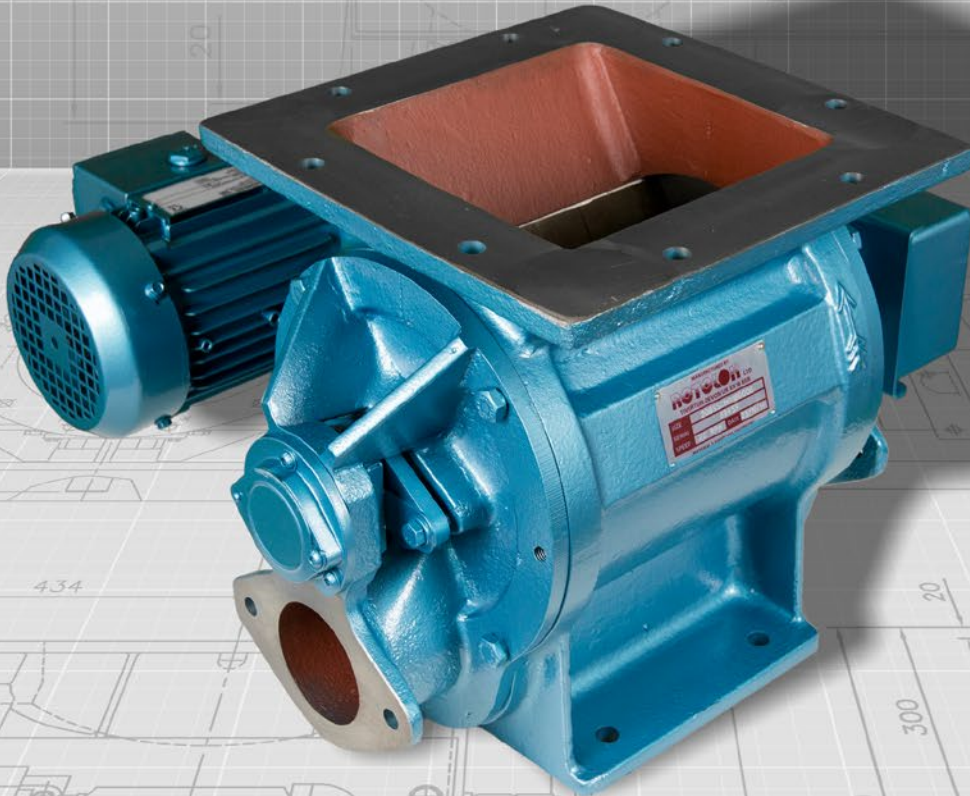ROTOLOK

everything under control…

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INTRODUCTION

Blowing Seals were introduced to meet the specific needs of the pneumatic conveying industry and are a natural extension to the Rotary Airlock, both being used to regulate the flow of dry powder, dust or granular products while maintaining an airlock.

However the Blowing Seal has distinct advantages for the specialist as it introduces high pressure conveying air through the valve body and rotor pockets ensuring - HIGH EFFICIENCY THROUGHPUT WITH LOW EFFECTIVE PRESSURE DROP.

This is achieved by the fact that more blades are in contact for longer periods with the valve body, resulting in less air leakage and by blowing through the rotor, each rotor pocket is efficiently emptied.

The Rotolok range of Blowing Seals are robustly constructed with an emphasis on close tolerances and minimal eccentricities, making the units suitable for the majority of pneumatic conveying applications.

STANDARD FEATURES

- Maximum number of blades in contact with body at one time without affecting throughput
- Streamlined entry and discharge of conveying air through valve
- Good throat opening at valve entry allowing high pocket filling efficiency
- Compact design minimising headroom
- Minimum clearance at rotor tips and sides with body
- Robust body adequately stiffened to prevent distortion
- Heavy shaft diameters minimising deflection
- Outboard bearings for non-contamination - options for high temperature
- Packing gland type seals with air purging option
- Precision machining of components
- Abrasive duty types

SPECIFICATION

BODY
Cast Iron or Stainless Steel precision machined

END COVERS
Cast Iron or Stainless Steel spigot located in body

ROTOR
Fabricated Mild or Stainless Steel fixed bladed open type

BEARINGS
Ball type sealed for life - alternative high temperature to 400°C

SHAFT SEAL
Gland type with PTFE packing

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

OPTIONAL FEATURES

- Hard Chrome Internals
- Electro-less Nickel Plating
- Shear Plate Deflectors
- Direct Coupled Drives
- Flameproof Motors
- Replaceable Bladed Rotor
- Lip Seal Shaft Seals
- Blowthrough Spigots
- Air Purge Glands
- Speed Switch
- Body Vents
- Vent Boxes
- V.S. Drives

