

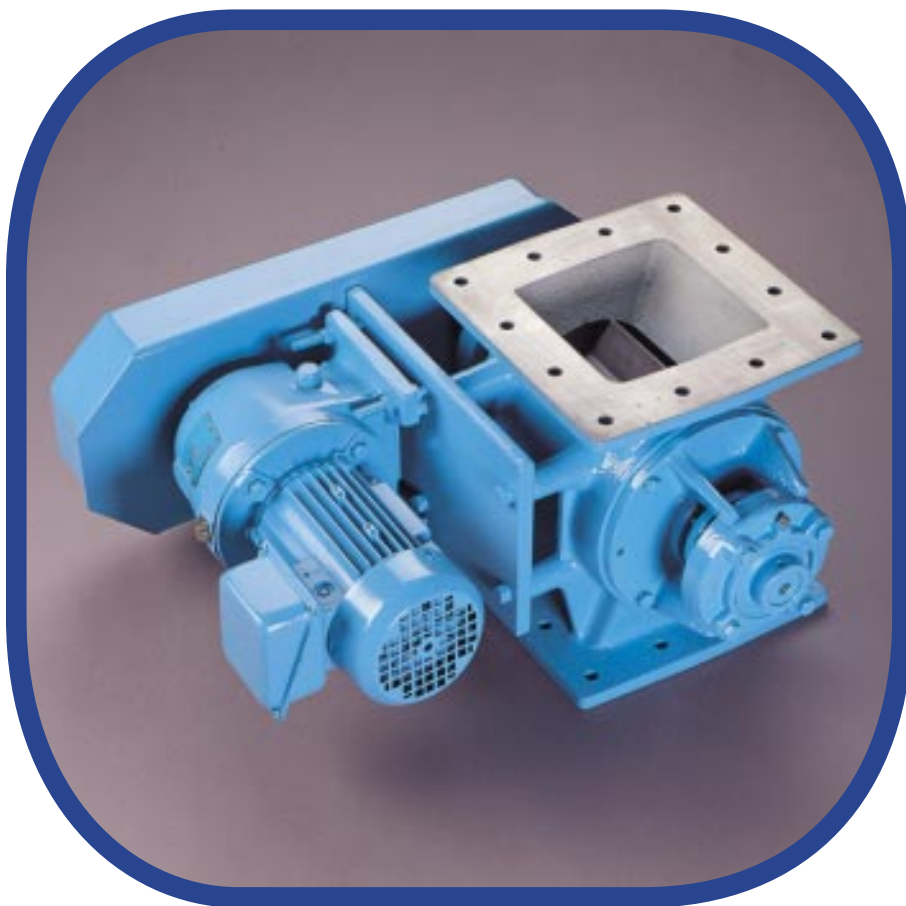
CAROLINA MATERIAL TECHNOLOGIES

WWW.CMTNC.COM



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 whilst 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.

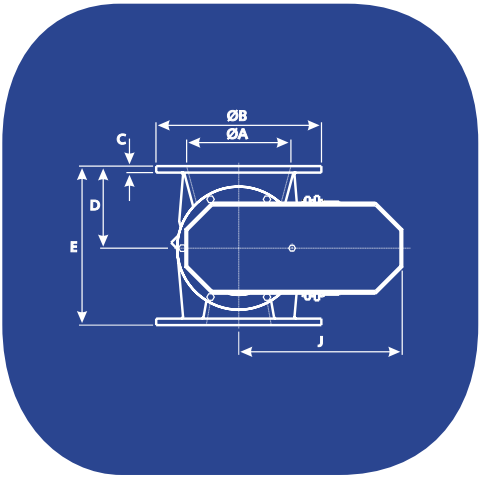
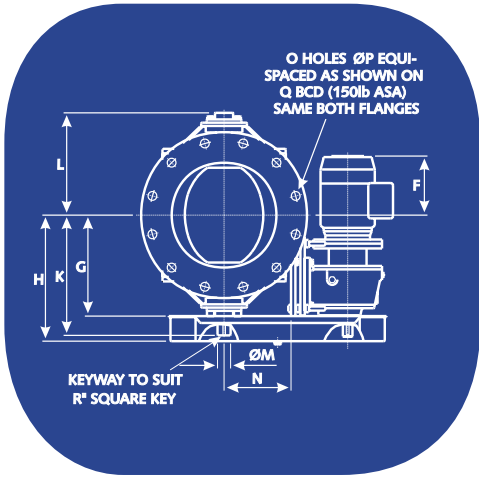
Remember Heavy Duty, quality features, design flexibility and rotor interchangeability are a pre requisite in solving your problems.



