

CONVEYING

# METRO

Simple Solutions - Conveying



ZERO LOSS

# SIMPLE SOLUTIONS

## EASILY REALISED, COMBINED AND INTEGRATED

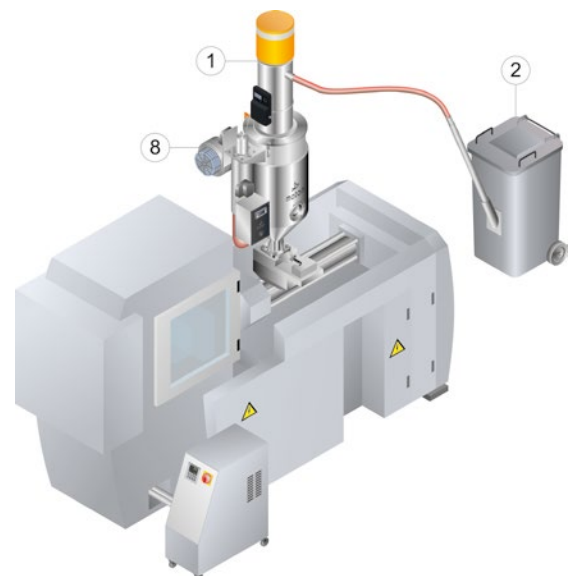
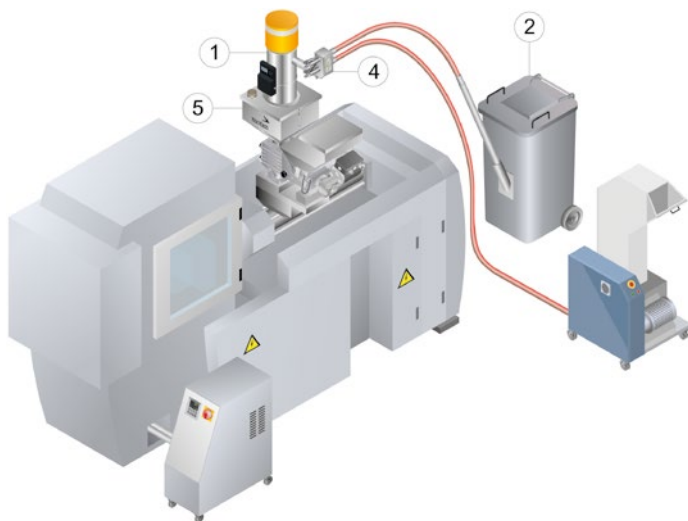
Simple solutions comprise a range of equipment for optimising and automating plastics processing machinery production. All units can be combined or expanded in order to satisfy increasing and changing requirements. They help the plastics processor to equip their individual machines or production cells. In the case of injection moulding, extrusion or blow moulding machines, cost savings can be easily achieved with minimum outlay.

