Wooden Bike Trailer Assembly Instructions

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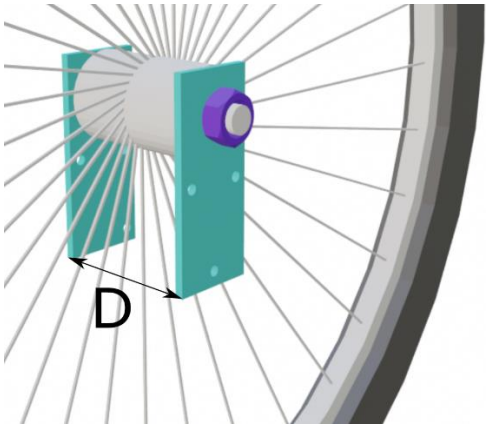
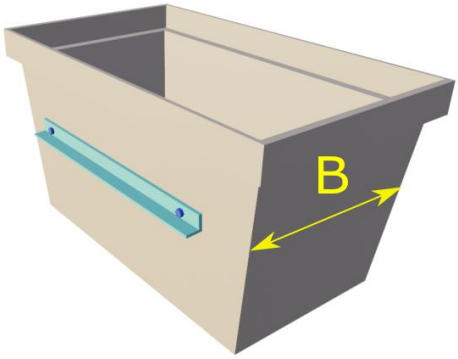
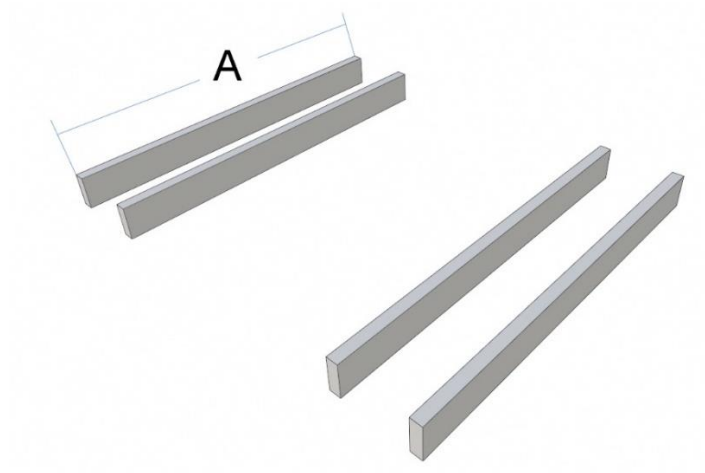
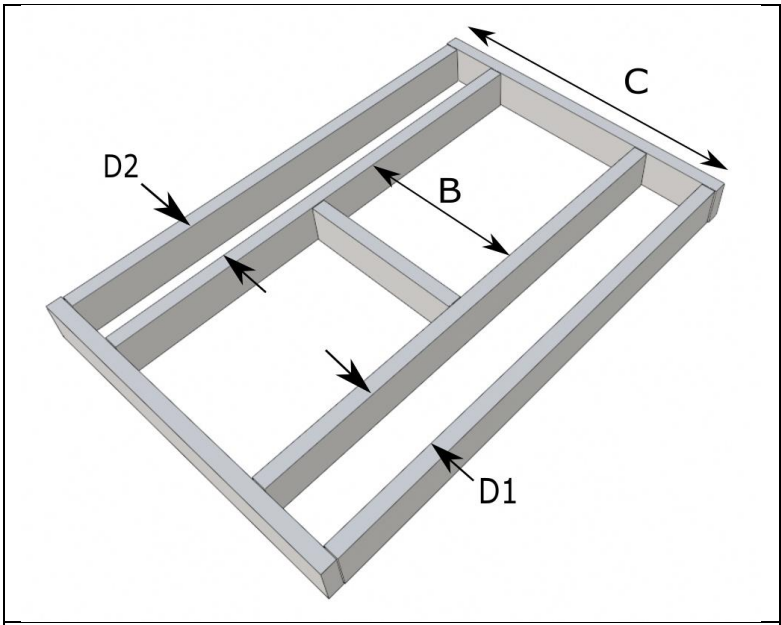
Safety
Do not use power saws unless you are experienced with them. Keep your fingers well away from the blade. They can chop off your fingers very easily. You must wear eye protection and earmuffs with power saws.

