

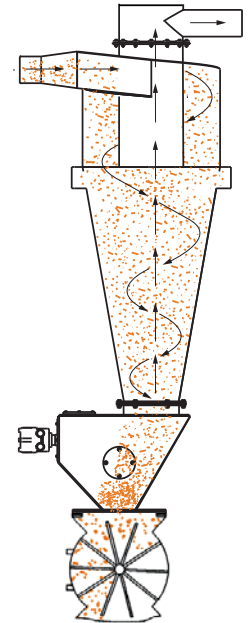
Application

The cyclone is ideal for conveying clean, pelletized to granular materials without fines or in applications where complete separation is not required. The cyclonic separation of material and air allows the material to discharge from the bottom of the cyclone while the conveying air exhausts at the top. When material is suitable for cyclonic separation, cyclones prove to be effective as filterless pneumatic receivers. This can be a big advantage in applications where the location makes it difficult to maintain cloth-based filters. In applications where a cyclone discharges material into a pneumatic conveying system, a surge hopper should be added to help prevent material backup into the cyclone.

Design

The cyclone has no moving parts, no bags to clean, and plant air and electricity are not needed for its operation. Cyclone inlet sizes range from 50 to 406 mm [2 to 16 in] diameters. Flanged discharge diameters range from 100 to 406 mm [4 to 16 in] I.D.

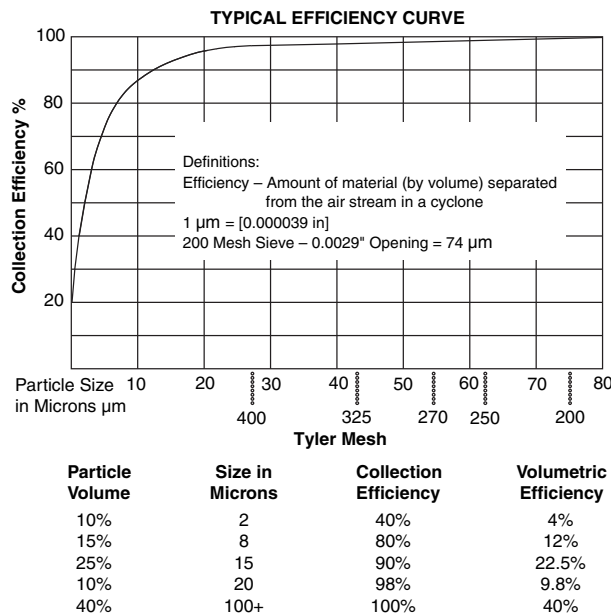
As shown in the illustration to the right, the cyclone contour uses centrifugal forces to separate the material from the gas. The configuration of body dimensions, inlet design, and internal profile maximizes the material/gas separation efficiently. The internal vortex is created from the material/gas mixture directed from the tangential, downward inlet. The centrifugal forces accelerate the material to the outer perimeter of the properly angled conical section. The material separates from the gas suspension allowing the material to be discharged and the gas exhausted.



Example of a Cyclone in Operation

Efficiency Performance

Cyclone efficiencies relate directly to the specific gravity and aerodynamic characteristics of the particle. For simplicity, the particle size only is used to determine estimated cyclone efficiencies. By determining the percentage of particle sizes in a given volume, the average cyclone efficiency can be figured.