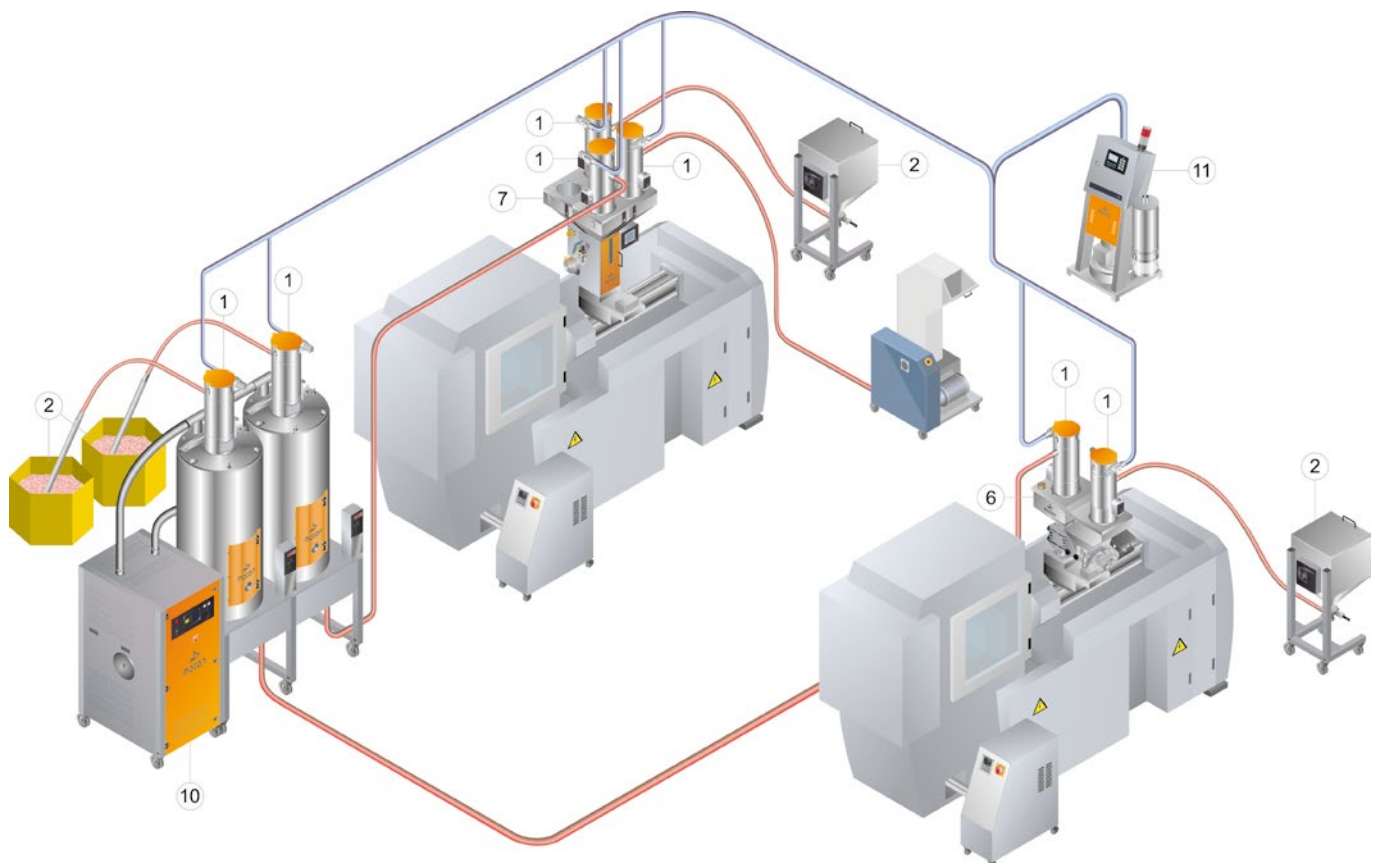
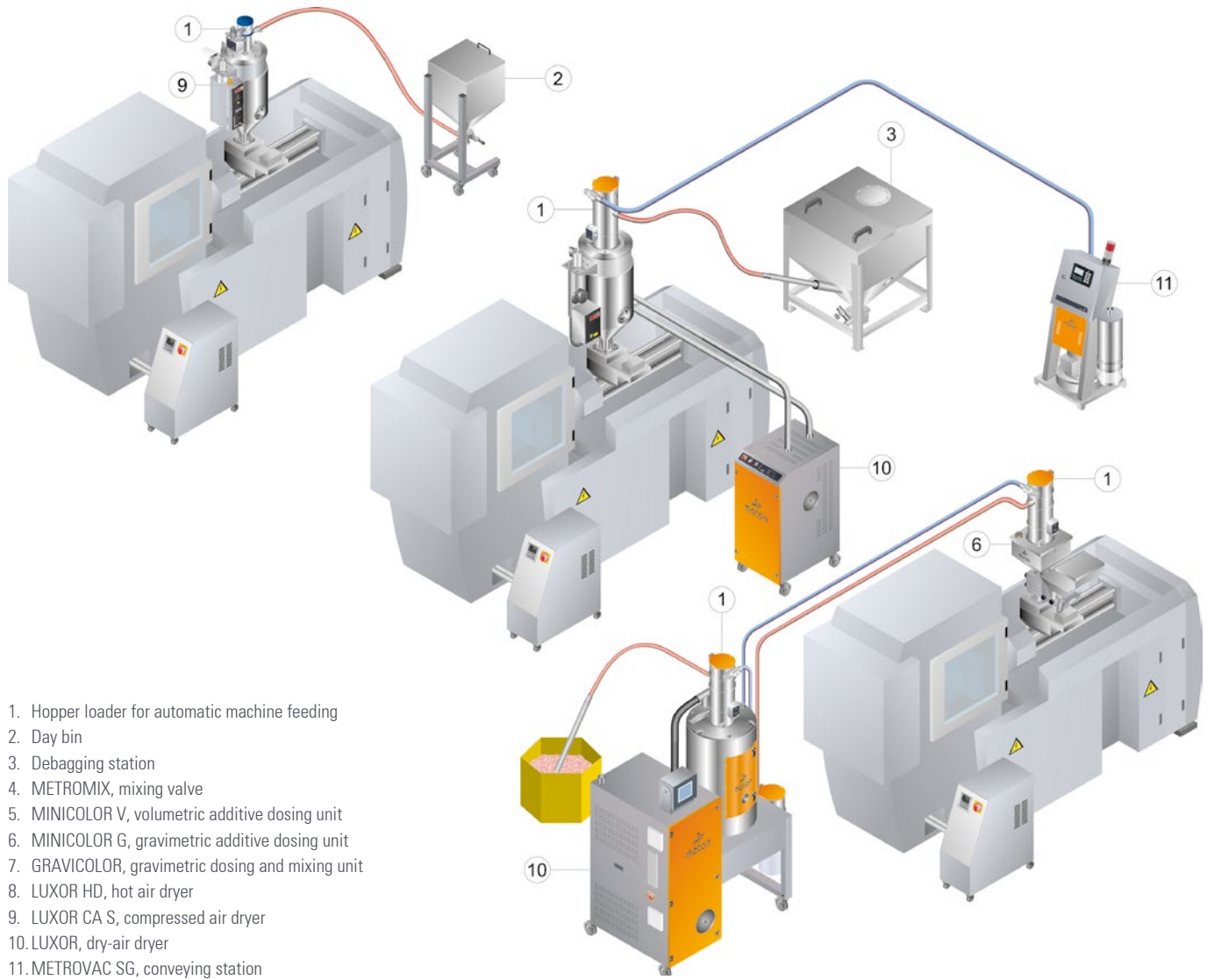
Individual applications and problems are rapidly solved and may be the first steps towards a later system solution. The simple solutions range correspond to motan's high quality standards in spite of lower prices and are available through motan's world-wide sales and service network. All units may of course be integrated into system solutions.

