AIR TECH
SYSTEMS

Technical Documentation

LTG Centrifugal Separators

Series ZSA / ZSB / ZSC

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To separate fine dust or liquid particles from the air stream, centrifugal separators are of great advantage. They have the following characteristics:

- high efficiency
- very exact separation possible
- large air volume range
- maintenance free operation.

The centrifugal separators series ZSA, ZSB and ZSC operate within an air volume range of 60 - 3,250 cfm (100 - 5500 m^3/h). They are designed to be robust and the protective liner on the inside ensures a long service life, utmost reliability, and safety. Series ZSB is especially effective for the separation of smallest particles at a high efficiency.

Application

The centrifugal separators ZSA, ZSB and ZSC are used for the separation of dust particles with a low percentage of fibers and granules. A variety of industries uses them, such as

- textile industry
- nonwovens industry
- wood working industry
- paper industry
- cellulose industry
- tobacco industry
- manufacture of powders
- surface coating

The cyclone series **ZSA** operates at a low pressure loss.

The cyclone series ZSB has a better separation efficiency as the series ZSA.

The series **ZSB with return air plenum** combines the excellent separation efficiency with a low pressure loss, due to a pressure regain plate inside the plenum.

The series **ZSC** is used for larger air volumes.

Advantages

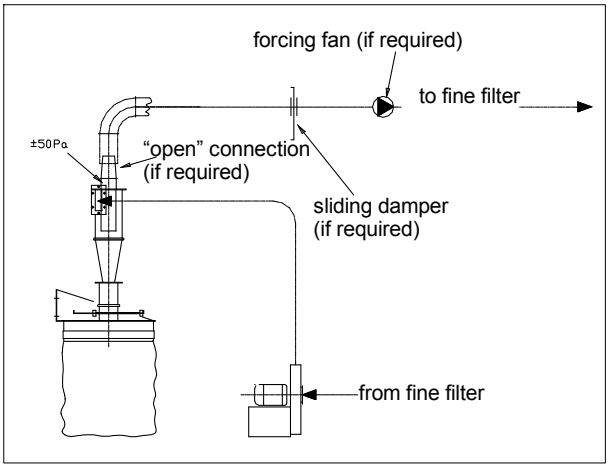
- no rotating or moving parts, ensuring maintenance free operation
- easy separation of fine and finest particles
- large capacity
- continuous operation
- robust design
- can operate under positive or negative pressure
- reduction of pressure loss through a pressure regain piece in the top portion (ZSB feature with return air plenum only)
- exact adaptation to any air volume due to extensive variety of available sizes
- application is possible over a large temperature range

Function

The air stream enters the separator tangentially at the top, creating a rotating airflow (vortex). By centrifugal force the dust or liquid particles are moved along the outside wall where they are separated and, in spiral motion, slide into a collection device (plastic bag). It is also possible to mount an LTG dust compactor below the separator. In the lower part of the housing, the air stream is forced to reverse and flows upwards through the immersion tube.

In the ZSB with return air head the pressure loss is reduced through a pressure regain piece in the top portion. The material discharge at the bottom is controlled by a slide gate.

