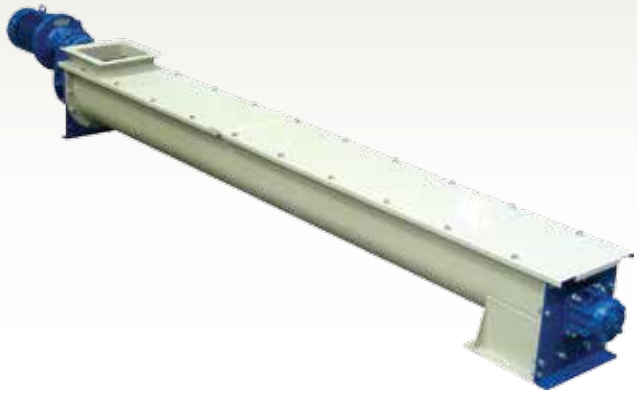
Animal Feed Milling

Screw Conveyors CA

1



Description

The CA is a Screw Conveyor with a U-shaped trough.
In its basic configuration it consists of:
- Direct drive with offset chain transmission or belt transmission;
- Intermediate hanger bearings suitable for the purpose;
- Shaft couplings splined, or splined and bolted, or bolted only;
- Flanged end bearing assemblies;
- Adjustable packing seals;
- Fabricated parts in powder-coated mild steel or 304 stainless steel.
- ATEX-compliant

Function

Conveying flour, or dry or moist cereals.

Applications

CA Trough Screw Conveyors are used in animal feed processing plants in the following applications: cleaning, repose, milling, bagging and storage of flour and by-products (bran and middlings). In particular, they are used:
- for conveying materials discharged from bucket elevators for transfer to feed hoppers of bagging machines;
- for conveying dry cereals.

Benefits

- ✓ **Easy access for cleaning, especially with drop-bottom trough version;**
- ✓ **Quick maintenance;**
- ✓ **Low material residue;**
- ✓ **No risk of material blockage at outlet;**
- ✓ **Highly reliable;**
- ✓ **Easy integration into the plant.**

Animal Feed Milling

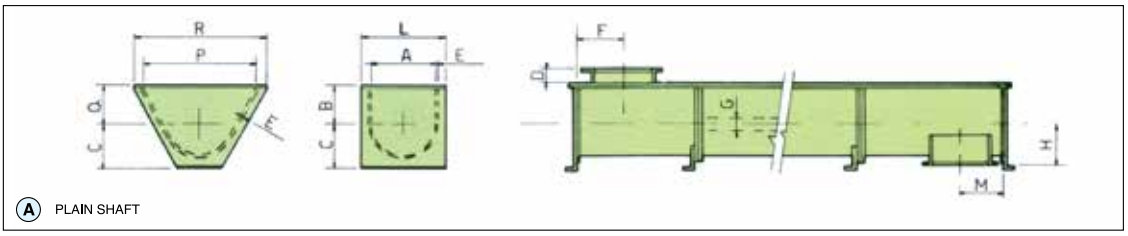
Screw Conveyors CA

Technical Features / Performance

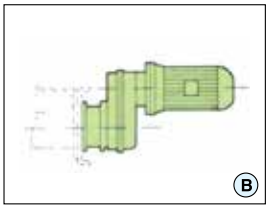
- Wide range of screw diameters from 150 to 500 mm;
- Throughput rates up to 100 m^3/h;
- Up to 25 m long;
- Accurate finishing without steps or niches;
- Adjustable Teflon® shaft seals;
- Drop-bottom trough over entire length (on request);
- Drive unit directly connected to screw;
- End bearing assembly equipped with long-life lubricated bearings;
- Wide range of accessories and options: inspection hatches, overflow hatches with safety grid, anti-stoppage membrane hatches, additional outlet spouts, trough feet, rotation control detector, coupling or chain transmission, emergency stoppage device.

Overall Dimensions

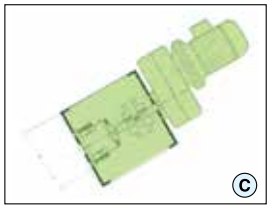
HEAVY-DUTY VERSION



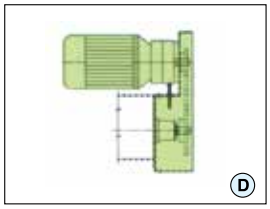
(A) PLAIN SHAFT



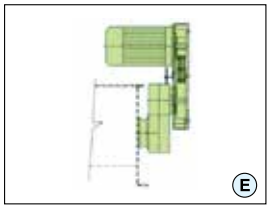
(B) DIRECT DRIVE



(C) FLEXIBLE COUPLING



(D) CHAIN TRANSMISSION



(E) PULLEY DRIVE

CONVEYOR Ø	A	B	C	D	E	F min	G	H	L	M	P	Q	R
100	—	—		60	3	88	48	130	—	170	175	115	265
120	—	—		60	3	88	48	130	—	170	175	115	265
150	175	115		60	3	88	60	130	265	170	375	175	485
200	225	135		60	3	113	60	165	315	195	425	200	540
250	275	160		60	3	138	60	195	365	220	525	225	655
300	325	195		60	4	163	114	225	435	260	525	250	655
350	375	235		60	4	188	114	255	485	290	625	270	755
400	425	270		80	4	213	114	285	540	340	730	290	900
500	525	340		80	4	263	114	340	655	390	830	340	1,000

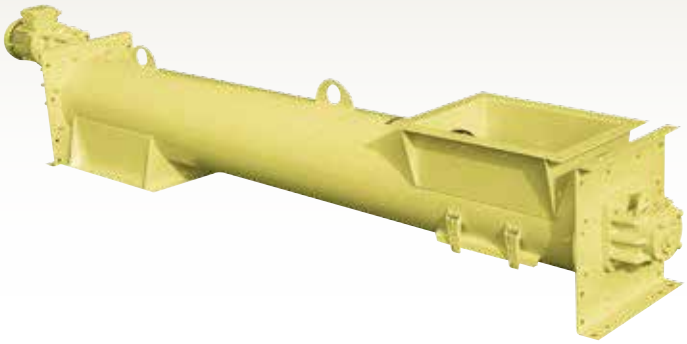
Dimensions in mm

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

Tubular Trough Screw Conveyors and Feeders CAO

1



Description

CAO Screw Conveyors and Feeders, in their standard configuration, consist of:

- gear reducer direct-mounted, with chain, with belt or with coupling transmission
- inlet spout: round, square, rectangular or variable cross section,
- cylindrical section casing in modular lengths made from mild steel
- flanged end bearing assembly at the opposite end of the power transmission

CAO Tubular Trough Screw Conveyors and Feeders are available in carbon steel with a food-grade powder-coated finish.

Function

Conveying and feeding flours or poorly flowable or packing materials (flour derivatives and mineral additives, cereals, coarse powders, fine powders, mash, bran).

Application

CAO Tubular Trough Screw Conveyors and Feeders are specially designed for flour and meals used in animal feed milling plants. The most typical application for CAO is under bins or silos beneath the bin activator outlet.

Benefits

- ✓ **Easy to clean when equipped with drop-bottom trough;**
- ✓ **Quick and easy maintenance;**
- ✓ **Low material residue;**
- ✓ **Minimum risk of packing at discharge;**
- ✓ **Easy to integrate into the plant.**

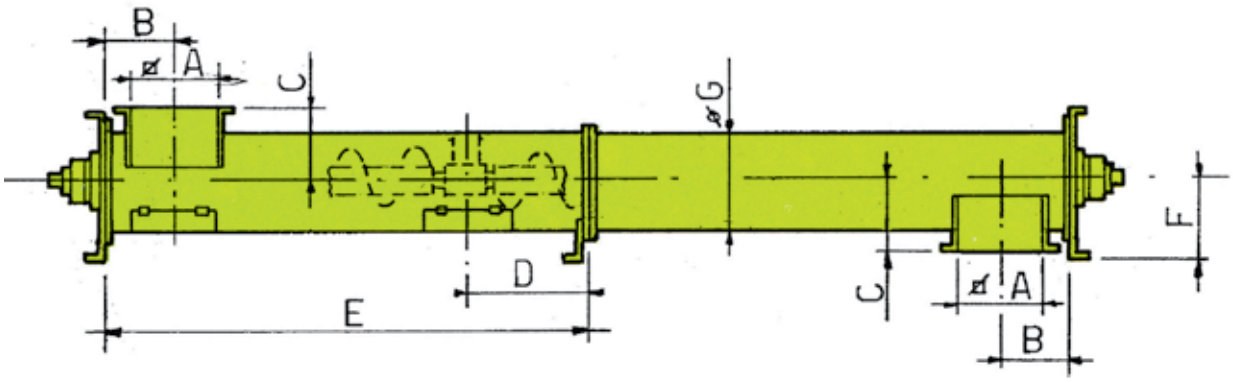
Animal Feed Milling

Tubular Trough Screw Conveyors and Feeders CAO

Technical Features / Performance

- Wide range 100 to 500 mm;
- Throughput/feed rates: 10 to 100 m^3/h;
- High-quality finish-grade;
- Gear reducer directly connected with the screw;
- Intermediate bearing with self-lubricating plastic bush;
- End bearing with self-lubricating bearings;
- Adjustable packing gland made of Tefon®;
- Variable feeding pitch;
- Reduced clearance between screw and trough;
- Wide range of accessories and options: drop bottom trough, inspection hatches, rotational indicator bracket, coupling transmission, chain transmission, emergency stoppage device.

Overall Dimensions



Screw Ø	A	B	C	D	E (max)	F	G
100	175	230	130	200	3,300	145	114
120	175	230	130	200	3,300	145	139
150	175	230	140	200	3,300	145	168
200	225	260	165	200	3,300	185	219
250	275	280	195	200	3,300	215	273
300	325	320	225	300	3,800	245	323
350	375	340	265	300	3,800	275	406
400	425	370	295	300	3,800	305	457
500	525	430	350	300	3,800	380	558

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

Bucket Elevators EC-220 – EF-220

2

Description

The EC and EF – series Bucket Elevators for vertical conveying granular and powdery materials consist of a casing entirely manufactured from galvanized or painted mild steel. The elevators consist of a head section with rubber-coated pulleys driven by a gear motor, a foot section with squirrel cage pulley and screw tensioning system for the belt. The material is conveyed by means of HDPE polyethylene buckets which are fixed to an oil-repellent rubber belt.

Function

EC and EF-series Bucket Elevators are designed for vertical conveying materials such as cereals and similar products having a grain size between 1 and 13mm. Powders can be equally handled provided they are dry, free-flowing, non-abrasive.
EC and EF series have a high elevation speed (2.4 - 3.1 m/s) and a large number of buckets per metre.

Application

EC and EF Bucket Elevators, in their various sizes are widely used in Animal Feed Milling. They are generally used in all those processes where vertical conveying is required. They are specially designed to handle all kinds of cereals, coarse or fine powders, mash and bran.

Benefits

- ✓ Solid and robust design;
- ✓ Easy installation thanks to modular components;
- ✓ Suitable for explosive environments;
- ✓ Totally enclosed equipment, dust-tight construction;
- ✓ Low maintenance and small footprint;
- ✓ Outlet shape designed for highest discharge efficiency;
- ✓ Matching complementary equipment (see Chain Conveyors).

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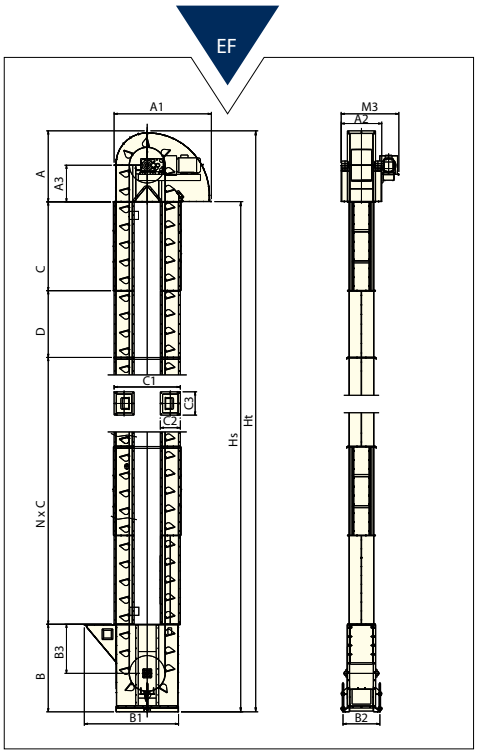
Animal Feed Milling

Bucket Elevators EC-220 – EF-220

Technical Features / Performance

- Throughput rates up to 1,400 m³/h
- Discharge height up to 45m
- Inspection doors on foot, loading and discharge section
- Wide range of accessories:
  - ATEX II3D T4 certification
  - Certified anti-explosion pressure relief panels
  - Self-cleaning foot section
  - Electrical control systems
  - Venting outlet for de-dusting system
  - Anti-wear plates on foot and head section on request
  - Maintenance platform
  - 304/316 SS versions



Overall Dimensions

Model	EF 08	EF 09	EF 11	EF 20	EF 21	EF 29	EF 30	EF 32	EF 39	EF 40	EF 42	EF 43
m³/h	8	16	27	36	55	85	106	151	186	232	341	409
Granular Material	EC 08	EC 09	EC 11	EC 20	EC 21	EC 29	EC 30	EC 32	EC 39	EC 40	EC 42	EC 43
m³/h	10	20	33	45	69	107	133	188	232	291	336	409
h min./max.	3 ~ 45	3 ~ 45	3 ~ 45	3 ~ 45	3 ~ 45	3 ~ 45	4 ~ 45	4 ~ 45	4 ~ 45	4 ~ 45	4 ~ 45	4 ~ 45
Drum Diameter (mm)	250	250	320	400	400	400	400	500	500	500	610	610
Casing Cross Section	145 x 145	145 x 145	186 x 166	236 x 200	236 x 200	300 x 250	300 x 250	340 x 280	430 x 340	430 x 340	525 x 340	525 x 340
A	602	602	770	922	922	1,056	1,056	1,197	1,408	1,408	1,485	1,485
A1	822	822	1,028	1,224	1,224	1,422	1,422	1,632	1,896	1,896	1,980	1,980
A2	335	335	390	440	440	620	620	700	810	810	962	962
A3	300	300	400	450	450	740	520	600	700	700	745	745
M3	530	530	640	713	713	890	890	1,030	1,140	1,140	1,370	1,370
B	753	753	923	1,104	1,104	1,320	1,320	1,437	1,670	1,670	1,806	1,806
B1	812	812	941	1,135	1,135	1,372	1,372	1,504	1,746	1,746	1,885	1,885
B2	310	310	384	432	432	490	490	586	700	700	782	782
B3	400	400	450	550	550	720	720	750	790	790	1,000	1,000
C	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
C1	548	548	764	822	822	922	922	1,074	1,196	1,196	1,300	1,300
C2 x C3	209 x 209	209 x 209	230 x 250	264 x 300	264 x 300	336 x 386	336 x 386	364 x 424	426 x 516	426 x 516	426 x 611	426 x 611
D	500-1,500	500-1,500	500-1,500	500-1,500	500-1,500	500-1,500	500-1,500	500-1,500	500-1,500	500-1,500	500-1,500	500-1,500
N	DEPENDING ON HEIGHT											

This datasheet does not show the complete range but only the models most suitable for the application.

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Animal Feed Milling

Chain Conveyors TCG-220

3

Description

TCG Chain Conveyors are designed for conveying dry solids such as free flowing powders, granules, pellets and flakes. The hot galvanized casing consists of a tail and head section, as well as a number of modular intermediate sections. Tail and head section contain the idle and transmission sprockets. Depending on the characteristics of the material handled and on the throughput rate required, the conveyor chain is either manufactured in pressed links with bent scrapers or in forged links with welded scrapers.
The chain guide is manufactured from polyzene.

Function

TCG Chain Conveyors are designed for conveying cereals, meals or similar materials. The material is dragged and conveyed by rectangular scrapers along the bottom of the casing. The scrapers are fixed on a guided chain. TCG Chain Conveyors may have multiple discharge points through intermediate outlets equipped with an electrically operated slide gate designed for this purpose.

Application

TCG Chain Conveyors, in their various sizes, find their most typical application in silo filling in Animal Feed Milling Plants. TCG Chain Conveyors are used for horizontal conveying to discharge into one or more silos. They are also used for extraction from pits or hoppers. They are especially designed to handle all kinds of cereals, coarse or fine powders, mash and bran.

DS.220.TCG.EN.March2012.ROO

Benefits

- ✓ Solid and robust design;
- ✓ Easy installation thanks to modular components;
- ✓ Suitable for explosive environments;
- ✓ Totally enclosed equipment, dust tight construction;
- ✓ Low maintenance and small footprint;
- ✓ Matching with complementary equipment (see Bucket Elevators).

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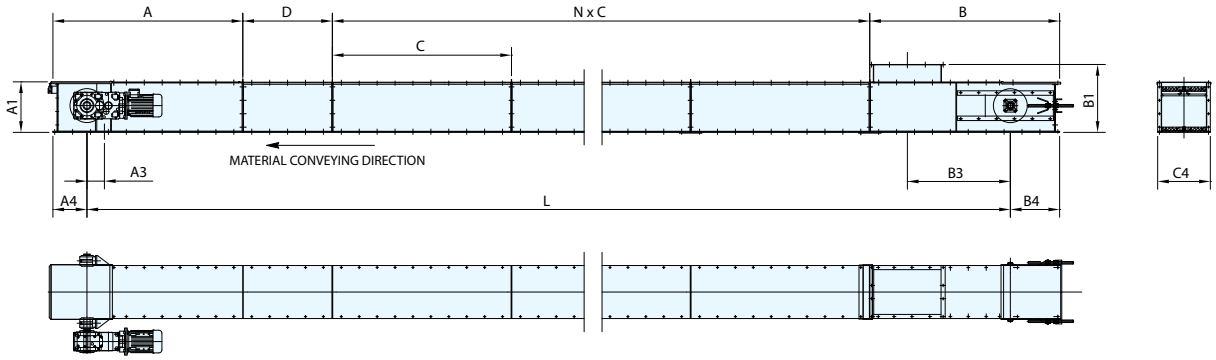
Animal Feed Milling

Chain Conveyors TCG-220

Technical Features / Performance

- Throughput rates up to 1,000 m³/h
- Conveying lengths up to 100 m
- Chain in pressed links with bent scrapers
- Frame completely bolted
- Wide range of options and accessories:
  - ATEX II3D T4 certification
  - Forged link chain with welded scrapers
  - Self-cleaning foot
  - Special casing (with double bottom, inlet for pit extraction, variation of inclination, flow control, inspection hatch)
  - Discharging slide valve
  - Electrical control systems
  - Vent outlet for de-dusting system
  - 304/316 SS version

Overall Dimensions



TYPE	TCG050	TCG100	TCG150	TCG200	TCG300	TCG400	TCG500	TCG600	TCG800
m³/h	87	130	210	280	404	533	670	800	1070
Max. length	100 m	100 m	100 m	100 m	100 m	100 m	100 m	100 m	100 m
Casing cross-section	200x290	300x290	300x420	400x420	500x550	660x550	Available on request	Available on request	Available on request
A	920	920	1,720	1,720	2,120	2,120			
A1	298	298	459	459	609	609			
A3	100	100	195	195	195	195			
A4	225	225	280	280	380	380			
B	920	920	1,720	1,720	2,120	2,120			
B1	343	343	555	555	804	804			
B3	800	800	100	100	1,150	1,150			
B4	332	332	385	385	548	548			
C	2,000	2,000	2,000	2,000	2,000	2,000			
C4	292	392	392	492	592	752			
D	1,400-600	1,400-600	1,400-600	1,400-600	1,400-600	1,400-600			
N	Variable depending on length								

This datasheet does not show the complete range but only the models most suitable for the application.

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Animal Feed Milling

WAMFLO® Dust Collectors FN-220 and FNX-220

4

Description

WAMFLO® FN-220 Dust Collectors have been specifically developed for Animal Feed Milling Plants. They are equipped with a round stainless steel body with large and no-dust-deposit 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-220 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 220 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 m^3/min.

Benefits

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

ATEX-compliant

DS.220.WAMFLO.EN.March2012.R00

WAM®

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www.wamgroup.com

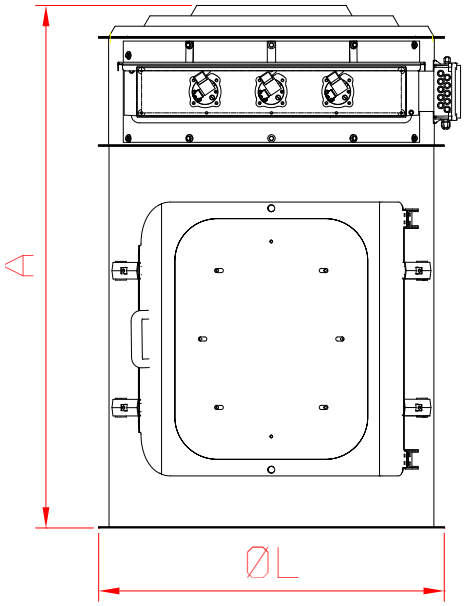
Animal Feed Milling

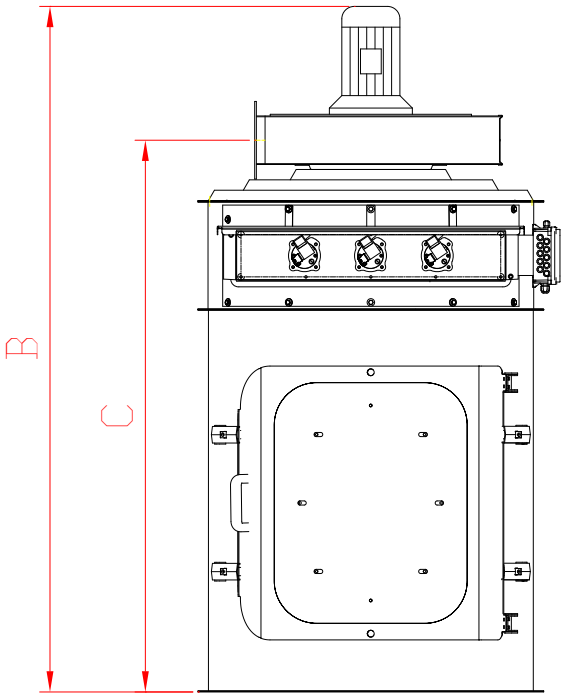
WAMFLO® Dust Collectors FN-220 and FNX-220

Technical Features / Performance

- 304 SS flanged cylindrical body
- Filter surface from 2 to 21m²
- 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 for filtering element removal required
- Large access door for comfortable filter element removal

Overall Dimensions





FILTER CODE	FILTER SURFACE (m²)	Ø L	A	B	C
FNB1J02	2	408	1,642	2,062	1,764
FNB2J05	5	603	1,666	2,221	1,809
FNB3J08	8	783	1,676	2,326	1,839
FNB3J11	11	783	2,156	2,806	2,319
FNB4J16	16	1,038	1,692	2,351	1,859
FNB4J21	21	1,038	2,172	2,831	2,339

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

WAMAIR® Dust Collectors FP-220 / FPX-220

5

Description

WAMAIR® FP 220 Dust Collectors consist of a polygonal shape casing, specifically developed for de-dusting mechanical conveyors in Animal Feed Milling Plants. The filter is equipped with horizontally inserted pocket filter elements made of antistatic filter media, and a reverse air jet cleaning system integrated in the hinged access door.

Function

WAMAIR® Dust Collectors separate dust from the air flow by means of pocket filter elements. Dust drops down after an automatic reverse air jet cleaning device inside the front inspection door has removed it from the filter elements.

Application

WAMAIR® FP 220 Dust Collectors are specially developed for de-dusting mechanical conveyors for grains such as belt conveyors, chain conveyors and bucket elevators.

Benefits

- ✓ Filter dimensions match shape of conveyors;
- ✓ Compliance with health and safety standards;
- ✓ Filter elements available in after-market;
- ✓ Safety for OEM and End User;
- ✓ Running cost reduction;
- ✓ Low energy consumption;
- ✓ Maintenance cost reduction.