### PRODUCT RANGE

- Material bins for clean and well arranged material storage
- Dryers for energy-saving material drying to a defined residual moisture, or removing surface moisture and preheating of material
- Conveying equipment for automatic material transport and supply to the machine
- Dosing and mixing units for self-colouring or for the addition of additives and regrind

### EXAMPLES FOR STEP-BY-STEP AUTOMATION OF INJECTION MOULDING MACHINES





# METRO SG

## SIMPLE SOLUTIONS - HOPPER LOADERS

METRO SG HES 15



METRO SG HES 50



METRO SG HES 80



METRO SG HES 200



METRO SG HOS 05



METRO SG HOS 10



METRO SG HOS 30



### **METRO SG - the simple, quick and easy to set up and cost-effective conveying series**

With the METRO SG hopper loaders motan expands the conveying range with simple, quick and easy to set up and cost-effective series in the usual motan quality for standard virgin and regrind material applications. This includes the METRO SG HES, single-phase hopper loaders for granules, which are available in four throughput sizes.

The METRO SG HOS system material loaders, available with 5, 10 and 30 liter capacities, are designed for standard conveying systems. To accompany these are the METROVAC SG blower stations with a central filter that can serve up to eight material loaders, eight proportioning valves and four purging valves. The conveying control METROnet SG can manage eight material loaders, eight proportioning valves and four purging valves as well as one stand-by blower via its colour touchscreen.

# METRO SG HES

## SINGLE-PHASE MATERIAL LOADERS

METRO SG HES with cone filter



METRO SG HES with filter cartridge



METRO SG HES filter exchange



METRO SG HES / Alarm off



METRO SG HES / Alarm on



The METRO SG HES loader range can handle throughputs of 15 to 200 kg/h.

The range of single-phase material loaders enable processors to automate a key area of the production process cost effectively, bringing significant benefits for process management.

The motors are installed in the hood of the loaders and are equipped with a special sound insulation, which significantly reduces the noise.



All METRO SG HES loaders have a hinged lid for easy cleaning of the loader and the filter. The filter is automatically cleaned by compressed air after every conveying cycle. This guarantees constant and reliable material conveying and reduces maintenance costs for the loader.

All units are equipped with their own control, which recognizes when material is needed and automatically starts conveying. This keeps machines running and avoids costly downtime while eliminating material wastage.



# METRO SG HOS

## SYSTEM MATERIAL LOADERS

### The practical solution for conveying plastic granules

METRO SG HOS system material loaders can automate important areas of the production process cost-effectively and efficiently. Virgin and regrind material is conveyed quickly and cleanly to the hopper of a processing machine, a drying bin or a dosing and mixing unit. Material is delivered exactly when needed keeping machines running and avoiding costly downtime. Material wastage is eliminated and the work-space is kept clean and safe.

