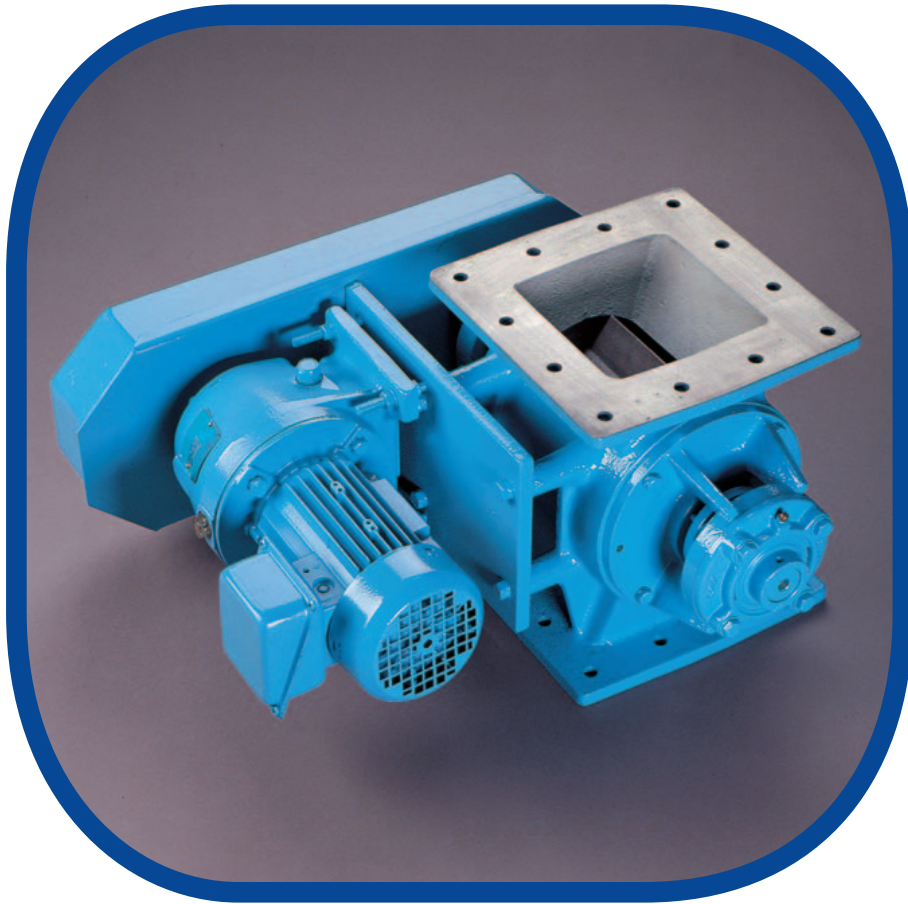




Carolina Conveying

Rotary Airlocks



the power
in
powders

Rotary Airlocks

“valves are vital
for successful
flow regulation.”

Carolina Conveying has carefully selected a team of engineers with considerable experience in design, application and after sales service to give customers confidence. No matter whether the product is abrasive, fluffy, fibrous, sticky or granular; free flowing or sluggish, dry or sometimes even damp, Carolina Conveying will meet the challenge.

Carolina Conveying Inc. have designed three types of Rotary Airlocks to meet industry demands:

- **Drop Thru Valves**
- **Blow Thru Valves**
- **Side Entry Valves**

Drop Thru : for standard applications e.g. cyclones, filters and conveying

Side Entry : for applications with stringy, lumpy products minimizing shear and shocks loads.

Blo-Thru : for compact, standard non-abrasive applications with low pressure drop.

Airlocks have three main functions:

- Feeder applications with no pressure used purely to feed product from a bin or hopper
- Filter applications e.g. cyclones, baghouses and various collectors where fine dust must be collected while maintaining an air seal.
- Pneumatic conveying applications where feeding material into a system against pressure or vacuum.

