How to Make a 500-Pound Doughnut

Doughnuts. Is there anything they can't do?

—Homer Simpson ("Marge vs. the Monorail")

Making a monster doughnut on network television is one of those crazy life stories that you never expect to happen to you. But after the first edition of this book came out, I got a call from a production company looking for a food science geek to be in a show for a "*network*" that "deals with *food*."

"How big of a doughnut do you think you could make?" they wanted to know. The show idea was simple: two chefs, each assisted by a pastry chef and a food science geek, would compete to make the tastiest, prettiest, and biggest version of an assigned food. The first (and only) episode of *Monster Kitchen* was broadcast on July 19, 2011, and showed us making a giant doughnut.

After some reading—yes, a baked doughnut still qualifies as a doughnut—I came up with a plan. I'd make a mold that we could bake in a room-sized industrial oven, Pastry Chef Amy Brown would mix up the batter in a cement mixer, and Chef Eric Greenspan would take care of the doughnut filling. The entire plan hinged on the ability to make a monster mold in the shape of a doughnut. A 5-foot-wide (1.5 meter) mold. As big as Chef Greenspan himself. Yikes.

Silicone rubber is often used for food molds, but the curing time would be too long, plus the mold would be too thick for the dough to cook. Metals like copper are also common for food molds, but at this scale a copper mold would be either too flimsy to hold its shape or too thick to manipulate. This left plaster—and plaster bandages, rolls of gauze coated with plaster powder. Bingo! Wet the strips and lay them on the surface of the object you want to create a mold of, and a few hours later they'll have cured into a hard cast that's also heat-safe.

For the *positive*—the item that provides the model for the mold—I needed something torus-shaped, like a white-water-rafting tube. At smaller sizes I could make a positive by crumpling up aluminum foil into the approximate shape and working it, but no way for a 5-foot one. After an admittedly grueling phone and online hunt (thanks, Chris!), we found a tire tube that was just over 5 feet in diameter. I had my materials to make a true torus-shaped mold and something to fabricate the mold around. Add cake batter, bake, and glaze, and you've got a monster doughnut.

Mini-monster doughnut mold (for ~1-foot-diameter / 30 cm doughnuts)

1. **Make and check a mold positive** by crumpling up aluminum foil into a torus shape and then wrapping it in plastic wrap. Check that it'll fit into your oven (or if you're daring, your deep-fat fryer) before continuing.
2. **Coat the positive** with shortening, which will act as a mold release.
3. **Create the mold** using plaster bandage strips, available online or at craft supply stores. Cut a strip a few feet long, wet it, and wrap it around the positive. Depending upon the size of your mold, either loop the strips around the torus, in which case you'll have to cut it later, or wrap only the sides and top such that you can remove the aluminum/plastic wrap core later. Repeat until the entire tube is covered, at least 4 or 5 times. (In the show, the mold was wrapped 8–10 times; that was just barely enough for that size.)
4. **Allow mold to cure,** ideally 24–48 hours.
5. **Remove the positive.** If you left the bottom uncovered, flip the mold over and pull out the aluminum foil and plastic wrap. If you fully wrapped the mold, cut the top off with an angle grinder (wear a dust mask and eye protection!).

Cake doughnut recipe

The following doughnut recipe, based on Amy Brown's work, makes fantastic cake-based doughnuts. (Doughnuts are often raised with yeast, but we opted to go with a baking powder and baking soda–based dough for a quicker rise.) Don't let the "500-Pound Doughnut" title here fool you into thinking you can't make regular doughnuts with this recipe.

1. In a bowl (for 1 dozen regular doughnuts), Hobart mixer (1-foot-diameter / 30 cm doughnut), or twenty 5-gallon food-grade buckets (5-foot-diameter / 1.5m donut), mix:

	1 dozen regular doughnuts	1-foot-diameter doughnut	5-foot-diameter doughnut
Flour (g)	516	6,192	103,200
Sugar (g)	238	2,856	47,600
Baking soda (g)	3	36	600
Baking powder (g)	9	108	1,800
Salt (g)	3	36	600
Nutmeg (g)	2	24	400

2 In another large bowl (for 1 dozen regular doughnuts or a 1-foot-diameter doughnut), or four 5-gallon food-grade buckets (5-foot-diameter doughnut), mix:

See page 447 for buttermilk substitution

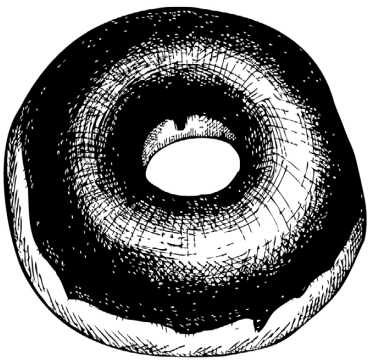
	1 dozen regular doughnuts	1-foot-diameter doughnut	5-foot-diameter doughnut
Buttermilk (mL)	192	2,304	38,400
Butter (g)	64	768	12,800
Vanilla extract (mL)	4	48	800
Eggs, large (count)	2	24	400
Egg yolks (count)	1	12	200

3 Mix dry and wet ingredients, using a spatula for the smaller versions; for a 5-foot-diameter doughnut, mix in four batches in a stand cement mixer. Transfer dough to mold.

For regular doughnuts, roll the dough out to about ½" / 1 cm thickness. Cut it into doughnut shapes using a round punch (a large yogurt container, flipped upside down, will work); punch out the center as well. Fry dough in oil at 375°F / 190°C until golden brown, taking care to keep the heat at the appropriate temperature (use more oil and cook them one or two at a time). Flip doughnuts partway through baking. Once they're done, transfer to a cooking sheet lined with paper towels to cool.

For 1-foot-diameter doughnuts, bake in an oven set to 350–375°F / 175–190°C until the middle reaches 195°F / 90°C. Remove the doughnut from the oven, cool for at least 30 minutes, and remove the mold. If you choose, optionally fry the donut at this point to set the outside to a crispier, mahogany brown color: transfer the doughnut to a sturdy cooling rack and, using a wire to hold that rack, lower the doughnut into a large pot of hot frying oil, fry it, and then lift it out.

For a 5-foot-diameter doughnut, start by baking it in a large oven, somewhere around 350–375°F / 175–190°C, for half a day or so, until the internal temperature reaches 180°F / 80°C. To fry it…well, it's complicated, involving cranes, sand blasters, welders, dumpsters, and about a million BTU of burners. Thankfully, someone else was footing the bill.



Filling and glazing

As for filling and glazing the donut, that's a personal choice. On the show, we used an egg custard filling and maple glaze, with chocolate-coated bacon strips as sprinkles. Personally, I think powdered sugar is pretty good, and way easier.