



SOLUTIONS for

Flow & Connection

FLUIDIZE

UNCLOG

CONNECT



Palamatic
PROCESS >>> machines • engineering

Powder Handling Solutions

CONTENT



Means that the equipment is available for testing at PALAMATIC PROCESS



Means that the equipment can be installed in ATEX zone



Means that design and options can be customised

PALAMATIC PROCESS reserves the right to make changes in the design of the facilities listed in this commercial documentation



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TO CONNECT UPPER AND LOWER PIPEWORK SECTIONS WITH PERFECT STATIC AND DYNAMIC SEALING

TECHNICAL SPECIFICATIONS

- Connections for CIP operations and degassing
- Temperature from -40°C to +300°C
- Zero-drop permeability
- 5.5 bar pressure
- FDA and food-grade approved according to European Standard EC 1935/2004
- Resistance to acids and caustic sodas
- Anti-static (explosive environment)

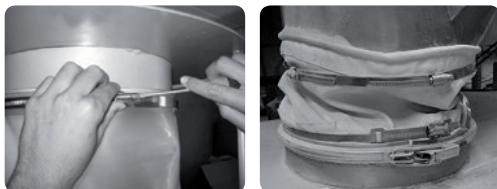


The assembly is composed of two **stainless steel tubes** and a **flexible fitting**.

Thanks to its design, the **flexible fitting BFM™** can be installed and disassembled without any tool in just a few seconds ensuring a perfectly sealed connection.

The flexible fitting can be installed in-line, offset or on oscillating parts.

Before



After



▶ **Hygiene:** no retention, perfect sealing



▶ **Size:** perfectly adjustable



▶ **Pressure resistance:** if an explosion occurs, the gasket tightens



▶ **Setting up:** no tool needed for disassembly

Advantages



QUICK AND EASY INSTALLATION

The installation is performed without any tool or with the help of disassembly system. The mounting operation is carried out from the inside, which reinforces the clamping process.



▶ **Assembly and disassembly without tool**



▶ **Assembly and disassembly with tool: safety**



CUSTOM MADE FLEXIBLE FITTING



▶ **4.000 mm flexible fitting**



▶ **Conical fitting**



▶ **Offset installation**



▶ **Stopper flexible fitting**

Types of Fittings

- Diameters from 100 to 650 mm. in increments of 50 mm
- Length of the flexible fitting: 150 mm. (Ø 100 to 200)/200 mm. (Ø 250 to 650)
- Thickness of the flexible fitting: 0.5 to 1 mm. according to material
- Possibility of fittings for cleaning operations in place (CIP) and degassing



250AS



Kevlar



Camlon



LM4



Seeflex 020



Seeflex 040



Seeflex 400w



Teflex

► FLEXIBLE FITTINGS SETTLEMENTS



Standard internal diameters in mm	Standard lengths (LM) in mm	
100	100	150
125		
150		
200		
250		
300		
350	200	
400		
450		
500		
550		
600		
650		



- 1 The stainless steel spigots (flanges) have 52 mm (2") long tail. They can be easily cut down or cut on an angle to suit your existing pipework (see installation instructions for more information).
- 2 When welding spigots, it is important to adjust the space between your pipes. Standard-length flexible connectors will be stocked and hence more easily available, and less expensive comparing with standard lengths.
- 3 If your application presents a risk of static electricity or implantation in ATEX zone, we recommend connecting the two BFM™ spigots to ground.

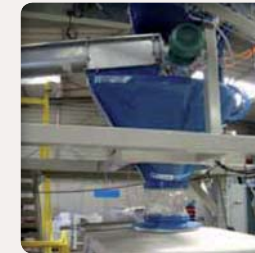
► INSTALLATIONS



Fitting below butterfly valve with vacuum resistance



Flexible fitting on vibrating sifter



Container connection



Connection between screw conveyor and sifter



Feeding of large diameter dosing unit



Tank connection for liquid



Dosing without weighing interference



Camlon flexible fitting on cement process



Pneumatic conveying feeding and vacuum resistance



Flexible fitting on atomizer



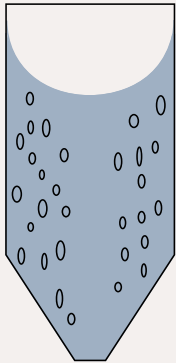
Mounting on oscillating sifter



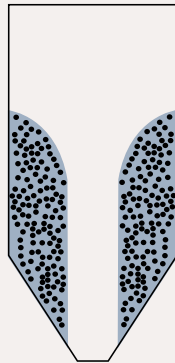
Milk powder process

What Are Your Flowing Issues?

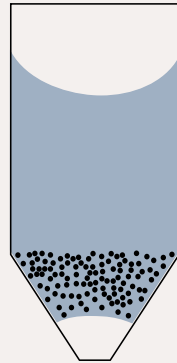
▶ Segregation



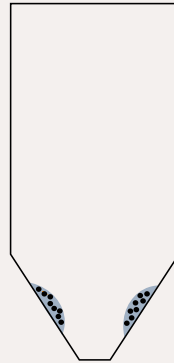
▶ Rat hole



▶ Bridging



▶ Retention



▶ POWDERS SPECIFIC ASPECTS

Sticky, oily, low density, with lumps, spreading, arching, abrasive...



PALAMATIC PROCESS has developed a range of equipment to facilitate the flow of materials inside hoppers or silos by providing highly efficient and innovative solutions.

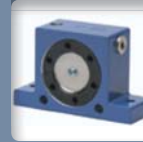
Vibration.....

Pneumatic ball vibrators



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Pneumatic roller vibrators



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Pneumatic turbine vibrators



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Electric vibrators



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Bin activators



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Bridge breaker hammer



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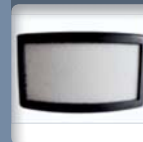
Fluidization.....

Nozzles



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Aeration pads



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Air cannons



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Vibrating bin aerators



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With mechanical action.....

Flat bottomed device



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Conical with screw



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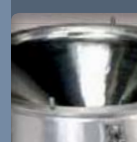
Conical with rotating blades



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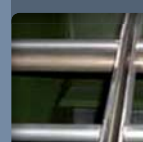
Special coatings.....

