



Gel mixer ANETO

Ref. 080512



If we asked any design engineer specialized in the dental sector what machine in the lab requires the most complex concept and design, he would answer without hesitation that it is the gel mixer. It is easy to understand: it has to grind and liquefy about 6 kg of gel -a substance whose viscosity varies enormously according to the temperature-, to warm the gel up to near the boiling temperature without burning it, and finally to cool it down to the exact pouring temperature. Furthermore, the mixer has to produce as less noise as possible during the process, and should be designed to endure an inadequate operation on the part of the user, such as starting the mixer up when the gel is solid. To make things more complicated, the mixer has to be designed to work for many hours a day. It will probably be the most intensively and widely used machine in any dental lab. These requirements explain why there are so few manufacturers in the world capable of producing gel mixers that work reliably and without trouble.

The almost 25 years of **MESTRA's** experience in manufacturing the **GEL-BAT 6** model are a good enough letter of introduction to be a member of this select club of manufacturers. But unfortunately time goes by, and despite the prestige and satisfaction a product may have given to its manufacturer, the time to renew it will arrive sooner or later. And this is the case of the new **ANETO** Gel Mixer of **MESTRA**. A machine designed to maintain the standard of reliability reached by our firm in this kind of products, while it updates and improves its concept. The **ANETO** mixer will probably be the best product in this category currently available in the Dental Market. Let us check it step by step.



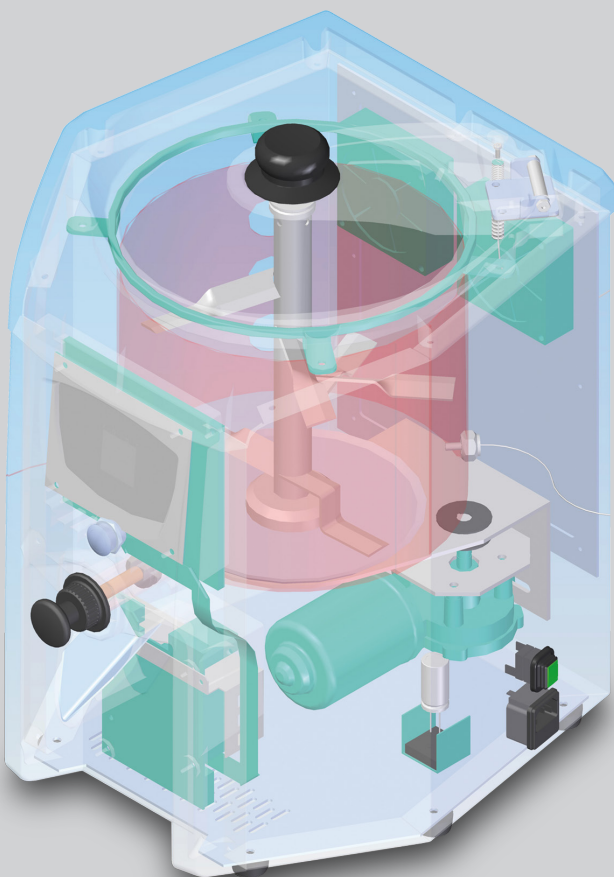
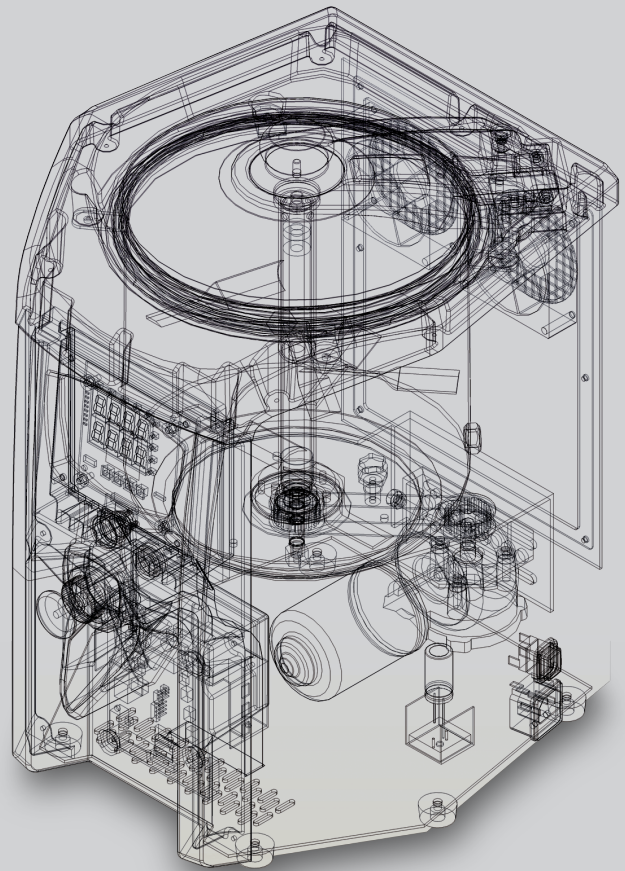
Characteristics

