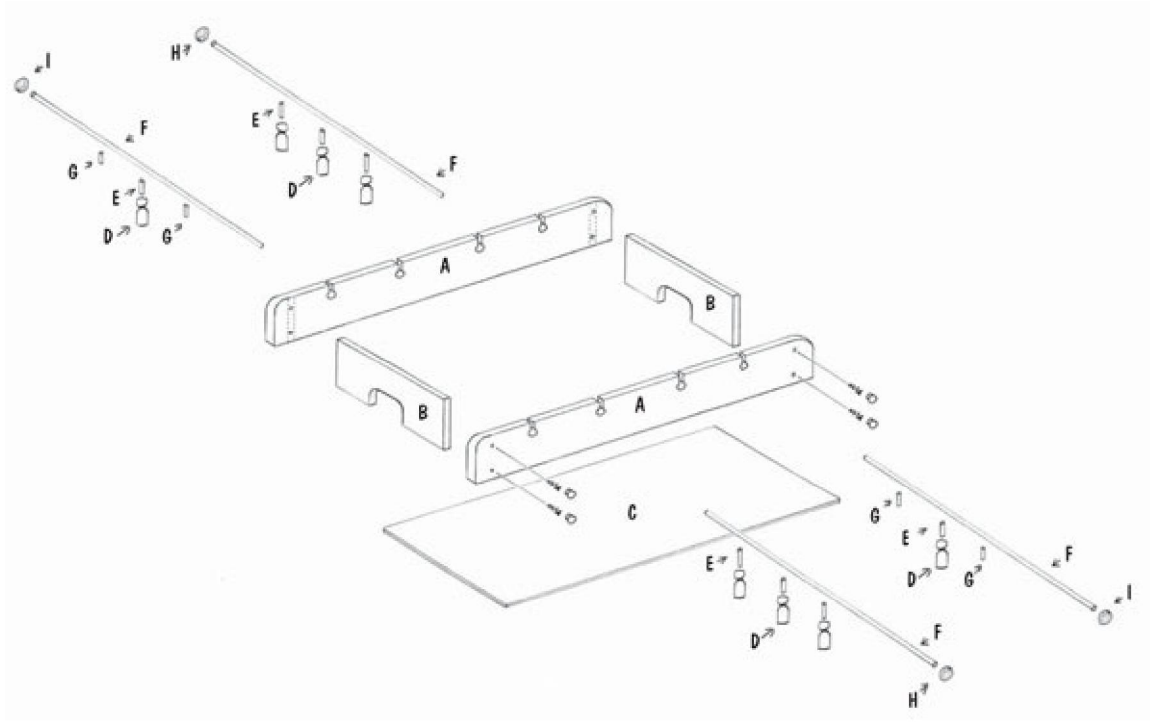


Tabletop Foosball



Foosball simulates the field game of soccer, and dedicated foosball tables have been a staple of rec rooms and arcades for decades. Full-size tables vary, but most are around 48” long and feature four control rods and 11 little players per side. However, with a downsized game board and fewer players, foosball is easily adaptable to a tabletop version. For this project we’ll cut the game board to about half size, decrease the number of controls to two per side, and the number of little players to four per team. Your kids will still have plenty of play action, and when they’re done the game is easy to store in a closet or under a bed.

Tabletop Foosball



Tabletop Foosball Cut List

Overall dimensions: 11- $\frac{1}{2}$ " wide x 24" long x 3- $\frac{3}{4}$ " high

Ref	Qty.	Part	Stock	Thick	Width	Length
A	2	Long Sides	Pine	$\frac{3}{4}$ "	3- $\frac{1}{2}$ "	24" (a)
B	2	Goal Sides	Pine	$\frac{3}{4}$ "	3- $\frac{1}{2}$ "	10" (a)
C	1	Bottom	Plywood	$\frac{1}{4}$ "	11- $\frac{1}{2}$ "	24"
D	8	Players	Hardwood Doll	$\frac{5}{8}$ "	n/a	1- $\frac{5}{8}$ " (b)
E	8	Player Mounts	Hardwood Dowel	$\frac{1}{4}$ "	n/a	1- $\frac{1}{4}$ "
F	4	Control Rods	Hardwood Dowel	$\frac{1}{2}$ "	n/a	20"
G	4	Goalie Rod Stops	Hardwood Dowel	$\frac{1}{4}$ "	n/a	1"
H	2	Kicker Rod Knobs	Hardwood Ball	1"	n/a	n/a
I	2	Goalie Rod Knobs	Hardwood Ball	1- $\frac{1}{4}$ "	n/a	n/a
J	1	Playing Ball	Hardwood Ball	1"	n/a	n/a