Centrifugal separator series ZSA



Arrangement in air system centrifugal separator series ZSA

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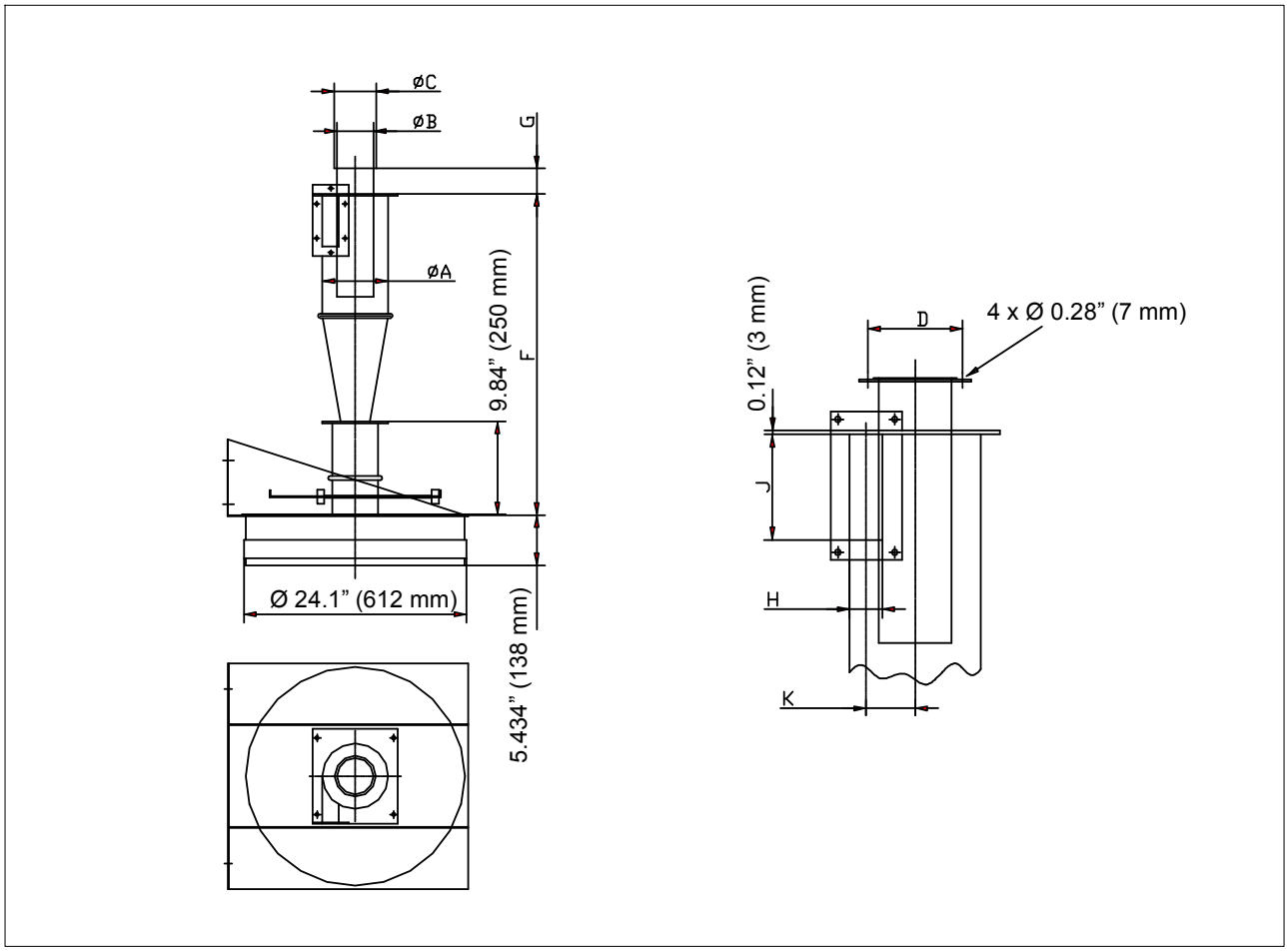
Dimensions Series ZSA



Type	Ø A [inch] [mm]	Ø B [inch] [mm]	Ø C [inch] [mm]	Hole center Ø D [inch] [mm]	F [inch] [mm]	G [inch] [mm]	H [inch] [mm]	J [inch] [mm]	K [inch] [mm]
ZSA 300	6.38 (162)	3.47 (88)	3.94 (100)	4.65 (118)	32.01 (813)	2.36 (60)	1.34 (34)	4.92 (125)	2.34 (59.5)
ZSA 400	7.17 (182)	3.86 (98)	4.33 (110)	5.08 (129)	34.57 (878)	2.76 (70)	1.54 (39)	5.51 (140)	2.64 (67.0)
ZSA 600	9.92 (252)	4.92 (125)	5.39 (137)	*)	40.67 (1033)	3.94 (100)	2.13 (54)	6.50 (165)	3.72 (94.5)
ZSA 800	12.48 (317)	5.51 (140)	5.98 (152)	*)	44.41 (1128)	3.94 (100)	2.32 (59)	7.87 (200)	4.90 (124.5)
ZSA 1000	14.06 (357)	6.30 (160)	6.77 (172)	*)	49.33 (1253)	3.94 (100)	2.72 (69)	8.66 (220)	5.49 (139.5)

Optional special design! Reinforced and spark resistant through special coating

*) 2 piece round duct connector with diameter Ø B.

