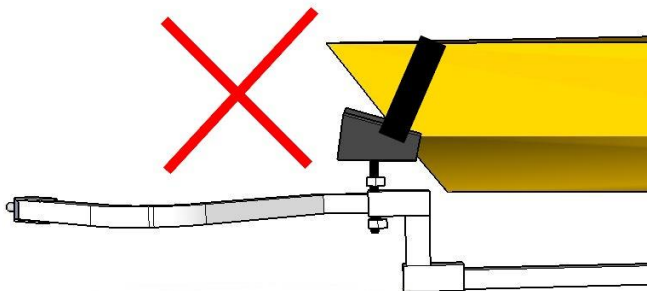
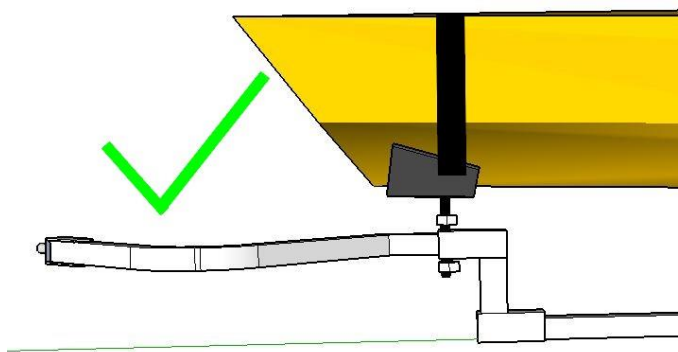
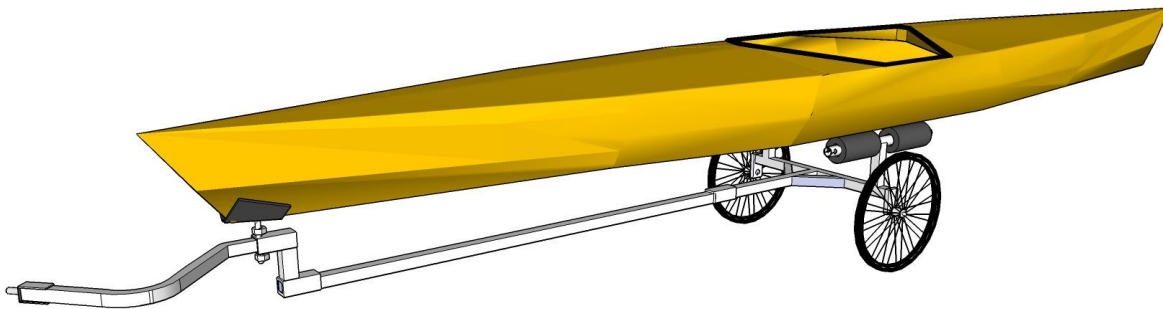
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 <p>A detailed diagram showing the assembly of a wheel onto a trailer frame. The components are labeled: 'Cone' (a thick black vertical bar), 'Locknut' (a nut on the right side of the axle), 'Nordlock washer' (a washer on the left side of the axle), 'Axle nut' (a nut on the left side of the axle), 'Wheel axle' (the central shaft), 'Hub' (the part of the wheel that fits onto the axle), 'Trailer frame' (the metal structure the wheel is being attached to), and 'Wheel' (the tire and rim assembly). Arrows point from each label to its corresponding part in the assembly.</p>	<p><b>Step 1 – Attach Wheels.</b></p> <p>If wheels are not provided, find a set of two 16" wheels (new ones can be supplied). 12" will be ok but are slightly less efficient than 16". If you are using 2nd hand wheels, the cones and locknuts may need to be offset to one side of the axle to provide enough thread on one end to do up the nut. A thin cone spanner is required for this, so if you do not have one available you may need to visit a bike shop to get this done. Some kids bikes have smaller front axles which can break under heavy loads (&gt; 30kg) particularly if you are on rough surfaces.</p> <p>Attach your wheels to the axle. Ensure the nuts are tight with a spanner tightening on both sides of the trailer frame, otherwise they may work loose. Because the axle is only attached on one side, it is more likely the nut will vibrate loose over time. A 10mm Nordlock washer (Blacks Fasteners) is the best thing to prevent this from happening and they are supplied with the trolley.</p>
 <p>A diagram showing a tow bar extension being attached to a trolley. The extension is a long metal bar with four bolts at one end, which are being used to secure it to the trolley's frame. A wheel is visible on the trolley.</p>	<p><b>Step 2 – Attach the back end of the tow bar extension to the trolley using the four bolts provided. The tow bar extension is marked front and back with marker pen.</b></p>
 <p>A diagram showing a kayak nose support being attached to a tow bar extension. The support is a metal bracket with three bolts, which are being used to secure it to the tow bar. A kayak is shown being supported by the bracket.</p>	<p><b>Step 3 – Attach the towbar and z-connector to the tow bar extension using the three bolts provided. Also place the kayak nose support through the 10mm hole, but don't do up the bolts until the next step.</b></p>