Mirror polishing



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Teflon coating



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Heating and insulation



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Pneumatic Vibrator



3 Technologies:
Ball, Roller, Turbine

Ball Technology

FACILITATES THE FLOW OF DIFFICULT MATERIALS



Advantages

- Multidirectional vibrations
- No lubrication
- No maintenance
- Explosion proof



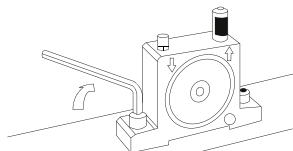
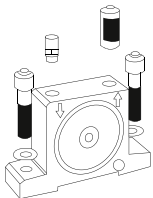
These vibrators generate **multi-directional vibrations**. They are used for emptying silos, intermediate hoppers, activating vibrating trays and tables, sifters and generally speaking to **unclog, convey, densify and separate bulk materials and reduce friction**.

They are suitable for explosive or humid environments and may also be used outdoor.

The frequency and centrifugal force is determined by the working pressure.

All our vibrators (ball, roller, or turbine) comply with Machine Directive 2006/42/CE.

For activation, a 2/2 solenoid valve and filtered air are required.



Easy mounting, air requisitions:

- . clean air, without impurities that may damage the solenoid valves used in the pneumatic vibrator.
- . dehumidified: a condensation water separator should be used.
- . lubricated

APPLICATIONS

Material separation, conveying and compacting, unclogging in silos/hoppers/sifters, filters cleaning, to facilitate the flow and eliminate blocking issues.

The small size of the pneumatic vibrators allows them to be easily integrated into the manufacturing process.

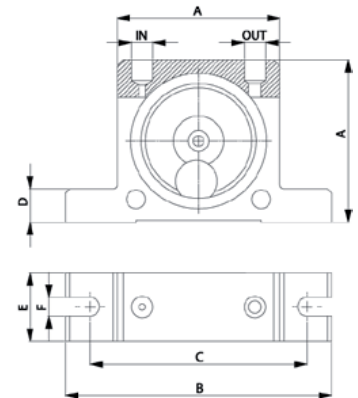
TECHNICAL SPECIFICATIONS

Ball vibrators are composed of an anodized aluminium frame in which a hardened steel ball turns on a wear-resistant hardened steel device. The vibrator produces small amplitude vibration whose frequency and vibration force can be adjusted with the help of the pressure (2 to 6 bar) and the air flow rate.

Operating temperature: from 20 to 120°C

DIMENSIONS

Type	A	B	C	D	E	F	IN/OUT	Weight Kg
	mm	mm	mm	mm	mm	mm		
S8	50	86	68	12	20	7	1/8"	0.13
S10	65	113	90	16	25	9	1/4"	0.26
S13					28			
S16	80	128	104	16	33	9	1/4"	0.53
S20					38			
S25	100	160	130	20	45	11	3/8"	1.13
S30					50			
S36								1.34



PERFORMANCES*

Type	Vibrations			Maximum force			Air consumption		
	2 bar	4 bar	6 bar	2 bar	4 bar	6 bar	2 bar	4 bar	6 bar
	Vpm			Kg			Litre/min.		
S8	25,500	31,000	35,000	13	26	36	83	145	195
S10	22,500	28,000	34,000	25	47	71	92	150	200
S13	15,000	18,500	22,500	32	55	87	94	158	225
S16	13,000	17,400	19,500	45	80	110	122	200	280
S20	10,500	14,500	16,500	72	122	172	130	230	340
S25	9,200	12,200	14,000	93	157	205	160	290	425
S30	7,800	9,700	12,500	151	247	321	215	375	570
S36	7,300	9,000	10,000	206	315	405	260	475	675

*The data comes from a vibrating bench with springs, perfectly simulating most of the possible applications. The more the structure where the vibrators are applied to is rigid, the greater the frequency and centrifugal force are.

Pneumatic Vibrator



Roller Technology



▶ APPLICATIONS

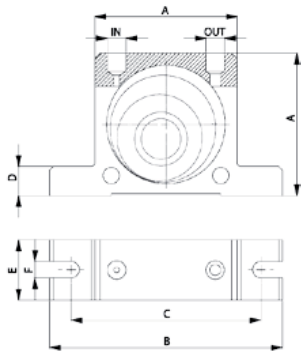
Pneumatic roller vibrators improve the flow rate of difficult materials into hoppers and other containers.

▶ TECHNICAL SPECIFICATIONS

They are made up of an anodized aluminum body with a hardened steel roller on a cast iron run rolling inside. Vibration is generated by a roller making epicyclical movements inside a run manufactured from steel. These vibrators create a very high frequency with low air consumption regarding the force created. Operating temperature: from 0 to 200°C

▶ DIMENSIONS

Type	A	B	C	D	E	F	IN/OUT	Weight
	mm	mm	mm	mm	mm	mm		Kg
OR 50	50	86	68	12	30	7	1/8"	0.370
OR 65	65	113	90	16	36	9	1/4"	0.760
OR 80	80	128	104	16	40	9	1/4"	1.270
OR 100	100	160	130	20	52	11	1/4"- 3/8"	2.600

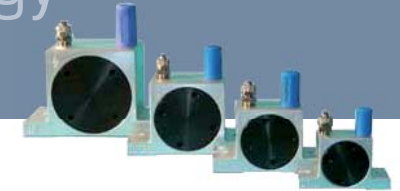


▶ PERFORMANCES*

Type	Vibrations			Maximum force			Air consumption		
	2 bar	4 bar	6 bar	2 bar	4 bar	6 bar	2 bar	4 bar	6 bar
	Vpm			Kg			Litre/min.		
OR 50	21,000	25,000	29,500	188	281	355	78	144	204
OR 65	19,000	22,000	26,000	235	439	552	100	198	296
OR 80	14,000	16,000	21,500	342	587	624	122	255	378
OR 100	6,750	9,750	11,000	289	604	783	132	284	412

*The data comes from a vibrating bench with springs, perfectly simulating most of the possible applications. The more the structure where the vibrators are applied to is rigid, the greater the frequency and centrifugal force are.

Turbine Technology



▶ APPLICATIONS

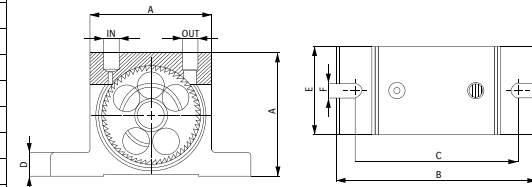
Pneumatic turbine vibrators prevent products from adhering to the sifter or hopper walls and are suitable for food and pharmaceutical industries.

