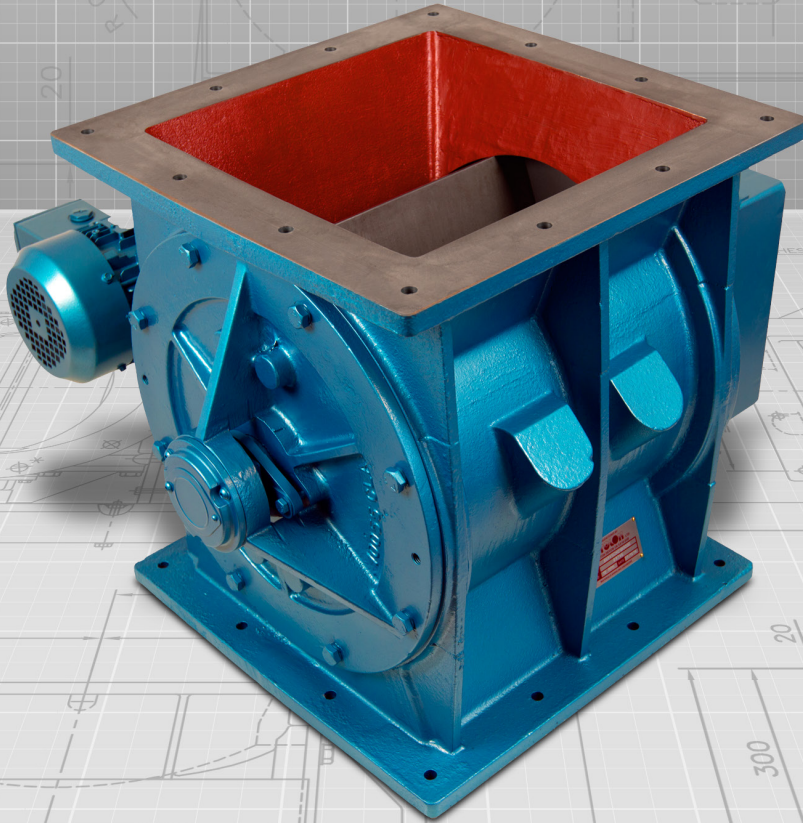


ROLOK

everything under control...



ROTARY VALVES & AIRLOCKS

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INTRODUCTION

The prime function of a rotary valve is to regulate the flow from one chamber to another while maintaining a good airlock condition. The product is mainly in dry powder or granular form.

In the dust filtration field good airlocks are essential on cyclone and bag filter applications in order that the manufacturer's quoted high dust collection efficiencies can be maintained. Airlocks are also important in the pneumatic conveying industry, where product is regulated into a high pressure conveying line while minimising air leakage.

With Rotolok there are no double standards, all our standard valves are precision machined for close tolerances and minimal eccentricities. Pressure differentials to 20psi and temperatures to 400°C. We have made specials to handle temperatures covering 1200°C and pressures to 350psi.

Rotolok Rotary Valves and Airlocks have ATEX Covered



Following successful completion of the rigorous testing process Rotolok can offer a complete range of Rotary Valves certified as suitable for use as an explosion barrier to a maximum of 10bar and for explosion isolation for ST1 and ST2 dusts.

STANDARD FEATURES

- Maximum number of blades in contact with body at one time without affecting throughput.
- Good throat opening at valve entry allowing high pocket filling efficiency.
- 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.
- Packing gland type seals.
- Maximising valve speed to 25 rpm -prolonging life, ensuring good throughput.
- Precision machining of components.

SPECIFICATION

Bodies

Cast Iron, Stainless Steel or Aluminium precision bored.

End Covers

Cast Iron, Stainless Steel or Aluminium spigot located in body for concentricity.

Rotor

Fabricated Mild or Stainless Steel.

Bearings

Sealed-for-life ball type rigged outboard.

Shaft Seal

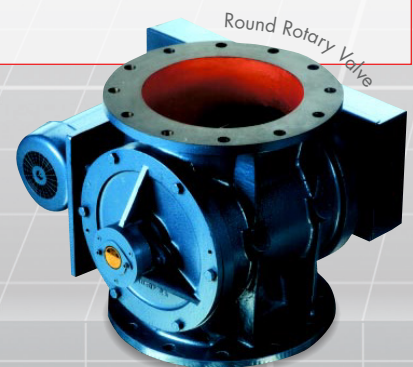
Gland type with PTFE packing.

