

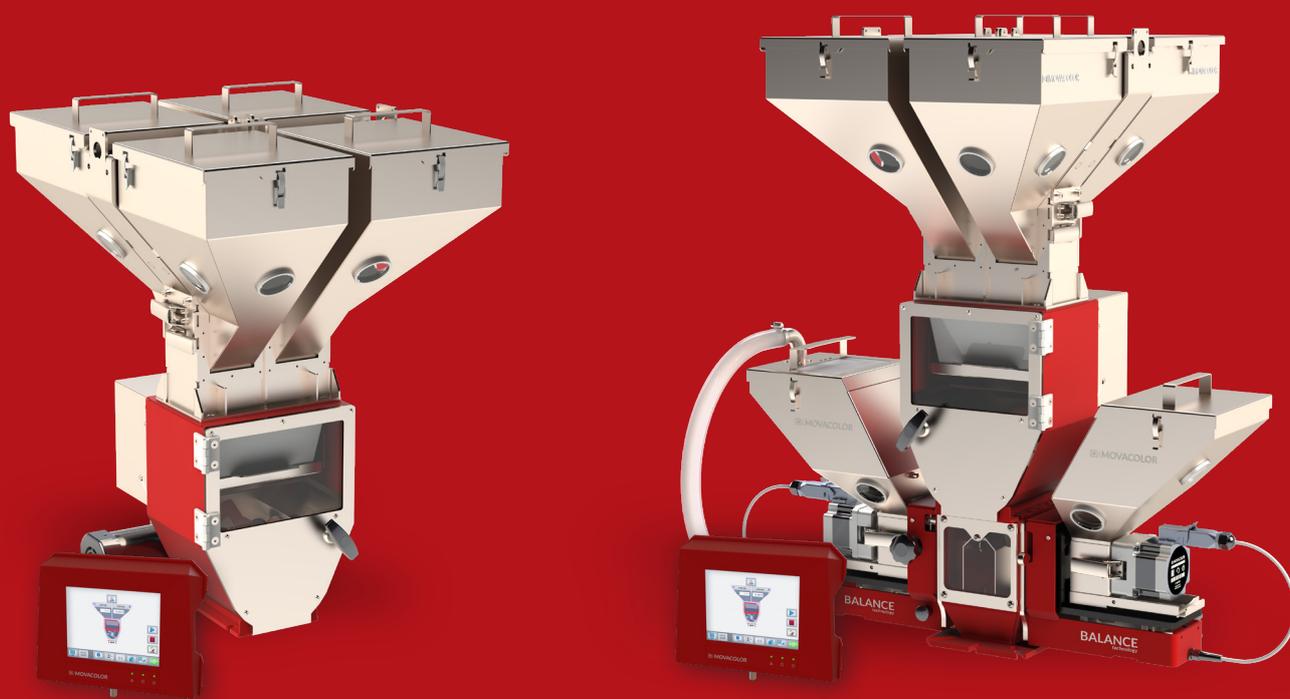
The MBS and MHBS blender series

Go beyond
blending



Modular and robustly engineered gravimetric batch blenders capable of handling a wide variety of materials with great precision and blend consistency.

Available in 23 standard configurations, divided into five series, customizable to fit your plastics production process.



M | **MOVACOLOR**
modular dosing solutions



The Movacolor modular blending, dosing and measuring concept

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 MBS blender series

Designed to perform, accurately dispense and deliver a consistent quality of blends. Engineered without mechanical parts or cables in the hoppers for efficient material changes and maintenance tasks; these are the spearheads of our blender series.

Available in 23 standard configurations, suitable for e.g. injection molding, blow molding and extrusion, customizable to fit your plastics production process.