▶ TECHNICAL SPECIFICATIONS

The obtained vibrations are generated by a turbine into which weights have been inserted. Even with low pressure, the amplitude remains significant. Operating temperature: from 20 to 120°C

▶ DIMENSIONS

Type	A	B	C	D	E	F	IN/OUT	Weight
	mm	mm	mm	mm	mm	mm		Kg
OT 8								0.250
OT 10	50	86	68	12	33	7	1/8"	0.255
OT 10S								0.263
OT 13								0.565
OT 16	65	113	90	16	42	9	1/4"	0.580
OT 16S								0.614
OT 20								1.090
OT 25	80	128	104	16	56	9	1/4"	1.120
OT 25S								1.200
OT 30								2.200
OT 36	100	160	130	20	73	11	3/8"	2.300
OT 36S								2.530



▶ PERFORMANCES*

Type	Vibrations			Maximum force			Air consumption		
	2 bar	4 bar	6 bar	2 bar	4 bar	6 bar	2 bar	4 bar	6 bar
	Vpm			DaN			Litre/min.		
OT 8	34,000	38,000	42,000	110	205	292	45	81	110
OT 10	26,000	33,000	38,000	105	171	252	45	81	110
OT 10S	17,200	23,400	26,000	72	147	187	45	81	110
OT 13	24,500	28,500	31,000	202	263	300	122	204	285
OT 16	18,000	20,000	21,000	194	239	264	122	204	285
OT 16S	11,500	15,000	17,500	129	196	234	122	204	285
OT 20	14,500	19,000	23,000	251	404	526	184	318	452
OT 25	13,200	15,500	17,000	244	336	508	184	318	452
OT 25S	9,000	11,000	13,500	214	335	483	184	318	452
OT 30	11,000	12,500	14,500	351	721	781	322	542	749
OT 36	8,500	11,500	12,000	341	698	749	322	542	749
OT 36S	6,000	7,000	8,500	406	706	754	322	542	749

*The data comes from a vibrating bench with springs, perfectly simulating most of the possible applications. The more the structure where the vibrators are applied to is rigid, the greater the frequency and centrifugal force are.

Electrical Vibrator



TO IMPROVE THE EXTRACTION OF DIFFICULT MATERIALS

The electric vibrators consist of an electric motor, hosted in a robust cast housing with offset weights mounted on both ends of the shaft.

ADVANTAGES

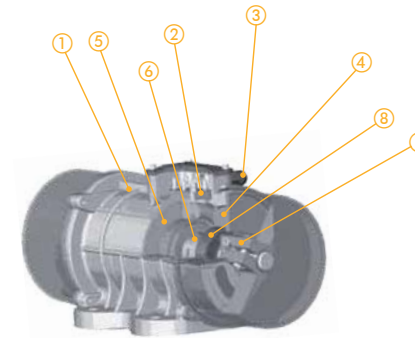
- Wide range of centrifugal forces that cover all applications
- Multiple tensions
- FMEA type robust box, premium quality bearings
- ATEX Certification ExII3D and ETL, Class II, Division 2 for hazardous locations

OPTIONS

- 2, 4, 6, 8 three-phase poles
- 2 single phase pole
- D.c. motors available



SPECIFICATIONS



- 1 Main body
- 2 Terminal unit
- 3 Cable gland
- 4 Roller bearing flange
- 5 Stator
- 6 Rotor shaft
- 7 Adjustable weights
- 8 Roller bearing



RANGE OF ELECTRICAL VIBRATORS AND MICROVIBRATORS

Models	Category	Reference	Poles	Vibration force (kg)	Tension (V)	Speed 50Hz / 60 Hz (tr/min.)	Power installed (kW)
Standard	2-8 poles	MVE	2	66 - 975	Triphase from 220V. to 690V. 50Hz or 60 Hz	3,000 / 3,600	0.04 - 17
			4	25 - 15,153		1,500 / 1,800	
			6	53 - 25,532		1,000 / 1,200	
			8	105 - 26,489		750 / 900	
Standard	Micro	MICRO	2	4 - 65	Triphase from 230V. to 460V. 50Hz or 60 Hz Single phase 115V. 60Hz and 230V. 50 Hz	3,000 / 3,600	0.03 / 0.07
	Single-phase	MVE-M	2	66 - 320	115V. 60Hz and 230V. 50 Hz	3,000 / 3,600	0.08 - 0.28
	Direct Current	MVE-DC	-	50 - 200	12V. et 24V.	3,000	0.08 - 0.16
Enhanced security	2-8 poles	MVE-E	2	187 - 4,052	Triphase from 200V. to 690V. 50Hz or 60 Hz	3,000 / 3,600	0.12 - 13
			4	194 - 15,153		1,500 / 1,800	
			6	51 - 13,009		1,000 / 1,200	
			8	105 - 9,952		750 / 900	
Explosion proof	2-8 poles	MVE-D	2	794 - 4,052	Triphase from 200V. to 690V. 50Hz or 60 Hz	3,000 / 3,600	0.35 - 3.9
			4	714 - 5,495		1,500 / 1,800	
			6	513 - 4,697		1,000 / 1,200	
			8	179 - 3,792		750 / 900	
Milling application	8-10 poles	MVE-MILLING	8	1,203 - 1,480		750 / 900	0.65 - 0.78
			10	770 - 1,364		600 / 720	

FUNCTIONS

External electric vibrators are used to improve the flow of industrial powders: on hoppers and silos to facilitate the discharge of materials or as actuators on vibrating devices in conveying, filtering, compacting or sorting applications.

When the vibrator is started, the rotation of the offset masses causes a sinusoidal centrifugal force. With only one vibrator mounted on a vibrating machine, the rotational force causes circular motion of the machine. Two motovibrators in opposite rotation, mounted in parallel on the same machine, produce a force which causes a linear movement of the machine. The requirement of a circular or linear movement depends on the application.

Bin Activator

Flow rates from 5 to 320 m³/h.
 Range: diameters from 400 mm to 3,000 mm
 Mild steel, stainless steel 304 L, stainless steel 316 L manufacturing

TO FACILITATE THE EXTRACTION OF POWDERS UNDER SILOS

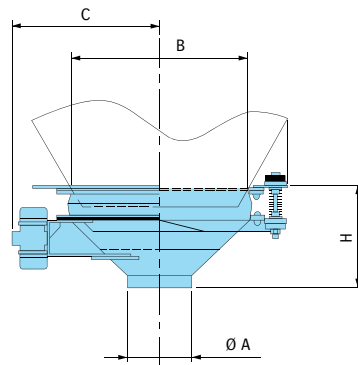
The vibrating bin activator is an extraction device which, through controlled vibration, ensures a continuous flow of the material inside the silos and hoppers. It is made of a weld-free manufacturing steel or stainless steel cone, a flange seal integrated on the bottom and top parts, suspension brackets connected to the silo and one or two electric vibrators.