	**Step 1**. Attach the wheel dropouts to your wheel. If you have knobbly tyres consider a spacer on the inside of one dropout to move the wheel away from the bin. This gives clearance for the lid of the bin. Measure the distance between the outside edges of the dropouts. This may be different for front and rear bike wheels so measure both wheels. This is distance D1 and D2 below. Note these dropouts are shown upside down from final position on the trailer.
	**Step 2.** If you are using a bin, attach some angle aluminium or wood to the edge as a stopper to give it 120-150mm ground clearance. The height of this depends on the size of wheels you use. Keeping the bin lower makes it more stable. The width of the bin at the bottom of your stopper is the width of your trailer measurement B below.
	**Step 3**. Cut the four long struts all the same length. Allow 100mm each end for corner braces. 100 or 120 litre bin A = 750 + 200 = 950 mm 2x80 litre Ezybunker A = 950 + 200 = 1150 mm. Check there is sufficient length past your wheel for the corner braces. 20” wheel = 508 mm diameter 24” wheel = 610 mm diameter 26” wheel = 660 mm diameter

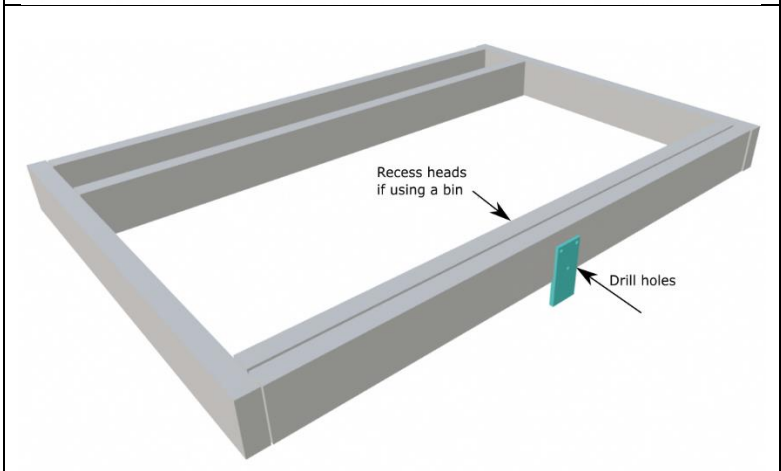


Step 4.

If using two bins, cut the optional centre strut which adds strength. For one bin don't use a centre strut.
2x80 litre Ezybunker B = 610 mm.
For 100 litre Mitre 10 Jobmate bin B = 420mm
For 120 litre Bunnings Ezybunker bin B = 500mm

The length of the two end struts (C) depends on the width of your wheel axles and dropouts D1 and D2 and the width of your wood. Measure this carefully.

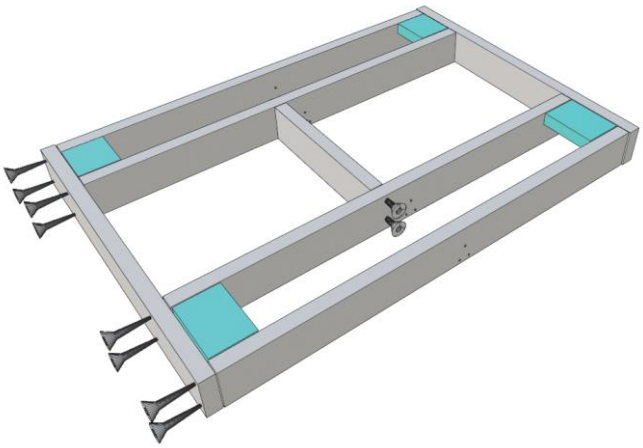
C = B + D1 + D2 + 4 x wood width



Step 5.
It is difficult to drill the dropout holes once the frame is constructed, so remove a dropout from one side of each wheel. Line up both sides of the frame on top of one another and drill 4 x 6mm holes through both sides of the frame at once. This is to ensure they are lined up exactly or the wheel may not be straight once the frame is glued together.

If you are using a centre strut you will need to place the dropouts in the rear section of the trailer.

