

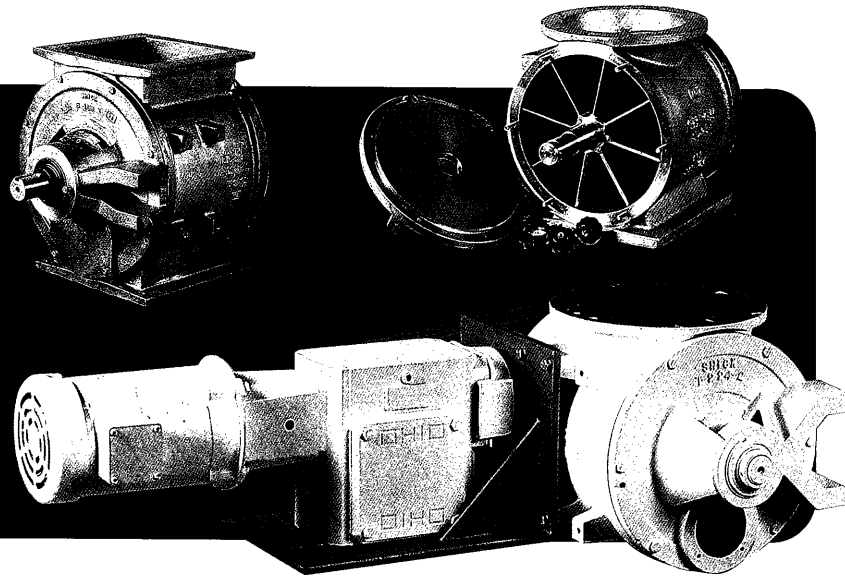
SECTION 3 • PNEUMATIC CONVEYING

Valves

Thompson-Hill provides an assortment of valves for a wide variety of material handling applications, including the most challenging conditions for many of the foremost names in the process industry. In addition to our rotary valves, our valve line includes a diversified combination of butterfly, pinch, slide gate and diverter valves to meet any of your material handling requirements or demands.

Rotary Valves

Designed for use in gravity vacuum and pressure conveying systems, Rotary Valves are suitable for metering a wide range of solids, granular, pelleted and powdered materials from the outlets of silos, hoppers, cyclones, mixers and weighers. We offer a choice between heavy duty parallel rotor feeders and a tapered rotor series suitable for lower differential pressures.