▶ OPERATING MODE

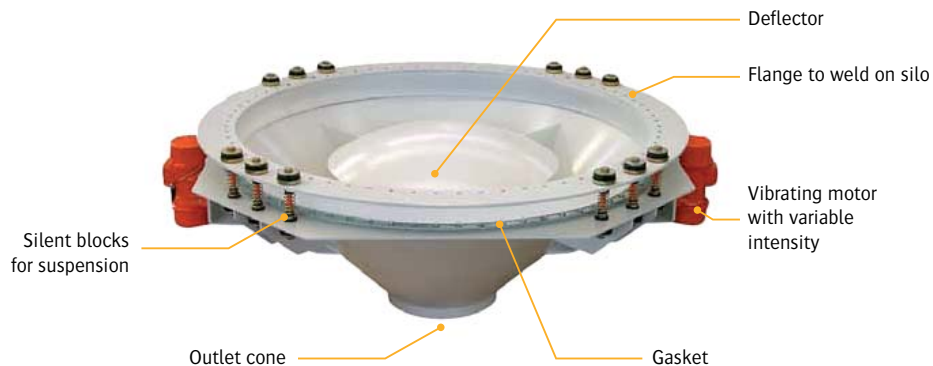
One or two electric vibrators are mounted on both sides of the main structure and induce a vibration of the entire bottom, without vibrating the silo above it. During extraction, the bin activator performs a circular movement which is transmitted to the material inside the silo and therefore provides a uniform flow.

▶ DIMENSIONS

Size in mm.	ØA	B	C	H	Motors	Kg
Ø 400	114	380	427	330	1	59
Ø 750	219	730	609	456	1	99
Ø 1.500	323	1,480	1,120	774	1	475
Ø 1.800	323	1,780	1,194	924	2	726
Ø 2.100	406	2,080	1,420	1,033	2	881



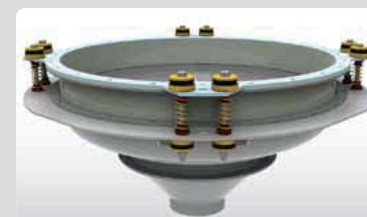
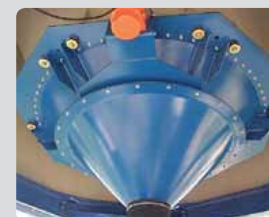
▶ TECHNICAL DESCRIPTION



▶ ADVANTAGES

- Mechanical extraction without air or vibration: no contamination or compaction
- Mounting under the silo with a single flange
- Independent work of the load with a complete emptying of the silo
- Reduced energy consumption, low power
- Tight and silent operation
- Easy settlement: rotating flange, adjustable length, flexible or rigid dosing
- Fast assembly
- Easy adaptation of recovery or transfer module
- Compact, reduced ground clearance of the silo
- Compact and robust construction
- Dosing accuracy regardless of the amount of powder contained in the silo
- 70% less welds than traditional bin activators
- Available in ATEX zone 22
- Seamless cone with increased thickness
- Seals range including a FDA approved food version and a compatibility with high temperature materials

PALAMATIC PROCESS EXAMPLES OF INSTALLATIONS



Bridge Breaker Hammer



Pneumatic Hammer



▶ APPLICATIONS

Pneumatic hammers represent an effective solution against the formation of bridges or rat holes (see diagram p.6). They are particularly suitable for silo cones or existing hoppers. Their action is particularly effective if the powder handled has a tendency to agglomerate under pressure or to stick to the walls. The robust design allows installing a pneumatic hammer outdoor. They are provided with a mounting plate to be welded to the wall of the hopper or silo and with a safety system to prevent accidental slip during installation or maintenance.

▶ OPERATING MODE

The pneumatic hammers produce a shock wave generated by the impact of the internal piston on the metallic plate welded to the wall of the hopper or silo. When using several hammers, those at the bottom must be operated first; it must then go gradually up at regular intervals.



▶ Pneumatic hammer and electric vibrator to improve the flow of product on a dump station for containers.

▶ ADVANTAGES

- Mechanical extraction without air or vibration: no contamination or compaction
- Mounting under the silo with a single flange
- Independent work of the load with complete emptying of the silo
- Reduced energy consumption, low power installed
- Compact design with integrated solenoid valve
- High performance
- Easy installation
- Suitable for explosive environments (ATEX compliance)

▶ TECHNICAL SPECIFICATIONS

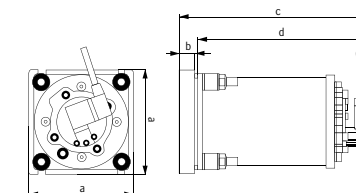
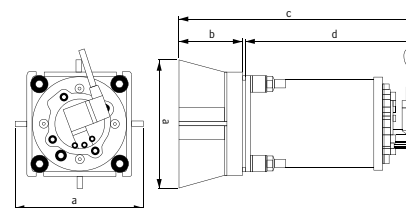
The pneumatic hammer is available in three different sizes and is suitable for explosive environments (ATEX compliance). It works intermittently.

- 3 sizes
- Warranty: 150,000 impacts
- Operating temperature: 20°C to 80°C
- Service pressure: 3 - 6 bar
- Generated energy: 4,2 / 153

▶ DIMENSIONS IN MM

Type	«A» type hopper thickness ≤3mm			
	a	b	c	d
PS040	160	80	302	219
PS063	200	95	357	259
PS080	250	119	430	308

Type	«B» type hopper thickness >3mm			
	a	b	c	d
PS040	130	20	242	219
PS063	163	20	282	259
PS080	200	25	336	308



▶ PERFORMANCES

Type	Air consumption		Air connection	Power		Kg	Packing dimensions in mm
	3 bar	6 bar		3 bar	6 bar		
	dm ³ /min.			J	J		
PS040	0.60	1.30	1/8 pipe 8 mm	8.4	18.1	8.5	270 x 185 x 170
PS063	1.17	2.30	1/4 pipe 8 mm	28.8	62	16.5	450 x 200 x 220
PS080	2.30	4.80	1/4 pipe 8 mm	59.2	153	30	450 x 200 x 220

Fluidization Nozzle

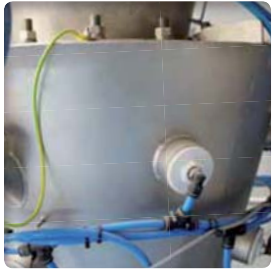


TO KEEP THE PRODUCT IN MOTION DURING LONG PERIODS OF STORAGE

The fluidizing nozzles and plates can easily be implemented in the existing facilities. Suitable arrangements may be made to remove air excess containing dust.

