

How the GA480 automatic mixer came to life

We spoke to Jan Post, Vice President Research International at Fast & Fluid Management, and wanted to learn more about the development of the GA480 automatic mixer and why it is such an innovation in terms of technological intelligence and ultimate speed.

The customer ignites innovation



Jan explains that it always starts with a need. “At Fast & Fluid, we have been producing mixers for over 20 years. Through listening to the market, our Product Management team learnt that our customers were looking for a mixer that could speed up the mixing time and offer more user-friendliness in the process. In other words, we discovered that there was a general need for performance improvement.”

The story behind dynamic balance

The basis for optimizing the performance and user-friendliness lies in stabilizing the machine during the mixing process. Jan Post explains just how this was achieved with the GA480. “We worked with TNO, the largest and one of the most highly respected research institutes in the Netherlands,” Jan explains, “and together we developed a technique to perfect the stabilization. This was the first very important step in the development. Everything else – the speed, reliability, user-friendliness – all depends on ensuring maximum stability.”

You can compare the stability with balancing the wheels of your car. Adding weight in exactly the right places creates a consistent perfect balance. The basic rule until now was that, the heavier the can, the lower the speed. If you didn’t, the machine would just ‘walk away’.” The GA480 has overcome this issue. Not only can it mix larger cans at high speed, it remains very stable at the same time. “This was the real breakthrough” Jan continues. “We focused on improving the stability of the cradle during mixing. It’s one thing to have stability of the cradle when the mixer is standing still, but the challenge is maintaining this stability when it contains a certain mass and while turning.”

The technology behind the unique stability of the GA480 is a technique called dynamic balance. “You can imagine that if you have such high forces on the mixer’s bearings and there is an imbalance, it affects the stability, quality and lifespan of the machine. Dynamic balance removes these extra forces, so there is less stress on parts, making it even more reliable and durable.”

Intelligent optimization

Another key feature of the GA480 is its intelligence. Jan explains what is so clever about this new mixer. “In the old days everything was coupled to the can height, so the larger the can, the slower the RPM. With this new intelligence, we receive constant feedback of what is happening inside the machine

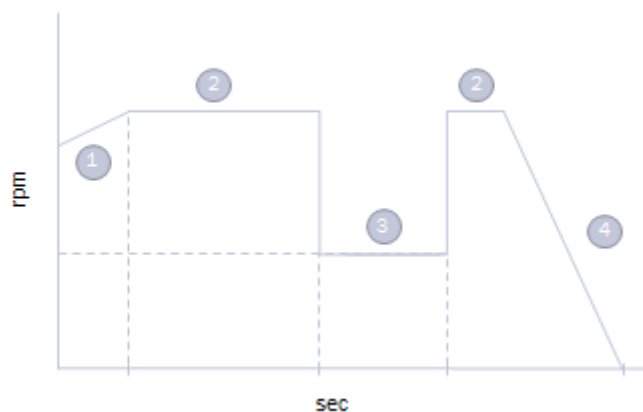
There is an incredible variation in paint types, can sizes and even the quality of the cans themselves. How does the GA480 calculate all this to get the best mixing results? “Based on the feedback during mixing, the machine measures the effects of all parameters – can size, paint structure, viscosity – and adapts the speed and time accordingly. This constant monitoring is aimed at achieving the best mixing results.” By using the auto button, the mixer builds up gradually to a high speed, then, if necessary, the machine will regulate the speed down. All this is done automatically.

One auto button that does all the thinking

We asked Jan how the auto button works. “Initially we had one button, which basically does all the thinking for the operator and optimizes the whole process. But there are sometimes cases that, for customer-specific reasons, more personal control is wanted. So we added extra buttons. For instance, if a customer has a particular can type that needs to be mixed with a lower clamp force, or if he would like to increase the mixing time because there is a special component in the paint, he can personalize the settings for this specific purpose.” Parameters such as the clamp pressure, the mixing time, and the speed can all be easily adjusted in the service software application of Fast & Fluid, thereby making it a personalized user interface.

Variable speed and faster clamping

To optimize the total mixing time, research looked into the mixing process itself and improving the clamp speed. Jan explains: “What we discovered is that by varying the rotational speed continuously, you not only get excellent mixing results, you reduce the total mixing time considerably in the process. With the GA480, the mixing speed is broken down into separate stages. The first phase starts slowly to ensure thorough distribution of the colorant and to prevent colorant from going into the rim of the can. Phase two increases the RPM to a continuous maximum speed corresponding with the specific paint. Phase three only kicks in when longer mixing times are involved, whereby the speed is reduced by about 50%, and then speeds up again to optimize colorant distribution. Ultimately, it means the machine does all the thinking to ensure better results in less time.”



“The other important improvement is the clamping speed”, Jan continues. “In this area we also carried out extensive tests to speed up the clamping process. The result is that we now have the fastest clamping speed on the market today.” In previous mixers there was one motor that did everything - the clamping and mixing. With the GA480 there is a dedicated motor for the clamping, enabling the clamp plates to move to the can a lot faster. “So it’s the entire process that has been sped up”, Jan says. “From placing the can and the paint mixing, to removing the can again.”

Let the customer be the judge

Involving the customer doesn’t just mean putting their ideas into practice. It is a continuous process and a very intensive cooperation from start to finish. “We tested over 1200 cans of paint”, Jan tells us. “We can only do that in a production environment, so the interaction with our customers is crucial: we supplied mixers, we went there ourselves, did numerous tests and measured the results.”

Ultimately it’s the customer who is the best judge in a real production environment. So what do they think? Jan is enthusiastic. “The people we speak with and who have been working with the GA480 during testing and development are amazed at how fast the new mixer realizes the desired mixing results. I have seen instances where the mixing process has been reduced from between 6 or 10 minutes down to 3 or 4 minutes. That’s a mixing process reduction of more than 50%! We have one customer whose mixing time used to be 3 minutes. Now, with the GA480, he can mix 90% of his cans in 45 to 75 seconds.”

Setting the new industry standard

Jan Post stands firmly behind his belief that the GA480 is a true breakthrough in the paint mixing market. “Absolutely. It is the result of a lot of effort and more than two years of development. And the technological intelligence we have been able to put into the machine makes the GA480 faster, but also smarter. But we’re still moving forward and looking towards the future. It’s a continuous process of research. We are constantly getting feedback from the marketplace, which we sincerely welcome, as it helps us remain innovative in our research for future trends in the tinting industry.”

About Jan Post

Jan Post joined Fast & Fluid in 1993 as head of R&D. In 2010, the Research and New Development divisions were separated and Jan now heads up the Research division, which fully dedicates itself to new technology to help the Fast & Fluid dispensers, shakers and mixers stay at the forefront in the industry. “We work with small teams with all specialist technologies in house”, Jan explains. “This means we can rely on a wealth of knowledge to keep us moving towards the future.”

Before joining Fast & Fluid, Jan worked at world-leading paint manufacturer Akzo Nobel for 15 years and has therefore enjoyed a long career in the paint industry.