DIMENSIONS- AIRLOCK/FEEDER



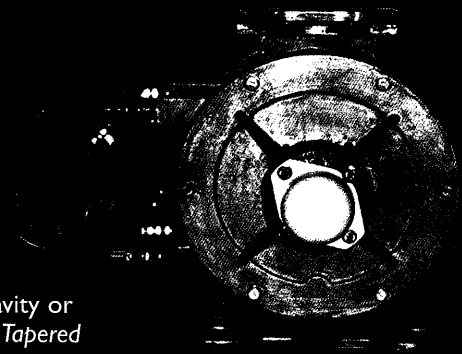
Housing Style	020	075	700	1250	175	420	2000	420F	2000F	700F	685F	1250F
Cu. Ft. per Rev.	.020	.075	.745	1.23	.163	.432	1.75	.420	1.75	.745	.657	1.25
Vanes	6	8	8	8	8	8	8	8	8	8	8	8
Air Leakage PSI	1.8	2.6	5.53	6.32	3.33	4.57	7.56	4.57	7.56	5.53	5.21	6.32
Shaft Diam. In/mm	.75/19	1.1875/30	1.5/38	2/51	1.1875/30	1.25/32	2/51	1.25/32	2/51	1.5/38	1.25/32	1.5/38
Weight** CI/304 S/S	50/70	75/95	280/300	490/510	90/110	160/180	530/550	160/180	530/550	280/300	210/230	490/510
A In/mm	8.5/216	16.375/416	26/660	29.5/749	18.25/464	22.5/572	34.5/876	21/533	34.5/876	24/610	30.4375/773	35/889
B In/mm	4.75/121	8.1875/208	13/330	14.75/375	9.125/232	11.25/288	17.25/438	11.625/295	17.25/438	13/330	15.2188/387	17.5/445
C In/mm	5.875/149	10/254	15.25/387	20/508	10/254	13.125/333	18.25/463	12.375/314	18.25/464	14.625/371	10.75/273	14.25/362
D In/mm	25.1875/640	27/686	33.5/851	35/889	27.125/689	29.625/752	35.75/908	29.625/752	35.75/908	33.5/851	28.625/727	32/813
E In/mm	27.9375/710	31.5/800	40.75/1035	44/1118	31.625/803	35.75/908	44.5/1130	35.75/908	44.5/1130	40.75/1035	36.125/918	39/991
F In/mm	-	-	-	-	-	-	-	3.75/95	6/152	4.25/108	3.375/86	4.25/108
Flange Style	A/A	B/B	C/C	C/C	A/B	A/B	A/C	A	A	C	D***	D
# of Mount Holes	4/4	8/8	12/12	12/12	6/8	6/8	6/12	6	6	12	18	14
Size of Holes/Tap	5/16 - 18	5/16 - 18	1/2 - 13	1/2 - 13	5/16 - 18	3/8 - 16	1/2 - 13	3/8 - 16	1/2 - 13	1/2 - 13	3/8 - 16	1/2 - 13
G (OD Round)	5.5/140	-	-	-	9/229	11/279	17/432	11/279	17/432	-	-	-
H (ID Round)	3.5/89	-	-	-	6/152	8/202	13/330	8/203	13/330	-	-	-
I Bolt Circle	4.75/121	-	-	-	8/203	9.75/248	15.5/394	9.75/248	15.5/394	-	-	-
J In/mm	-	8/203	14.5/368	14.5/368	8.125/206	10.75/273	16/406	-	-	14.5/368	15/381	14/356
K In/mm	-	5/127	10.5/267	10.5/267	5.125/130	7.75/197	12/305	-	-	10.5/267	9/229	9/229
L In/mm	-	7/178	14.5/368	13.5/343	9/229	11.125/283	16/406	-	-	14.5/368	17/432	21/533
M In/mm	-	4/102	10.5/267	10.5/267	6/225	8.125/206	12/305	-	-	10.5/267	12/305	16/406
N In/mm	-	3/76	4.125/105	4.125/105	4/102	5.1875/132	4.875/124	-	-	4.125/105	2.5/64	4.75/121
O In/mm	-	3.5/89	4.125/105	4.125/105	3.5/89	4.875/124	4.875/124	-	-	4.125/105	3/76	3/76

ROTARY VALVES/FEEDERS

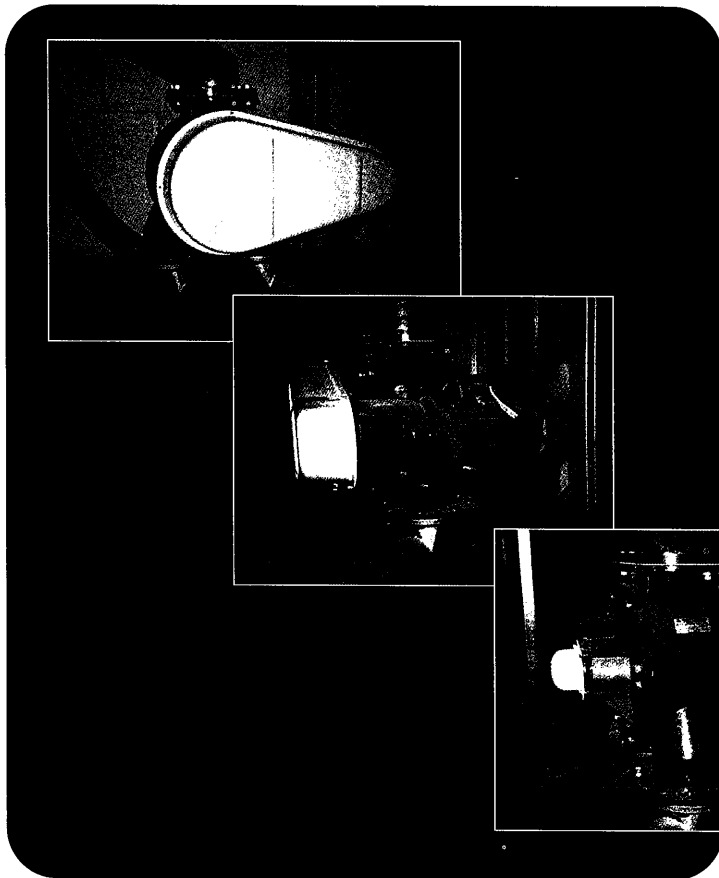
An important key to Rotary Valve Performance, including (maximum) optimum operation life, is proper valve selection based on your specific process requirements. We have the right valve for your application, precision machined to close tolerances for pressure or vacuum systems, gravity feeding, metering material into pneumatic conveying lines or for simple dust collector discharge applications. Most valves are available in cast iron, stainless steel, aluminum, monel, hastelox and NI hard bodies with a variety of metallic or polymer coatings.