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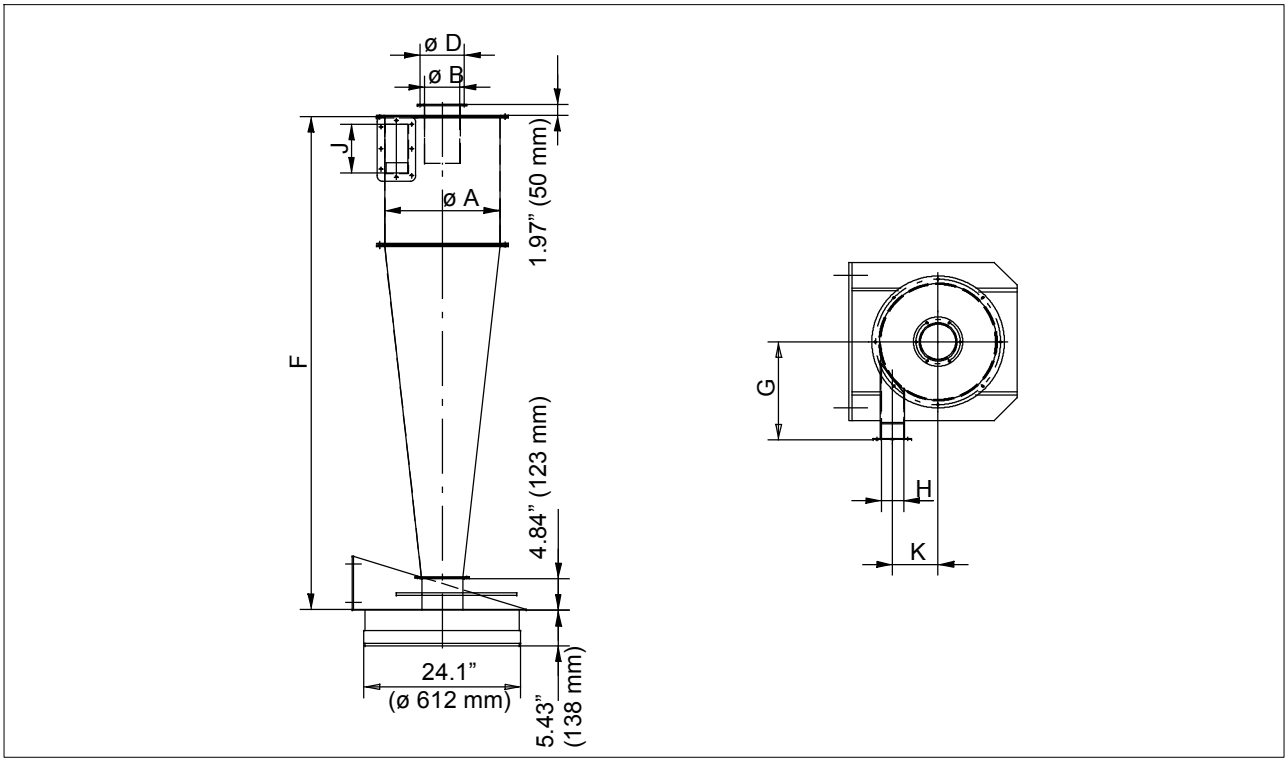
Dimensions Series ZSB



Type	Ø A [inch] [mm]	Ø B [inch] [mm]	Hole circle Ø D [inch] [mm]	F [inch] [mm]	G [inch] [mm]	H [inch] [mm]	J [inch] [mm]	K [inch] [mm]
ZSB 1	6.3 (160)	2.8 (71)	4.06 (103)	44.21 (1123)	7.09 (180)	1.38 (35)	3.15 (80)	2.4 (61)
ZSB 2								
ZSB 3		3.15 (80)	4.41 (112)					
ZSB 4	11.02 (280)	3.54 (90)	4.8 (122)	52.09 (1323)	10.43 (265)	2.76 (70)	5.51 (140)	4.07 (103.5)
ZSB 5		4.41 (112)	5.67 (144)					
ZSB 6		4.92 (125)	6.18 (157)					
ZSB 7								
ZSB 8	17.72 (450)	6.3 (160)	6.77 (172)	75.71 (1923)	15.16 (385)	3.54 (90)	7.48 (190)	7.03 (178.5)
ZSB 9		7.09 (180)	7.56 (192)					
ZSB 10		7.87 (200)	8.35 (212)					

