

# Roto-Flate™

## Inflatable Seal Spherical Valves

### Bubble-Tight Against Full Vacuum and Pressure up to 150 psig

- Heavy-duty construction
- Bi-directional sealing
- No sliding contact when the valve opens and closes
- Full-open port
- Long, low-maintenance service life



### Roto-Flate™ Advantage

Roto-Flate valves feature a bubble-tight sealing system that is ideal for high pressure and vacuum environments. The positive seal prevents leakage of liquids, gasses or dry material into or out of the valve. Bubble-tight sealing means your process runs more efficiently because compressors or vacuum pumps won't be overloaded.

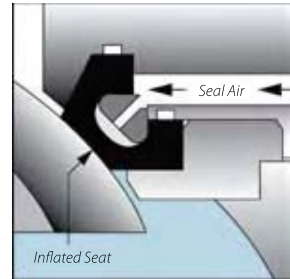
When All Else Fails

# Roto-Flate™ Valves

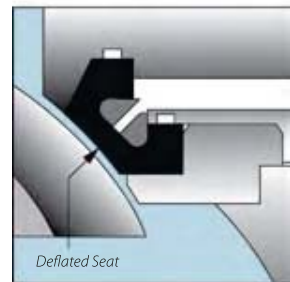


Solenoid valves control the actuator and inflatable seal. Solutions available for fail-close, fail-open or fail-last requirements.

**Mechanics of Operation**  
Compressed air enters the inflatable seal assembly and compresses it against the dome.



Compressed air is released causing the seal to relax and allowing the dome to rotate.



Seal retainer plate protects inflatable seal from product flow.

Position indicators with visible beacon let you and your control system know the position of the valve.

▲ Teflon®-coated valve is shown. Stick-release and other coatings are also available.

# Delay Interlock System (DIS)



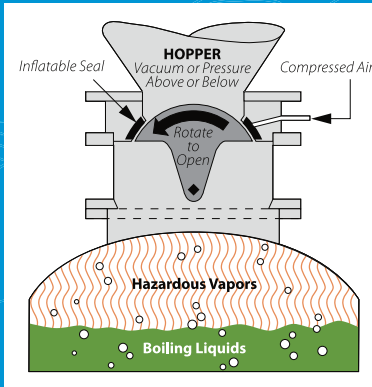
Roto-Flate™ valves are now available with our exclusive delay-interlock feature. This system allows the valve to be controlled with just one signal to open and one to close. This unique device developed exclusively by

Roto-Disc Company makes controlling the Roto-Flate as easy as any quarter-turn valve, while still providing the high performance of a two-stage sealing system.



▲ The DIS comes with field-adjustable timers and is pre-wired to the solenoids. Available NEMA 4 or NEMA 7/9 enclosures.

# Typical Applications

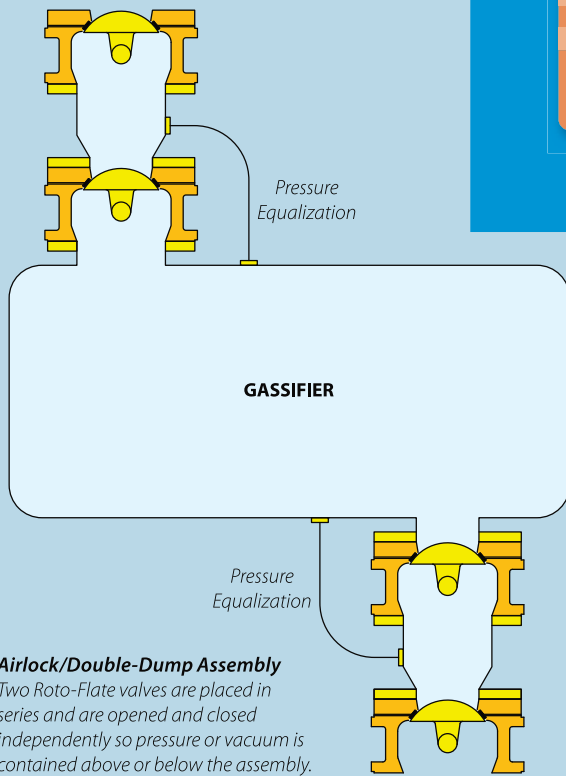


◀ **Typical Installation**  
**Temperatures to 475° F. Pressure up to 150 psi or Full Vacuum.**

Roto-Flate™ valves handle a wide range of dry and slurry material in many different applications. Here are a few of the diverse valve installations:

