Product information

Dosing system for liquid colors · colorDoS

Description

colorDoS® is a compact dosing system for liquid colors in plastic injection molding and in extrusion. The special design of the dosing nozzle prevents against color transfer and ensures a fast and clean color change. The smallest quantities of color are possible.

The feed system is mounted above the injection molding machine or extruder directly in the feed area of the conveying screw. It can be integrated into existing machines. The display control synchronizes the volumetric dosing pump and the operating steps of the system for precise metering of the liquid color. The control system further includes cleaning mode, color code management, remaining time display, alarm manager, and others.

The use of colorDoS together with liquid colors offers a real alternative to common masterbatches in many cases. It significantly reduces waste during color changes, protects the environment, ensures optimum machine capacity utilization rate, and saves material and time. Moving away from master batch and towards liquid color for the coloration of plastics is possible with colorDoS.

If you have any specific question about the dosing system, please contact our colorDoS expert Mr. Olaf Lang at olaf.lang@hnp-mikrosysteme.de.

We are happy to advise you on your colorDoS systems solution, support the on-site implementation and train your staff in the use of the dosing system for liquid colors.

Advantages at a glance

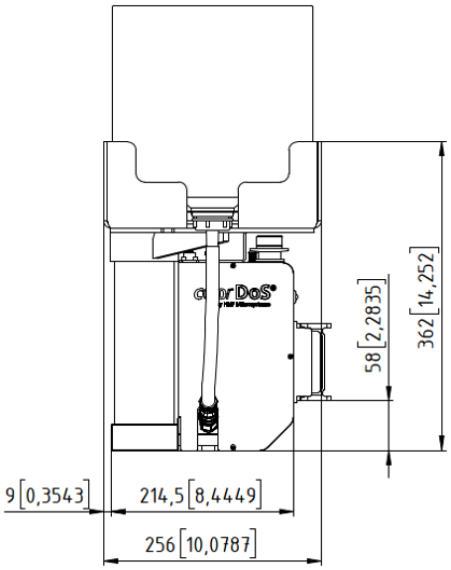
- Compact dosing system easy installation directly above the feed area of the injection molding machine or extruder
- Gentle precision dosing high color fidelity with minimum color application by micro annular gear pump
- Clean handling dripless quick-release couplings, short fluid connections, dosing nozzle design for smallest color quantities without color transfer in the feeding area
- Fast color change low void volume allows fast rinsing of the pump module and thereby a fast color change
- Intuitively operated display control different operator levels, remaining time display until container change, alarm manager, color formulation management, cleaning mode, communication with injection molding machine, etc.