Carolina Conveying has the philosophy of meeting these demands with Heavy Duty Airlocks as standard. Furthermore, with the introduction of sophisticated CNC machining equipment, volume sales and stock production needs can be achieved, and prompt delivery and competitive price are offered with no compromise on quality.

Remember Heavy Duty, quality features, design flexibility and rotor interchangeability are a pre requisite in solving your problems.

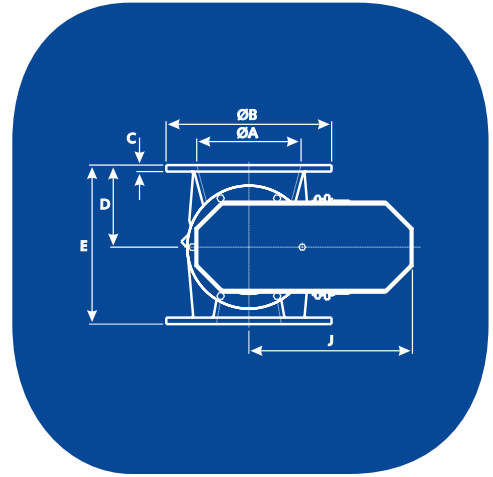
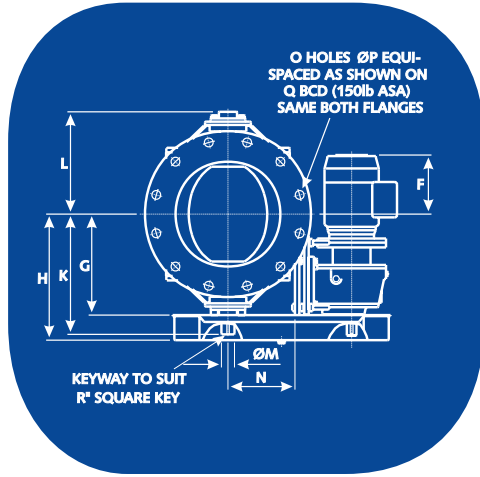


standard features

- Heavy Duty castings for body and end covers.
- Rotor robustly constructed to ensure tolerances are held. Fixed blade bevelled edges and closed type are offered as standard although numerous variations are available.
- End covers spigotted into body for concentricity.
- Grease packed ball type bearings, mounted outboard.
- PTFE packing glands with design flexibility for air purging.
- Driven by helical in line gearbox that will accommodate any C Flange motor whether it's standard, explosion proof, chemical duty etc. Helical gears have higher efficiency transmission than the industrial standard worm types used by most of our competitors.
- Simple rotor centralization is achieved with set screws located in bearings
- Compact assembly units ready to be installed. All imperial construction wherever possible.



Round Inlet Rotary Airlocks



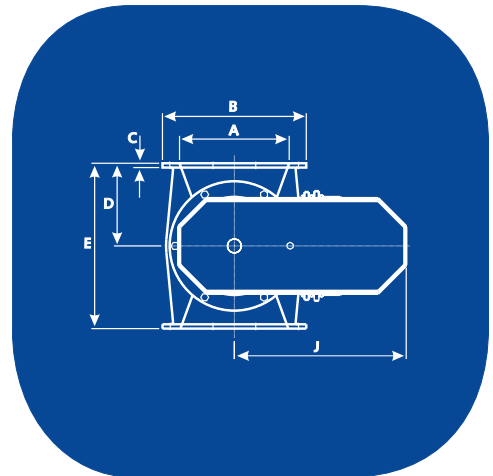
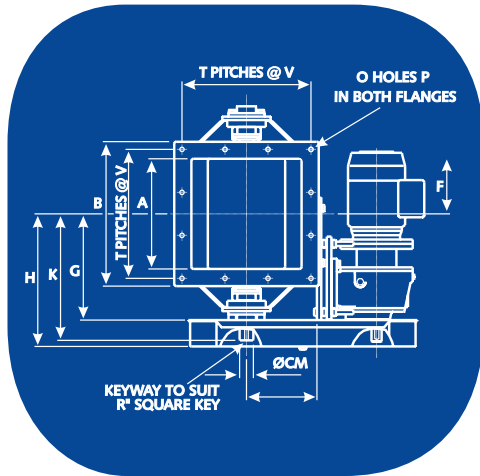
dimensions

