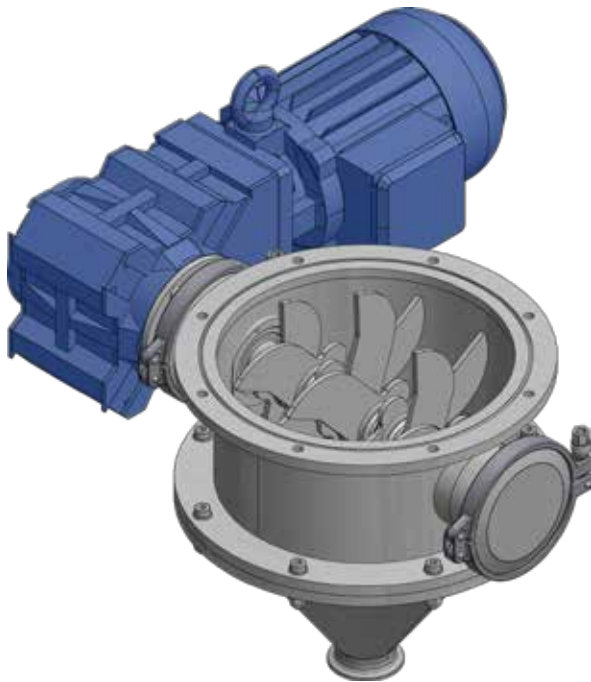




VOLKMANN
IDEAS AHEAD

Lump breaker



VOLKMANN lump breakers can be used in different scenarios. They break agglomerates and lumps of solids with their rotating blades. Often it is useful to reduce the size of agglomerates powder or granule before introducing it to a pneumatic conveying line. Also there are other numerous procedures where material lumps can hamper the process. **VOLKMANN lump breakers** can be installed within down pipes or can be directly combined to hoppers, product feeding stations or bulk bag unloading stations.

Volkmann lump breaker:

- Nominal diameters 250 mm and 350 mm
- Shaft, blades and actuator can be easily removed
- EC design inspection certificate according to 94/9/EG directive (ATEX) (inside: class level 20/0; outside: class level 21/1)*
- Simple combination with vacuum conveyors
- Optional features with compressed air flushing and temperature control of the bearings
- Simple installation and commissioning

* Subject to the correct choice of the electric motor and drive



Conditioning of:



Flakes for example from sheets



Agglomerates within bags



Lump breakers



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Lump breaker

Control options

In many cases the control is provided by the customer. Therefore a motor protection switch is required and a control provided by the customer. If the lump breaker is in combination with a vacuum conveyor (which has a pneumatic control). Then the lump breaker should only be activated during the conveyor suction cycle. Alternatively, electro-pneumatic and intelligent compact controls can be offered which should be selected in accordance with ATEX requirements.

Compressed air flushing for the bearings (optional)

In applications where the lump breaker will crush agglomerates of very fine material, the bearings and seals can be protected against dust with air flushing. Compressed air at low pressure (< 0.2 bar) will be used. This option is essential if the lump breaker is to be used within ATEX areas.

Temperature control of the bearings (optional)

When the crushed material has a smoldering temp of < 150°C and ATEX is relevant then temperature controlled bearings are necessary. With ATEX gas issues, Volkmann should always be contacted as careful selection of components and the control is necessary.

Trials

Throughput, performance of the lump breaker, final particle size and particle structure will depend on the original product characteristics and its "previous history". Because of that trials should be conducted in advance. For an initial quotation, please complete the attached questionnaire and add the material MSDS data sheet.

Technical information

In general

Type of bearing	Antifriction bearing
Temperature of the product	-40°C ... + 80°C
Temperature of the environment	-20°C ... + 60°C
Sound emission	< 70 dB

Technical information

250er Nominal diameter

350er Nominal diameter

Height C	244 mm*	344 mm*
Width A	369 mm*	469 mm*
Width of the motor B	depending on motor type	
Depth H	160 mm*	210 mm*
Depth of motor G	depending on motor type	
Height of flange D	134 mm*	134 mm*
Pitch circle F	295 mm* (8 x M8)	392 mm* (12 x M8)
Inner diameter E	250 mm*	350 mm*
Number of blades	8 pcs. /10 pcs.	12 pcs.
Weight	39 kg*	48 kg*
Weight with motor	68 kg*	77 kg*

*) all details are approx.

Actuator

Type of motor	electric motor
Power supply	400V-16A
IP code	IP 65
IP class	max. 0,55kW
Output	< 137 Nm
Speed	max. 35U/min

A pneumatic motor is an option





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Lump breaker

Technical information

Material

AISI 316L (1.4404), AISI 316Ti (1.4571), PTFE product contact
EPDM not product contact