Quick material change

Fast material changes through removable hoppers or drains



Smart maintenance

Integrated cabling and hoppers free from mechanical or moving parts



Robust design

Stainless-steel material hoppers with sight-glasses for checking material level



Intuitive control

8" full color portable touchscreen controller equipped with intuitive functionalities



Easy cleaning

Removable mixing and weighing bin for easy cleaning



Accurate blending

Best-in-class accuracy and blend homogeneity through unique mixerblade



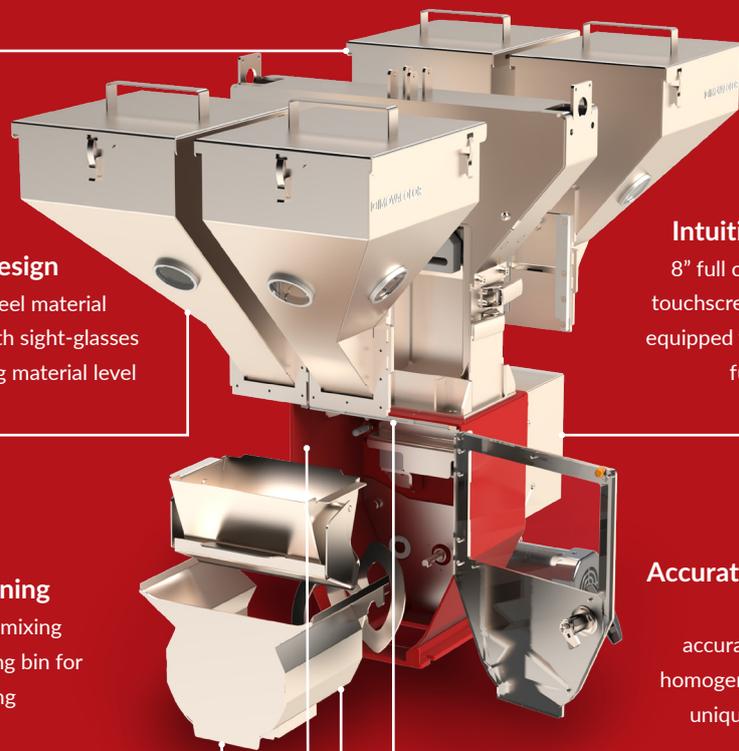
Vibration management

Protected loadcells and unique software allow precise dispensing and mixing quality even in high vibration environments



Automatic regrind control

Unique algorithms for maximization of regrind consumption and minimizing usage of expensive additives or colorants



Scan the QR code to find out more!

Capacity range

— Gravimetric mode — Semi-gravimetric



What is semi-gravimetric mode?

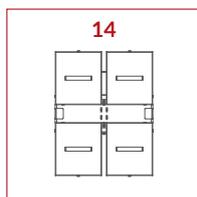
Semi-gravimetric mode provides about 50% throughput. Once the blender has reached the accurate flow rates for each material in full gravimetric mode, it can run several cycles in volumetric mode, dispensing components simultaneously without weighing. This results in a notable increase in throughput. After a series of volumetric cycles, it will automatically initiate a gravimetric cycle to recalibrate its settings.

The maximum throughputs mentioned in our product leaflets and on our website are based on granular material with a bulk density of 0.8 kg/l and the most ideal materials, conditions, settings, and mix percentages.

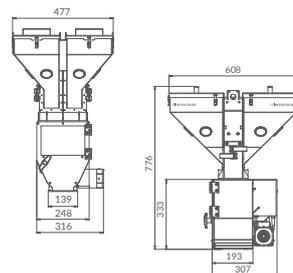
Hopper configurations and dimensions

1-series

The 1-series is equipped with a 3-liter mixing chamber, is configured with 4 hoppers and supports a maximum batch size of 1.4 kg.

