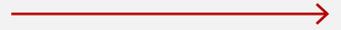


The highest standard  
in gravimetric feeding

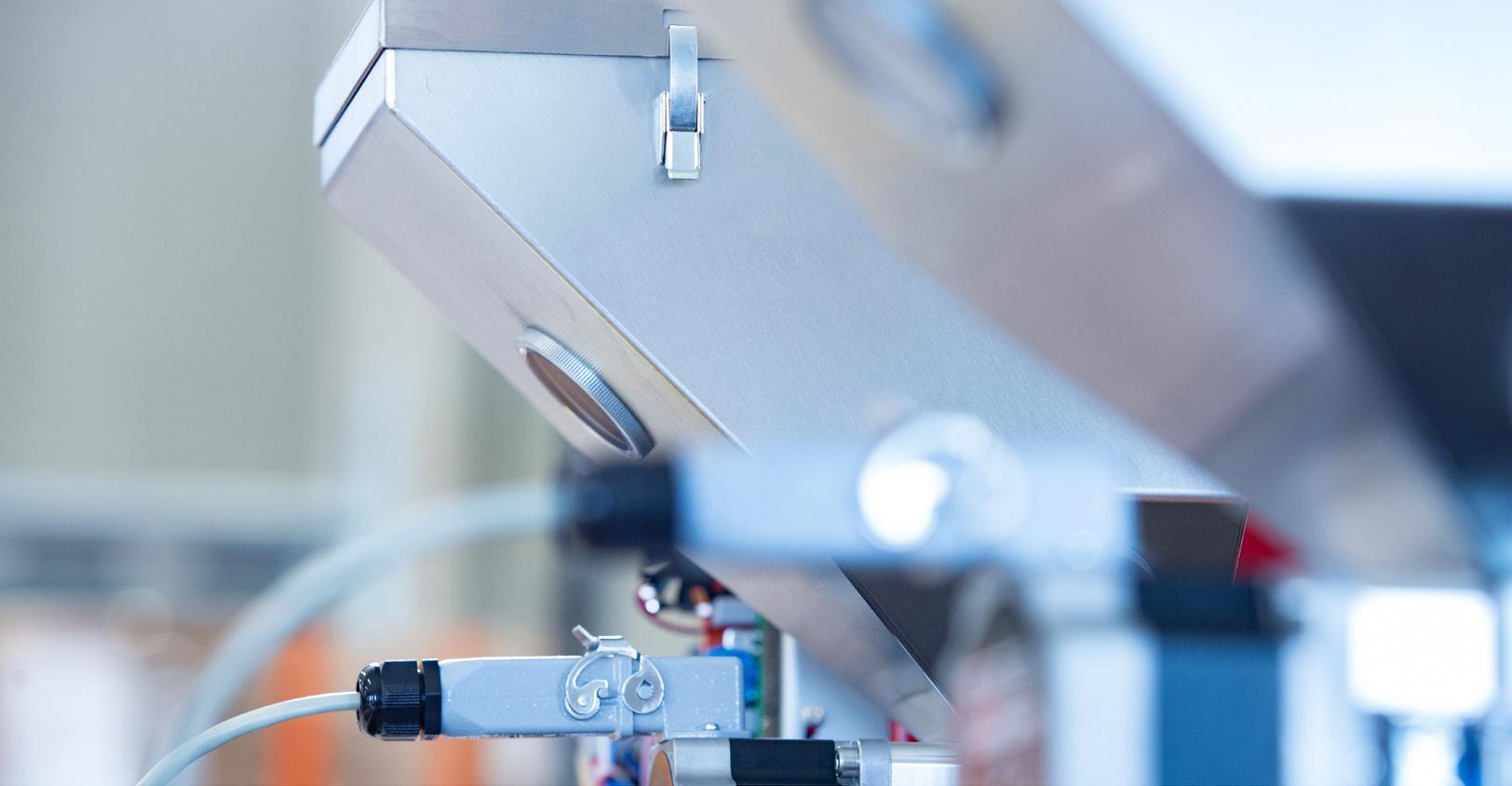


# MDS Balance

A continuous loss-in-weight feeding solution equipped with proven Balance technology for inline feeding critical additives and colorants with up to 0.05% accuracy.



**M** | **MOVACOLOR**  
modular dosing solutions



## The Movacolor modular blending, dosing and measuring concept

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Our mission is to support plastics producers in achieving their sustainability goals. We do this through our unique modular blending, dosing and measuring concept. This concept ensures plastics manufacturers can easily reduce waste, process recycled material and save costs.

Our solutions have an intuitive design and are made from robust stainless steel, making them endure throughout the years. Our solutions effortlessly integrate with Industry 4.0 technologies, allowing you to make your entire production line work together.

