

Biscuit Processing

Screw Feeders TX

1



Function ▼

TX Tubular Screw Feeders are usually installed under a silo or FIBC (Bulk Bag) discharger to feed powdery or granular materials into a weigh hopper. They are suitable for applications in which any contamination of the material handled has to be strictly avoided.



Description ▼

TX Tubular Screw Feeders and Conveyors, which are manufactured from stainless steel with a suitable surface finishing grade appropriate for the application in Biscuit (cookies) Processing Plants, are highly versatile. Manufacture of the fabricated components is carried out on machines that guarantee a perfectly smooth surface due to which material residue is reduced to the minimum. The screw conveyors or feeders are made up from a tubular trough which is equipped with an inlet and an outlet spout, an end plate at each tube end, helicoid screw flighting continuously welded on both sides on a centre pipe with a coupling bush at each end, two end bearing assemblies complete with an air or gas-purged, adjustable shaft seal. Furthermore, the screw conveyors or feeders, which for this industry come without intermediate bearings, are equipped with a gear motor suitable for the application.

Application ▼

The application in the photograph shows a TX Screw Feeder installed over a stainless steel hopper for transfer of the material (e.g. flour, starch, sugar, granulated sugar) into the process.

- ✓ Comfortable cleaning and maintenance;
- ✓ Minimum residue;
- ✓ High feeding accuracy;
- ✓ Vast range of options and accessories;
- ✓ Attractive price.



WAM®



www.wamgroup.com

Biscuit Processing

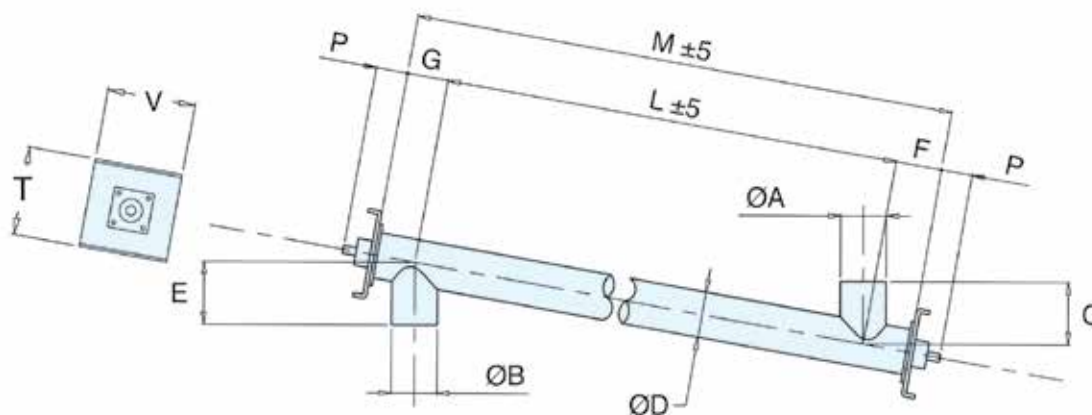
Screw Feeders TX



Technical Features / Performance ▼

- ▶ All fabricated parts manufactured from stainless steel
- ▶ Air or gas-purged shaft seals for maximum material protection against contamination
- ▶ Easily accessible inspection hatches
- ▶ Modular design
- ▶ ATEX zone 22 certification

Overall Dimensions ▼



Type	100	120	150	200	250	300	350	400	500
Ø A	114	139	168	219	273	323	406	457	558
Ø B	114	139	168	219	273	323	406	457	558
C	1)								
Ø D	114	139	168	219	273	323	406	457	558
E	1)								
F	140	140	160	180	220	220	270	280	340
G	120	120	140	160	180	220	280	320	360
L	2)								
M	L + F + G								
P	114	114	124	124	124	124	151	151	162
T	280	280	280	355	410	465	535	590	740
V	265	265	265	315	365	435	485	540	655

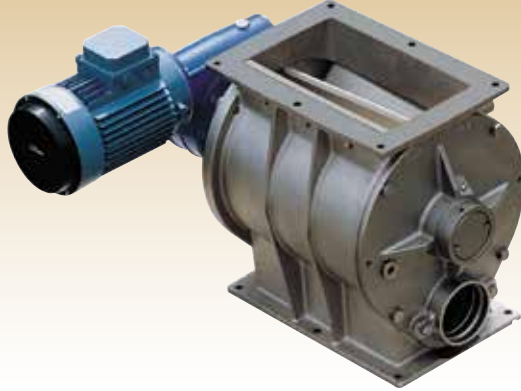
Dimensions in mm

Biscuit Processing

RVS Blow-Through Rotary Valves



2



Description ▼

RVS Blow-Through Rotary Valves consist of a tubular cast iron or stainless steel casing, a horizontally mounted rotor with a certain number of oblique V-shaped cross section compartments, a drive unit and a casing cover at each end.



Function ▼

Two compartments at a time of the continuously turning rotor are filled up with material through the inlet at the top of the Rotary Valve. After less than half a turn the material falls through the bottom opening into an air stream passing through a pneumatic conveying duct connected with the bottom part of the Rotary Valve.

Application ▼

RVS Blow-Through Rotary Valves are usually fitted at the outlet of a bin, silo or hopper upstream of a pneumatic conveying duct into which the material is accurately fed.

Benefits ▼

- ✓ No product contamination due to 304/316 SS design and air-injected seals;
- ✓ Zone 22 ATEX-certified;
- ✓ 304 SS inserts for granules;
- ✓ Cast iron or 304/316 SS material, nickel coating and various other rotor versions available to offer the best configuration for most application requirements;
- ✓ Pipe connections already included simplify unit installation and removal.

Biscuit Processing

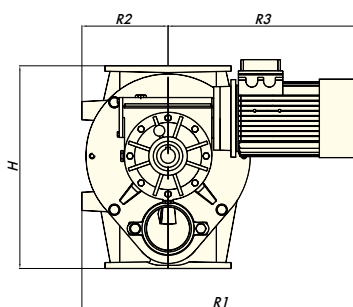
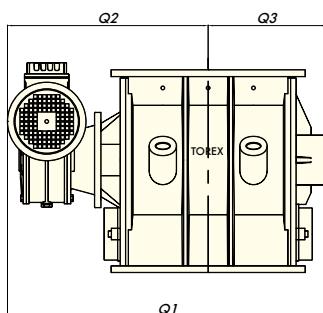
RVS Blow-Through Rotary Valves



Technical Features / Performance ▼

- ▶ Feed rates: 5, 9, 14, 20, 38 litres per revolution (0.17, 0.3, 0.5, 0.7, 1.3 cu ft per revolution)
- ▶ Working temperature: -20°C to 150°C (-4°F to 240°F)
- ▶ Maximum differential pressure: 0.8 bar (11.6 PSI)
- ▶ Cast iron or 304/316 SS
- ▶ Nickel coating available
- ▶ Rotor with bevelled blades
- ▶ Easy access to internal mechanical parts
- ▶ Sturdy compact structure
- ▶ Small footprint
- ▶ Drive unit mounted directly on shaft without any further bearing assembly or coupling
- ▶ Rectangular inlet flanges
- ▶ Counterflanges to be welded on pneumatic duct
- ▶ Blade scraper installed inside the inlet to ease rotor movement
- ▶ Different materials and treatments available depending on material handled

Overall Dimensions ▼



30 RPM	TYPE	Dimensions in mm							Electric Motor	
		Q1	Q2	Q3	R1	R2	R3	H	kW	min ⁻¹
	RVS/C 05	505	342	163	550	130	420	335	0.55	1,400
30 RPM	RVS/C 10	572	372	200	560	140	420	339	0.75	1,400
	RVS/C 15	605	390	215	588	162	426	399	1.1	1,400
	RVS/C 20	705	444	261	608	181	426	447	1.5	1,400
	RVS/C 35	890	558	332	740	217	523	530	2.2	1,400
	RVS/C 80	1,165	718	447	890	277	613	677	3.0	1,400

20 RPM	TYPE	Dimensions in mm							Electric Motor	
		Q1	Q2	Q3	R1	R2	R3	H	kW	min ⁻¹
	RVS/C 05	505	342	163	550	130	420	335	0.55	900
20 RPM	RVS/C 10	572	372	200	560	140	420	339	0.55	900
	RVS/C 15	605	390	215	588	162	426	399	0.75	900
	RVS/C 20	705	444	261	608	181	426	447	1.1	900
	RVS/C 35	890	558	332	740	217	523	530	1.5	900
	RVS/C 80	1,165	718	447	883	277	556	677	2.2	900

10 RPM	TYPE	Dimensions in mm							Electric Motor		Pre-Torque
		Q1	Q2	Q3	R1	R2	R3	H	kW	min ⁻¹	
	RVS/C 05	475	342	163	517	130	387	335	0.37	1,400	YES
10 RPM	RVS/C 10	542	342	200	527	140	387	339	0.37	1,400	YES
	RVS/C 15	585	370	215	572	162	410	399	0.55	1,400	YES
	RVS/C 20	658	397	261	591	181	410	447	0.75	1,400	YES
	RVS/C 35	890	558	332	740	217	523	530	1.1	1,400	NO
	RVS/C 80	1,150	703	447	832	277	555	677	1.5	1,400	NO

Biscuit Processing

WAMFLO® Dust Collectors FN / FNX

3



Description ▼

WAMFLO® FN Dust Collectors have been specifically developed for Biscuit (cookies) Processing Plants. They are equipped with a round stainless steel body with a large residue-free access door for filter element removal. The casing contains vertically mounted round bag-type filter elements with antistatic filter media. To keep the filter media clean an air jet cleaning system is integrated in the top cover.