| SIZE | A | B | C | D | E | F | G | H | J | K | L | M | N | O | P | Q | R | HP |
|------|-----|-----|------|-----|-----|----|-----|-----|-----|-----|-----|----|-----|----|-----|-----|---|----|
| 6" | 6 | 11¼ | ½ | 5½ | 10⅝ | 8¼ | 8¼ | 11½ | 16 | 10¼ | 8¼ | 1¼ | 5⅝ | 8 | 7/8 | 9½ | ¼ | ½ |
| 8" | 8 | 13½ | ½ | 6⅝ | 12⅝ | 7¼ | 9¼ | 12½ | 16 | 11¼ | 9⅝ | 1¼ | 5⅝ | 8 | 7/8 | 11¾ | ¼ | ½ |
| 10" | 10 | 16 | 9/16 | 7⅞ | 15 | 8⅝ | 10⅝ | 13⅝ | 18⅜ | 12⅝ | 10 | 1½ | 6⅞ | 12 | 1 | 14¼ | ⅜ | 1 |
| 12" | 12 | 19 | ¾ | 9⅞ | 18⅝ | 7¼ | 11⅝ | 14⅞ | 18⅞ | 13¾ | 11¾ | 1½ | 7⅞ | 12 | 1 | 17 | ⅜ | 1 |
| 14" | 14 | 21 | ¾ | 10⅝ | 20½ | 7 | 12 | 15¼ | 20¼ | 14⅜ | 12⅞ | 1½ | 8⅞ | 12 | 1⅞ | 18¾ | ⅜ | 1 |
| 16" | 16 | 23½ | ¾ | 11⅝ | 22⅝ | 4⅜ | 14⅝ | 19 | 24⅝ | 18 | 14⅞ | 2½ | 9¼ | 16 | 1⅞ | 21¼ | ⅝ | 1½ |
| 18" | 18 | 25 | ¾ | 12⅝ | 24⅝ | 3⅜ | 15⅝ | 20 | 24⅝ | 19 | 15⅞ | 2½ | 11¼ | 16 | 1¼ | 22¾ | ⅝ | 1½ |
| 20" | 20 | 27½ | ¾ | 13⅝ | 26⅝ | 5¼ | 16⅝ | 21 | 27½ | 19⅞ | 16⅞ | 2½ | 11⅝ | 20 | 1¼ | 25 | ⅝ | 2 |
| 24" | 24 | 32 | ¾ | 15⅝ | 29⅝ | 3⅝ | 18⅝ | 23 | 27½ | 21⅞ | 18¾ | 2½ | 13⅝ | 20 | 1⅝ | 29½ | ⅝ | 3 |
| 30" | 29½ | 29½ | 1 | 19⅝ | 39⅝ | 3 | 19¾ | 25¼ | 35¾ | 23⅞ | 20½ | 70 | 17⅞ | 28 | 1⅞ | 36 | 6 | 3 |