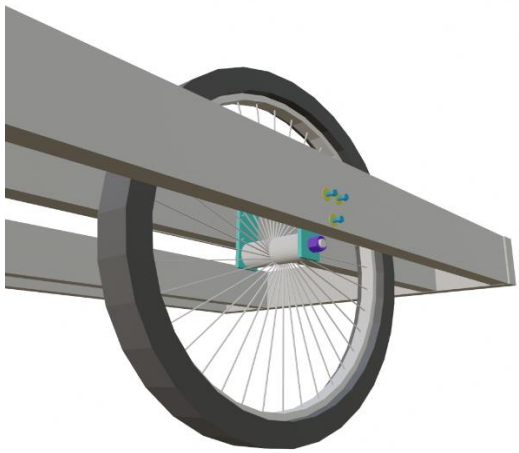
If you are using a bin, recess the inside holes using a countersink bit or 13mm drill so the bolt heads don't stick out and stop the bin sliding in.



Step 6.

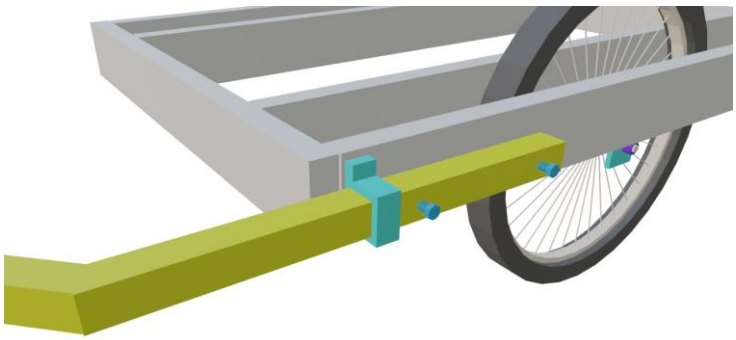
Cut 2 pieces of wood for D1 and D2 measurements. These are the corner braces and assist getting the frame straight.

Construct the frame using the measurements made in step 3 to get the wheel spacing correct. Consider predrilling the holes with a 2-3mm bit to avoid splitting the wood, depending on how brittle the wood is. Ensure the corners are exactly square with a set square. Glue every joint and use 50 mm screws. Ensure the wood is on a flat surface to get it level.



Step 7.

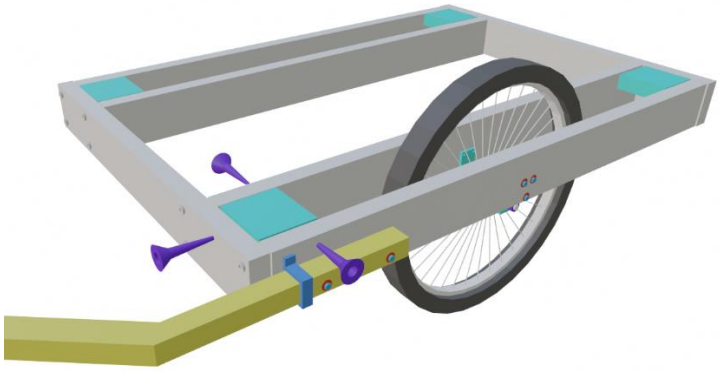
Attach your wheel dropouts using the 6mm bolts. Make sure there is a washer under the wood.



Step 8.

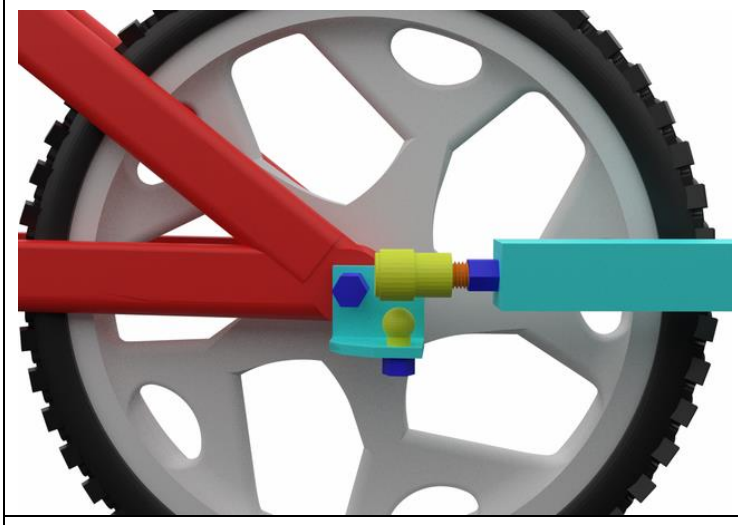
Attach the tow bar to the left hand side of the trailer using the two 6mm bolts. It can be angled if there is a large mismatch in size between the trailer wheels and bike rear wheel so the trailer sits level when attached to the bike.

