

RYOBI

BILLY CART: BRONZE LEVEL





PROJECT CENTRE

BRONZE LEVEL

Billy Cart / Sleigh

CUTTING LIST

Item	Material	Size L x W x T	No.
Chassis	Pine	900 x 70 x 35	1
Steering arm	Pine	465 x 70 x 35	1
Back wheel support	Pine	465 x 70 x 35	1
Spacer blocks	Pine	197 x 70 x 35	2
Seat pan	CD plywood	730 x 465 x 12	1
Seat pan sides	Pine	730 x 42 x 18 429 x 42 x 18	2 2
Sleigh sides	CD plywood	900 x 600 x 12	2
Back rest	CD plywood	300 x 465 x 12	1

MATERIAL LIST AND COSTING

Material	Size (mm)	No.	Unit Cost	Total Cost
Wheels	200	4	\$7.50	\$30.00
Axle	600 x 1/2 inch	2	\$12.50	\$25.00
Galvanised eye bolts	8 x 75 x 20	2	\$3.15	\$3.15
Galvanised washers	M8	4	.20	\$0.80
Nyloc nut	M8	2	\$4.10	\$4.10
Rope	10 x 2 meters	1	\$3.20	\$3.20
CD plywood	900 x 600 x 12	4	\$14.04	\$56.16
Pine	3000 x 42 x 19	1	\$3.42	\$3.42
Pine	2400 x 70 x 35	1	\$6.50	\$6.50
Coach screws	1/4 inch x 1 1/4 inch	8	\$0.20	\$1.60
Bolt (cup head)	3 inch x 1/2 inch	1	1.60	\$1.60
Washers	1/2 inch	10	\$0.20	\$2.00
Nyloc nuts	1/2 inch (pkt 4)	1	3.15	\$3.15
Particle screws	40 x 8g	100		\$7.10
	60 x 10g	100		\$7.75
	25 x 6g	100		\$5.10

TOOL LIST

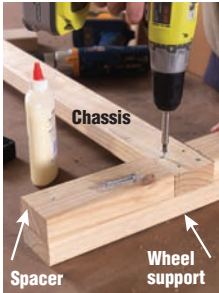
- PPE
- 5,10mm drill bits and 12mm spade bit.
- Drill
- Combination square
- Tape measure
- Jigsaw
- Router/trimmer
- 5mm radius round over bit
- Compound Mitre Saw

INTRODUCTION

Just the look on the faces of the young ones alone will make this Christmas, one that you will never forget! A simply-made billy cart with a Christmas decorated reindeer sleigh façade will provide hours of fun, even during the manufacturing process. We have provided a design template, or with some “creative” input from the prospective Santa, you never know what you might come up with! **Approx \$150**

STEP-BY-STEP INSTRUCTIONS

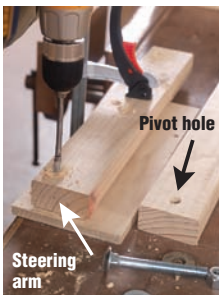
1.



Chassis assembly

Glue and screw both spacer blocks and the chassis to the back wheel support. A 5mm clearance hole and two 60 x 10g screws in each spacer block and four in the chassis will do the trick.

2.



Drilling

Clamp securely and with a 12mm spade bit, drill a pivot hole in the centre of the chassis and steering arm 25mm from the end and front edge. Two 10mm holes are required for the eye bolts, and are drilled 25mm in from the front edge and end of the steering arm.

3.



Axle brackets

Position the axle brackets flush with the inner edge (opposite to pivot hole) and the end of the steering arm. Drill a 5mm pilot hole and fasten securely with coach screws. Repeat this process for the back axle.

4.



Like father, like son

Insert axle through brackets with a washer on either side of the wheel bearing, slide the split pin through the axle hole and bend tails over to secure wheel. Place a washer between the steering arm and chassis and slide the bolt through from the top side. Secure with lock nut.

5.



Keeping an eye on things

Under the watchful eye of my son Cameron, there was no way I would get away with not using a washer on the top and bottom of the steering arm. Secure with a lock nut on the underside.

6.



Seat pan

Glue and screw the 42 x 18 pine frame and secure the plywood base with 40 x 8g screws. Screw the completed seat pan central to the chassis and 300mm back from the front end of the chassis with 40 x 8g screws.

7.



Taking the reins

With the budding Santa taking the helm, adjust the seat position and steering rope length. I screwed two battens of 42 x 18 to the fixing points of the seat, then screwed through the batten into the seat pan. Securely tie off the rope through the eye bolts.

8.



Artistic flair

If you choose to use our design, simply divide the best face of your 900 x 600mm piece of plywood into a 50mm grid pattern and transfer the positions from the scaled pattern (Diagram 1). But with the help of your own "expert" you may choose to come up with your own design.

9.



Cut to shape

Lay the side pieces together with the inside faces together and edges flush. Temporarily join, ensuring the screws are positioned out of the way of the blade. Cut to shape with a jigsaw and clean up with abrasive paper.

10.



Protect the little fingers

Soften all exposed edges on both sides of the plywood with a 5mm round over bit fitted to the trimmer. A router bit with a ball bearing fitted is easily guided around the shape. It is important however that you move the router in an anti-clockwise direction.

11.



Give it a body

Screw the side panels to the seat pan with 25 x 6g screws, ensuring clearance is maintained around the wheel and the seat pan is covered. Repeat this process for other side maintaining consistent distance and clearance measurements.

12.



Back panel

The purpose of the back panel is two-fold. It provides support for the extra height of the side pieces and, of course, most importantly, provides some storage space for Santa to keep the Christmas presents.

13.



Our best wishes

On behalf of all the crew (the many hard working people behind the scenes that you never get to see) at Ryobi, I wish you a Merry Christmas, all the very best for the New Year and Happy woodworking.