All dimensions in inches

Dimensions subject to change without notice

Square Inlet Rotary Airlocks



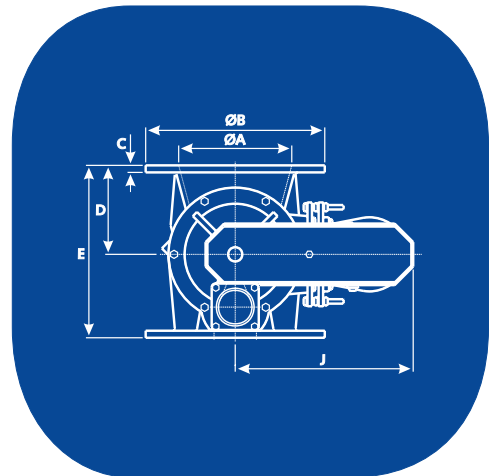
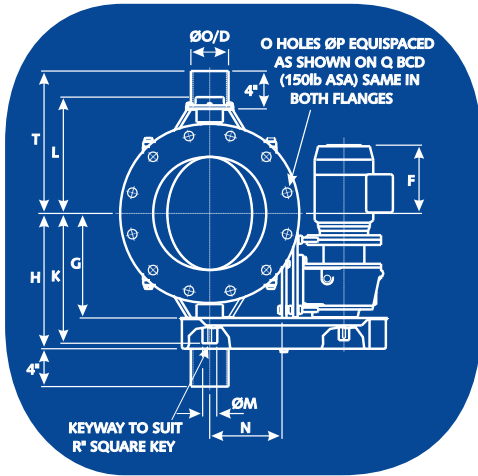
dimensions

| SIZE | A | B | C | D | E | F | G | H | J | K | L | M | N | O | P | R | T | V | HP |
|------|-----|-----|------|-----|-----|----|-----|-----|-----|-----|-----|----|-----|----|------|---|---|----|----|
| 6" | 6 | 9⅞ | ½ | 5½ | 11 | 8¼ | 8¼ | 11½ | 16 | 10¼ | 8¼ | 1¼ | 5⅝ | 12 | ½ | ¼ | 3 | 2¾ | ½ |
| 8" | 8 | 11⅝ | ⅝ | 6½ | 13 | 7¼ | 9¼ | 12½ | 16 | 11¼ | 9⅝ | 1¼ | 5⅝ | 12 | ½ | ¼ | 3 | 3⅞ | ½ |
| 10" | 10 | 13¼ | 9/16 | 7½ | 15 | 8⅝ | 10⅝ | 13⅝ | 18⅜ | 12⅝ | 10⅞ | 1½ | 6⅞ | 12 | 9/16 | ⅜ | 3 | 4 | 1 |
| 12" | 12 | 15¾ | ½ | 9⅞ | 18⅞ | 7¼ | 11⅝ | 14⅞ | 18⅞ | 13¾ | 11¾ | 1½ | 7⅞ | 12 | ½ | ⅜ | 3 | 4⅞ | 1 |
| 14" | 14 | 18½ | ¾ | 10⅝ | 20¼ | 7 | 12 | 15¼ | 20¼ | 14⅜ | 12⅞ | 1½ | 8⅞ | 12 | ½ | ⅜ | 3 | 5½ | 1 |
| 16" | 16 | 21⅝ | ¾ | 11⅝ | 22⅝ | 4⅜ | 14⅝ | 19 | 24⅝ | 17⅝ | 14⅞ | 2½ | 9¼ | 12 | 1⅞ | ⅝ | 3 | 6½ | 1½ |
| 18" | 18 | 24 | ¾ | 12⅞ | 24⅝ | 3⅝ | 15⅝ | 20 | 24⅝ | 19 | 15⅞ | 2½ | 11¼ | 12 | 1⅞ | ⅝ | 3 | 7⅞ | 1½ |
| 20" | 20 | 25⅞ | ¾ | 13⅝ | 26⅝ | 5¼ | 16⅝ | 21 | 27½ | 19⅞ | 16⅞ | 2½ | 11⅝ | 14 | 1⅞ | ⅝ | 4 | 5⅝ | 2 |
| 24" | 24 | 29½ | ¾ | 14⅝ | 29½ | 3⅝ | 18⅝ | 23 | 27½ | 21⅞ | 18¾ | 2½ | 13⅝ | 14 | 1⅞ | ⅝ | 4 | 6⅝ | 3 |
| 30" | 29½ | 29½ | 1 | 19⅝ | 39⅝ | 3 | 19¾ | 25¼ | 35¾ | 23⅞ | 20½ | 70 | 17⅞ | 14 | 1⅞ | ⅝ | 6 | 5⅞ | 3 |
| 36" | 36 | 45⅞ | 1 | 23⅝ | 47¼ | -1 | 23⅞ | 29½ | 39⅞ | 27⅞ | 24⅞ | 70 | 21¼ | 14 | 1⅞ | ⅝ | 6 | 6⅞ | 5 |

