

# OFFSET ROTARY VALVES

**ROTOLUX**

*everything under control...*

# • OFFSET ROTARY VALVES •

## INTRODUCTION

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

The granule type of product, especially if it is a plastic type, polyethelene or nylon etc., does not shear easily and consequently, without considerable care the standard drop-through type of valve leads to valve seizure and also considerable shock loadings.

To minimize these problems the Offset Rotary Valve ensures lower pocket fillage as its design means that the rotor is still being filled in the upward cycle with the pellets falling away at the shear point. Similarly, the pelican beak distributes the product across the full width of the rotor.



## 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 type above 475° F.

**Shaft Seal** - Gland type with PTFE packing.

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

## IMPORTANT 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.
- 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.

**All add up to Rotolok standards.**



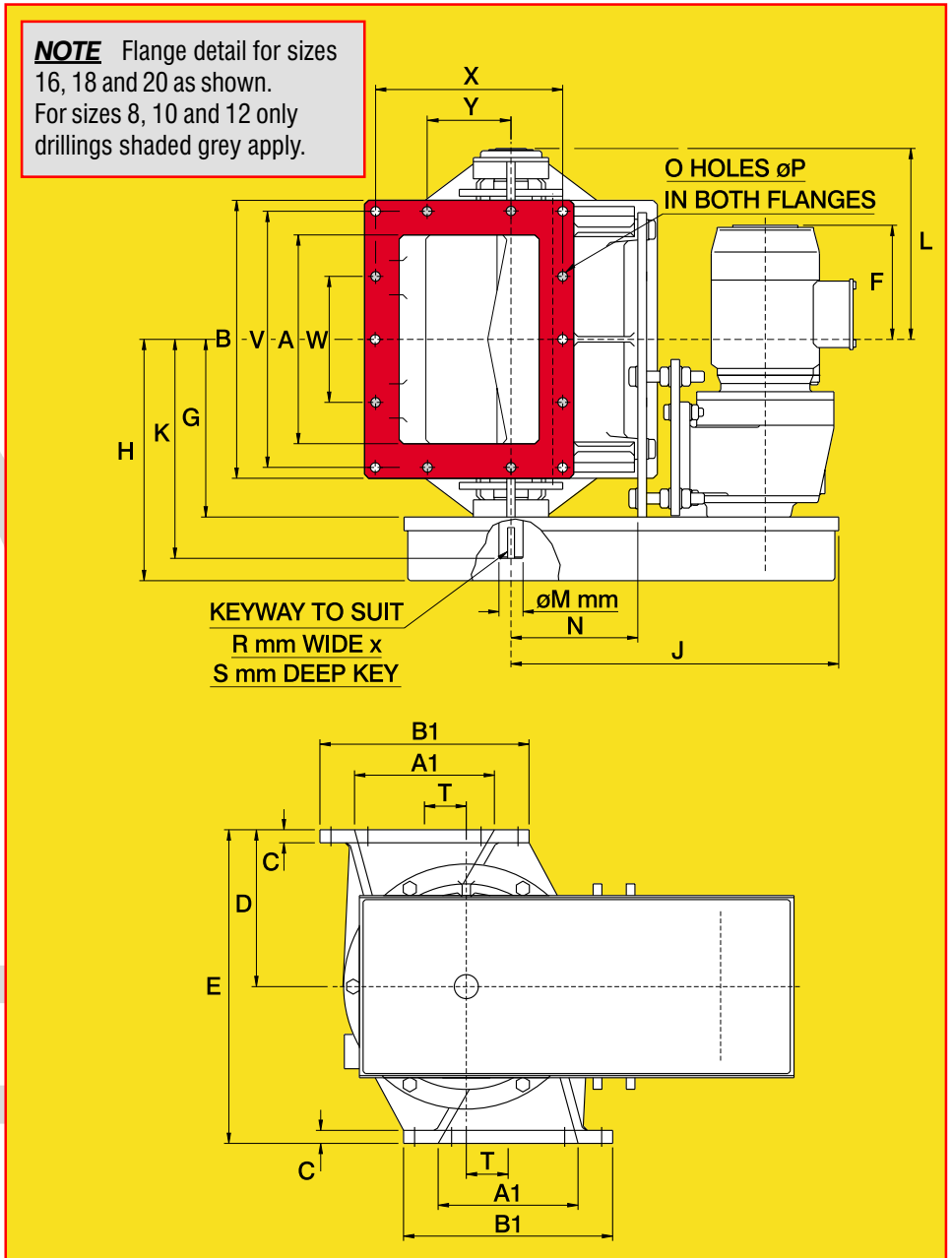
# • OFFSET ROTARY VALVES •

## RECTANGULAR OFFSET ROTARY VALVES



PLANNING-IN DETAIL FOR  
GENERAL GUIDANCE ONLY

(TO COVER SAFETY  
ASPECTS ASK FOR  
OUR SAFETY LEAFLETS)



Drillings are Rotolok standards. Variations can be made.

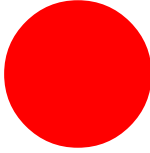
## RECTANGULAR OFFSET ROTARY VALVES

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.
8	7 7/8	6	12	10	1/2	6 1/2	13	11	7 7/8	10 3/4	17 3/4	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
10	10	7	14	11	5/8	8	16	9 1/4	9	12 5/8	18 7/8	11 3/8	9 3/4	35	6 1/8	8	9/16	10	8	1 7/8	12 3/4	6	9 3/4	6	1
12	12	8	16	12	3/4	9	18	8	10 1/4	13 7/8	20 3/4	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
16	16	10	22	16	7/8	11	22	6	13 1/8	16 3/4	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
18	18	11	24	17	7/8	12 7/8	25 3/4	6 1/4	14	17 3/4	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
20	20	12	26	18	1	14	28	6	15	18 3/4	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