ATEX-compliant

WAM®

WAMGROUP®

www.wamgroup.com

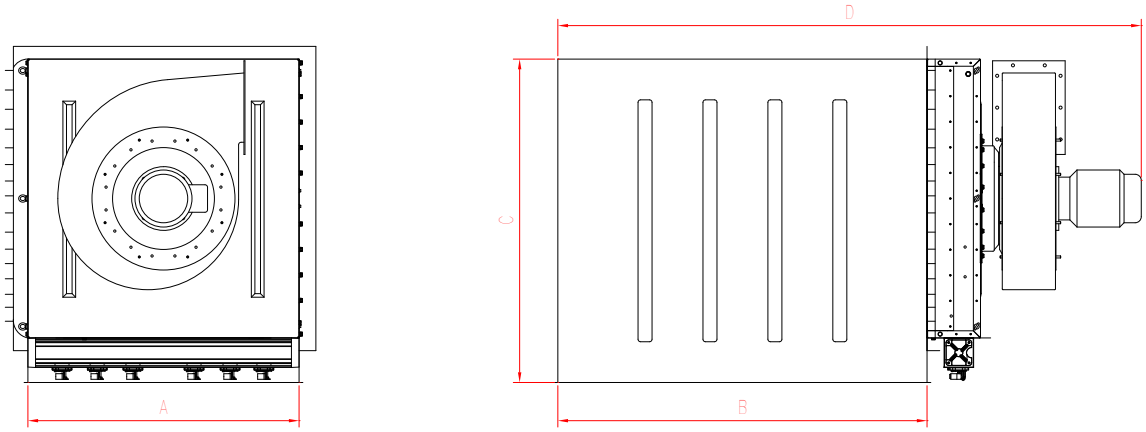
Animal Feed Milling

WAMAIR® Dust Collectors FP-220 / FPX-220

Technical Features / Performance

- ATEX category 2/3D and 2/2D
- 304 SS polygonal body
- Filter surface from 3 to 54m²
- Low emission level due to B.I.A.-certified filter media
- Pred = 0.25 barg
- Large access door for comfortable flter element removal
- High cleaning efficiency due to "Full Immersion" solenoid valves incorporated in aluminium air tank (corrosion-resistant) for low-maintenance operation
- Safe weather protection cover with lockable snap hook
- High efficiency centrifugal fan
- Fan integrated into access door

Overall Dimensions



FILTER CODE	FILTER SURFACE (m²)	A	B	C	D
FPHT 1 03	3	570	700	825	1,570
FPHT 2 05	5	570	950	825	1,820
FPHT 5 09	9	570	1,700	825	2,570
FPHT D 12	12	570	1,200	1,320	2,170
FPHT E 15	15	570	1,450	1,320	2,420
FPHT F 18	18	570	1,700	1,320	2,670
FPHT M 22	22	845	1,450	1,320	2,440
FPHT R 24	24	1,065	1,200	1,320	2,190
FPHT S 30	30	1,065	1,450	1,320	2,530
FPHT T 36	36	1,065	1,700	1,320	2,813
FPHT Y 45	45	1,065	1,450	1,815	2,563
FPHT U 54	54	1,065	1,700	1,815	2,813

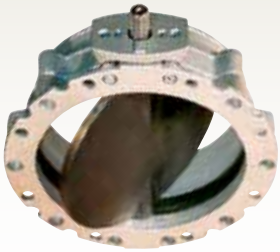
DS 220 WAMAIR.EN.March2012.R00

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

Butterfly Valves VFS

6

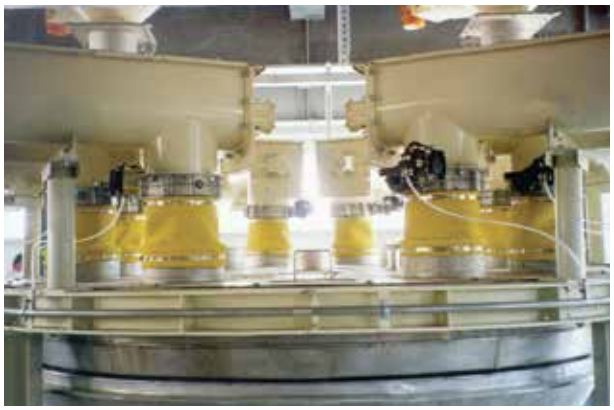


Description

VFS Butterfly Valves consist of two high-pressure die-cast semi-bodies manufactured from aluminium alloy, a swivel disc made of stainless steel or cast iron, and a pre-stressed elastomer seal or integral 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 and 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.



Applications

VFS Butterfly Valves are used in all types of powdery and granular material processing plants where interception of gravity-fed or pneumatically conveyed dry materials is required.
Typical applications are storage, transport 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 contamination due to metal steel disc and NBR white seal;**
- ✓ **Dust-tight thanks to components geometry;**
- ✓ **Suitable for different materials in the same configuration;**
- ✓ **Safety for OEM and End User thanks to ATEX zone 22 certifcation;**
- ✓ **Quick integration into the process;**
- ✓ **Modular design and easy maintenance thanks to small numbers of components;**
- ✓ **High flexibility thanks to interchangeable components.**

DS.220.VFS.EN.March2012.ROO

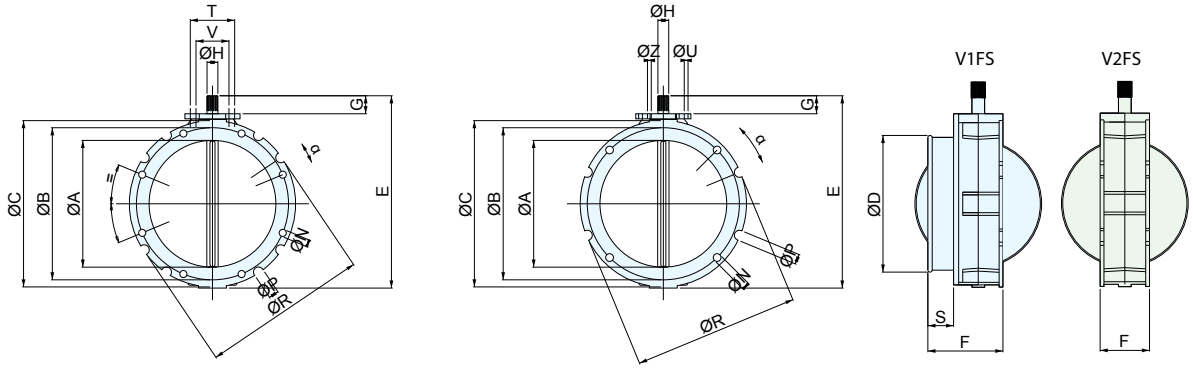
Animal Feed Milling

Butterfly Valves VFS

Technical Features / Performance

- V1FS with top flange and beaded bottom section suitable for fixing of flexible sleeve from 100 ~ 400 mm (4 ~ 16 in)
- V2FS with identical top and bottom flange from 100 ~ 400 mm (4 ~ 16 in)
- Pressure-proof up to 0.2 bar (2.9 psi) and max. temperature T = 100°C (212°F)
- Disc in SINT® FDA-approved engineering polymer or stainless steel
- Absence of stagnation points
- White seals for standard or no-contact-with-material applications
- Interchangeable discs

Overall Dimensions



TYPE	Ø A	Ø B	Ø C	Ø D	E	F	G	ØH DIN 5482	N Drilling	P External grooves	Ø R	α	S	T	U	V	Z	kg
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

Dimmensions 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	kg
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

Dimmensions in mm

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

Slide Valves VL

7

Description

VL-type Slide Valves consist of a two-piece carbon or stainless steel frame, which is partly coated with WAM®'s unique SINT® engineering polymer composite, as well as a sliding blade manufactured either from the same material or from carbon or stainless steel. The use of SINT® 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 or to the inlet of an telescopic loading spout.

Applications

The special geometry of the VL Slide Valves and the different options of blade design enable their application in virtually all types of powder and processing plants where interception of gravity-fed or pneumatically conveyed dry materials is required. Typical applications are storage, transport and processing lines.
They are fitted beneath hoppers, bins, silos, screw conveyors or other type conveyors. Due to their special design and to the engineering polymer materials used, they represent a particularly cost-effective yet most efficient solution.

- ✓ **No contamination due to metal steel blade and valve frame coated with polymer material;**
- ✓ **Dust-tight thanks to special component geometry;**
- ✓ **Suitable for different materials in the same configuration;**
- ✓ **Safety for OEM and EU thanks to ATEX zone 22 certifcation;**
- ✓ **Easy integration into the process;**
- ✓ **Time-saving maintenance thanks to small number of components;**
- ✓ **Optimum performance thanks to friction-free contact design (actuator torque is not wasted in order to win friction resistance).**

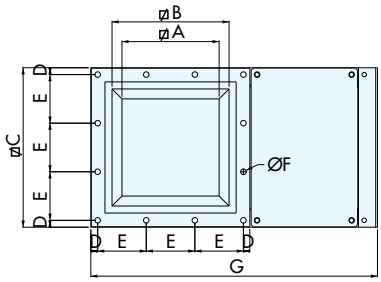
Animal Feed Milling

Slide Valves VL

Technical Features / Performance

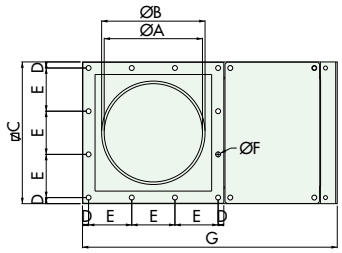
- Square (VLQ) or round (VLC) inlet from 150 ~ 400 mm (6 in ~ 16 in)
- Rectangular inlet for 300mm size (12 in)
- Dust-tight, max. temperature T= 80°C (176 F°)
- Blade in mild or stainless steel or coated with SINT® engineering polymer
- Frame in mild or stainless steel
- Absence of stagnation points
- Friction-free contact design
- Safe sealing with no additional measures due to the all-round dust-tight seal lips incorporated in the polymer coating

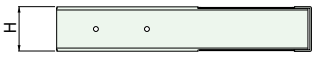
Overall Dimensions



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

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

Slide Valves VG

8

Description

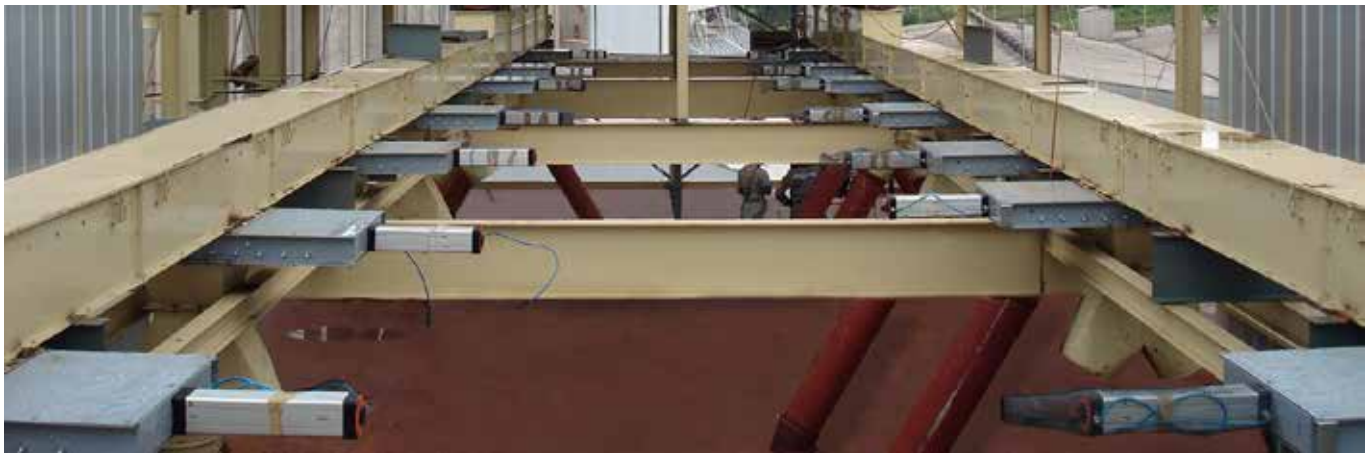
VG-type Slide Valves, which are entirely manufactured from carbon steel or stainless steel, ensure safe interception and excellent durability. The ideal equipment for heavy-duty applications, VG Slide Valves are available in larger sizes and are equipped with two replaceable seals. In the VG version the Slide Valves have a square cross section, in the VGR version a rectangular one.

Function

VG Slide Valves are used in all those plant applications where interception of gravity material flow is required. The Valves are mounted on the outlets of hoppers, tanks, silos, mechanical conveyors, and on loading bellow inlets.

Applications

The geometry of the VG Slide Valves enable their application in virtually all types of powder handling and processing plants where interception of gravity-fed or pneumatically conveyed dry materials is required. Typical applications are storage, transport and processing lines.
They are fitted beneath hoppers, bins, silos, screw conveyors or other type conveyors.
Due to their special design, they represent a particularly cost-effective yet most efficient solution.



Benefits

- ✓ **Suitable for different materials in the same configuration;**
- ✓ **Easy integration into the process;**
- ✓ **Time-saving maintenance thanks to small number of components;**
- ✓ **Quick maintenance and replacement of the scraper;**
- ✓ **High quality standard;**
- ✓ **Equipped for manual, electropneumatic or gear motor actuator.**

Animal Feed Milling

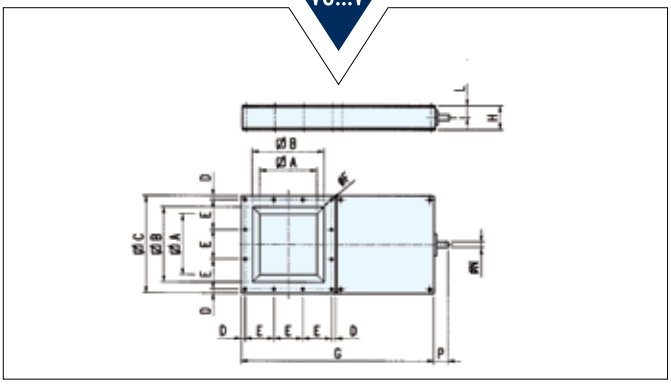
Slide Valves VG

Technical Features / Performance

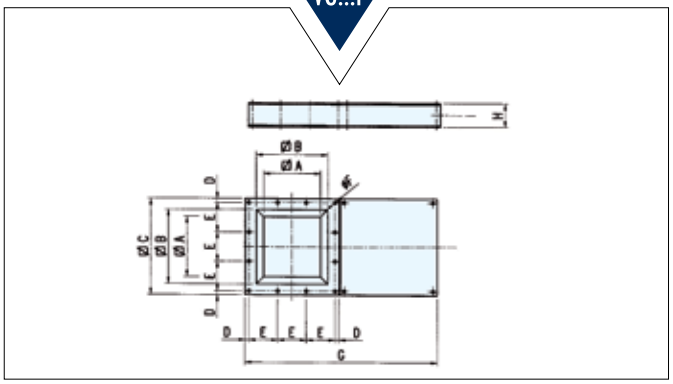
- Square (VG) inlet from 500 ~ 1,000 mm (1.64 ft ~ 3.3 ft)
- Rectangular inlet from 150 ~ 400 mm (0.5 ft ~ 1.3 ft)
- Blade and frame in mild or stainless steel
- Powder-coated

Overall Dimensions

VG...V



VG...P



TYPE	A	B	C	D	E	No. E	Ø F	Ø Bolts	G	H	L	Ø N DIN 5482	P	kg	
														VG...V	VG...P
VG 0500..	450	525	653	26.5	120	15	15.5	M 12	1,300	133	35	28 x 25	60	85	80
VG 0600..	550	625	753	26.5	140	15	15.5	M 12	1,500	133	35	28 x 25	60	110	104
VG 0700..	650	725	895	35.0	165	15	15.5	M 12	1,720	133	35	28 x 25	60	135	128
VG 0800..	750	825	995	35.0	185	15	23.0	M 12	1,920	133	35	28 x25	60	180	172
VG 1000..	950	1,025	1,235	40.0	165	15	18.0	M 12	2,340	133	35	28 x 25	60	240	230

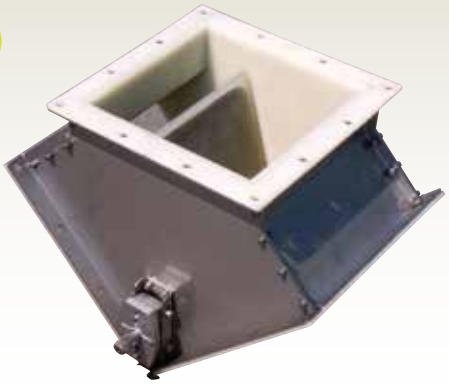
Dimensions in mm

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

Diverter Valves DVA

9



Description

The DVA Diverter Valve consists of a casing in stainless steel lined with SINT® engineering polymer and a flap in SINT® engineering polymer with a steel core. The flap is activated by a manual lever, or by a pneumatic or electric actuator.

Function

DVA Diverter Valves are equipped with one inlet and two outlets for the diversion of the flow of powdery or granular materials. The engineering polymer materials enable quick cleaning and maintenance apart from offering great resistance to abrasion.

Applications

DVA Diverter Valves are used in all types of powdery or granular material processing plants where diversion of gravity flow or conveyed dry materials is required.
Typical applications are at the end of a milling line.
DVA Diverter Valves are also placed at the top of packaging lines for bags or bulk bags.

Benefits

- ✓ **Zero clearance between diverter flap and casing ensures dustproof sealing;**
- ✓ **Elastic outline of the SINT® flap ensures material transport without particle breakdown, grinding or jamming;**
- ✓ **Suitable for different materials in the same configuration;**
- ✓ **Easy integration into the process thanks to light weight;**
- ✓ **Modular design and easy maintenance thanks to small numbers of components.**

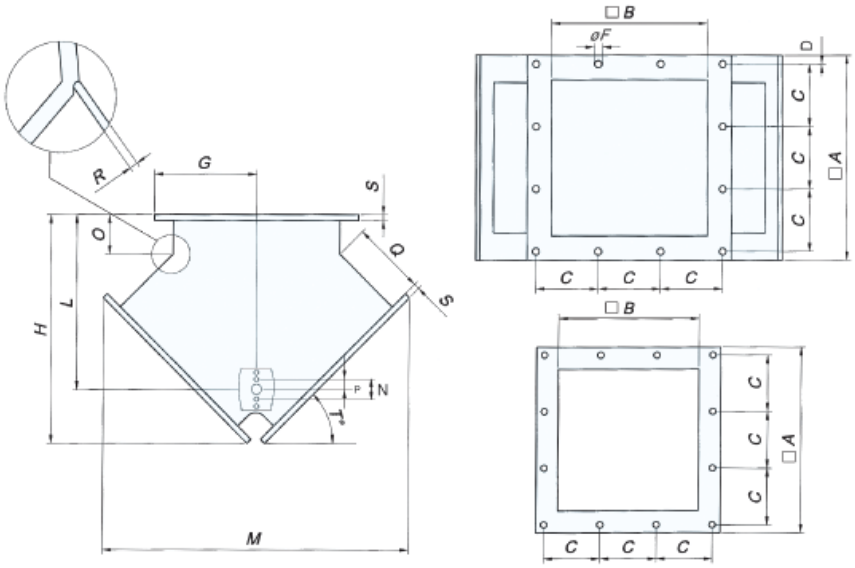
Animal Feed Milling

Diverter Valves DVA

Technical Features / Performance

- Range: 150 ~ 300 mm (6 in ~12 in)
- Dust-tight; max. temperature T= 80°C (176°F)
- Sturdy 304 SS body completely lined with non-stick, wear-resistant SINT® engineering polymer
- Flexible flap coated with SINT® engineering polymer

Overall Dimensions



TYPE	A	B	C	D	ØF	G	H	L	M	N	O	P	Q	R	S	T	kg
150	261	175	115	15	12.5	131	312	221	401	50	66	25	98	5	10	45°	12
200	311	225	93.3	15	12.5	156	358	267	472	50	66	25	114	5	10	45°	15
250	358	275	110	15	12.5	179	403	312	542	50	72	25	127	8	10	45°	19
300	433	325	128.3	24	12.5	217	465	358	645	50	66	25	152	8	10	45°	24

This datasheet does not show the complete range but only the models most suitable for the application.

WAM®

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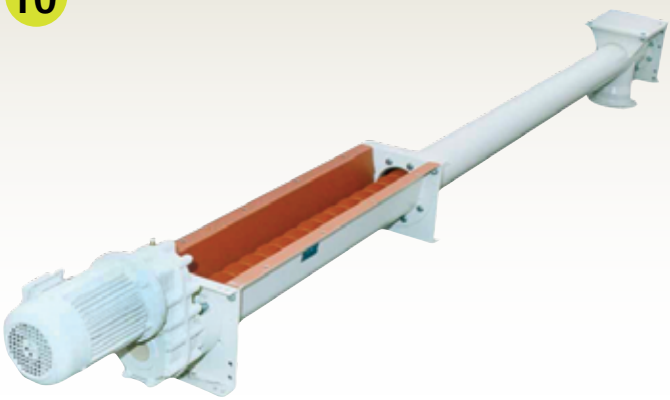
Animal Feed Milling

Single Shaft Screw Feeders SU

10



Description

According to the cross section of the silo outlet, SU-type Single Shaft Screw Feeders are available with standard U-shaped or with flared V-section trough. For animal feed and similar products a heavy-duty version is recommended.

Function

Feeding poorly flowing or packing materials (flour, derivatives and mineral additives, cereals, coarse powders, fine powders, mash, bran)

Applications

SU Single Shaft Screw Feeders are designed specifically for animal feed milling. Mostly they are fitted under silos for flour feeding, connected to the outlet of a bin activator. The spout between the bin activator and the screw feeder is usually equipped with a level indicator.
For feeding bran or other by-products the SU Single Shaft Screw Feeders is directly connected to the silo.

Benefits

- ✓ Easy access for cleaning if equipped with drop-bottom trough;
- ✓ Easy maintenance;
- ✓ Low material residue;
- ✓ Low risk of packing at discharge;
- ✓ Easy integration into the plant.

This datasheet does not show the complete range but only the models most suitable for the application.

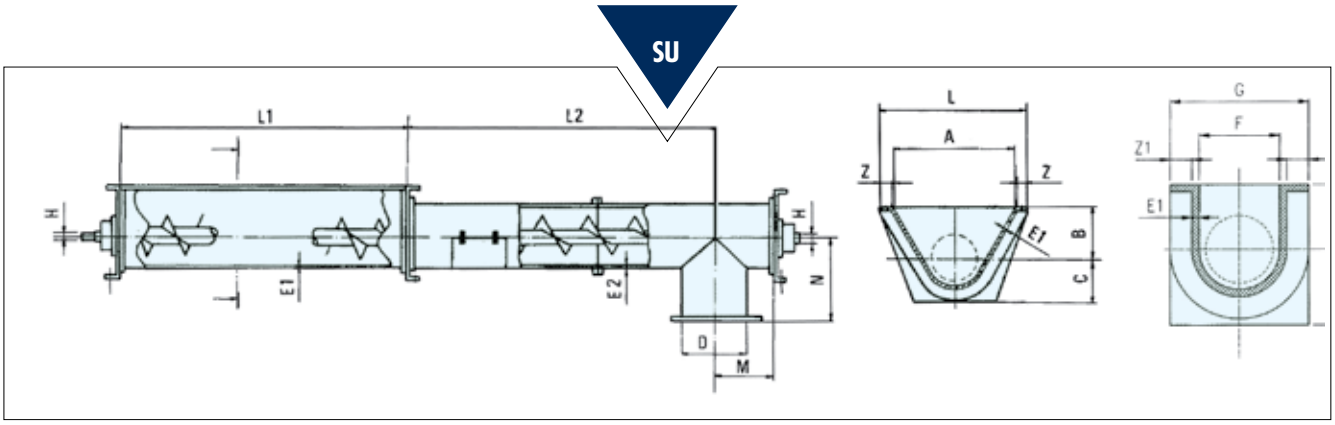
Animal Feed Milling

Single Shaft Screw Feeders SU

Technical Features / Performance

- Wide range of screw diameters from 100 to 400 mm;
- Feed rates from 10 to 100 m³/h;
- High quality finishing;
- Direct drive connected with screw;
- Intermediate bearings with self-lubricating polymer bushes;
- End bearing assembly equipped with long-life lubricated bearings;
- Adjustable Teflon® shaft seals;
- Reduced clearance between screw and trough;
- Outlet spout with large opening for improved discharge;
- Wide range of accessories and options: drop-bottom trough, inspection hatches, rotation detectors, coupling transmission, chain transmission, belt transmission, emergency stop device at feeder outlet end.

Overall Dimensions



Screw ø	Trough U-V		Tubular Trough O															
	L1	E1	Ø	E2	L2	A	B	C	D	F	G	H	L	M	N*	Q	Z	Z1
100	500 750 1,000	2	114	3	VAR.	175	115	145	114	-	-	25	265	120	120	-	40	-
120	500 750 1,000	2	139	3	VAR.	175	115	145	168	-	-	25	265	120	210	-	40	-
150	500 750 1,000 1,250	2	168	4	VAR.	375	175	145	168	175	265	35	485	140	175	115	50	40
200	500 750 1,000 1,250	2	219	4	VAR.	425	200	185	219	225	315	35	540	160	205	135	50	40
250	500 750 1,000 1,250	2	273	4	VAR.	525	225	215	273	275	365	35	655	180	250	160	60	40
300	500 1,000 1,250 1,500	3	323	4	VAR.	525	250	245	323	325	435	55	655	220	300	195	60	50
350	1,000 1,250 1,500	3	406	5	VAR.	625	270	275	406	375	485	55	755	280	360	235	60	50
400	1,000 1,250 1,500	3	457	5	VAR.	730	290	305	457	425	540	55	900	320	420	270	80	50

Dimensions mm

* For cylindrical outlet (in compliance with WAM® standard)

WAM®

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Animal Feed Milling

Tapered Multiple-Shaft Screw Feeders BU

11

Description

BU are Multiple-Shaft Screw Feeders with tapered screws and tapered trough. They come with 2, 3, 4, 5 or 6 screws in a single trough.
In the basic configuration they consist of:

- One or more direct-mounted drives each drive powering two screws;
- Gear transmission;
- Modular trough;
- Tapered screws;
- Flow intercepting diaphragm to avoid material flushing;
- No intermediate bearings;
- Splined shaft couplings;
- Flanged end bearing assemblies opposite drive end;
- Mild steel design.