All dimensions in inches

Dimensions subject to change without notice

Round Inlet Blow Thru Rotary Airlocks



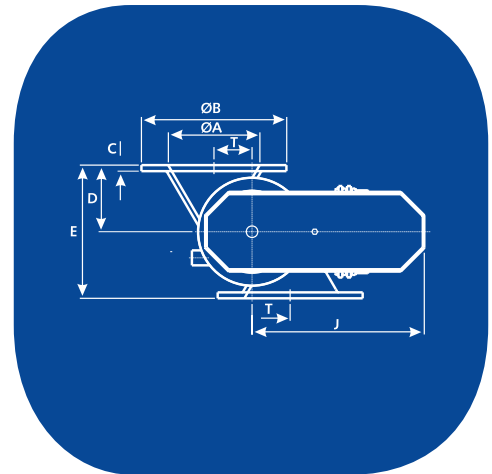
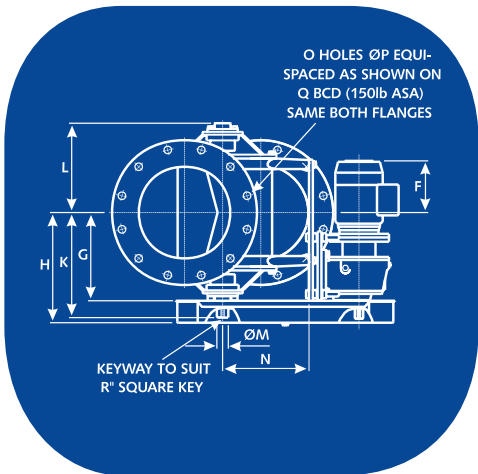
dimensions

| SIZE | A | B | C | D | E | F | G | H | J | K | L | M | N | O | P | Q | R | T | O/D | HP |
|------|----|--------------------------------|------|----------------------------------|----------------------------------|-------------------------------|---------------------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|-------------------------------|---------------------------------|----|-------------------------------|--------------------------------|-----|----------------------------------|--------------------------------|-------------------------------|
| 6" | 6 | 11 ¹ / ₄ | 1/2 | 5 ¹ / ₂ | 10 ⁵ / ₈ | 8 ⁷ / ₈ | 7 ⁵ / ₈ | 10 ³ / ₄ | 14 ³ / ₈ | 10 ¹ / ₄ | 8 ¹³ / ₁₆ | 1 ¹ / ₄ | 5 ⁵ / ₈ | 8 | 7/8 | 9 ¹ / ₂ | 1/4 | 11 ⁵ / ₈ | 2 ³ / ₈ | 1/2 |
| 8" | 8 | 13 ¹ / ₂ | 1/2 | 6 ⁵ / ₁₆ | 12 ³ / ₁₆ | 7 ⁷ / ₈ | 8 ⁵ / ₈ | 11 ⁷ / ₈ | 14 ³ / ₈ | 11 ¹ / ₄ | 9 ⁷ / ₈ | 1 ¹ / ₄ | 5 ⁵ / ₈ | 8 | 7/8 | 11 ³ / ₄ | 1/4 | 12 ⁵ / ₈ | 2 ⁷ / ₈ | 1/2 |
| 10" | 10 | 16 | 9/16 | 7 ⁷ / ₈ | 15 | 9 | 9 ¹⁵ / ₁₆ | 13 ⁹ / ₁₆ | 17 ³ / ₈ | 12 ⁵ / ₈ | 11 ¹ / ₄ | 1 ¹ / ₂ | 6 ¹ / ₈ | 12 | 1 | 14 ¹ / ₄ | 3/8 | 13 ¹⁵ / ₁₆ | 3 ¹ / ₂ | 1 |
| 12" | 12 | 19 | 3/4 | 9 ⁷ / ₁₆ | 18 ⁵ / ₁₆ | 7 ⁷ / ₈ | 11 ¹ / ₈ | 14 ⁷ / ₈ | 18 ⁷ / ₈ | 13 ³ / ₄ | 12 ³ / ₈ | 1 ¹ / ₂ | 7 ¹¹ / ₁₆ | 12 | 1 | 17 | 3/8 | 15 ¹ / ₈ | 4 | 1 |
| 16" | 16 | 23 ¹ / ₂ | 3/4 | 11 ¹³ / ₁₆ | 22 ¹³ / ₁₆ | 3 ³ / ₄ | 13 ³ / ₄ | 19 | 22 ³ / ₈ | 17 ¹⁵ / ₁₆ | 15 ³ / ₄ | 2 ¹ / ₂ | 9 ¹ / ₄ | 16 | 1 ¹ / ₈ | 21 ¹ / ₄ | 5/8 | 17 ¹¹ / ₁₆ | 5 ⁹ / ₁₆ | 1 ¹ / ₂ |