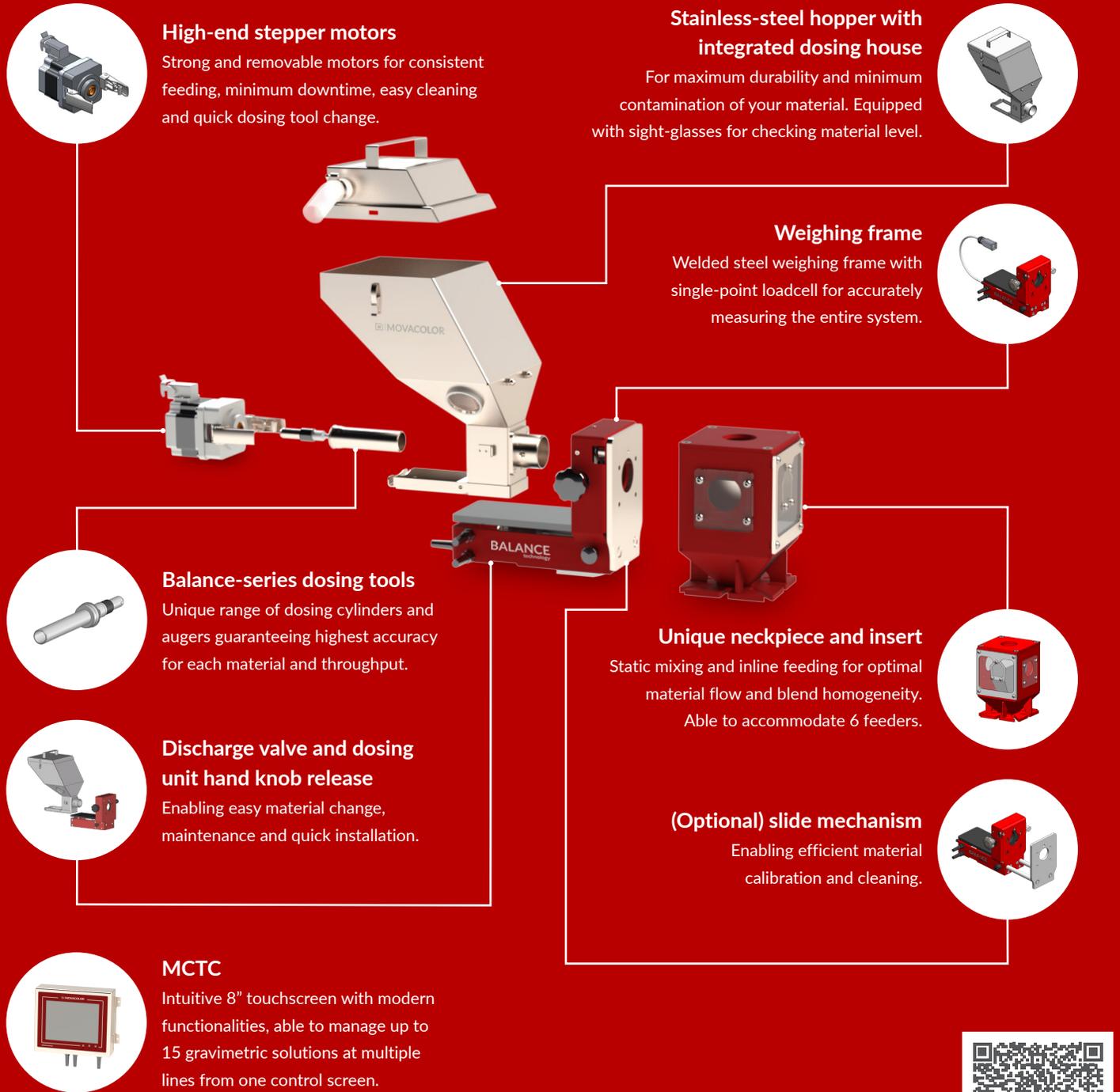
Our modular design allows flexibility in evolving needs by providing configuration possibilities, which helps us tailor our solutions to align with diverse plastics production processes.

### Why Movacolor

- ✔ 35+ years of experience and knowledge in plastics blending, dosing and measuring
- ✔ 5 year warranty
- ✔ In-house engineering department
- ✔ Short delivery times
- ✔ Global product support
- ✔ Designed and assembled in the Netherlands

# The MDS Balance

The MDS Balance is the benchmark for accurately feeding additives and colorants. With thousands of units in the field, the MDS Balance has proven its value in guaranteeing a stable production process, high quality end products, fewer rejects and high savings on expensive masterbatch. This feeder comes with a range of options and features to efficiently feed materials into your plastics production process. Its versatility makes it well-suited for e.g. injection molding, blow molding and extrusion processes, ensuring optimal performance across various applications.



*Scan the QR code to find out more!*



# MDS Balance benefits



## Balance Technology – continuous loss-in-weight

Continuously calibrates the dosage and automatically adjusts motor speed. Save significant on expensive colorants and additives by achieving 0.05% feeding accuracy.



## Efficient maintenance

Designed to be easily removed from neckpiece and equipped with accessible components for efficient maintenance.



## Improve shot-to-shot accuracy

Data logging offers full traceability and shot verification of your additives. Retrospectively verify which materials went into each batch and improve reproducibility and repeatability.



## Intuitive control

MCTC 8" color touchscreen with modern functionalities. Able to manage up to 15 gravimetric solutions at multiple lines from one control screen.



## Balance-series dosing tools

Strong stepper motor and unique range of dosing cylinders and augers providing the highest feeding accuracy. Capable of handling granules, free-flowing powders and regrinds.



## Industry 4.0 compatible

Monitoring and reporting software for data processing and Flexible universal communication protocols: OPC UA, ProfiBus, Modbus, ProfiNet.



## Accuracy and material homogeneity

Material is dosed inline in the center of the main material and directly into the machine throat, ensuring blend uniformity. Neckpiece serves as a static mixer.



## Durability and material integrity

Stainless-steel material hopper and dosing house for durability, minimum contamination of material and sight-glasses for checking material level.



## Vibration management

Innovative algorithm guarantees exceptional accuracy, even in high vibration environments and at extremely low shotweights.



## Minimize downtime

Proven value through thousands of units in the field, supported by a reputable brand offering a 5 year warranty and short delivery times.



## 60 second cleaning and material change

Discharge valve for easy draining contents of the hopper and dosing house. Fast dosing tool change by simple motor release.