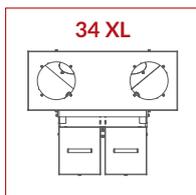
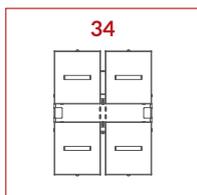
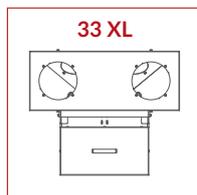
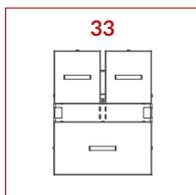
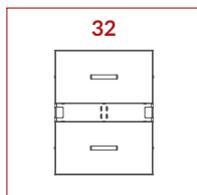


Top view

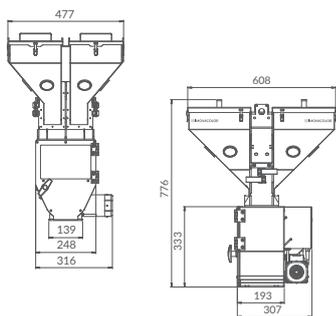


3-series

The 3-series is equipped with a 3-liter mixing chamber, can be configured with 2 to 4 hoppers, and supports a maximum batch size of 1.4 kg.

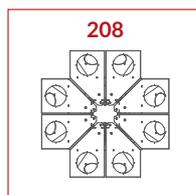
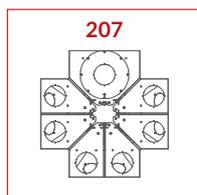
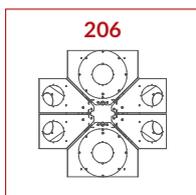
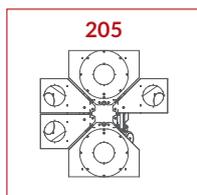
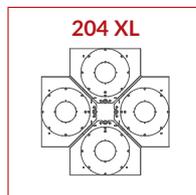
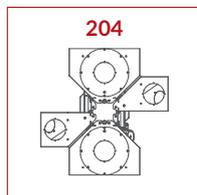
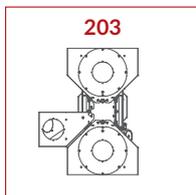
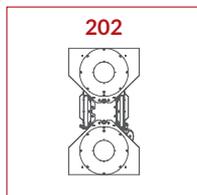


Top view

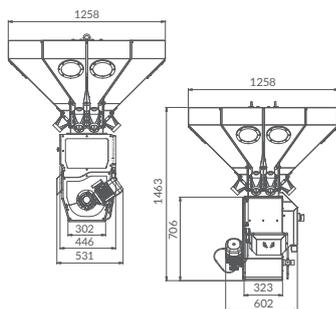


20-series

The 20-series is equipped with a 20-liter mixing chamber, can be configured with 2 to 8 hoppers, and supports a maximum batch size of 7.5 kg.



Top view



MBS blender series

Specifications	MBS 1 series	MBS 3 series	MBS 20 series	MBS 20 extrusion series	MBS 20 recycling series
Batch size	1,4 kg	1,4 kg	7,5 kg	7,5 kg	7,5 kg
Mixing chamber	3 liter	3 liter	20 liter	20 liter	20 liter
Configurable with stainless steel hoppers	4 hoppers	2, 3 or 4 hoppers	2 to 8 hoppers	2 to 8 hoppers	4 hoppers
Gravimetric throughput capacity	135 kg/h*	480 kg/h*	1600 kg/h*	1600 kg/h*	depends*
Able to handle material up to 70° Celsius, special version up to	—	120° Celsius	180° Celsius	180° Celsius	180° Celsius
Unparalleled accuracy through unique valve designs	✓	✓	✓	✓	✓
Unmatched mixing performance and blend homogeneity through unique mixerblade	✓	✓	✓	✓	✓
Vibration management for robustness in extreme environments	✓	✓	✓	✓	✓
Automatic regrind control for maximization of regrind consumption	—	✓	✓	✓	✓
Semi-gravimetric mode for extra throughput	✓	✓	✓	✓	✓
8" full color portable touchscreen controller with 1000 recipe storage function	✓	✓	✓	✓	✓
Integrated cabling for smart maintenance	✓	✓	✓	✓	✓
Mixing chamber level-sensor air-purge	✓	✓	—	—	—
Compressed air-gun system for quick cleanout	✓	✓	✓	✓	✓
Removable material hoppers for quick material change	✓	✓	—	—	—
Hopper drains for quick material change	—	—	✓	✓	✓
Removable weighing bin	✓	✓	✓	✓	✓
Removable mixing bin and mixerblade	✓	✓	—	—	—
Hopper loader lifting device for convenient removing of hoppers	✓	✓	—	—	—
Loss-in-weight extrusion control	—	—	—	✓	optional
Capable of processing regrind	—	✓	✓	✓	✓
Capable of processing PCR and flakes	—	—	—	—	✓
115 or 230 VAC	✓	✓	✓	✓	✓
Upgradable to a Hybrid solution	✓	✓	✓	✓	✓