Function

Feeding from silos flour, derivatives (cereals, coarse powders, fine powders, mash, bran).

Applications

BU Multiple-Shaft Screw Feeders are installed beneath flour or bran silos when bin activators cannot be used. Furthermore they are used under silos for by-products. BU Feeders can be used instead of MMU-type Live Bin Bottoms. The advantage of BU over a live bin bottom is a more efficient extraction of the material as there is no jamming.

Benefits

- ✓ **Progressive material feeding in the open trough (inlet) section ensuring accurate material flow from the silo;**
- ✓ **Modular trough design enables easy access to internal components without the need of drop-bottom troughs and/or inspection hatches;**
- ✓ **Reduced, easy and quick maintenance;**
- ✓ **Minimised material residue.**

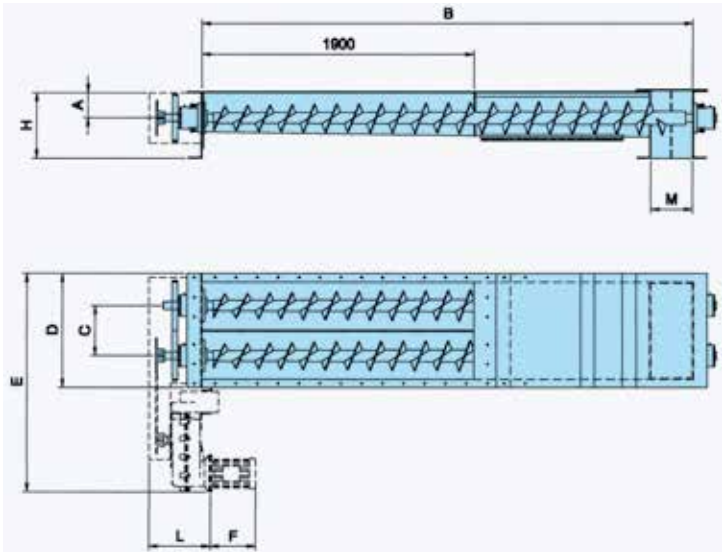
Animal Feed Milling

Tapered Multiple-Shaft Screw Feeders BU

Technical Features / Performance

- Wide range from Ø 150 to 500 mm;
- Feed rates up to 200 m^3/h;
- Modular overall lengths in steps of 500 mm;
- Variable length open trough section depending on silo outlet dimensions;
- Fixed tapered screw and trough length;
- Accurate finishing (no steps or niches);
- Direct drive (directly connected with screw) with either direct power transmission, linear shaft coupling, offset chain transmission, or offset belt transmission;
- End bearing assemblies with long-life lubricated bearings and adjustable Teflon® seals;
- Wide range of accessories and options: overflow hatches with safety grid, tubular trough inserts, trough feet, rotation detectors, flow interception diaphragms.

Overall Dimensions



Screw Ø	Gear Reducer	A	B	C	D	E *	F *	H	L *	M	N	kg
BU 150	S 41	115	2,500	165	433	845	391	260	232	175	343	216
	S 43	115	2,500	165	433	903	510	260	232	175	343	236
BU 200	S 43	135	3,000	220	535	1,023	491	320	275	225	445	356
BU 250	S 43	160	3,000	270	635	1,128	372	375	275	275	545	416
	S 45	160	3,000	270	635	1,195	670	375	275	275	545	476
BU 300	S 45	195	3,000	315	750	1,305	662	440	283	325	640	540
	S 47	195	3,000	315	750	1,325	666	440	283	325	640	606
BU 350	S 45	235	3,000	380	865	1,425	662	510	283	375	755	760
	S 47	235	3,000	380	865	1,448	666	510	283	375	755	920
BU 400	S 47	270	3,500	425	965	1,550	685	575	317	425	850	1,077
BU 500	S 47	340	3,500	520	1,175	1,778	685	720	317	525	1,045	1,234

* Approx. dimensions

Dimensions in mm

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

Live Bin Bottoms MMU-220

12

Description

The MMU Live Bin Bottom is a multiple screw feeder that consists of 2, 3, 4, 5 or 6 parallel screws in a single trough casing.
In its basic configuration it is equipped with:

- One or more direct drives, one each for two screws;
- Gear transmissions;
- Modular trough;
- Screws with variable pitch flighting;
- Flow intercepting diaphragm to avoid material flushing;
- No intermediate bearings;
- Splined shaft couplings;
- Flanged end bearing assemblies opposite drive end;
- Mild steel design.

Function

Extracting and feeding extremely poorly flowing materials from silos.

Applications

MMU Live Bin Bottoms are installed under the outlets of silos for bran and middlings in animal feed milling plants.

Benefits

- ✓ **Modular trough design enables access to all internal components without need for drop-bottom troughs or inspection hatches;**
- ✓ **Easy, time-saving maintenance;**
- ✓ **Low material residue;**
- ✓ **Progressive feeding process.**

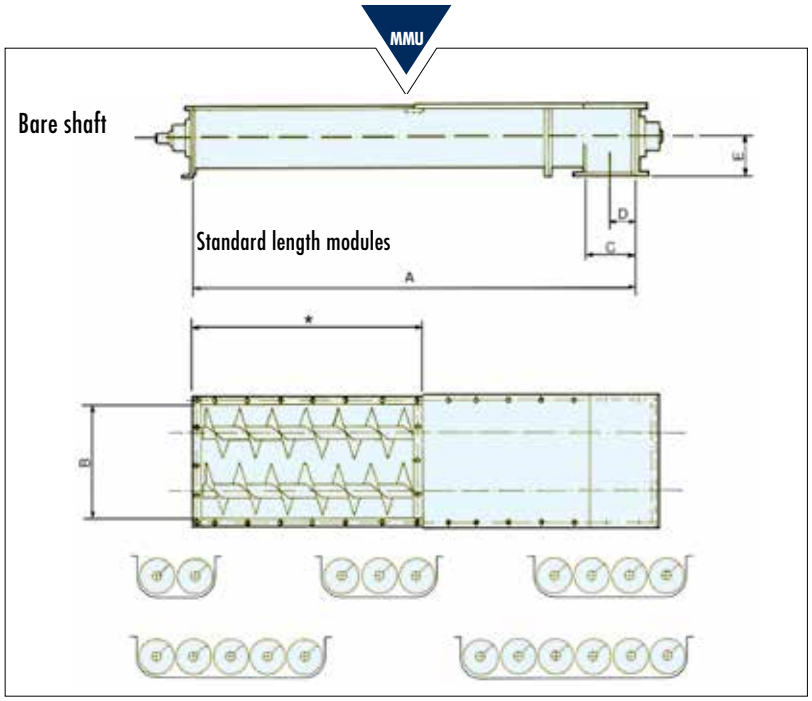
Animal Feed Milling

Live Bin Bottoms MMU-220

Technical Features / Performance

- Flight diameter from Ø 150 to 500 mm;
- Feed rates up to 200 m^3/h;
- Modular overall lengths in steps of 500 mm;
- Variable length open trough section depending on silo outlet dimensions;
- Fixed tapered screw and trough length;
- Accurate finishing (no steps or niches);
- Direct drive (directly connected with screw) with either direct power transmission, offset chain transmission, or offset belt transmission;
- End bearing assemblies with long-life lubricated bearings and adjustable Teflon® seals;
- Wide range of accessories and options: overflow hatches with safety grid, tubular trough inserts, trough feet, rotation detectors, flow interception diaphragms.

Overall Dimensions



Screws

Ø	A (m)	B (mm) 2 Screws	3 Screws	4 Screws	5 Screws	6 Screws	C (mm)	D (mm)	E (mm)
150	1.5-2-2.5-3	340	505	670	835	1,000	172	86.0	145
200	1.5-2-2.5-3	445	665	885	1,105	1,325	222	111.0	185
250	1.5-2-2.5-3	545	815	1,085	1,355	1,625	262	131.0	215
300	2-2.5-3-3.5-4	640	955	1,270	1,585	1,900	315	157.5	245
350	2-2.5-3-3.5	755	1,135	1,515	1,895	2,275	370	185.0	275
400	2.5-3-3.5	850	1,275	1,700	2,125	2,550	417	208.5	305
500	2.5-3	1,045	1,565	2,085	2,605	3,125	512	256.0	380

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

Bin Activator BA-220 BAEX-220

13

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 carbon or stainless steel cone manufactured on a sheet metal lathe, a seamless SINT® 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 to 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-220 Bin Activators are used in various applications in the animal feed industry 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 rat holing phenomena.

Application

Discharging of a variety of powders

Usually fitted in large numbers under the ground material storage silos or daily buffer silos/hoppers to discharge poorly flowing powders such as flours or additives.

The Bin Activator outlet is usually shut off by a slide valve or butterfly valve which is connected with a mechanical feeding device or loading bellows.

Benefits

- ✓ **High discharging performance;**
- ✓ **No waste material thanks to special seal design;**
- ✓ **Reduced maintenance thanks to long-life seal material;**
- ✓ **Total operator safety according to ATEX directive.**

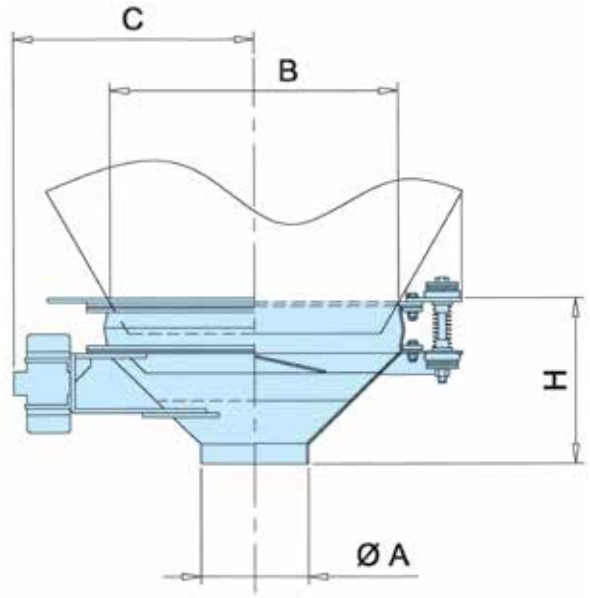
Animal Feed Milling

Bin Activator BA-220 BAEX-220

Technical Features / Performance

- Diameters up to 3,000mm
- 304L SS available for additives
- Strong seamless seal
- No internal residue nests
- Smooth internal finishing
- ATEX-compliant

Overall Dimensions



TYPE	Size	Ø A* Standard	B	C	H	Motovibrators	kg
BA040	400	114	380	427	330	1	59
BA060	600	168	580	519	408	1	80
BA075	750	219	730	609	456	1	99
BA090	900	219	880	684	531	1	134
BA100	1,000	273	980	734	555	1	146
BA125	1,250	273	1,230	937	730	1	290
BA150	1,500	323	1,480	1,120	774	1	475
BA180	1,800	323	1,780	1,194	924	2	726
BA210	2,100	406	2,080	1,420	1,033	2	881
BA235	2,350	406	2,330	1,547	1,166	2	1,255
BA250	2,500	406	2,480	1,705	1,307	2	1,530
BA300	3,000	406	2,980	1,955	1,568	2	2,456

** Further outlet dimensions reported in Technical Catalogue*

Dimensions in mm

This datasheet does not show the complete range but only the models most suitable for the application.

EXTRAC®

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Animal Feed Milling

Manual Bag Openers RSM-220 RSMX-220

15

Description

RSM-220 Manual Bag Openers are manufactured from mild steel or stainless steel and consist of a grille with a rest fitted to their front. The grille is mounted on top of a hopper which is supported by four feet. A fabricated hood with protection door fitted to the front covers the hopper and grille. RSM Bag Openers are manufactured in high finishing-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-220 (ATEX-compliant version) special ATEX devices such as an acoustic alarm and a 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 may be 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-220 Bag Openers are designed to minimise material residue. They satisfy a large number of applications due to their modular component design.

Application

RSM-220 Manual Bag Openers are used to transfer raw materials such as additives contained in bags to the mixer or to silos for storage. The material is normally conveyed pneumatically or mechanically into the mixer or silo.

Benefits

- ✓ **Residue-free internal design;**
- ✓ **Easy and quick access to all internal parts for cleaning;**
- ✓ **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 sheet) low overall height;**
- ✓ **Favourable price-performance ratio.**

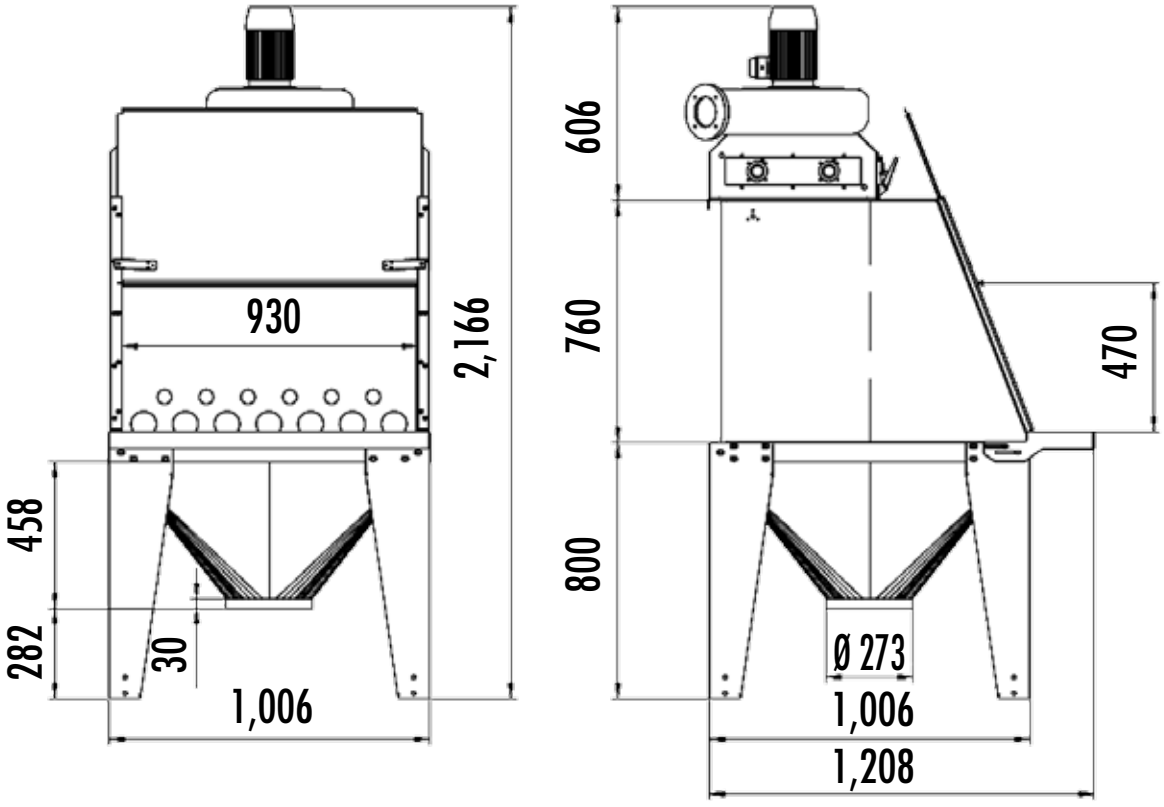
Animal Feed Milling

Manual Bag Openers RSM-220 RSMX-220

Technical Features / Performance

- Construction material: mild steel or stainless steel
- Gas spring-supported residue-free access door on demand
- Available with de-dusting filter or equipped for centralised dust suction
- Filter element options: round bags, elliptical bags with antistatic filter media in case of ATEX version
- Filter surface from 3 to 22m² (32 sq ft)
- Collecting hoppers with different volume capacity
- Support feet with possibility of height adjustment
- ATEX-compliant for zone 22 on request

Overall Dimensions



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

** *Depending on the hopper model*

Further outlet dimensions reported in Technical Catalogue

This datasheet does not show the complete range but only the models most suitable for the application.

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Animal Feed Milling

Waste Bag Compactors COM

16

Description

The COM Bag Compactor for torn empty bags consists of a mild steel or stainless steel trough with appropriate surface finishing. The U-profile trough is longitudinally split in half to facilitate replacement of the SINT® liner that helps introduction and further compression of the broken bags. The Bag Compactor is equipped with a suitable direct drive unit. At the drive end the compactor is equipped with an end plate fixed to the end flange of the trough for assembly of the end bearing complete with flanged shaft coupling for the bag compacting screw. The other trough end is connected with a tapered pipe that facilitates the progress of the compacted broken bags. At the end of this pipe a polyethylene tube for disposal of the waste bags can be fitted.

Function

The COM Waste Bag Compactor receives entire empty bags or bag fragments from a bag emptying device compacting the bags to approximately one eighth of their original volume. Collected in a polyethylene hose that is periodically untied and cut, the waste bags can be easily disposed of.

Application

COM Waste Bag Compactors are fitted on the outlet of an RSM-220 Manual Bag Opener for the compaction and disposal of waste bag material.
The COM Waste Bag Compactor applied to the RSM-220 Manual Bag Opener ensures a clean workplace.

Benefits

- ✓ **Easy access to all parts due to modular design;**
- ✓ **Extra-heavy-duty shaftless compactor spiral able to handle waste bags of any type without adjustment;**
- ✓ **Detachable outlet safeguard in compliance with CE-regulations;**
- ✓ **Compactor does not have to be stopped for untying filled polyethylene tube;**
- ✓ **SINT® engineering polymer liner for better compression of the bags.**

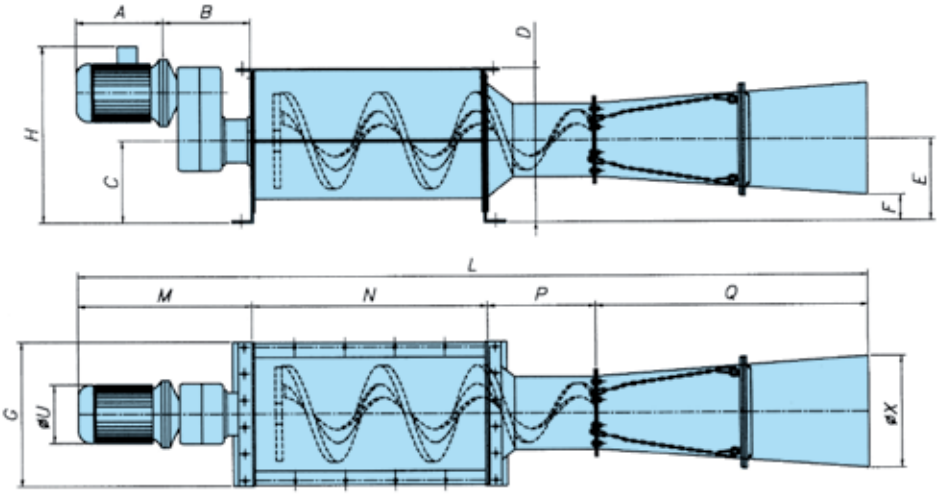
Animal Feed Milling

Waste Bag Compactors COM

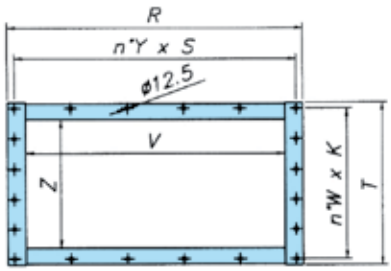
Technical Features / Performance

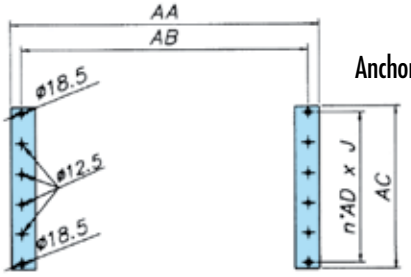
- Construction material: carbon steel or stainless steel;
- Complete with adjustable tensioning ring for polyethylene hose for disposal of waste bags;
- Heavy-duty shaftless compactor spiral supported at inlet end;
- Direct gear motor drive mounted at inlet end;
- ATEX zone 22 certification.

Overall Dimensions



Inlet Flange Drilling





Anchoring Drilling

Type	A	B	C	D	E	F	G	H	L	M	N	P	Q	U	X	R	T	V	Z	AA	AB	AC	Qty W	K	Qty Y	S	Qty AD	J
COM 030	320	320	245	440	245	67	435	600	2,436	640	496	300	1,000	218	357	584	435	484	325	624	564	435	3	128.3	4	136	3	128.3
COM 040	320	320	305	575	305	95	540	660	2,906	640	868	398	1,000	218	420	970	540	850	425	1,010	940	540	5	100	5	185	5	100

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

FIBC Dischargers SBB-220

17

Description

The SBB-220-type FIBC Dischargers consist of a 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

SBB-220 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 SBB-220 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-220 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

Discharging of a variety of powders.

Usually employed in large numbers in animal feed plants to discharge additives from bulk bags both to fill silos or mixers.

The SBB-220 FIBC Discharger outlet is shut off by a slide valve or butterfly valve which is connected to a mechanical conveying device or a pneumatic conveying system.

Benefits

- ✓ **No material residue thanks to appropriate design features and finishing;**
- ✓ **No material contamination thanks to stainless steel contact parts on request;**
- ✓ **High discharging performance;**
- ✓ **Frame available for different ways of loading the FIBCs;**
- ✓ **Complete discharging from the bag corners thanks to pneumatic shaking system;**
- ✓ **Excellent quality/price ratio.**

DS.220.SBB.EN.March2012.ROO

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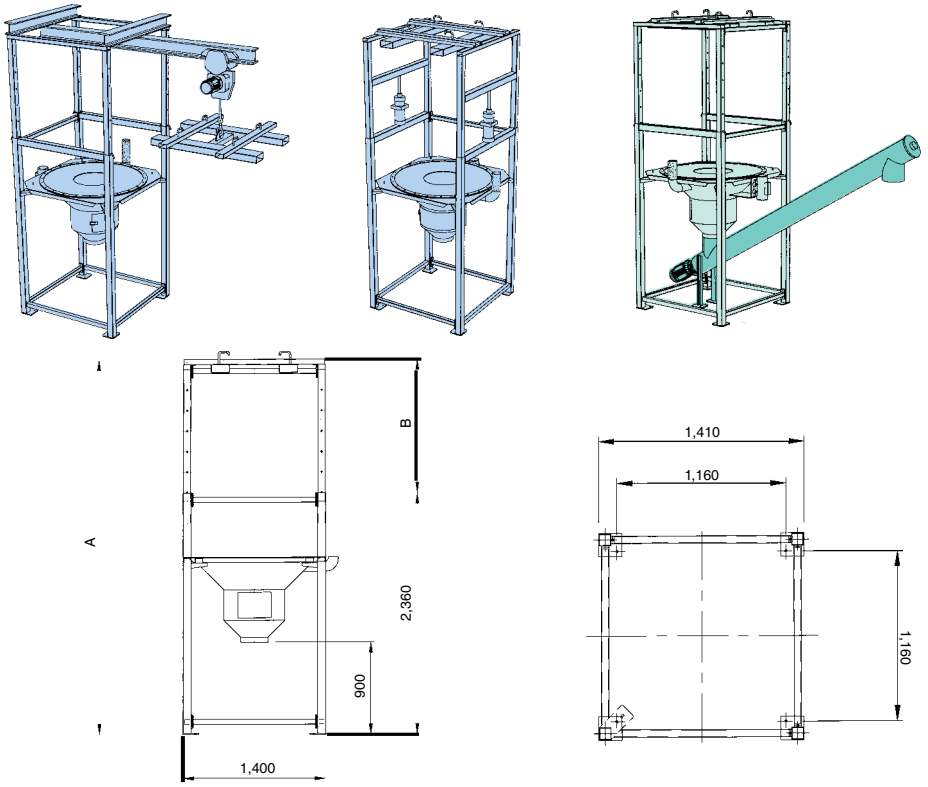
Animal Feed Milling

FIBC Dischargers SBB-220

Technical Features / Performance

- Construction material: Carbon steel, 304L / 316L SS
- Available in two different hopper sizes: 1,250 mm (4 ft) or 1,500 mm (5 ft) diameter vibrating cone fitted with outlet opening hatchway
- Frame Versions available:
  - With height adjustment for FIBC loading by forklift truck
  - For overhead crane loading
  - With monorail for installation of a hoist
- Hopper complete with
  - Access hatch for FIBC opening
  - Electric vibrator as material discharge aid
- 273 mm (11 in) diameter discharge outlet, flanged on demand
- Vibration dampening
- Rubber dust seal
- Problem-free complete discharging from bag corners even with compressed powders
- Door sensor limit switch available on request

Overall Dimensions



				Max. Bulk Bag Dimensions		
TYPE	A	B	C	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

This datasheet does not show the complete range but only the models most suitable for the application.