## Modular system

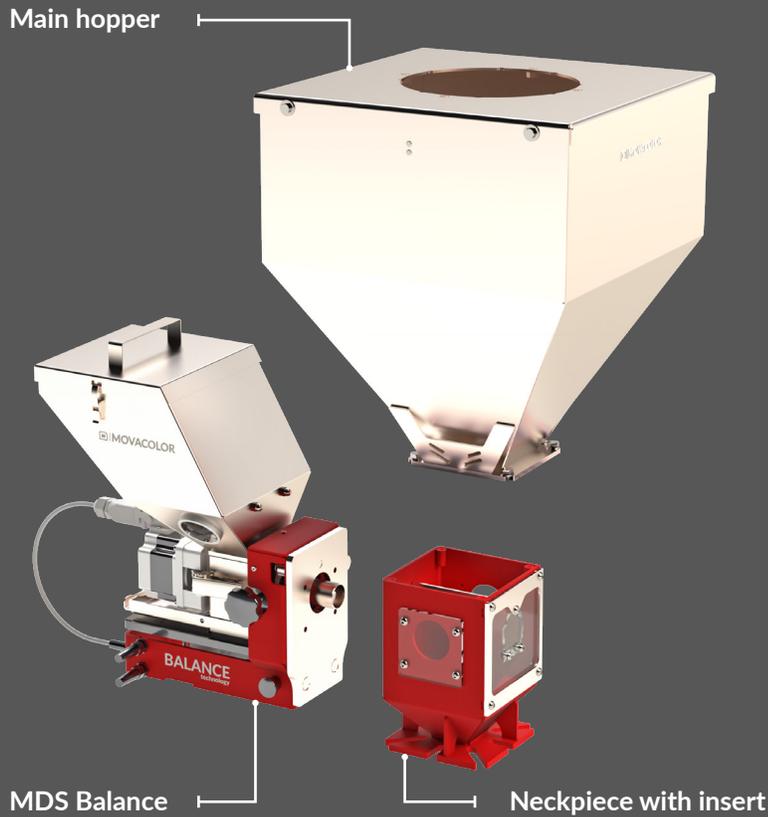
Tailor your feeder to your specific needs by building multi-component setups and choice from a wide range of accessories.

# Specifications

<b>Feeding capacity</b>	0,09 - 400 lb/h*
<b>Max capacity of neckpiece</b>	11.700 lb/h
<b>Max percentage of additive</b>	98%
<b>Motor</b>	LT: 0-200 rpm / HT: 0-350 rpm
<b>Power supply</b>	95-250 VAC, 50/60 Hz – by integrated automatic voltage selector. 150 watt maximum
<b>Hopper capacity</b>	6, 12 or 15 liter
<b>Controller</b>	MCTC 8" color touchscreen
<b>Processes</b>	Injection molding, blow molding, extrusion, batch dosing
<b>Materials</b>	Granular, free-flowing powder, regrind
<b>Max material temperature</b>	160° Fahrenheit – high temp version up to 300° Fahrenheit
<b>Mounting and feeding</b>	Neckpiece directly mountable on machine throat and off-line option
<b>Max units on neckpiece</b>	6
<b>Output signals</b>	Hopper loader control (1x), 24 VDC 0.5A max Warning/Alarm, 24 VDC 0.5A max Run, 230 VAC / 30 VDC 5A max Alarm, 230 VAC / 30 VDC 5A max
<b>Input signals</b>	Injection molding    Timer mode: start feeding: 24 VDC or potential free Relay: start/stop feeding: 24 VDC or potential free Extrusion                Tacho synchronization: 0-30 VDC Relay: start/stop feeding: 24 VDC or potential free  Main material hopper sensor (1x) 24 VDC
<b>Technology</b>	Continuous loss-in-weight measuring and automatic material calibration
<b>Dosing tools</b>	Multiple augers and dosing cylinders
<b>Recipes storage function</b>	Max 1.000
<b>Alarm function</b>	Configurable alarms
<b>Smart monitoring and reporting</b>	Comprehensive logging, alarming, reporting and recipe management
<b>Connectivity</b>	Modbus TCP/IP, ProfiBus, ProfiNet, OPC UA, USB, remote support
<b>Weight</b>	41,2 lb (feeder) / 7,2 lb (controller)

\*The maximum throughputs mentioned in our product leaflets and on our website are based on granular material with a bulk density of 50 lb/ft<sup>3</sup> and the most ideal materials, conditions, settings, and mix percentages.

# Optimize your additive feeding



## Balance Technology

Single-point loadcell, ensuring precise measuring across its entire system, accommodating off-center loads.

Weighs total system, tracking each pellet dispensed and swiftly responds to changes in setpoint or material bulk density.

Innovative algorithm guarantees exceptional accuracy, even in high vibration environments and at extremely low shotweights.

## Inline feeding

Improve shot-to-shot accuracy and blend homogeneity by feeding inline, directly into the machine's throat, in the center of the main material. This ensures full traceability and shot verification of your most critical additives. The neckpiece serves as a static mixer.



## Dosing cylinders

Unique range of dosing cylinders for pulse-free, unparalleled feeding accuracy of a wide variety of materials and throughput capacities.



# The perfect dosing tool for your production process

Movacolor's range of dosing cylinders and augers provides the highest feeding accuracy in the market. Regular feeding screws require up to 10-20% overdosing and often need an additional mixer to avoid segregation. Movacolor's unique dosing tools offer pulse-free, unparalleled feeding accuracy of a wide range of materials and throughput capacities. For maximum control over your material flow.

		Feeding capacity (oz/sec.)	Feeding capacity (lb/hour)	Accuracy	Material
	<b>GLX dosing cylinder</b>	0,0007 - 0,0564*	0,154 - 12,8*	● ● ● ● ●	Granules
	<b>GX dosing cylinder</b>	0,0070 - 0,1764*	1,59 - 40*	● ● ● ● ○	Granules
	<b>HX dosing cylinder</b>	0,0004 - 0,0564**	0,09 - 12,8**	● ● ● ● ●	Free-flowing powders
	<b>A8 auger</b>	0,0007 - 0,0353*	1,54 - 7,9*	● ● ● ● ○	Free-flowing powders and granules
	<b>A10D auger</b>	0,0018 - 0,1164*	0,4 - 26,2*	● ● ● ● ○	Free-flowing powders and granules
	<b>A15 auger</b>	0,0070 - 0,1764*	1,59 - 40*	● ● ● ● ○	Free-flowing powders and granules
	<b>A20 auger</b>	0,0176 - 0,7055*	0,4 - 160*	● ● ● ● ○	Free-flowing powders and granules
	<b>A20HT auger***</b>	0,0176 - 0,7055*	0,4 - 160*	● ● ● ● ○	Free-flowing powders, granules and regrind
	<b>A30HT auger***</b>	0,0706 - 1,7637*	16 - 395*	● ● ● ● ○	Free-flowing powders, granules and regrind

\*measured with normal granular masterbatch 50 lb/ft<sup>3</sup>

\*\*measured with free-flowing powder 40 lb/ft<sup>3</sup>

\*\*\*Only available with high-torque stepper motor

## 60 second cleaning and material change

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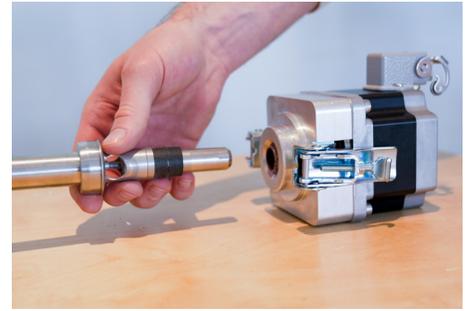
### Easy drainage

Discharge valve for quick draining of hopper and dosing house contents.