Function ▼

WAMFLO® FN Dust Collectors are used for both venting and suction applications. Dust separated from the air flow by round bag-type filter elements drops back into the silo, bin or hopper after an integrated automatic reverse air jet cleaning system has removed it from the filter elements.



Application ▼

WAMFLO® FN Dust Collectors are mainly used for final product silo venting and weigh hopper venting. They are equipped with a centrifugal fan with a potential air volume capacity of up to 53 Nm³/min.

Benefits ▼

- ✓ Running cost reduction;
- ✓ Residue-free access door;
- ✓ Round bags available from after-market;
- ✓ Compliance with health and safety standards;
- ✓ Maintenance cost reduction;
- ✓ Safety for OEM and End User.



www.wamgroup.com

Biscuit Processing

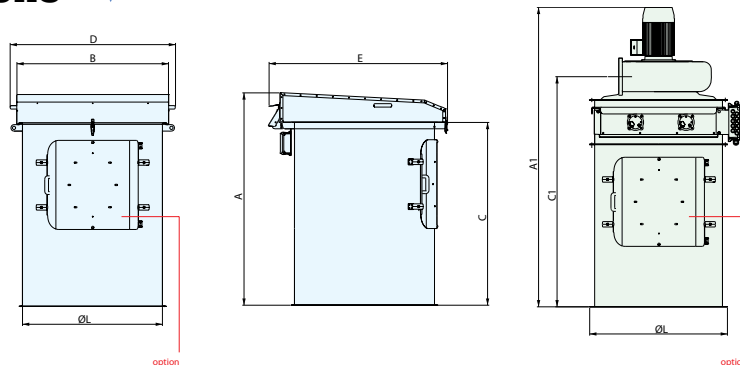
WAMFLO® Dust Collectors FN / FNX



Technical Features / Performance ▼

- ▶ 304 SS (316 SS on request) flanged cylindrical body
- ▶ Filter surface from 2 to 21 m²
- ▶ Low emission level due to B.I.A.-certified filter media
- ▶ Compressed air jet cleaning system integrated in top cover
- ▶ High efficiency centrifugal fan
- ▶ Pred = 1 barg
- ▶ ATEX category 2/3D and 2/2D
- ▶ High cleaning efficiency due to "Full Immersion" solenoid valves incorporated in aluminium air tank (corrosion-resistant) for low-maintenance operation
- ▶ No tools required for filtering element removal
- ▶ Large access door for comfortable filter element removal

Overall Dimensions ▼



Filter Surface (m ²)				Ø L	A	B	C	D	E	A1	C1
FNW ①	FNE ②	FNW / FNB ③	FNC / FNS ④								
-	-	-	2-4	400	746	495	520	580	635	1,197	879
-	-	-	3-5	400	996	495	770	580	635	1,447	1,129
-	-	1	6	400	1,146	495	920	580	635	1,597	1,279
-	-	2	-	400	1,586	495	1,360	580	635	2,037	1,719
-	-	3	-	400	2,066	495	1,840	580	635	2,517	2,199
7	2	-	7	600	746	690	520	775	880	1,325	913
11	-	-	10	600	996	690	770	775	880	1,575	1,163
14	4	3	12	600	1,146	690	920	775	880	1,725	1,313
-	7	5	-	600	1,586	690	1,360	775	880	2,165	1,753
-	9	6	-	600	2,066	690	1,840	775	880	2,645	2,233
13	4	-	12	800	746	875	520	960	1,010	1,430	943
20	-	-	18	800	996	875	770	960	1,010	1,680	1,193
24	7	5	22	800	1,146	875	920	960	1,010	1,830	1,343
-	10	8	-	800	1,586	875	1,360	960	1,010	2,270	1,783
-	13	11	-	800	2,066	875	1,840	960	1,010	2,750	2,263
27	6	-	24	1,000	746	1,125	520	1,210	1,325	1,455	963
40	-	-	36	1,000	996	1,125	770	1,210	1,325	1,705	1,213
48	12	11	44	1,000	1,146	1,125	920	1,210	1,325	1,855	1,363
-	18	16	-	1,000	1,586	1,125	1,360	1,210	1,325	2,295	1,803
-	24	21	-	1,000	2,066	1,125	1,840	1,210	1,325	2,775	2,283

Biscuit Processing

Diverter Valves VAR

4



Description ▼

VAR Diverter Valves consist of a cast aluminium body and cover and a rotary inner drum which closes one of the two outlet pipes as required. The rotation of the inner drum is brought about by means of a pneumatic actuator. The inner sealing is ensured by pneumatically inflatable gaskets.

Function ▼

VAR Diverter Valves are suitable for conveying any kind of material, both in powdery and granular form. The pneumatic actuator which activates the inner rotary drum makes it possible to divert the outlet pipe and thereby divert the flow of material from one duct to another.



Application ▼

VAR Diverter Valves are fitted directly on pneumatic conveying ducts whenever it is required to divert the flow of material to different production lines.

Benefits ▼

- ✓ No contamination due to 304 stainless steel contact inserts;
- ✓ Minimum pressure drop thanks to inflatable seal;
- ✓ Minimum friction during diverting operation due to inflatable seal;
- ✓ ATEX-compliant pneumatic actuator and solenoid valves;
- ✓ Use with different materials in one configuration only;
- ✓ Quick process integration thanks to lightweight design and easy handling;
- ✓ Modular design and easy maintenance thanks to reduced number of components.

Biscuit Processing

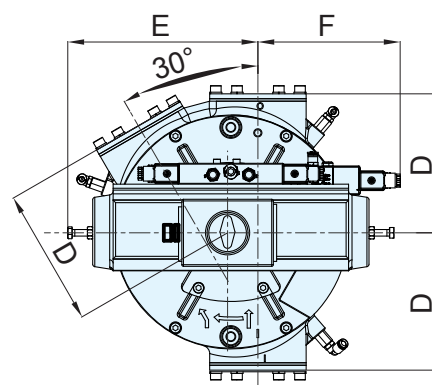
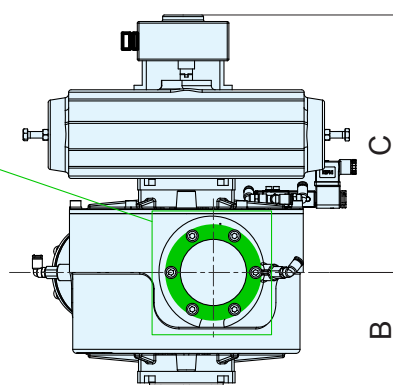
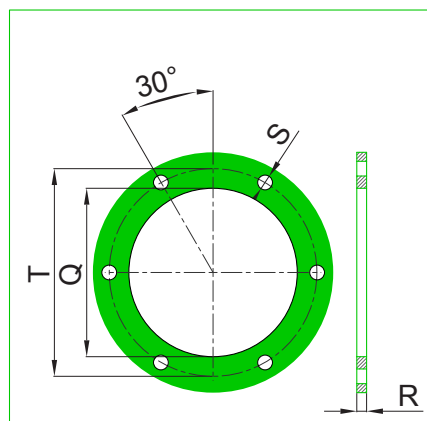
Diverter Valves VAR



Technical Features / Performance ▼

- ▶ Basic structure manufactured from cast aluminium
- ▶ Operating temperature: -20° C to 80° C (-4° F to 180° F)
- ▶ Diverter operating pressure: max. 3.5 bar (36 PSI)
- ▶ Inflatable seal closure pressure: max. 4 bar (58 PSI)
- ▶ Pneumatic actuator activation pressure: max. 8 bar (116 PSI)
- ▶ Range comprising diameters from 80mm to 150mm (3 to 6 in)
- ▶ Micro-switch box for signalling actuator position
- ▶ Electro-pneumatic actuator with different supply voltages: 24/48/110/230 V AC

Overall Dimensions ▼



Type	B	C	D	E	F	T	Q	R	S
VAR 080	142	314	169	260	174	103	82	6	9
VAR 100	148	320	209	266	160	127	102		11
VAR 125	181	386	242	299	191	158	127		
VAR 150	197	402	273	305	184	185	158		
VAR 175	216	453	313	432	197	217	177		
VAR 200	233	469	338	436	186	245	208		

Dimensions in mm

Biscuit Processing

Stainless Steel Bin Activators BA



5



Description ▼

The BA Bin Activator is a device of tapered conical shape that due to vibration facilitates material flow from hoppers or silos. It consists of a seamless stainless steel cone manufactured on a sheet metal lathe, a seamless food-grade SINT®AL engineering polymer seal with integrated upper and lower flange, suspensions for connection of the Bin Activator with the silo, as well as one or two electric vibrators.