All dimensions in inches

Dimensions subject to change without notice

Round Inlet Side Entry Airlocks



dimensions

| SIZE | A | B | C | D | E | F | G | H | J | K | L | M | N | O | P | Q | R | T | HP |
|------|----|---------------------------------|-----|--------------------------------|--------------------------------|-------------------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|----|-------------------------------|--------------------------------|-----|-------------------------------|-----|
| 8" | 8 | 13 ¹ / ₂ | 5/8 | 6 ¹ / ₂ | 13 | 7 ¹ / ₄ | 9 ¹ / ₄ | 12 ¹ / ₂ | 18 ¹ / ₄ | 11 ¹ / ₄ | 9 ³ / ₁₆ | 1 ¹ / ₄ | 7 ⁷ / ₄ | 8 | 7/8 | 11 ³ / ₄ | 1/4 | 3 ³ / ₈ | 1/2 |
| 10" | 10 | 16 | 3/4 | 7 ¹ / ₂ | 15 | 8 ⁵ / ₈ | 10 ³ / ₈ | 13 ⁵ / ₈ | 22 ⁷ / ₁₆ | 12 ⁵ / ₈ | 10 ⁹ / ₁₆ | 1 ¹ / ₂ | 9 ³ / ₄ | 12 | 1 | 14 ¹ / ₄ | 3/8 | 4 ¹ / ₄ | 1 |
| 12" | 12 | 19 | 3/4 | 8 ³ / ₄ | 17 ¹ / ₂ | 7 ¹ / ₄ | 11 ⁵ / ₈ | 14 ⁷ / ₈ | 22 ⁵ / ₈ | 13 ³ / ₄ | 11 ³ / ₄ | 1 ¹ / ₂ | 11 ⁵ / ₁₆ | 12 | 1 | 17 | 3/8 | 5 | 1 |
| 14" | 14 | 21 | 7/8 | 10 ¹ / ₂ | 21 | 7 | 12 | 15 ¹ / ₄ | 25 ³ / ₈ | 14 ³ / ₁₆ | 12 ¹ / ₈ | 1 ¹ / ₂ | 13 | 12 | 1 ¹ / ₈ | 18 ³ / ₄ | 3/8 | 5 ¹ / ₂ | 1 |
| 20" | 20 | 29 ⁹ / ₁₆ | 1 | 14 | 28 | 5 ¹ / ₈ | 16 ⁵ / ₈ | 21 | 29 ³ / ₄ | 19 ⁷ / ₈ | 16 ⁷ / ₈ | 1 ¹ / ₄ | 21 ¹ / ₄ | 20 | 1 ¹ / ₄ | 25 | 5/8 | 7 ⁷ / ₈ | 2 |

