Go-karting adventure

Rod Baker makes a simple adaptation to a basic design and builds a nifty go-kart.

A go-kart is one of those perennial favourites. We loved them when we were kids, now our children are doing the same. The trouble is, when your young lad starts to really grow, the enjoyment is still there – but he has to curl up like a pretzel in order to be able to ride on the go-kart. Not any more: this go-kart just keeps on growing and in the distant years, when you can't stand too close to a braai otherwise your dentures will melt, your grandchildren will still be playing with it. And the great thing is that the driver can help build his own cart!

This cart might be a little beyond the average child's age to make, but involve them where you can, like sanding down edges, painting the name (I like Rockit or Mazzerwati, the misspelling adding that little touch) on the sides and wherever else you can involve them. Who knows, you might help launch the career of a future do-it-yourself fundi.

Construction method

Main drawbar and axle struts:

Step 1: Cut and round the ends of the drawbar using a tin can or compass to mark off the curve.

Step 2: Cut the front axle strut from a single length of 69mm x 22mm SA pine and make it 500mm long.

Step 3: Cut each 69mm mounting block from a length of 44mm x 44mm SA pine, mark the centre by drawing diagonals from corner to corner, and drill a 10mm hole for the axle bolt in each, flanking it with holes for the mounting screws (four or six). *Note:* The block is mounted so that the axle hole goes across the grain, not with it, for greater strength.

Step 4: Attach the outer mounting blocks to the strut, flush with the ends.

Step 5: Insert an axle bolt, with a wheel and washers, into the first mounting block and the second, so that the holes are perfectly aligned. Slide the second block away from the first until the thread just disappears, and so that the wheel still rotates freely. Mark the position, remove the bolt and fix the block in position.

Step 6: Now reinsert the bolt, wheel and washer. Assemble and position the stop block. This will keep the bolt axle in the correct position and stop it riding inwards and possibly causing the wheel to bend.

Step 7: Now that you have both mounting blocks and the stop block in position you can repeat the procedure with the other wheel.

Step 8: The two axle mounting struts are the same, apart from the fact that the one destined for the front will have an 8mm

Marking off the curve from the front of the seat.

You can use a standard blade for a curve such as this, but when cutting sharp curves use a narrower blade.

The offcut comes in handy when gluing the seat pieces together.

You'll find it easier to get a good finish if you sand surfaces before assembly.

The sides, joining pieces and base before assembly.

The assembled seat.

hole through the centre so that the cart can be steered. Assemble the second strut the same way as the first.

The seat:
The seat is 370mm wide x 370mm long and comprises three pieces of 142mm x 22mm SA pine glued together. Reinforce it with two lengths of 69mm x 22mm below, fixed in position with 40mm screws. Position these lengths about 72mm apart to allow the drawbar to slide between them.

Step 1: Assemble the seat base and round off the leading edge in a smooth curve. Save the offcut as you will use it to make the seat back.

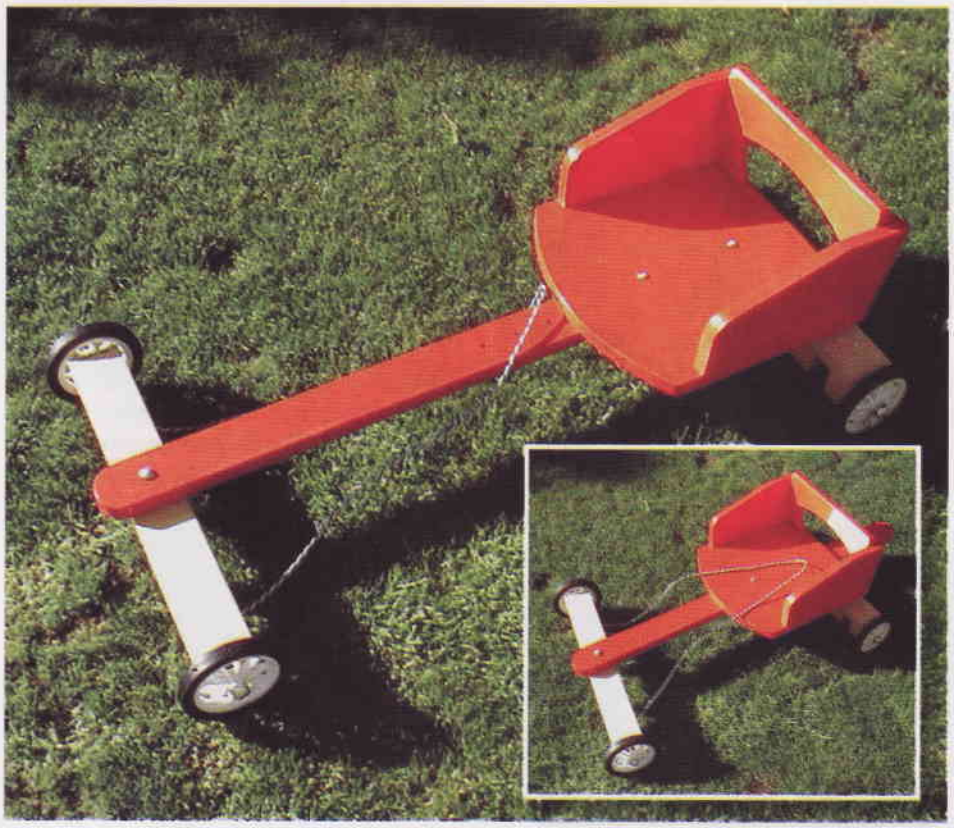
Step 2: Cut the two sides from a 600mm length of 142mm x 22mm SA pine. The rear edge is sloped at about 10° from the vertical and the top edge is trimmed as in the diagram. Again, save the offcuts, as they become the joining pieces between the seat sides and backrest.