ADVANTAGES

- Easy setup
- Easy maintenance
- Compact design
- Operating temperature: -20°C to + 80°C
- Suitable for cement, lime and similar materials



APPLICATIONS

Fluidization nozzles represent the best solution to ensure the flow of materials inside silos or hoppers.

TECHNICAL SPECIFICATIONS

A polymer shaft, jointly molded with a threaded nozzle (manufactured in brass or polyethylene), has to be screwed to the steel fitting. This steel fitting has to be welded on the outer cone of the silo or hopper before making the connection with the compressed air supply.

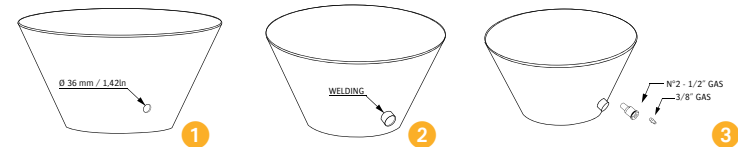
The compact size facilitates the installation of fluidization nozzles.

The fluidizing nozzles may be used with fine powdery materials, such as cement, lime or plaster with a pressure of 0.2 bar or of 1 bar (14 PSI).

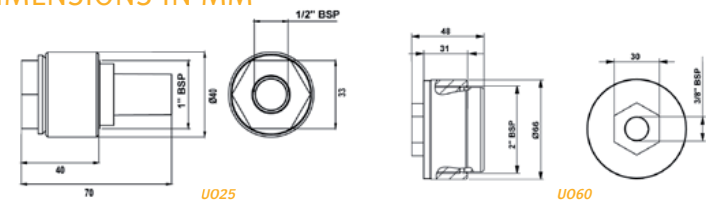
AIR CONSUMPTION

Type	Weight	Air consumption			
		0.2 bar (2.9 psi)		1 bar (14 psi)	
		L/min.	Cfm	L/min.	Cfm
U025	150 g	0.83	0.03	-	-
U060		-	-	30	1.10

MOUNTING PRINCIPLE



DIMENSIONS IN MM



TO KEEP THE PRODUCT IN MOTION DURING LONG PERIODS OF STORAGE

ADVANTAGES

- Easy setup
- Easy maintenance
- Compact design
- Operating temperature: -20°C to + 80°C
- Suitable for cement, lime and similar materials



APPLICATIONS

Aeration pads are a low cost solution ensuring the flow of pulverulent materials inside silos or hoppers. Aeration or low pressure fluidization prevents the formation of mouse holes, bridges, cloggings and material residues at the bottom of the silo.

The aeration pads are widely used for materials such as cement. They are also suitable for installations with multiple lines alternately supplied (e.g. in storage factories and lime dosing process). In this type of application, the aeration pad is not only used during discharging phase of the silo, but also to keep the material in motion for long periods of storage.

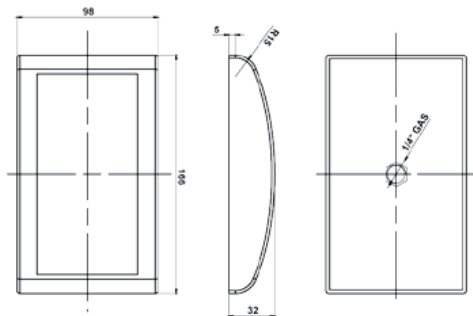
TECHNICAL SPECIFICATIONS

With the semi-convex shape of the gasket of durable polymer, the air is expelled with a wide angle of emission over the whole surface of the white filter.

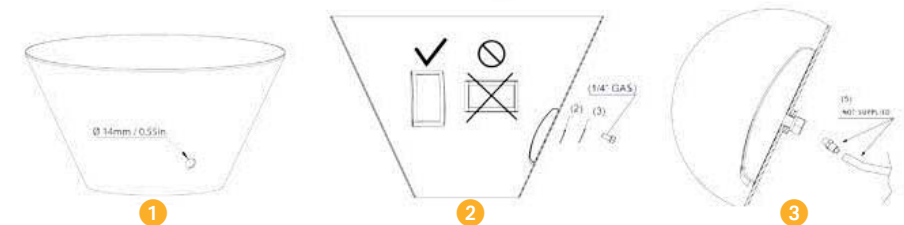
Aeration pads are characterized by a light box, robust and reliable polymer, and by the design of the filter. An external mounting kit is available for easy mounting. The working pressure operates up to 0.2 bar (3 PSI).

DIMENSIONS

Operating pressure with dehumidified air (depending on material)	Air consumption	Weight
0.2 bar	0.12 m ³ /h. à 0.2 bar	250 g



MOUNTING PRINCIPLE



▶ ADVANTAGES

- Easy setup
- Operating pressure from 2 to 6 bar
- Reduced air consumption
- Unique high-efficiency design
- Full range of products
- Renewed design



▶ APPLICATIONS

The air cannon is used to avoid the emergence of bridges or stacks. It is ideal for setting in motion dry bulk solids and light irregular shapes (fibers, chips, flakes, wood chips, plastic chips).

▶ TECHNICAL SPECIFICATIONS

The air cannons are designed to inject high pressure gas (air or nitrogen) jets of up to 6 bar (87 PSI) for a short time (usually fractions of a second), resulting in the collapse of bridges and stacks.

In a standard version, the air cannons are activated in electropneumatic way. A fully pneumatic version is available on request.

When using multiple air cannons, those below must be operated first; it must then go gradually up at regular intervals. The curved discharge pipe carries air tangentially along the wall or bottom of the silo (zero impact on the bottom of the silo or structure).

The robust design allows installing the air cannons outdoor.

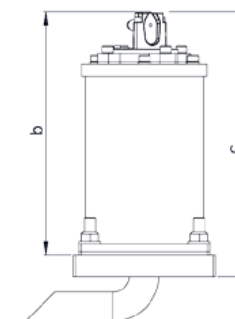
The external parts of the body are made of aluminum and galvanized steel.

