

Hopper loaders for powders

# METRO P

 think materials management



# METRO P HOPPER LOADERS FOR POWDERS

In the plastics compounding and manufacturing process, there are many powders (all with different flow properties) that require handling. For the vacuum conveying of both free-flowing and non-free-flowing powders, motan has a solution. The METRO P series of hopper loaders are available in two versions and guarantee reliable and dust-free conveying.

The METRO PC system loaders are designed to be integrated into centralised motan conveying systems. The METRO PB single loaders are designed to be used as a “stand-alone” solution. From the material source right through to the point of processing, motan offers the ideal solution for your powder handling requirements.

## METRO PC system loaders (1)

To cope with different material conveying throughputs, hopper loaders are available in 10, 25 or 50 litre sizes. The system loaders are an integral part of a centralised material conveying system. Each system is designed to suit the customer; e.g. throughput, material types and plant layout are individually taken into account. In addition to different loader sizes, a wide variety of conveying options, controls, blowers and filter techniques allow the creation of the optimum system for the customer’s facility.

The hopper loaders along with the blower and other system components are integrated using a CAN-Bus network linked to the METROnet conveying control. The control can be used as a single control for one conveying system or combined with other controls using Ethernet to form an integrated network. The control is operated using a full colour easy-to-use graphic touch panel.

## METRO PB stand-alone loaders (2)

The METRO PB versions come in a variety of loader and blower sizes for material throughputs of up to 1000kg/h. Included in the scope of supply is a floor-mounted blower station (3) comprised of a control and a maintenance-free, low-noise three-phase blower.

The easy-to-use colour graphic display with touch panel (4) is located at a convenient height allowing for easy operation of the stand-alone system.

## Hopper loader models F & N

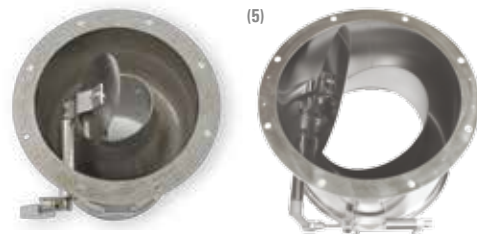
The METRO PCF and PBF models are designed for free-flowing powders, the METRO PCN and PBN models for non-free-flowing powders.

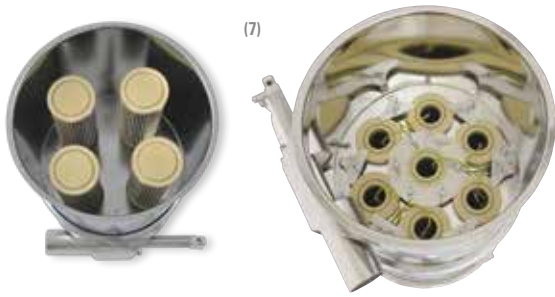
## Material discharge of METRO PCF and PBF (5)

A counter weighted gravity discharge flap (Ø130mm) is used for free-flowing powders with throughputs up to 500 kg/h. For higher conveying throughputs of up to 1000 kg/h, a larger pneumatically operated flap (Ø266mm) is required.

## Material discharge of METRO PCN and PBN (6)

A pneumatic butterfly valve (Ø300mm) is used for all non-free-flowing powders, guaranteeing safe material discharge.





#### **Filter unit (7)**

Up to 7 generously dimensioned ePTFE-coated star cartridge filters can be installed in the loader. The large filter area to air-flow ratio and the Teflon membrane coating on the filters provides optimum separation for all powders.

#### **Filter cleaning unit (8)**

A compressed air accumulator integrated in the hinged lid of the hopper loader with direct connection of the air outlet nozzles secures high-efficient filter cleaning. Depending on the material to be conveyed, optimisation of the filter cleaning sequences can be made in the setup menu of the control.



#### **Vacuum valve (9)**

All METRO PC loaders are fitted with a vacuum valve. The valve opens the vacuum line when material is being conveyed and closes with an airtight seal after the conveying phase. This allows multiple loaders to be connected to one blower.

#### **Fluidisation aid for METRO PBN and PCN loaders**

The optional fluidisation aid installed in the hopper body of the N-type loaders eliminates bridging and guarantees safe discharge even with non-free-flowing powders.

#### **Level sensor**

In every hopper loader, a rotary paddle switch can be optionally installed to automatically stop the conveying cycle when the level is reached.

#### **Material take-up**

Essential for trouble-free material conveying is the correct form of material take-up.

#### **Conveying of free-flowing powders:**

##### **Telescopic suction probe**

Free-flowing powders can be simply conveyed using a telescopic suction probe connected to the material feed-line.