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Animal Feed Milling

BINSWEEP® Rotary Dischargers BSN-220

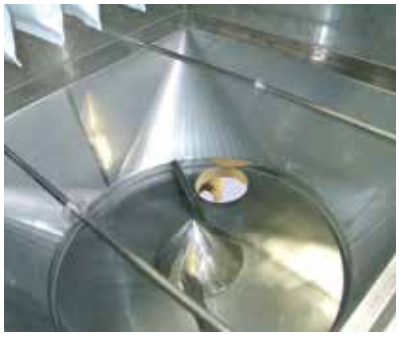
18

Description

The BINSWEEP® Rotary Discharger BSN-220 is a device through which powders are discharged from small size bins or hoppers provided there is a low headload. Flanged on the outlet of the bin or hopper, BINSWEEP® has a bottom disc equipped with two rotating arms fixed at its centre. Scrapers are fitted on the lower end of the arms that move the material towards an outlet spout in the bottom disc. A gear motor that applies motion to the rotary arms is mounted outside in the bottom centre of the disc.

Function

The BINSWEEP® Rotary Discharger BSN-220 is an efficient discharging device for a variety of poorly flowing materials. It is applicable to small bins or hoppers. Its low height reduces the overall dimensions of the system layout.
BINSWEEP® is frequently used for the recovery of dust from medium-size dust collectors and as a discharging device fitted beneath manual bag openers or generally small bins.



Application

The BINSWEEP® Rotary Discharger enables efficient discharging and cleaning of the material collecting hopper fitted beneath the manual bag opener. Thanks to BINSWEEP® bags can be opened at a comfortable work height. In this way a special steep-angle underground hopper design can be avoided.

Benefits

- ✓ Continuous, even discharging of poorly flowing materials
- ✓ Minimum material residue
- ✓ Minimum space required
- ✓ Low maintenance costs due to equipment components highly resistant to wear
- ✓ 304L stainless steel version for additives

DS.220.BSN.EN.March2012.R00

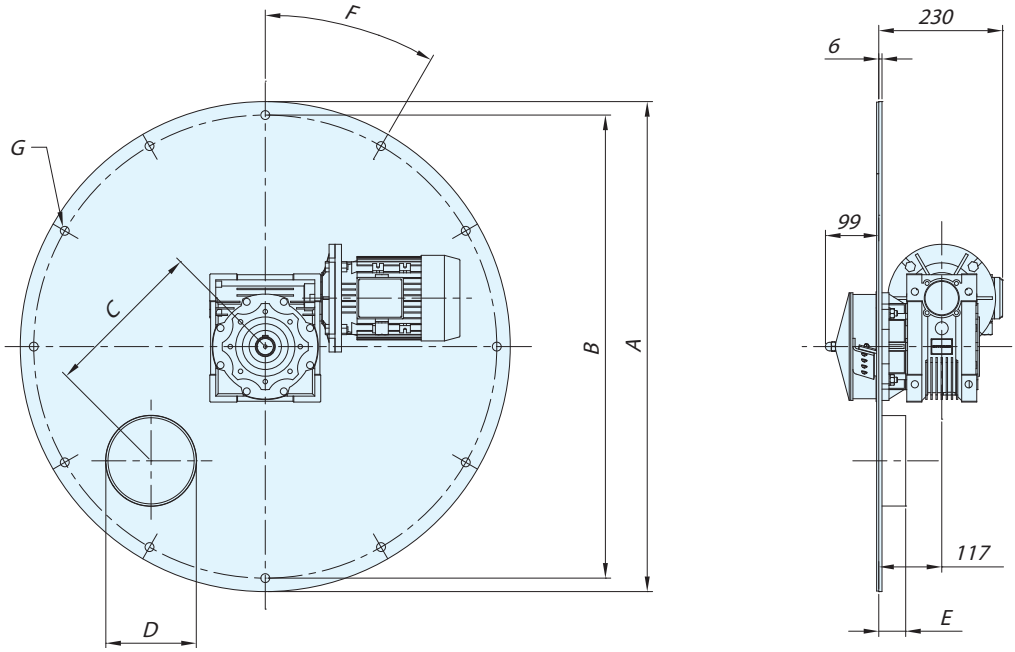
Animal Feed Milling

BINSWEEP® Rotary Dischargers BSN-220

Technical Features / Performance

- Body material: mild steel or stainless steel;
- Low operating noise level.

Overall Dimensions



	BSN 075	BSN 090
A (mm)	910	1,075
B (mm)	860	1,020
C (mm)	300	359
D (mm)	168	193
E (mm)	50	50
Nbr. of G	12	12
Ø G (mm)	16.5	16.5
F	30⁰	30⁰
kW	1.1 - 1.5	1.1 - 1.5
RPM	14	14

Further outlet dimensions reported in Technical Catalogue

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

BELLOJET® ZA
Tanker Loading Bellows With Built-In Dust Filter

19

Description

BELLOJET® ZA Loading Bellows are used for efficient, dust-controlled loading of dry, dusty bulk solids into tankers. The spouts are provided with inner tapered cones to contain the flow of material and an outer double bellows to provide for dust removal. At the lower end of the Loading Bellows, a polymer-coated SINT® cone with special sealing properties is provided for connection to the tanker.
The BELLOJET® dust filtration system, which includes 8 cartridges to provide an overall surface area of 10m² (108 sq ft), is equipped with a 2.2 kW (3.0 HP) fan.

Function

First the Loading Bellows is lowered from the stand-by position towards the inlet spout of the tanker. As soon as the bellows outlet cone has settled on the inlet spout of the tanker, the slack cable switch mounted outside the transmission box stops lowering of the bellows. The limit switch inside the transmission box stops both full extension and contraction of the bellows. Material loading is started by opening the silo outlet valve.
During the filling of the tanker, the polymer SINT® coating of the outlet cone acts as a perfect dust seal. At the same time the filter fan continuously sucks dust through the external bellows into the integrated filter cartridges in the upper section of the unit and exhausts excess air. A slack cable switch activates further extension of the bellows as the tanker lowers under the increasing material weight. A level monitoring device installed in the centre of the outlet cone signals maximum material level in the tanker compartment and orders immediate closing of the silo outlet valve. Contraction of the bellows back to stand-by position starts after a delay of approximately 10 seconds in order to allow the filter to evacuate the remaining dust. Once the bellows is fully contracted, the cable limit switch inside the transmission box stops operation. The preset after shut-down cleaning cycle now provides for additional pulse-jet cleaning of the filter cartridges for another 10 minutes.

Application

BELLOJET® ZA Telescopic Loading Bellows are suitable for continuous loading at a maximum flow rate of 250m³/h (147 cfm) of bulk material.
The outlet can be equipped with an anti-spillage device which acts as a dustproof stopper as the Loading Bellows is being raised. The equipment features an electric winch.
The fan of the BELLOJET® dust filtration system increases the efficiency of the filtering elements. Due to an after-shutdown-cleaning-cycle, the filter elements are always in perfect condition at the start of each new loading.

Benefits

- ✓ **No product contamination thanks to the following features:**
  - *Double bellows which keeps the falling material separate from the dust*
  - *304/316 stainless steel contact parts*
  - *White colour food-grade polyester internal/external chutes*
  - *Built-in filter unit which recycles the dust extracted into the tanker*
  - *ATEX zone 22 certification*
  - *Built-in dust filter reduces dust emission during filling operation*
- ✓ **Flexible chute in Neoprene covered by Hypalon® makes bellows weather-proof, highly abrasion and temperature-resistant and durable;**
- ✓ **Reverse cone with inside level indicator indicates when tanker is full, raises loading bellows gradually and improves material distribution inside the tanker;**
- ✓ **Outlet can be equipped with an anti-spillage device which acts as a dustproof stopper as the Loading Bellows is being raised and prevents that insects or birds enter inside the outlet;**
- ✓ **Two lifting cables outside the material flow raise and lower the loading bellows without any cable wear due to material friction and obstruction to material flow.**

Animal Feed Milling

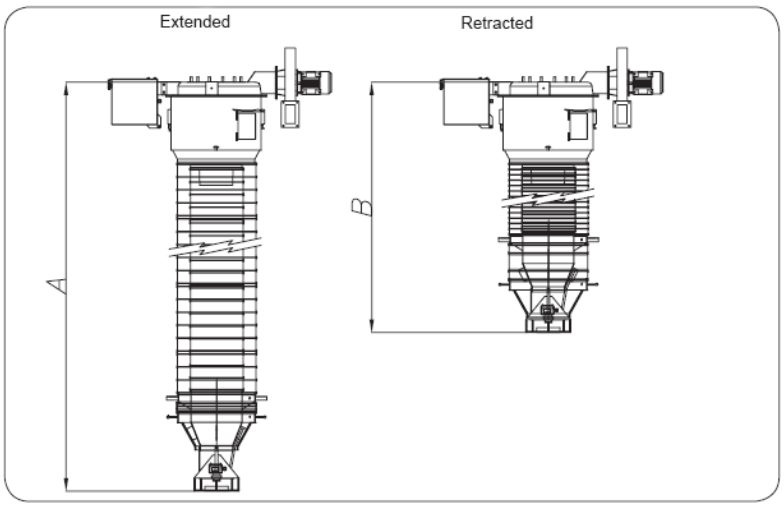
BELLOJET® ZA

Tanker Loading Bellows With Built-In Dust Filter

Technical Features / Performance

- Inlet diameter: 300mm (12 in)
- Maximum flow rate: 250 m^3/h (147 cfm)
- Working temperature: - 20 °C up to 120 °C (- 4° F to 248° F)
- Hoisting system equipped with 0.55 kW electric motor and gear reducer with belt transmission.
- Upper/lower limit switch
- Slack cable limit switch
- Dust filtration system including 8 cartridges with polyester or antistatic media
- Filtering surface: 10 m^2 (108 sq ft)
- Dust suction fan equipped with 2.2 kW (3.0 HP) electric motor
- Electronic filter cleaning panel
- Fabricated parts in carbon steel or 304/316 stainless steel
- Bellows manufactured from Neoprene/Hypalon® or white colour food-grade polyester
- Double bellows with optional internal steel cones for granules
- Rubber bottom outlet cone to ensure perfect sealing of tanker hatch
- Control panel with remote control for fully automatic operation
- Available with rotary level indicator or vibrating level indicator
- Anti-spillage device on outlet
- 2 external hoisting cables

Overall Dimensions



* = Order Form

*	A_{max} [mm]	B_{min} [mm]	[kg]
05	2,050	1,550	303
07	2,330	1,590	305
10	2,630	1,630	308
12	2,810	1,650	309
15	3,110	1,690	311
17	3,390	1,720	313
20	3,590	1,750	315
22	3,870	1,780	317
25	4,170	1,820	319
27	4,450	1,850	322
30	4,730	1,890	324
32	5,030	1,930	326
35	5,310	1,960	328

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

Tanker Loading Bellows ZG

19

Description

ZG Loading Bellows are used for efficient, dust-controlled loading of dry, dusty bulk solids into tankers. The spouts are provided with inner tapered cones to contain the flow of material and an outer double bellows to provide for dust removal. At the lower end of the Loading Bellows, a polymer-coated SINT® cone with special sealing properties is provided for connection to the tanker.

Function

ZG Telescopic Loading Bellows are suitable for continuous loading with a maximum flow rate of 250 m^3/h (147 cfm) of bulk material. The outlet can be equipped with an anti-spillage device which acts as a dustproof stopper as the Loading Bellows is being raised. The equipment features a manual or an electric winch. A spigot on the header can be connected on site to an external de-dusting filter. First the Loading Bellows is lowered from its stand-by position towards the inlet spout of the tanker. As soon as the bellows outlet cone has settled on the inlet spout of the tanker, the slack cable switch mounted outside the transmission box stops lowering of the bellows. The limit switch inside the transmission box stops both full extension and retraction of the bellows. Material loading is started by opening the silo outlet valve. During the flling of the tanker, the polymer SINT® coating of the outlet cone acts as a perfect dust seal. The slack cable switch activates further extension of the bellows as the tanker lowers under the increasing weight of the material. A level control device installed in the centre of the outlet cone signals maximum material level in the tanker compartment and orders immediate closing of the silo outlet valve. Contraction of the bellows back to stand-by position starts after a delay of approximately ten seconds in order to allow the external filter to evacuate the remaining dust. Once the bellows is fully retracted, the cable limit switch inside the transmission box stops operation.

Application

ZG Telescopic Loading Bellows are suitable for continuous loading of both finished products and by-products shipped in bulk.

Benefits

- ✓ **No product contamination thanks to:**
  - *Double bellows keeping falling material separate from dust*
  - *304/316 stainless steel contact parts*
  - *White colour food-grade polyester internal/external chutes*
- ✓ **ATEX zone 22 certification;**
- ✓ **Flexible chute in Neoprene covered by Hypalon® makes bellows weather-proof, highly abrasion and temperature-resistant and durable;**
- ✓ **Reverse cone with inside level indicator indicates when tanker is full, raises loading bellows gradually, thus improving material distribution inside the tanker;**
- ✓ **Outlet can be equipped with an anti-spillage device which acts as a dustproof stopper as the Loading Bellows is being raised and prevents that insects or birds enter inside the outlet;**
- ✓ **2 lifting cables outside the material flow raise and lower the loading bellows without any cable wear due to material friction and obstruction to material flow.**

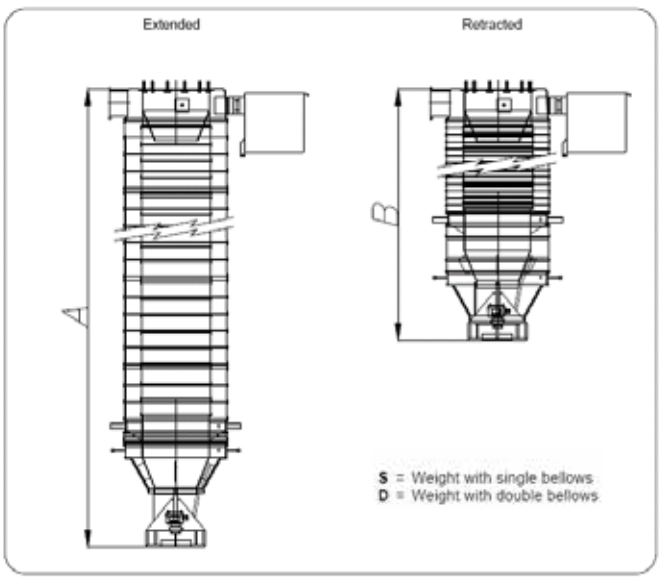
Animal Feed Milling

Tanker Loading Bellows ZG

Technical Features / Performance

- Inlet diameter: 300mm (12 in)
- Maximum flow rate: 250 m^3/h (147 cfm)
- Working temperature: - 20 °C up to 120 °C (- 4° F to 248° F)
- Hoisting system equipped with an 0.55 kW electric motor and gear reducer with belt transmission.
- Upper/lower limit switch
- Slack cable limit switch
- Fabricated parts in carbon steel or 304/316 stainless steel
- Bellows manufactured from Neoprene/Hypalon® or white colour food-grade polyester
- Double bellows with optional internal steel cones for granules
- Rubber bottom outlet cone to ensure perfect sealing of tanker hatch
- Control panel with remote control for fully automatic operation
- Available with rotary level indicator or vibrating level indicator
- Anti-spillage device on outlet
- 2 external hoisting cables

Overall Dimensions



*	A_{max} mm	B_{min} mm	S kg	D kg
05	1,610	1,100	183	205
07	1,890	1,140	184	207
10	2,190	1,170	185	210
12	2,370	1,200	186	211
15	2,670	1,230	188	213
17	2,950	1,270	189	215
20	3,150	1,290	190	217
22	3,430	1,330	191	219
25	3,730	1,370	192	221
27	4,010	1,400	193	224
30	4,290	1,440	195	226
32	4,590	1,470	196	228
35	4,870	1,510	197	230
37	5,170	1,540	198	223
40	5,710	1,740	205	231
42	5,990	1,770	206	233
45	6,290	1,800	207	235
47	6,590	1,840	208	237
50	6,870	1,880	209	239
52	7,150	1,910	210	241
55	7,340	1,940	211	243
57	7,710	1,980	212	245
60	8,010	2,020	213	247

This datasheet does not show the complete range but only the models most suitable for the application.

TOREX®

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Animal Feed Milling

Loss-In-Weight Feeding Systems - MBF+BE

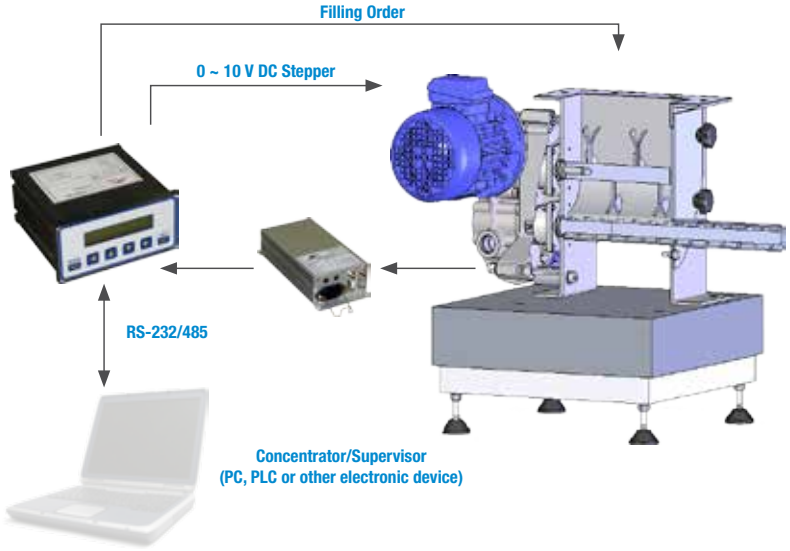
20

Description

MBF and BE Loss-In-Weight Screw Feeders consist of a steel-reinforced SINT® engineering polymer body (optionally body entirely manufactured in stainless steel), a horizontally mounted rotating agitator tool, a feeder screw beneath the agitator tool, a feeder pipe enclosing the protruding feeder screw, one independent drive unit each for agitator and feeder screw and an optional electronically operated scale pan mounted on load cells.
The system is able to assess any variation in weight in time adjusting the feed rate by varying the speed of both discharging and feeding device.

Function

Wherever powders or granular materials have to be continuously fed and metered, MBF-BE type Loss-In-Weight Screw Feeders offer exceptional operating versatility due to a highly precise metering performance and excellent user-friendliness.
MBF series Micro-Batch Feeders for powder and granular material feeding are particularly suitable for poorly flowing materials which tend to clog, along with adhesive products. Poorly flowing materials with cohesion or bridging problems are homogeneously fed into the feeding zone by the blending shaft which is shaped according to the material properties.
Depending on the user's individual requirements, MBF Micro-Batch Feeders can be supplied with alternative feeder screws and blending tools and with various accessories.



Applications

Loss-in-weight systems, which come in various configurations, are suitable for feeding of powdery or granular materials.
Typical positions within a plant are on weighing scales for loss-in-weight installations above the mixer. Furthermore, they may be installed in a separate part of the plant where all additives are dosed.

Benefits

- ✓ **Simplification of automation of the feeding process;**
- ✓ **Quick integration into new or existing production processes;**
- ✓ **Suitable for installations in a battery configuration;**
- ✓ **Easy to use, clean and maintain;**
- ✓ **Minimum downtime during product change;**
- ✓ **Highly reliable and durable;**
- ✓ **Functional assessment in WAMGROUP®'s own test facility based on decades of experience in bulk solids feeding and metering;**
- ✓ **Attractive price.**

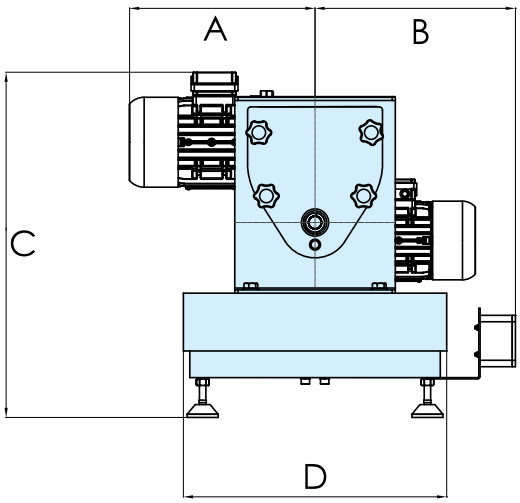
Animal Feed Milling

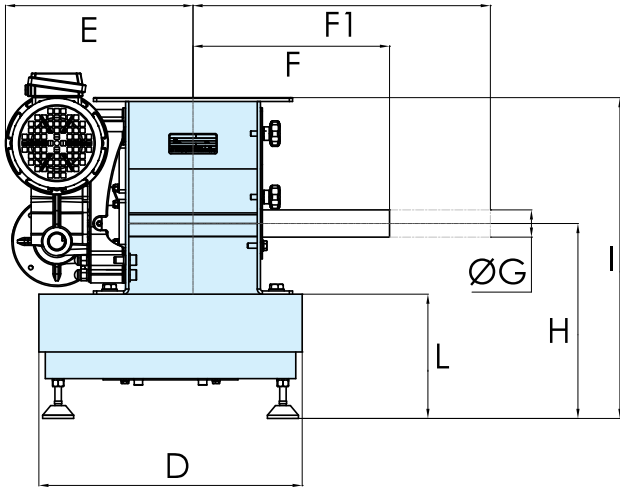
Loss-In-Weight Feeding Systems - MBF+BE

Technical Features / Performance

- Continuous real-time controlling and adjustment depending on material weight and flow
- Feeding accuracy between 0.5 and 1%
- Sturdy, compact system with contact surfaces manufactured from suitable construction materials
- Interchangeablity of standard components and accessories within the feeder range
- Micro-Batch Feeder available with ATEX-certification
- Feed hoppers having different geometry and volume

Overall Dimensions





MODEL	A	B	C	D	E	F	F1	Ø G	H	I	L
042	298	312	538	410	292	306	476	42	304	500	194
073	335	372	570	510	417	435	685	76	333	685	199
114	335	372	589	510	417	435	685	114	333	703	199

Dimensions in mm

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

Micro-Batch Feeders MBF

20

Description

The MBF Micro-Batch Feeder for continuous volumetric feeding of powdery materials consists of a casing entirely manufactured from stainless steel or a steel-reinforced SINT® engineering polymer body, a horizontally mounted rotating agitator tool, a feeder screw beneath the agitator tool, a feeder pipe enclosing the protruding feeder screw, as well as one drive unit each for agitator and feeder screw.

Function

MBF Micro-Batch Feeders are particularly suitable for poorly flowing materials which tend to clog, as well as for adhesive products.
Fed through a bag opening hopper, a bulk bag discharger, or another feeding device, the agitator tool manages to keep the material flowing, reducing at the same time the possibility of formation of lumps or bridges.
The size of the material particles is of utmost importance when choosing the type of feeder screw. Poorly flowing materials with cohesion or bridging problems are homogeneously fed into the feeding zone by the blending or agitator shaft which is shaped according to the product properties.
Depending on the user's individual requirements, the MBF Micro-Batch Feeder can be supplied with alternative feeder screws and blending tools and with various accessories.

Applications

MBF, which come in various configurations, are suitable for feeding of granules or powders.
The flexible design enables feeding of flour, gluten, vitamin or additives in general.
Typical areas of application are lines of production for enriched flours or for formulation of flours for special application lines.
Typical positions within the plant are on weighing scales for loss-in-weight installations next to the mixer. Furthermore, they are fitted inside dosing stations on top of weighing scales upstream of the mixer.

Benefits

- ✓ **Easy integration into the plant;**
- ✓ **Feeding of different additives with the same unit thanks to component interchangeability;**
- ✓ **Small number of parts makes maintenance easy and quick;**
- ✓ **Independent drives for agitator and feeder tool leave all options open in terms of drive power and tool speed;**
- ✓ **Maximum safety for OEM and End User thanks to ATEX-certification;**
- ✓ **Process reliability due to back-up by WAMGROUP® test labs ;**
- ✓ **High degree of homogeneity of fed material tank to blending/agitating tool;**
- ✓ **Easy and quick internal cleaning thanks to quick-access inspection panel.**

DS.220.MBF.EN.March2012.R00

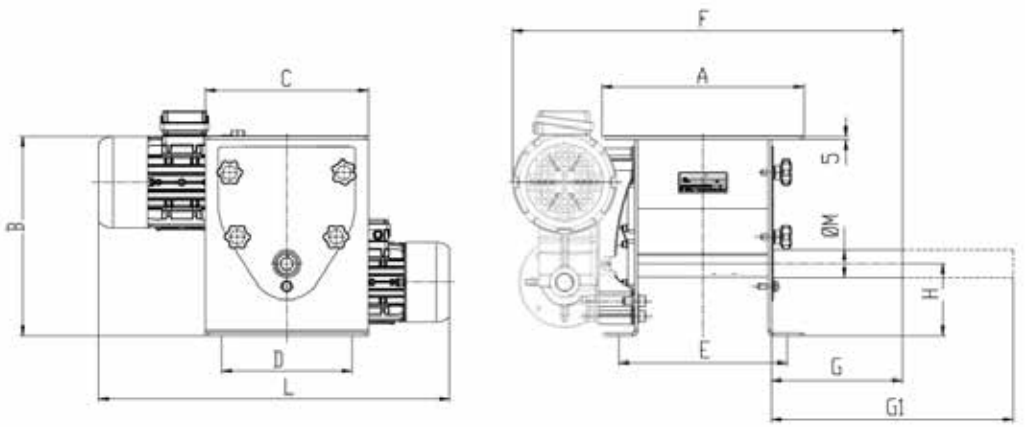
Animal Feed Milling

Micro-Batch Feeders MBF

Technical Features / Performance

- Wide range of interchangeable machine components
- Suitable for powders or granules
- Compact design, small footprint
- 3 sizes available with feed rates ranging from 3 dm^3/h to 4,000 dm^3/h
- Agitator and feeder tool with independent drives
- Internal geometry ensures smooth feeding of particularly difficult materials
- No material residue
- Quick-access inspection panel available for stainless steel feeders
- Contact surfaces in SINT® engineering polymer or 304 SS (316 optional)
- Different types of 304 SS shaft seals

Overall Dimensions



MBF	A	B	C	D	E	F	G	G1	H	L	M	N	dm^3	kg
042	310	295	250	200	260	595	200	370	100	535	42	12.5	5	40
073	464	486	390	305	410	855	250	500	135	600	76	12.5	28	105
114	464	486	390	305	410	855	250	500	135	600	114	12.5	35	110

Dimensions in mm

This datasheet does not show the complete range but only the models most suitable for the application.