Control

Control option pneumatic or electric options

Connection

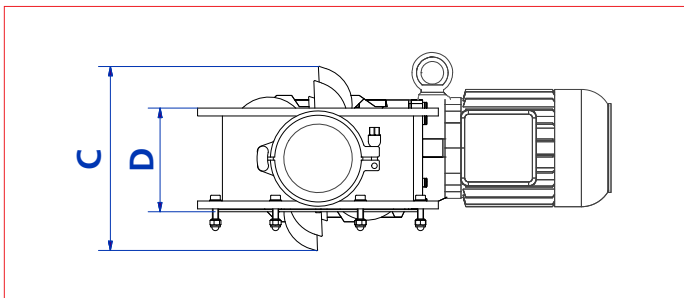
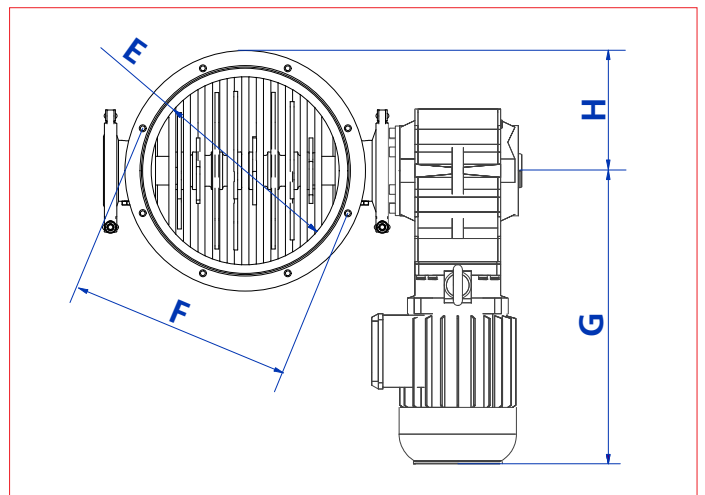
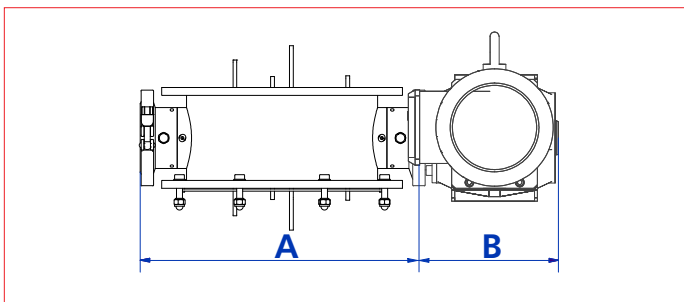
Connection option flange, clamps and VS-module connection (patented)

ATEX marking

II 1 D c T 80°C / II 2 D c T 100°C
II 2 / 2 G c T 4



Technical drawing: Lump breaker with motor



Accessories (optional)

- Motor protection switch
- Control synchronization with a vacuum conveyor
- Electro-pneumatic and intelligent compact control
- Compressed air flushing of the bearings ($p_{\max} < 0.2$ bar)
- Temperature control of the bearings
- Trolley to assist with connection to plant equipment and/or for mobile use
- Pick up interface for use with a vacuum conveyor
- Hoppers and delivery systems



Technical Data subject to change without notice · Version 02-2016_EN



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Lump breaker

Please fill in the information available and send it to your contact or Email: mail@volkmann.info or Fax it to +49 (0) 2921 9604900

1. Customer information

Company: _____ Contact person: _____ Email: _____ Phone: _____

2. Task

Desired capacity /throughput: _____ kg/hr

Product charging (lump breaker inlet): _____

(e.g. downpipe, hoppers, sack unloading stations, bulk bag unloading station, etc.)

Product discharging (lump breaker outlet) _____

(e.g. Downpipe, mixer, sieve, product feeding point etc.)

IMPORTANT: If applicable, please advise installation details such as pressures, temperatures, rising vapour and solvents present in the process

2.1. Will the unit be used in EX-Area?

No, please continue with 2.2 Yes, please specify: _____

Ex zone internal: _____ Class level: _____

2.2. Is the material combustible or potentially dust explosive and is the dust content size < 0.5mm?

No, please continue with 3 Yes, the Minimum Ignition Energy (MIE) is _____ Millijoule (mJ)

If 2.1 or 2.2 Yes, please specify smoldering temp of the crushed material:

< 150 °C > 150 °C

3. Material description of the product to be conveyed

Trade name: _____ Chemical designation: _____ Manufacturer: _____

Particle size min ____ max. ____ (please state in mm or µm Size of agglomerates approx. from ____ to ____ mm

Bulk density: _____ kg/dm³ Density (basic materials): _____ kg/dm³ Max. humidity content.: _____ %

Particle description: _____ Particle geometry: _____

Flowing characteristics (estimated) Free flowing sticky bridging

Is the material hygroscopic (does it absorb humidity?) no yes

Is the material scouring/wearing? no yes

Is the material sensitive to mechanical loads? no yes

4. Material requirements of the Conveying System

If applicable please describe: product contacting parts: _____

None product contacting parts: _____ Others _____

Are any special certificates necessary for the product contacting parts? No Yes: _____

Operativ area of the lump breaker (eventually tendency) Chemical Pharmaceutical Food Industrial Others:

5. Information with regard to health risks, industrial safety and environmental protection (Please enclose MSDS)

Is the material poisonous/toxic? no yes Is the material corrosive/caustic? no yes

Does skin contact have to be avoided? no yes Does the material cause allergic reactions? no yes

Is the material harmful to the environment? no yes Is the material hazardous to water? no yes

6. Additional Comments

Important: Before shipping any samples for testing, please send Volkmann the MSDS safety Data sheets. Volkmann will then issue written permission to ship the materials. Material will be rejected from our goods in if written permission has not been granted. All materials should be supplied in reusable containers and include a return address note. All samples, containers etc. will be returned to the sender after the trials. The freight charges will be invoiced to the sender. For Big-Bag unloading trials please add one empty Big-Bag.

This inquiry form was filled-in on _____ by _____