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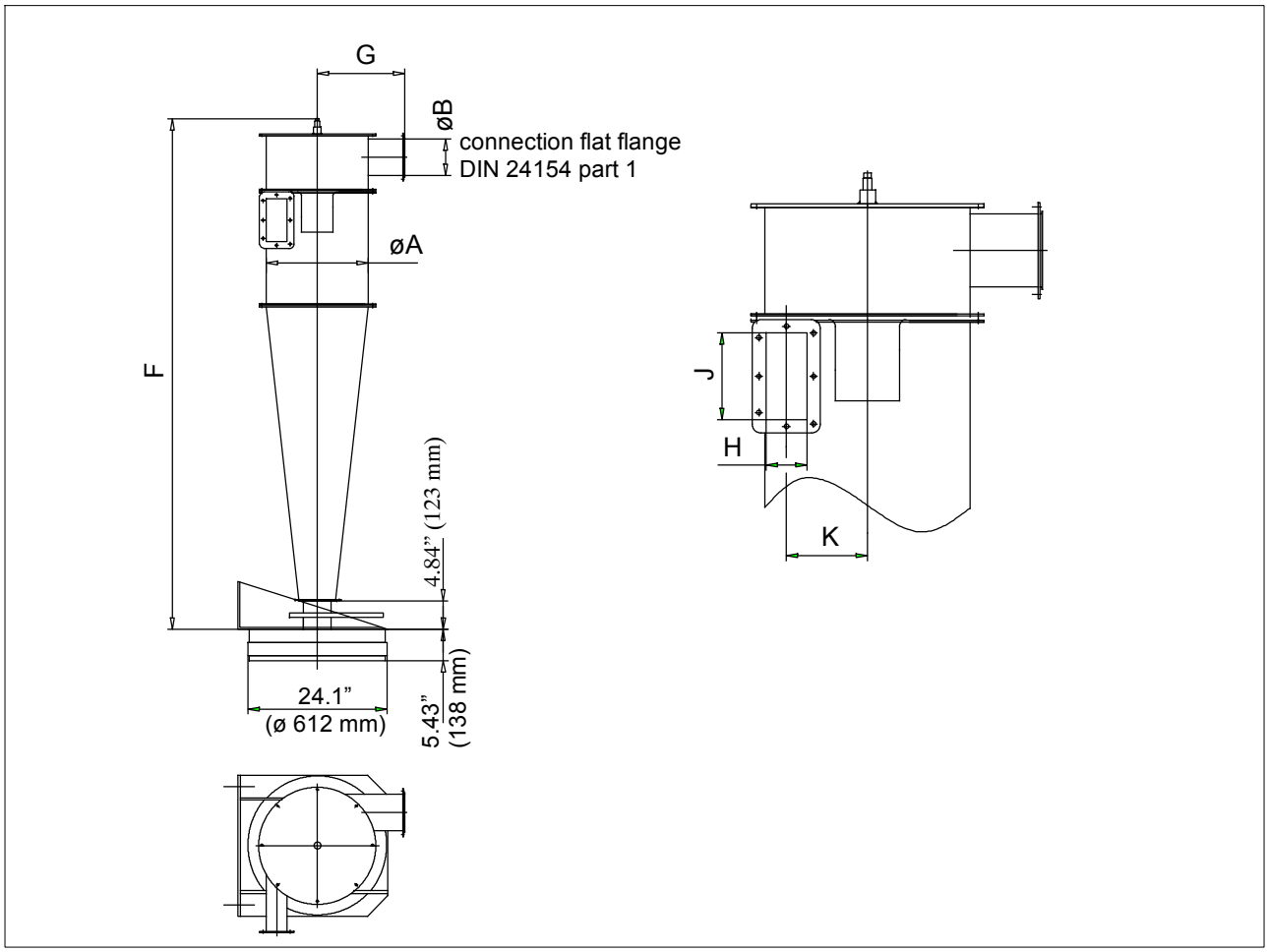
Dimensions Type ZSB with return air plenum



Type	Ø A [inch] [mm]	Ø B [inch] [mm]	F [inch] [mm]	G [inch] [mm]	H [inch] [mm]	J [inch] [mm]	K [inch] [mm]
ZSB 1	6.30 (160)	3.94 (100)	54.72 (1390)	7.09 (180)	1.38 (35)	3.15 (80)	2.4 (61)
ZSB 2							
ZSB 3							
ZSB 4	11.02 (280))	4.92 (125)	62.60 (1590)	10.43 (265)	2.76 (70)	5.51 (140)	4.07 (103.5)
ZSB 5							
ZSB 6							
ZSB 7							
ZSB 8	17.72 (450)	6.30 (160)	88.39 (2245)	15.16 (885)	3.54 (90)	7.48 (190)	7.03 (178.5)
ZSB 9							
ZSB 10							

All sizes have spark resistant coating at the inlet area.