All dimensions in inches

Dimensions subject to change without notice

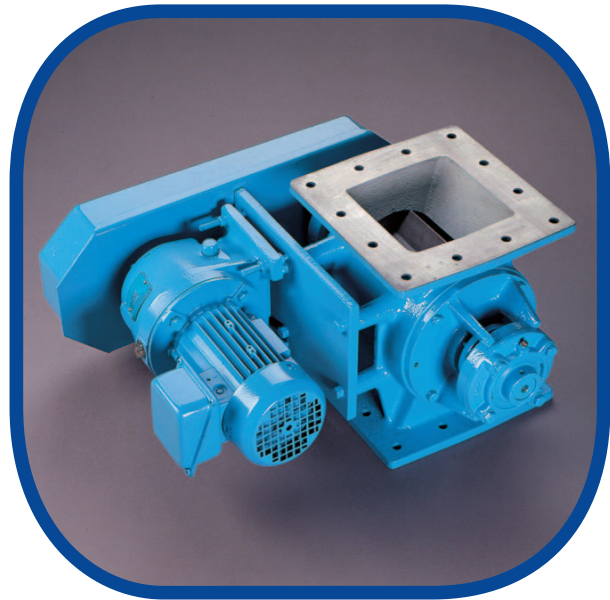
Calculating your correct valve size

Valves are sized on volumes. Throughput is usually expressed in lbs or tons / hour, but for valves selection it must be converted into cubic feet / hour.

- ∴ To calculate a valve throughput per hour:
Throughput lbs / hr = cu. ft. / hr. capacity
Bulk Density lbs / cu. ft.
- ∴ Based on, say, 240,000 lbs / hr. at a bulk density of 80 lb. / cu. ft.

Valve throughput required

$$= \frac{240,000 \text{ lb / hr.}}{80 \text{ lb / cu. ft.}} = 3000 \text{ cu. ft. / hr.}$$



| Size | CFR | 100% CAPACITY IN CUBIC FEET / HOUR | | | | | | | | | | | | | |
|------|-------|------------------------------------|-----|------|------|------|------|------|------|------|------|------|------|------|------|
| 24 | 5.683 | 341 | 682 | 1364 | 2046 | 2720 | 3410 | 4092 | 4774 | 5456 | 6138 | 6820 | 7502 | 8184 | 8865 |
| 20 | 3.233 | 194 | 388 | 776 | 1164 | 1552 | 1940 | 2328 | 2716 | 3104 | 3492 | 3880 | 4268 | 4656 | 5043 |
| 18 | 2.333 | 140 | 280 | 560 | 840 | 1120 | 1400 | 1680 | 1960 | 2240 | 2520 | 2800 | 3080 | 3360 | 3639 |
| 16 | 1.667 | 100 | 200 | 400 | 600 | 800 | 1000 | 1200 | 1400 | 1600 | 1800 | 2000 | 2200 | 2400 | 2601 |
| 14 | 1.017 | 61 | 122 | 244 | 366 | 488 | 610 | 732 | 854 | 976 | 1090 | 1220 | 1342 | 1464 | 1587 |
| 12 | 0.700 | 42 | 84 | 168 | 252 | 336 | 420 | 504 | 588 | 672 | 756 | 840 | 924 | 1008 | 1092 |
| 10 | 0.380 | 23 | 46 | 91 | 137 | 182 | 228 | 274 | 319 | 365 | 410 | 456 | 502 | 547 | 593 |
| 8 | 0.190 | 11 | 23 | 46 | 68 | 91 | 114 | 137 | 160 | 182 | 205 | 228 | 251 | 274 | 296 |
| 6 | 0.069 | 4 | 8 | 17 | 25 | 33 | 41 | 50 | 58 | 66 | 75 | 83 | 91 | 99 | 108 |
| 5 | 0.039 | 2 | 5 | 9 | 14 | 19 | 23 | 28 | 33 | 37 | 42 | 47 | 51 | 56 | 61 |
| | | 1 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 |