MBS and MHBS for extrusion applications

The 20-extrusion series blender has all the functionalities of the regular 20-series blender, but includes a weighing mixing chamber resulting in an integrated continuous loss-in-weight extrusion control. This allows the plastics processor to measure the real-time throughput (feed capacity) of their extruder and track the consumption of materials. Also, it provides quick response to capacity

variation of the extruder. When opting for a MHBS 20-extrusion series, it also automatically adjusts additive dosing from the MDS Balance units according to the extruder capacity variation. This solution provides the operator and line manager tools to get the best out of their extrusion line and brings major benefits to extrusion applications such as pipe, profile, cable, wire and sheet.

MBS and MHBS for recycling applications



The 20-recycling series blender has all the functionalities of the regular 20-series blender, but is capable of processing difficult flowing materials such as various PCR, flakes and regrinds. The material hopper oscillators (shaking devices) ensure optimal flow of the material while the isolated upper body filters vibrations ensuring high dosing accuracy.

Optionally the material hoppers can be equipped with bridge-breakers to prevent material blocking or bridging. This solution provides plastics processors tools to add recycled material to its production process. Throughput depends on material type – contact Movacolor for information.

Stop overdosing and reduce shot-to-shot fluctuations

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.

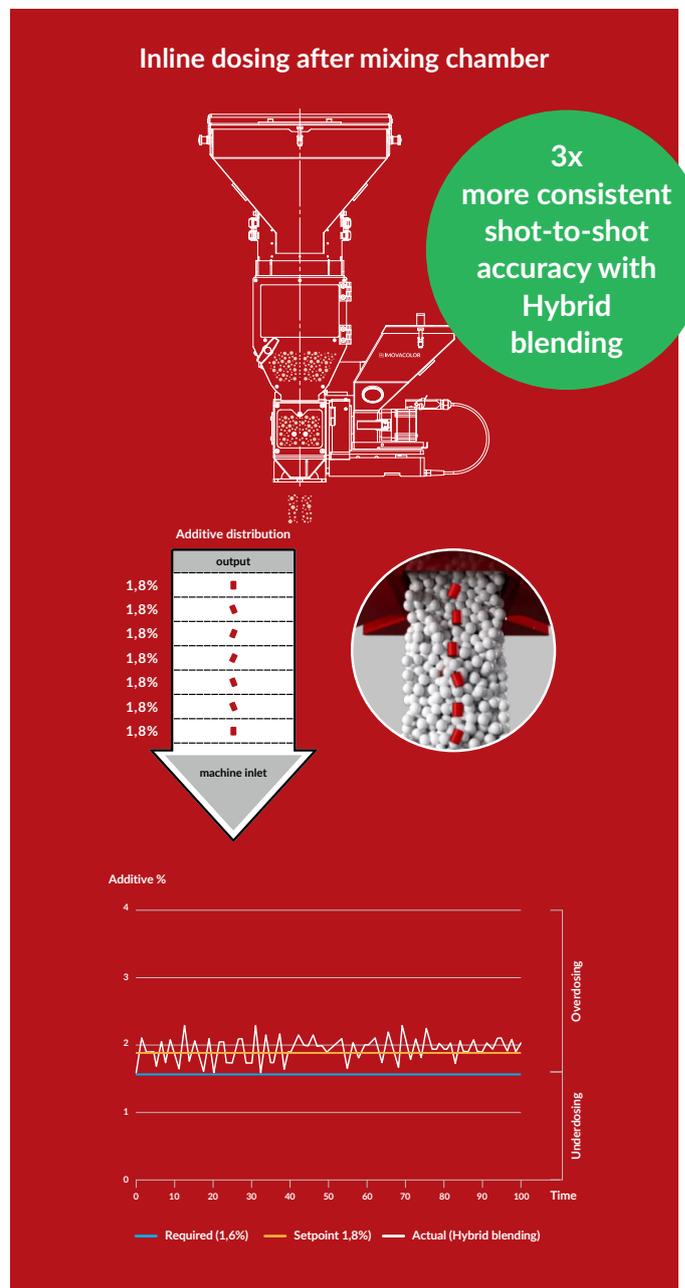
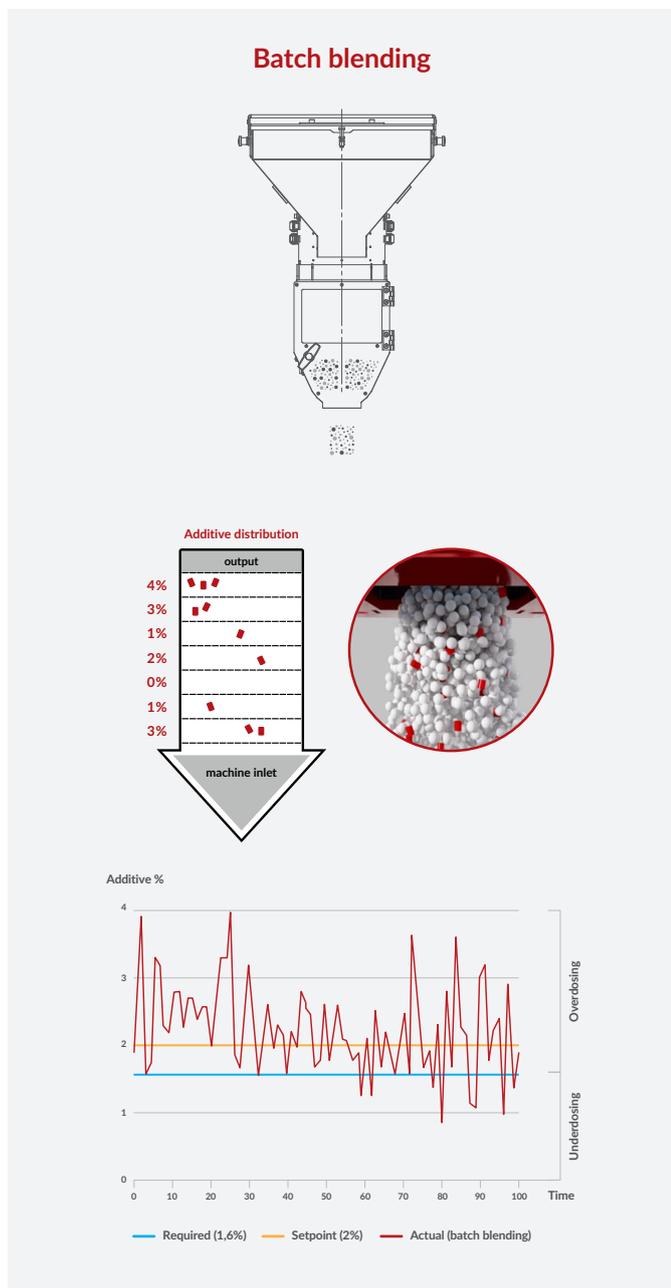
Operators often set additive at slightly higher levels than required to compensate for these shot-to-shot

fluctuations. This overdosing results in increased material costs while not fully mitigating the risk of mix variations.

The solution is a MHBS Hybrid Blender. Combining blending with inline dosing by adding a MDS Balance for full control over your critical additive.



Scan the QR code to find out more!



Go Beyond Blending and get the best of both worlds: Blending and inline dosing into one integrated system

Gain control over the additive and improve shot-to-shot accuracy with the Movacolor Hybrid blender. Stop overdosing and save thousands of Euros per year by dosing closer to the setpoint. Furthermore, this system facilitates a more uniform distribution of materials, leading to improved blend homogeneity and consistent product quality.