RECTANGULAR INLET
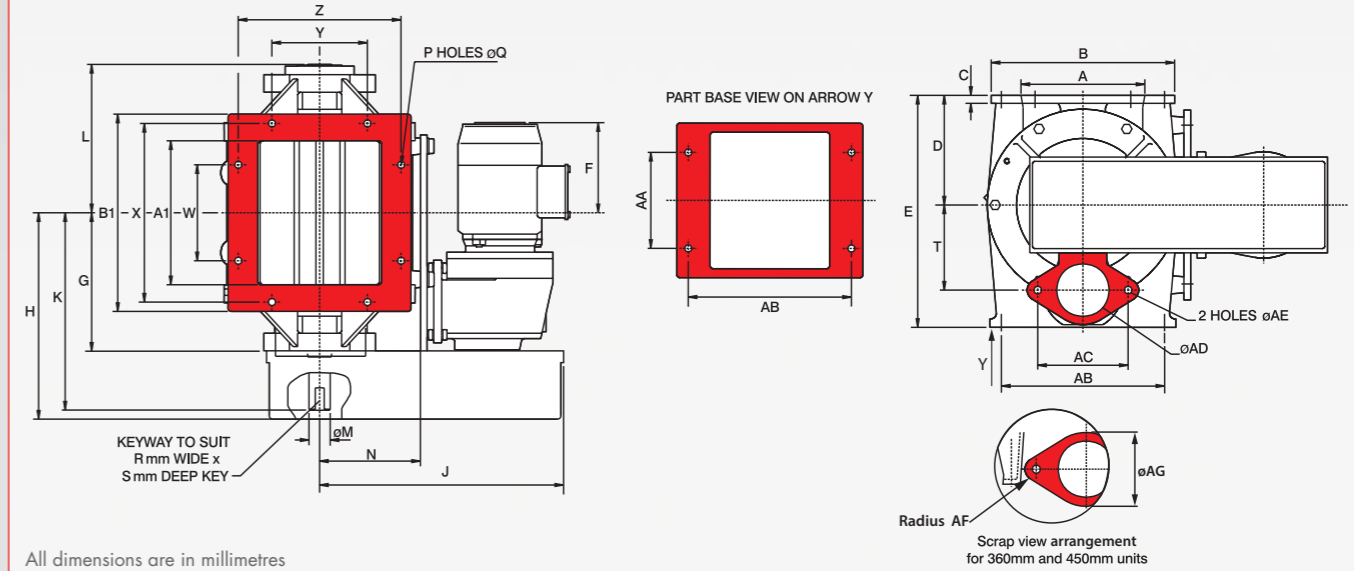
All dimensions are in millimetres

SIZE	A	A1	B	B1	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	kW	ltr/rev
125	125	125	205	205	12	110	240	240	159	241	320	219	180	28	95	8	10	8	7	80	90	170	90	170	90	125	95	50	11.5	20	78	0.37	1.33
200	200	200	300	300	12	160	340	200	199	281	350	258	218	28	125	8	13	8	7	100	130	270	130	270	130	190	130	75	11.5	20	110	0.37	5.96
240	180	200	280	280	15	180	340	220	225	327	435	287	245	40	165	8	*	12	8	110	130	250	100	250	130	225	110	65	14	20	100	0.75	8
280	225	270	345	370	15	206	436	180	259	361	460	320	278	40	190	8	13	12	8	160	180	335	180	307	180	307	170	98	14	20	130	0.75	15.33
360	255	350	350	450	15	240	519	171	315	427	595	386	335	50	240	10	14	14	9	230	2@150	420	180	320	2@150	320	180	110	14	22	144	1.1	31
450	310	400	410	510	15	290	597	136	350	465	625	421	370	50	270	10	14	14	9	230	2@160	480	220	380	2@160	380	200	125	14	22	154	1.1	70

CIRCULAR INLET

FOOT MOUNTING FOR SIZE 200 ONLY
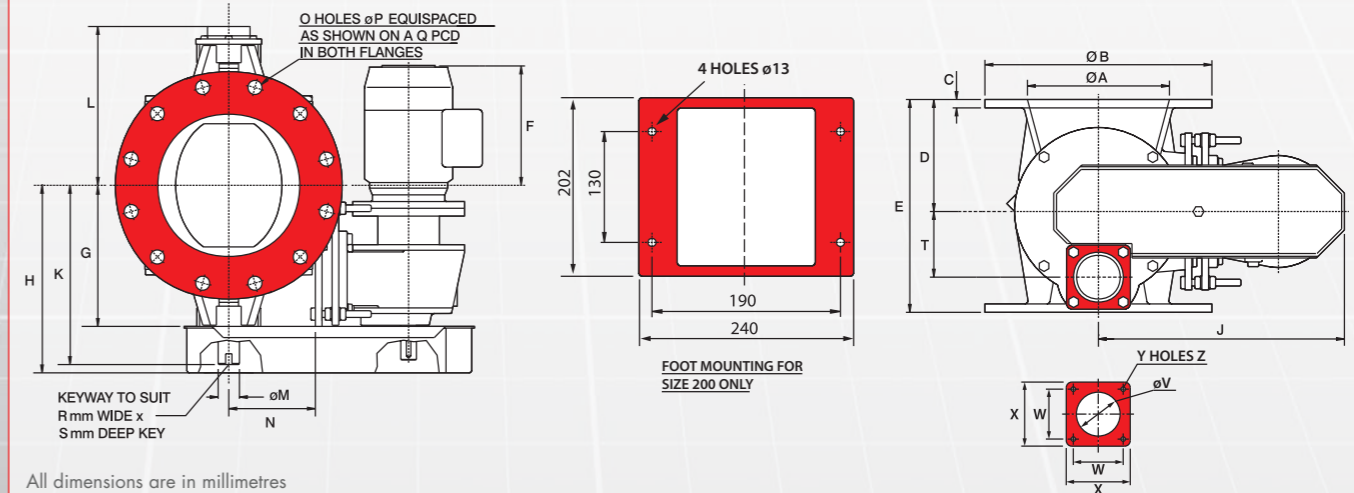
All dimensions are in millimetres