Notes

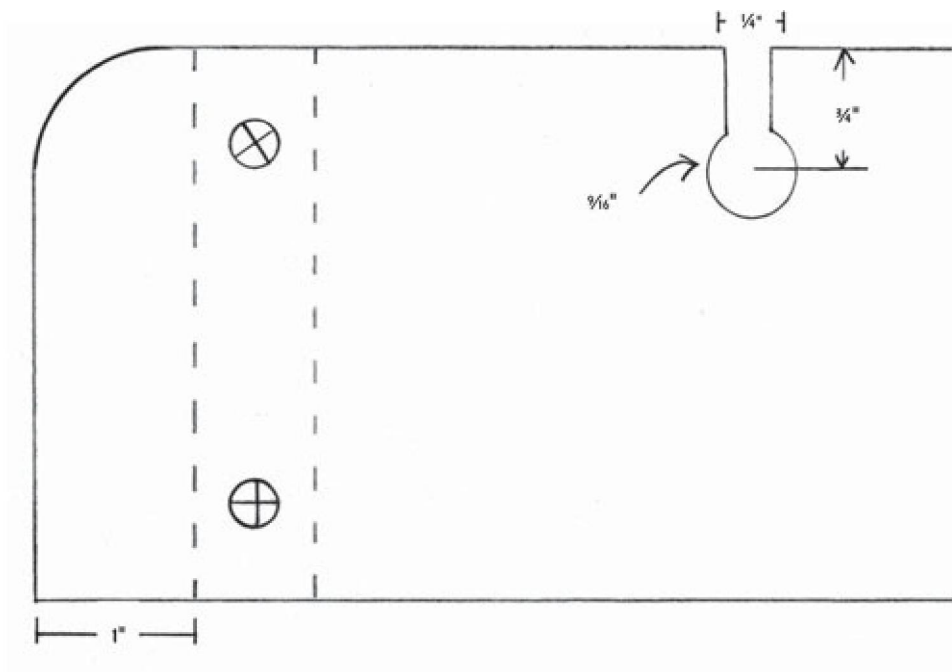
(a) Parts A and B can be cut from standard 1x4 pine, which actually measures $\frac{3}{4}$ " thick by 3- $\frac{1}{2}$ " wide.

(b) Usually sold as "Wooden Doll" or "Wooden People" or something similar.

Additional Materials

Hardwood button plugs (8 needed)

Side End Detail (full size)



Goal Pattern (full size)

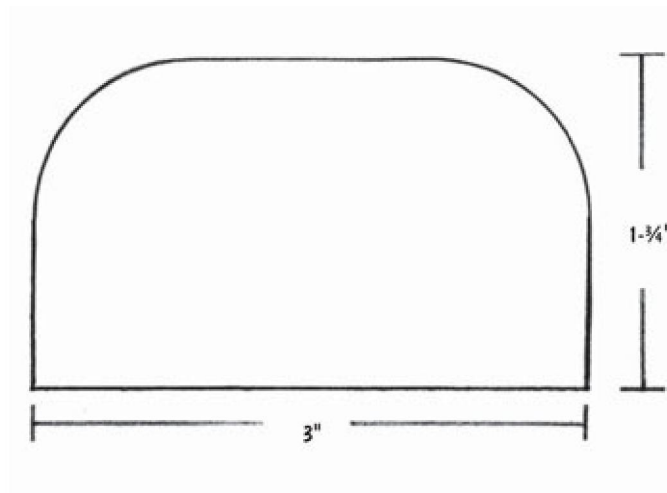


Photo 1 Cut out the goal opening with a coping saw or, as here, a scroll saw.



Photo 2 Measure and mark carefully, then drill the rod holes at the top of the game side pieces.



Photo 3 Create a keyhole by cutting down to the rod hole with a coping saw.



