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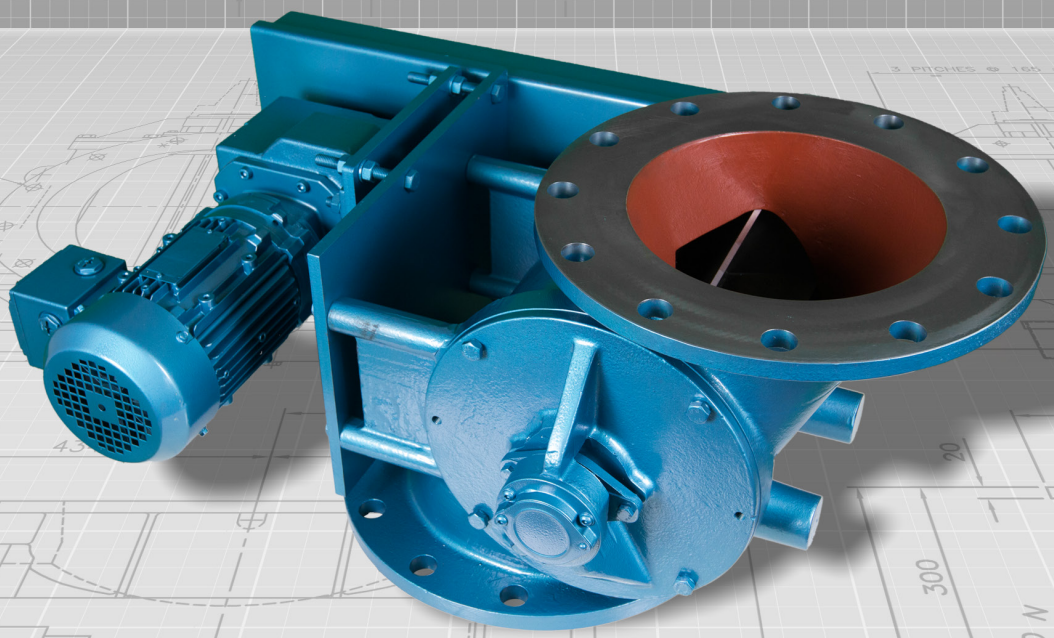
OFFSET ROTARY VALVES



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INTRODUCTION

The main function of a Rotary airlock is to regulate the flow of materials from one chamber to another while maintaining a good airlock condition. The material or product being handled is usually dry free flowing pellets or granules.

The granule type of product, especially if it is a hard type: plastics; polyethylene; nylon etc., does not shear easily and consequently, without considerable care, the standard drop-through type of airlock can seize and also experience considerable shock loadings.

To minimize these problems the Offset Rotary Airlock ensures that the rotor is still being filled in an upward cycle with the pellets falling away at the shear point. Similarly, the vee design inlet minimizes the quantity of pellets getting caught between the vanes and body at any one time.

IMPORTANT FEATURES

- Maximum number of blades in contact with body at one time without affecting throughput
- Good throat opening at airlock entry allowing high pocket fillage efficiency
- Robust body adequately stiffened to prevent distortion
- Heavy shaft diameters minimizing deflection
- Outboard bearings for non-contamination
- Packing gland type seals
- Maximizing rotor speed to 25 RPM prolonging life, ensuring good throughput
- Precision machining of components

OPTIONS

- Body Vents
- Air Purge Glands
- Quick Release Rotors
- Easy Release on Rails
- Direct Coupled Drives
- USDA Approved
- Hard Chrome Internals
- Electro-less Nickel Plating
- Shear Plate Deflectors
- Speed Switch
- Lip Seal Shaft Seals
- Dropout Boxes
- V.S. Drives
- Explosion Proof Motors
- Vent Boxes etc.