#### Step 4 - Attaching the kayak.

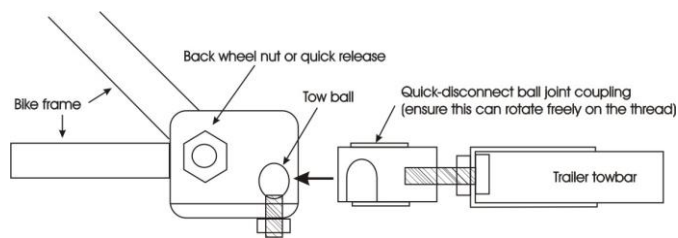
Place the kayak on the trolley making sure there is at least 100mm clearance from the nose of the kayak to the back wheel of the bike. The kayak should be reasonably well balanced on the supports. If it is more than 300mm off the centre of balance you should replace the tow bar extension with one of the correct length. Some kayaks are longer in the nose than the tail so try reversing the kayak if balance is a problem. If the nose of the kayak does not naturally sit in the black plastic nose support, adjust the height of the nose support by raising or lowering the bolts. Note the bottom bolt is a nylock to stop it vibrating loose. Once height of the nose support is correct tighten the locking nut (non nylock) down onto the z-connector to lock it all in place.

Attach the kayak using two 25mm x 2m length cam-lock straps from Bunnings or Warehouse. Bungees are not sufficient to hold the kayak securely. A 1m strap is also required to strap the nose of the kayak into the nose support, which is important as this aids the rigidity of the towbar. You can use two straps on the nose if you wish.

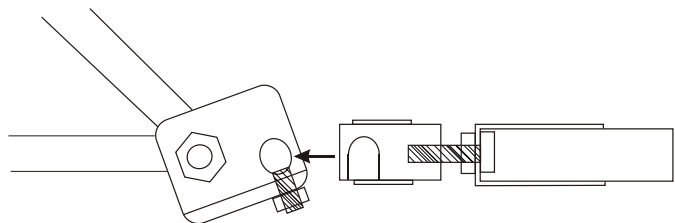


Make sure the bottom of the kayak is resting on the nose support so the weight of the kayak pushes directly down onto the nose support. **DO NOT** place the angled front edge of the kayak on the edge of the nose support as this will twist the nose support and likely cause it to break. If the kayak has a very long skinny nose, consider placing the kayak around the other way so the rear of the kayak is at the front of the trailer.

The nose support may be bent to suit the kayak by heating it with a paint stripping heat gun until it softens, then clamping it in place until it cools again.



Correctly fitted Hitch base – nicely aligned with the towbar.

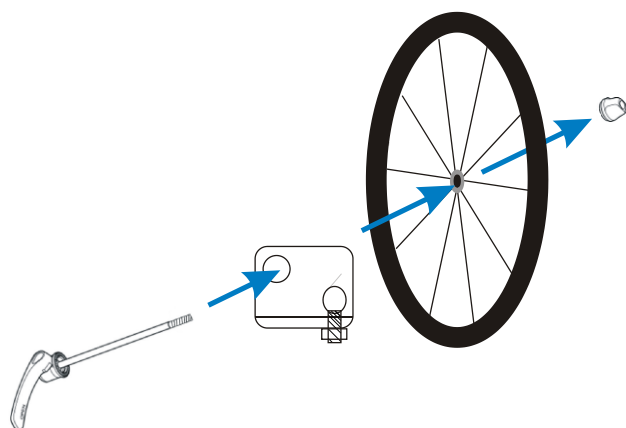


Incorrectly fitted hitch base – the angle does not allow enough movement for bumps

## Step 5.

Attach the hitch base to your bike underneath the rear wheel nut or quick release lever (left hand side). It stays on your bike all the time. It is important to align the tow ball with the tow bar and quick disconnect ball joint coupling to allow up/down movement over bumps. If there is a permanent angle on the tow ball there may not be enough play and the ball joint may bend or break.

It is also important to make sure the quick disconnect ball joint coupling can rotate at least  $90^\circ$  on the bolt thread in both directions. It would pay to get in the habit of checking this every time you connect the trailer on as it can tighten up over time and will damage the ball joint if it cannot rotate freely.



To fit the hitch under a quick release skewer, release the lever by rotating the lever out, then unscrew the nut from the right hand side of the bike. Pull the skewer completely out from the axle being careful to notice how the two small springs are positioned. These springs are optional so it doesn't particularly matter if they don't go back in. Put the skewer through the hole in the hitch base, through the axle and do up the nut again. Check to see the wheel and the hitch base are both straight before the final tighten of the quick release lever.



## Step 6 - Go shopping.

The tow bar extension may be removed and a bin placed on the trolley so it can be used as a shopping trailer. The connector for the tow bar extension is a snug fit so it usually requires a tap from a rubber mallet or hammer on a piece of wood to encourage the tow bar extension to separate. Leave the z-connector on as it keeps the bin more level & stable.

A 100litre bin from Bunnings is a good option and may be bolted on to a wider trolley or just strapped into a narrower trolley as the 100l bin fits snugly between the supports. You will need to drill holes if you wish to bolt the bin on. Three 5 x 45mm bolts with nylocks are usually sufficient to hold it, two on the axle and one at the front of the bin.









This one is a bit tail heavy but still quite acceptable. 5.8m and 40kg still tows nicely



This one has a longer nose so balanced better going backwards