Function ▼

One or two electric vibrators fitted on the unit generate vibration of the Bin Activator every time the feeding device beneath the silo is started for material extraction. During operation the Bin Activator describes a gyratory movement which is transmitted to the material inside the silo. The result is smooth material flow through the Bin Activator outlet into the connected feeder.

BA Bin Activators are used in various applications in biscuit (cookies) processing plants to facilitate discharging of powdery materials from silos or hoppers. The use of this equipment ensures optimum feeding of the material causing "mass flow" inside the silo, thus avoiding bridging or ratholing phenomena.



Application ▼

BA Bin Activators are usually fitted in large numbers under ground material storage silos or daily buffer silos/hoppers to discharge poorly flowing powders such as Flour, Starch, Powdered or Granulated Sugar. For such applications a stainless steel design is required (ATEX version available on demand).

The Bin Activator outlet is usually shut off by a slide valve or butterfly valve which is connected via flexible connection to a mechanical conveying device or loading bellows.

Benefits ▼

- ✓ No material residue;
- ✓ No material contamination;
- ✓ High discharging performance;
- ✓ Reduced maintenance;
- ✓ Operator safety according to ATEX directive.

Biscuit Processing

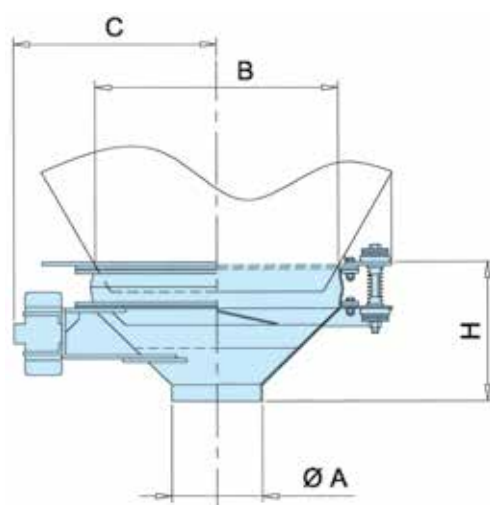
Stainless Steel Bin Activators BA



Technical Features / Performance ▼

- ▶ Diameters up to 2100mm
- ▶ Food-grade design (stainless steel)
- ▶ FDA-approved seal
- ▶ No internal dead spaces
- ▶ Highly accurate internal finishing
- ▶ ATEX-compliant

Overall Dimensions ▼



TYPE	Size	Ø A STD	B	C	H	Motors	kg
BA040	400	114	380	427	330	1	47
BA060	600	168	580	519	408	1	66
BA075	750	219	730	609	456	1	82
BA090	900	219	880	684	531	1	114
BA100	1,000	273	980	734	555	1	125
BA125	1,250	273	1,230	937	730	1	221 (4) / 225 (8)
BA150	1,500	323	1,480	1,120	774	1	376 (8) / 385 (12)
BA180	1,800	323	1,780	1,194	924	2	610 (8) / 620 (12)
BA210	2,100	406	2,080	1,420	1,033	2	674 (12) / 687 (18)

Dimensions in mm

Biscuit Processing

External Pneumatic Turbine Vibrators OT-Type

6



Description ▼

OT-Type External Pneumatic Turbine Vibrators develop frequencies of up to 42,000 r.p.m. They are used wherever powdery materials have to be set in motion. OT Turbine Vibrators are installed on bins to prevent bridging or rat holing, or for the improvement of material flow in chutes, screens and vibrating tables.

Function ▼

OT-type Turbine Vibrators consist of an inside anodized "anticorodal" casing. A turbine with integrated flyweights rotates on two oversized ball bearings. For operation OT Turbine Vibrators require a 2/2-way-valve and filtered compressed air.



Application ▼

OT Turbine Vibrators are used in all types of powdery and granular material processing plants where flow aids are required. They are fitted on FIBC dischargers or on storage, weigh or feed hoppers.

Benefits ▼

- ✓ Large amplitude even with low operating pressure;
- ✓ ATEX compliance – Ex II 2GD;
- ✓ Suitable for powdery and granular materials;
- ✓ Great acceleration;
- ✓ High centrifugal force and vibration frequency;
- ✓ No damage to fabricated structure;
- ✓ Low noise level;
- ✓ Low air consumption;
- ✓ Durable;
- ✓ Easy to install;
- ✓ Oil-free, maintenance-free operation.

Biscuit Processing

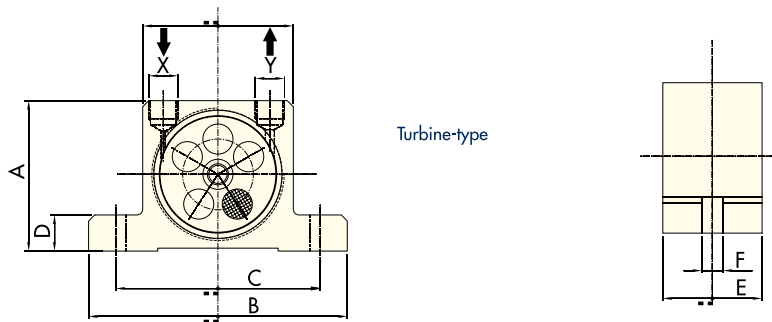
External Pneumatic Turbine Vibrators OT-Type




Technical Features / Performance ▼

- ▶ Galvanised steel cover
- ▶ Brass silencer
- ▶ Nickel-plated brass air nipple inlet
- ▶ Working temperature: -20° C ~ 120° C (-4° F ~ 250° F)
- ▶ Working pressure: 3 ~ 6 bar (44 ~ 87 psi)

Overall Dimensions ▼



TYPE	A		B		C		D		E		F		X-Y		
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch		kg	lbs
OT 8	50	1.97	86	3.39	68	2.68	12	0.47	33	1.30	7	0.28	1/8"	0.250	0.55
OT 10														0.255	0.56
OT 10S														0.263	0.58
OT 13	65	2.56	113	4.45	90	3.54	16	0.63	42	1.65	9	0.35	1/4"	0.565	1.24
OT 16														0.580	1.28
OT 16S														0.614	1.35
OT 20	80	3.15	128	5.04	104	4.09	16	0.63	56	2.20	9	0.35	1/4"	1.090	2.40
OT 25														1.120	2.46
OT 25S														1.200	2.64
OT 30	100	3.94	160	6.30	130	5.12	20	0.79	73	2.87	11	0.43	3/8"	2.200	4.84
OT 36														2.300	5.06
OT 36S														2.530	5.57

TYPE	Vibrations			F.C. max.						Air consumption					
	2 bar=29 psi	4 bar=58 psi	6 bar=87 psi	2 bar=29 psi	4 bar=58 psi	6 bar=87 psi	2 bar=29 psi	4 bar=58 psi	6 bar=87 psi	2 bar=29 psi	4 bar=58 psi	6 bar=87 psi	2 bar=29 psi	4 bar=58 psi	6 bar=87 psi
	Vpm			kg	lbs	kg	lbs	kg	lbs	l	CF	l	CF	l	CF
OT 8	34,000	38,000	42,000	110	242	205	451	292	641	45	1.6	81	2.9	110	3.9
OT 10	26,000	33,000	38,000	105	231	171	377	252	554	45	1.6	81	2.9	110	3.9
OT 10S	17,200	23,400	26,000	72	159	147	323	187	410	45	1.6	81	2.9	110	3.9
OT 13	24,500	28,500	31,000	202	444	263	579	300	659	122	4.3	204	7.2	285	10.1
OT 16	18,000	20,000	21,000	194	427	239	527	264	581	122	4.3	204	7.2	285	10.1
OT 16S	11,500	15,000	17,500	129	285	196	431	234	516	122	4.3	204	7.2	285	10.1
OT 20	14,500	19,000	23,000	251	552	404	888	526	1157	184	6.5	318	11.2	452	16.0
OT 25	13,200	15,500	17,500	244	537	336	740	508	1117	184	6.5	318	11.2	452	16.0
OT 25S	9,000	11,000	13,500	214	471	335	738	483	1063	184	6.5	318	11.2	452	16.0
OT 30	11,000	12,500	14,500	351	771	721	1586	781	1718	322	11.4	542	19.1	749	26.5
OT 36	8,500	11,500	12,000	341	751	698	1536	749	1648	322	11.4	542	19.1	749	26.5
OT 36S	6,000	7,000	8,500	406	893	706	1554	754	1660	322	11.4	542	19.1	749	26.5

This datasheet might not show the complete range but only the models specialised for the application.



OLI®



WAMGROUP

www.wamgroup.com

Biscuit Processing

WBH Batch-Type Single Shaft Mixers for Biscuit Processing

7



Description ▼

WBH batch-type mixers consist of a single horizontal shaft equipped with ploughshare or shovel tools, housed in a tubular mixing drum. The machines come with one or more inlets, an outlet with a central discharge port, a venting spout, two drum closing end plates that carry flanged end bearing assemblies complete with integrated, air or gas-purged shaft seal, and a drive unit complete with power transmission.

