

## Toy car plans.



The photo shows the roadster driven by Big Heart Bear. In spite of it's simple appearance, there is a bit of a challenge, which relates to getting the wheels to fit neatly into the wheel arches.

Use contrasting wood for the fenders, and laminate a darker piece in the middle to give it that “go faster” racing stripe.

### Materials.

Pine 19mm ( $\frac{3}{4}$  inch) thick by 100mm (4 inch) wide x 800mm (31  $\frac{1}{2}$  inch) long. Optional meranti or darker wood 12mm ( $\frac{1}{2}$  inch) thick by 75mm (3 inch) wide by 260mm (10  $\frac{1}{4}$  inch) long.

For the template, use thin MDF board or masonite or plywood 260mm (10  $\frac{1}{4}$  inch) long by 140 (5  $\frac{1}{2}$  inch) wide.

### Tools.

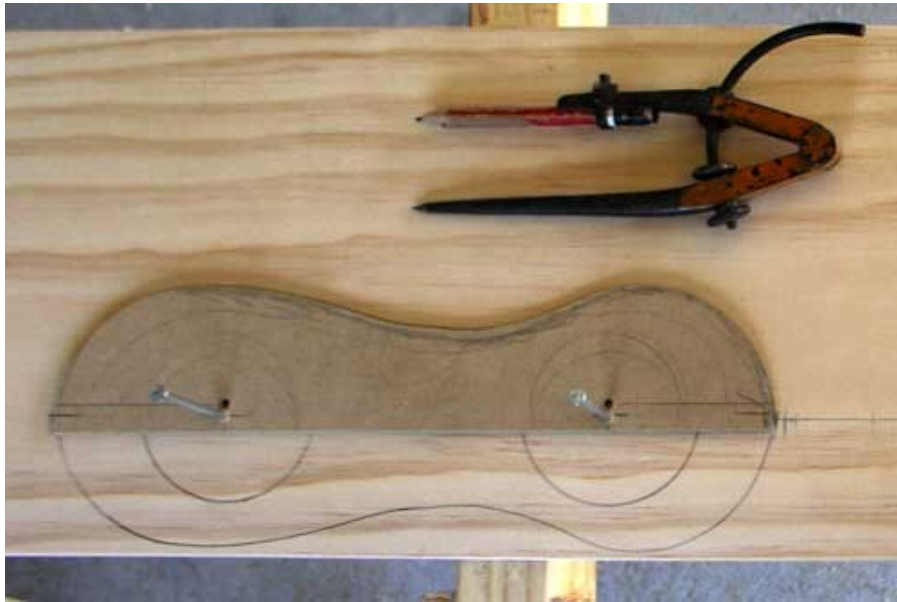
This toys can be made with a limited number of power tools. Safety is the first consideration when dealing with power tools. This is a list of tools that I used:

- Jigsaw for cutting a rough outline.
- Bandsaw when cutting more accurate outline.
- Drill press for cutting the wheel arches and the wheels.
- A circle cutter modified to cut wheels instead of holes.
- Router with a 6mm round-over bit, but you can use a wood file or sandpaper.
- A 12 inch disk sander, but it's not essential to this project.

## Step by step instructions.

Download and print the toy car plans on your home printer. Trace the outline of the body shape and the mudguards onto thin MDF or plywood or even stiff card and cut it out.

For the wheels to fit in the wheel arch, it is important that the centre of the wheel arch and the hole for the axle are drilled accurately. To do this, I place the mudguard template over the body template and drill a pilot hole through both templates.



1. The photo shows how a pair of nails through the template ensures the accurate placement of the wheel arches.



2. Using my trusty drill press, I cut the holes that will form the wheel arches. A drill press is strongly recommended for this step.

3. The leftover centres can be used to make a pair of wheels. Clicking on the link will take you to a page for instructions on how to make your own [wooden toy wheels](#).



4. Using a half round file to remove the burr left by the modified circle cutter.



5. Make a template for the body and use it to cut a rough shape on as many pieces of wood that you may want to use for the body. I used two pieces of 19mm pine and a contrasting piece of 12mm meranti sandwiched in the middle.

The photo showing the parts rough cut ready to be glued together. Note the template in the foreground and for what it's worth, the mudguard with the wheel arches cut out in the background.

6. I cut the mudguards to shape with the bandsaw, then used the 6mm roundover bit in a router to round over the edges. If you are not comfortable using a router on such small pieces of wood, it would be much safer using a half round bastard file and 80 grit sandpaper.

Note that the wheel arches are to be rounded over on one side only as the other side is to be glued to the body.



7. Clamping the mudguard to a sawhorse, I cut it in half with a tenon saw. This is where I used the 12 inch disc sander to square off the middle part, and to shape the two ends.
8. By now the glued up body parts has set enough for me to handle it. I cut out the shape with a bandsaw, then sanded the saw marks away with a combination of a half round bastard file and 80 grit sandpaper. This is where a drum sander would've come in handy.
9. Round off the edges of the body with a 6mm round over bit in a router. If you are not comfortable using a router on small bits, use a half round bastard file and 80 grit sandpaper .
10. I only thought about this afterwards, so you can benefit from my mistake. Staining the mudguards a deeper colour or using contrasting food colouring would make the toy more attractive, so now is the time to do it before gluing the mudguards in place. My mistake was to try to stain it afterwards, and the problem is that the glue makes the stain blotchy.

Wiping the glue off before it sets, fair enough, but have a look at step 12. and you will see it is virtually impossible to do this.





11. Hold the mudguards in place, mark and drill the holes for the axles. Now, with the wheels on, glue the mudguards. Try not to apply too much glue at this stage. I suggest marking the areas to be glued lightly with a pencil.



12. The photo showing the clamps in place. This also illustrates the wisdom of pre-staining mudguards before assembly, as noted in step 10.
13. When the glue has set, you can apply a dab of glue to the axles to fix the wheels in place, and viola, you now have your very own road racer.