Manufacturer Type	Material	Application
General Chemical	Potassium Tantalum	Isolation Valve
General Chemical	Silica Gel	Dense Phase Pneumatic Conveying
General Chemical	Hydro Bromine Salts	Line Shut-off
General Chemical	Zinc Stearate	Reactor Fill/Shut-off
General Chemical	TiO <sub>2</sub>	Silo Discharge
Alternative Energy	Crumb Rubber	Gasification
Diversified Food	Cake Frosting	Mixer Discharge
Diversified Food	Maltodextrin	Control Valve
Major Pharmaceutical	Pharmaceutical Powder	Vacuum Dryer Discharge
Major Pharmaceutical	Pharmaceutical Powder	Vacuum Conveying System
Major Pharmaceutical	Pharmaceutical Powder	Centrifuge Discharge
Biofuels	Rapeseed (Canola)	Gasification
Aggregate & Mining	Aluminum Silicate Powder	Silo Discharge
Agricultural Processor	Poultry Biocide	Nauta Mixer Discharge
Agricultural Processor	Corn Gluten	Weigh Bin Fill
Batteries	Magnesium Dioxide	L.I.W. Feeder Refill
Bio-pharmaceutical	Dried Milk Formula	Air Lock (Double-dump)
Coal Fired Power Plant	Hot Fly Ash	Bag House Discharge
Computer Printers	Toner Powder	Metering Hopper
Flavorings & Spices	Food Flavoring	Hopper Discharge
Flavorings & Spices	Powdered Flavoring	Mixer Discharge
Flavorings & Spices	Salt & Seasoning	Ribbon Blender Discharge

## Lock-Hopper Valves



### Airlock/Double-Dump Assembly

Two Roto-Flate valves are placed in series and are opened and closed independently so pressure or vacuum is contained above or below the assembly.

## Airlock / Double-Dump Assembly

Roto-Disc Company commonly supplies valves in airlock / double-dump assemblies for processing materials into and/or out-of pressure or vacuum vessels. Intermediate accumulator chambers are sized to meet processing requirements and are designed for ledge-free flow of material from valve-to-valve. Cycle-timing and pressure equalization couplings are available for turn-key feeding solutions. These are a perfect replacement for leaky rotary vane feeders or other, flimsy double-dump valves.

## Pressures & Temperatures

- System pressures can be as high as 150 psi or full vacuum.
- Seal pressure is recommended to be 15 psi greater than operating pressure.
- Standard valves are good for temperatures up to 475° F. Special materials and water cooling are available for higher temperatures.
- Heating/cooling jackets and tracing are available for thermal regulation.

## Other Options

- Flange adaptors and reducers
- Fail safe design for loss of power and/or compressed air
- Dribble-feed or throttling
- DIN or other special flange drilling
- Stick-release and/or Teflon® coatings for highly-corrosive applications

# Technical Information

## Materials of Construction

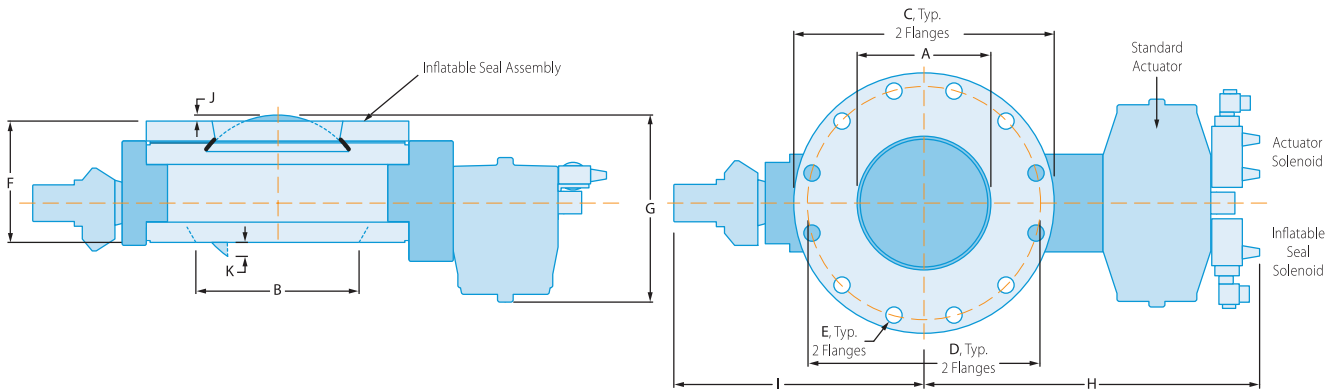
**Body, Dome & Retaining Plates:** Stainless Steel (316, 304, 410), Carbon Steel (4140, WCB), Ductile Iron, Hastelloy-C, Monel, Aluminum Bronze, other alloys upon request

**Seal material:** Neoprene, Viton®, Viton® Extreme, EPDM, Perfluoroelastomer, Buna-N and Heat-Stable Silicon®. Some materials are available in white.

**Coatings & Hardfacing:** Teflon® PFA, Halar ECTFE, Chrome, Tungsten Carbide and Electroless Nickel.

Teflon® is a registered trademark of DuPont.