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.
- Drives by spur in line gearheads that will accommodate any C Flange motor whether it's standard, flameproof, chemical duty etc. Spur gears have higher efficiency transmission than the industrial standard worm types used by most of our competitors.
- Simple rotor centralization is achieved with grub screws located in bearings (only non drive end is locked)
- Compact assembly units ready to be installed. All imperial construction wherever possible.

Round Inlet Rotary Airlocks



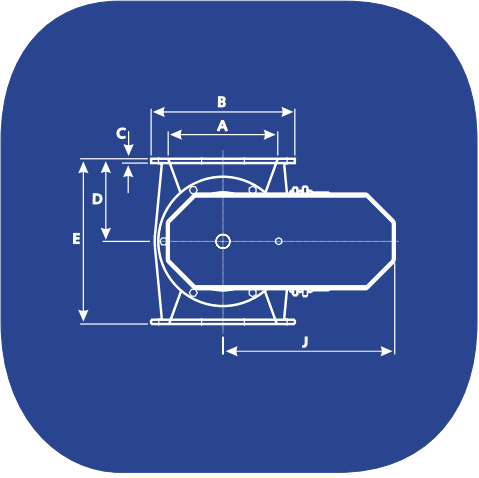
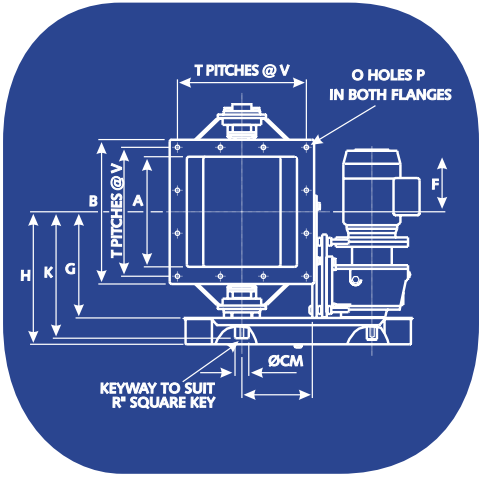
dimensions

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	HP
6"	6	11¼	1/2	5½	10⅝	8¼	8¼	11½	16	10¼	8¼	1¼	5⅝	8	7/8	9½	1/4	1/2
8"	8	13½	1/2	6⅝	12⅜	7¼	9¼	12½	16	11¼	9⅜	1¼	5⅝	8	7/8	11¾	1/4	1/2
10"	10	16	9/16	7⅞	15	8⅝	10⅜	13⅝	18⅜	12⅝	10⅞	1½	6⅞	12	1	14¼	3/8	1
12"	12	19	3/4	9⅞	18⅝	7¼	11⅝	14⅞	18⅞	13¾	11¾	1½	7⅞	12	1	17	3/8	1
14"	14	21	3/4	10⅝	20½	7	12	15¼	20¼	14⅜	12⅞	1½	8⅞	12	1⅞	18¾	3/8	1
16"	16	23½	3/4	11⅞	22⅜	4⅜	14⅝	19	24⅝	18	14⅞	2½	9¼	16	1⅞	21¼	5/8	1½
18"	18	25	3/4	12⅝	24⅝	3⅜	15⅝	20	24⅝	19	15⅞	2½	11¼	16	1¼	22¾	5/8	1½
20"	20	27½	3/4	13⅜	26⅜	5¼	16⅝	21	27½	19⅞	16⅞	2½	11⅜	20	1¼	25	5/8	2
24"	24	32	3/4	15⅞	29⅝	3⅜	18⅞	23	27½	21⅞	18¾	2½	13⅜	20	1⅞	29½	5/8	3