Height 465 mm	Voltage 220 V 50 / 115 V 60 Hz
Width 330 mm	Power consumption 650 W
Depth 385 mm	Speed (rpm) 100
Weight 14 kg	Capacity 7 L

The heating

One of the most important challenges our design team had to face while developing the **ANETO** project was to achieve a uniform heating of the gel. The gel is just water mixed with a thickening substance, and, therefore, above 100 °C the water evaporation itself leaves a solid residue in the tank edges. Over time the heat of the resistors tends to blacken the tank, and conforms a solid crust very difficult to clean. The higher the temperature reached by the resistors, and the lower the level of the gel in the tank, the greater the amount of crust generated.

The solution to this problem is not easy, and most manufacturers do not take specific measures: they just heat the tank without paying too much attention to the problem. Some of the manufacturers have opted for fitting the products with a double chamber to heat the gel in a “Bain Marie”, but preventing the gel reaching 100° C. Nevertheless, it increases the price and the volume of the machine, and, in addition, it requires a longer heating time and more resources to prepare and maintain the machine.



The solution proposed by **MESTRA** is simple and clever. It uses two heating resistors: one of them in the lower part of the tank, which raises the temperature in a very short time, and the other one covering all the side surface. The latter is made of silicone, and gives a uniform heating across all its big surface of 1052 cm². This way an electric power density of just 0.33 W/cm² is achieved, enough to maintain the temperature in the tank edges at exactly 93.5 °C. While the lower resistor raises the temperature in the tank in a few minutes, until the gel mixes, the side resistor prevents the heat loss along the sides, but without burning the gel.

The result is astonishing: the heating is much quicker than in the “Bain Marie”, and without the annoying burnt crusts.

The cooling

If we want to obtain ready-to-pour gel from solid gel in the shortest possible time, it is easy to understand that a quick cooling is as important as a quick heating. The engineer team in **MESTRA** has carried out a smart design work: the power of the ventilation system has been doubled compared to the **GEL-BAT 6** model, and the design of the hot air extracting system allows to obtain gel in an ideal pouring state in a record time. In fact, for a given amount of gel, the cycle time has been reduced almost a 35% compared to the time in the **GEL-BAT 6** model.