### Simple motor removal

Open the two latches to release the motor and easily clean the dosing house.



### Fast dosing tool change

Quickly change and clean the dosing tool.



*Scan the QR code to see the process!*

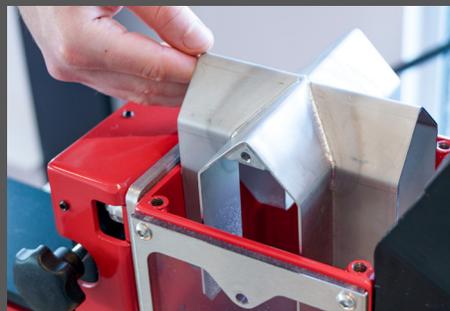
## Efficient maintenance and automatic calibration

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### Quick disassembly

Remove feeder from weighing frame by simply loosening the hand knob. Optional slide mechanism allows for direct calibration without disassembly.



### Neckpiece cleanout

Neckpiece can be accessed and insert can be removed for optimal cleaning.



### Convenient maintenance

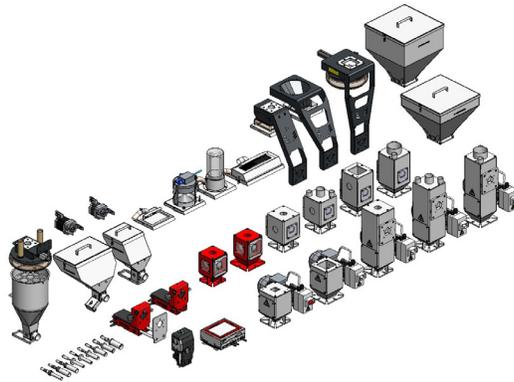
Feeder can be positioned upright for convenient maintenance, cleaning and automatic calibration.



*Scan the QR code to see the process!*

# MDS Balance modular options

Our modular system provides the possibility to tailor a feeder to your specific needs. We offer different material hoppers, neckpieces, mixers, hopper loaders and a variety of dosing tools. All can be specified to any customer's processing technique and material.



## Motor



LT stepper motor  
0-200 rpm



HT stepper motor  
0-350 rpm



## Neckpiece



NST40  
Standard  
45mm



NST90  
Standard  
90mm



NBH  
PET  
45mm



NBHA  
PET 45mm  
de-airing



NPH  
PET 90mm



MIXBH  
PET mixer  
45mm



MIXBHA  
PET mixer  
45mm de-airing



MIXPHA  
PET mixer  
90mm de-airing



## Additive hopper



H006X02  
6L additive  
hopper



H012X02  
12L additive  
hopper



H015X02  
15L additive  
hopper



## Main hopper



MAINH20  
20L main  
material hopper



MAINH40  
40L main  
material hopper



## Mixer



MIX50  
Multi purpose  
45mm



MIX100  
Multi purpose  
90mm

# MDS Balance Cleanroom

Designed to meet the stringent requirements of cleanroom environments, ensuring the highest standards of contamination control and material purity.



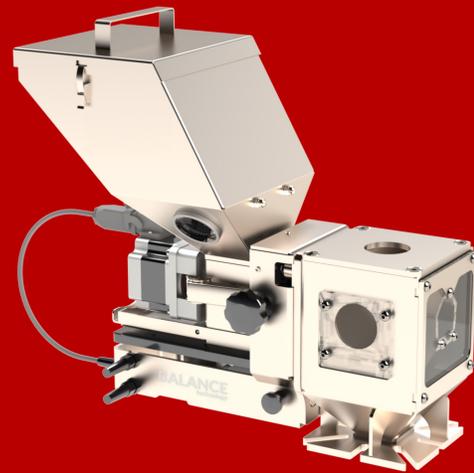
## Cleanroom ready design

Food-quality seals specified for use in most medical and cleanroom applications. Completely oil-free design. All powder-coated materials are replaced by stainless-steel. Controller has no external ventilation.



## Convenient, easy cleanout

Designed for convenient cleaning and maintenance. Complete unit can be cleaned by iso-propyl alcohol.



*Scan the QR code to find out more!*

# MCS Regrind

Simultaneously feed masterbatch and regrinds and save substantial on material costs. Unique algorithms adjust feeding of additives or colorants based on availability of regrind.



## Produce sustainably, maximize regrind usage

For maximization of regrind consumption and minimizing usage of expensive additives or colorants.



## Closed-loop regrind handling

Process up to 90% regrind while maximizing savings on additive by directly feeding granulated material into the production process.



*Scan the QR code to find out more!*

# MDS Balance – the cornerstone for configurations

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## MCS Continuous Feeder

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Continuous gravimetric multi-component feeder designed for accuracy, automatic adjustment to extruder capacity variation and real-time throughput measurement of the extruder.



## MCS Off-line dosing

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Precise feeding from plant floor: achieve high feeding accuracy and blend homogeneity by ruling out machine vibrations with our innovative floor-level feeding solution. No more hazardous climbing on ladders or stairs to access your dosing equipment.



## MHBS Hybrid blender

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Combine the MBS blender with one or multiple feeding solutions for enhanced shot-to-shot accuracy, increased blend homogeneity and savings on expensive additives.



