

# How to Build a Billy Cart

Rouse Hill Billy Cart Derby

Before using this guide, remember to download your list of materials from the event website:

[www.billycartderby.com.au](http://www.billycartderby.com.au)

# How to Build a Billy Cart

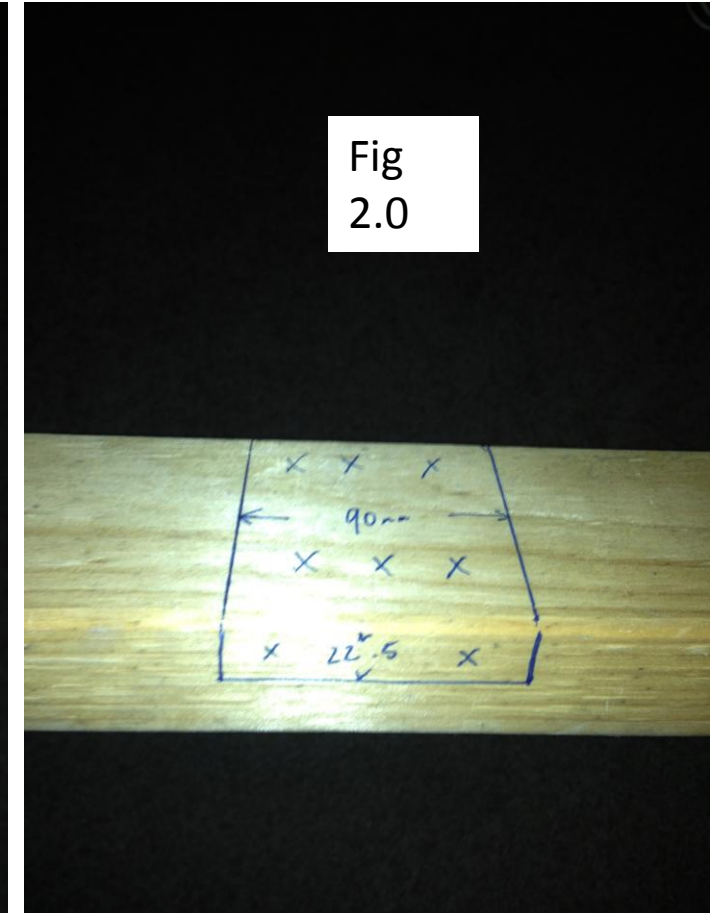
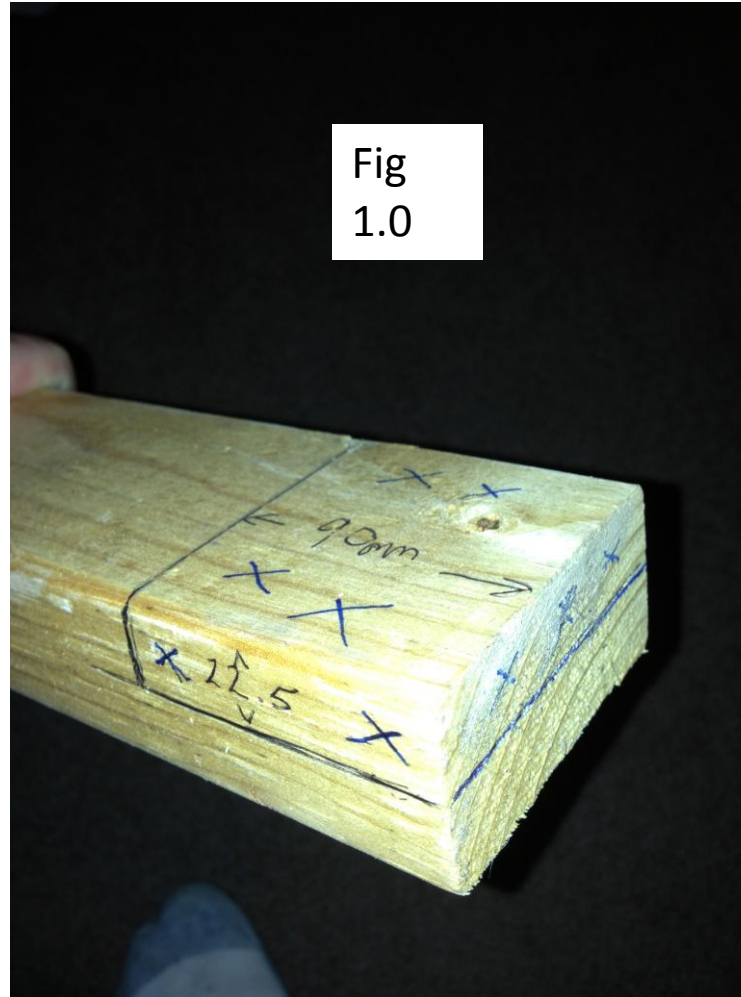
1. Cut the 2.4m 90mm x 35mm pine  
1 @ 900mm and 2 @ 480mm