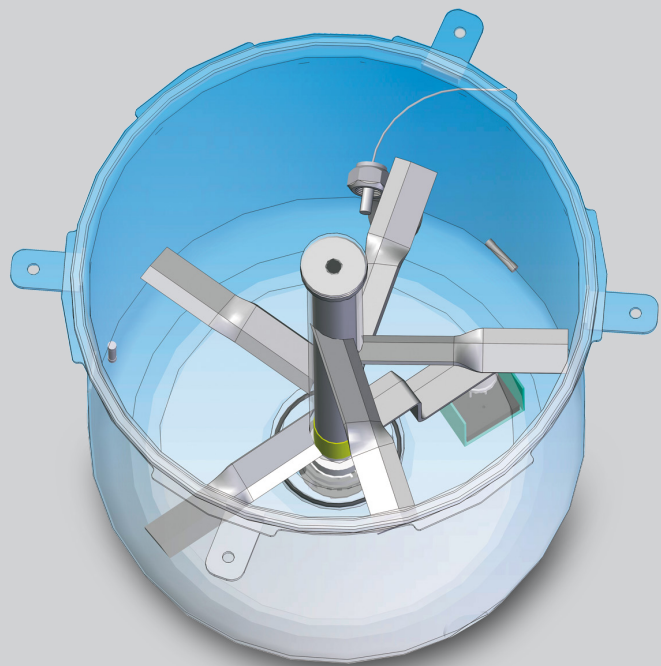
Easily operated tap. Made of non-stick thermo-plastics



The mixing

If the heating is one of the main ingredients to achieve a, excellent texture gel, the other ingredient is without doubt the mixing. The problem is that the “engine/transmission/blades” cinematic string has always been a source of trouble in any mixer, and a real headache for the design engineers. We could state that this string is the Achilles’ heel of all the gel mixers. As it is customary in our firm, the design team gave it special attention and care.

The mixing system of the **ANETO** gel mixer has been thoroughly calculated, and the result is a mechanism that works as accurately as a Swiss watch: the shafts glide over three bearings (two sockets and a ball bearing); the shaft is linked to the motor by means of a flexible coupling; the thickness of several parts of the system has been increased to improve their resistance; the allowances have been refined to less than a tenth of millimetre; etc. With all these features the **ANETO** boasts of being one of the most reliable gel mixers currently in the market, and probably the most silent. During its operation you will notice just a light whir, almost imperceptible. You will be glad to have a silent operation machine near you working for many hours a day. We have to recognise the brilliant work of our design team.



The controls

The sophisticated features described above are completely useless if they are not strictly controlled. Hence the decisive role of the controls in the good operation of the machine. The motion of the engine is completely monitored: the starts, stops, stresses and overloads are checked every few thousandths of second, and the resulting controlled motion never forces the transmission system. And this turns into a smooth operation and a long and excellent working life of the machine.

The temperature is also thoroughly controlled to co-ordinate the heating of the two resistors as efficiently as possible: the heating takes place at the highest possible speed for the gel not to get burnt, and the cooling takes place very quickly to finish the cycle in the shortest possible time. After all, the secret to achieve an impeccable operation of the machine lies in wisely combining the mixing and the heating.

Needless to say, apart from monitoring these two important parameters, the controls of the ANETO gel mixer perform many other important functions: programming of gradients and drops in the cycle, programming the waiting times, synoptic control of the cycle; programme storage; alarms, etc. All these tools are easy to configure, and help adapt the machine to the user's likes and needs.



A key point: the cold start

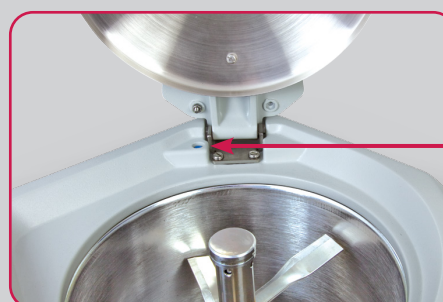
Obviously, the hardest stress you can require from a machine of this type is a start with a solid gel: let's suppose that the tank is full of solid gel, and we press the start key. The trailing string bears a forced jam, and all the elements suffer a big overload that could even damage the system. This is what we could call the real test of any gel mixer.