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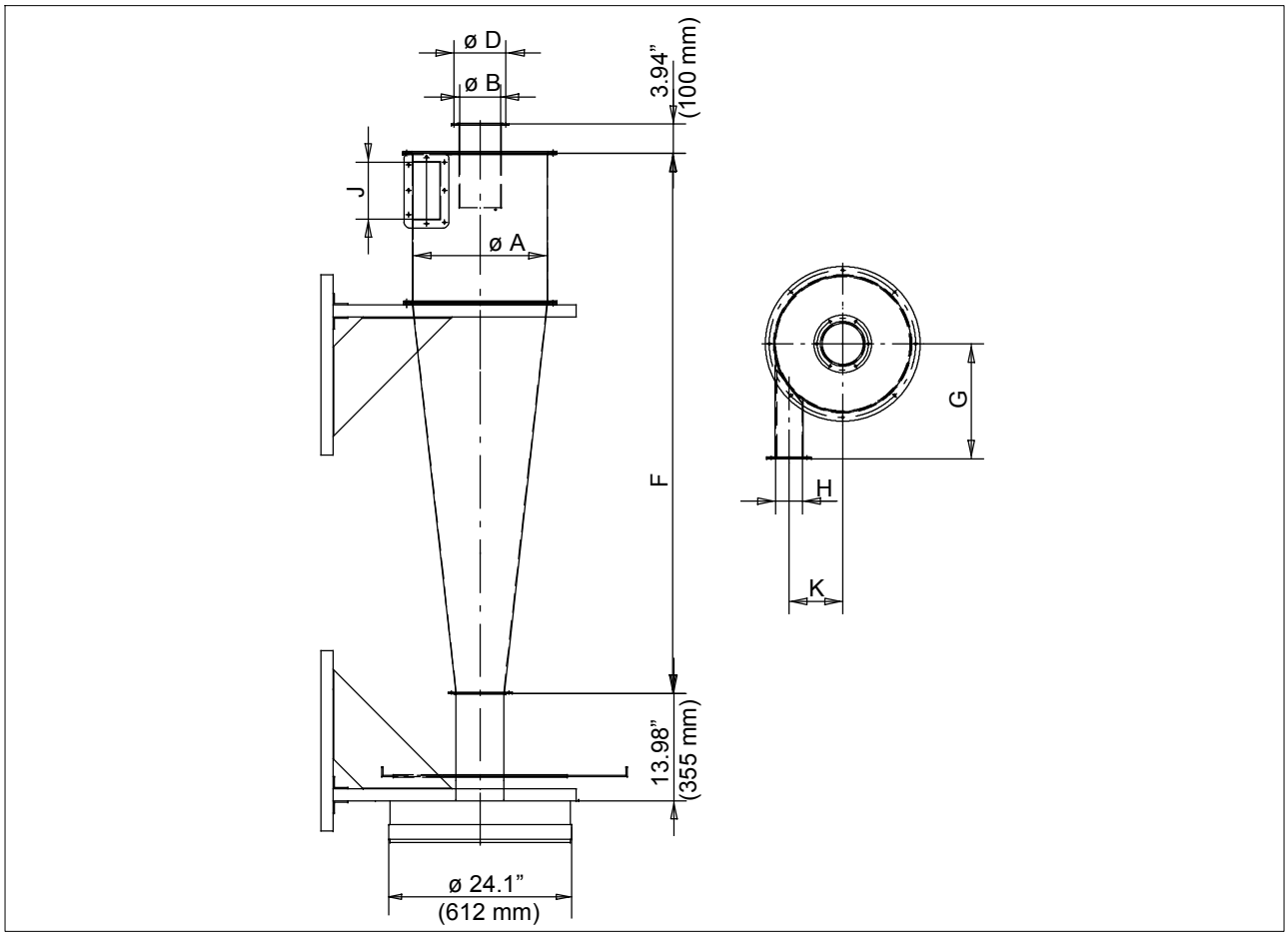
Dimensions Type ZSC



Type	Ø A [inch] [mm]	Ø B [inch] [mm]	Hole circle Ø D [inch] [mm]	F [inch] [mm]	G [inch] [mm]	H [inch] [mm]	J [inch] [mm]	K [inch] [mm]
ZSC 180	19.69 (500)	8.86 (224)	10.12 (257)	67.13 (1705)	8.98 (228)	6.3 (160)	7.87 (200)	13.07 (332)
ZSC 200					8.86 (225)			
ZSC 224	24.8 (630)	11.02 (280)	12.48 (317)	86.81 (2205)	11.14 (283)	7.87 (200)	9.84 (250)	16.42 (417)
ZSC 250					11.03 (280)			
ZSC 280	31.5 (800)	13.98 (355)	15.43 (392)	106.5 (2705)	14.09 (358)	9.84 (250)	13.98 (355)	20.79 (528)
ZSC 315					14.09 (358)			
ZSC 355					13.98 (355)			