All dimensions in inches.  
Dimensions subject to change without notice

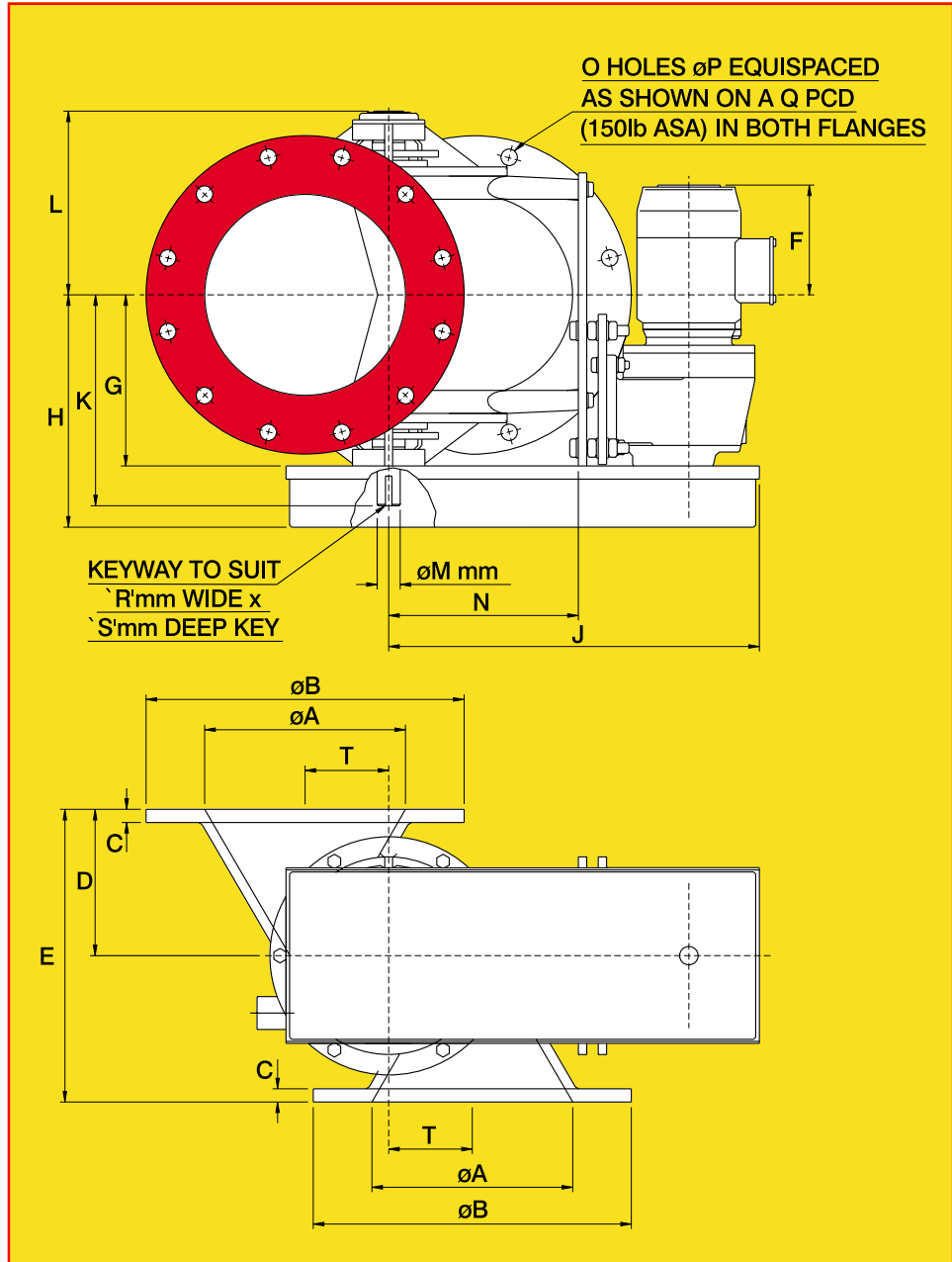
# • OFFSET ROTARY VALVES •

## ROUND OFFSET ROTARY VALVES



PLANNING-IN DETAIL  
FOR GENERAL  
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## ROUND ROTARY VALVES

	SIZE	$\phi A$	$\phi B$	C	D	E	F	G	H	J	K	L	$\phi M$	N	O	$\phi P$	$\phi Q$	R	S	T	H.P.
VALVE SIZE	8	8	13 1/2	5/8	6 1/2	13	10 1/2	7 7/8	10 3/4	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
	10	10	16	3/4	7 1/2	15	9 1/4	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
	12	12	19	3/4	8 3/4	17 1/2	8	10 1/4	13 7/8	24 5/8	12 5/8	11	35	11 5/16	12	1	17	10	8	5	1 1/2
	14	14	21	7/8	10 1/2	21	8 1/4	10 5/8	14 3/8	25 5/8	13	11 3/8	35	13	12	1 1/8	18 3/4	10	8	5 1/2	1 1/2
	20	20	27 1/2	1	14	28	4 1/2	15 5/16	18 3/4	28 7/16	17 7/8	15 7/8	50	13 3/8	20	1 1/4	25	14	9	8	3

All dimensions in inches.  
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## 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 tons/hour of flour at 35 lb/cu. ft. Volume required =  $7.0 \times 2000 \div 35 = 400$  cu. ft/hr.