#### **Conveying of non-free-flowing powders:**

##### **Screw discharge (10)**

In a collecting hopper fitted with a horizontal agitator, non-free-flowing powder is stirred up. The integrated feed-screw conveys the powder directly into the material feed-line. By varying the feed-screw speed, the amount of material being conveyed can be adjusted.



# METRO P

## TECHNICAL DATA

Technical data						
Hopper loader Type METRO ...	PCF 10 PBF 200	PCF 25 PBF 500	PCF 50 PBF 1000	PCN 10 PBN 200	PCN 25 PBN 500	PCN 50 PBN 1000
Flow properties of the powder	Free-flowing			Non-free-flowing		
Separation volume (dm <sup>3</sup> )	10	25	50	10	25	50
Material throughput (kg/h) *	200	500	1000	200	500	1000
Number of filter cartridges	4	7	7	4	7	7
Filter area (m <sup>2</sup> )	1.0	1.75	3.5	1.0	1.75	3.5
Filter cleaning with compressed air reservoir	2 circuits	3 circuits		2 circuits	3 circuits	
Rotary paddle switch in the hopper body (max. level)	Option					
Fluidisation aid	—			Option		
Material discharge	Gravity flap (Ø130 mm)		Pneumatic flap (Ø266 mm)	Butterfly valve (Ø300 mm)		
Rotary paddle switch for actuation of hopper loader discharge	—		Standard			
Max. temperature (°C)	80					
Compressed air oil and water-free (bar)	5 - 7					
Power supply - hopper loader (VDC)	24					
Weight hopper loader (kg)	40	52	67	47	66	67
Dimensions (mm)	60					
H1	1231	1528	1743	1066	1363	1613
d1	303	403	403	303	403	403
d2 (pitch circle diameter)	350	350	450	350	350	350
d3	45 (60)	60	60 (76)	60	60	60 (76)
d4	60					
Blower station (kW) with control and blower protection filter	1.3 (2.2)	2.2 (4.3)	4.3	1.3 (2.2)	2.2 (4.3)	4.3
Monitoring of blower protection filter	Option					
Dimensions (mm)	60					
H2	886	886	1083	886	886	1083
B1	391	391	450	391	391	450
L1	410	410	680	410	410	680
d4	60					

\* Valid only for METRO PBF and METRO PBN

Subject to technical changes

METRO PC



METRO PB



Blower station



### YOUR BENEFITS

- Compatibility with other motan products and network capability in motan's CONTROLnet world
- Both powder and granulate material loaders can be integrated into the same conveying system
- Tool-free, simple handling,
  - hinged lid
  - tool-free exchange of filter cartridges
- Conductive polyester cartridge filters with Teflon membrane coating
- All hopper loader housing components and the filter cartridges are earthed
- Tangential material inlet improves the separation of the powder
- All material contact parts are made from electropolished stainless steel
- Effective multiple circuit compressed air cleaning of the filters
- Butterfly valve 300 mm for optimum discharge of non-free-flowing powders
- Safety filter is installed in front of the blower (single units)
- Fully adjustable control parameters for conveying, purging, filter cleaning, discharge, fluidisation and alarm monitoring
- Optional control of the conveying quantity with rotary paddle switch
- Visual alarm at the hopper loader

Over 130 agencies world-wide.

[www.motan-colortronic.com](http://www.motan-colortronic.com)

Brazil, São Paulo  
Tel. +55 19 3414-2870  
info@motan-colortronic.com.br

China, Changchun  
Tel. +86 431-8956 7886  
sales@motan-colortronic.com.cn

Germany, Friedrichsdorf  
Tel. +49 6175 792-167  
info@motan-colortronic.de

India, Chennai  
Tel. +91 44 2247-2423  
info@motan-colortronic.co.in

Singapore  
Tel. +65 6873-7666  
info@motan-colortronic.com.sg

USA, Plainwell  
Tel. +1 269 685-1050  
motanusa@motan-inc.com

China, Guangzhou  
Tel. +86 20 2886-6688-8081  
sales@motan-colortronic.com.cn

France, Evry  
Tel. +33 1 608 690-18  
info@motan-colortronic.fr

Germany, Isny  
Tel. +49 7562 76-0  
info@motan-colortronic.de

Italy, Milan  
Tel. +39 02 9216 3362  
info@motan-colortronic.it

Switzerland, Oftringen  
Tel. +41 62 889 29-29  
info@motan-colortronic.ch

China, Taicang  
Tel. +86 512 5357-7066  
sales@motan-colortronic.com.cn

Germany, Bünde  
Tel. +49 5223 68544-0  
info@motan-colortronic.de

Great Britain, Chesterfield  
Tel. +44 1 246 260 222  
sales@motan-colortronic.co.uk

Japan, Hiroshima  
Tel. +81 82 928-6150  
info@semco.jp

Thailand, Bangkok  
Tel. +66 2 717-1088  
info@motan.co.th