DS.220.MBEEN.March2012.R00

WAM®

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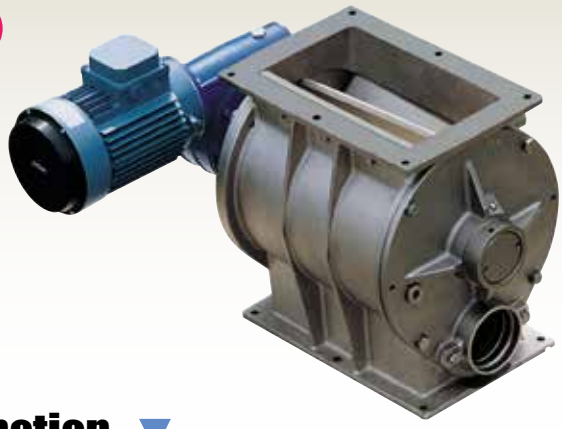
Animal Feed Milling

Blow-Through Rotary Valves RVS

21



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 construction and air-purged seals;
- ✓ ATEX Zone 22-certifed;
- ✓ 304 SS inserts for granules;
- ✓ Cast iron or 304/316 SS construction material; nickel coating and various other rotor versions available to offer the best configuration for most application requirements;
- ✓ Pipe connections included simplifying unit installation and removal.

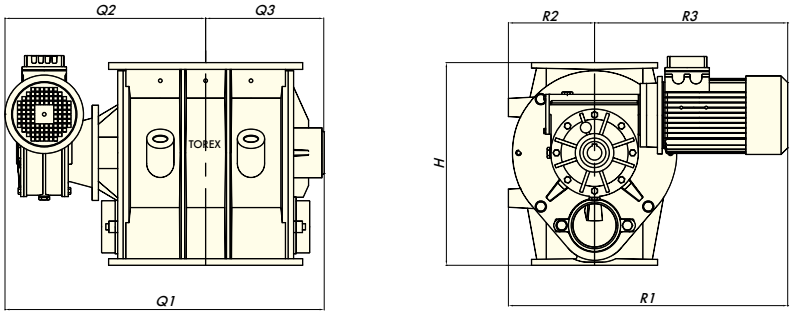
Animal Feed Milling

Blow-Through Rotary Valves RVS

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 ~ 150 °C (-4° F ~ 240° F)
- Maximum differential pressure: 0.8 bar (11.6 psi)
- Cast iron or 304/316 SS construction
- Nickel coating available
- Rotor with beveled 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 construction materials and treatments available depending on material handled

Overall Dimensions



	TYPE	Dimensions in mm							Electric Motor	
		Q1	Q2	Q3	R1	R2	R3	H	kW	min^{-1}
30 RPM	RVS/C 05	505	342	163	550	130	420	335	0.55	1,400
	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	1,400

	TYPE	Dimensions in mm							Electric Motor	
		Q1	Q2	Q3	R1	R2	R3	H	kW	min^{-1}
20 RPM	RVS/C 05	505	342	163	550	130	420	335	0.55	900
	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

	TYPE	Dimensions in mm							Electric Motor		Pre-Torque
		Q1	Q2	Q3	R1	R2	R3	H	kW	min^{-1}	
10 RPM	RVS/C 05	475	342	163	517	130	387	335	0.37	1,400	YES
	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

This datasheet does not show the complete range but only the models most suitable for the application.

DS.220.RVS.EN.March2012.ROO

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Animal Feed Milling

RV-RVR Drop-Through Rotary Valves

21

Description

RV Drop-Through Rotary Valves consist of a tubular cast iron or stainless steel casing, a horizontally mounted rotor with a certain number of V-shaped cross section compartments, a drive unit and a casing cover opposite the drive end.

Function

RV Rotary Valves have been developed for maximum versatility in application. They are suitable for controlled discharging and feeding of powdery or granular materials from silos, hoppers, pneumatic conveying systems, bag filter houses, or cyclones.

Application

RV-RVR Rotary valves are fitted at the outlet of silos, bins or hoppers for feeding the discharged material with high accuracy into the downstream process.

DS.220.RVEN.March2012.R00

Benefits

- ✓ No product contamination due to 304/316 SS design and air-purged seals;
- ✓ ATEX zone 22-certifed;
- ✓ Square or round flanges ensure system compatibility and match with WAM® flanges;
- ✓ Cast iron or 304/316 SS, nickel coating, as well as various rotor versions available to ensure the most appropriate configuration for application requirements;
- ✓ Quick integration into the process thanks to easy handling;
- ✓ Modular design and easy maintenance thanks to small number of components.

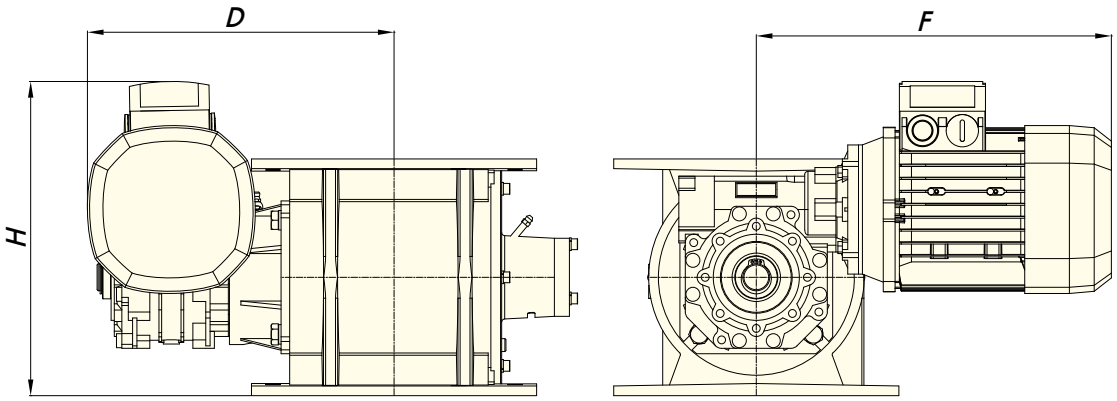
Animal Feed Milling

RV-RVR Drop-Through Rotary Valves

Technical Features / Performance

- Capacity: 2.2 ~ 19.5 litres per revolution (0.08 ~ 0.7 cu ft per revolution)
- Working temperature: - 20° C ~ 150° C (- 4° F ~ 300° F)
- Maximum differential pressure: 0.3 bar (4.4 psi)
- Cast iron or 304/316 SS design
- Nickel coating available
- Rotor with beveled blades available
- Easy access to internal mechanical parts
- Sturdy compact structure
- Small footprint
- Drive unit mounted directly on shaft without further bearing assembly or coupling
- Square or round flanges and inlet spouts
- Compatibility with WAM® standard flanges on inlet and outlet
- Different materials and treatments available depending on material handled

Overall Dimensions



TYPE	D*	F*	H*		kW
			RV	RVR	
RV/RVR 02 30 rpm	294	350	318	333	0.5
RV/RVR 02 20 rpm					
RV/RVR 05 30 rpm	328		348	373	0.75
RV/RVR 05 20 rpm					0.5
RV/RVR 10 30 rpm	364	394	425		1.1
RV/RVR 10 20 rpm					0.75
RV/RVR 20 30 rpm	392	419	472		1.5
RV/RVR 20 20 rpm					1.1

DS.220.RV.EN.March2012.R00

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

Loss-In-Weight Screw Feeders DCC

22

Description

DCC Loss-In-Weight Screw Feeders consist of a micro-screw feeder in a food-grade polymer body with stainless steel guards and feeder pipe and an optional electronically operated scales platform mounted on load cells.

Function

Specially suitable for weigh-batch or continuous feeding of dry, flowable powders and granular materials.
Weigh feeding is possible thanks to the combination with scales having an off-centre load cell which assesses any variation in weigth in time adjusting the feed rate by varying the speed of both discharging and feeding device if used together with electronic controls.

Application

Wherever powders or granular materials have to be continuously fed and metered, DCC-type Loss-In-Weight Screw Feeders offer exceptional operating versatility due to a highly precise metering performance and excellent user-friendliness.

DS.220.DCC.EN.March2012.R00

Benefits

- ✓ **No product contamination due to 316 SS construction and food-grade plastic material;**
- ✓ **Non-stick body;**
- ✓ **Easily transformable from volumetric to weigh-batch system by adding BE-type scales;**
- ✓ **Works either in BATCH or CONTINUOUS mode;**
- ✓ **Various drive options offer wide range of feed rates or metering capacities;**
- ✓ **Easy strip down;**
- ✓ **Easy to clean;**
- ✓ **ATEX certified drive components;**
- ✓ **Suitable for different materials in the same configuration;**
- ✓ **System completed with ANSY 8010 Electronic Control.**

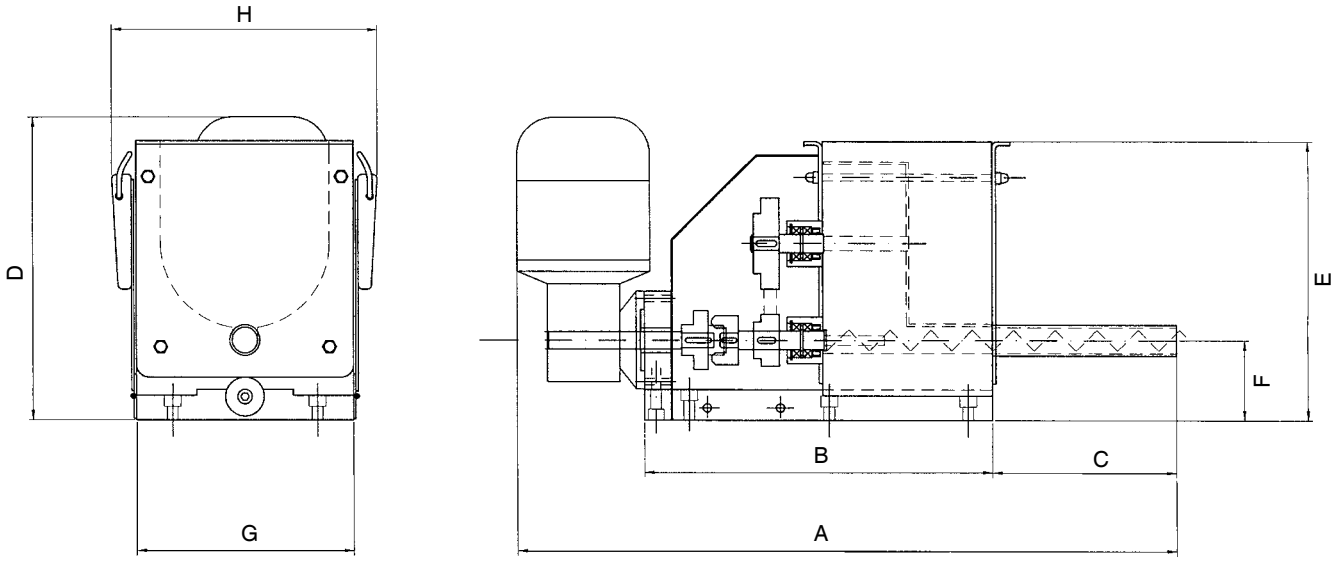
Animal Feed Milling

Loss-In-Weight Screw Feeders DCC

Technical Features / Performance

- Feed rates/metering capacities from 1.4 up to 244 dm^3/h (0.049 CFH up to 8,616 CFH)
- Accuracy up to 0.9%
- Operating temperature: -10° C ~ 50° C (14° F ~ 122° F)
- Metal parts made from 316 SS
- Food-grade polymer-cast one-piece body ensures free material flow
- Variable speed drive supplied on request
- Lightweight design
- Compact overall dimensions

Overall Dimensions



Dimensions in mm

TYPE	A	B	C	D	E	F	G	H
DCC 31	544	287	150	275	230	64	180	220
DCC 32	544	287	150	275	230	59	180	220

This datasheet does not show the complete range but only the models most suitable for the application.

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Animal Feed Milling

Rotary Level Indicators ILT

23

Description

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

Function

As long as material is present, the paddle of the ILT Bin Level Indicator does not rotate. As soon as the material level sinks below the paddle radius, rotation restarts activating other system components. The top or side-mounted indicators are commonly used for materials having a bulk density ranging between 0.5t/m³ (0.02 lb per cu in) and 2t/m³ (0.08 lb per cu in).

Application

Typically ILT Rotary Level Indicators are fitted on the vertical walls of a bin, silo or hopper at the desired maximum or minimum level. Equipped with an extension rod, they can also be mounted vertically into the roof plate.

Benefits

- ✓ **No product contamination due to the 304 SS shaft; and measuring paddle as well as non-toxic plastic fittings;**
- ✓ **No product contact with the casing;**
- ✓ **ATEX-zone 20/21-certifed;**
- ✓ **Adjustable via resetting force spring in 3 positions;**
- ✓ **Double threaded fitting ensures system compatibility;**
- ✓ **Use with different materials in the same configuration;**
- ✓ **Easy and quick installation and replacement;**
- ✓ **Compact overall dimensions;**
- ✓ **Lightweight due to aluminium alloy casing;**
- ✓ **Maintenance-free;**
- ✓ **Cost-effective.**

DS.220.ILTEN.March2012.R00

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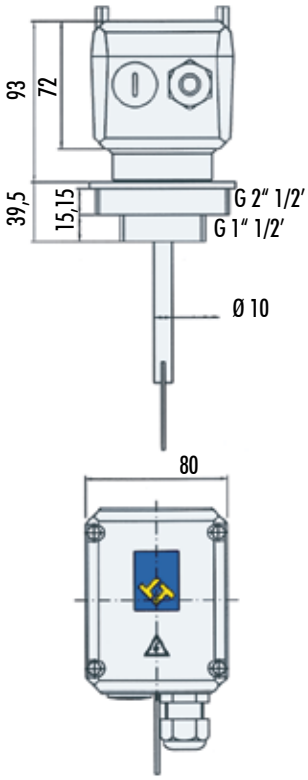
Animal Feed Milling

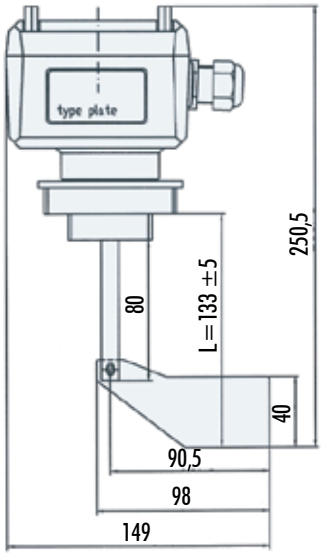
Rotary Level Indicators ILT

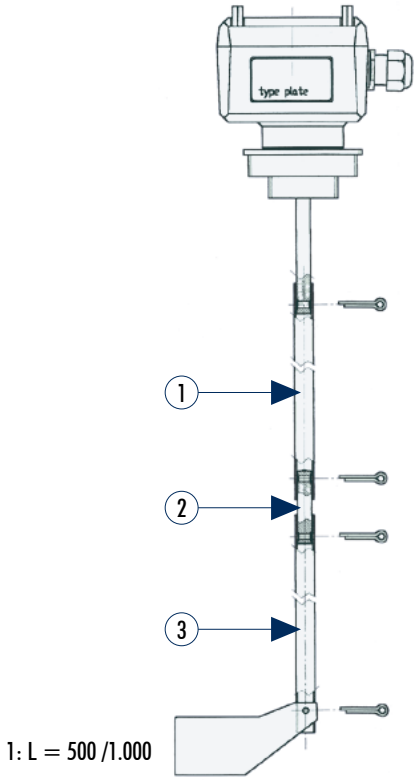
Technical Features / Performance

- Voltages available:
  - 24 V – 48 V (AC), 50-60 Hz;
  - 110 V – 230 V (AC), 50-60 Hz;
  - 24 V (DC)
- Signal output: Floating microswitch AC max. 250 V, 2 A
- Standard connection: thread G 1½" – G 2 ½"
- Enclosure: IP 66
- Working temperature inside vessel:
  - 20 °C to 80 °C (- 4° F to 178° F)
- Vessel maximum pressure: max. 0.8 bar (12 PSI)
- Threaded fitting material: plastic
- Rotating shaft and measuring paddle material: 304 SS
- Casing material: aluminium alloy
- Speed of measuring paddle: 1 rpm
- Friction clutch protection of the gearing from impacts of measuring paddle
- Self-opening double paddle for light materials
- Flanged connection as option
- Modular shaft extension up to 3 m (10 ft)
- External light

Overall Dimensions







This datasheet does not show the complete range but only the models most suitable for the application.

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Animal Feed Milling

Silo Safety System KCS

Description

KCS is a system supplied in components which are fixed to the silo for monitoring pressure and level of material level inside the silo.

The components are:

ILTA0 - 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

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.

Applications

The KCS can be used for different kind 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 filter may need 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.

DS.220.KCS.EN.March2012.ROO

TOREX®

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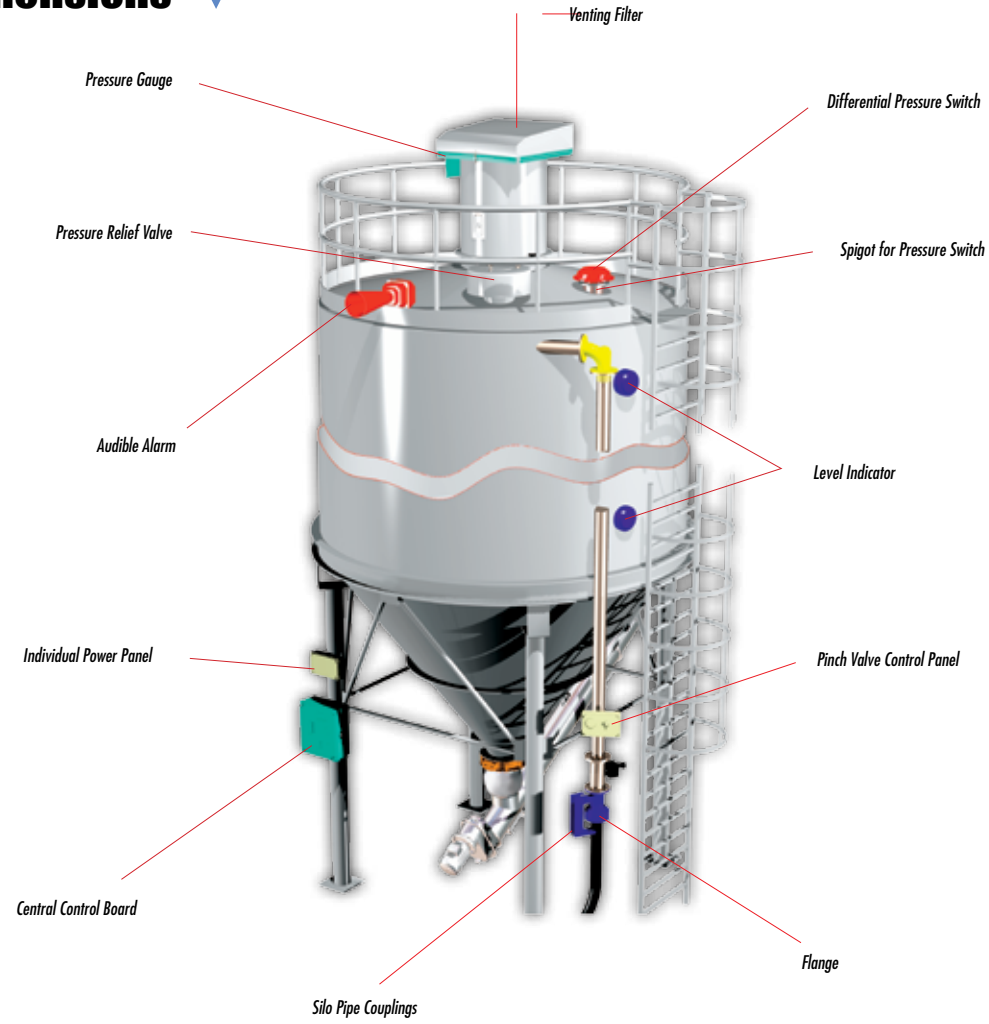
Animal Feed Milling

Silo Safety System KCS

Technical Features / Performance

- **Graphic display interface**
  The display and software logic presents information in written form.
- **Menu in different languages** (English, French, German, Dutch, Spanish and Italian)
  The messages provided by the system are included in the selected language.
  The language can be changed at any time.
- **Parallel handling of silos**
  The new 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.
- **Software updating easy and economical**
  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 the 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.
- **Greater safety against undesirable intrusion**
  The system is protected by means of a four-digit electronic code entered from the keyboard.
- **Possibility of extension**
  KCS Systems installed in a plant to which additional silos are connected can be easily extended at any time.
- **Versatility**
  Each silo is controlled separately. Each silo can have a configuration suitable for the specific use. Functioning of the related equipment of each silo is not affected by the settings made for the other silos.
- **Adaptability to existing plant**
  The KCS System is designed to be easily integrated with components of another make already installed on the plant, since not all users require a complete system.
- **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 requires any maintenance.

Overall Dimensions



This datasheet does not show the complete range but only the models most suitable for the application.

TOREX®

WAMGROUP®

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Animal Feed Milling

Pressure Relief Valves - VCP

25

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 shape 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

In 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 overcome the spring force. Once the pressure exceeds the preset value the lid is pushed up and the pressure can 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 EU 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;**
- ✓ **Time-saving maintenance due to few components.**

DS.220.VCPEN.March2012.R00

WAM®

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www.wamgroup.com

Animal Feed Milling

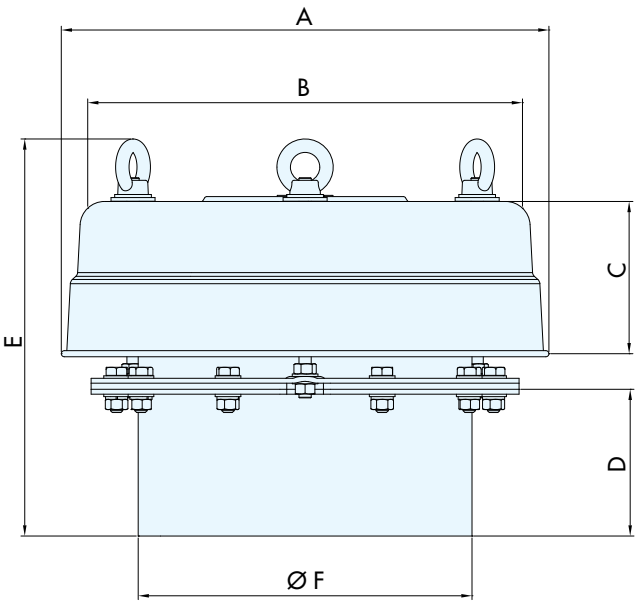
Pressure Relief Valves - VCP

Technical Features / Performance

- Carbon steel body (VCP…1C) painted RAL 7001 or 304 SS body (VCP…2C)
- Sizes: 273mm (11 in); 356mm (14 in)
- Weather protection cover in stainless steel
- In compliance with ATEX certification (zone 21) and HSE British Guideline
- Air volume up to 13,000 Nm^3/h (7,650 cfm)
- Setting range: excess pressure from 300mm H_2O (0.44 psi) up to 800mm H_2O (1.16 psi)
- Setting range: negative pressure from -50mm H_2O (0.07 psi) up to -100mm H_2O (0.15 psi)
- No welding seams inside
- Pre-equipped for inductive signalling sensors
- Protective bellows for springs
- White seals for standard or no contact with product application
- Small number of components
- Easy part replacement
- Lightweight and easy to handle

Overall Dimensions

	Size 273 MM	Size 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



This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

Pressure Relief Valves VHS

26

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 stricter 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 valve. 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 housing, 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.