This operation is, of course, completely inadvisable, and it should be avoided in order to prevent safety problems and mechanical damage. Nevertheless, our engineers are fully aware that, dangerous as it may be, it could happen as a consequence of the carelessness of the user or a failure in the power supply. Therefore, some steps had to be taken about this matter:

The "motor/transmission/blades" cinematic string of the ANETO gel mixer has been sized bearing in mind this operation: The controls protect the motor, and set the exact parameters (intensity, speed and torque) during the start and prevent sudden movements that might cause damages or accidents. In addition, elastic relief-elements have been placed between the different pieces. Such a prevention guarantees a long working life of the mechanical elements of the machine.



7 litre tank made of stainless steel.

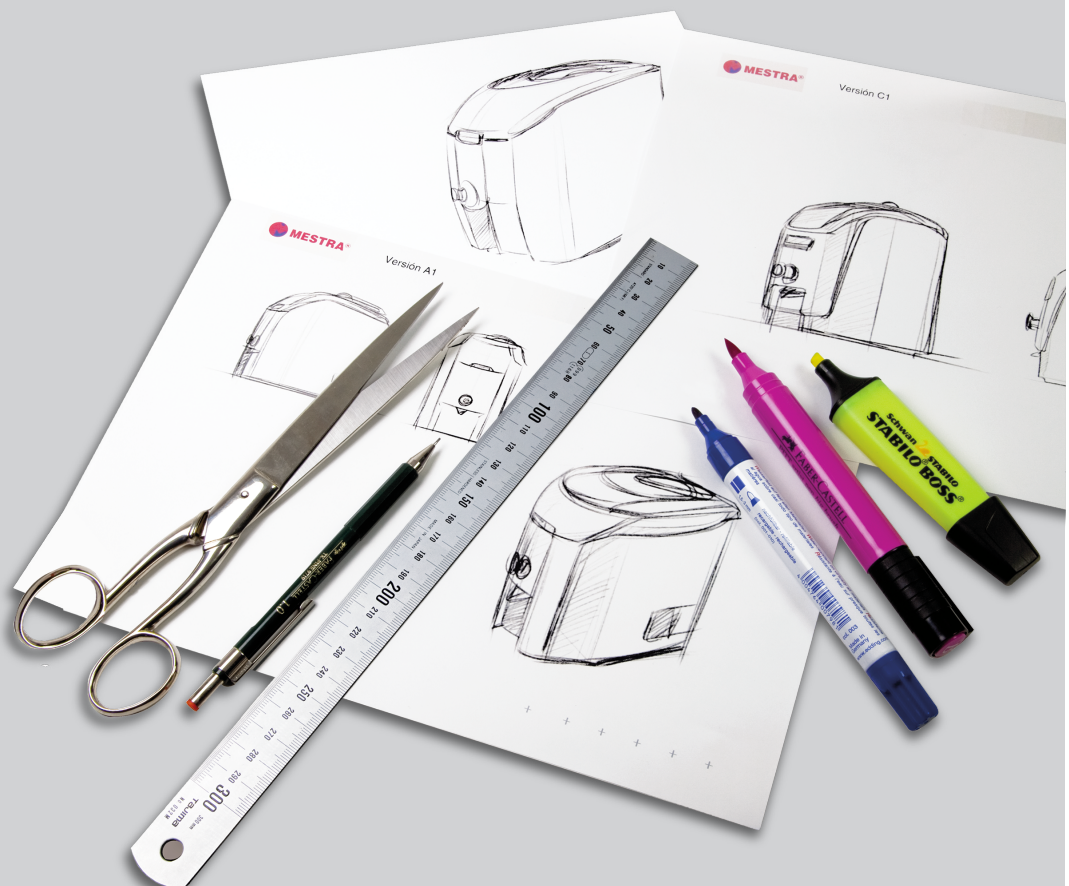


The sealing lid triggers a safety sensor that prevents the operation of the engine and the resistor while the lid is open.

The design

In **MESTRA** we have always thought that reliability and robustness do not need to be at odds with an attractive design. We try to give our products a pleasant and attractive shape. A good example is the design of the **ANETO** gel mixer: modern, smart, different... are the adjectives that come to your mind the first time you see the device. It is often said that one of the distinctive features of a good professional is the tools he uses; we are convinced that the design of the **ANETO** gel mixer will be a breath of fresh air in your lab, and will improve your professional image.