Step 3: Attach the sides to the seat base using 60mm screws and glue to secure.

Step 4: Attach the joining pieces (the offcuts from the sides) to the inner edges of the sides. Trim the backrest to fit. From 370mm it will come down to about 326mm long (remember that the sides are both 22mm thick) and attach it to the joining pieces with 40mm screws.

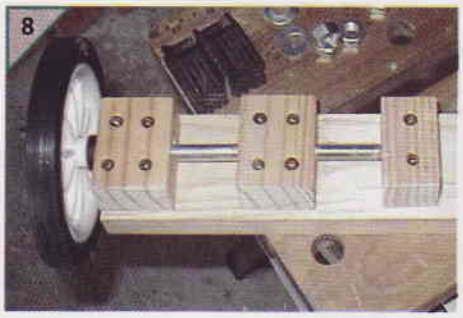
Step 5: Attach the rear axle strut to the base of the seat with glue and 60mm screws.

Step 6: Paint the go-kart sections. *Note:* the cart comprises four basic sections: front axle, drawbar, seat and rear axle.



The finished go-kart will provide many hours of fun for kids of different sizes.

Sand any sharp edge that can hurt young skin.

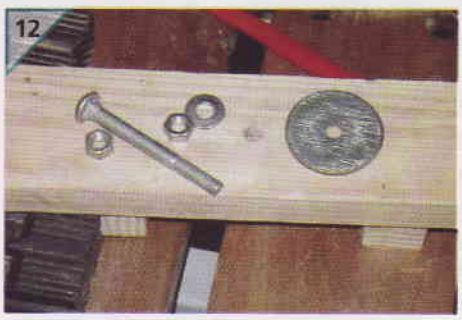


One of the axle assemblies during construction.

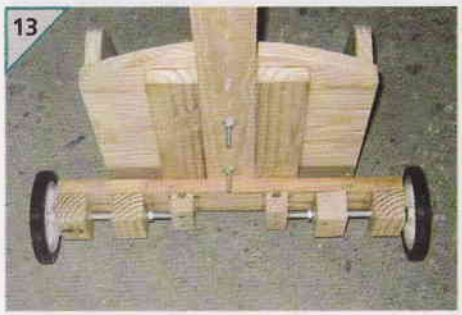
How the rear axle attaches to the seat.

Plane the drawbar slightly to allow it to slip easily between the underside of the seat and the rear axle assembly.

The two holes (at 150mm centre to centre) in the seat guide you in drilling the holes in the drawbar.