Function ▼

WBH horizontal single shaft ploughshare mixers work on the principle of mechanical fluidisation of the product. The particular shape, position and rotation speed of the mixing tools, create a centrifugal vortex motion, which allows the ingredients to be projected in a three-dimensional way and to merge with each other. This ensures that ingredients with different particle size and bulk density are perfectly blended and mixed with high precision within the shortest possible time.



Application ▼

WBH mixers installed in the raw material buffer storage and milling area of a biscuit processing plant.

Benefits ▼

- ✓ High mixing homogeneity;
- ✓ High speed mixing;
- ✓ Low material residue;
- ✓ Minimum wear/low maintenance;
- ✓ Easy access to all internal parts;
- ✓ Top quality mixing;
- ✓ ATEX-certified;
- ✓ Attractive price.

Biscuit Processing

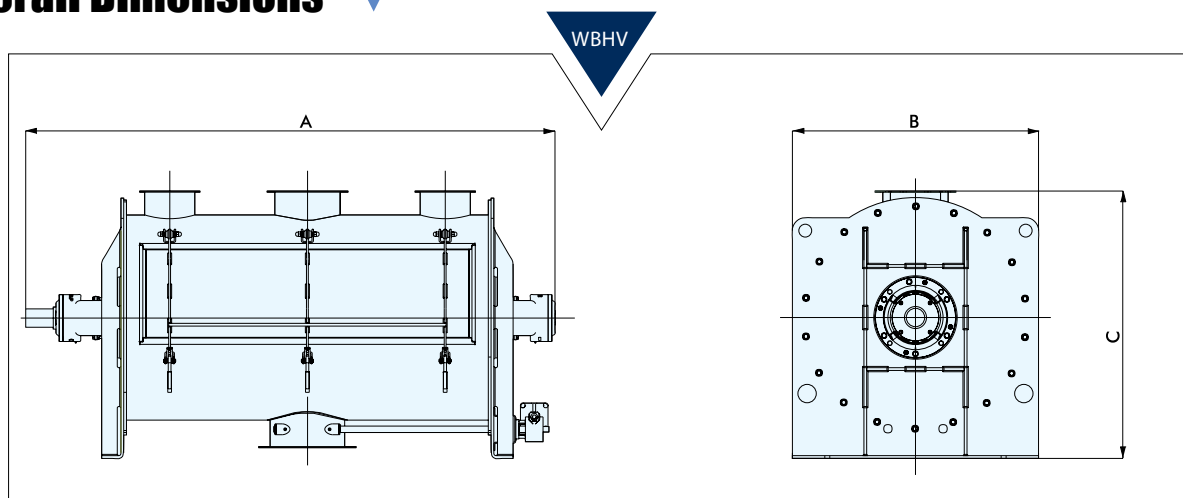
WBH Batch-Type Single Shaft Mixers for Biscuit Processing



Technical Features / Performance ▼

- ▶ Sizes: 75 to 25,000 litres
- ▶ Drive units: 4.0 kW to 300 kW
- ▶ Mixing capacity: 2 to 18 batches per hour (depending on recipe and unit configuration)
- ▶ End bearing assemblies with various types of shaft seals and air or nitrogen purging
- ▶ Central discharge valve
- ▶ Heavy-duty mixing chamber manufactured from carbon steel or 304L or 316L stainless steel
- ▶ Jacketed chamber
- ▶ Chopper bearing assemblies with air or gas-purged rotary shaft seal
- ▶ Liquid injection device
- ▶ Decompression control panel
- ▶ Pneumatic sampling device
- ▶ PT 100 temperature probe on jacketed mixing chamber
- ▶ Wide range of mixing tools
- ▶ Automatic cleaning system

Overall Dimensions ▼



TYPE	A	B	C	Usable Volume (dm³)	Empty Weight (kg)
WBHV 75	1,300	611	649	56	245
WBHV 150	1,460	670	754	105	350
WBHV 300	1,840	770	889	210	550
WBHV 550	2,150	930	1,075	385	840
WBHV 800	2,350	980	1,151	560	1,080
WBHV 1100	2,690	1,100	1,278	770	1,400
WBHV 2000	2,920	1,340	1,455	1,400	2,100
WBHV 3000	3,920	1,340	1,455	2,100	2,800
WBHV 4800	4,520	1,500	1,750	3,360	4,300
WBHV 6000	4,820	1,600	1,860	4,200	4,800
WBHV 8800	5,390	1,810	2,130	6,160	5,800
WBHV 10500	5,630	1,910	2,160	7,350	6,900
WBHV 15000	6,124	2,110	2,445	10,500	8,200
WBHV 20000	6,617	2,312	2,665	14,000	11,903
WBHV 25000	6,888	2,432	2,735	17,500	13,653

Indicative dimensions (mm)

Biscuit Processing

RSM – RSMX Stainless Steel Manual Bag Openers



8



Description ▼

For the applications in this sector the RSM Manual Bag Opener is manufactured from stainless steel. It consists of a grille with a rest fitted to its front. The grille is mounted on top of a hopper which is supported by four feet. A fabricated hood with protection door fitted to its front covers the hopper and grille. RSM Bag Openers are manufactured in high-finish-grade materials and come with or without integrated de-dusting filter unit. In the version with integrated dust filter the filter elements are cleaned pneumatically by reverse air jet. For RSMX (ATEX-compliant version) special ATEX devices such as an acoustic alarm and a signal lamp warn the operator in case of an increase in temperature due to an overload of the fan motor.

Function ▼

The operator puts the bag on the rest and pushes it on to the grille. He then slits the bag open with a vertical cut and shakes it empty. While the bag content is discharged through a hopper or by BINSWEEP®, a special rotary discharging device, into any type of feeder, the built-in fan operated, air jet cleaned dust collector filters the dust generated during emptying. The empty bag is dropped into the chute on the side which leads into the optional COM-type Waste Bag Compactor (see COM).

Manual RSM Bag Openers are designed to minimise material residue. Due to their modular component design they satisfy a large number of applications.



Application ▼

RSM Manual Bag Openers are used to transfer raw materials or additives contained in bags to the mixer or to a silo for storage. The material is conveyed pneumatically or mechanically into the mixer or silo.

Benefits ▼

- ✓ Space-saving overall dimensions and compact user-friendly design;
- ✓ Built-in, fan-operated, air jet-cleaned, maintenance-friendly dust collector;
- ✓ With optional BINSWEEP® Rotary Discharging Device (see chapter);
- ✓ Low overall height;
- ✓ Favourable price-performance ratio.

Biscuit Processing

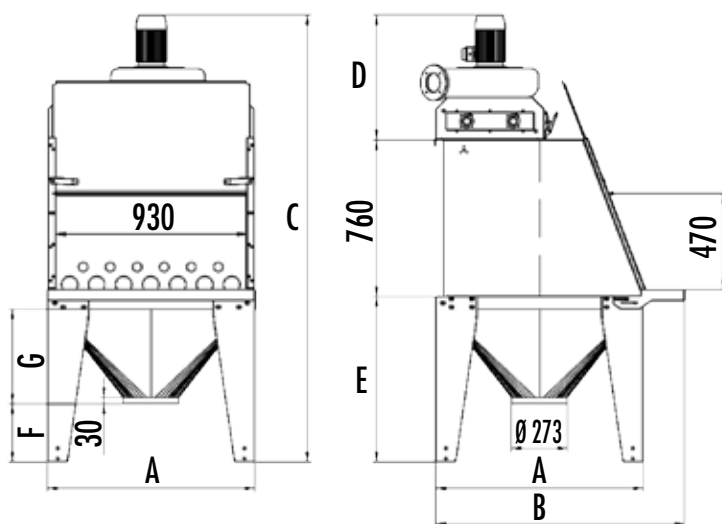
RSM – RSMX Stainless Steel Manual Bag Openers



Technical Features / Performance ▼

- ▶ Material: stainless steel
- ▶ Available with de-dusting filter or equipped for centralised dust suction
- ▶ Filter element options: round bags, elliptical bags made of antistatic filter media in case of ATEX version
- ▶ Filter surface from 3 to 7m² (32 to 75 sq ft)
- ▶ Collecting hoppers with different capacity volumes
- ▶ Support feet with possibility of height adjustment
- ▶ ATEX-compliant for zone 22 on request

Overall Dimensions ▼



	RSM03
A	1,006
B	1,208
C*	2,166
D*	606
E*	800
F**	282
G**	458

* Depending on the height of the filter elements and on the type of support feet

** Depending on the hopper model

Biscuit Processing

VFS Butterfly Valves

9



Description ▼

VFS Butterfly Valves consist of two high-pressure die-cast semi-bodies manufactured from aluminium alloy, a stainless steel swivel disc and an integral, FDA-approved seal. While V1FS has a top flange and a beaded bottom section suitable for the attachment of a flexible sleeve, the V2FS comes with an identical top and bottom flange.