Valve Size	Weight in Stainless or Carbon Steel with Standard Controls LBS. (Kg)	Minimum Torque Required INCH-LB. (nm)	Typical Torque Required INCH-LB. (nm)
3	75 lbs. (34)	210 (24)	480 (51)
4	97 lbs. (44)	300 (34)	480 (51)
6	140 lbs. (64)	680 (77)	1450 (164)
8	200 lbs. (91)	1150 (130)	3600 (407)
10	275 lbs. (125)	1800 (203)	3600 (407)
12	575 lbs. (261)	2660 (301)	5325 (602)
14	615 lbs. (277)	4130 (467)	5325 (602)
16	485 lbs. (220)	5480 (619)	9350 (1056)
18	760 lbs. (344)	7400 (836)	9350 (1056)
20	1580 lbs. (716)	11300 (1277)	24000 (3389)
24	2290 lbs. (1039)	15110 (1707)	24000 (3389)



Valve Size	Top and Bottom Flange Bolting Size	Optional Bottom Flange Bolting Size	Standard Valve Dimensions – IN. (mm)										
			A	B*	C*	D*	E* # Holes x Hole Dia.	F*	G*	H*	I*	J*	K*
3	4", 150# ANSI	3", 150# ANSI	3" (76)	4-1/8" (105)	9" (229)	7-1/2" (191)	8 x 3/4" (8 x 19)	5-1/4" (133)	6-25/32" (172)	14-5/8" (372)	12-1/16" (306)	0" (0)	0" (0)
4	6", 150# ANSI	4", 150# ANSI	3-27/32" (98)	6-1/16" (154)	11" (279)	9-1/2" (241)	8 x 7/8" (8 x 22)	5-11/32" (136)	6-15/16" (176)	15-3/4" (400)	13-1/8" (333)	0" (0)	7/8" (22)
6	8", 150# ANSI	6", 150# ANSI	5-3/4" (146)	8-1/8" (206)	13-1/2" (343)	11-3/4" (299)	8 x 7/8" (8 x 22)	6-25/32" (172)	8-7/8" (225)	17-7/16" (443)	14-1/4" (362)	0" (0)	1-7/32" (31)
8	10", 150# ANSI	8", 150# ANSI	7-3/4" (197)	10-1/4" (260)	16" (406)	14-1/4" (362)	12 x 1" (12 x 25)	7-5/8" (194)	11-3/4" (299)	20-3/4" (527)	15-5/8" (397)	3/8" (10)	2-17/32" (64)
10	12", 150# ANSI	10", 150# ANSI	10" (254)	12-1/4" (311)	19" (483)	17" (432)	12 x 1" (12 x 25)	9-7/16" (240)	13-1/16" (332)	22-1/4" (565)	17-1/8" (435)	31/32" (25)	2-11/16" (68)
12	16", 150# ANSI	12", 150# ANSI	11-5/8" (295)	15-1/2" (394)	23-1/2" (597)	21-1/4" (540)	16 x 1-1/8" (16 x 29)	11-1/4" (286)	16-5/8" (422)	25-1/4" (641)	19-1/8" (486)	1-1/32" (26)	3-5/16" (84)
14	20", 150# ANSI	14", 150# ANSI	14-1/2" (368)	22-1/4" (565)	27-1/2" (699)	25" (635)	20 x 1-1/4" (20 x 32)	14-1/32" (356)	19-11/32" (491)	26-5/8" (676)	21-3/4" (552)	13/16" (21)	5-5/32" (131)
16	20", 150# ANSI	16", 150# ANSI	16-1/4" (413)	22" (559)	27-1/2" (699)	25" (635)	20 x 1-1/4" (20 x 32)	12-3/8" (314)	18-25/32" (477)	27-3/4" (705)	22-1/8" (562)	2-1/16" (52)	5-17/32" (141)
18	26", Series A, CL-150	18", 150# ANSI	18-1/2" (470)	27" (686)	34-1/4" (870)	31-3/4" (806)	24 x 1-3/8" (24 x 35)	16-17/32" (420)	21-5/8" (549)	29-1/2" (749)	24-3/8" (619)	1-27/32" (47)	5-31/32" (152)
20	30", Series A, CL-150	20", 150# ANSI	20-1/2" (521)	31-13/16" (808)	38-3/4" (984)	36" (914)	28 x 1-3/8" (28 x 35)	18-19/32" (472)	25-19/32" (650)	39" (991)	26-5/8" (676)	2" (51)	7-1/2" (191)
24	36", Series A, CL-150	24", 150# ANSI	24-1/2" (622)	38" (965)	46" (1168)	42-3/4" (1086)	32 x 1-5/8" (32 x 41)	23-11/32" (593)	28-11/16" (729)	42-5/8" (1083)	30-1/4" (768)	2-5/32" (55)	7-15/16" (202)

\* Dimensions vary with Inlet / Outlet Options and with non-standard controls. Fractional dimensions rounded up to the next 1/32"



Roto-Disc, Inc. 514 Enterprise Drive, Unit A, Erlanger, Kentucky 41017, USA  
 ph +1 513-871-2600, fax +1 513-871-9013 • info@rotodisc.com • www.rotodisc.com