All dimensions in inches

Dimensions subject to change without notice

Square Inlet Rotary Airlocks



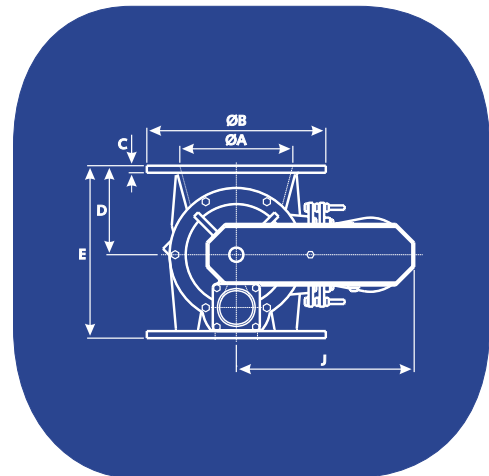
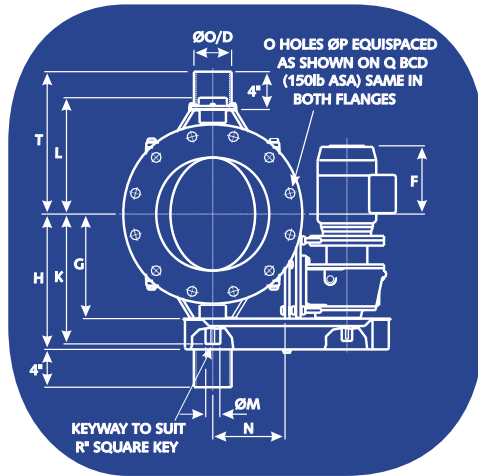
dimensions

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	T	V	HP
6"	6	9⅞	1/2	5½	11	8¼	8¼	11½	16	10¼	8¼	1¼	5⅝	12	1/2	1/4	3	2¾	1/2
8"	8	11⅞	5/8	6½	13	7¼	9¼	12½	16	11¼	9⅜	1¼	5⅝	12	1/2	1/4	3	3⅞	1/2
10"	10	13¼	9/16	7½	15	8⅝	10⅜	13⅝	18⅜	12⅝	10⅞	1½	6⅞	12	9/16	3/8	3	4	1
12"	12	15¾	1/2	9⅞	18⅞	7¼	11⅝	14⅞	18⅞	13¾	11¾	1½	7⅞	12	1/2	3/8	3	4⅞	1
14"	14	18½	3/4	10⅞	20¼	7	12	15¼	20¼	14⅜	12⅞	1½	8⅞	12	1/2	3/8	3	5½	1
16"	16	21⅝	3/4	11⅞	22⅜	4⅜	14⅝	19	24⅝	17⅝	14⅞	2½	9¼	12	11/16	5/8	3	6½	1½
18"	18	24	3/4	12⅞	24⅝	3⅜	15⅝	20	24⅝	19	15⅞	2½	11¼	12	11/16	5/8	3	7⅞	1½
20"	20	25⅞	3/4	13⅜	26⅜	5¼	16⅝	21	27½	19⅞	16⅞	2½	11⅜	14	11/16	5/8	4	5⅞	2
24"	24	29½	3/4	14⅝	29½	3⅜	18⅞	23	27½	21⅞	18¾	2½	13⅜	14	11/16	5/8	4	6⅞	3