Save up to
20% on your
material
costs!



ROI calculation MHBS Hybrid blender system

Estimated additive savings / years	€ 14.994 1.764 kg
Return on Investment	0,2 years

4-component MBS blender

	Blend %	Material cost/kg	Blend kg/h	Blend cost/kg	Blend cost/h
Component 1: Virgin	68,00%	€ 1,50	204,00	€ 1,020	€ 306,00
Component 2: Re grind	20,00%	€ 1,00	60,00	€ 0,200	€ 60,00
Component 3: Color	10,00%	€ 4,00	30,00	€ 0,400	€ 120,00
Component 4: Additive	2,00%	€ 10,00	6,00	€ 0,200	€ 60,00
			300	€ 1,820	€ 546,00

3-component MHBS Hybrid blender + 1 MDS Balance

	Blend %	Material cost/kg	Blend kg/h	Blend cost/kg	Blend cost/h
Component 1: Virgin	68,20%	€ 1,50	204,60	€ 1,023	€ 306,90
Component 2: Re grind	20,00%	€ 1,00	60,00	€ 0,200	€ 60,00
Component 3: Color	10,00%	€ 4,00	30,00	€ 0,400	€ 120,00
MDS Balance 4: Additive	1,80%	€ 10,00	5,40	€ 0,180	€ 54,00
			300	€ 1,803	€ 540,90

Production situation

Target setpoint of additive	1,6%
Production hours per day	12
Production days per week	5
Production weeks per year	49
Production hours year per year	2.940

Year calculation

	MBS blender	MHBS Hybrid blender + 1 MDS Balance
Virgin cost / year	€ 899.640	€ 902.286
Regrind cost / year	€ 176.400	€ 176.400
Color cost / year	€ 352.800	€ 352.800
Additive cost / year	€ 176.400	€ 158.760
Total material cost / year	€ 1.605.240	€ 1.590.246



Why the hybrid solution?



Ramp up your production speed with higher blending throughput capacities.



Use gravimetric feeders for dosing your expensive additives with up to 0,05% accuracy.



Improve shot-to-shot accuracy by inline dosing for full traceability and shot verification of your most critical additives.



Reduce the risk of material segregation in the mixing chamber and save up to 20% on your material costs.



Ability to handle granules, powders, liquids, regrinds, flakes and PCR in one system.



Add up to 6 gravimetric feeders for full control over low % components.



Unique algorithms for maximization of regrind consumption and minimizing usage of expensive additives or colorants.

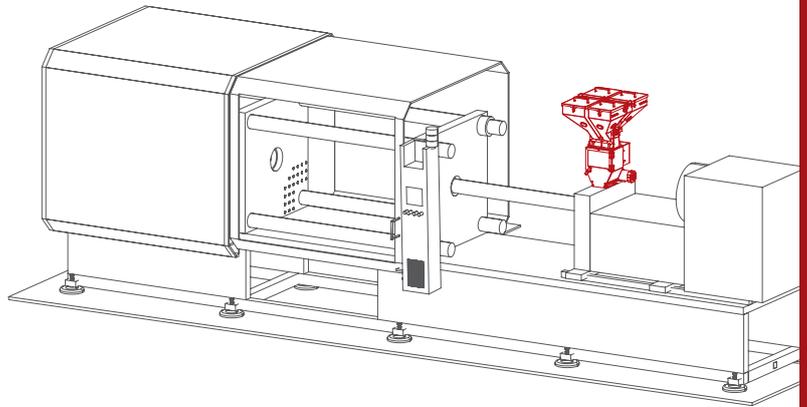


Complete system integrated in one portable touchscreen controller.