From the chart, two valves economically cover this:

1. 10" Valve at 26 rpm.
2. 12" Valve at 12 rpm.

With flour being sluggish and the 10" unit on its uppermost speed, the selection is limited to the 12" unit.

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.

## OPTIONS

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

Capacity Chart in Cubic Feet/Hr													
Valve Size	Rotor Speed RPM												Practical
	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	1843	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	Practical
	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	363	454	545	636	727	818	908	999	1090	1181	100%
	45.4	227	354	409	480	547	611	663	708	739	774	803	Practical
10"	25.6	128	205	256	307	359	410	461	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

## NOTES ON VALVE SELECTION

### Throughput

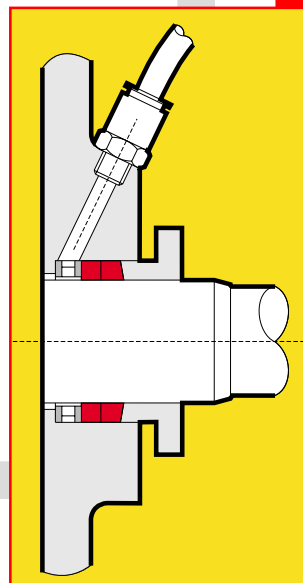
Certain products when fluidised can greatly exceed the conservative rating and on application, e.g. cement, 100% pocket fillage has been known to occur - similarly light products up to 15lb/cu. ft. the opposite effect can happen.