All the **MESTRA** products are designed to be functional and, at the same time, harmonious. The quality of the materials used; the level of the finishing; the touch of the controls; the ease of use; the ergonomics... are a good example of the standards required by **MESTRA** in all its products. The quality and these details are easily perceivable, but difficult to define. In addition, our products include construction details, characteristic of the brand, that make them top quality and highly reliable products. If you are a customer of the brand, you must have noticed it. If you are not our customer, you are invited to confirm it by buying one of our products.



Advice to choose a gel mixer



You may be currently interested in buying a gel mixer. In this case, you are lucky, because you will find many models and manufacturers of excellent products in the market. We would like to give you several useful tips for you to choose the most suitable model.

- ✓ **First of all, be objective. Do not let names, nationality or any other information from the dealer or manufacturer influence you.** Do not pay attention to set phrases such as “there must be something wrong if it is so cheap”, “cheap products often prove to be expensive”, “in XX (country) they have never been good at manufacturing machines” and so on. Take into account just reasons, facts and arguments. Never accept disparaging remarks from dealers. Compare at least three models (four, better) before choosing one
- ✓ **The heating is one of the key aspects in this type of machines.** You will have to check what solutions the manufacturer has foreseen to prevent the gel burning in the edges of the tank. Excuses like “our machine is very quickly cleaned” are not admissible: the matter is not to clean the machine quickly, but not to dirty it.
- ✓ **Take special care in the cycle timing.** The quicker you prepare the gel, the better. You will save time and energy. An efficient cooling is very important at this stage. The quicker the gel is heated and cooled down, the shorter the cycle will be.
- ✓ **As it has been said, the Achilles’ heel of these machines is the “engine/transmission/blades” string.** An efficient design has to have enough gliding elements (bearings, ball bearings), has to be correctly sized, and has to have elastic relief elements. This is the only way to guarantee a long working life of the machine. Besides, the manufacturer has to have foreseen protection systems to prevent starting the machine with a cold gel. Make sure this important requirement is fulfilled.
- ✓ **The noise of the machine should also be checked:** bear in mind that it is going to work for many hours a day. You can bear a whirl for a few minutes, but it can get on your nerves if maintained for a long time.
- ✓ **Look at the details as well:** the ease to program the electronic controls; the touch of the controls of the machine (keys, pouring tap...); the filling height of the tank; the ease to clean the machine; the access to the pouring point, etc. are the distinctive features of a good brand. Quality is not improvised, it requires years of hard work, patience and experience.
- ✓ **Although it is a secondary aspect, do not forget the design of the product:** a modern and efficient professional should use modern and efficient tools. Old fashioned designs from past decades make a poor impression.

After analyzing the aspects above, consider the price, the technical support and all the other services offered by the manufacturer. Think over all this information, and make your choice. If you take into account all these tips, be sure you will always make the right choice.



At **MESTRA** we are specialized in the manufacture and distribution of dental machinery and appliances. We are a Spanish company based in Bizkaia. We currently export to clients in more than fifty countries on five continents and we have more than a thousand references in our catalogue.

We have maintained a line of constant expansion since our foundation in 1945, thanks to our best qualities: the high quality of our products that have earned the ISO 9001:2015 certification by TÜV Rheinland, a close and attentive relationship with our customers, and a constant technical innovation in the design of our products.

Our design philosophy is based on three fundamental pillars: the needs of our clients, the observation of the techniques used in dental laboratories and our more than 77 years of experience providing creative and contemporary solutions to the daily problems of professionals in the sector.

Do you want to take a virtual visit to our training and exhibition center?

Contact us and we'll show you!



Talleres Mestraitua SL
(+34) 944 530 388
info@mestra.es - www.mestra.es
48150 SONDIKA (Spain)