Applications

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;**
- ✓ **The special properties of the diaphragm help avoid blockage, as well as the formation of material crusts;**
- ✓ **The working principle of the VHS Pressure Relief Valve itself is innovative. Its 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.**

DS.220.VHS.EN.March2012.ROO

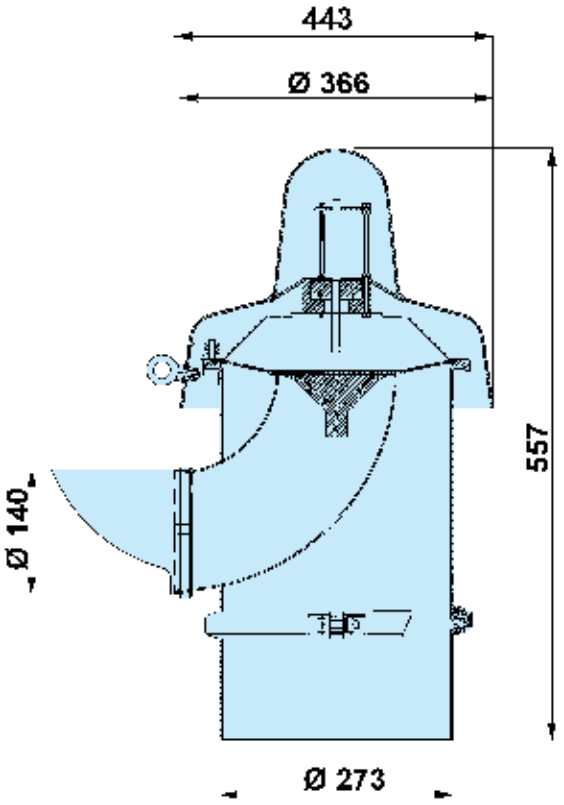
Animal Feed Milling

Pressure Relief Valves VHS

Technical Features / Performance

- Carbon steel casing (VHS2731B), painted RAL 7001 (silver-grey) or in 304 stainless steel (VHS2732B)
- Body diameter = 273mm (10 in)
- Air volume up to 5,000Nm^3/h (2,950 cfm)
- Exhaust outlet spout for connection with centralised suction system
- These 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
- Easier part replacement
- Lightweight and easy to handle
- Conveyed emission

Overall Dimensions



TYPE	Excess Pressure	Negative Pressure	kg
VHS273	300 ~ 1,000 mm H_2O*	-50 mm H_2O*	22

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

EXTRABEND® and EXTRACURVE® Pipe Elbows

27

Description

Short-radius EXTRABEND® and wide-radius EXTRACURVE® Pipe Elbows are inserted as a link in pneumatic conveying ducts. Both models are manufactured from a one-piece SINT® engineering polymer cast. Wear-resistant EXTRABEND® and EXTRACURVE® Pipe Elbows deflect incoming powders, pellets or granular materials towards the outlet minimising material degradation and elbow wear, avoiding at the same time any clogging or plugging.

Function

The EXTRABEND® short-radius Pipe Elbow offers a substantially innovative geometry suitable to reduce wear during operation in all types of dilute phase pneumatic conveying systems.
The body cavity next to the point of diversion generates an internal material turbulence which protects the elbow from wear caused by the material travelling through the duct.
The EXTRACURVE® represents the latest evolution in the development of wide angle pipe elbows. Due to its flexibility and adaptability installation is quick while durability is highly increased.

Application

EXTRABEND® and EXTRACURVE® Elbows are used as a link in silo filling pipes and in ductworks of pneumatic conveying systems. They excel through their particular resistance to wear with abrasive materials.

Benefits

- ✓ **Long-life elbow suitable for abrasive materials thanks to anti-wear SINT® engineering polymer material;**
- ✓ **Reduced installation costs thanks to elastic properties (no extra work for connection on site required);**
- ✓ **Reduced installation and maintenance time as elbows are easy to handle thanks to lightweight design;**
- ✓ **Reduced costs for project designing thanks to elastic properties (elastic elbows fit different plant layouts);**
- ✓ **Considerable reduction of noise and flow resistance, consequently energy saving pneumatic conveying.**

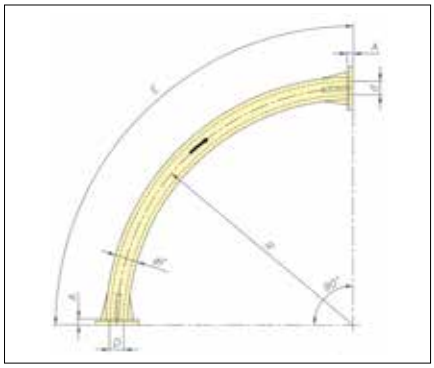
Animal Feed Milling

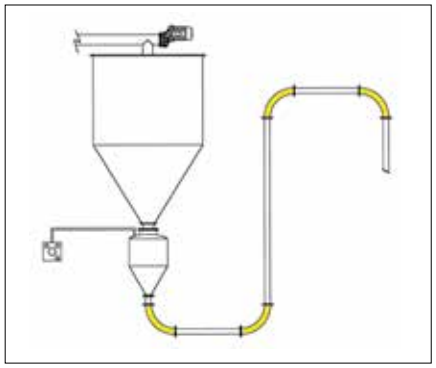
EXTRABEND® and EXTRACURVE® Pipe Elbows

Technical Features / Performance

- SINT® engineering polymer
- Range from 2″ to 4″
- PN-type connecting flanges
- Up to 1.5 bar (22 psi) in lean phase
- Max temperature: 80° C (176° F)

Overall Dimensions

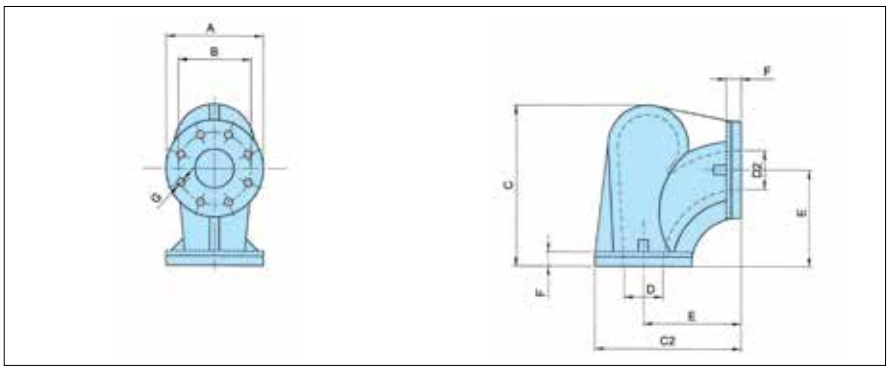




EXTRACURVE®

EW	A	Ød	ØD	E	ØF	R	kg
2″	23	52	55	1,400	85	900	7.3
3″	30	80	83	1,400	110	900	9.6
4″	30	105	108	1,400	140	900	13.4

Dimensions in mm



EXTRABEND®

Type	Ø Piping	A	B	C	C2	Ø D	Ø D2	E	F	Ø G	Flange Drillings	kg
EB 2	2″	165	125	232	220	55	52	140	23	18	4	2
EB 3	3″	200	160	330	300	85	80	200	30	18	4	5
EB 4	4″	220	180	435	373	108	105	263	30	18	8	7

Dimension in mm

This datasheet does not show the complete range but only the models most suitable for the application.

WAM®

WAMGROUP®

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Animal Feed Milling

Diverter Valves VAD

28

Description

VAD Diverter Valves consist of an aluminium die-cast casing and a swivel flap that closes one duct or the other. The range suits common pipe standards used for pneumatic conveying. Internal sealing of the body is achieved through low friction gaskets.
Surface treatment is available to make the valves suitable for operation with different materials.

Function

VAD-type Diverter Valves are suitable for use in pneumatic conveying lines for handling any type of material in powdery or granular form. Through activation of the actuator direction of the material flow is changed. VAD-type Diverter Valves ensure minimum pressure loss and contamination-free, pressure-proof operation.

Application

VAD Diverter Valves are fitted directly to the pneumatic conveying ducts wherever it is necessary to divert the flow of material to different production lines.

Benefits

- ✓ **ATEX-certified actuator components;**
- ✓ **Manual, Pneumatic and Electric actuators available;**
- ✓ **Square counter-flanges ensure system compatibility;**
- ✓ **Suitable for different materials in the same configuration;**
- ✓ **Quick integration into the process thanks to lightweight design;**
- ✓ **Time-saving maintenance thanks to small number of components.**

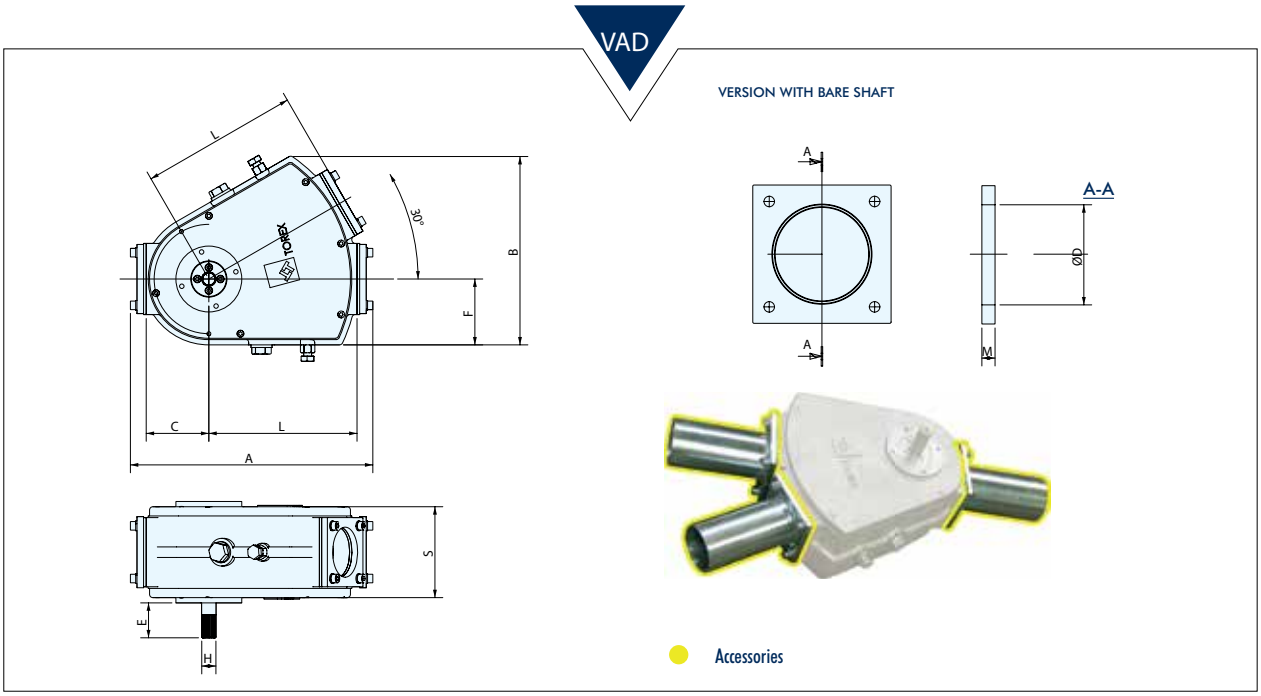
Animal Feed Milling

Diverter Valves VAD

Technical Features / Performance

- Lightweight design
- Compact overall dimensions
- Basic structure manufactured from cast aluminium
- Operating temperature: -20° C ~ 80° C (-4° F ~ 180° F);
- Diverter operating pressure: max. 2.5 bar (35 psi);
- Low friction gaskets
- Pneumatic actuator activation pressure: max. 8 bar (116 psi);
- Range from 50 mm up to 100 mm
- Micro-switch box for signalling actuator position
- Electro-pneumatic actuator with possibility of different supply voltages 24/48/110/230 V AC

Overall Dimensions



TYPE	D NOM. inches	D NOM.	L	A	B	C	E	F	H DIN 5482	S	kg
VAD 050	1 ½"	50	170	289	224	75	52.5	80	Toothing 22x19	122	10.5
VAD 080	2 ½"	80	225	368	287	95	52.5	100		135	17.5
VAD 100	3 ½"	100	240	393	311	105	52.5	110		155	21.0

TYPE	ØD NOM. inches	ØD	M
VAD 050	1 ½"	48	10
VAD 080	2 ½"	76	10
VAD 100	3 ½"	102	10

Dimensions in mm

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

Diverter Valves VAR

28

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 virtually 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 one.

Application

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

Benefits

- ✓ **No contamination due to the 304 contact parts inserts;**
- ✓ **Minimum pressure drop thanks to inflatable seal;**
- ✓ **Minimum friction during diverting thanks to inflatable seal;**
- ✓ **ATEX-compliant pneumatic actuator and solenoid valves;**
- ✓ **Use with different materials in the same configuration;**
- ✓ **Quick integration into the process thanks to lightweight design;**
- ✓ **Time-saving maintenance thanks to small numbers of components.**

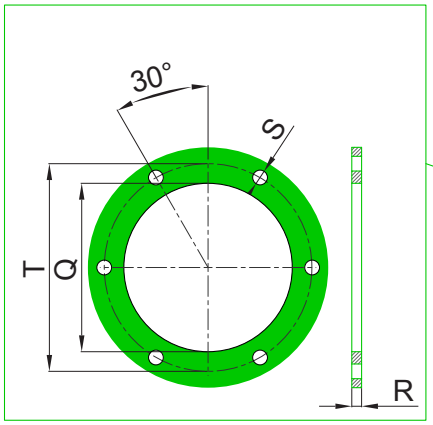
Animal Feed Milling

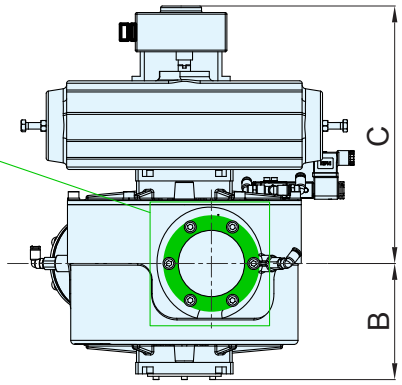
Diverter Valves VAR

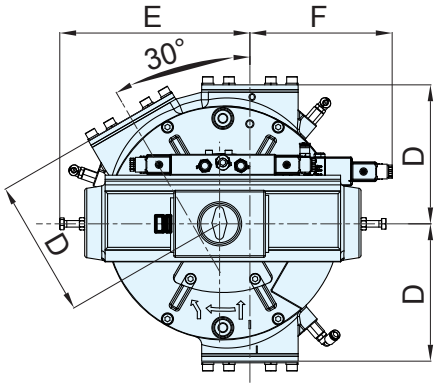
Technical Features / Performance

- Basic structure manufactured from cast aluminium
- Operating temperature: -20° C ~ 80° C (-4° F ~ 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)
- Diameters from 80mm to 150mm (3 to 6 in)
- Micro-switch box for signalling actuator position
- Electro-pneumatic actuator with possibility of 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	10	
VAR 175	216	453	313	432	197	217	177		
VAR 200	233	469	338	436	186	245	208		

Dimensions in mm

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

External Electric Vibrators MVE-Type

29

Description

The range of MVE-type External Electric Vibrators is the result of fifty years of experience in vibrating technology for various industrial applications worldwide.

Function

MVE-type External Electric Vibrators are used in a number of different applications: as material flow aids, for screening, conveying, cleaning, detaching, compacting and sorting.

Application

MVE-type External Electric Vibrators are used in powder and granular material processing plants where flow aids are required.
Typical applications are hopper emptying, de-stoning machines, vibro-separators, bin activators.

DS.220.MVE.EN.March2012.ROO

Benefits

- ✓ 2-years-warranty including electric components;
- ✓ Ex-stock delivery;
- ✓ High quality/price ratio;
- ✓ Low maintenance.

Animal Feed Milling

External Electric Vibrators MVE-Type

Technical Features / Performance

- SKF Bearing
- Working temperature: -20° to 40°C (-4° F to 104° F)
- Standard voltage: 230/400V, 50Hz (264/460V 60Hz)
- Standard: Atex Ex II 3D CERTIFIED

Overall Dimensions

TYPE	Dimensional Features															
	FIG.	Size	C (mm) 50Hz	C (mm) 60Hz	M (mm) 50Hz	M (mm) 60Hz	A (mm)	B (mm)	Ø G (mm)	Bores Qty.	D (mm)	E (mm)	F (mm)	H (mm)	I (mm)	L (mm)	N (mm)
MVE 40/15	A	10	211		45		*	*	*	4	130	136	12	48	94	121	85
MVE 90/15	B	20	219		41		62-74	106	9	4	131	159	15	64	121	123	112
MVE 200/15	C	30	260		43		***	***	***	4	154	175	15	79	142	163	131
MVE 400/15	D	40	338		75		105	140	13	4	168	196	22	92	169	178	158
MVE 500/15	D	40	338		75		105	140	13	4	168	196	22	92	169	178	158
MVE 300/15	D	50	311		47		120	170	17	4	208	210	22	94	180	205	170
MVE 700/15	D	50	397		90		120	170	17	4	208	210	22	94	180	205	170
MVE 1100/15	D	50	451		112		120	170	17	4	208	210	22	94	180	205	170
MVE 1400/15	D	60	448		98		140	190	17	4	229	247	30	120	247	220	222
MVE 1700/15	D	60	448		98		140	190	17	4	229	247	30	120	247	220	222
MVE 2400/15	D	60	510	448	129	98	140	190	17	4	229	247	30	120	247	220	222
MVE 2500/15	D	70	522	486	123	105	155	225	22	4	272	284	40	140	267	250	235
MVE 3000/15	D	70	522	486	123	105	155	225	22	4	272	284	40	140	267	250	235
MVE 3800/15	D	75	588	538	140	115	155	255	23.5	4	302	318	35	147	295	273	264
MVE 4300/15	D	75	588		140		155	255	23.5	4	302	318	35	147	295	273	264
MVE 5500/15	D	80	603		130		180	280	26	4	332	360	37	167	345	304	310
TYPE	Dimensional Features																
	FIG.	Size	C (mm) 50Hz	C (mm) 60Hz	M (mm) 50Hz	M (mm) 60Hz	A (mm)	B (mm)	Ø G (mm)	Holes Qty.	D (mm)	E (mm)	F (mm)	H (mm)	I (mm)	L (mm)	N (mm)
MVE 7200/15	D	85	605		120		200	320	28	4	385	410	49	200	422	325	378
MVE 9000/15	D	85	605		120		200	320	28	4	385	410	49	200	422	325	378
MVE 10000/15	E	90	726	646	160	120	125	380	38	6	452	430	44	204	422	367	378

Fig A

	A mm	B mm	Ø G mm
*	62 - 74	106	9
	33	83-102	7

Fig C

	A mm	B mm	Ø G mm
***	80	110	11
	90	125	13
	124	110	11
	135	115	11

Fig C

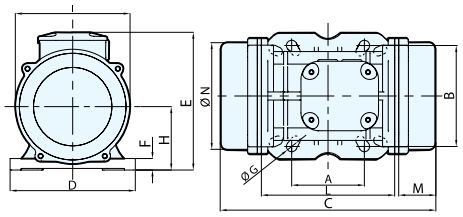


Fig D

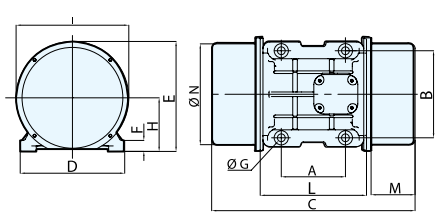
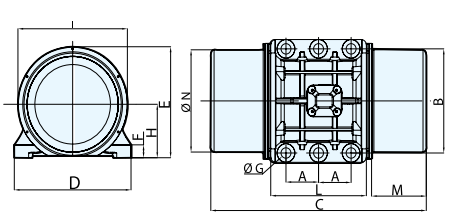


Fig E



This datasheet does not show the complete range but only the models most suitable for the application.

OLI®

WAMGROUP

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Animal Feed Milling

External Pneumatic Turbine Vibrators OT-Type

30

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 moved. OT Turbine Vibrators are installed on bins to prevent bridging or rat holing and for the improvement of material flow in chutes, screens and vibrating tables.

Function

OT-type Turbine Vibrators consist of an inside anodized "anticorodal" casing inside. 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 to **FIBC dischargers or on storage, weigh or feed hoppers.**

DS.220.OT.EN.March2012.ROO

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 the fabricated structure;**
- ✓ **Low noise level;**
- ✓ **Low air consumption;**
- ✓ **Durable;**
- ✓ **Easy to install;**
- ✓ **Oil-free, maintenance-free operation.**

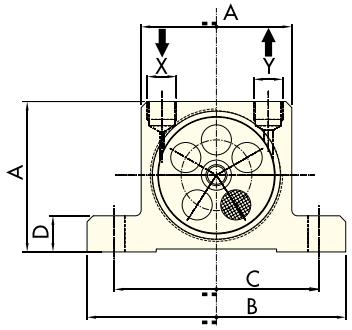
Animal Feed Milling

External Pneumatic Turbine Vibrators OT-Type

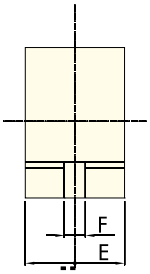
Technical Features / Performance

- 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



Turbine-type



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	
	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	17,5000	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 does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

External Pneumatic Vibrators S-Type

31

Description

S-Type External Pneumatic Ball Vibrators develop frequencies of up to 35,000 r.p.m. They are used wherever powdery materials have to be moved. S-type Ball Vibrators are installed on bins to prevent bridging or rat holing and for the improvement of material flow on chutes, screens and vibrating tables.

Function

S-type Ball Vibrators are used for emptying without bridging (hoppers, bins), assisting the flow of material from chutes, as well as for the prevention of adhesion on pipes or plates.

Application

S-type Ball Vibrators are used in all types of powdery or granular material processing plants where flow aids are required.
Typical application are the discharge of cereal powders, starch and additives from small hoppers or silos, or cleaning of pipes in the plant.
They are fitted to FIBC discharger or storage, weigh and feeding hoppers.

DS.220.S.EN.March2012.ROO

Benefits

- ✓ **Large amplitude even with low operating pressure;**
- ✓ **ATEX compliance – Ex II 2GD;**
- ✓ **Variable frequency;**
- ✓ **Generates vibrations with high frequency and low amplitude;**
- ✓ **Solves all mass flow problems;**
- ✓ **Maintenance-free;**
- ✓ **Durable;**
- ✓ **Lubrication-free;**
- ✓ **Low air consumption;**
- ✓ **Casing in anodised aluminium.**

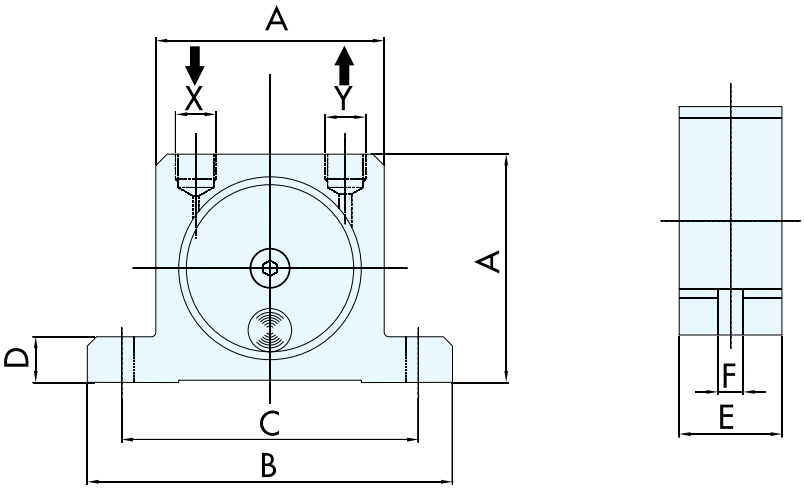
Animal Feed Milling

External Pneumatic Vibrators S-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 to 88 psi)

Overall Dimensions



TYPE	A		B		C		D		E		F		X-Y		
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in		kg	lb
S8	50	1.97	86	3.39	68	2.68	12	0.47	20	0.79	7	0.28	1/8"	0.13	0.29
S 10															
S 13	65	2.56	113	4.45	90	3.54	16	0.63	25	0.98	9	0.35	1/4"	0.26	0.57
S 16									28	1.10				0.30	0.66
S 20	80	3.15	128	5.04	104	4.09	16	0.63	33	1.30	9	0.35	1/4"	0.53	1.17
S 25									38	1.50				0.63	1.39
S 30	100	3.94	160	6.30	130	5.12	20	0.79	45	1.77	11	0.43	3/8"	1.13	2.49
S 36									50	1.97				1.34	2.95

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	
	Vpm			kg	lb	kg	lb	kg	lb	l/min	CF/min	l/min	CF/min	l/min	CF/min
S8	25,500	31,000	35,000	13	29	26	57	36	79	83	2.9	145	5.1	195	6.9
S 10	22,500	28,000	34,000	25	55	47	103	71	156	92	3.2	150	5.3	200	7.1
S 13	15,000	18,500	22,500	32	70	55	121	87	191	94	3.3	158	5.6	225	7.9
S 16	13,000	17,000	19,500	45	99	80	176	110	242	122	4.3	200	7.1	280	9.9
S 20	10,500	14,500	16,500	72	158	122	268	172	378	130	4.6	230	8.1	340	12.0
S 25	9,200	12,200	14,000	93	205	157	345	205	451	160	5.7	290	10.2	425	15.0
S 30	7,800	9,700	12,500	151	332	247	543	321	706	215	7.6	375	13.2	570	20.1
S 36	7,300	9,000	10,000	206	453	315	693	405	891	260	9.2	475	16.8	675	23.8

This datasheet does not show the complete range but only the models most suitable for the application.