METRO SG HOS with filter

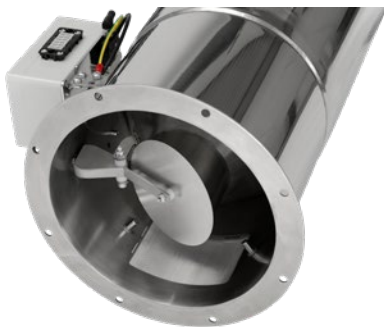


### Guarantees constant and stable material conveying and reduces maintenance costs

The strong stainless-steel filter is automatically cleaned by implosion after each loading. This guarantees constant and reliable material conveying and reduces maintenance costs for the loader. Because the material loader is air-tight, the conveying performance remains stable and there is no dust around the unit.

All material loaders are modular and are constructed using polished stainless steel, guaranteeing you contamination-free operation and easy cleaning due to the high-quality surface finish.

METRO SG HOS discharge flap



### Abrasion-resistant material outlet

Because the large material outlet has a discharge flap which is made of stainless steel, it is abrasion resistant and meets all requirements for medical or food packaging applications. The angled design increases the outlet area and helps with materials which may bridge.

### From simple cost-effective solutions to innovative controls

Several different levels of automation are available for controlling the METRO SG HOS loaders:

- METROVAC SG: Stand-alone conveying station with blower, dust filter and PLC conveying control for 8 hopper loaders, 8 proportioning valves and 4 purging valves.
- METROnet SG: a soft PLC conveying control for standard conveying systems with full colour touch screen. For 8 hopper loaders, 8 proportioning valves and 8 purging valves, one blower and one stand-by blower.

METRO SG HOS with METROMIX



METRO SG HOS control



# METROnet SG

## CONVEYING CONTROL

METROnet SG



### High quality system conveying as standard

METROnet SG can control:

- 8 METRO SG HOS material loaders
- 8 METROMIX material proportioning valves
- 8 purging valves
- 2 dry air conveying valves
- 1 blower station
- 1 stand-by blower station

### High quality system conveying

Material is delivered exactly when needed, keeping machines running and avoiding costly downtime. Material wastage is eliminated and the work-space is kept clean and safe.

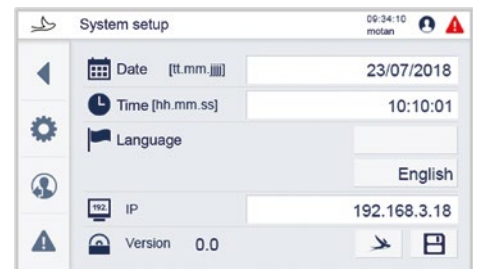
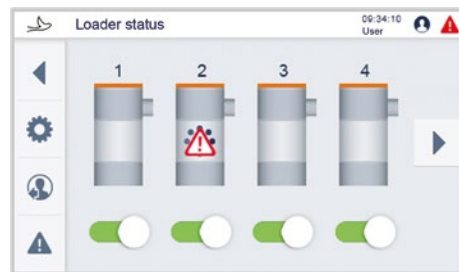
### Accurate and reliable addition and mixing

With the integrated METROMIX material proportioning valve control, you can easily adjust the percentage and number of material layers per conveying cycle using the touchscreen.



### Intuitive and reliable for up to 8 hopper loaders

motan's METROnet SG conveying control offers a cost-effective solution for your standard conveying needs. The Siemens S7 based microprocessor control comes with a 4.7" full colour touchscreen giving you simple, intuitive, fast, reliable operation and can manage up to eight METRO SG material loaders and much more.



### Constant material temperature

The METROnet SG control can manage two dry air conveying valves. These are essential for hygroscopic materials that reabsorb moisture quickly. Conveying is carried out in a closed loop and dry warm air is used for transporting the material to the processing machine - maintaining material temperature and eliminating reabsorption of moisture.

### Switches in automatically with no downtime

Optionally, a standby blower function can be integrated into the control. If the blower or the pump fails in the application, then the control will automatically switchover to a stand-by, without any downtime to production.

# METROVAC SG

## CONVEYING STATION



### Three phase conveying station for granulate

The METROVAC SG three phase conveying stations offer a wide choice of blower sizes and are designed for standard central conveying applications. The stations are supplied with a three-phase blower which is low-noise and maintenance-free, a cyclone dust filter with dust collection bin and a PLC control.