Total Cyclone Efficiency 88.3%

Operating Specifications

Size	Air Volume m³/h [ft³/min]			Pressure/Vacuum Maximum Operating Limits mbar(g) [psi(g)] / mbar(g) [in Hg]			
	Min.	Optimal	Max.	10-Ga. CS	14-Ga. CS	0.125 Alum.	14-Ga. SST
1	0	212 [125]	297 [175]	N/A	1027 [14.9] / 575 [17]	1027 [14.9] / 575 [17]	1027 [14.9] / 575 [17]
2	297 [175]	382 [225]	510 [300]	N/A	1027 [14.9] / 575 [17]	1027 [14.9] / 575 [17]	1027 [14.9] / 575 [17]
3	467 [275]	637 [375]	850 [500]	1027 [14.9] / 575 [17]	1027 [14.9] / 575 [17]	1027 [14.9] / 575 [17]	1027 [14.9] / 575 [17]
4	722 [425]	1019 [600]	1274 [750]	1027 [14.9] / 575 [17]	1027 [14.9] / 575 [17]	1027 [14.9] / 575 [17]	1027 [14.9] / 575 [17]
5	1104 [650]	1444 [850]	1954 [1150]	1027 [14.9] / 575 [17]	690 [10] / 575 [17]	938 [13.6] / 575 [17]	690 [10] / 575 [17]
6	1444 [850]	1954 [1150]	2549 [1500]	814 [11.8] / 575 [17]	469 [6.8] / 467 [13.8]	600 [8.7] / 575 [17]	469 [6.8] / 467 [13.8]
7	1954 [1150]	2633 [1550]	3398 [2000]	620 [9.0] / 575 [17]	365 [5.3] / 365 [10.8]	441 [6.4] / 441 [13.0]	365 [5.3] / 365 [10.8]
8	2379 [1400]	3228 [1900]	4248 [2500]	490 [7.1] / 490 [14.6]	262 [3.8] / 262 [7.7]	352 [5.1] / 352 [10.4]	262 [3.8] / 262 [7.7]
9	2973 [1750]	3908 [2300]	5097 [3000]	400 [5.8] / 400 [11.8]	186 [2.7] / 186 [5.5]	248 [3.6] / 248 [7.3]	186 [2.7] / 186 [5.5]
10	3568 [2100]	4757 [2800]	6201 [3650]	330 [4.8] / 330 [9.7]	151 [2.2] / 151 [4.5]	193 [2.8] / 193 [5.7]	151 [2.2] / 151 [4.5]
11	4417 [2600]	5777 [3400]	7646 [4500]	275 [4.0] / 275 [8.2]	138 [2.0] / 138 [4.1]	172 [2.5] / 172 [5.1]	138 [2.0] / 138 [4.1]
12	4842 [2850]	6456 [3800]	8495 [5000]	234 [3.4] / 234 [7.0]	110 [1.6] / 110 [3.3]	138 [2.0] / 138 [4.1]	110 [1.6] / 110 [3.3]
13	5777 [3400]	7815 [4600]	10190 [6000]	207 [3.0] / 207 [6.0]	83 [1.2] / 83 [2.4]	110 [1.6] / 110 [3.3]	83 [1.2] / 83 [2.4]
14	6966 [4100]	9090 [5350]	11890 [7000]	179 [2.6] / 179 [5.2]	69 [1.0] / 69 [2.0]	90 [1.3] / 90 [2.6]	69 [1.0] / 69 [2.0]
15	7815 [4600]	10450 [6150]	13590 [8000]	159 [2.3] / 159 [4.6]	59 [0.85] / 59 [1.7]	76 [1.1] / 76 [2.2]	59 [0.85] / 59 [1.7]

NOTE: 1. Adhere to maximum vacuum ratings to assure proper operation in a conveying system.
2. A PD blower vacuum system requires cyclones rated to 575 mbar(g) [17 in Hg].

Technical Data

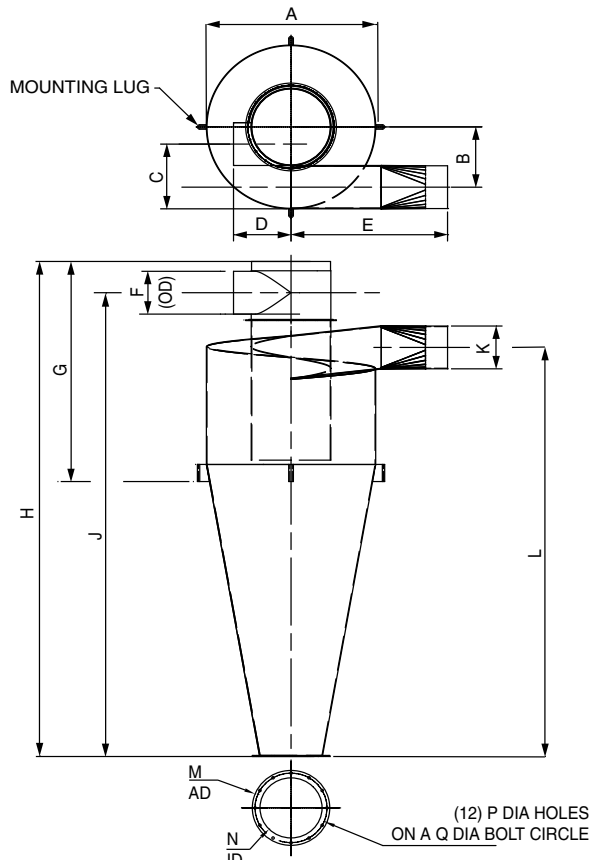
Standard Features

- Choice of materials of construction:
 - 10 and 14 gauge carbon steel, painted RAL 7035 gray
 - 3.2 mm [0.125 in] aluminum, painted RAL 7035 gray
 - 14 gauge 1.4301 [AISI 304] stainless steel
- Left hand inlet
- CE compliant

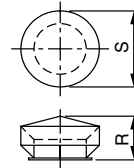
Options

- 1.4404 [AISI 316] stainless steel construction
- Exhaust canopy
- Right hand inlet
- Surge hopper

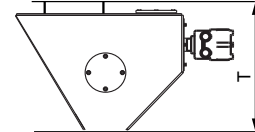
Dimensions of Cyclone mm [in]



Exhaust Canopy Option



Cyclone Surge Hopper



Size	R mm [in]	S mm [in]
1	152 [6]	89 [3.5]
2	203 [8]	114 [4.5]
3	305 [12]	171 [6.75]
4	381 [15]	216 [8.5]
5	457 [18]	257 [10.13]
6	533 [21]	311 [12.25]
7	610 [24]	341 [13.44]
8	686 [27]	381 [15]
9	762 [30]	425 [16.75]
10	838 [33]	467 [18.38]
11	914 [36]	508 [20]
12	991 [39]	552 [21.75]
13	1066 [42]	594 [23.38]
14	1143 [45]	635 [25]
15	1219 [48]	676 [26.63]

Cyclone Size	Aerolock Model Size	T mm [in]
3	1110	406 [16]
4	1312	502 [19.75]
5	1514	508 [20]

Note: Always include surge hopper when material from the cyclone is being discharged into a pneumatic conveying system. Other sizes available upon request.