Function ▼

For closing bins, hoppers or silos containing powders or granular materials, VFS Butterfly Valves are among the most widely used equipment worldwide. What used to be custom-built items for specific applications, have been turned by WAM® into a mass-produced industrial product with features that allow extremely versatile use.

VFS Butterfly Valves are used in all types of Biscuit (cookies) Processing Plants where interception of gravity-fed or pneumatically conveyed dry materials is required.



Application ▼

VFS Butterfly Valves are used in all types of powder, flake or granular material processing plants (Flour, Starch, Sugar, Granulated Sugar) where interception of gravity-fed or pneumatically conveyed dry materials is required. Typical applications are storage, conveying and processing lines. They are fitted beneath hoppers, bins, silos, screw or other type conveyors, or to intercept pneumatic conveying ducts. Due to their special design and to the engineering materials used, they represent a particularly cost-effective yet most efficient solution.

Benefits ▼

- ✓ No product contamination;
- ✓ Dust-tight thanks to special component geometry;
- ✓ Suitable for different materials in the same configuration;
- ✓ Safety for OEM and end user (ATEX zone 22 certification);
- ✓ Quick integration into the process;
- ✓ Modular design and easy maintenance thanks to small number of components;
- ✓ High flexibility thanks to interchangeable components.

Biscuit Processing

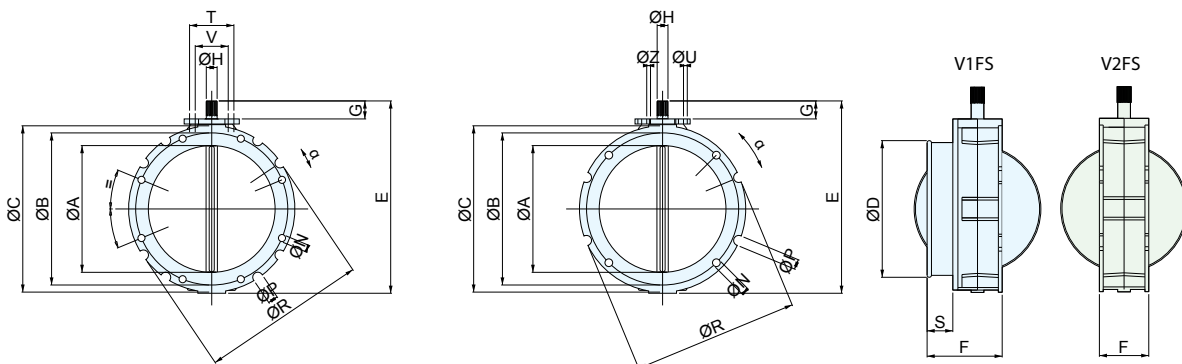
VFS Butterfly Valves



Technical Features / Performance ▼

- ▶ V1FS with top flange and beaded bottom section suitable for fixing of a flexible sleeve from Ø 100 ~ 400 mm (4 in ~ 16 in)
- ▶ V2FS with identical top and bottom flange from Ø 100 ~ 400 mm (4 in ~ 16 in)
- ▶ Pressure-proof up to 0.2 bar (2.9 PSI) and max. temperature of 100°C (212°F)
- ▶ Stainless steel disc
- ▶ Absence of stagnation points
- ▶ White integral food-grade seal
- ▶ Interchangeable discs

Overall Dimensions ▼



TYPE	Ø A	Ø B	Ø C	Ø D	E	F	G	Ø H DIN 5482	N Drilling	P External grooves	Ø R	α	S	T	U	V	Z	κ
V1FS 100.	95	180	220	105	250	115	35	22x19	4 x Ø14	4 x Ø20	220	22°30'	40	80	M12	50	M10	4
V1FS 150.	150	200	228	163	290	115	35	22x19	4 x Ø14	4 x Ø20	228	22°30'	40	80	M12	50	M10	5
V1FS 200.	200	250	278	213	340	115	35	22x19	4 x Ø14	4 x Ø20	278	22°30'	40	80	M12	50	M10	6.5
V1FS 250.	250	300	328	263	390	115	35	22x19	8 x Ø14	8 x Ø20	325	11°15'	40	80	M12	50	M10	7.5
V1FS 300.	300	350	378	313	440	115	35	22x19	8 x Ø14	16 x Ø20	375	5°41'	40	80	M12	50	M10	9
V1FS 350.	350	400	440	363	530	123	50	28x25	8 x Ø14	8 x Ø20	440	10°	40	80	M12	-	-	16
V1FS 400.	400	470	530	413	580	123	50	28x25	8 x Ø14	16 x Ø20	530	4°30'	40	80	M12	-	-	20.5

Dimensions in mm

TYPE	Ø A	Ø B	Ø C	E	F	G	Ø H DIN 5482	N Drilling	P External grooves	Ø R	α	T	U	V	Z	κ
V2FS 100.	95	180	220	250	77	35	22x19	4 x Ø14	4 x Ø20	220	22°30'	80	M12	50	M10	4
V2FS 150.	150	200	228	290	77	35	22x19	4 x Ø14	4 x Ø20	228	22°30'	80	M12	50	M10	5
V2FS 200.	200	250	278	340	77	35	22x19	4 x Ø14	4 x Ø20	278	22°30'	80	M12	50	M10	6.5
V2FS 250.	250	300	328	390	77	35	22x19	8 x Ø14	8 x Ø20	325	11°15'	80	M12	50	M10	7.5
V2FS 300.	300	350	378	440	77	35	22x19	8 x Ø14	16 x Ø20	375	5°41'	80	M12	50	M10	9
V2FS 350.	350	400	440	530	85	50	28x25	8 x Ø14	8 x Ø20	440	10°	80	M12	-	-	16
V2FS 400.	400	470	530	580	85	50	28x25	8 x Ø14	16 x Ø20	530	4°30'	80	M12	-	-	20.5

Dimensions in mm

Biscuit Processing

SBB FIBC Dischargers

10



Description ▼

The SBB FIBC Discharger consists of a stainless steel frame complete with a material discharge hopper and an upper mobile cross bar for lifting of the filled up bag by forklift truck into the Discharger.

Function ▼

The SBB is a modular system for discharging Flexible Intermediate Bulk Containers (Big Bags) in different configurations depending on the application. Easy introduction of the FIBC into the support frame and dust-free discharging along with a variety of options make the SBB extremely user-friendly.

The four loops of the FIBC are attached to the hooks of the detached cross bar that has previously been laid on top of the FIBC. The cross bar with the attached FIBC is then picked up by a forklift truck and introduced into the frame of the SBB Discharger. Once the FIBC has settled on the rubber seal of the discharge hopper the outlet closing rope of the FIBC can be pulled open through the inspection hatch of the discharge hopper.



Application ▼

SBB FIBC Dischargers are used to transfer the raw materials contained in FIBCs to silos for storage. The material is normally conveyed pneumatically into the silo.

Benefits ▼

- ✓ **Modular design;**
- ✓ **Compact shipping dimensions;**
- ✓ **Easy to install;**
- ✓ **Complete dust-free discharging from bag corners even with compressed powders.**

Biscuit Processing

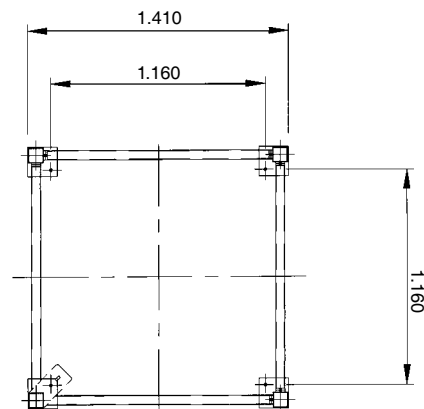
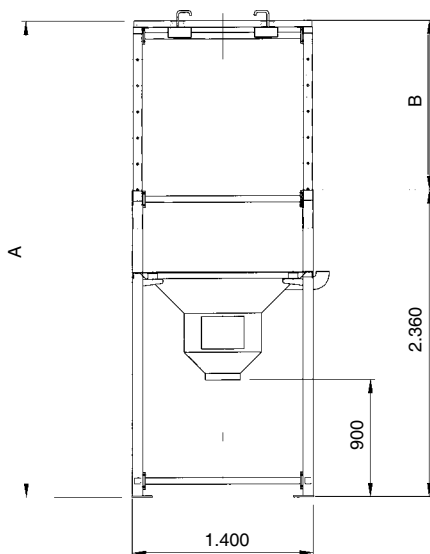
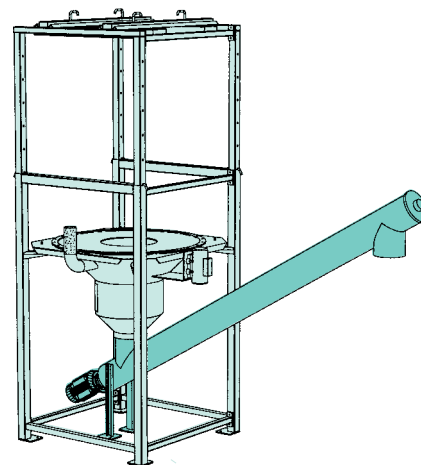
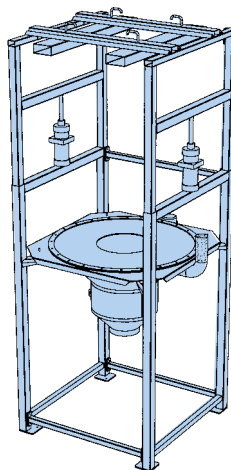
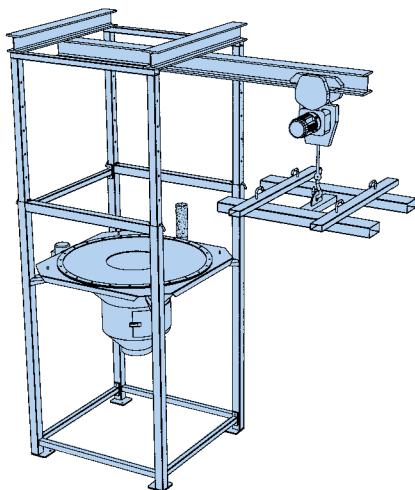
SBB FIBC Dischargers