### METROVAC SG control:

- 8 METRO SG HOS material loaders
- 8 METROMIX material proportioning valves
- 4 purging valves
- 1 blower station

The PLC control panel is located at a convenient height and an alarm lamp and horn are fitted as standard.



### Central dust filters

All METROVAC SG conveying stations are equipped with the highly efficient filter units FC07 or FC15. The FC filters combine cyclonic dust separation with a fine dust filter. A dust collection bin makes the removal of fines quick and easy.





# METROMIX

## PROPORTIONING VALVE

A stainless steel proportioning valve for mixing virgin and regrind material. The percentage and number of material charges per feed cycle can easily be adjusted. It can be retrofitted without difficulty. The METROMIX is easily cleaned via a large transparent access panel.



# METRO VL

## VENTURI LOADER



The METRO VL loader is designed principally for manufacturers who produce small plastic parts and components.

This highly versatile compressed air loader can fulfil several different functions. It can be fitted directly to the throat of a small injection moulding machine to deliver 30 kg/h of virgin material. It can supply additive dosing units with material, a GRAVICOLOR blender with additives or a LUXOR CA S/A compressed air dryer with virgin material.

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### MANY FEATURES MAKE THE METRO VL VERY USER-FRIENDLY:

- It is light in weight
- Easy and quick to install
- Simple to operate and to clean
- Silent and wear-free operation
- Requires very little maintenance

The stainless steel construction ensures no contamination of material. An alarm indicates insufficient material.

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# MATERIAL HOPPERS / STORAGE BINS

Material hopper, square, stainless steel



Day bin, mobile



BB 60, blanketing bin



DB 60, day bin, stainless steel



## Material hoppers

Hoppers with hinged lid and hopper loader flange for mounting on a MINICOLOR dosing unit or directly on the feed throat of the machine.

Technical data			
Material hoppers	Gross filling quantity approx. (l)	Net filling quantity* approx. (l)	Suitable loader sizes approx. (l)
10 litre, square, SST	10	5	0.5/1.5/3/5
15 litre, square, SST	15	10	6/10
30 litre, square, SST	30	25	15/30/50
60 litre, square, SST	60	50	15/30/50

\* Filling quantity with hopper loader fitted.

## Material storage containers

Profitability starts with well-thought-out material storage and the use of small and mobile bins.

### Mobile day bins

Connecting piece with locking cap for a suction probe of 38 – 60 mm diameter included. For contamination-free storage of free-flowing granules/additives or regrind materials. The day bins are made of high quality plastic (PE-HD).

Technical data			
Day bin, mobile			
Volume (l)	120	240	360
B (mm)	480	580	600
L (mm)	550	730	870
H (mm)	930	1075	1100

### Blanketing modules (for day bins, octabins)

The plastic granulate is blanketed with released compressed air. This isolates the stored material from the ambient air and keeps it dry.

### Day bins made of stainless steel (DB 60)

Shut-off valve and a suction box is included. Compact design and mobile with four castors.

Technical data		
Day bin	BB 60	DB 60
Volume (l)	60	60
Compressed air oil and water-free (bar)	1-6	-
Material (hopper)	stainless steel	stainless steel
Weight (kg)	30	27
Dimensions (mm)		
LxWxH	431x549x917	431x499x916
Colour (RAL)	7040	7040

# MATERIAL

## HOPPERS / STORAGE BINS

**Intermediate storage containers made of aluminium,  
1500 - 5000 litres**

Bulk material container for free-flowing plastics granules.

### Technical data

#### Intermediate storage container

Volume (l)	1500	2000	3000	4000	5000
Dimensions (mm)					
L	1200	1200	1500	1500	1500
B	1200	1200	1500	1500	1500
H	1650	2000	2070	2520	2920

Debagging station



# METRO SG

## TECHNICAL DATA

### Technical data

Loader type METRO VL*	METRO VL
Material throughput approx. (kg/h)**	max. 30
Mode of conveying	compressed air
Power supply (V/Hz)	230/50
Compressed air oil and water-free (bar)	3 - 7
Air consumption at 3 bar (m³)	0.12
Weight approx. (kg)	2.5
Colour	stainless steel, electropolished