*Explore the Hybrid solution*

## MCS HO Balance rPET

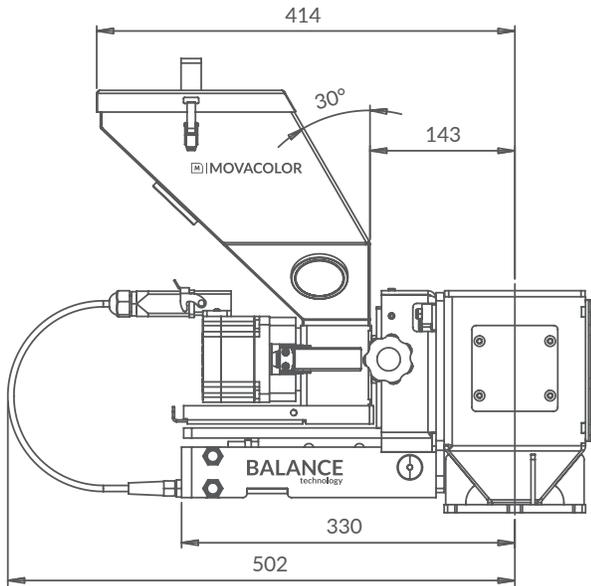
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Comprehensive system designed for feeding low density flakes at high rates. Features a water-cooled neckpiece with an integrated mixer plus options for extra dosing stations for masterbatch/additives. Ideal for PET preform production.

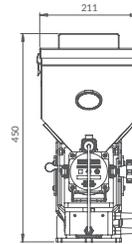


# MDS Balance and MCS Regrind configurations and dimensions

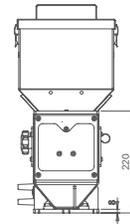
## MDS Balance



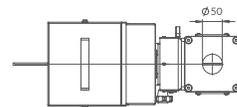
Left side



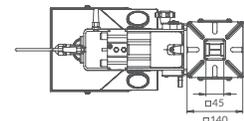
Right side



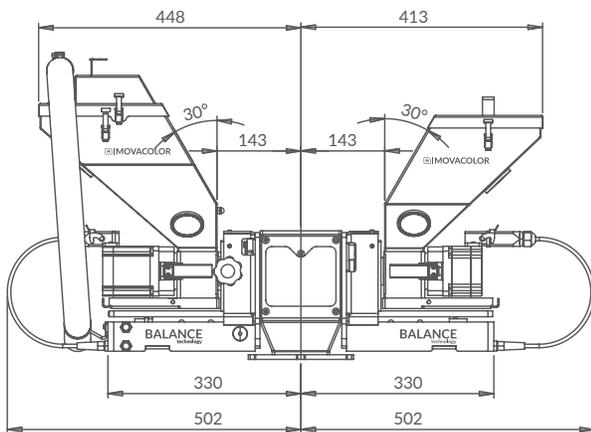
Top



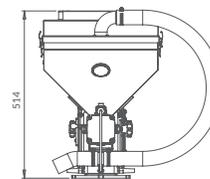
Bottom



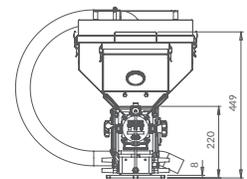
## MCS Regrind



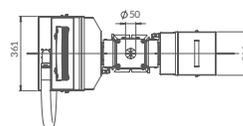
Left side



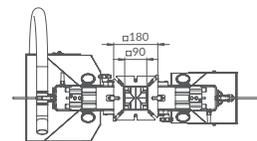
Right side



Top



Bottom



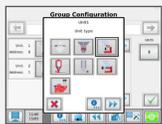
# Modular and future ready - Intuitive control software technology for all Movacolor gravimetric solutions

## MCTC

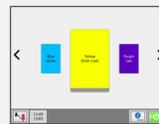


8" color touchscreen controller with modern functionalities for all plastics production processes.

PTC AVAILABLE Q4 2024



Capable of managing up to 15 gravimetric solutions at multiple lines from one control screen.



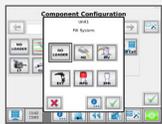
Different user-levels and Basic Operator Mode for simplified recipe selection and single-touch recipe starting.



Easy entering and memory to store up to 1.000 recipes.



Configuration wizard for quick start-up and intuitive GUI with self explanatory visuals.



Integrated hopper loading control synchronized with the feeding system.



Flexible universal communication protocols: OPC UA, ProfiBus, Modbus, ProfiNet.



Continuous data logging, process monitoring and recipe- and material file management through Smart software.



VNC remote support option for immediate trouble-shooting.

## Also included in the MCTC

- ✓ Large range of mounting options
- ✓ VNC remote operation option
- ✓ Backup, restore settings and export log files through USB memory stick
- ✓ Multilingual
- ✓ Special algorithms: closed-loop regrind handling and nodding head synchronization
- ✓ Event log and alarm history

# MDS Balance versus batch blending

When working with expensive and critical additives, it is paramount that the mixing uniformity (blend homogeneity) of a batch blender is top-notch. Any blender mixing chamber has the inherent risk of de-mixing and segregation due to differences in bulk density and physical properties. Consequently, resulting in variations in blend homogeneity. This phenomenon becomes especially visible when low percentages are being blended.