Drive

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

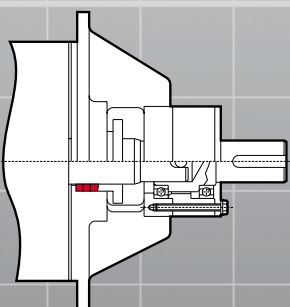
OPTIONS

- | | | |
|-------------------------|--------------------------|------------------------------|
| • Quick Release Rotors | • Dropout Boxes | • Electroless Nickel Plating |
| • Direct Coupled Drives | • V.S. Drives | • Hard Chrome Internals etc. |
| • Air Purge Glands | • Speed Switches | |
| • Body Vents | • Flameproof Motors | |
| • Vent Boxes | • Shear Plate Deflectors | |

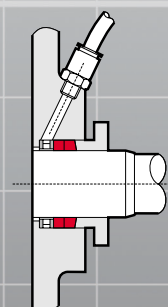


Round Rotary Valve

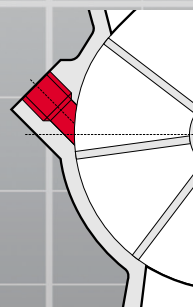
Quick Release Rotor Detail



Air Purge Gland



Body Vent



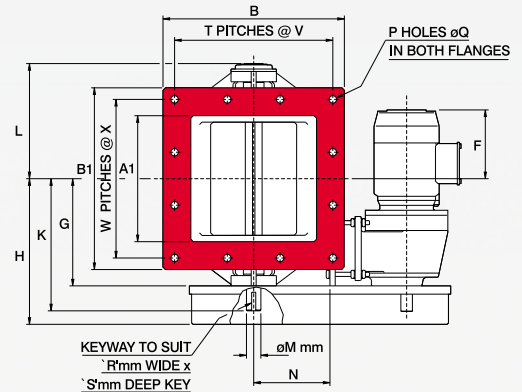
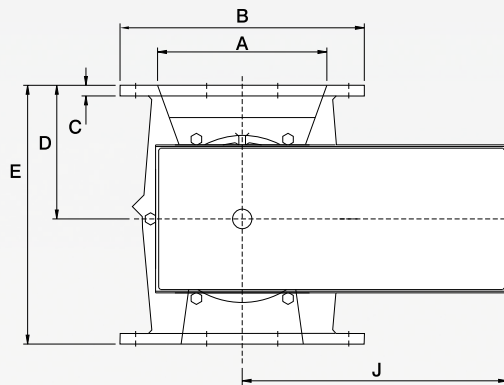
Square Rotary Valve

Planning-in detail for general guidance only

(To cover safety aspects ask for our safety leaflets)

Drillings are Rotolok standards. Variations can be made.

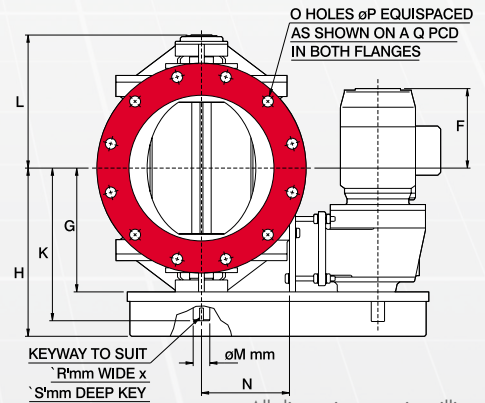
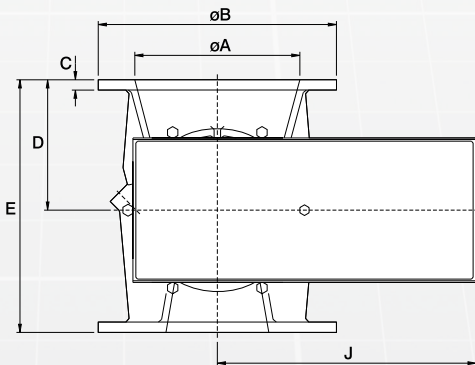
SQUARE INLET



