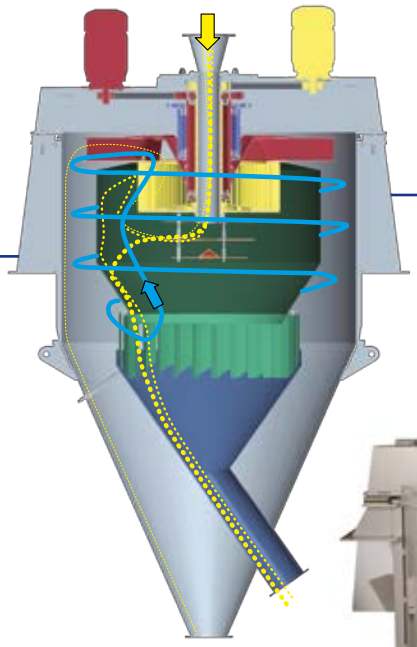
POWDER & PARTICLE PROCESSING
VENTOPLEX CLASSIFIER TYPE C

HOSOKAWA MICRON

HOSOKAWA ALPINE

PROCESS TECHNOLOGIES FOR TOMORROW[SM]

VENTOPLEX®CLASSIFIER TYPE C



In contrast to the former Ventoplex B with central drive, the new C design has a separately driven classifying wheel. In the new machine, the fan and classifying wheel are coaxially arranged and are driven by means of two separate shafts.

OPERATING PRINCIPLE

The Ventoplex classifier type C is an internal recirculation classifier designed for high fines yields at low energy consumption. Fineness can be simply changed between d_{97} = 24 µm and 200 µm. Up to size C25V the product is fed to the centre of the classifier head via a hollow shaft, from which the material falls onto a centrifugal plate underneath the classifying wheel. The centrifugal plate distributes the feed material uniformly in the classifying chamber. Coarse particles fall against the upward flow of classifying air to the bottom, collect in the coarse material cone and are discharged through the side of the machine via a gravity chute. Fine particles in the feed material become entrained in the upward flow of classifying air and enter the classifying wheel along with the classifying air.

The particles in the classifying wheel are classified by the two competing forces, namely centrifugal force and flow force. Coarse particles are rejected by the centrifugal force, whereas for the fine particles, the drag force of the air flow predominates, allowing the particles to pass through the classifying wheel. The Ventoplex air classifier requires no additional external dust collector to separate the fines.

FEATURES

- Wide fineness range
- Easy and fast setting of finess
- High fines throughput rate
- Insensitive to overload
- Low specific energy consumption
- Low peripheral speed
- Low air circulation rate
- Low overall height
- Low wear and tear design
- Good accessibility for inspections
- Maintenance-friendly design, use of inexpensive wear parts and thus low maintenance costs
- Various options for wear protection

Ventoplex Type C		C9V	C12V	C15V	C18V	C21V	C25V	C28V	C32V	C36V	C40V
Scale-up factor	F = approx.	1	1.8	2.8	4	5.6	8	10	12.5	16	20
Drive power of internal fan	kW	3.0	5.5	7.5	11	15	22	30	37	55-75	75
Material feed		from above centrally via hollow shaft						from the side via conveyor device			
Drive power of classifier	kW	1.5	2.2	3.0	4.0	5.5	7.5	11	15	22	30
Max. classifier speed	rpm	1120	800	670	560	475	400	355	315	280	250
Max. feed rate	t/h	3	5	8	12	17	24	30	38	48	60
Fineness *)	d_{97} = ca. µm	24 - 200	24 - 200	32 - 200	32 - 200	32 - 200	40 - 200	40 - 200	45 - 250	50 - 250	63 - 250
Fines yield *)	d_{f97}										
	24 µm in t/h	0.3	0.5	---	---	---	---	---	---	---	---
	32 µm in t/h	0.4	0.7	1.1	1.6	2.2	---	---	---	---	---
	45 µm in t/h	0.5	0.9	1.5	2.2	3.0	4.3	5.4	6.8	(8.5)	---
	63 µm in t/h	0.7	1.2	1.9	2.8	3.9	5.6	7.0	8.8	11.2	14.0
	90 µm in t/h	0.9	1.6	2.5	3.6	5.0	7.2	9.0	11.3	14.4	18.0
	200 µm in t/h	1.6	2.9	4.5	6.4	9.0	12.8	16.0	20.0	25.6	32.0

*) Reference material: limestone with density 2700 kg/m³; feed material with 70% < d_{f97}

DESIGN

The method of material feed for all designs up to machine size C25V is central via a hollow shaft. From machine size C28V onwards, the material is fed either via a screw conveyor or a pneumatic trough conveyor.

LOW-MAINTENANCE DESIGN

The rotor and housing parts are easy to access and can thus be cleaned and inspected quickly and with ease. The patented classifying wheel permits the exchange of individual classifying wheel vanes. If necessary, the entire rotor can also be exchanged.

VARIABLE WEAR-PROTECTION CONCEPT

Rotor blades and highly stressed housing parts are protected against wear, for example, with ceramic or special steel. Other housing parts are coated with elastomers.

APPLICATION AREAS

The Ventoplex is absolutely ideal

- **for classifying industrial minerals** such as limestone, quick lime, fertiliser lime, bentonite, dolomite, gypsum, ores, phosphorous, etc.
- **for classifying abrasive products** up to Mohs' hardness 7 – 8, for example glass powder and other abrasives, etc.
- **for classifying ceramic powders** that need to be produced with no iron contamination such as chamotte, quartz, feldspar, pegmatite, raw kaolin, etc.
- **for classifying food and feed ingredients** such as starch, soya, rock salt, feed lime, rice flour and bone flour, etc.
- **for classifying base chemicals** such as ammonium sulphate, silica, soda, citric acid, etc.
- for dedusting of grits
- for integration into grinding-classifying circuits
- for operation in combination with an additional ultrafine classifier.

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