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Animal Feed Milling

Pneumatic Hammers MARTSHOCK “PS”

32

Description

PS-type MARTSHOCK Single Impact Electro-pneumatic Hammers belong to those flow aids that act destructively as bridge breakers. The mechanical energy released at regular intervals, at the moment of collision, is transmitted through the container wall to the stored material. MARTSHOCK Hammers are suitable for removal of adhesive material crusts on walls, pipes or bins, and as bridge breakers in silos. The blow impulse leads to the complete detachment of the crusts or the collapse of a material bridge.
MARTSHOCK Hammers are particularly suitable for retrofitting to existing silo cones or hoppers as no emptying of the bin or drilling of the wall is required.

Function

The MARTSHOCK Pneumatic Hammer produces a violent impact on the wall on which it is fitted. It is suitable for all bin shapes and sizes.

Application

PS-type MARTSHOCK is used in all types of **powdery or granular material** processing plants where flow aids are required.
Typical applications are the discharge of flours or additives where MARTSHOCK are fitted on **storage silos** or **hoppers.**

Benefits

- ✓ **Suitable for powdery or granular materials even if hygroscopic;**
- ✓ **Avoids further compaction of the material to be handled;**
- ✓ **The intermittent hammering effect radically resolves all mass flow problems;**
- ✓ **No damage to the structure of the bin;**
- ✓ **ATEX 22 compliance – Ex II 3D T100° (with ATEX Accessories);**
- ✓ **Low-noise impact (with noise-abating accessories);**
- ✓ **Durable;**
- ✓ **Easy maintenance;**
- ✓ **Lubrication-free.**

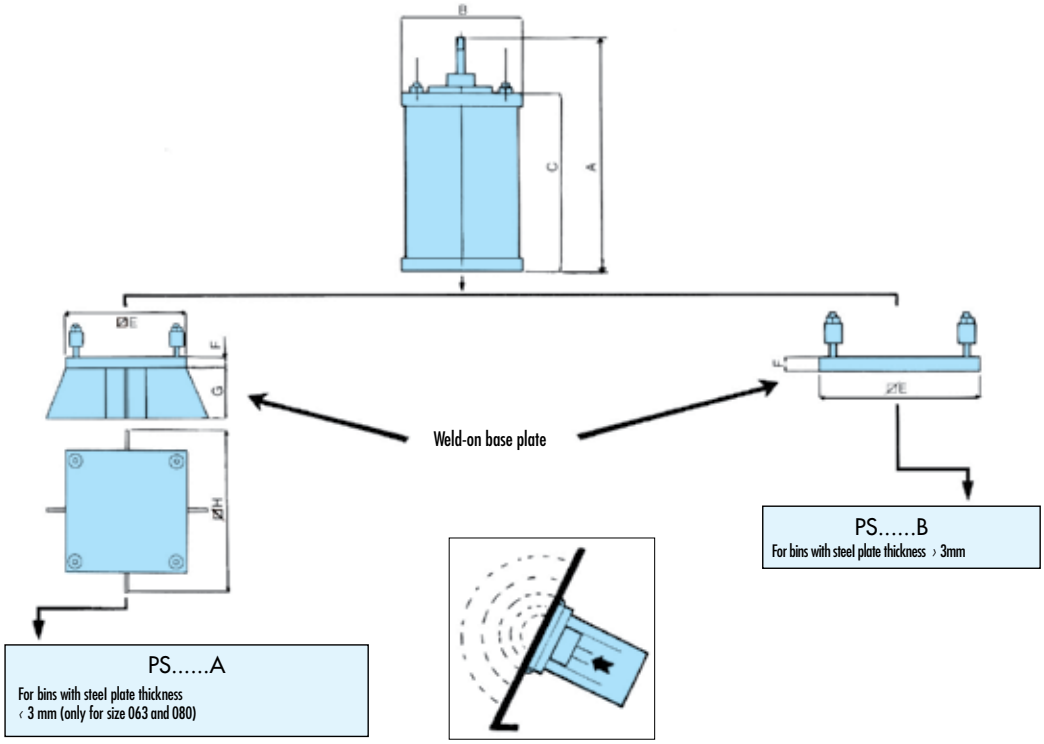
Animal Feed Milling

Pneumatic Hammers MARTSHOCK "PS"

Technical Features / Performance

- Galvanised steel casing
- Weld-on steel plate included (2 types with different thicknesses)
- 4 vibration dumpers
- PVC gasket situated between weld-on steel plate and casing
- Safety chain (to fix the casing to the silo/hopper)
- Air inlet (PS40 : ⅛" - PS63-80: ¼")
- Electro-pneumatic kit
- Working temperature: -20° C ~ 80° C (-4° F ~ 180° F)
- Working pressure: 3 ~ 6 bar (44 ~ 88 PSI)
- Accessories:
  - ATEX 22 IP 65 coils (BOB024CC15 not included)
  - ATEX 22 and noise-abating components
  - Control panel for adjustment of operation and pause intervals

Overall Dimensions



TYPE	A	ØB	C	ØE	F	G	ØH	Air consumption Nl per cycle		Air connection	Energy				kg	Packaging
											3 bar		6 bar			
								3 bar	6 bar		J	kpm	J	kpm		
PS040	245	115	175	130	20	60	160	0.6	1.3	1/8 pipe 8 mm	8.4	0.86	18.1	1.85	8.5	270x185x170
PS063	281	150	213	160	20	75	220	1.17	2.3	1/4 pipe 8 mm	28.8	2.94	62	6.34	16.5	450x200x220
PS080	340	200	266	200	25	94	250	2.3	4.8	1/4 pipe 8 mm	59.2	6.0	153	15.6	30	450x200x220

Dimension in mm

This datasheet does not show the complete range but only the models most suitable for the application.

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Animal Feed Milling

External Pneumatic Impact Vibrators P-Type

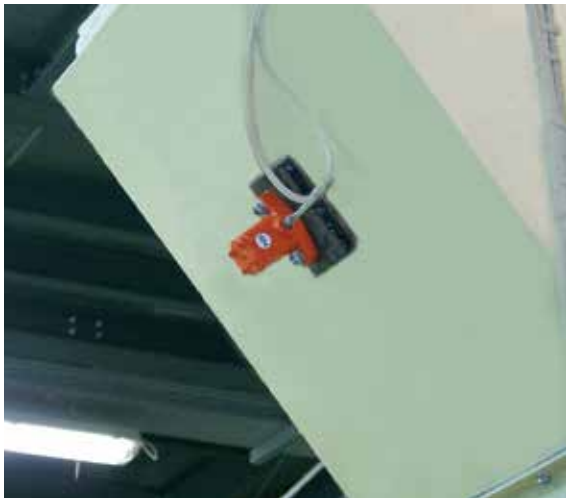
33

Description

P-type External Pneumatic Impact Vibrators are particularly robust and are used for detaching material incrustations inside pipes or bins. In areas where noise prevention is not a priority P-type Vibrators are the best value.

Function

P-type Piston Vibrators are used in powdery and granular material processing plants where flow aids are required. They produce an extremely high impact force and they are particularly suitable for use on silos, hoppers and conveying pipes to avoid the formation of bridges and to prevent rat holing.



Application

P-type Piston Vibrators are used in all types of powdery and granular material processing plants where flow aids are required.

Benefits

- ✓ Impacts like a rubber hammer;
- ✓ Ex II 3GD compliance (with noise-abating accessories);
- ✓ Vibration with high peak acceleration;
- ✓ Low noise versions with elastomer insert (air-cushioned version);
- ✓ Can operate mounted in any position;
- ✓ Optimal START and STOP behaviour;
- ✓ No damage to the structure of the bin;
- ✓ Maintenance-free, when used with filtered/lubricated air;
- ✓ Low air consumption;
- ✓ Durable.

DS.220.EEN.March2012.ROO

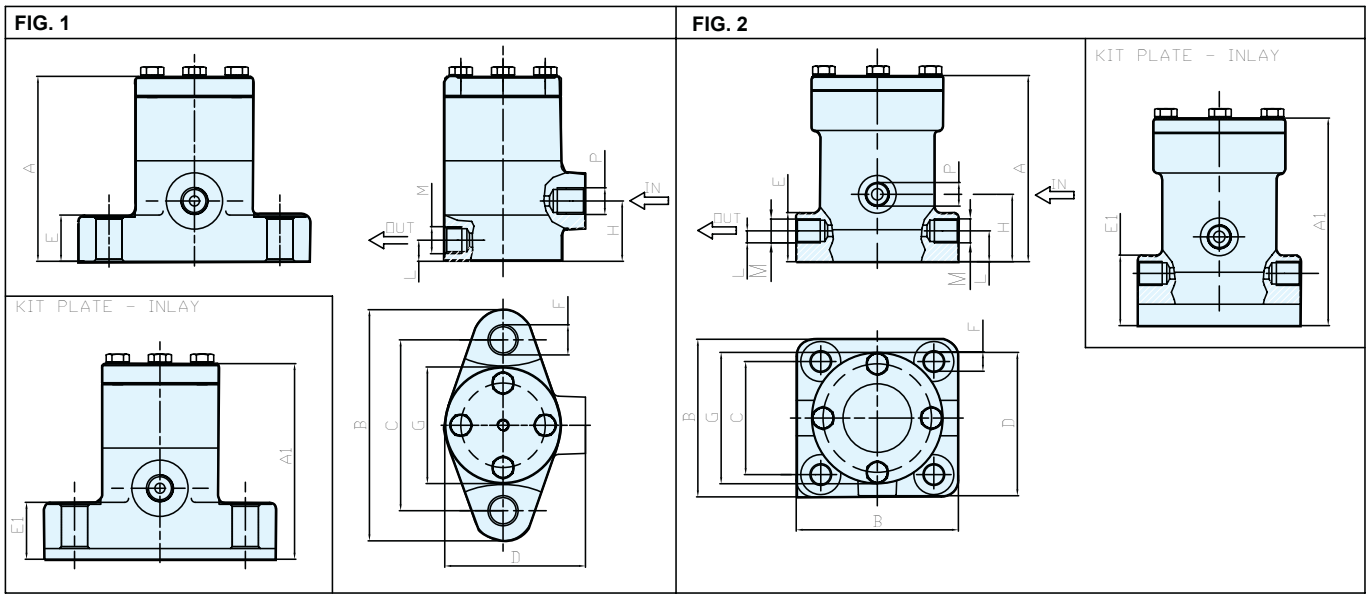
Animal Feed Milling

External Pneumatic Impact Vibrators P-Type

Technical Features / Performance

- Anodised aluminium “anticorodal” cover
- Brass silencer
- Hardened steel piston
- G25 cast iron casing
- Nickel-plated brass air nipple inlet
- Working temperature: -20° ~ 200°C (-14° F ~ 392° F)
- Working pressure: 3 ~ 6 bar (44 ~ 88 psi)

Overall Dimensions



DIMENSIONS																													
		A		A1		B		C		D		E		E1		F		G		H		P	L		M	N		WEIGHT	
TYPE	Fig.	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in			mm	in	mm	in	mm	in		mm	in		mm	in	kg	lbs
P25	1	92	3.62	102	4.01	115	4.52	85	3.34	70	2.75	22	0.86	32	1.26	13	0.51	58	2.28	30	1.18	1/4”	10.5	0.41	1/4”	25	0.98	2.2	4.9
P40	1	121	4.76	134	5.27	148	5.8	110	4.33	91	3.58	24	0.94	37	1.46	16.5	0.65	75	2.95	45	1.77	3/8”	16	0.63	3/8”	35	1.37	4.5	9.9
P60	2	163	6.41	183	7.2	138x142	5.43x5.59	99x99	3.9x3.9	125	4.92	28	1.1	48	1.89	17	0.67	115	4.52	60	2.36	1/2”	27	1.06	2x1/2”	60	2.36	11	24.3

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

Vibrating Bin Aerators VB-Type

34

Description

Vibrating Bin Aerator types VB (VBI-VBM) combine product aeration under operating pressure reaching 6 bar (87 PSI) with an additional slight vibration on the silo wall . Due to their design damage of the silo is impossible even with abrasive materials. An additional backstop valve is not required as, due to the work pressure ranging from 2 to 6 bar (29-87 PSI), no material can enter the zone beneath the elastic lip. VB-type Vibrating Bin Aerators are used for the improvement of mass flow with powders and granular materials.

Function

Compressed air is introduced into the stored material through the silicon lip which adheres to the inside silo wall. By varying the work pressure within a range between 2 and 6 bar (29 to 87 PSI) the intensity of vibration of the elastic silicon lip can be changed. Due to interval operation and a maximum operation time of five seconds air consumption is very low.

Application

VB Vibrating Bin Aerators are used **in all types of powder** processing plants where flow aids are required.
Typical application is fluidisation of additives, cereal powders and starches in storage silos and hoppers.
They are fitted on storage silos or weigh or feed hoppers.

Benefits

- ✓ **2 combined effects: vibration and aeration;**
- ✓ **No damage to the structure of the bin;**
- ✓ **Suitable for powdery or granular materials (non hygroscopic);**
- ✓ **Self-cleaning;**
- ✓ **Abrasion-resistant;**
- ✓ **Durable;**
- ✓ **Easy to fit;**
- ✓ **Maintenance-free.**

DS.220.VB.EN.March 2012.ROO

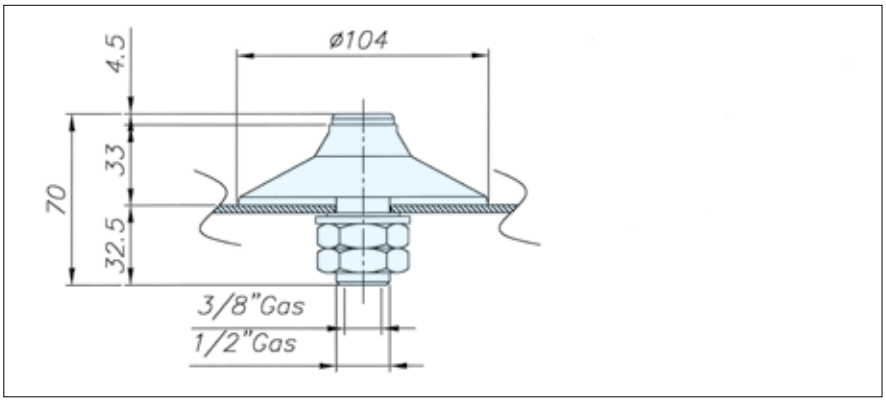
Animal Feed Milling

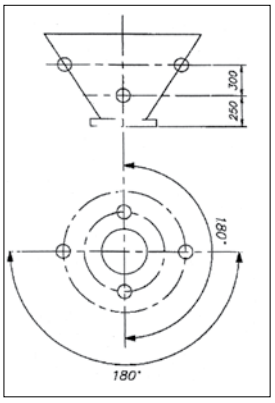
Vibrating Bin Aerators VB-Type

Technical Features / Performance

- Aluminum "anticorodal" shaft (304 SS on request – VBI-Type)
- Vibrating silicon membrane (FDA-approved)
- EPDM seal
- ½" washer (galvanized steel)
- 2 nickel-plated brass ½" hexagonal nuts
- Work temperature: -40° ~ 170°C (-40° F ~ 340° F)
- Work pressure: 2 ~ 6 bar (29 ~ 87 psi)

Overall Dimensions





	Max. Air Consumption					
	2 bar (29 psi)		4 bar (58 psi)		6 bar (87 psi)	
	l / min	cfm	l / min	cfm	l / min	cfm
VB	100	3.53	150	5.29	250	8.82
VBE	100	3.53	150	5.29	250	8.82
VBM	70	2.47	90	3.17	120	4.23

This datasheet does not show the complete range but only the models most suitable for the application.

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Animal Feed Milling

Batch-Type Single Shaft Mixers WBH

35

Description

Batch-type WBH Single Shaft Mixers consist of a horizontal single shaft, equipped with ploughshare or shovel tools, housed in a tubular mixing drum. One or more inlets, an outlet with central discharge port, a venting spout, two drum closing end plates that carry flanged end bearing assemblies complete with integrated, adjustable shaft sealing unit and a drive unit complete with power transmission.

Function

The horizontal single shaft ploughshare mixer WBH is based 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 products to be projected in a three-dimensional way and to merge with each other.
This ensures that components with different particle size and bulk density are perfectly blended and mixed with high precision within the shortest possible time.

Application

For mixing different types of materials:

- Mash
- Meals
- Salt Lick and Minerals
- Milk Replacer
- Pet Food
- Fish Food
- Animal Care
- Feed Additives
- Veterinary products
- Animal Feed products in general

Benefits

- ✓ CV < 5%;
- ✓ Maximum mixing homogeneity;
- ✓ High-speed mixing;
- ✓ Low material residue;
- ✓ Minimum wear;
- ✓ Easy access to all internal parts;
- ✓ Top quality mixing;
- ✓ Low maintenance;
- ✓ Attractive price.

Animal Feed Milling

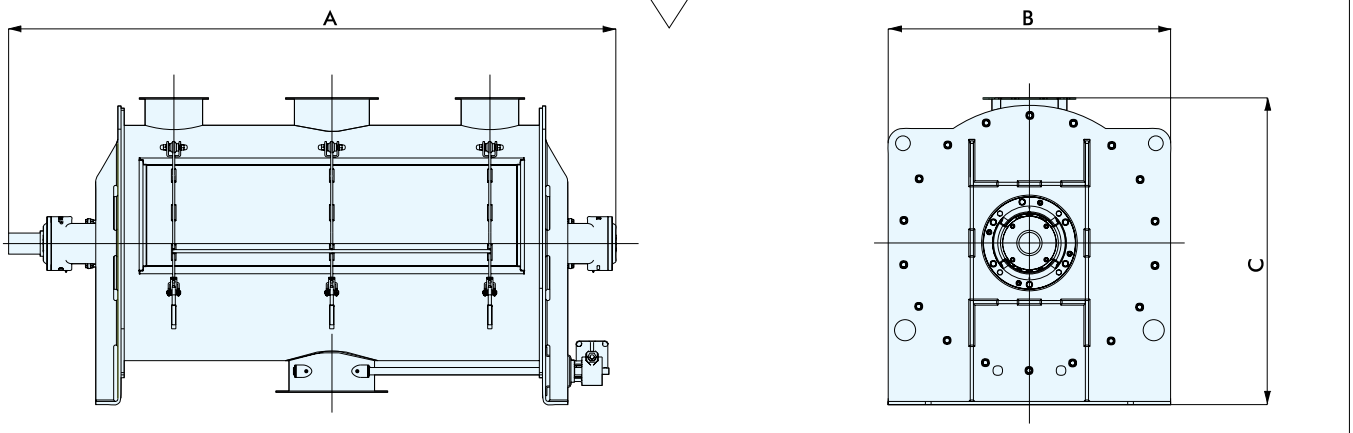
Batch-Type Single Shaft Mixers WBH

Technical Features / Performance

- From 75 up to 15,000 litres volume
- Different construction materials
- Bomb-bay discharge available (15° or 60°)
- Choppers and liquid injection
- Great variety of accessories and options available

Overall Dimensions

WBHV



TYPE	A	B	C	Usable Volume (dm^3)	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

Dimensions in mm

Dimensions in mm

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

Batch-Type Single Shaft Mixers with Bomb-Bay Discharge WBHT - WBHP

36

Description

WBHT - WBHP Batch-Type Single Shaft Mixers consist of a horizontal single shaft, equipped with ploughshare or shovel tools, housed in a tubular mixing drum. Bomb-Bay Discharge Batch Mixers, type WBHP with 15° opening section and WBHT with 60° opening section satisfy any customer's requirement in terms of high quality mixing in batch-type processes which are oriented towards optimised efficiency. An outlet opening across the entire length of the mixing drum ensures virtually residue-free discharge of the product in the shortest possible time.

Function

The horizontal single shaft ploughshare mixer WBHT/P is based 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 products to be projected in a three-dimensional way and to merge with each other.
This ensures that components with different particle size and bulk density are perfectly blended and mixed with high precision within the shortest possible time.

Application

For mixing different types of materials:

- Mash
- Meals
- Salt Lick and Minerals
- Milk Replacer
- Pet Food
- Fish Food
- Animal Care
- Feed Additives
- Veterinary products
- Animal Feed products in general

Benefits

- ✓ **High-speed mixing;**
- ✓ **Mixing homogeneity 1:100.000, CV <5%;**
- ✓ **Low material residue;**
- ✓ **Minimum wear;**
- ✓ **Easy access to all internal parts;**
- ✓ **Low maintenance.**

DS.220.WBHP.EN.March2012.R00

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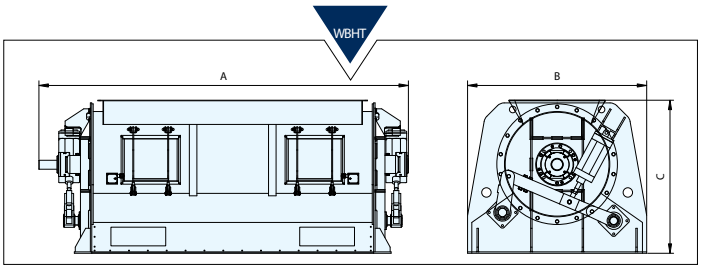
Animal Feed Milling

Batch-Type Single Shaft Mixers with Bomb-Bay Discharge WBHT - WBHP

Technical Features / Performance

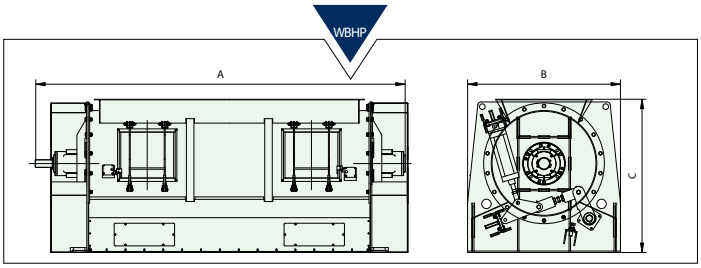
- From 550 up to 15,000 litres volume
- Different construction materials
- Choppers and liquid injection
- Great variety of accessories and options available

Overall Dimensions



TYPE	A	B	C	Usable Volume (dm³)	Empty Weight (kg)
WBHT 550 ¤	2,150	1,250	1,200	385	690
WBHT 800 ¤	2,350	1,200	1,250	560	850
WBHT 1100 ¤	2,615	1,500	1,500	770	1,200
WBHT 2000 ¤	2,920	1,900	1,650	1,400	2,400
WBHT 3000 ¤	3,920	1,900	1,650	2,100	3,000
WBHT 4800 •	4,550	2,000	1,790	3,360	3,800
WBHT 6000 •	4,870	1,960	1,900	4,200	4,400
WBHT 8800 •	5,390	2,200	2,200	6,160	5,300
WBHT 10500 •	5,630	2,400	2,430	7,350	6,900
WBHT 15000 •	6,124	2,800	2,525	10,500	8,000
WBHT 20000 •	6,617	2,312	2,665	14,000	11,903
WBHT 25000 •	6,888	2,432	2,735	17,500	13,653

Indicative dimensions (mm)



TYPE	A	B	C	Usable Volume (dm³)	Empty Weight (kg)
WBHP 550	2,150	1,250	1,200	385	650
WBHP 800	2,400	1,200	1,250	560	810
WBHP 1100	2,690	1,350	1,500	770	1,100
WBHP 2000	3,030	1,500	1,650	1,400	2,280
WBHP 3000	3,900	1,500	1,650	2,100	2,550
WBHP 4800	4,550	1,780	1,790	3,360	3,600
WBHP 6000	4,820	1,820	1,970	4,200	4,200
WBHP 8800	5,382	2,000	2,200	6,160	5,050
WBHP 10500	5,630	2,110	2,400	7,350	6,500
WBHP 15000	6,124	2,380	2,500	10,500	7,600
WBHP 20000	6,617	2,312	2,665	14,000	11,903
WBHP 25000	6,888	2,432	2,735	17,500	13,653

Indicative dimensions (mm)

This datasheet does not show the complete range but only the models most suitable for the application.

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Animal Feed Milling

Continuous Single Shaft Mixers WAH

Description

WAH is a Continuous Horizontal Single Shaft Mixer suitable for mixing dry bulk solids (powders, granules, short fibres), dry bulk solids with liquids (conditioning & granulating), sludges and pastes.
WAH Mixers operate on the principle of a mechanically generated fluid bed. Ploughshare or shovel-shaped mixing tools rotate close to the horizontal, cylindrical drum casing lifting the components to be mixed from the product bed into the open mixing area. The quality of the mixture is achieved before the product reaches the mixer outlet.

Function

The particular shape, position and rotation speed of the mixing tools, creates a centrifugal vortex motion, which allows the products to be projected in a three-dimensional way and to merge with each other.
This ensures that components with different particle size and bulk density are perfectly blended and mixed with high precision within the shortest possible time.