All dimensions are in millimetres

Valve Size	A	A1	B	B1	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	V	W	X	kW
125	127	127	225	225	12	98.5	197	195	159	232	406	220	195	28	143	8	14	8	7	ON APPLICATION				0.37
150	152	152	250	250	12	140	280	180	174	247	406	234	195	28	143	12	12	8	7	3	70	3	70	0.37
200	203	203	300	300	15	165	330	155	199	272	406	259	219	28	143	12	12	8	7	3	90	3	90	0.37
250	254	254	370	370	15	203	388	200	229	322	478	290	249	35	155	12	18	10	8	3	108	3	128	0.75
300	305	305	440	440	19	240	465	170	260	353	478	320	279	35	195	12	18	10	8	3	128	3	128	0.75
350	356	356	470	470	19	257	514	160	270	363	512	329	289	35	220	12	12	10	8	3	140	3	140	0.75
400	406	406	550	550	20	300	580	115	332	425	626	403	352	50	235	12	18	14	9	3	165	3	165	1.1
450	457	457	610	610	20	322	630	85	357	450	626	428	377	50	285	12	18	14	9	3	187	3	187	1.1
500	508	508	650	650	20	340	670	120	382	475	700	453	402	50	289	16	18	14	9	4	148	4	148	1.5
600	610	610	750	750	20	380	750	115	432	525	700	503	452	50	335	16	18	14	9	4	173	4	173	2.2
750	750	750	1000	1000	25	500	1000	60	503	643	910	605	522	70	450	24	18	20	12	6	149	6	149	2.2
915	915	915	1165	1165	25	600	1200	25	605	748	1000	707	625	70	540	24	22	20	12	6	175	6	175	4.0

CIRCULAR INLET



All dimensions are in millimetres

Valve Size	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	kW	
50	51	152	10	60	120	*	74	ON APPLICATION												
85	85	190	10	80	160	*	117	ON APPLICATION												
125	127	240	12	108	214	200	159	232	406	219	178	28	143	8	18	200	8	7	0.37	
150	154	285	12	140	270	180	174	247	406	234	194	28	143	8	22	241	8	7	0.37	
200	203	320	13	160	310	155	199	272	406	259	219	28	143	8	18	280	8	7	0.37	
250	254	370	15	200	380	200	229	322	478	289	248	35	155	8	18	320	10	8	0.75	
300	305	440	19	240	465	170	260	353	478	320	279	35	195	12	22	395	10	8	0.75	
350	356	533	19	270	520	160	270	363	512	332	289	35	220	12	22	445	10	8	0.75	
400	406	540	20	300	580	110	332	425	626	403	352	50	235	12	22	495	14	9	1.1	
450	457	635	20	320	625	80	357	450	626	419	377	50	285	16	32	578	14	9	1.1	
500	508	700	20	340	670	115	382	475	700	453	402	50	289	20	32	635	14	9	1.5	
600	610	813	20	385	760	115	432	525	700	503	452	50	335	20	35	749	14	9	2.2	
750	762	984	25	500	1000	45	503	646	910	605	522	70	450	28	35	914	20	12	2.2	

Rotolok manufactures and casts other valve sizes with rectangular & other non-standard inlets. If you are looking for something considered special it may be in our library of valves.

STANDARD ROTORS

Rotolok basically manufactures four types of rotor as outlined, but to give the plant engineer flexibility many variations can be accommodated, e.g. closed/tipped, reduced volume, staggered blades etc. We will make a rotor to suit your application - not our production.

VALVE SELECTION

The chart below gives theoretical and estimated throughputs on the basis of rotor speed. The theoretical figure is determined by the swept volume of the valve and is calculated on a pocket fillage of 100%. In practice this is seldom achieved as density, product characteristics, pressure differential, feeding methods, all affect the valve throughput efficiency. On these considerations the estimated figures are assessed and are more acceptable for selecting the correct

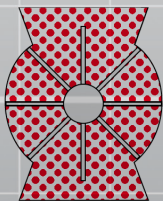
valve. e.g. Select a valve to handle 7 1/2 tonnes/hour of flour at 545kg/cu.metre. Volume required = $7.5 \times 1000/545 = 13.75$ cu.metre/hrs.