All dimensions in inches

Dimensions subject to change without notice

Round Inlet Blow Thru Rotary Airlocks



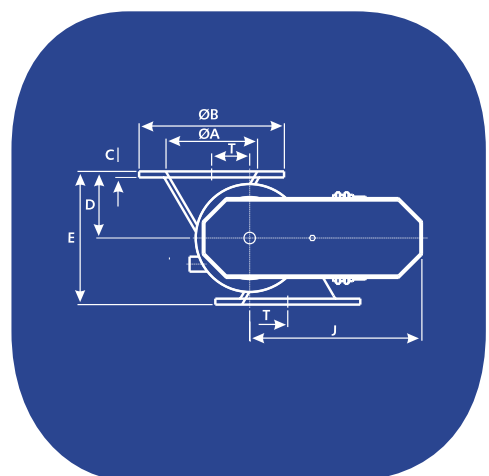
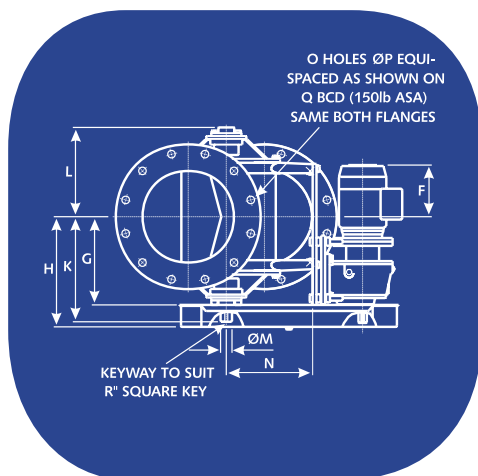
dimensions

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.

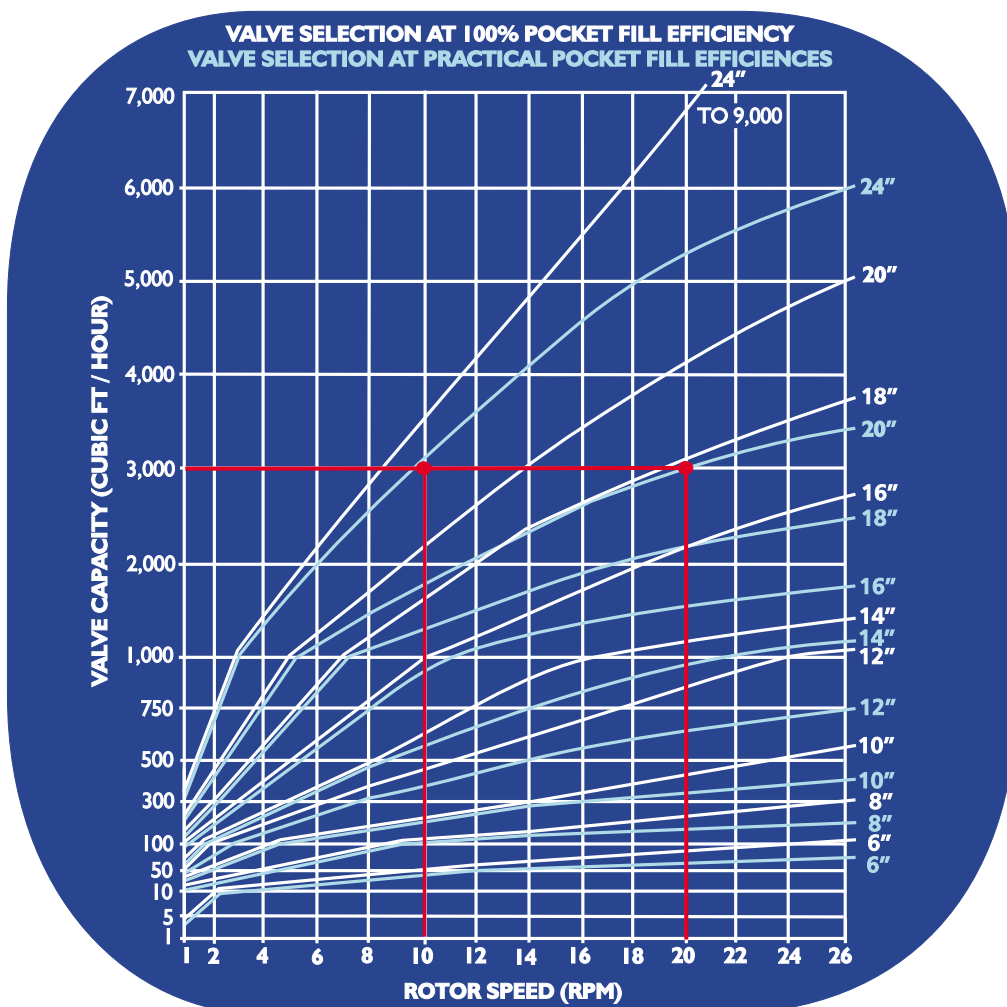
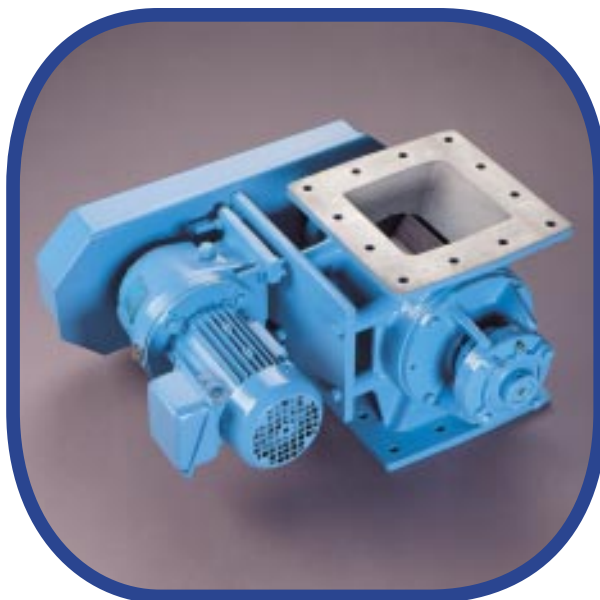
- To calculate a valve throughput per hour:
$$\frac{\text{Throughput lbs / hr}}{\text{Bulk Density lbs / cu. ft.}} = \text{cu. ft. / hr. capacity}$$
- Based on, say, 240,000 lbs / hr. at a bulk density of 80 lb. / cu. ft.