Optional special design! Reinforced and spark resistant through special coating

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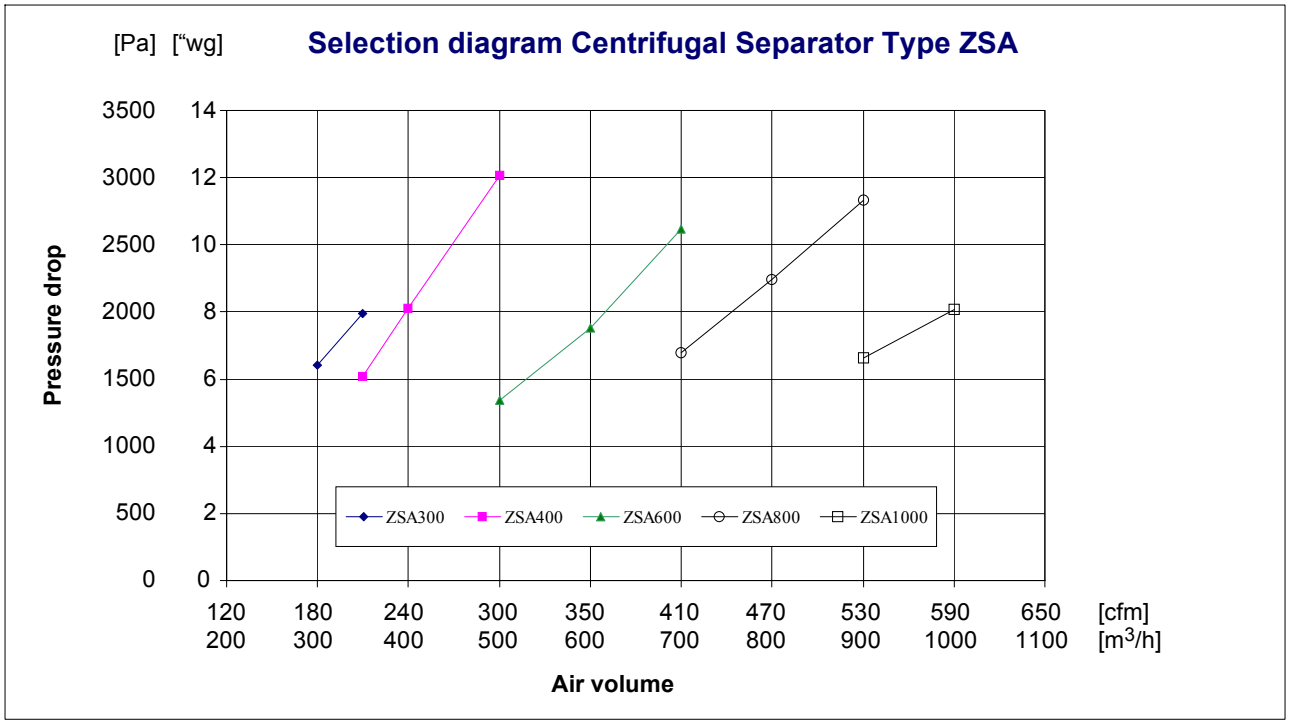
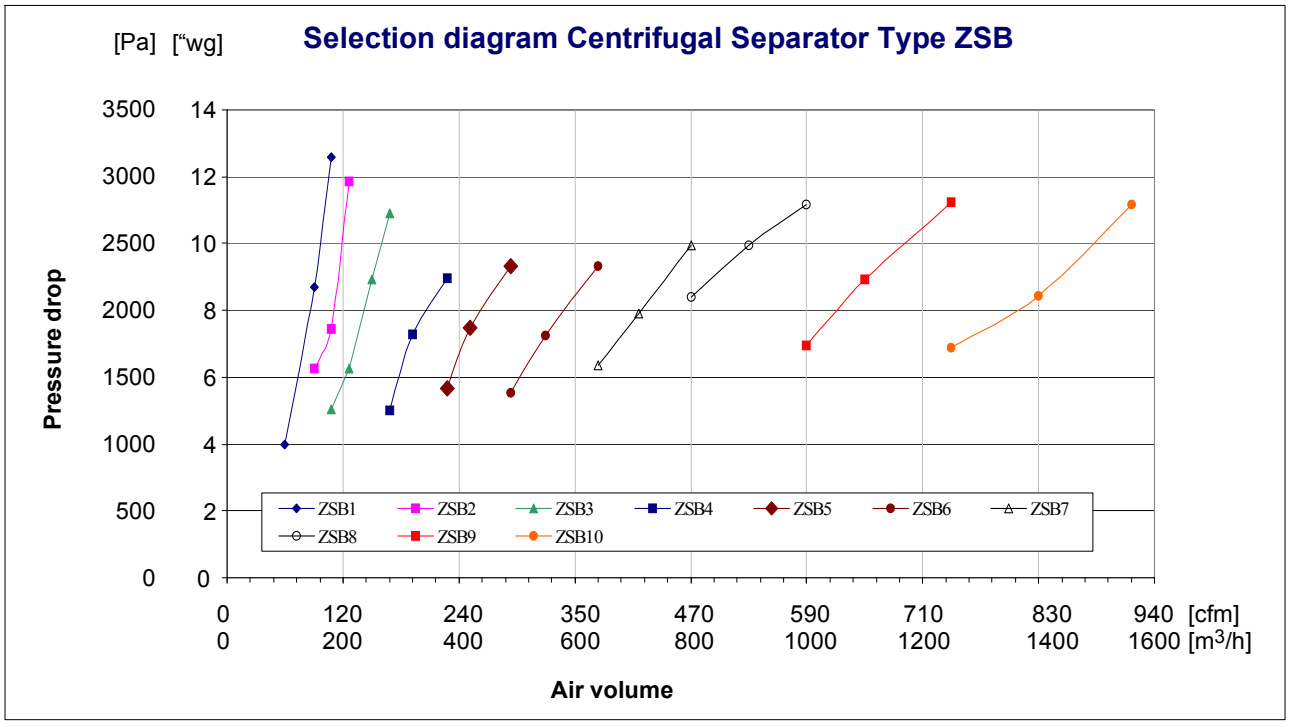
Selection Diagrams