Installation options

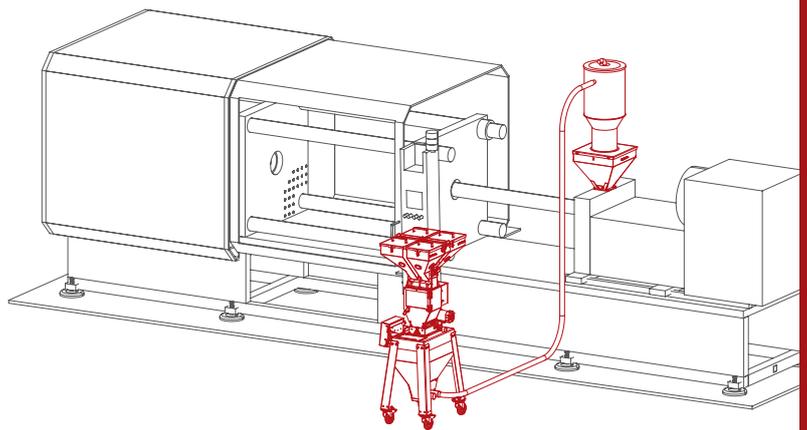
Throat mount

Mounting the throat of the primary machine is ideal for mix control, minimum cleaning and saving floor-space.



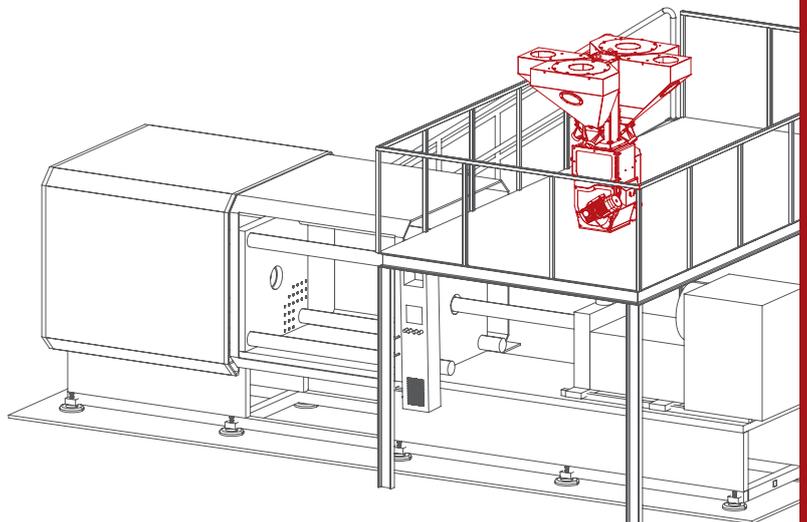
Off-line frame

Mounting on a frame next to the primary machine is ideal for central blending, quick material changes, easy cleaning and provides the flexibility for convenient maintenance on the primary machine (only 1- and 3-series off-line frame can be rolled away).



Mezzanine floor mount

Mounting on a mezzanine floor is ideal for quick material changes and provides easy cleaning and access to the top of the primary machine.



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

PTC

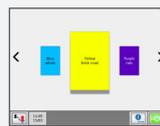


Ergonomic designed 8" full-color portable touchscreen controller with modern functionalities for all plastics production processes.

Single-cable possibility making it portable up to 15 meters.



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



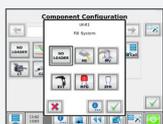
Different user-levels and Basic Operator Mode for simplified recipe selection and single-touch recipe starting.



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 dosing system.