2. Measure in 90mm at one end of the 900mm pine and check out 22.5mm.

(see Fig 1.0)

3. Measure to the middle of one of the 480mm pieces (240mm) and mark 45mm on each side of the centre line and make a check out 90mm wide and 22.5mm deep to fit the end of the 900mm piece of timber. You can use a piece of 90mm timber to mark the check out for better results.

(see Fig 2.0)



# How to Build a Billy Cart

4. Fit the two pieces together to make a T- shape and put a 8g x 35mm screw in the join

(See Fig 3.0)

5. Put the second 480mm timber onto the opposite end of the 900mm piece of timber make sure it is centred and drill an 8mm hole through the two pieces of timber and put the M8 120mm bolt through the first piece of timber then put a washer on to the bolt as a spacer then place the second timber onto the bolt and finish with a washer and 2 x M8 nuts as per pic below don't over tighten the nut so there is movement to steer the cart.

(see Fig 4.0 & 5.0)



# How to Build a Billy Cart

6. Screw the 40 x 40 x 40 x 3.5mm angle HED6040 bracket onto the bottoms of the cross members flush with the end so the wheel doesn't foul on the end of the timber.

(See fig 6.0)

7. Cut 12mm dia steel rod to 610 mm and drill a 3mm hole close to each end to take the split pin to hold the wheel on. Put one split pin in one hole and slide a wheel and then a 12mm washer for a spacer on then slide the axel through the brackets and place the wheel on the other end then finish with the split pin.

(see Fig 7.0)

Repeat steps 6 and 7 with the back brackets and axel and wheels





# How to Build a Billy Cart

8. Time to cut the timber for the seat.

Start by getting your 1200mm x 600mm x12mm plywood and marking all 4 parts of the seat on it before starting to cut, you will need,

1 @ 510mm x 450mm

1 @ 450mm x 255mm

2 @ 310mm x 210mm

9. Screw the base of the seat flush with the back of the back fixed cross member, then drill 5 6mm holes through seat part a as seen in the picture above.

Make sure the 2 bolts close together at the back go through the join in the cross members. Use the 5/16 x 3inch bolts. The base is 510mm long and 450mm wide with angles cut on the front edge for aerodynamics.

If you look closely you can see the measurements written on the seat in the pics.



Fig  
8.0

# How to Build a Billy Cart

10. Screw the back of the seat flush with the bottom of the back cross member and inline with the sides of the seat base. The back is 450mm wide and 255mm high.

(see Fig 9.0 & 10.0)



Fig  
9.0



Fig  
10.0

# How to Build a Billy Cart

11. Now it is time to fix the seat sides they are 310mm long and 210mm high with the top front corners cut off for safety and less wind resistance.

Screw the sides into the base of the seat and into the back of the seat using 8g 35mm screws

(see Fig 12.0)



Fig  
12.0

# How to Build a Billy Cart

12. Screw the brackets on the back of the seat for the push pole on the preferred pushing side, making sure the screws go into the back cross member for extra pushing strength

(see Fig 13.0 & 14.0)



Fig  
13.0



Fig  
14.0



# How to Build a Billy Cart

13. Screw a block to stop the front steering member from turning too far.

14. Drill holes into the front cross member for the drivers steering rope

(see Fig 15.0  
& 16.0)



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15. Put on a brake for fast stopping.

Cut the 42 x 19 DAR pine 330mm long and put it on the side of the cart using a M6 75mm bolt and washer with a washer spacer between the 42 x 19 and side seat panel.

Then put a small block of timber to stop the brake from digging into the road.

(see Fig 17.0)



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16. And then give it a coat of paint and  
HAPPY CARTING!!!

17. Register you team for the Rouse Hill  
Billy Cart Derby!

[www.billycartderby.com.au](http://www.billycartderby.com.au)