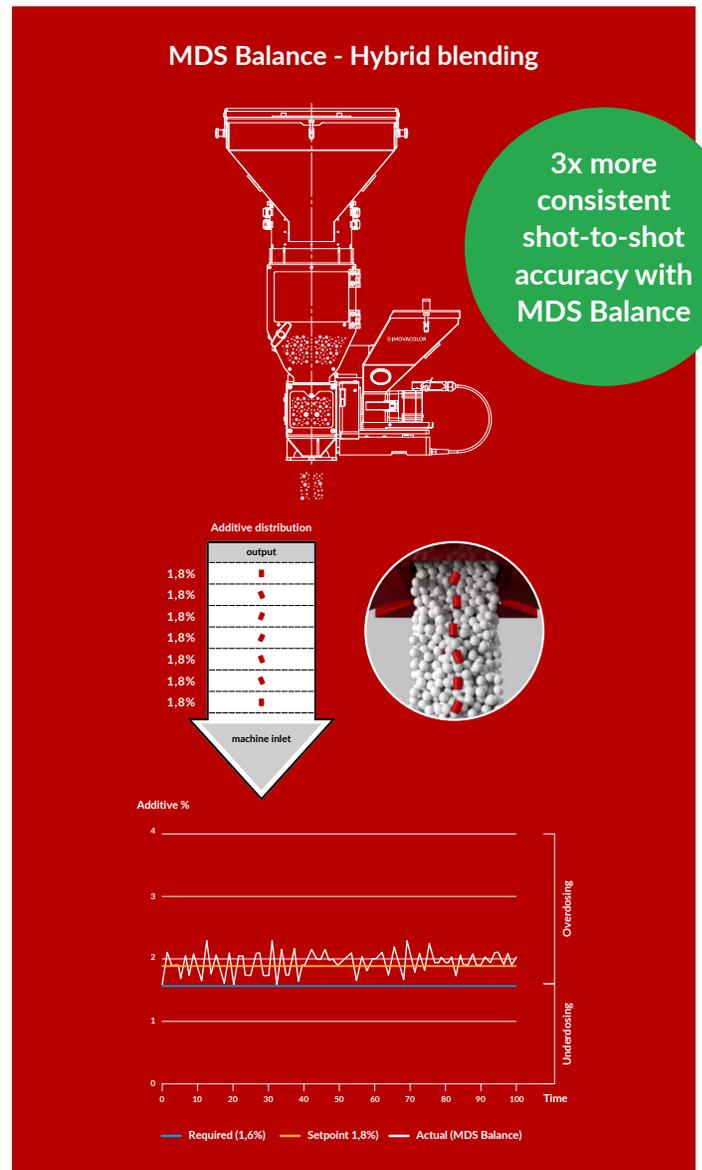
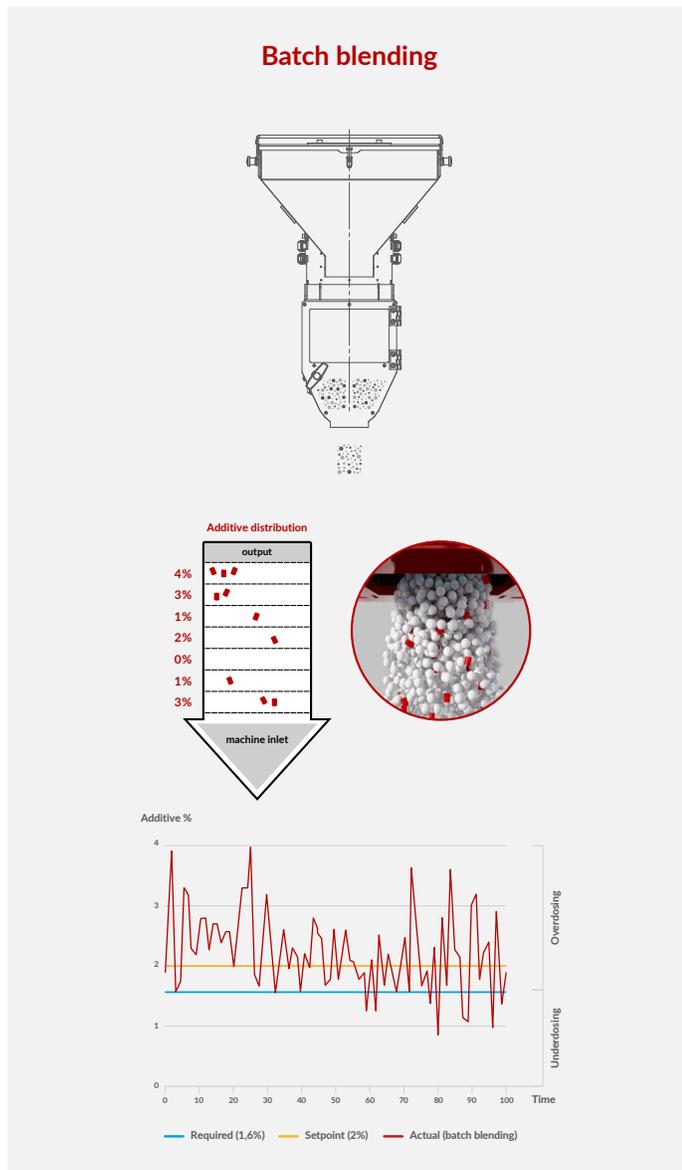
Operators often set additive at slightly higher levels than required to compensate for these shot-to-shot fluctuations. This overdosing results in increased material costs while not fully mitigating the risk of mix variations.

Gain control over the additive and improve shot-to-shot accuracy

- ✔ Stop overdosing and save thousands of Dollars per year by feeding closer to the setpoint
- ✔ More consistent product quality by more uniform distribution of materials



*Calculate your ROI*



# MDS Balance versus volumetric feeding

When working with expensive and critical additives, it is paramount that the feeding accuracy of a dosing unit is top-notch. Volumetric feeders do not adjust for differences in bulk density and physical properties resulting in feeding accuracy limitations and variations in blend homogeneities. Besides, volumetric dosing units are time intensive as it requires calibration every material change.