Size	A mm [in]	B mm [in]	C mm [in]	D mm [in]	E mm [in]	F mm [in]	G mm [in]	H mm [in]	J mm [in]	K mm [in]	L mm [in]	M mm [in]	N mm [in]	P mm [in]	Q mm [in]
1	215 [8.5]	80 [3.125]	25 [1]	127 [5]	346 [13.63]	50 [2]	N/A	660 [25.94]	630 [24.81]	50 [2]	494 [19.45]	165 [6.5]	100 [4]	11 [0.44]	140 [5.5]
2	330 [13]	120 [4.75]	38 [1.5]	152 [6]	403 [15.88]	76 [3]	N/A	943 [37.13]	900 [35.5]	76 [3]	739 [29.11]	216 [8.5]	152 [6]	14 [0.56]	190 [7.5]
3	431 [17]	159 [6.25]	50 [2]	178 [7]	467 [18.38]	100 [4]	N/A	1203 [47.38]	1150 [45.25]	100 [4]	965 [37.97]	267 [10.5]	203 [8]	14 [0.56]	241 [9.5]
4	533 [21]	197 [7.75]	64 [2.5]	229 [9]	543 [21.38]	127 [5]	N/A	1445 [56.88]	1378 [54.25]	127 [5]	1167 [45.93]	330 [13]	254 [10]	14 [0.56]	305 [12]
5	648 [25.5]	238 [9.38]	76 [3]	254 [10]	625 [24.63]	152 [6]	883 [34.75]	1900 [74.88]	1822 [71.75]	152 [6]	1585 [62.39]	330 [13]	254 [10]	14 [0.56]	305 [12]
6	762 [30]	279 [11]	76 [3]	305 [12]	746 [29.37]	203 [8]	1035 [40.75]	2235 [88]	2130 [83.88]	203 [8]	1858 [73.14]	394 [15.5]	305 [12]	14 [0.56]	362 [14.25]
7	864 [34]	318 [12.5]	100 [4]	330 [13]	822 [32.38]	203 [8]	1118 [44]	2605 [102.56]	2500 [98.44]	203 [8]	2213 [87.13]	394 [15.5]	305 [12]	14 [0.56]	362 [14.25]
8	965 [38]	356 [14]	100 [4]	356 [14]	899 [35.38]	254 [10]	1250 [49.25]	2883 [113.5]	2753 [108.38]	254 [10]	2428 [95.59]	445 [17.5]	356 [14]	14 [0.56]	413 [16.25]
9	1080 [42.5]	397 [15.63]	127 [5]	381 [15]	987 [38.88]	254 [10]	1359 [53.5]	3315 [130.5]	3185 [125.38]	254 [10]	2847 [112.08]	445 [17.5]	356 [14]	14 [0.56]	413 [16.25]
10	1194 [47]	438 [17.25]	127 [5]	432 [17]	1102 [43.38]	304 [12]	1540 [60.625]	3625 [142.75]	3470 [136.63]	304 [12]	3098 [121.98]	508 [20]	406 [16]	14 [0.56]	470 [18.5]
11	1295 [51]	476 [18.75]	152 [6]	457 [18]	1178 [46.38]	304 [12]	1619 [63.75]	2993 [117.19]	2837 [111.06]	304 [12]	3449 [135.79]	508 [20]	406 [16]	14 [0.56]	470 [18.5]
12	1397 [55]	514 [20.25]	178 [7]	483 [19]	1254 [49.38]	304 [12]	1702 [67]	4362 [171.75]	4207 [165.63]	304 [12]	3810 [150]	508 [20]	406 [16]	14 [0.56]	470 [18.5]
13	1511 [60]	556 [21.88]	178 [7]	508 [20]	1368 [53.88]	356 [14]	1911 [75.25]	4895 [192.75]	4664 [183.63]	355 [14]	4220 [166.14]	508 [20]	406 [16]	14 [0.56]	470 [18.5]
14	1625 [64]	597 [23.5]	178 [7]	533 [21]	1508 [59.38]	406 [16]	2019 [79.5]	5330 [209.81]	5123 [201.69]	406 [16]	4632 [182.38]	508 [20]	406 [16]	14 [0.56]	470 [18.5]
15	1727 [68]	635 [25]	203 [8]	559 [22]	1559 [61.38]	406 [16]	2095 [82.5]	5692 [224.13]	5486 [216]	406 [16]	4996 [196.69]	508 [20]	406 [16]	14 [0.56]	470 [18.5]

Caution: Measurements are for general reference only. Please consult dimensional drawing for exact measurements.