Technical Features / Performance ▼

- ▶ Construction material: stainless steel
- ▶ Vibrating outlet cone fitted with outlet opening hatchway

Overall Dimensions ▼



TYPE	A	B	C	Max. Bulk Bag Dimensions		
				L	W	M (max.)
SBB01.1.X	3,668	1,884	1,308	1,000	1,000	1,800
SBB01.2.X	4,108	2,234	1,658	1,000	1,000	2,200

Dimensions in mm

Biscuit Processing

VL Slide Valves

11



Description ▼

VL-type Slide Valves consist of a two-piece stainless steel frame, which is partly coated with WAM®'s unique SINT® engineering polymer composite, and a sliding blade manufactured either from the same material or from carbon or stainless steel. The use of SINT®AL FDA-approved engineering polymer composites considerably increases resistance to abrasion compared to traditional valves.

Function ▼

VL Slides Valves are used where flow of a bulk solid caused by gravity or transport has to be intercepted. Valves may be fitted to hopper or silo outlets, to the inlets and outlets of mechanical conveyors and to the inlet of telescopic loading spouts.



Application ▼

The special geometry of the VL Slide Valves and the different options of blade design enable their application in all departments of a Biscuit Processing Plant where interception of gravity-fed or pneumatically conveyed dry materials is required. Typical applications are storage, conveying and processing lines.

They are fitted beneath hoppers, bins, silos, screw or other type conveyors.

Due to their special design and to the engineering materials used, they represent a particularly cost-effective yet most efficient solution.

Benefits ▼

- ✓ No contamination due to metal steel blade and valve frame coated with engineering polymer;
- ✓ Dust and granule-proof thanks to components geometry;
- ✓ Used with different materials in the same configuration;
- ✓ Safety for OEM and user thanks to ATEX certification zone 22;
- ✓ Easy integration into the process thanks to its light weight and easy handling;
- ✓ Modular design and easy maintenance thanks to small numbers of components;
- ✓ High flexibility and time-saving maintenance thanks to interchangeable components;
- ✓ Better performance thanks to friction-free contact design (actuator torque is not wasted in order to win friction resistance).

Biscuit Processing

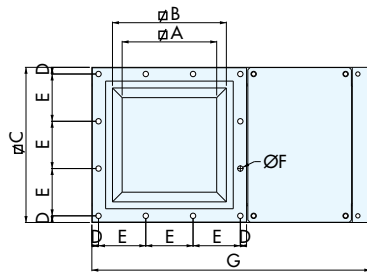
VL Slide Valves



Technical Features / Performance ▼

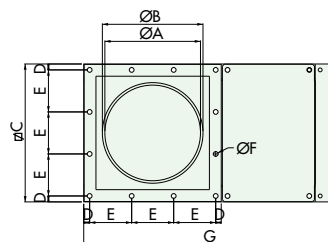
- ▶ Square (VLQ) or round (VLC) inlet from 150 to 400mm (6 to 16 in)
- ▶ Rectangular inlet for size 300mm (12 in)
- ▶ Dust and granular-proof and max. temperature of 80°C (176 F°)
- ▶ Blade and frame in stainless steel (or coated in SINT® AL FDA-approved engineering polymer)
- ▶ Absence of residue points
- ▶ Friction-free contact design
- ▶ Small number of components
- ▶ Easy part replacement
- ▶ Safe sealing with no additional measures due to the all-around dustproof seal lips incorporated in the polymer coating

Overall Dimensions ▼



VLQ

Type	A	B	C	D	E	N° E	Ø F	Bolts	G	H	kg
VLQ0150..	120	175	261	15.5	115.0	2	12.5	M10	455	113	14
VLQ0200..	170	225	311	15.5	93.3	3	12.5	M10	555	113	18
VLQ0250..	220	275	361	15.5	110.0	3	12.5	M10	650	113	22
VLQ0300..	270	325	431	23.0	128.3	3	12.5	M10	765	113	30
VLQ0350..	320	375	481	18.0	89.0	5	12.5	M10	900	125	40
VLQ0400..	370	425	531	15.5	100.0	5	12.5	M10	1,000	125	46



VLC

Type	A	Ø B	Ø C	D	E	N° E	Ø F	Screw	G	H	kg
VLC0150..	150	165	261	15.5	115.0	2	12.5	M10	455	113	14
VLC0200..	200	215	311	15.5	93.3	3	12.5	M10	555	113	18
VLC0250..	250	265	361	15.5	110.0	3	12.5	M10	650	113	22
VLC0300..	300	315	431	23.0	128.3	3	12.5	M10	765	113	30
VLC0350..	350	365	481	18.0	89.0	5	12.5	M10	900	125	40
VLC0400..	400	415	531	15.5	100.0	5	12.5	M10	1,000	125	46



Biscuit Processing

ILV Vibrating Level Indicators

12



ILVA



ILVB



Description ▼

ILV-type Vibrating Level Indicators have been designed for electric signalling by vibrating action of minimum or maximum material level inside bins, hoppers or silos.



Function ▼

The piezo-electrically stimulated oscillating fork vibrates at its mechanical resonance frequency. If the probe is covered by bulk material, the damping thus generated is registered electronically and a corresponding signal output is actuated. The oscillation of the fork ensures a certain degree of self-cleaning. The top or side-mounted indicators are commonly used for materials having a bulk density starting from 0.06 t/m³ (0.002 lb per cu in).

Application ▼

Typically ILV Vibrating Level Indicators are fitted on the vertical walls of a bin, silo or hopper at the desired maximum or minimum level (ILVA). Equipped with an extension rod, it can also be mounted vertically into the roof plate (ILVB).

Benefits ▼

- ✓ No product contamination due to 304 stainless steel forks and fittings;
- ✓ No contact between material and casing;
- ✓ Zone 20 /21 ATEX-certified;
- ✓ Suitable for very light materials;
- ✓ Use with different materials in one single configuration;
- ✓ Easy and quick installation and replacement;
- ✓ Compact overall dimensions and lightweight due to aluminium alloy casing;
- ✓ Rotatable casing orientation marking of oscillating rods;
- ✓ Maintenance-free;
- ✓ Cost-effective.

Biscuit Processing

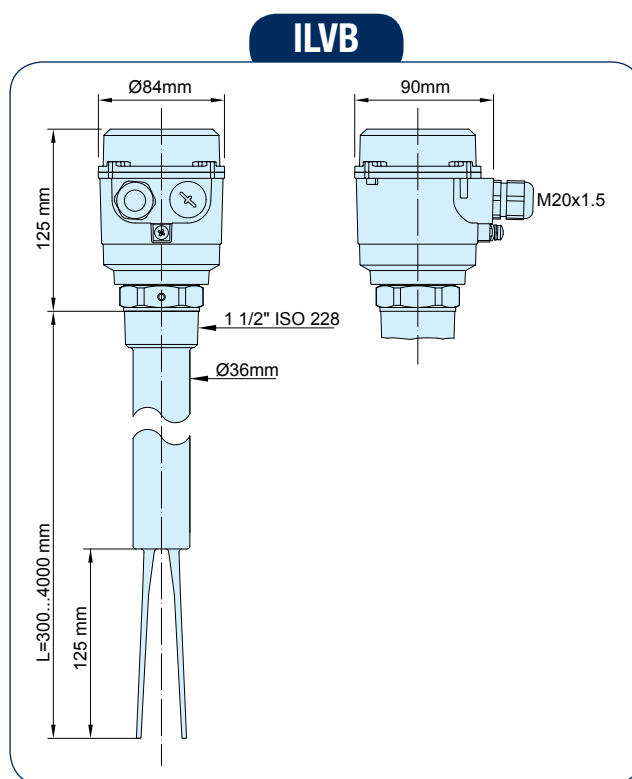
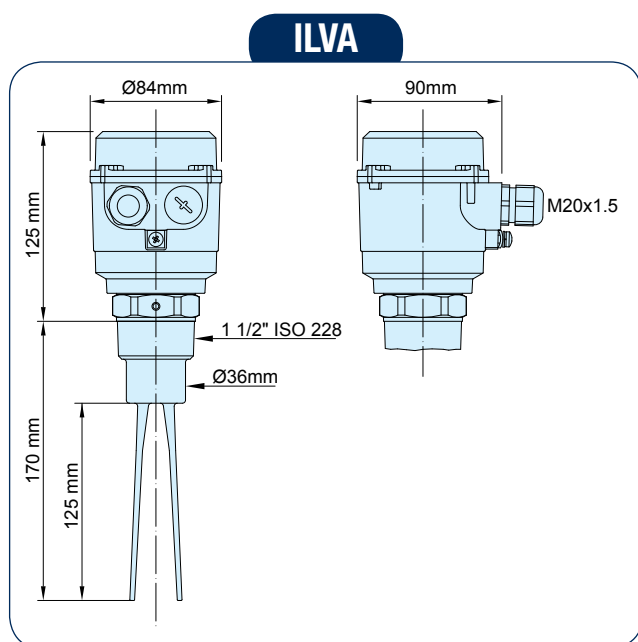
ILV Vibrating Level Indicators