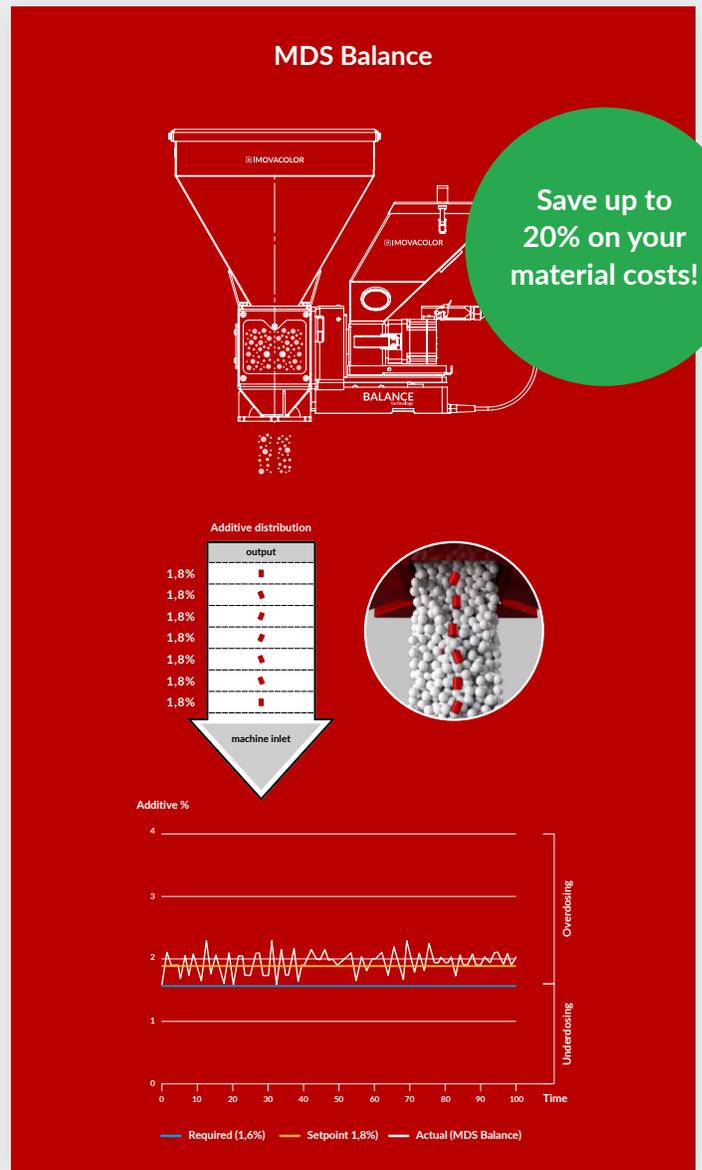
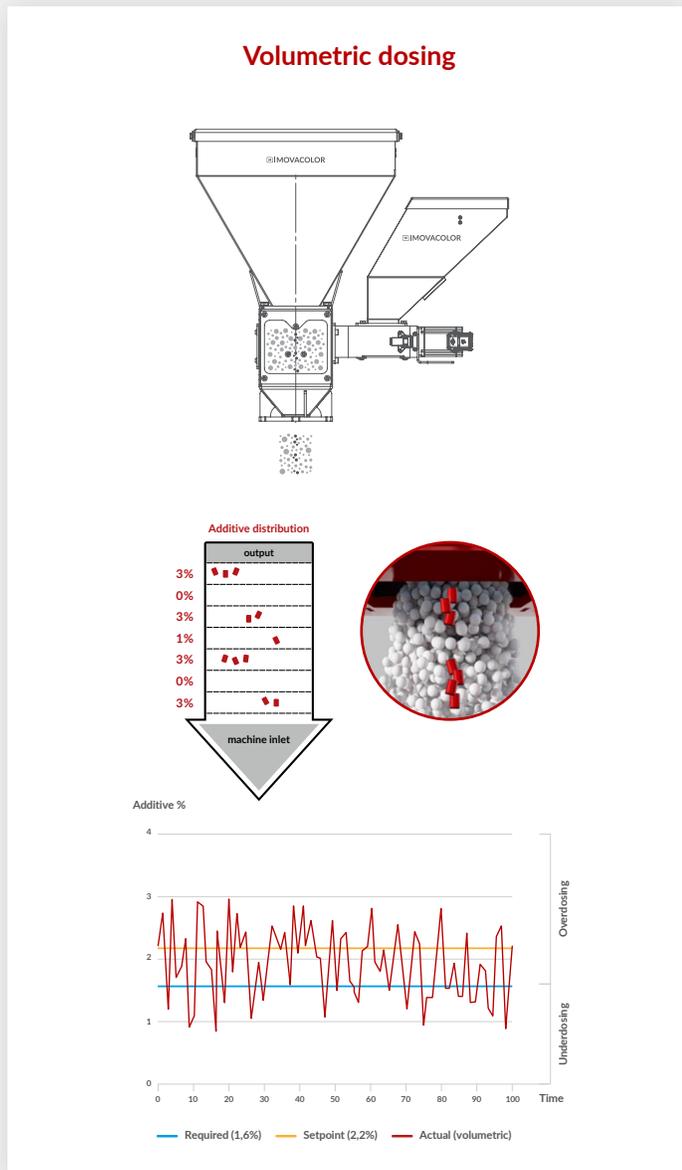
Operators often set additive at slightly higher levels than required to compensate for these feeding inaccuracies. This overdosing results in increased material costs while not fully mitigating the risk of mix variations.

Gain control over the additive and improve shot-to-shot accuracy

- ✔ Stop overdosing and save thousands of Dollars per year by feeding closer to the setpoint
- ✔ More consistent product quality by more uniform distribution of materials
- ✔ Eliminate machine downtime by automatic self-regulating operation (bulk-density compensation)



*Calculate your ROI*



# MDS Balance accessories and hopper loaders

## Alight



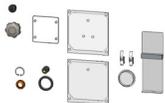
Alarm flashlight for alarm indication (24 VDC), complete with cable.

## Asounderbeacon/S



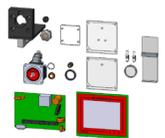
Alarm sounder beacon for alarm indication (24 VDC) Combination of LED flashlight and electronic sounder up to 106dB, complete with cable.

## Recommended spare parts kit - Basic



Bundle of spare parts for versatile repair and maintenance needs. Consisting of: seal, segering LT or HT motor, hopper sightglass, slide, clamp, curled knob and slide knob, bearing and coupling for dosing tool 3 types of sightglasses for neckpiece.