| Size | CFR | PRACTICAL CAPACITY PER EFFICIENCY | | | | | | | | | | | | | |
|------|-------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | | 100% | 100% | 100% | 98% | 95% | 90% | 88% | 86% | 84% | 81% | 78% | 74% | 71% | 68% |
| 24 | 5.683 | 341 | 682 | 1364 | 2005 | 2591 | 3069 | 3601 | 4105 | 4583 | 4971 | 5319 | 5551 | 5810 | 6029 |
| 20 | 3.233 | 194 | 388 | 776 | 1141 | 1474 | 1746 | 2048 | 2336 | 2607 | 2828 | 3026 | 3158 | 3305 | 3430 |
| 18 | 2.333 | 140 | 280 | 560 | 823 | 1064 | 1260 | 1478 | 1685 | 1881 | 2041 | 2184 | 2279 | 2385 | 2475 |
| 16 | 1.667 | 100 | 200 | 400 | 588 | 760 | 900 | 1056 | 1204 | 1344 | 1458 | 1560 | 1628 | 1704 | 1768 |
| 14 | 1.017 | 61 | 122 | 244 | 359 | 464 | 549 | 644 | 735 | 820 | 890 | 952 | 993 | 1040 | 1079 |
| 12 | 0.700 | 42 | 84 | 168 | 247 | 319 | 378 | 444 | 506 | 564 | 612 | 655 | 684 | 716 | 743 |
| 10 | 0.380 | 23 | 46 | 91 | 134 | 173 | 205 | 241 | 275 | 306 | 332 | 356 | 371 | 389 | 403 |
| 8 | 0.190 | 11 | 23 | 46 | 67 | 87 | 103 | 120 | 137 | 153 | 166 | 178 | 186 | 194 | 202 |
| 6 | 0.069 | 4 | 8 | 17 | 24 | 31 | 37 | 44 | 50 | 56 | 60 | 65 | 67 | 71 | 73 |
| 5 | 0.039 | 2 | 5 | 9 | 14 | 18 | 21 | 25 | 28 | 31 | 34 | 37 | 38 | 40 | 41 |
| | | 1 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 |



Carolina Conveying

Specialists

in powder handling components and systems. We offer a very comprehensive range of products including Rotary Airlocks, IBC Systems, Diverter Valves, Silo Dischargers, Volumetric and Weighing Systems, Aero-mechanical Conveyors and Dense Phase Conveying Systems.

Carolina Conveying

Technology

product test facility with our complete range of machines allowing prospective clients to visit and witness trials. State of the art CAD and manufacturing facilities for material handling systems.

Carolina Conveying

Design

products are always designed to suit your particular application and requirements.

Carolina Conveying

Philosophy

it is our company policy to supply customers with products which conform to the highest quality specifications, are fit for their intended purpose, and offer a wide range of support services including installation, commissioning and service contracts.



product range

Bin Activators

Soliflo™ Dischargers

Solibin™ IBC Systems

FIBC Systems

Rite Rate™ Feeders

Rite Weight™ Feeders

**DiscAir™
Aeromechanical
Conveyors**

**Blo-Bin™ Dense Phase
Pneumatic Conveying**

**Blo-Bend™ Ni Hard
Bends**

Rotary Valves

**Side Entry Rotary
Valves**

**Blow Thru Rotary
Valves**

Double Dumps

**Flap Type Conveying
Diverters**

Carolina Conveying Inc.

**P.O. Box 1208, Beaverdam Industrial Park
162 Great Oak Drive, Canton, NC 28716**

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