SPECIFICATION

BODIES
Cast Iron, Stainless Steel or Aluminum precision bored

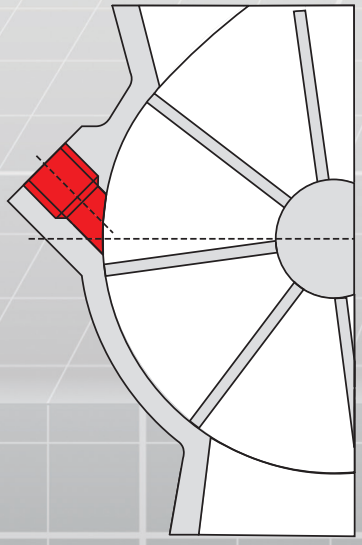
END COVERS
Cast Iron, Stainless Steel or Aluminum spigot located in body for concentricity

ROTOR
Fabricated Mild or Stainless Steel

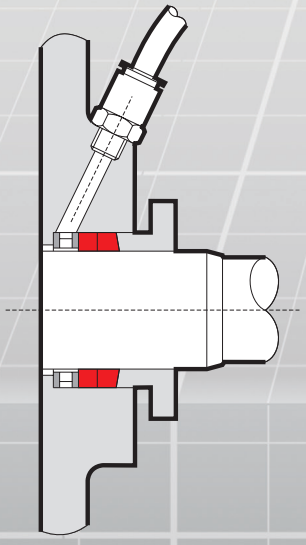
BEARINGS
Generally sealed-for-life-ball type rigged outboard or high temperature above 400°F

SHAFT SEAL
Gland type with PTFE packing

DRIVE
TEFC geared motor unit side wall mounted to airlock body and complete with taper lock sprockets chain drive all in an enclosed guard



BODY VENT



AIR PURGE GLAND

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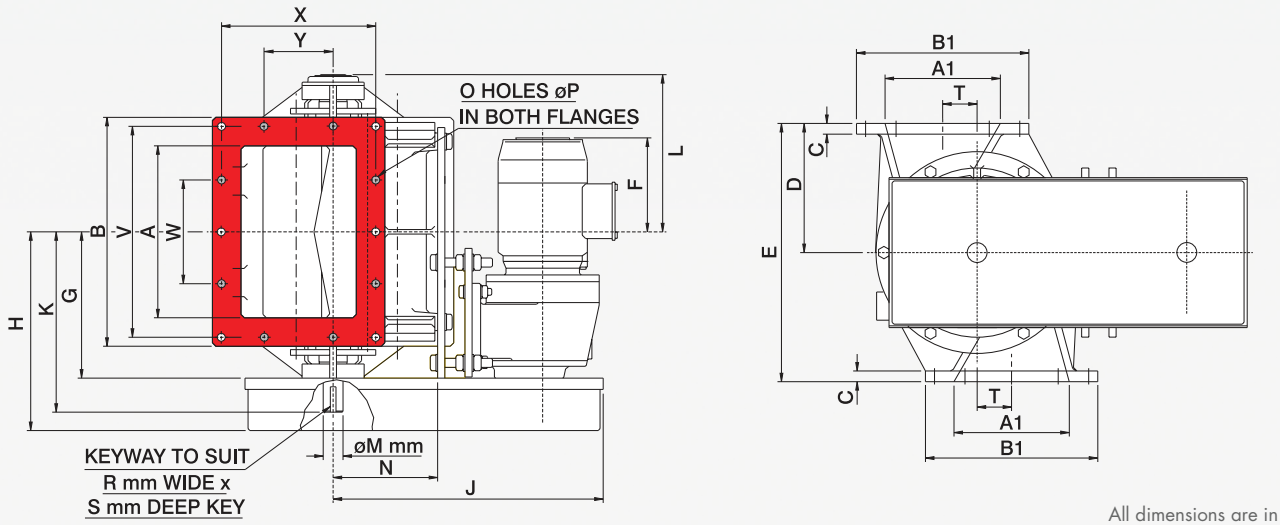
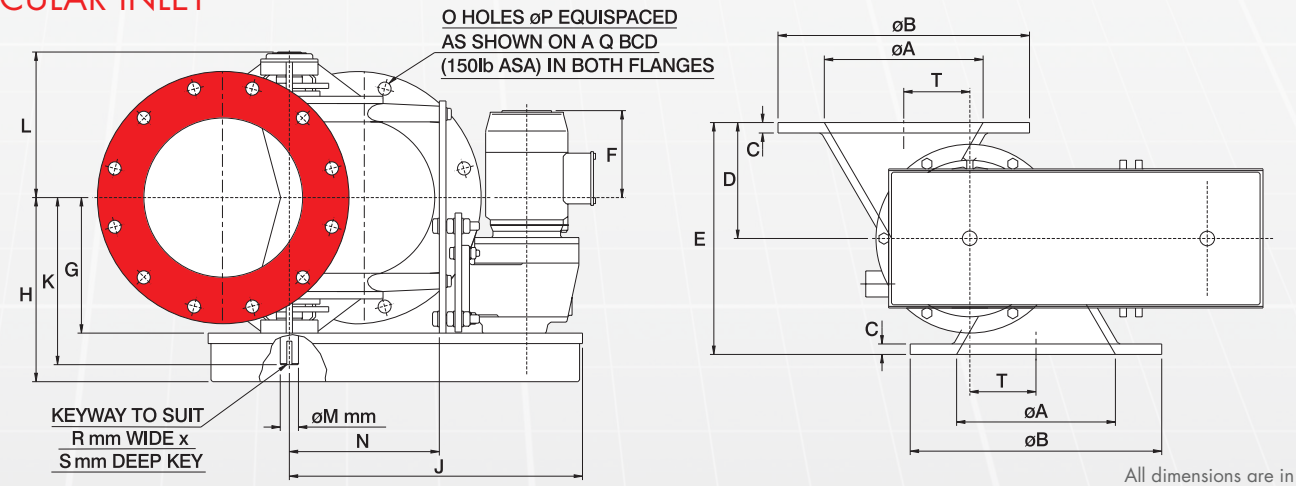
RECTANGULAR INLET



