

Saving of colorant through accurate dosing

# Spot-on

MOVACOLOR COLORS PLAYMOBIL®

## Gravimetric technology

The MC-Balance is a highly user-friendly system that delivers accurate dosing rates on the basis of continuous loss-in-weight measurements with closed-loop control of the dosing speed. This makes color changes quick and easy, since the system does not require time-consuming color calibration when materials are changed. It can be used on injection molding machines, extruders and blow molders.

### The benefits

- Cost-effective – principle of gravimetric unit saves material
- User friendly: automatic adjustment by unit – adjusts by process
- Accurate dosing
- Continuous weight control
- Fully automatic calibration – quick color changes
- Compact unit – easy handling and easy to install
- Reliable – low maintenance
- Long life – excellent return on investment
- Easy to clean
- Possibility to communicate external via TCP/IP network connection
- Possibility to operate as a double dosing unit
- The gravimetric MC-Balance is well priced.

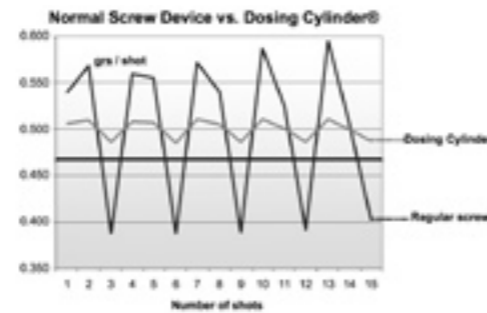
For full specs, please visit our website [www.movacolor.com](http://www.movacolor.com) or contact Movacolor.

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COLOR IN CONTROL



MC-Balance with optional main material hopper



Actual dosing pattern of a normal screw-type dosing device versus a Dosing Cylinder®. Both tests were performed under identical circumstances, using the same material.

Innovation by Movacolor:

## The Dosing Cylinder®

The dosing cylinder is driven by a stepper motor for consistent speed. The cylinder holds a vibrating and turning spiral screw. The screw design ensures that the colorant is purged evenly, extremely accurately, and without any pulsation through the cylinder and into the plastic, thus offering maximum control of the process and the end product.

**MOVACOLOR**  
COLOR IN CONTROL

Plant Manager Kurt Gertler, on why Playmobil switched to Movacolor:

**“Movacolor units work. It’s as simple as that.”**



Good business practice is almost always based on a combination of inspiration and plain common sense. Look at many of the most successful people in business. They have ideas. They are inspiring. But they are usually also very down-to-earth when it comes to business. If something works well, continue. If something doesn't work, stop doing it.

Geobra Brandstätter in the southern German town of Dietenhofen is a highly successful company. Their products, the famous Playmobil toys, are sold all over the globe. The reason for the success: inspiration, quality products, and a down-to-earth, realistic approach to business. This was one of the reasons they decided to install Movacolor dosing devices on virtually all of their injection molding machines. The company had been testing several samples extensively in all peace and quiet, and compared them to devices they had been using so far. The result of the comparison and the tests: Could Movacolor please supply another 300 devices...

“It’s all very simple,” says Kurt Gertler, Plant Manager of the Dietenhofen Playmobil plant. “With regard to production we don’t need strategic marketing details or long reports. We need machines that run. We need consistency and reliability. We need production speed and the most efficient use of the materials that we use without compromise to the quality level we want. And we certainly do not want waste. Achieving all this is a little bit harder, though.”

(cont'd on page 2 >>)

## Color in Control

Movacolor produces dosing equipment for the plastics industries. In this specialty business, Movacolor strives to produce best-of-class products that meet the production manager’s technological demands in terms of regularity, reliability and precision as much as they meet and exceed the CEO’s business targets in terms of return on investment. Movacolor equipment provides accurate control.



Playmobil treasure chest: two-color injection molding

(cont'd from page 1)

"When we decided to install Movacolor color dosing and metering devices on our machines, it was because we had tested them extensively and they worked. Again, as simple as that," he adds.

Mr. Erik Klijn, CEO of Movacolor, could not agree more:

"We are convinced that our product is superior. But so are our competitors. There is no better way to find out what the best solution is than by on-site testing and comparison."