Photo 4 Apply glue to the ends of the goal sides and clamp the assembly until dry.

Building the Tabletop Foosball

The game board is a basic rectangular box with 3-½” high sides, so you can cut all four sides of the game box to length from standard 1x4 pine, which is already 3-½” wide. A miter box is your best bet for cutting these squarely. Transfer the Goal Pattern from [Page 73](#) to the center of the two shorter pieces, and cut the opening with a coping saw, jigsaw or scroll saw ([Photo 1](#)).

Prepare the game box long sides by first rounding off the top corners with a jigsaw or coping saw per the Side End Detail drawing on [Page 73](#). Now, lay out the locations of the side holes that will accept the control rods. Measure and mark at 4-½“, 9-½“, 14-½” and 19-½“; each of these marks should be exactly ¾” from the top edge. With the marks laid out, clamp the sides atop a piece of scrap to your bench or worktable, and drill ⅙” holes on your marks as shown in [Photo 2](#). Since the control rods are ½“, a ⅙” hole will allow them to move freely without binding.

These side holes are slotted on the top in an inverted keyhole shape to accommodate the mounting dowels of the little players when inserting the rods for play. Mark a ¼” wide slot directly above and centered over each of the holes, then cut the waste free. In [Photo 3](#) I’m using a coping saw, which is really the fastest way to go, but you can also cut these with a jigsaw or scroll saw if you like. Since the player mounting dowels are ¼“, cut these slots directly on the line, which will create a slot just a tad wider than ¼“. With the ⅙” hole drilled at ¾” from the top edge, the length of this slot will be a bit shorter than ½“. You can see these slotted holes in the Side End Detail drawing.

Fold a piece of #100-grit sandpaper and sand the interior and edges of the slots smooth, rounding edges slightly, then give the entire side a good sanding as well. Repeat with #150-grit paper.



Photo 5 Reinforce the assembly by countersinking pilot holes and driving in 1-⅝” screws.



Photo 6 Cut the box bottom with a jigsaw. A clamped-on guide ensures a straight cut.



Photo 7 Apply glue to the bottom edges of the game box, then nail the bottom into place. Be sure to set the nails just below the surface.



Photo 8 Put just a dab of glue around the edges of the countersinks, then tap in wooden button plugs.

Mark perpendicular lines 1" from each end across the inside faces of the long sides. Assemble the game box by applying glue to the ends of the short goal sides and clamping them on your lines between the two long sides, then check the assembly for square as in [Photo 4](#). Insetting the two goal ends gives a playing field measuring 20-1/2" long.

When dry, unclamp the assembly and countersink pilot holes for two 1-5/8" screws at each corner to reinforce the joints ([Photo 5](#)). Drill the countersinks deeply enough so that once the screws are driven in, there's a 3/16" to 1/4" space above the screw heads. This will give us room to install wooden button plugs to hide the screws.

A jigsaw works best to cut the game box bottom to size. To get a perfectly straight cut, temporarily clamp a strip of wood to the workpiece offset the width of the jigsaw base, as in [Photo 6](#).

Flip the game box upside down and apply glue all around the top edges. Put the bottom into place, aligning the edges all around, and attach the bottom permanently by driving $\frac{3}{4}$ " or 1" brads in through the bottom. Note in [Photo 7](#) that I've penciled a nailing guide showing the center of the box sides all the way around. Be sure to set the nails just below the surface with a nail set so they can't scratch the tabletop while playing. With the bottom attached, give the plywood a light sanding if needed.

Let's go back to those screws in the box assembly and make them disappear. Apply just a dab of glue around the inside of the countersink and tap in wood button plugs, which will cover the screw heads and add a nice detail to the sides of the game box ([Photo 8](#)). This is just one way to cover screws with plugs; you'll see another way to do it in the Desktop Bookrack Project on [Page 105](#).

The game box is now complete, so set it aside as we shift attention to the players and control rods. The players are small wooden doll bodies available at any craft store or large fabric store with a craft section, and are the same ones used for the Rubber Band Racer Project on [Page 62](#). These are fairly standard, but for reference the ones I got were $\frac{5}{8}$ " in diameter by $1\text{-}\frac{5}{8}$ " in length.