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

From the chart draw a horizontal line (depicted on the chart in red) starting at 3000 cu. ft. / hr. until it reaches valve efficiency curves.

On this application two valves can be selected:

- (a) 24" Valve @ 10 RPM
 - or (b) 20" Valve @ 20 RPM
- on cost basis (b) would be selected



WHO WE ARE

CMT is a manufacturers representative, based centrally in Charlotte, NC, faithfully serving the Carolinas since 1996. We specialize in bulk material handling equipment and system solutions.

Excellence in Everything is more than a slogan. From answering the phone, to consultation meetings, to our website, to proposals, to videos and other sales tools... excellence is demanded.

WHO WE AIM TO BECOME

We desire to be considered the best rep firm in the Carolinas by both our customers and our principles. This starts with our people.

Our staff is attentive, detailed and solution orientated with a core desire to serve our clientele honestly and ethically. In becoming the 'best' it is vital that we partner with the right suppliers who are also honest, ethical and stand behind their solutions. In a day and age where time is our most valuable resource, clients are constantly trying to determine "Who can I trust?". We can say with confidence that hundreds and hundreds, repeatedly trust CMT with their bulk material handling projects

HOW THIS IS ACCOMPLISHED

Our staff is trained, and is continuously trained, in solution based selling which revolves completely around listening and then offering not just 'a' solution, but the best possible solution. There are generally 4-8 ways to solve a particular bulk processing problem, but the key is working and collaborating to provide the best solution. This is what keeps client's returning year after year (23+ years now) to CMT.

MEET OUR TEAM



Scott Dahlgren
Owner and Founder



Carrie Waller
Office Manager



Dan Otarola
IT/Marketing Manager



Alex Norton
Systems Sales Manager



Josh Wright
SC Territory Manager



Katie Wormald
NC Territory Manager



Justin Harrell
Mechanical Engineer

WHAT WE OFFER

25kg Bag Emptying Robots
(Automatic)

25kg Bag Emptying Stations
(Manual)

Bin Activators

Blenders and Mixers

Blowers

Bucket Elevators

Bulk Bag Fillers

Bulk Bag Unloaders

Controllers

Conveying Elbows

Conveyors (Mechanical/Screw)

Conveyors (Pneumatic)

Dust Collectors

Feeders (Mass Flow/Vibratory)

Feeders (Screw/Auger)

Flexible Sleeves

Gates and Valves

Level Controls and Sensors

Magnets

Material Flow Aids

Silos and Tanks

Sizing Equipment/Material

Crushers

Tote/IBC Systems

Venturi Eductors