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	V	W	X	Y	Z	kW	ltr/rev
150	154	285	12	140	270	225	193	275	365	260	224	30	143	8	22	241	8	7	85	On Application					0.37	2.38
200	203	343	15	160	340	223	199	281	350	259	218	28	125	8	22	298	8	7	100	On Application					0.37	5.96
250	254	406	15	200	380	195	252	347	440	320	284	35	155	12	25	362	10	8	117	78	89	114	4	⅜" UNC	0.75	12
300	305	483	19	240	465	200	282	374	480	350	314	35	195	12	25	432	10	8	142	90.1	104.8	127	4	M10	0.75	21
400	406	597	20	300	580	94	348	484	565	456	398	60	235	16	28	540	18	11	179	128	127	152	4	M10	1.1	49

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VALVE SELECTION

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

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

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

e.g. Select a valve to process 7 ½ tonnes/hour of flour at 545kg/m³.
Volume required = 7.5 x 1000/545 = 13.75 m³/hr

From the chart the 280 unit running at 18 rpm covers this requirement.

Certain products when fluidised can exceed the conservative ratings. Similarly, light products - 160kg/m³ the opposite effect can occur.

VALVE SIZE	CAPACITY CHART IN M³/HR												
450	4.20	21	34	42	50	59	67	76	84	92	101	109	100%
	4.20	21	32	38	44	51	56	62	66	68	72	74	Practical
400	2.94	15	24	29	35	41	47	53	59	65	71	76	100%
	2.94	15	23	26	31	35	39	43	46	48	50	52	Practical
360	1.86	9.3	15	19	22	26	30	33	37	41	45	48	100%
	1.86	9.3	14	17	19	22	25	27	29	30	32	33	Practical
300	1.26	6.3	10	13	15	18	20	23	25	28	30	33	100%
	1.26	6.3	9.5	12	13	15	17	19	19	21	21	22	Practical
280	0.92	4.60	7.4	9.2	11	13	15	17	18	20	22	24	100%
	0.92	4.60	7	8.6	10	11	13	14	15	16	17	18	Practical
250	0.720	3.6	5.8	7.2	8.6	10	12	13	14	16	17	19	100%
	0.720	3.6	5.5	6.5	7.6	8.6	10	11	11	12	12	13	Practical
240	0.48	2.4	3.8	4.8	5.7	6.7	7.7	8.7	9.6	10.6	11.5	12.5	100%
	0.48	2.4	3.6	4.5	5.2	6	6.6	7.2	7.8	8.4	8.9	9.4	Practical
200	0.358	1.8	2.9	3.6	4.3	5.0	5.7	6.4	7.2	7.9	8.6	9.3	100%
	0.358	1.8	2.8	3.2	3.8	4.3	4.8	5.2	5.6	5.8	6.1	6.3	Practical
150	0.143	0.72	1.1	1.4	1.7	2.0	2.3	2.6	2.9	3.2	3.4	3.7	100%
	0.143	0.72	1.0	1.3	1.5	1.7	1.9	2.1	2.3	2.4	2.4	2.5	Practical
125	0.080	0.40	0.64	0.80	0.96	1.1	1.3	1.4	1.6	1.7	1.9	2.1	100%
	0.080	0.40	0.61	0.72	0.84	0.95	1.1	1.1	1.2	1.3	1.3	1.4	Practical
	1	5	8	10	12	14	16	18	20	22	24	26	
	ROTOR SPEED RPM												

NOTES:

THROUGHPUT

Certain products when fluidised can greatly exceed the conservative rating and on some application, e.g. cement, 100% pocket fillage has been known to occur. Similarly light products, up to 160kg/m³, the opposite can occur.

TEMPERATURE

On an application above ambient (21°C) it is important to specify operating temperatures so rotor compensation for expansion can be incorporated as necessary.

CONVERSIONS

Multiply m³/hr by 35.315 to obtain cubic ft³/hr.

Theoretical capacity = 100% pocket fillage efficiency.