#### Innovative concept

In 2001, the innovative Movacolor color dosing concept came to the attention of Geobra Brandstätter at a trade fair. The company read the claims that Movacolor made with regard to color control and colorant savings. If the claims were true, this would yield substantial benefits to the company. The company runs 600 injection molding machines from 6 to 2000 tons, many of them around the clock.

#### Consistent quality

Consistent quality is essential to Playmobil. Color control is very hard to achieve. Every engineer who works with color in plastics extrusion and injection molding knows this from experience. Movacolor has managed to design a dosing system that is both versatile and universal. Not only does it offer a wide capacity range, it can also handle most commonly used dry materials including grains, normal and micro granules, pellets, color master batches, filling and blowing agents, anti-static materials, color concentrates, regrind and recycled materials and free-flowing powders.

#### Investment decisions

Seeing is believing. So Geobra Brandstätter ordered several devices to test them. Kurt Gertler: "It soon became clear that the Movacolor devices did their job. And did them remarkably well."

The operators had been positive throughout. The systems had proved to be reliable, save time, save colorants and, as a major bonus, they were much easier to operate and service. Kurt Gertler listened to his crew: "I like to talk to the operators here. They are my prime advisors. They know the true engineering details. They know what works and what does not. I take investment decisions primarily on the basis of their experiences. I trust them."

Kurt Gertler likes to see his equipment suppliers as little as possible. With a good dose of humour in his voice: "I haven't seen much of Mr. Klijn here. That's a good sign. Usually when you see a supplier's car in the parking lot, it means that something is wrong with their product..." His face shows a big smile.



Kurt Gertler, Plant Manager of the Dietenhofen Playmobil plant

## Playmobil

Some 1.5 billion Playmobil toys have left the Dietenhofen Playmobil plant since the basic design was presented on February 2, 1974. The system toys are truly universal. They tickle the fantasy of children on all continents. Keywords for the toys: happy colors, friendliness, inspirational, indestructible and high quality.

## The art of color control

**Like every producer of plastic extruded and injection-moulded products, Playmobil wants color consistency. This requires color control. Accurate color control in high-speed production injection molding and extrusion is difficult. As every engineer in the business will say, controlling color is an art.**

Why is accurate color control so hard? Reasons are manifold. Type, size and shape of the colorant material used, friction between particles, environmental conditions, the density of the additive, they all influence color accuracy. The result: producers want to be on the safe side and overdose colorants to the production process to ensure consistent end results and minimize rejects. This has a downside, too. Colorants are expensive. Improved dosing is a better option. This is exactly what the Movacolor systems do.

#### Immediate improvements

Johann Stürzenhofecker, head of Injection Molding at Playmobil confirms this. "We immediately saw improvements in the colorant dosing after we installed the Movacolor systems. We also saw great improvements in repeat precision. We could set the colorant addition to the ideal lower limit. It reduced our colorant use substantially."

#### Gravimetric or volumetric

The company tested both the gravimetrically and volumetrically controlled systems. "Both systems provide the same metering and repeat precision but the gravimetric system provides continuous weight loss monitoring," says Johann Stürzenhofecker. "The gravimetrically controlled systems impressed us with their ease of use and their consistent weight control. But what impressed us most was the time we save during color changes."

#### Color change in 30 seconds

The volumetrically controlled Movacolor devices require approximately 10 to 15 minutes for correct calibration and check and double-check, also when previously stored calibration data are used. Johann Stürzenhofecker: "This was already a



The Dietenhofen Playmobil plant under construction

major improvement on our previous system." The gravimetrically controlled MC-Balance, however, calibrates fully automatically on the basis of the colorant actually within the system. All one has to do is to enter the shot weight and the percentage of colorant additive. On average, color changes take no longer than 30 seconds due to the fully automatic calibration system. There is no need to re-calibrate for color changes. All that is needed is a shot-related contact to the injection molding machine. On the basis of the continuously monitored process information, the system automatically controls the color metering process.

After extensive tests of both systems, Playmobil opted for the 300 gravimetric Movacolor systems, even though they are slightly more expensive than the volumetric systems. CEO Kurt Gertler: "We are convinced that the higher savings on colorants, faster color changes and, particularly, the reduction of downtime will more than justify the choice for gravimetric units."

## Size matters

Movacolor dosing devices are uncharacteristically small. They do not require a lot of space on the injection molding or extrusion machine. Particularly on smaller machines with little available space for peripherals, this is a major advantage. One person can exchange the devices, easily and fast.