

IMS.81 Pro LN

THE Ice-cream Man!





Appliances / Ice-cream machine

Planetary gears from IMS Gear make ice-cream and sorbets even more delicious.

Planetary gears from IMS Gear make ice-cream and sorbets even more delicious. This is stirring, in the full sense of the word: Sophisticated technology from the IMS Gear planetary gear module kit makes ice-cream, granitas and sorbets even more delicious. Find out here how we do that and why Ugolini SpA equips its machines with planetary gears made by IMS Gear.

With its modular system, IMS Gear's spectrum ranges from quick quality solutions to customer-specific adaptations and sophisticated special gear configurations. The same applies to our solutions for ice-cream machines.

- High efficiency
- Small installation space
- Low noise emission
- Strong time-to-market performance

“Together with IMS Gear we make the world-famous Italian ice-cream yet a little better.”

Gelati, Gelati, Gelati

Who doesn't know them, the stands alongside boardwalks, markets and tourist attractions in the South where fruity granitas, sorbets or tasty slush ice is offered? Ugolini SpA ranks among the leading manufacturers of

ice-cream or sorbet machines worldwide. These are used to produce, cool and continuously stir the ice-cream in order to maintain optimum consistency and avoid extreme freezing or lump formation.

Ice-cream Needs Power

“For more than 40 years, our family-owned company from the greater Milan area has developed and manufactured machines for the production and sale of sorbets and granitas”, Junior Manager Marco Ugolini reports. When it was decided to offer machines for slush and dairy ice-cream as well, it quickly became evident that the gear solutions used so far were inadequate: “With a firmer consistency you need a significantly higher torque to stir

the goods - and that continuously.” After test runs with gear solutions by other providers had failed, Ugolini got in touch with IMS Gear through the manufacturer of the electric motors. “In our cooperation, we realized very soon: For the quick implementation of our project IMS Gear is exactly the partner we were looking for.”

You Eat with your Eyes

“Planetary gears boast the great advantage of high energy density. This means that high torques can be transmitted in small installation spaces”, Franco Nacci, Sales Engineer at IMS Gear explains. Apart from the power, the design also plays a major role with ice-cream machines:

As an eye-catcher at the point of sale, ice-cream machines also have to convince by their look - after all, you eat with your eyes. This means: Lots of space for the ice-cream, little space for the technology.

The Requirements: Pretty Sporty

“To be precise, the installation space available had a diameter of just 42 mm, with high requirements to torque and service life”, Nacci explains the sporty task. Why sporty? Because the calculations showed that the gear design of a metal planetary gear with a diameter of at least 52 mm was necessary to meet the requirements to torque and robustness. And also

sporty because the scheduled time frame was practically used up after the implementation that had initially been intended failed. “At this point, we could really score with our modular system”, Nacci rejoices. “Instead of the axial screw connection of the gear drive we opted for an alternative radial pin connection.”

Can. Do!

For this reason, we from IMS Gear could develop an alternative approach: This trick allowed the design of a gear housing reduced to an outer diameter of 42 mm, while retaining the gear components of the IMS.52 Pro gear. Furthermore, the bearing plate of the motor was adapted to attach the gear drive directly and without additional motor flange to the motor. "At last, we modified the sealing at the motor side so that a ready-to-use

planetary gear could be delivered within months and in large quantities", Nacci emphasizes the extremely fast implementation. And this even with two different gear reductions. The modular system always allows to adapt the gear reduction within a series by four to five different gear reductions per gear stage.

Can you Please Turn Down the Volume?

In this first version, all three stages were equipped with metal planetary wheels. Tests after 4,500 hours of runtime showed practically no wear. "Thus, the preconditions for the next step towards noise optimization were fulfilled", Nacci reports. The machines would usually be located at busy places with lots of background noise, Marco Ugolini explains, yet there was an increasing demand for low-noise operation, so that machines could also reliably be operated within buildings.

At this point, the fully modular gear system once more makes full use of its benefits: It has the variability to replace the metal planetary wheels by plastic ones whose quality and durability have been proven in numerous test runs and series applications. In the first stage, where the high

rotational speed directly meets the gear drive, ductile plastic planetary wheels now provide the first gear reduction while the torque is still low. This reduces the noise level significantly. "The exact implementation of the gearing in this stage is based on decades of experience of IMS Gear in combination with state-of-the-art simulation calculations", Franco Nacci emphasizes.

In the second and third stage, spur-gear metal wheels transform the rotational speed to the required torque. Due to a special bearing technology, these wheels are optimized for a particularly long service life even with high torques.

Making Ice-cream Yet More Delicious

The customer is enthusiastic about our constructive solution finding: "The use of a brushless motor with the sophisticated planetary gear from IMS Gear is an excellent technological solution by which we can ideally design the stirring and circulation process during production and in the dispenser", Ugolini rejoices. Especially in the production process of ice-cream, this constellation allows for an unprecedented degree of control to ensure the optimum consistency and texture of the product. "In this way, Ugolini helps - together with IMS Gear - to make the world-famous Italian ice-cream yet a little more delicious", Nacci rejoices.

Utilization in the top devices is the first application. The proven robustness of the IMS Gear gear drives and the slim design, however, have induced Ugolini to use planetary gears with modified gear reduction also in simpler devices without control. The variability of the modular system allows for quick and cost-efficient derivation - and Ugolini takes advantage of this option: On the one hand, he offers high-end products, but at the same time he can address new market segments. "Thanks to the use of IMS Gear planetary gears, our products rank among the slimmest models in the market", Marco Ugolini points out a tangible competitive advantage.

Summary

THE ice-cream man? Absolutely, but even he can further improve the production process - with gear solutions from IMS Gear. Planetary gears from our modular system allow for extremely short project times, reconcile competing goals such as low noise and durability by superior technology, and facilitate the safe and easy derivation. Sounds good - and tastes delicious!

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☎ +49 (0)771 8507-252

✉ franco.nacci(at)imgear.com

www.imgear.com