Recommendation: for separation of fine particles - use larger air volume
for separation of big particles - use lower air volume





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Selection Diagrams

Recommendation: for separation of fine particles - use larger air volume
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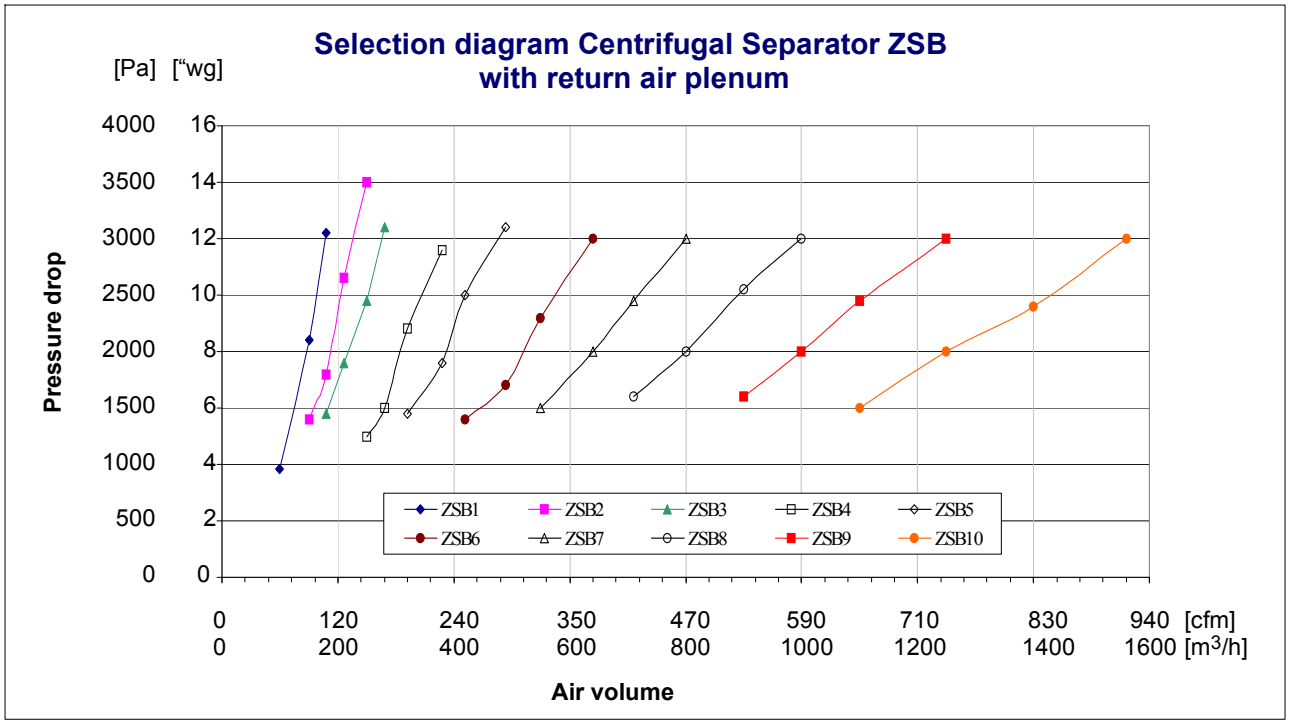