The players attach to the control rods by way of short $\frac{1}{4}$ "-diameter dowels, so drill the top of each player using a $\frac{1}{4}$ " drill bit to a depth of $\frac{3}{8}$ ". To make this task easier, create a quick jig to hold the little players for drilling – it'd be nearly impossible to drill them safely otherwise. Drill a few $\frac{5}{8}$ " holes in a line down the center of a small piece of scrap. Now, use a scroll saw, jigsaw or coping saw to cut the scrap in two right through the holes, creating two halves with partial holes. Place the wooden players in these half-holes, add the other side of the scrap and clamp the two sides together. This forms an assembly that you can now clamp to your workbench for drilling, as shown in [Photo 9](#). I've used masking tape to ensure I don't drill any deeper than $\frac{3}{8}$ ". Depending on how many holes you made in your jig, you'll need to do this a few times to drill all eight of the wooden players.

While you still have the $\frac{1}{4}$ " bit in your drill, move on to the control rods and mark the hole locations. For the center kicker control rods, mark for the three wooden players at $5\text{-}\frac{1}{2}$ ", $8\text{-}\frac{1}{2}$ " and $11\text{-}\frac{1}{2}$ ". There's only one player on the goalie rods, right in the center. However, these rods need a couple of stops to control how far the rod will move. The kicker rods don't need these because the outer two players act as stops. Mark the goalie rod at 6", $8\text{-}\frac{1}{2}$ " and 11". Note that the two outermost holes are a bit farther in than on the kicker rod, meaning the goalie has a wider range of movement to protect the goal.

Before drilling the rods, clamp them securely to a bench; if you have a vise, partially open it and set the rods there and clamp from the top. Drill on your marks to $\frac{3}{8}$ " deep (Photo 10).



Photo 9 Secure the wooden players in the drilling jig, then drill a $\frac{1}{4}$ " hole into the center of the tops.



Photo 10 Clamp the control rod dowels onto a partially opened vise for drilling the player mounting holes.

Cut eight pieces of $\frac{1}{4}$ " dowel to a length of $1\text{-}\frac{1}{4}$ " for the player mounts, and four more to 1" for the goalie stops. In Photo 11, you can see how to make this easy. Clamp a small block of scrap to the bed of your miter gauge so it snugly holds a length of dowel in place. Pencil in a mark to indicate the desired length to the side of the cutting slot. Slide the dowel until it touches your mark and cut, then slide and cut again until you have as many as you need.

With $\frac{3}{8}$ "-deep holes in both the wooden players and the control rods, mounting the players with the $1\text{-}\frac{1}{4}$ " dowels will leave $\frac{1}{2}$ " of open dowel between them, which will allow the rods to be inserted into the game box's slot holes. Because drilling precise hole depths can be difficult, be sure to dry-fit the players on the rods and check the distance of open dowel – if it's $\frac{1}{2}$ " you're golden; if it's not, shorten the mounting dowels or cut longer ones to get the length right.

Dab a very small amount of glue into the top of all eight wooden players and tap the $1\text{-}\frac{1}{4}$ " mounting dowels in until they seat firmly as in Photo 12. Now, dab a bit of glue into the player holes in the control rods and tap the players into place. Remember that there are three players on the two center rods, but only one on the goalie rods. With the goalies in

place, glue in the 1” dowel stops on either side of the goalie. You can see two completed control rods on the left in [Photo 12](#).

The rods are complete and ready for use, but you can add a nice touch by gluing some knobs on the ends for surer control and an attractive detail. You can find wooden balls already drilled with ½” holes at most craft stores. If they’re not drilled, you can drill your own with the same type of jig used earlier to drill the tops of the wooden players. I used 1” knobs for the two center kicker rods. For the goalie rods I wanted a better grip and so glued on slightly larger 1-¼” knobs. You can use either size, or make all the knobs the same if you like.

The last step is to give the entire game a nice finish. Polyurethane varnish is perfect for this, as it not only brings out the grain and deepens the color of the wood, but it also adds a good bit of protection from rough play.

Insert the rods by turning them so the players face upward, and slide them into the slot holes. Once all the way in, swinging the players down into playing position locks the rods in the game box.



Photo 11 A pencil mark on your miter gauge makes it easy to cut several dowels the same length.



Photo 12 Put a bit of glue into the hole atop the players, and tap the mounting dowels into place.