METRO VL



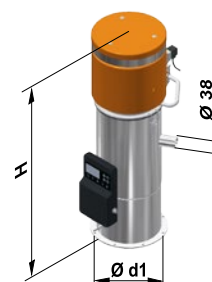
METRO VL



### Technical data

Loader type METRO SG ...	HES 15	HES 50	HES 80	HES 200
Volume / cycle (l)	2	5	6	6
Material throughput approx. (kg/h)**	15	50	80	200
Filter cleaning	compressed air	compressed air	compressed air	compressed air
Filter type	cloth	cloth / filter cartridge (Option)	cloth / filter cartridge (Option)	cloth / filter cartridge (Option)
METROMIX connection	yes	yes	yes	yes
Blower capacity/connected load (W)	870	870	1100	1100 brushless
Power supply (V/Hz)	1/N/PE 230/50	1/N/PE 230/50	1/N/PE 230/50	1/N/PE 230/50
Compressed air oil and water-free (bar)	5 - 7	5 - 7	5 - 7	5 - 7
Dimensions (mm)				
H	522	666	717	764
Ø d1 (hole circle)	195	195	225	225
Weight approx. (kg)	10.5	10.8	14.2	15.8
Colour RAL	2011	2011	2011	2011

METRO SG HES



\* The following items are included with delivery: 3 m material hose and a suction pipe.

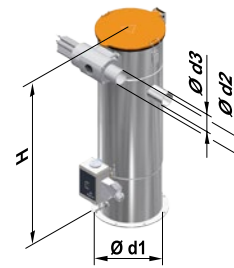
\*\* The conveying capacity refers to a conveying distance of 5 m at a height of 3 m. The information refers to materials with a bulk density of 0.6 kg/dm³

# METRO SG

## TECHNICAL DATA

Technical data			
Loader type METRO SG ...	HOS 05	HOS 10	HOS 30
Volume (l)	5	10	30
Filter cleaning	implosion	implosion	implosion
Filter type / mesh size (µm)	cloth / 1000	cloth / 1000	cloth / 1000
Power supply (V DC)	24	24	24
Compressed air oil and water-free (bar)	4 - 6	4 - 6	4 - 6
Dimensions (mm)			
H1	513	668	829
Ø d1 (hole circle)	195	225	325
Ø d2	50	50	60
Ø d3	50	50	60
Weight approx. (kg)	7	8	13
Colour RAL	2011	2011	2011

METRO SG HOS



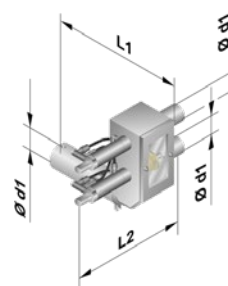
Technical data				
Conveying station METROVAC SG ...	085	13	22	43
Power supply - control (V DC)	24	24	24	24
Filter type	FC07	FC07	FC15	FC15
Connected load - Blower (kW)	0.85	1.3	2.2	4.3
Power supply - Blower (V/Hz)	3/N/PE 400/50 3/PE 480/60	3/N/PE 400/50 3/PE 480/60	3/N/PE 400/50 3/PE 480/60	3/N/PE 400/50 3/PE 480/60
Dimensions (mm)				
H1	1412	1412	1412	1412
H2	1223	1223	1223	1223
L	672	672	771	845
W	446	446	446	913
Ø d1 (vacuum line)	50	50	60	60

METROVAC SG

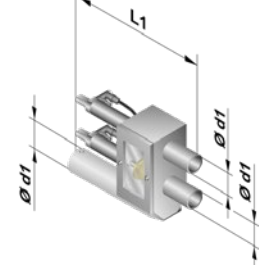


Technical data		
Mixing valve type METROMIX	38	50
Mixing ratio (virgin:regrind)	90:10 to 10:90	90:10 to 10:90
Power supply (V DC)	24	24
Compressed air oil and water-free (bar)	5 - 7	5 - 7
Dimensions (mm)		
L1	171	272
L2	254	-
Ø d1	38	50
Weight approx. (kg)	2.5	2.5

METROMIX 38



METROMIX 50



Subject to technical changes

### YOUR BENEFITS

#### Improved production efficiency through

- proven motan quality for trouble-free, reliable operation
- a first step to efficient, automated production
- processing machine which does not run empty – automatic alarm prompts for material supply

- avoiding health and safety risks – no material spillage, resulting in clean, safe floors and workspace
- possibility of proportioning of regrind
- easy access for cleaning
- automatic filter cleaning

#### Cost savings through

- material savings at least 1 to 2% – no spillage
- manpower savings through automated material conveying – no manual delivery and loading
- stainless steel construction – long service life
- low maintenance

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