From the chart the 300 unit running at 14 RPM covers this requirement.

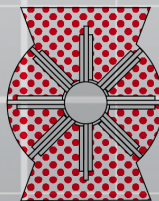
Factors other than throughput can sometimes determine valve selection. This is particularly true on cyclone and filter applications where the valve inlet size to prevent bridging can become the governing factor, always with the proviso that the potential valve discharge rate exceeds the collecting rate.

CAPACITY CHART IN CUBIC METRE/HR													
	32.8	164	263	328	394	459	525	591	656	722	788	853	100%
915	32.8	164	250	295	347	395	441	479	512	534	559	580	Practical
	19.3	96	154	193	231	270	308	347	385	424	462	501	100%
750	19.3	96	146	174	203	232	259	287	300	314	328	341	Practical
	10.1	50	81	101	121	141	161	181	202	222	242	262	100%
600	10.1	50	77	97	106	121	135	147	158	164	172	178	Practical
	5.82	29	47	58	70	81	93	105	116	128	140	151	100%
500	5.82	29	45	52	62	70	78	85	90	95	99	103	Practical
	4.2	21	34	42	50	59	67	76	84	92	101	109	100%
450	4.2	21	32	38	44	51	56	62	66	68	72	74	Practical
	2.94	15	24	29	35	41	47	53	59	65	71	76	100%
400	2.94	15	23	26	31	35	39	43	46	48	50	52	Practical
	1.86	9.3	15	19	22	26	30	33	37	41	45	48	100%
350	1.86	9.3	14	17	19	22	25	27	29	30	32	33	Practical
	1.26	6.3	10	13	15	18	20	23	25	28	30	33	100%
300	1.26	6.3	9.5	12	13	15	17	19	19	21	21	22	Practical
	0.720	3.6	5.8	7.2	8.6	10	12	13	14	16	17	19	100%
250	0.720	3.6	5.5	6.5	7.6	8.6	10	11	11	12	12	13	Practical
	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%
200	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
	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%
150	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
	0.080	0.40	0.64	0.8	0.96	1.1	1.3	1.4	1.6	1.7	1.9	2.1	100%
125	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
	0.027	0.13	0.22	0.27	0.32	0.38	0.43	0.49	0.54	0.59	0.65	0.70	100%
85	0.027	0.13	0.21	0.24	0.28	0.33	0.36	0.40	0.42	0.44	0.46	0.48	Practical
	0.007	0.033	0.053	0.066	0.079	0.11	0.11	0.12	0.13	0.14	0.16	0.17	100%
50	0.007	0.033	0.05	0.059	0.070	0.09	0.09	0.10	0.10	0.10	0.11	0.12	Practical
	1	5	8	10	12	14	16	18	20	22	24	26	

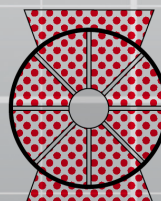
Rotor Speed RPM



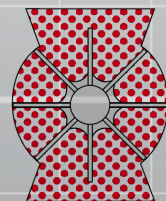
Open fixed bladed rotor
Suitable for general range of products and particularly suitable on conveying systems to pressure of 15 psi. Sealing is by packing gland type with standard packing being fluon or equal.



Open adjustable bladed rotor
Suitable for most products and pressure differentials to 20 psi. Blades are adjustable, reversible and replaceable and can be supplied in mild steel, PVC rigid, PTFE, stainless steel etc. to suit particular product. Can be adapted to suit highly abrasive materials.



Closed rotor
Suitable for general use on filters, cyclones, silos, screw conveyors and on low pressure conveying systems. Sealing by means of packing gland.



Scalloped rotor
Particularly suitable for "sticky" materials and discharge can be further aided by the application of PTFE coating, generally used in food processes where no product build-up can be tolerated. Pressures to 15 psi are applicable.

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 240kg/cu.m. the opposite effect can happen.

Temperature

Note: On any application above ambient (21°C) it is important to specify operating temperatures so rotor compensation for expansion can be adjusted as necessary

Conversions

Multiply cubic metres/hr by 35.31 to obtain cubic feet/hr.

Theoretical capacity 100% pocket fillage efficiency.

Conservative estimates throughout.