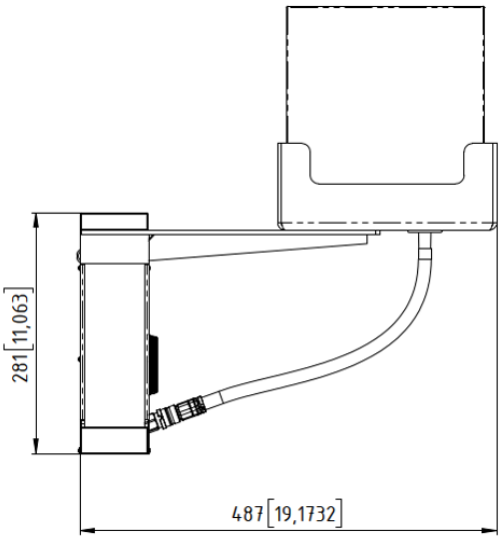
Technical data

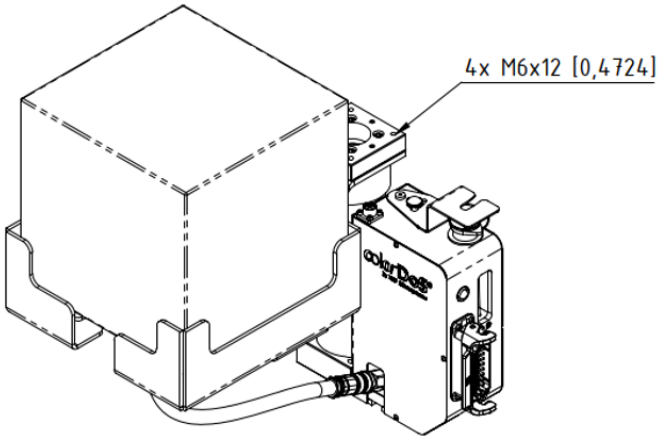
Shot weight	Injection molding: as of 2 g (depending on color addition and ink density)
Material throughput	Extrusion: 2… 600 kg/h (depending on color addition and ink density)
Color addition	Injection molding: as of 0.1 % (depending on shot weight and colordensity) Extrusion: as of 0.1 % (depending on material throughput and colordensity)
Dosing volume	Injection molding: 0.02 … 100 g color/shot (depending on dosing time and viscosity)
Volume flow	Extrusion: 0.2 … 100 ml/min (depending on viscosity)
Precision CV	< 1 % (Coefficient of variation CV)
Clearance volume	approx. 3 ml
Color change duration	as of 120 s
Container change duration	as of 10 s
Viscosity range	0.3 … 10,000 mPas
Liquid temperature range	-5 ... +60 °C (+23 ... +140 °F)
Adaption	Injection molding: 4 x M6, 60 x 60 mm (standard Arburg flange pattern) Extrusion: 4 x M8, 100 x 100 mm other dimensions can be realized with adapter plates
Container dimensions	1, 5, 10 and 20 liter container; Colorcube (max. weigth 30 kg)
Fluid connection	dripless quick-release coupling
Interface	Injection molding: start signal, error message to injection molding machine (potential-free contact) Extrusion: start signal, error message to extruder (potential-free contact), analog signal 0…10V signal light and acoustical signal (potential-free contact)
Controller	intuitively operated display control with 7" touch display
Electrical connection	230 V AC
Dimensions (L x W x H)	Injection molding: 256 x 487 x 362 mm [10.1 x 19.2 x 14.3 in] Extrusion: 307 x 487 x 362 mm [12.1 x 19.2 x 14.3 in]
Weight	Injection molding: approx. 18 kg Extrusion: approx. 27 kg (depending on the container holder)

Notice
Even if single parameters are within the indicated performance range of technical data, certain parameter combinations may not be achievable. Single parameters may exceed their indicated performance range under adequate circumstances. For detailed evaluation please contact HNP Mikrosysteme. Actual performance may vary. Specifications are subject to change without notice. This document is subject to change without notice.

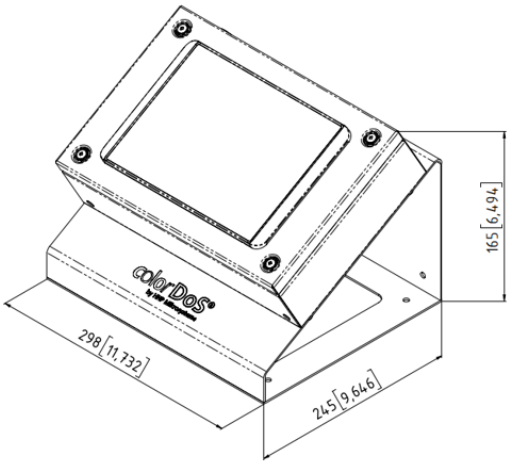
Dimensions colorDoS in plastic injection molding