They are provided with a mounting plate to be welded to the wall of the hopper or silo and a safety system to prevent accidental slip during installation or maintenance.

The air cannons are available in 3 sizes.

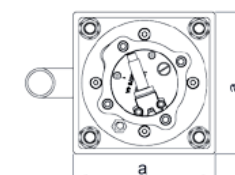
▶ DIMENSIONS IN MM

Type	a	b	c
PG040	130	220	243
PG063	160	260	283
PG080	200	308	336

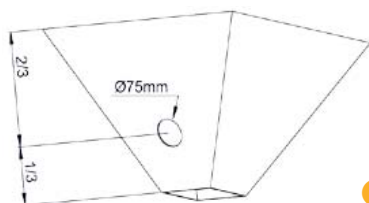
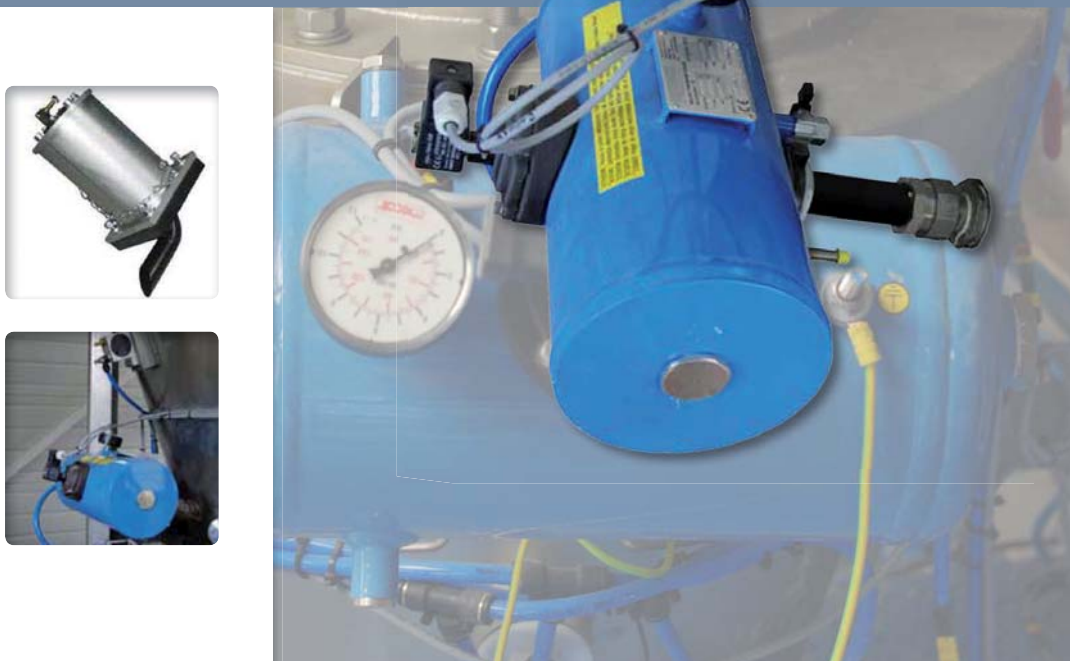


▶ PERFORMANCES

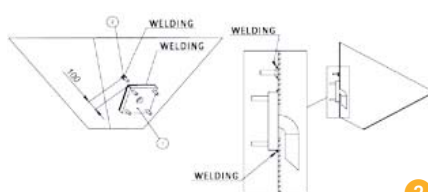
Type	Air consumption		Air connection	Kg	Packing dimensions in mm
	3 bar	6 bar			
PG040	0.60	1.3	1/8 pipe 6 mm	8.2	270 x 185 x 170
PG063	1.17	2.3	1/4 pipe 8 mm	16.2	450 x 200 x 220
PG080	2.30	4.8	1/4 pipe 8 mm	29.7	450 x 200 x 220



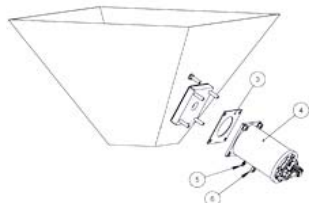
▶ MOUNTING PRINCIPLE



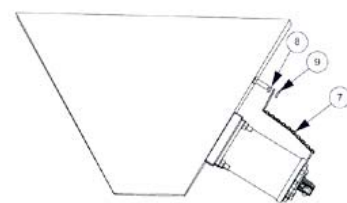
1



2



3



4

Vibrating Bin Aerator

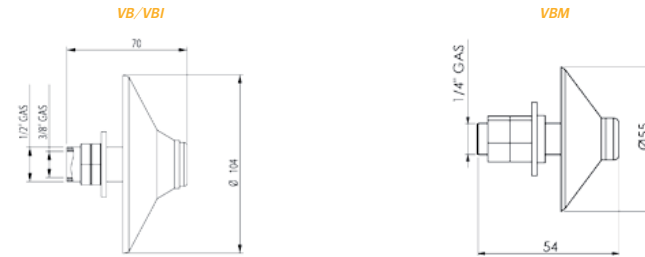
TO KEEP THE PRODUCT IN MOTION DURING LONG PERIODS OF STORAGE

ADVANTAGES

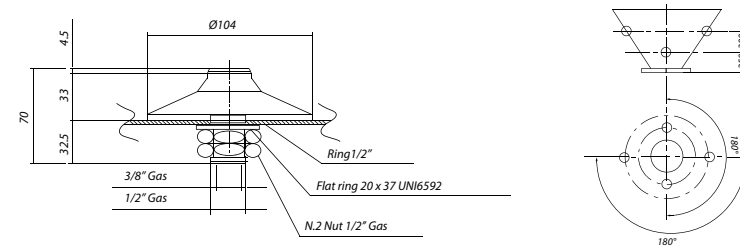
- Easy setup
- Operating pressure from 2 to 6 bar
- Reduced air consumption
- Unique high efficiency design
- Full range of products
- Renewed design
- Robust construction
- Self-cleaning
- Anti-abrasive
- Operating temperature: -40°C à 170°C
- For granular and powder products
- FDA approved



DIMENSIONS IN MM



MOUNTING PRINCIPLE ON HOPPER



APPLICATIONS

The vibrating bin aerators are used to facilitate the flow of powder products and granules. They combine a fluidizing effect under pressure of 2 to 6 bar and a slight vibration against the wall of your hopper.