Application

Usually for mixing different types of materials:

- Mash
- Meals
- Salt Lick and Minerals
- Milk Replacer
- Pet Food
- Fish Food
- Animal Care
- Feed Additives
- Veterinary products
- Animal Feed products in general

DS.220.WAH.EN.March2012.800

Benefits

- ✓ **Mixing homogeneity 1:100.000, CV <5%;**
- ✓ **High speed mixing (short mixing time);**
- ✓ **Low material residue;**
- ✓ **Minimum wear/low maintenance;**
- ✓ **Easy access to all internal parts of the mixer.**

MAP®

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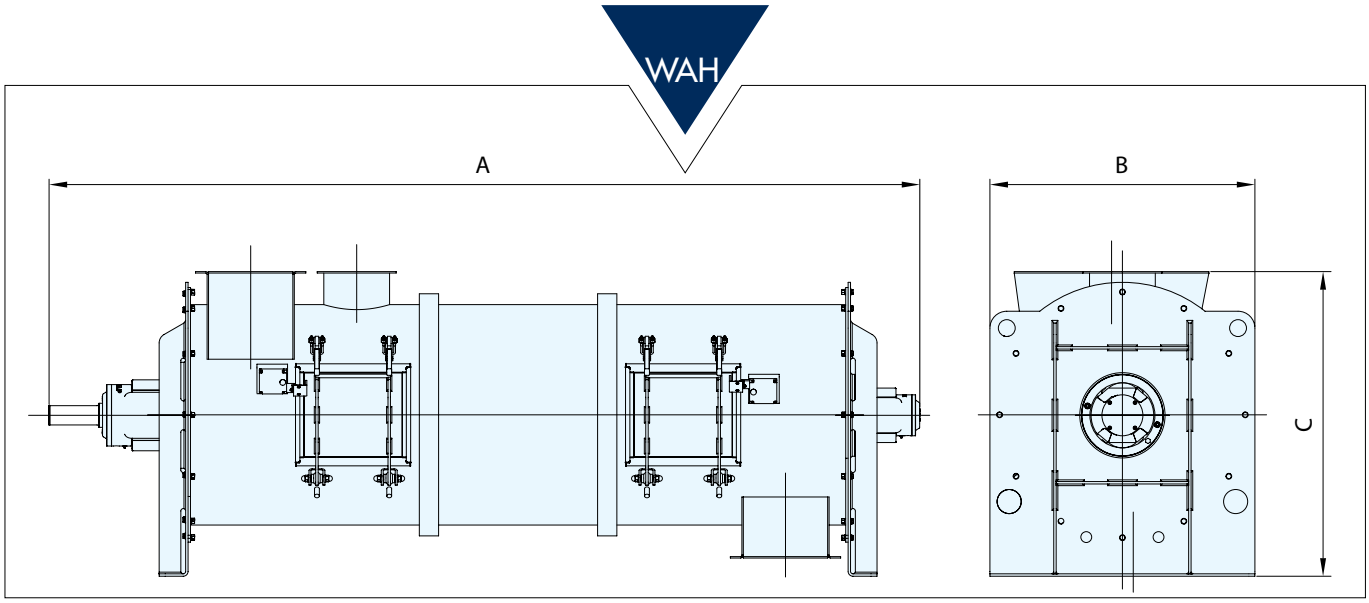
Animal Feed Milling

Continuous Single Shaft Mixers WAH

Technical Features / Performance

- From 75 up to 15,000 litres volume
- Different construction materials
- Different types of mixing tools
- Choppers and liquid injection
- Great variety of accessories and options available
- Adjustable front discharge

Overall Dimensions



	A	B	C	50% ◒ dm³/h Residence Time		Empty Weight
				60 s	180 s	(kg)
WAH 00075	1,690	485	556	2,022	674	210
WAH 00150	1,960	570	634	4,031	1,344	350
WAH 00300	2,220	670	801	7,892	2,631	580
WAH 00500	2,550	770	920	13,716	4,572	840
WAH 01000	3,140	930	1,118	27,993	9,331	1,390
WAH 01800	3,670	1,100	1,265	50,170	16,723	2,100
WAH 03000	3,920	1,340	1,472	82,577	27,526	2,800
WAH 04800	4,510	1,500	1,800	134,281	44,760	3,800
WAH 06000	4,816	1,600	1,860	165,708	55,236	4,500
WAH 08800	5,325	1,810	2,133	245,796	81,932	5,840
WAH 10500	5,580	1,910	2,237	295,322	98,441	6,600
WAH 15000	6,090	2,110	2,465	411,885	137,295	8,200

Dimensions in mm

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

Ribbon Blenders WBN

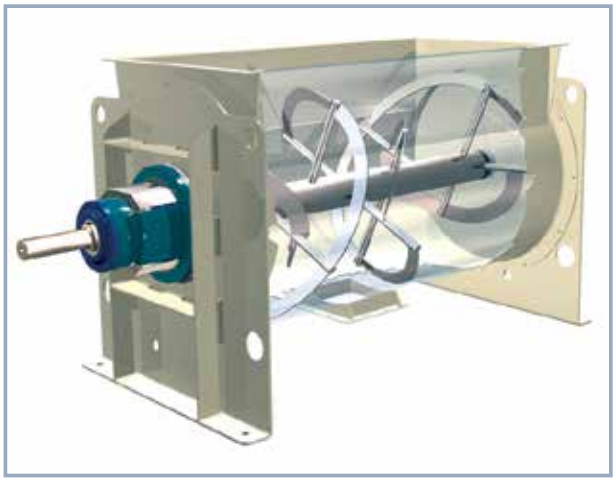
38

Description

Batch-type WBN Ribbon Blenders consist of a horizontal, single shaft double counter-pitch ribbon screw housed in a tubular mixing drum, a central inlet or a rectangular shape inlet port across the entire length of the mixing drum, an outlet with central discharge outlet, a venting spout, two drum closing end plates that carry flanged end bearing assemblies complete with integrated adjustable shaft sealing unit, and a drive unit complete with power transmission.

Function

The outer helix will move the material from both ends of the vessel towards the centre, while the inner helix will transfer the material towards both ends, performing a sort of convection mixing. The product is processed gently in a relatively short mixing time.



Application

For blending different types of materials:

- Mash
- Meals
- Salt Lick and Minerals
- Milk Replacer
- Pet Food
- Fish Food
- Animal Care
- Feed Additives
- Veterinary products
- Animal Feed products in general

Benefits

- ✓ **Maximum mixing homogeneity;**
- ✓ **Mixing of fragile materials without particle damage;**
- ✓ **Low material residue;**
- ✓ **Low maintenance;**

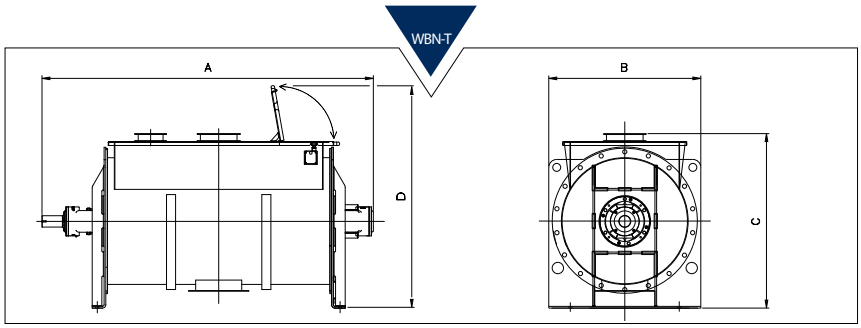
Animal Feed Milling

Ribbon Blenders WBN

Technical Features / Performance

- From 75 up to 15,000 litres volume
- Different construction materials
- Bomb-bay discharge available (15° or 60°).

Overall Dimensions



TYPE	A	B	C	D	Usable Volume (dm^3)	Empty Weight (kg)
WBN-T 75	1,300	611	670	1,051	56	160
WBN-T 150	1,460	670	763	1,274	105	270
WBN-T 300	1,840	770	930	1,393	210	400
WBN-T 550	2,150	930	1,133	1,585	385	690
WBN-T 800	2,350	980	1,154	1,602	560	850
WBN-T 1100	2,690	1,100	1,260	1,754	770	1,200
WBN-T 2000	2,920	1,340	1,465	1,975	1,400	2,400
WBN-T 3000	3,920	1,340	1,465	2,090	2,100	2,700
WBN-T 4800	4,520	1,500	1,725	2,199	3,360	3,800
WBN-T 6000	4,820	1,600	1,876	2,325	4,200	4,400
WBN-T 8800	5,390	1,810	2,067	2,665	6,160	5,300
WBN-T 10500	5,630	1,910	2,413	2,862	7,350	6,900
WBN-T 15000	6,124	2,110	2,706	3,190	10,500	8,000

Dimensions in mm

This datasheet does not show the complete range but only the models most suitable for the application.

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Animal Feed Milling

Twin Shaft Paddle Mixers WTS

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Description

The WTS Twin Shaft Paddle Mixer is a Batch Mixer with two parallel drums, each with paddles which promote a homogeneous mix regardless of particle size and density, with the added efficiency of counter rotation of the overlapping paddles.

The design provides low shear forces but allows rapid mixing with low energy consumption.

Function

The WTS creates a fluidised zone with its special design and the arrangement of the mixing paddles on both shafts.
This is possible thanks to the two different technologies of mixing, the first in turbulence and the second in conveying. In combination with a low loading coefficient, a freely movable mass occurs. In this fluidised zone powders and granules will be optimally dispersed in a very short time. The twin shaft paddle mixer WTS ensures high level features in terms of homogeneity and mixing speed.

Application

For mixing different types of materials:

- Mash
- Meals
- Salt Lick and Minerals
- Milk Replacer
- Pet Food
- Fish Food
- Animal Care
- Feed Additives
- Veterinary products
- Animal Feed products in general
- Fragile and difficult to move material

Benefits

- ✓ **High speed mixing (5 - 30 seconds);**
- ✓ **High homogeneity;**
- ✓ **Low material residue;**
- ✓ **Up to 60% energy savings;**
- ✓ **Mixing of fragile or sticky products.**

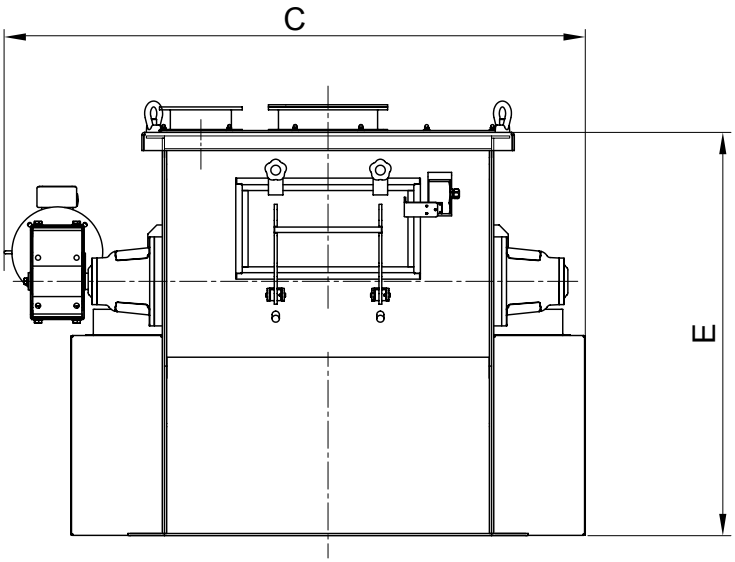
Animal Feed Milling

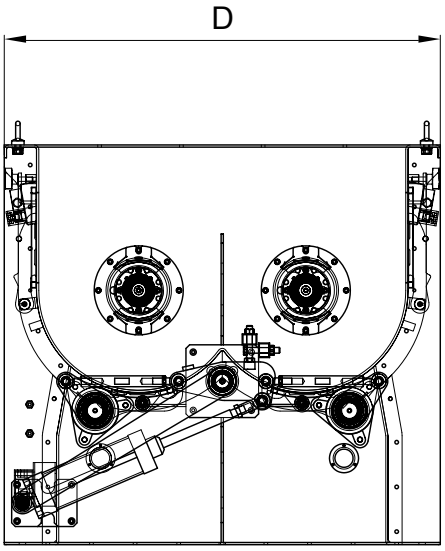
Twin Shaft Paddle Mixers WTS

Technical Features / Performance

- From 50 up to 2,800 litres volume
- Different construction materials
- Standard bomb-bay discharge
- Great variety of accessories and options available

Overall Dimensions





Type	Nominal volume in litres	Working capacity in litres		C	D	E
		min	max	mm	mm	mm
WTS 120	120	48	168	1,484.5	1,059	1,004
WTS 250	250	100	350	1,784	1,363	1,104
WTS 500	500	200	700	2,169	1,835	1,630
WTS 1000	1,000	400	1,400	2,690.4	2,170	2,036.5
WTS 2000	2,000	800	2,800	3,170	2,662	2,373

This datasheet does not show the complete range but only the models most suitable for the application.

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Animal Feed Milling

Laboratory Mixer MLH

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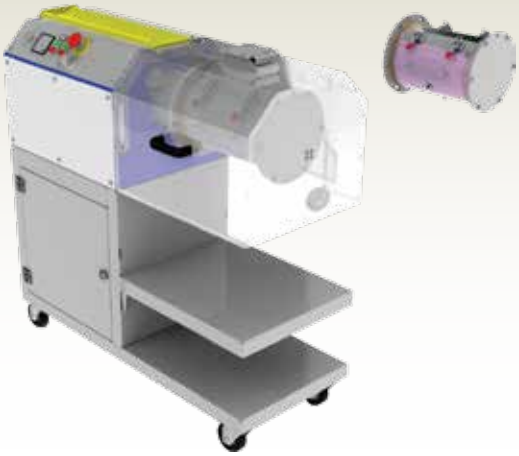

Description

The MLH Laboratory Batch Mixer consists of a stand-alone drive unit with incorporated frequency inverter, an easily replaceable horizontal mixing shaft supported at the drive end only, and an equally easily replaceable, revolving mixing vessel complete with inlet/outlet.

Function

MLH Laboratory Batch Mixers operate on the principle of a mechanically generated fluid bed. Consequently, it is possible to test using different mixing technologies: mixing, moistening/coating, agglomeration/granulation, as well as reaction/drying. This ensures efficient product and process development as required by the industry today. The quick change of drum size combined with a rich basic equipment package ensures use in a variety of applications. In some cases, to obtain the desired mixing effect, a separately driven high-speed chopper can be installed.

Application

The MLH Laboratory Mixer is suitable for a variety of mixing technologies:

- powder + powder = mixing
- powder + liquid = granulation/agglomeration
- powder + liquid = mixing/moistening/coating
- powder + liquid = drying

Benefits

- ✓ Short mixing time;
- ✓ Ideal for product and process development;
- ✓ Table top or free standing;
- ✓ Variety of options;
- ✓ Easy to use and maintain;
- ✓ Stainless steel construction;
- ✓ Easy to clean;
- ✓ Quick and easy shaft replacement;
- ✓ Ergonomic handling;
- ✓ Attractive price.

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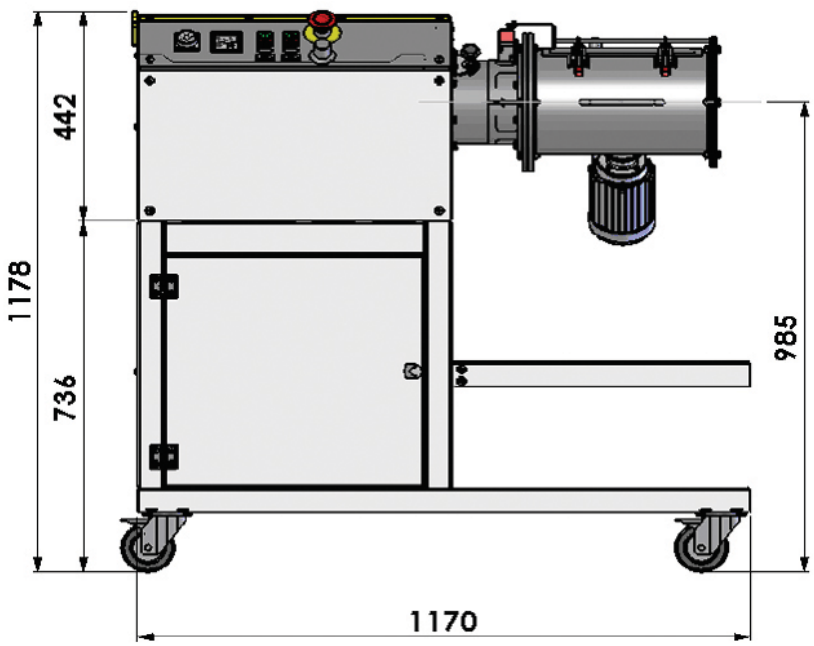
Animal Feed Milling

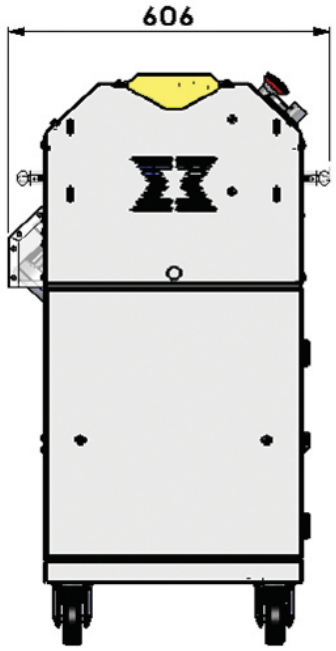
Laboratory Mixer MLH

Technical Features / Performance

- From 6 up to 30 litres volume
- Different construction materials
- Chopper and liquid injection
- Variety of options and accessories available

Overall Dimensions





MLH 12	
Total volume	12 litres
Minimum Working Volume	2.5 litres
Maximum Working Volume	9.6 litres
Drive Power Installed	1.1 kW
Rotation Speed	25 ~ 450 rpm
Chopper Power Installed	0.12 kW
Chopper Rotation speed	1,450 rpm
Weight	260 kg

This datasheet does not show the complete range but only the models most suitable for the application.

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Animal Feed Milling

DUSTFIX® Dust Conditioners (Molassing Machines)

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Description

DUSTFIX® Dust Conditioners consist of a carbon steel tubular casing with SINT® engineering polymer liner, a combined feeder screw/mixing shaft entirely manufactured from SINT® engineering polymer, one vertical inlet and a flush outlet in SINT®, a liquid supply point in the conditioning section, a drive unit with integrated adjustable shaft sealing unit.

Function

In terms of function and economy, the DUSTFIX® Dust Conditioner originally is a machine for moistening and conditioning for disposal of industrial dust. Due to its particular technical features, the use of innovative SINT® engineering polymers and extremely short processing time, DUSTFIX® is suitable for continuous duty. In Animal Feed Milling Plants it can be also used to add liquid or additives to feed, as well as a molassing machine.

Application

Mixing system for Animal Feed Industry:

- Mash
- Meals
- Salt Lick and Minerals
- Powders and liquid additives
- Molasses

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Benefits

- ✓ **Quick return on investment;**
- ✓ **High-speed mixing;**
- ✓ **Minimum wear;**
- ✓ **Easy to install;**
- ✓ **Attractive price;**
- ✓ **Low maintenance.**

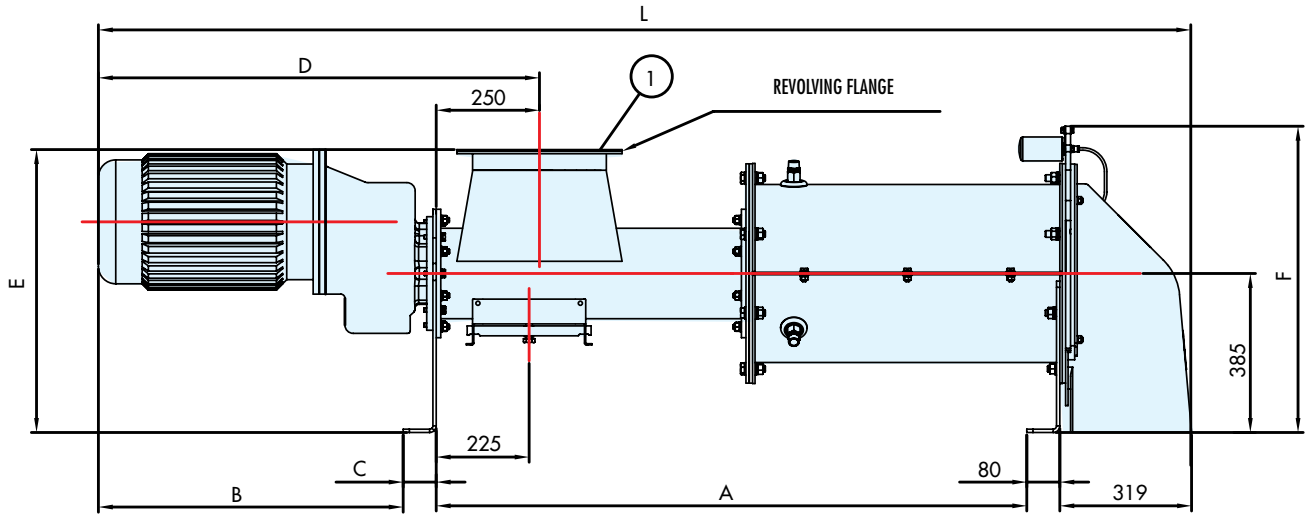
Animal Feed Milling

DUSTFIX® Dust Conditioners (Molassing Machines)

Technical Features / Performance

- From 2 to 35 m³/h
- Electric control panel
- Water supply panel
- Antiwear construction material

Overall Dimensions



TYPE	A	B	C	D	E	F	L	kW	kg	m³/h
DF 2040	1,430	738	80	1,068	685	741	2,645	15	490	35 max.

Dimensions in mm

This datasheet does not show the complete range but only the models most suitable for the application.

Animal Feed Milling

Pinch Valves VM

Description

The body of the VM Pinch Valve is manufactured from aluminium alloy. The sleeves are made from fabric-reinforced NR or NBR. The sleeve support bushes are either made from aluminium alloy or 304/316 stainless steel.

Function

VM-type Pinch Valves are used for the interception of the material flow in pneumatic conveying systems, or other pipelines. They can also be installed as a locking device for silo filling pipes.
In the open position the internal cross section of the valve is identical with the connecting pipe diameter. By introducing compressed air or, especially with small valves, water under pressure, through the threaded bore into the interior of the valve, the internal flexible sleeve is reshaped in such a way that the passage is hermetically sealed.

Application

VM Pinch Valves equally handle pneumatically conveyed powders, granules, fibres, dense mixtures and liquids. They are fitted directly to the pneumatic conveying duct.

Benefits

- ✓ **No product contamination due to the 304/316 SS sleeve support bushes and white colour NBR sleeve;**
- ✓ **ATEX zone 22-certifed;**
- ✓ **Full bore-through passage without any pressure loss and stagnation points;**
- ✓ **No contact between material handled and casing;**
- ✓ **Particularly low air consumption;**
- ✓ **Time-saving sleeve and bush replacement;**
- ✓ **Sleeves in fabric-reinforced NR or NBR;**
- ✓ **Compact overall dimensions;**
- ✓ **Lightweight due to valve body made from aluminium alloy;**
- ✓ **No maintenance required except for periodical replacement of sleeve and bushes.**

Animal Feed Milling

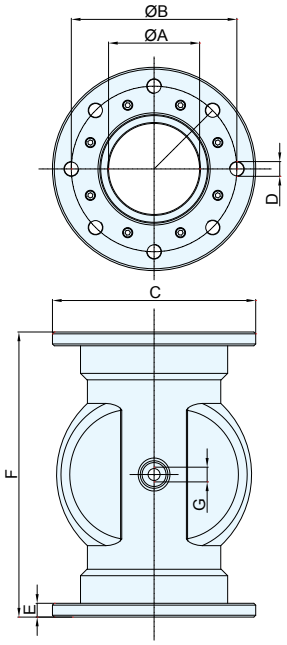
Pinch Valves VM

Technical Features / Performance

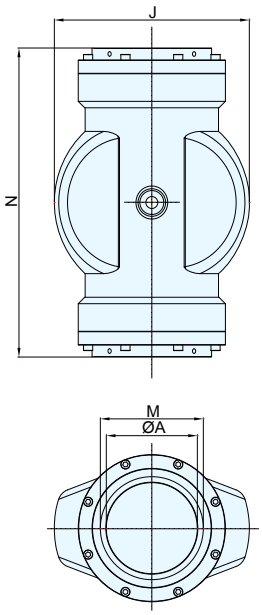
- Passage diameter from 40mm to 150mm (1½ to 6 in)
- Maximum working pressure: 3.5 bar (52 psi)
- Maximum inflation pressure: 6.0 bar (90 psi)
- Recommended maximum differential pressure: 2.5 bar (37 psi)
- Different sleeve materials suitable for product handled: NR or NBR
- Different connections
- Different types of bushes suitable for material handled: Aluminium alloy or 304/316 SS

Overall Dimensions

Sizes from 40 to 150



Sizes from 40 to 100



TYPE	A	B	C	D		E	F	G	H	J	L	M	N	kg
				Ø	n°									
VM040	40	110	150	M 16	4	12	178	1/8"		99		1+1/2"	202	2.2
VM050	50	125	165	M 16	4	15	190	1/4"		120		2"	214	3.4
VM065	65	145	185	M 16	4	15	225	1/4"		138		2+1/2"	230	4.0
VM080	80	160	200	M 16	4	15	270	1/4"		180		3"	294	5.4
VM0100	100	180	220	M 16	8	15	310	1/4"		214		4"	334	7.6
VM0125	125	210	250	M 16	8	15	350	1/4"		250				10.2
VM0150	150	240	285	M 16	8	18	396	1/4"		285				15.6

This datasheet does not show the complete range but only the models most suitable for the application.