Technical Features / Performance ▼

- ▶ Voltages available: 19 V230 V AC, 50-60 Hz; (absorption 22 VA)
19 V....40 V DC; (absorption 2 W)
- ▶ Signal output: DPDT, max. 250 V AC, 8 A – max 30 V DC, 5 A – Non inductive
- ▶ Standard connection: thread G 1½"
- ▶ Enclosure: IP 66
- ▶ Working temperature inside vessel: - 40 °C to 150 °C (- 40° F to 302° F)
- ▶ Ambient temperature: - 40°C to + 60°C (- 40°F to 140°F)
- ▶ Vessel maximum pressure: min. - 1 bar - max. + 16 bar (- 14.5 to 232 PSI)
- ▶ Threaded fittings material: 304 stainless steel
- ▶ Vibrating fork material: 304 stainless steel
- ▶ Casing material: aluminium alloy
- ▶ Maximum oscillation: 7 Vss DC
- ▶ Measuring frequency: 200 Hz
- ▶ Sensitivity: adjustable at two levels (max. 0.06 t/m³ – min. 0.15 t/m³)
- ▶ ILVB modular shaft extension min. 300 mm up to 4,000 mm in 100 mm steps
- ▶ Optional rain shield
- ▶ Optional flanged connection

Overall Dimensions ▼



Biscuit Processing

VCP Spring-Loaded Pressure Relief Valves

13



Description ▼

VCP Pressure Relief Valves consist of a cylindrical casing with a bottom flange to be connected with a spigot welded on the silo roof, a disc-shaped inner steel lid for negative pressure operation held in position by a central spring rod, an outside steel ring for excess pressure kept in position by three spring rods, gaskets, and a weather protection cover.

Function ▼

Inside the VCP Pressure Relief Valve, helical springs keep the valve lids closed when the pressure value remains within the preset limits. The three outside spring rods keep the external ring-shaped lid firmly closed as long as the force generated by the pressure inside the silo does not exceed the spring force. Once the pressure exceeds the pre-set value, the lid is pushed up allowing pressure to escape. The smaller lid covers the central circular opening of the external lid from below. It is held in the middle by a single spring rod and is pressed onto the external lid by the normal air pressure inside the silo. In the event of suction pressure, the spring is compressed and allows the lid to drop. The air entering the silo from outside ensures rapid pressure balance and pushes the central lid back up into the "closed" position.



Application ▼

VCP Pressure Relief Valves are the last resort when abnormal pressure conditions endanger the silo structure. This is why sudden excess or suction pressure inside the silo must be dealt with instantaneously. Even though ideally a Pressure Relief Valve should never have to go into action, it must be efficient and reliable if needed. With tens of thousands of units installed worldwide, VCP Pressure Relief Valves have given evidence of being totally reliable under the most different conditions.

Benefits ▼

- ✓ Safety for OEM and user thanks to ATEX certification zone 21;
- ✓ No contamination due to metal steel discs and EPDM white seal;
- ✓ Used with different materials in the same configuration;
- ✓ Easy to handle and fit thanks to lightweight design and reduced overall dimensions;
- ✓ Quick maintenance due to few components;
- ✓ Easy maintenance thanks to small numbers of components.

Biscuit Processing

VCP Spring-Loaded Pressure Relief Valves

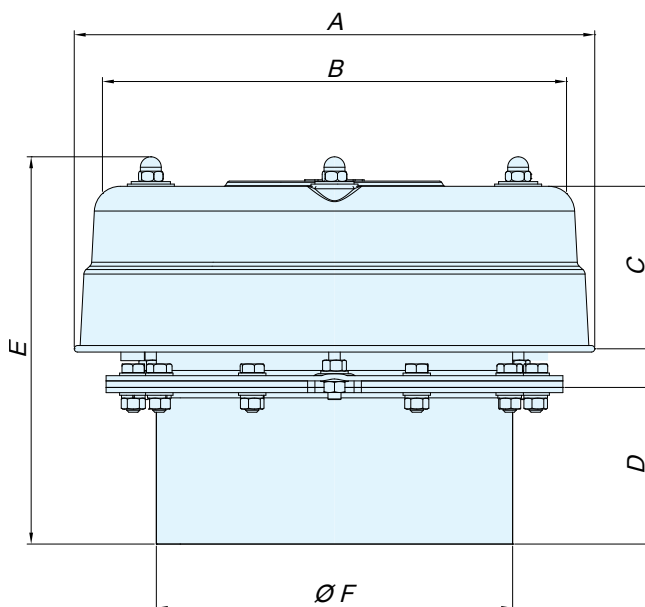


Technical Features / Performance ▼

- ▶ 304 stainless steel body (VCP...2C)
- ▶ Ø 273mm (11 in) and 356mm (14 in)
- ▶ Weather protection cover in stainless steel
- ▶ ATEX certification (zone 21) and HSE British Guidelines
- ▶ Air volume up to 13,000 m³/h (7,650 cfm)
- ▶ Setting range: excess pressure from 300mm H₂O (0.44 PSI) up to 800mm H₂O (1.16 PSI)
- ▶ Setting range: negative pressure from -50mm H₂O (0.07 PSI) up to -100mm H₂O (0.15 PSI)
- ▶ No internal welding seams
- ▶ Equipped for inductive signalling sensors
- ▶ Protective bellows for springs
- ▶ White integral food-grade seal
- ▶ Small number of components
- ▶ Easy part replacement
- ▶ Lightweight and easy to handle
- ▶ Interchangeable discs

Overall Dimensions ▼

	Ø 273 mm	Ø 375 mm
A	400	525
B	356	468
C	125	175
D	120	120
E	325	400
Ø F	273	356
kg	9.5	23



Biscuit Processing

Pressure Relief Valves VHS

14



Description ▼

VHS Pressure Relief Valves consist of a cylindrically shaped metal body with clamp connection spigot to the silo, an exhaust outlet spout for duct connection, an elastic diaphragm able to re-establish pressure balance instantaneously, a counterweight kit to keep the valve closed under normal conditions, and a weather protection cover.



Function ▼

For some time, tighter safety regulations in industrialised countries have ensured strict enforcement of rules regarding the safeguarding of silos and bins against both excess and negative pressure. There is no question that other countries will have to follow this example. The counterweight-loaded VHS-type Pressure Relief Valve has one decisive advantage over other types of pressure relief valves. Due to the moment of inertia of the helical springs on those traditional pressure relief valves, pressure balance is re-established extremely quickly but not instantaneously. The VHS, on the other hand, does the job in real time. Through an interplay of pressure on different surface areas on both sides of a diaphragm fitted inside the valve casing, perfect pressure balance is achieved. In the event of excess pressure this interaction enables air from inside the silo to flow back into the atmosphere; in case of suction pressure the air penetrates from the atmosphere into the silo.

Application ▼

VHS Pressure Relief Valves are the last safety net when abnormal pressure conditions endanger the silo structure. This is why sudden excess or suction pressure inside the silo must be dealt with instantly. Even though ideally a VHS Pressure Relief Valve should never have to go into action, it must be efficient and reliable if needed.

Benefits ▼

- ✓ Safety for people and the environment thanks to the possibility to convey emissions;
- ✓ Special properties of the diaphragm help avoid locking and formation of material crusts;
- ✓ Innovative working principle (special double-acting diaphragm pervious to air sees to both excess and suction pressure relief);
- ✓ No failure thanks to counterweight system never in contact with dust;
- ✓ Quick and easy maintenance due to few components;
- ✓ Easy to handle and fit thanks to lightweight design and reduced overall dimensions.