TECHNICAL SPECIFICATIONS

In addition to the variety of materials of the membrane, the new design of our vibrating bin aerators improves their performance.

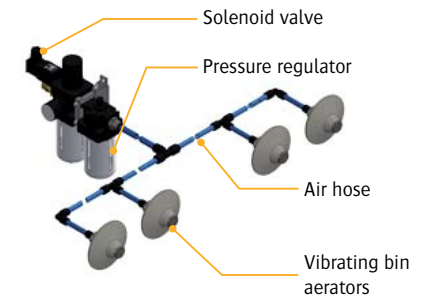
Our vibrating bin aerators can be used with a large variety of powdered materials and meet the constraints of the protection of the environment and the ambient temperature. The operating pressure and reduced air consumption are the main advantages.

An external mounting kit makes our vibrating bin aerators interchangeable with aerators pads that are commonly used in mobile batch stations.



AIR CONSUMPTION

Type	Air consumption		
	2 bar L./min.	4 bar L./min.	6 bar L./min.
VB/VBI	100	150	250
VBE	100	150	250
VBM	70	90	120



Anti-bridging Device

Flat Bottom



Anti-bridging Device

TO BOOST AND CONTROL THE FLOW OF POWDERS UNDER SILO OR HOPPER

FUNCTION

The flat-bottomed anti-bridging device is designed to break up lumps and facilitate the flow of the material

It is used for the extraction and feeding of pneumatic transfer, screw conveyors, rotary valves... It provides mechanical agitation of the material to prevent it from caking during storage or after a grinding phase.

It increases the storage volume on a specific height (no slope).

TECHNICAL CHARACTERISTICS

The anti-bridging device, also called extraction system, is entirely mechanical and is fitted with a rotary blade driven by a gear which moves the material to the feeding point while avoiding the formation of bridges. Seals at the shaft passage are particularly neat with braids and deflector.

Versions with pressurization are possible.

The speed of the anti-bridging device can be adjusted with a frequency converter.

The blade engine is independent (installed power: 1.5 kW - 15 kW IP55).

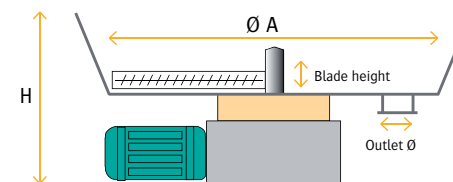
Mild steel, stainless steel 304L and 316L manufacturing
Diameters from 400 to 2,000 mm.



ADVANTAGES

- Mechanical extraction without air or vibration, no contamination or compaction
- Mounting under the silo with a single flange
- Independent work load with complete draining of the silo
- Low installed power
- Tight and silent operation
- Ease of implementation: rotating flange, adjustable length, flexible or rigid dosing
- Fast assembly
- Dosing accuracy regardless of the amount of powder contained in the silo

DIMENSIONS



Models	Ø A	Number of outlets	Outlet Ø	H	Blade height*	Number of blades	Power in kW*
400	400	Custom made	Custom made		from 15 to 400 mm	2	1.5
600	600				from 15 to 400 mm	2	2.2
800	800				from 15 to 400 mm	2	3.3
1.200	1.200				from 15 to 800 mm	2 or 4	5.5
1.600	1.600				from 15 to 800 mm	2 or 4	7.5
2.000	2.000				from 15 to 800 mm	2 or 4	15

* Variable according to the treated material



Option: the bridge breaker, fitted with crumbling fingers, burst the material lumps against the fixed shaft



TECHNICAL CHARACTERISTICS



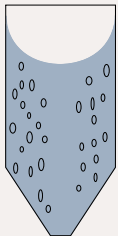
Pressurization of the bearings and air injection (optional)



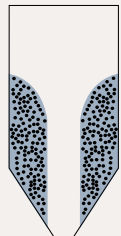
Braids for bearing sealing

What Are Your Flowing Issues?

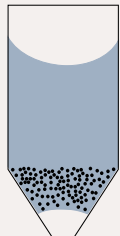
Segregation



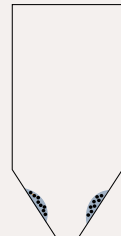
Rat hole



Bridging



Retention



2 PRINCIPLES WITH CONICAL DEVICE



With rotating blades



With conical screw

CONICAL SCREW



In order to carry out an extraction of moist and very clogging powders from a cylindrical and conical storage silo, PALAMATIC PROCESS offers a mechanical fluidising system with conical screw.

The blade, positioned at the top of the blender ensures the breaking of the sloping and optimizes the useful volume of the hopper.

Also, the screw prevents the bulk material from caking and promotes their emptying.

The main advantage of this anti-bridging device is the implementation of the drive motor at the top of the hopper, which protects the central shaft passage from the powders.

The conception and the design of the screw are defined according to the treated powders. The rotational speeds are slow and are less than 1 meter per second at the periphery.

This equipment is compatible with "Clean In Place" systems and ATEX certifications.

Advantage: to boost the flow of powders and the feeding of the extraction screw.

ROTATING BLADES

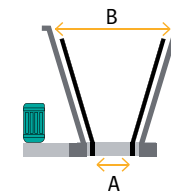
The anti-bridging devices with rotating blades on conical bottom are specially designed to be clamped on hoppers containing poor flowing powders.

The standard cone angle is 60°. It goes with two scraping rotating blades.

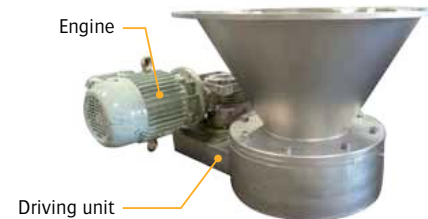
Its hollow shaft conception with offset geared motor provides full bore of the product at the outlet flange.

This design makes possible the implementation of standard maintenance slide or butterfly valve.

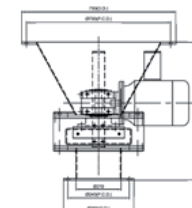
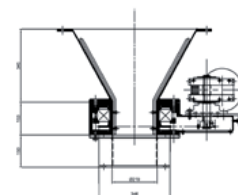
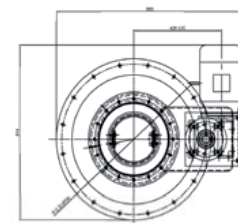
Models	Ø A	Ø B	Power in kW*
200	200	600	2.2
250	250	600	2.2
300	300	800	3.3



Advantages: full bore of the outlet flange.