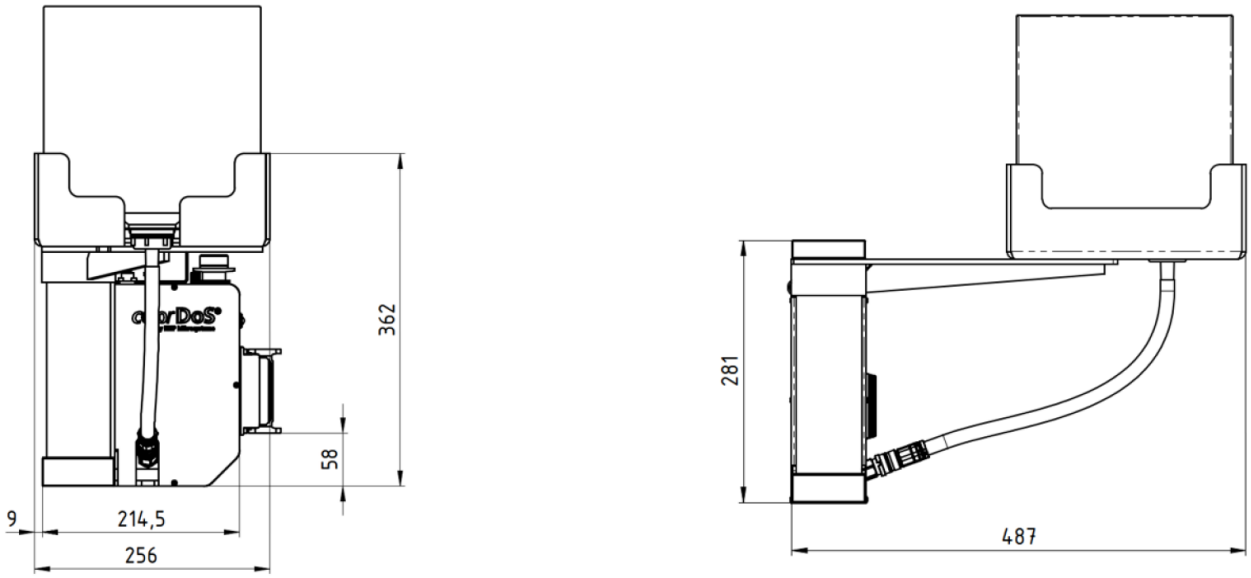


Picture with 10 liter container holder

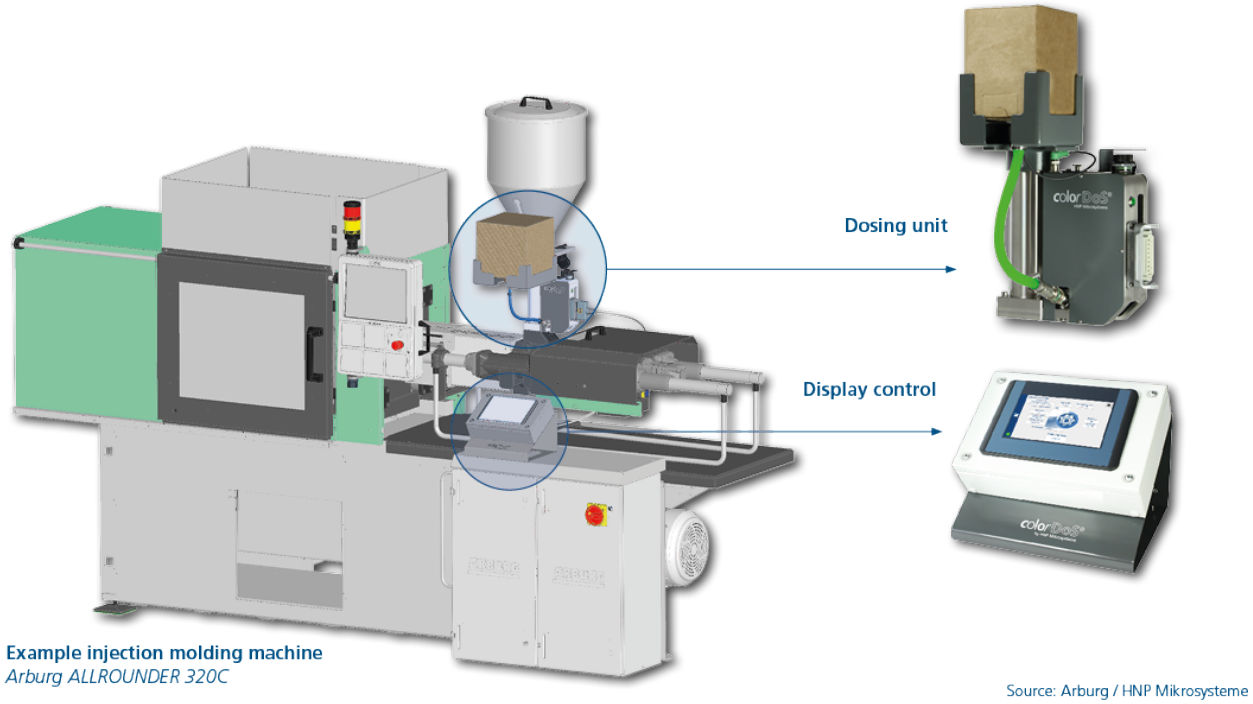


Display control

Dimensions colorDoS for extrusion



Mounting situation

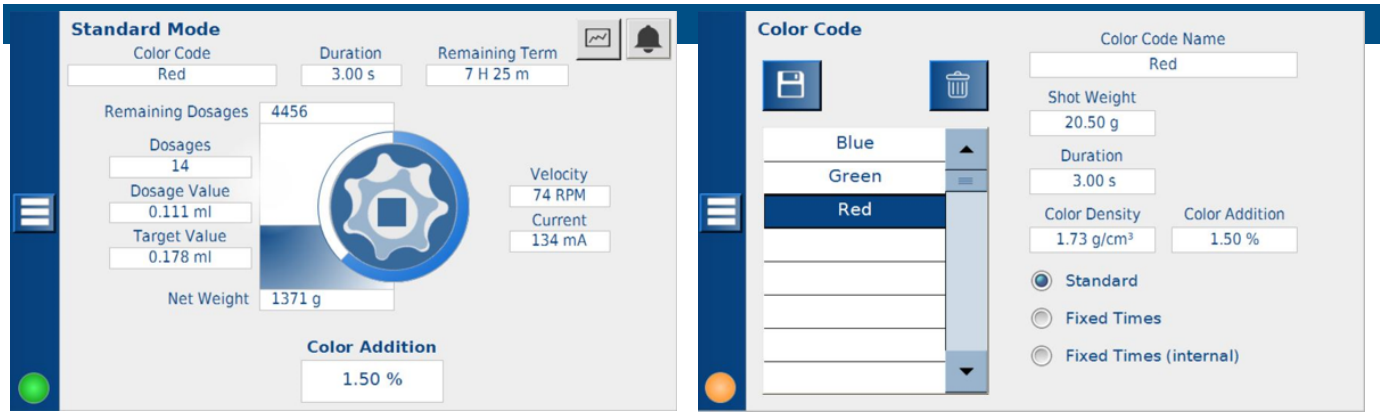


Example injection molding machine
Arburg ALLROUNDER 320C

Source: Arburg / HNP Mikrosysteme

Functions of the colorDoS control

- Different operator levels operator, administrator, service
- Remaining time display with adjustable advance warning time until container change
- Color code management storage of up to 30 color code formulations
- Cleaning mode enables fast color change
- Alarm manager displays warnings (e.g. low filling level) or failures and can stop the injection molding machine to avoid rejects.



Components

- Micro annular gear pump
- Dosing nozzle
- Adapter unit
- Container holder with load cell
- Dripless quick-release couplings
- Display Control
- Signal light
- Tube kit

Typical liquids

- Liquid colors
- Additives

Applications

- Plastic injection molding
- Extrusion

Patents and trademarks

Our products are protected by the following national and international patents: DE 10 2018 129 631.2 B3; EP 3 884 162; CN 113 302 399 B; DE 10 2018 129 633.9 B3; EP 3 884 160; CN 113 272 553 B; DE 10 2018 129 634.7 B3; EP 3 884 527; DE 10 2018 129 635.5 B3; EP 3 762 165; DE 10146 793.1; EP 1 354 135 B1; US 7,698,818 B2; DE 10 2011 051 486 B4; EP 2 726 740 B1; US 9,404,492 B2; CN 103 732 921B; EP 2 640 977 B1; US 10,012,220 B2; CN 103 348 141 B; HK 1 185 648 B.
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