All dimensions are in inches

SIZE	A	A1	B	B1	C	D	E	F	G	H	J	K	L	M	N	O	P	R	S	T	V	W	X	Y	H.P.	ft³/rev
8	7 7/8	6	12	10	1/2	6 1/2	13	14 5/8	7 7/8	11 1/8	17 1/4	10 1/4	8 5/8	28	5 1/4	8	9/16	8	7	1 5/8	10 3/4	7	8 3/4	5	1	0.21
10	10	7	14	11	5/8	8	16	11 7/8	9	12 1/4	18 7/8	11 7/16	9 3/4	35	6 1/8	8	9/16	10	8	1 7/8	12 3/4	6	9 3/4	6	1	0.42
12	12	8	16	12	3/4	9	18	11 5/8	10 1/4	14 1/4	20 1/8	12 5/8	11	35	7 1/4	8	9/16	10	8	2 3/8	14 3/4	7 1/4	10 3/4	6 1/2	1 1/2	0.74
16	16	10	22	16	7/8	11	22	7 3/4	13 1/8	17 1/8	24 5/8	15 7/8	13 7/8	50	9 1/4	14	3/4	14	9	3 3/8	20 1/4	10 1/2	14 1/4	6	1 1/2	1.73
18	18	11	24	17	7/8	12 7/8	25 3/4	8 7/8	14	18	26 1/4	16 1/2	14 7/8	50	10 1/4	14	3/4	14	9	3 3/8	22 1/4	11	15 1/4	6	2	2.47
20	20	12	26	18	1	14 3/16	28 3/8	7 7/8	15	19	26 1/4	17 7/8	15 3/4	50	11 1/4	14	3/4	14	9	3 7/8	24 1/4	12	16 1/4	6	3	3.42