ANTI-BRIDGING DEVICE WITH ROTATING BLADES DIMENSIONS



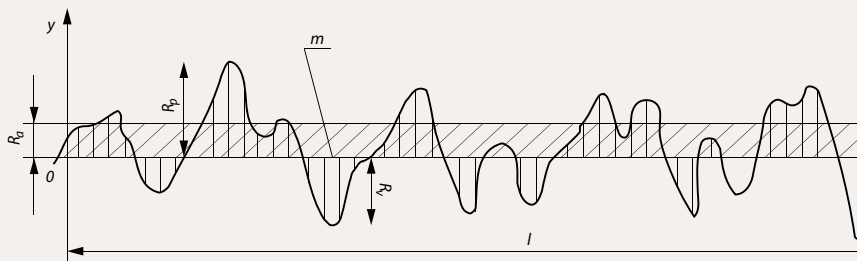
MIRROR POLISHING

Mirror polishing is a finish that requires removing off all the defects and to obtain a perfect surface finish. In certain sectors, such as food & feed, cosmetics or fine chemicals industries, polished mirror is a safety requirement. It is to enable perfect cleaning of the walls of their equipment that our customers require a polished mirror finish.

PALAMATIC PROCESS equipment can be supplied with roughness certificates guaranteeing the final Ra. Mechanical polishing of 600 grain is often required to achieve Ra lower than 0.05 microns. Electropolishing can also be suggested.



Ra chart example



TEFLON COATING

When one wishes to reduce friction between materials and steel, fluorine resins present outstanding properties:

- 1- Non-stick coating (Teflon)
- 2- Low coefficient of friction
- 3- Good corrosion resistance
- 4- Chemical resistance
- 5- Temperature resistance (-200 à +300°C)
- 6- Electrostatic compatibility

A very high surface tension of fluorinated resins minimizes adhesion. The thicknesses of the standard coatings are generally very thin, between 5 and 20 microns (can rise to 1,000 microns).

This type of coating is applicable to many surfaces:

- steel
- stainless steel
- alloy steel...



HEATING AND INSULATION

Some powders, sensitive to thermal shock or those transferred to rooms with different temperatures can cause clogs. The insulation and heating solution avoids the risk of condensation and also struggles against the sticking of powders.

Heating technologies used:

- plates
- ribbon
- insulation with glass wool or rock wool



Insulated and heated hopper

Insulated piping

Insulated tank

Test Plant



TESTS ON AN INDUSTRIAL SCALE & FLEXIBILITY



Our test center offers the latest machinery existing in the powder handling sector. Specialist engineers are there to advise you on the industrial processes best suited to your requirements and to guide you at every stage of the decision to design the most efficient installation.

▶ 3 STEPS TO VALIDATE YOUR PROCESS

Step 1 - Before Test

- Select the likely optimal machine configuration based on your technical requirements (powders, flow rate, dosing)
- Draft test proposal by our sales-engineers representatives

Step 2 - During Test

- Process validation for product testing
- Perform testing and sample collection
- Discussion on results after the test with machines (phase diagram, degradation tests, fines content)

Step 3 - After Test

- Analysis of machine test data and samples
- Write a summary report
- Collaborate on the optimal solution for your requirements
- Submit a quotation

▶ THE BENEFITS OF MECHANICAL TESTING

- An individual consultation with and on-going support by our R&D engineers
- Confirmation of the appropriate machines to conduct a test with your product
- Tests at various operating conditions to define the most efficient process according to your industrial requirements
- Evaluation of the profitability of equipment configuration
- Possibility to test additional options using PALAMATIC PROCESS' range of products
- Maximize the return on your investment
- Maximize the optimum selection of the proper machine
- Capitalize on the wide experience of our experts

- ▶ Come with your materials
- ▶ Participate in selecting the test machines
- ▶ Maximize your productivity

- + than **300** process configurations
- **2,400** sq. feet of surface dedicated to the test
- **35** industrial machines
- **35** feet of ceiling
- Test with **all types of products**
- **2 support engineers**
- **ATEX** configurations

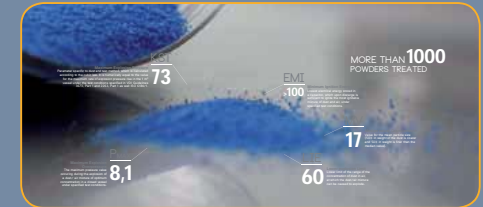
300
+ than **300** configurations

Laboratory for Powders



Particle size correspondences

PALAMATIC PROCESS laboratory for powders was built for the use of all our industrial customers wishing to define production machines that will meet their expectations.



▶ HANDLED PRODUCTS

Boric acid, Citric acid, Clay, Glucose, Ammonium nitrate, Barite nitrate, Sodium nitrate, Lampblack, Salt, Sugar, Magnesium Sulphate, Talc, Urea, Sludge, Milk powder...

▶ TESTS ON AN INDUSTRIAL SCALE & FLEXIBILITY

The anti-bridging device is available for testing. It may be tested as a separate or integrated equipment under a big bag emptying station, a container or a sack emptying station.



Our expertise:

FILLING SOLUTIONS FOR BIG BAG AND OCTABIN

To fill

EMPTYING SOLUTIONS FOR BIG BAG AND OCTABIN

To empty, compact and massage

SACK, DRUM AND CARDBOARD FILLING SOLUTIONS

To fill, package, handle

SACK AND DRUM EMPTYING SOLUTIONS

To empty, compact, handle, discharge

SOLUTIONS FOR PNEUMATIC CONVEYING

Vacuum, pressure

SOLUTIONS FOR MECHANICAL CONVEYING

To transfer with screw, belt conveyor, bucket elevator, aeromechanical or vibratory conveyor, truck loading spout

CRUMBLING AND GRINDING EQUIPMENT

To granulate, crumble, grind, pound, micronise, disagglomerate

SIFTING EQUIPMENT

To sift, segregate, sieve, protect

CONTAINERS AND STORAGE SOLUTIONS

To fill, charge, empty, contain

DOSING EQUIPMENT

To control, regulate, empty, extract

MIXING EQUIPMENT

To homogenise, incorporate, fluidify, stir, mix

FLOW AND CONNECTION

To vibrate, fluidise, unclog, drain, facilitate extraction, control the descent, prevent stacks and vaults, connect

INDUSTRIAL DUST COLLECTING EQUIPMENT

To filter, clean, confine, secure



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