Biscuit Processing

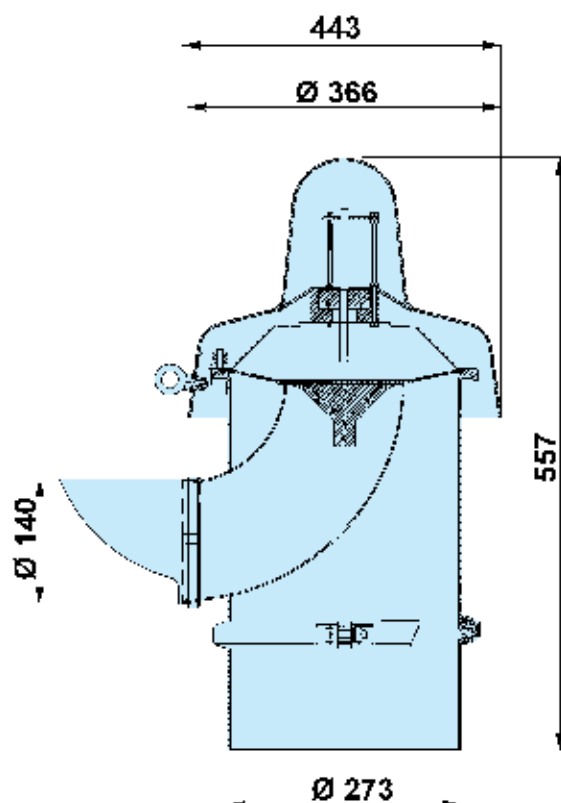
Pressure Relief Valves VHS



Technical Features / Performance ▼

- ▶ 304 stainless steel casing (VHS2732B)
- ▶ Casing diameter = 273mm (10 in)
- ▶ Air volume up to 5,000 Nm³/h (2,950 cfm)
- ▶ Exhaust outlet spout for connection to centralised suction system
- ▶ Valves are preset for a maximum negative pressure of -0.005 bar (0.07 PSI) and a maximum excess pressure of 0.05 bar (0.72 PSI)
- ▶ Should customer requirements be different, the valves can be set at a maximum excess pressure ranging from 0.02 bar (0.29 PSI) to 0.08 bar (1.16 PSI)
- ▶ Weight: 16 kg (35 lbs)
- ▶ Pre-equipped for inductive signalling sensors
- ▶ Small number of components
- ▶ Easy part replacement
- ▶ Lightweight and easy to handle
- ▶ Conveyed emission

Overall Dimensions ▼



TYPE	Excess Pressure	Negative Pressure	kg
VHS273	300 ~ 1,000 mm H ₂ O*	-50 mm H ₂ O*	22

Biscuit Processing

Silo Safety System KCS

15



Function ▼

The system, supplied in component form, prevents overfilling or excess pressurisation, thus avoiding damage to the silo, to the venting filter or any other accessory, at the same time reducing the risk of dust emission.



Description ▼

KCS is a system supplied in component form. These components are fixed on the silo for monitoring pressure and level of material inside the silo.

The components are:

ILTAO - Rotary paddle level indicator (min./max. level)

IPE - Electronic pressure meter
(measures real-time pressure inside the silo)

IPM - Mechanical pressure switch
(indicates excess pressure inside the silo)

IPX - Stub pipe connected to silo
(to be welded on the silo for fixing IPE or IPM)

KAT-080 A - Kit for pipe connection to tanker
(for 80mm diam. filling pipe)

KAT 100 A - Kit for pipe connection to tanker
(for 100mm diam. filling pipe)

KAT 100 B - Kit for pipe connection to tanker (for Italian market)

LS 1 - Audible alarm

PF12 - Filter pressure switch (measures presence of air in the air tank)

SC 1 - Control panel (monitoring of up to 16 silos)

SP 1 - Power panel (one for each silo)

ST 1 - Integrated control/power panel

VM..A. - Pinch valve (interrupts silo filling in case of emergency)

VMX01 N - Pinch valve control unit with box (actuates pinch valve)

XKF... - Connector flange (counter flange for pinch valve)

Additional recommended equipment:

Pressure Relief Valve VCP / VHS

WAMFLO® Venting Filter

Application ▼

The KCS can be used for different materials stored in silos or bins, where the process status has to be monitored and controlled. It suits all applications in which silos or bins are filled using horizontal or vertical type tankers.

Benefits ▼

- ✓ Avoids damage to silo and accessories;
- ✓ Reduces risk of air pollution;
- ✓ Eliminates risk of filling the incorrect silo;
- ✓ Starts and stops filter cleaning automatically;
- ✓ Receives indication from electronic pressure meter whether venting filter needs attention;

- ✓ Benefits from control panel monitoring of:
- ✓ Internal pressure of any silo;
- ✓ Maximum level indicator free;
- ✓ Presence of compressed air to venting filter (if air jet filter is used);
- ✓ Presence of compressed air to pinch valve.

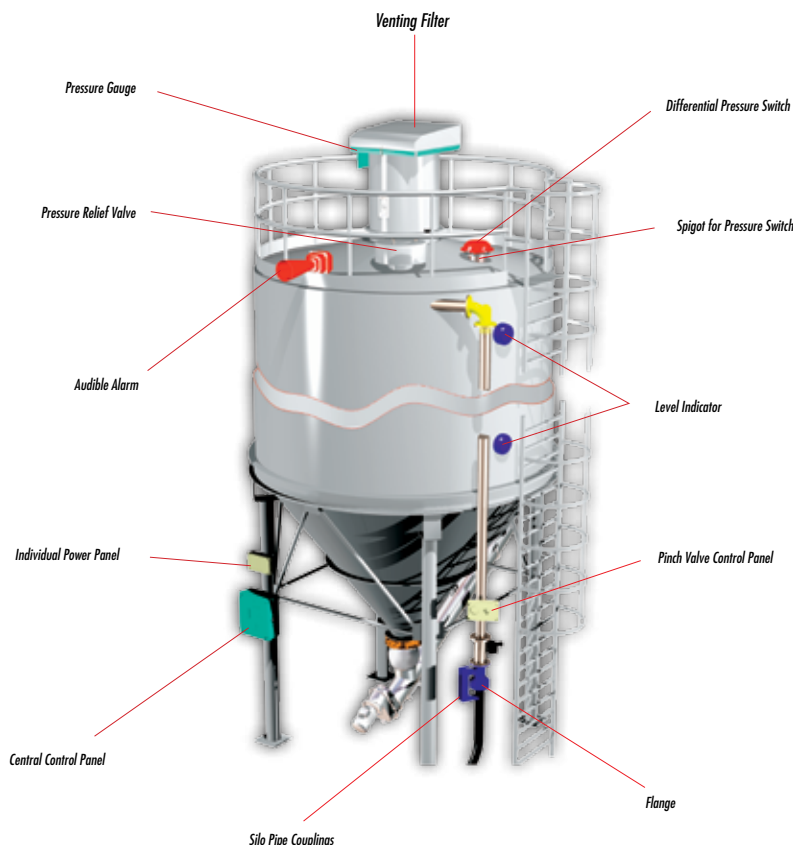
Biscuit Processing

Silo Safety System KCS



Technical Features / Performance

- ▶ Graphic display interface
- ▶ Display and software logic presents information in written form
- ▶ Menu in different languages (English, French, German, Dutch, Spanish, Italian)
- ▶ Messages provided by the system are included in the selected language
- ▶ The language can be changed at any time
- ▶ Parallel handling of silos
- ▶ KCS System simultaneously monitors up to 16 silos separately. In the event of an alarm in one of the 16 silos the KCS System automatically displays the silo concerned, simultaneously displaying a message concerning the type of fault
- ▶ ST1 integrated panel combines logical and functional features of the SC1 and SP1 panels making it possible to economise when a plant with just one silo has to be monitored
- ▶ As regards the internal logic of the SC1 and ST1 panels, software can be easily and rapidly updated using a portable PC
- ▶ Software can also be transmitted by e-mail ensuring quick, specific operation
- ▶ Self-diagnostics function of SC1 and ST1 panels enables testing of all outputs of the panel concerned, so that, in the event of a fault, it is possible to locate it
- ▶ Safe against undesirable intrusion
- ▶ System protected by means of a 4-digit electronic code entered through keyboard
- ▶ KCS System installed in a plant to which additional silos are connected can be easily extended at any time
- ▶ Versatility: each silo is controlled separately and can have a configuration suitable for the specific use. Functioning of related equipment of each silo is not affected by the settings made for the another silo
- ▶ Adaptable to existing plant
- ▶ The KCS System is designed to be easily integrated with components of another make already installed on the plant
- ▶ Easy detection of faults: in the event of faults, the mimic panel enables identification of the component that caused the alarm status
- ▶ Prompt delivery
- ▶ When the controlling body obliges the user to upgrade the plant to the new emission standards, time is money
- ▶ Filter check
- ▶ If the silo is provided with a REVERSE AIR JET FILTER together with an ELECTRONIC PRESSURE METER, the control mimic panel also functions as the "check panel" for the filter
- ▶ Maintenance-free
- ▶ None of the components require any maintenance



This datasheet might not show the complete range but only the models specialised for the application.