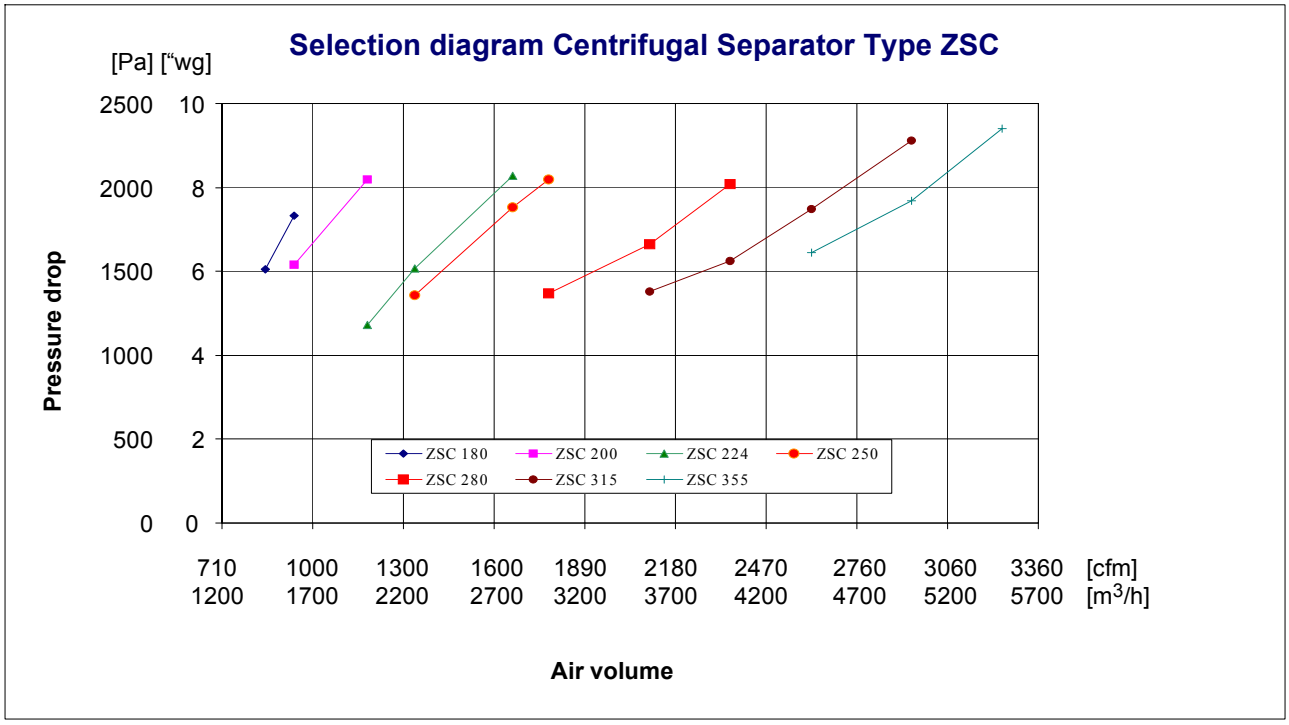

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Technical Data

Type	Air volume	Dust quantity	Pressure drop	Characteristic min. particle size d_{50}*	Characteristic min. particle size d_{90}**
	[cfm] [m^3/h]	[lbs/h] [kg/h]	["wg] [Pa]	[µm]	[µm]
ZSA	175 - 600 300 - 1000	to 110 to 50	4.8 - 8 1200 - 2000	3 - 5	10 - 20
ZSB	60 - 950 100 - 1600	to 220 to 100	4.8 - 12 1200 - 3000	2 - 3	6 - 10
ZSB with return air plenum	60 - 950 100 - 1600	to 220 to 100	4.8 - 10 1200 - 2500	1.5 - 2.5	4.5 - 7.5
ZSC	825 - 3250 1400- 5500	to 220 to 100	4.8 - 10 1200 - 2500	3 - 4	10 - 15

*) Min. particle size d_{50} means that 50% of particles of that size will be separated.

**) Min. particle size d_{90} means that 90% of particles of that size will be separated.

The minimum particle size was determined at maximum nominal volume.

Shipping

The LTG Centrifugal Separators are shipped completely assembled and can be selected as basic unit (without bag holder) or as standard unit (with bag holder).

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