### Temperature

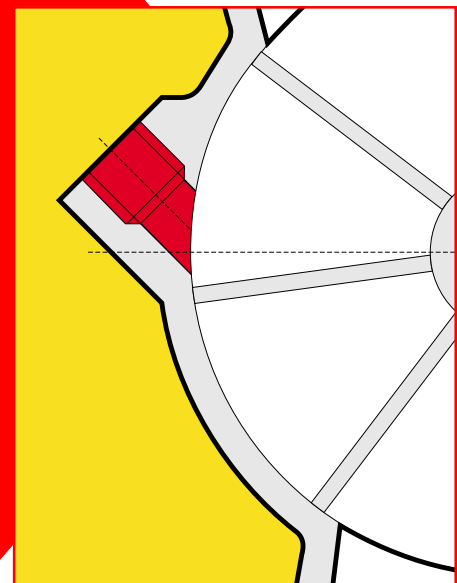
Note: On any application above ambient (70°F) it is important to specify operating temperatures so rotor compensation for expansion can be adjusted as necessary.

### Conversions

Divide cubic metres/hr by 0.0283 to obtain cubic feet/hr.



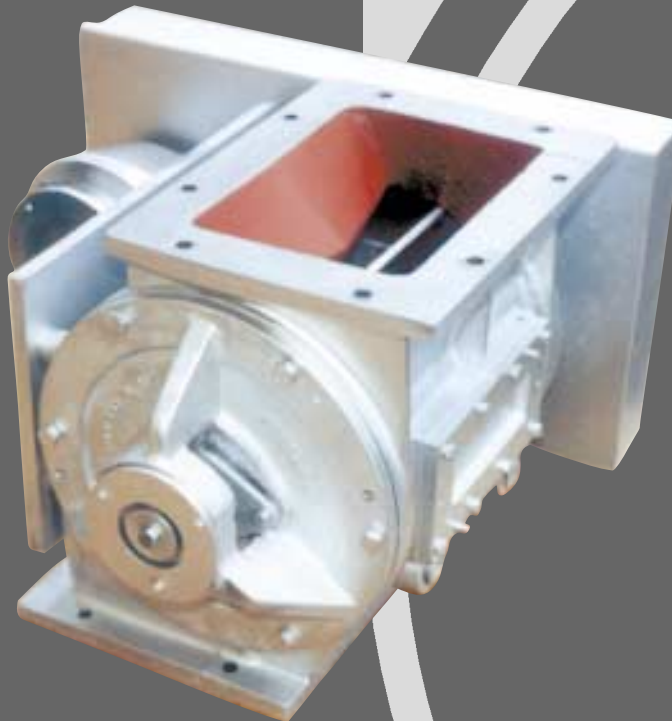
Air Purge Gland



Body Vent

# • OTHER ROTOLOK PRODUCTS •

- Rotary Airlocks
- Conveying Diverters
- Double Dumps
- Blowing Seals
- Fabricated Slides
- Slim Slides
- Rotoslides
- Rotoflex Valves
- Slimflex Valves
- Butterfly Dampers
- Weigh Valves
- Plug Diverters
- Screw Conveyors
- Gravity Diverters
- Rotospeed Switch
- Level Lok
- Pipe Couplings
- Ni Hard Bends
- Special Designs



## SPECIAL ROTARY VALVES

Rotolok manufactures other valve sizes with rectangular and other non standard inlets. We have also made specials to handle temperatures of 2200°F and pressures of 350 p.s.i. If you are looking for something special please ask for our ODDBALL Brochure.



Rotolok Valves Inc  
Industrial Ventures II, 2711 Gray Fox Road  
Monroe, North Carolina, 28110  
Tel: (704) 282-4444 Fax: (704) 282-4242  
e-mail: [sales@rotolok.com](mailto:sales@rotolok.com)  
website: [www.rotolok.com](http://www.rotolok.com)