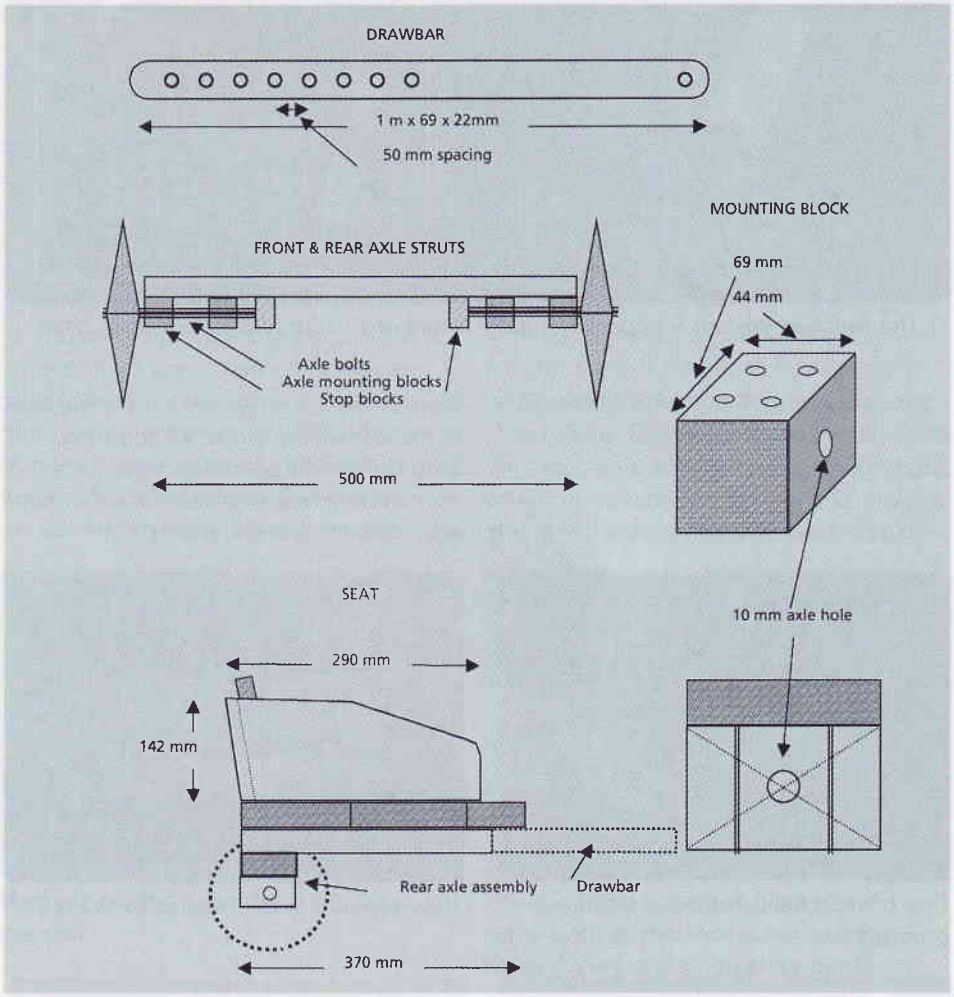
Use a large flat washer between the front axle strut and drawbar, so that you have a large bearing surface.



The underside view.

Use locknuts (two nuts tightened against each other) and a proprietary product or hot glue to lock the nut in position.

Graphic 1.



Materials

The beauty of go-karts is that they lend themselves to being made from odd bits and pieces, so adapt the dimensions here at will.

- Root around in your garage/ workshop to find lengths of timber that might be useful, such as a 1m length of 69mm x 22mm SA pine for the drawbar joining the seat to the front axle, plus enough of the same timber to make the two axle struts, each one 500mm long.
- About 900mm of 44mm x 44mm (or similar) SA pine for the axle bolt mounting blocks and stop blocks.
- 1,8m of 142mm x 22mm SA pine for the seat, seat sides and backrest.
- Four 150mm x 10mm bolts, nuts and washers for the axles (I've used round-head coach bolts, but hex-heads will work as well, just as long as the shaft is smooth and not threaded where the wheel will be – you'll chew up the latter.
- Two 75mm gutter bolts of 6mm diameter to lock the drawbar in position.
- One 8mm bolt, washers, plus two nuts (so that you can lock them). *Note:* the washer between the drawbar and the front axle, which steers the cart, should be as broad as possible.
- You will also need locking compound to stop the nuts and bolts from becoming loose. Locking nuts or hot glue also work well.
- A length of rope for steering. Make it long enough so that the child can wrap it a couple of times around each hand for better grip.
- A dozen 40mm screws, a bag of 60mm screws, wood glue and paint of your choice – the brighter the better.

If you're painting the cart a uniform colour then this doesn't apply, but if it's going to be different colours, as is this one, then you may find it easiest to paint the various sections before final assembly, leaving surfaces where glue will be applied uncoated.

Step 7: Assemble the cart, sliding the drawbar into the slot formed by the two lengths under the seat and position it at its most extended position. Drill two holes through the seat and drawbar 150mm apart. Slide the drawbar in 50mm and drill through the same holes into the drawbar. Repeat until you have the drawbar at the shortest desired length. You'll end up with a series of holes down the drawbar at 50mm intervals, which will allow you to adjust the length between the seat and the front axle as your child grows. Use 6mm gutter bolts, which have round heads and won't even be felt, to fix the position.

Step 8: Finally, add the steering rope. This will probably have to be replaced every so often, but it should be long enough for the driver to wind it around each hand a couple of times for better grip, whatever the overall length of the cart.

Beware: When the cart is at its shortest, the drawbar protrudes from the back, so take care when pushing the cart; another good reason for rounding-off edges.

Now go and find a hill – a safe one.