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



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

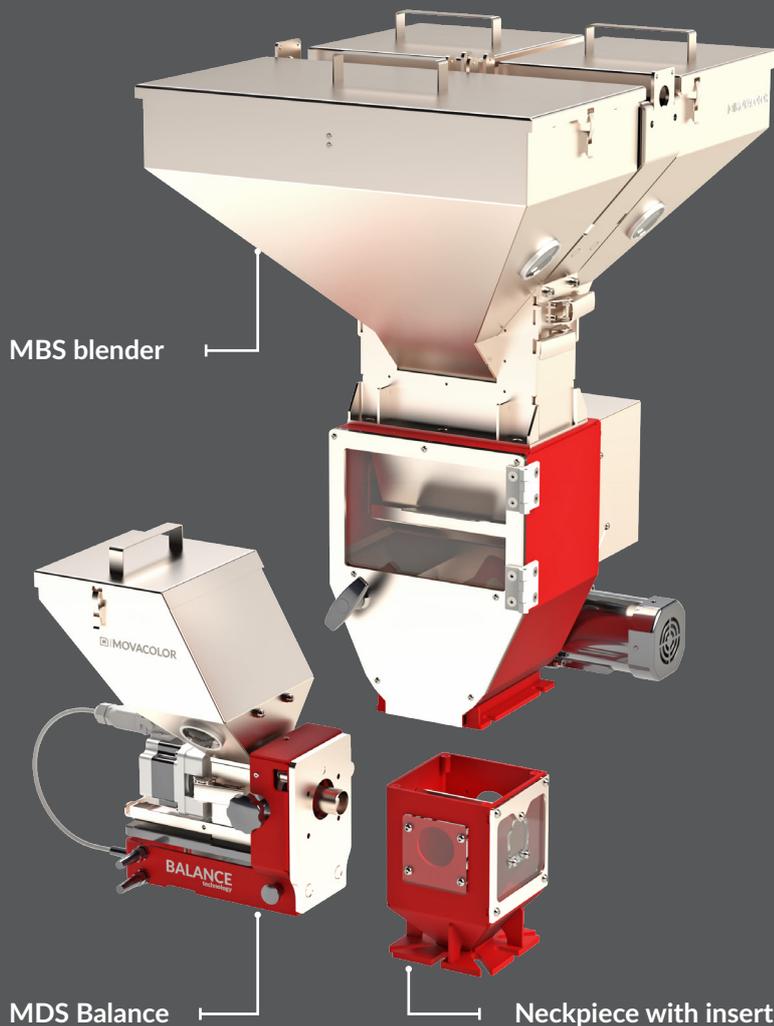


VNC remote support option for immediate trouble-shooting.

Also included in the PTC

- ✓ 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

Optimize your additive dosing



Balance Technology

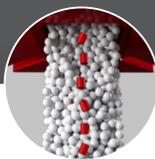
Single-point loadcell, ensuring precise measuring across its entire system, accommodating off-center loads.

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 dosing

Improve shot-to-shot accuracy and blend homogeneity by dosing 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 dosing accuracy of a wide variety of materials and throughput capacities.



Accessories

ME25 loader



Movacolor Ejector (ME) compressed air hopper loader for granules. Maximum capacity 40 to 125 kg/h (material depending). Complete with hopper lid, dust filter, solenoid valve, material hose, Asens level sensor, and suction probe. This hopper loader is directly fitted on the 1- and 3-series 9- and 21-liter material hoppers.

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.

3PH loader



3-Phase (3PH) vacuum hopper loader for automatic conveying of granules. Maximum capacity 150 to 1600 kg/h (material depending). Complete with material hose and suction probe. This hopper loader is fitted on the hopper lid.

MFD loader



Motor Feeder (MFD) single phase hopper loader for automatic conveying of granules. Maximum capacity 30 to 120 kg/h (material depending). Complete with material hose and suction probe. This hopper loader is fitted on the hopper lid.

20-series frame



Frame with 100-liter bin for off-line use of MBS/MHBS 20-series. With 4-connections for hopper loaders (dia. 50mm).

3-series frame



Movable frame with 40-liter bin for off-line use with MBS/MHBS 1- and 3-series. With 2 connections for hopper loaders (dia. 38 mm).

Bridge breaker set for 20-series



A pneumatically operated device that is installed inside one of the material hoppers of the MBS/MHBS 20-series. This enables accurate dosing of regrind, PCR and other materials that tend to block or 'bridge' and thereby obstruct flow through the valve of the hopper.

20-series mezzanine frame



Frame with 40-liter bin for off-line use of MBS/MHBS 20-series. With 1-connection for gravity fed system (dia 102mm).

Knife gate



Control valve that can be placed between the blender and the off-line frame material bin. It ensures material is held in the mixing chamber for good mixing prior to automatic release to the material bin.

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.

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.



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 to find out more about our modular dosing concept and how you can configure your own dosing solution!

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