CIRCULAR INLET



All dimensions are in inches

SIZE	ØA	ØB	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	H.P.	ft³/rev
8	8	13 1/2	5/8	6 1/2	13	13	7 7/8	11 7/8	20 3/8	10 1/4	8 5/8	28	7 7/8	8	7/8	11 3/4	8	7	3 3/8	1	0.21
10	10	16	3/4	7 1/2	15	12 7/8	9	12 1/4	22 1/4	11 3/8	9 3/4	35	9 3/4	12	1	14 1/4	10	8	4 1/4	1	0.42
12	12	19	3/4	8 3/4	17 1/2	10 5/8	10 1/4	14 1/4	24 5/8	12 5/8	11	35	11 5/16	12	1	17	10	8	5	1 1/2	0.74
14	14	21	7/8	10 1/2	21	10 1/4	10 5/8	14 5/8	25 5/8	13	11 3/8	35	13	12	1 1/8	18 3/4	10	8	5 1/2	1	1.08
20	20	27 5/16	1	14	28	8 7/8	15	19	30 5/16	17 7/8	15 7/8	50	15 1/2	20	1 1/4	25	14	9	7 7/8	3	3.42

Dimensions are approximate and subject to change without notice
Planning-in detail for general guidance only
(To cover safety aspects ask for our safety leaflets)
Drillings are Rotolok standards. Variations can be made.

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AIRLOCK SELECTION

The chart below gives theoretical and practical throughputs on the basis or rotor speed.

The theoretical efficiency is seldom achieved in practise as density, product characteristics, pressure differentials, feeding methods etc. all affect airlock throughput.

On these considerations the practical figures are assessed and are more acceptable for correct airlock selection.

e.g. Select a valve to process 7 1/2 tonnes/hour of flour at 34lb/cu.ft.
Volume required = 7.5 x 2200/34 = 485 cu.ft/hr.

From the chart the 12'' unit running at 14 RPM covers this requirement.

CAPACITY CHART IN CUBIC FEET/HR

AIRLOCK SIZE	1	5	8	10	12	14	16	18	20	22	24	26	
20''	205	1024	1639	2048	2458	2868	3277	3687	4097	4506	4916	5326	100%
	205	1024	1557	1743	2163	2466	2753	2986	3196	3334	3490	3622	Practical
18''	149	743	1189	1487	1784	2082	2379	2676	2974	3271	3568	3866	100%
	149	743	1130	1338	1570	1791	1998	2168	2320	2421	2533	2629	Practical
16''	104	519	830	1037	1245	1452	1660	1867	2075	2282	2490	2697	100%
	104	519	789	933	1096	1249	1394	1512	1618	1689	1768	1834	Practical
14''	65.2	326	521	652	782	912	1043	1173	1303	1434	1564	1694	100%
	65.2	326	495	587	688	784	876	950	1016	1061	1110	1152	Practical
12''	45.4	227	364	454	545	636	727	818	908	999	1090	1181	100%
	45.4	227	363	409	480	547	611	663	708	739	774	803	Practical
10''	25.6	128	205	256	307	359	410	451	512	564	615	666	100%
	25.6	128	195	230	270	309	344	373	399	417	437	453	Practical
8''	12.7	63	101	127	152	177	203	228	253	279	304	329	100%
	12.7	63	96	114	134	152	171	185	197	206	216	224	Practical

ROTOR SPEED RPM

NOTES:

THROUGHPUT

Certain products when fluidised can greatly exceed the conservative rating and on application, e.g. cement, 100% pocket fillage has been known to occur. Similarly light products, up to 10lb/cu.ft, the opposite can occur.

TEMPERATURE

On an application above ambient (70°F) it is important to specify operating temperatures so rotor compensation for expansion can be machined as necessary.

CONVERSIONS

Divide cubic feet/hr by 35.315 to obtain cubic metre/hour.

Theoretical capacity 100% pocket fillage efficiency.

Conservative estimates throughput.