Screw the saddle clamp on in front of the front bolt. This gives extra sideways strength if you ever crash the trailer.



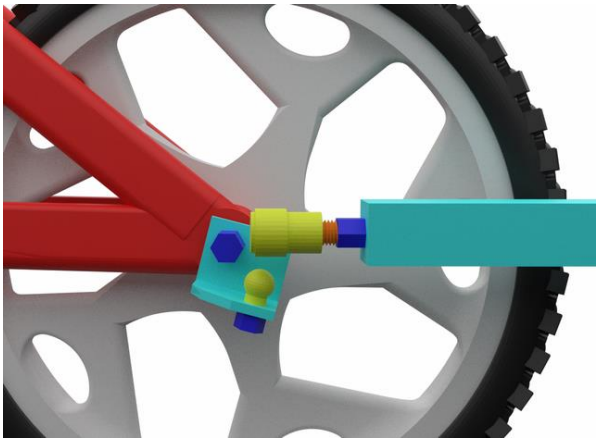
Step 9.

Glue and screw the 4 corner braces in to the ends of the trailer, being careful not to place the screws in the same line as the main frame screws.

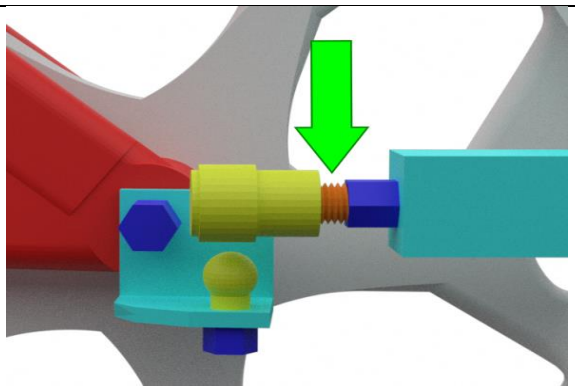


Step 10.

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.



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



It is also important to make sure the quick disconnect ball joint coupling can rotate at least 90° on the bolt thread in both directions. It would pay to get in the habit of checking there are several screw threads showing (green arrow) 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.

Wheel Dropout options

The wheel axles go through a hole in the dropouts to be held into place. The only way of changing a tyre or tube is to unbolt both dropouts from the trailer frame. If you prefer a faster method of changing tyres or tubes, you can make the hole in the dropout into a slot by cutting it with a hacksaw. This makes tyre changing easier but will weaken the dropout a little. Punctures can be repaired without removing the wheel.

	
Hole is stronger but dropout needs to be unscrewed to change tyre/tube	Slot is weaker but easy to change tyre/tube

Finishing touches

- Foam or rubber glued to the top edge of the trailer will stop bins from rattling when unloaded (this can be very noisy).
- A flag, reflector and reflective tape are very good additions to make the trailer more visible.
- Attaching a rear light is highly recommended so you can use it for night trips.

Safety Information

- Glue can lose it's stick over time so keep an eye on the joints and re-glue them if needed.
- Be careful on sharp right hand turns as the tow bar can rub against the back wheel of the bike putting a huge strain on the tow ball. Most corners are fine but do any U-turns to the left. If you have a very large disc on your rear brake, test the towbar doesn't hit the disc under right turn.
- Don't overload the trailer. 50 kg is around the limit assuming it's well balanced and towed carefully (and your construction skills are good).
- Be careful when going up curbs particularly with an unloaded trailer. If you get a wheel hitting the square edge of the curb they will flip easily.
- Watch your load doesn't shift. Anything that touches the moving wheel spokes will be ruined very quickly. Consider fitting guards if this is a problem.
- Light weight road racing frames can apparently bend if you try towing a heavy load, so mountain bikes or steel frame road bikes are more suitable for a towing vehicle.