

Candy Gears—Where Mesh Meets Marshmallow



On the production floor at Knechtel, food scientists, chemists and engineers take part in Willy Wonka-like experiments in search of the perfect piece of candy. Whether salty, sweet or something in between, the consulting firm has the daunting task of mixing and matching various flavors all in the name of great taste. It's a tough job testing chocolate, peanut butter and marshmallow combinations, but somehow the Knechtel team seems to manage.

Since 1956, Knechtel, one of the largest and oldest confectionary consultants in the world, has serviced major brands in the candy industry. The firm covers everything from creative development, engineering and scale-up studies to assisting clients with pilot plant manufacturing.

"Besides chocolate, gummy bears and chewing gum, the company has evolved into other markets like nutraceuticals, snack foods, pet foods and pharmaceuticals," says Bob Boutin, president at Knechtel. "Drugs don't have to taste bad to be good for you anymore."

The 27,000-square-foot laboratory and test kitchen in Skokie, Illinois features cooking burners, extruders, rotary presses, revolving pans and chocolate kettles.

And did we mention gears?

"Almost everything on the premises incorporates gears of some kind,"

Boutin says. "From an old wheat grinder to a forming extruder for granola bars and a caramel wrapping machine from the '50s."

Knechtel still utilizes drop frame rollers from the '30s and '40s for proof of concept equipment. Though the volumes have changed, the methodology and principles of candy design have remained the same.

"With all the transporting and transferring of materials that goes on in the candy industry gears are an intricate part of what we do day-to-day," Boutin says.

When asked by a client to wrap 1.7 million pieces for a clinical trial using an old-fashioned wrapping machine, Boutin says the gears were ground off the machine not once but twice before the project was completed. "You sometimes come up with very viable methods to save your clients money and yet you destroy pieces of equipment along the way," Boutin says. "Each project is about resolving issues and that includes engineering and manufacturing."

Knechtel also has a chewing gum line that Boutin calls, "a gear driven nightmare."

"The bubblegum sausage goes through two sets of sizing rollers to cut

and form it into pillow shapes," Boutin says. "If you want to change the size and shape of the bubble gum, you have to change the gears each time."

While gears remain ever-present at Knechtel, Boutin says they aren't as prevalent in the industry as they once were.

"We've got some direct drives and hydraulic drives on some of our equipment, and we're always looking at different methods to get the most out of our machines."

For projects that require high viscosity, strong power and torque, however, Boutin says the best method is still the gear drive.

"For every gear that might be lost to other methods, you'll find plenty of products that will need gears in the future."

Although Knechtel isn't permitted to share trade secrets or recipes, Boutin can't walk down a snack aisle at the supermarket without smiling at all the products his company has helped to create.

"I have thousands of children [products] on the market that nobody knows we worked on. It's an exciting and challenging job, but satisfying to see these projects come to fruition."

And maybe eat a couple along the way.

For more information on Knechtel, visit www.knechtel.com.