## Recommended spare parts kit - Complete



Bundle of spare parts for versatile repair and maintenance needs. Consisting of: seal, segering LT or HT motor, hopper sightglass, slide, clamp, curled knob and slide knob, bearing and coupling for dosing tool 3 types of sightglasses for neckpiece, HT or LT motor, loadcell, 20 or 50kg block, mainboard MCTC, CPU MCTC, display MCTC.

## ME25G



Movacolor Ejector (ME) compressed air hopper loader for granules (relatively dust free), max. cap. from 88 to 275 lb/h. (mat. dep.), the unit comes complete with hopper lid with filter, compressed air solenoid valve and 3 m. 25 mm. transport hose. The activation of the ME-system comes directly from the gravimetric dosing unit.

## MEC25G



ME Cyclone hopper loader for gravimetric unit, for granules (relatively dust free), max. cap. 88 to 275 lb/h, with cyclone hopper lid and filter, solenoid valve, 3 m transport hose.

## Asens



Sensor for hopper alarm. Capacitive triple shielded, to work under static conditions, complete with cable and sight glass with hole for use in hopper.

## Asounderbeacon/Tower



Flash light with 3 colors (green, orange, red) for indicating status of blender and acoustic alarm (85 dB). Complete with cable and support bracket.

## Recommended spare parts kit - Plus



Bundle of spare parts for versatile repair and maintenance needs. Consisting of: seal, segering LT or HT motor, hopper sightglass, slide, clamp, curled knob and slide knob, bearing and coupling for dosing tool 3 types of sightglasses for neckpiece, HT or LT motor, loadcell, 20 or 50kg block.

## Smart monitoring and reporting tool



Full quality control system and recipe management. Smart logs data and provides material consumption and alarm summary reports. VNC allows duplication of the touchscreen for remote operation.

## ME38GR



Movacolor Ejector (ME) compressed air hopper loader for dusty granules or regrind, max. cap. from 120 to 330 lb/h. (mat. dep.), the unit comes complete with hopper lid with filter, compressed air solenoid valve and 3 m. 38 mm. transport hose. The activation of the ME-system comes directly from the gravimetric dosing unit.

## MEC38G



ME Cyclone hopper loader for gravimetric unit, for regrind and granules (relatively dust free), max. cap. 100 to 275 lb/h, with cyclone hopper lid and filter, solenoid valve, 3 m transport hose.

## MV16G



Movacolor Vacuum (MV) hopper loader for free-flowing powders with bulk density > 62 lb/ft<sup>3</sup>., and/or granules, max. cap. from 110 to 220 lb/h. (mat. dep.), the unit comes complete with hopper lid, vacuum chamber with filter, compressed air solenoid valve and 3 m. 16 mm. transport hose with stainless steel suction pipe. The activation of the MV-system comes directly from the gravimetric dosing unit.

## SFG/Round



Filling system with pneumatic operated slide gate valve incl. 2 pieces of exhaust filters and dust filter between hopper and filling system.

## CMB/Flex



MCTC support frame, adjustable by using the quick locking bolt to view in different angle.

## CMB/Pillar



Stainless-steel floor stand for supporting MCTC controller and maximum 3 blind controllers (max 4 components). Stand height 1 m. Stand to be used in combination with CMB/FLEX ( to be ordered separate).

## MCTC screen cap



Screen cap to protect MCTC display.

## T-Kit



System for feeding material into a pre-expander. Designed for EPS systems. Consisting of: neckpiece, vacuum pump, 6 m transport hose, solenoid valve and compressed air reducer.

## MV25G



Movacolor Vacuum (MV) hopper loader for free-flowing powders with bulk density < 62 lb/ft<sup>3</sup>., and/or granules, max. cap. from 77 to 155 lb/h. (mat. dep.), the unit comes complete with hopper lid, vacuum chamber with filter, compressed air solenoid valve and 3 m. 25 mm. transport hose with stainless steel suction pipe. The activation of the MV-system comes directly from the gravimetric dosing unit.

## Cable management kit



Kit for neatly organizing cables consisting of 2,5 metres spiral-band + 1x tool guide for cable tray, 0,5 metres cable tray, 6x sticky cable clip + tie wraps.

## Side drain



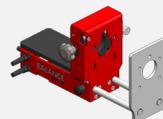
Material hopper with side drain for easy material changes in continuous production processes.

## Dosing stop



Device for opening and closing the neckpiece, avoiding masterbatch falling into the neckpiece by accident. Perfect for color switching applications. Including bracket for solenoid and pressure regulator.

## Slide mechanism



Slide for easy material calibration and cleaning.

## Barcode scanner set



Barcode scanner for connection to MCTC controller including mounting bracket. The scanner is capable of reading all of the popular barcodes like UPC, EAN, ASCII, GS1 and code 39.

# Three off-line dosing configurations

## Stand

Increase floor-space by mounting the system onto a horizontal surface of your preference, such as a primary machine bed.

One MDS Balance only.



## Movable trolley

Avoid severe vibrations from large injection molding machines. Flexible positioning of the off-line system on the plant floor for convenient and safe maintenance and material changes.

Recommended for one MDS Balance.



## Movable frame

Avoid severe vibrations from large injection molding machines. Flexible positioning of the off-line system on the plant floor for convenient and safe maintenance and material changes.

Recommended for up to four MDS Balances and additional accessories (such as dosing stops, support frames, loaders etc.)



*Scan the QR code to find out more!*



“ In our market, the quality of the final product simply cannot fluctuate. The accuracy of the MDS Balance is best in class. This is why we work with Movacolor’s equipment. ”

  
**SCHIFFER**  
DENTAL CARE PRODUCTS



### 5 year warranty

Movacolor products are designed and manufactured to the highest standards and deliver high-quality performance. In the unlikely event of a product failure, Movacolor will, subject to conditions\*, ensure your product is serviced and repaired free of charge.



### Global Support

Need help with (the installation of) your Movacolor product?

Our global support team will be happy to assist you.

## Tailored blending, dosing or measuring systems, suited to your plastics production process.

Visit [movacolor.com](http://movacolor.com) to find out more about our modular dosing concept and how you can configure your own dosing solution!

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