New!
**Twin-Outlet
 Diverting Rotary
 Valve**

(patents pending) A never before offered combination of **Feeder/Airlock and Diverter in one simple mechanism**. Ideal for all gravity or pneumatic applications. The *Tapered Rotor* design provides for easy rotor gap adjustments. Five Sizes, Capacities to 2,500 ft³/hr.



The Award Winning Twin Outlet Rotary Valve



This revolutionary valve combines the functionality of a rotary valve/feeder with the ability to divert the flow of product. The advantages are clear over a rotary valve combined with a diverter valve: less head room and only one moving part.

Design Features:

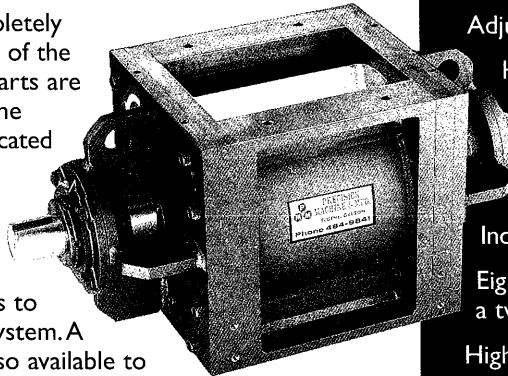
- externally adjustable rotor clearance
- controllable flow rate
- available in cast iron, stainless & Hastelloy
- easy-clean rotor assembly
- wear resistant coatings
- purged shaft seals

BUSH & WILTON, INC.

PMV Precision Machine Valves

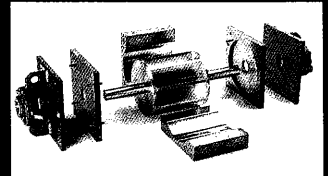
Introducing PMV, a completely bolt together unit, made of the finest quality alloys. All parts are interchangeable within the same size unit and are located with the dowel pins for proper alignment.

The units can be furnished with the inlet and discharge transitions to adapt to your existing system. A knife gate assembly is also available to isolate the valve for re-building, while the valve is still in position.



Design Features

- Adjustable shaft packing glands with replaceable media.
- High pressure air ring to prevent contaminants from entering the packing media.
- Type "E" fixed, piloted flange bearing on both ends.
- 500 Brinell Alloy machined housing.
- Industrial hard chromed barrel and end wear plates.
- Eight blade rotor which gives a two blade seal at all times.
- High temperature paint.
- 3 or 9 o'clock drive mounting position.



Your down time is reduced to a minimum when you rebuild your "PMV" yourself!

Rebuilding the PMV is simply a matter of removing the proper bolts and replacing the worn piece with an identical new piece, be it the rotor, the end plates or even the barrel. All pieces are "Precision Machined" identical, making them interchangeable. Besides the bolts, the pieces are dowel pinned for ease of alignment and assembly until the bolts are secured.

Simply order the replacement parts and your parts will be sent to you the fastest way possible from our "on the shelf inventory."

PMV Precision Machine Valve Chart

Sizes	CFR	MAX. RPM	Length	Height	Width	Inlet & Discharge Size	EST. Weight
PMV8	.17	48	11 1/2"	10"	11"	6 1/2" x 8"	275 lbs.
PMV10	.34	48	13 1/2"	12"	12"	7" x 10"	350 lbs.
PMV12	.62	32	15 1/2"	15"	15"	9" x 12"	525 lbs.
PMV14	1.0	30	18"	17"	18"	9 5/8" x 14"	750 lbs.
PMV16	1.6	25	20"	20"	21 3/4"	10 3/4" x 16"	1050 lbs.
PMV18	2.25	25	22"	22"	24"	18" x 18"	1300 lbs.
PMV20	3.10	22	24"	24"	26"	20 3/8" x 20"	1475 lbs.

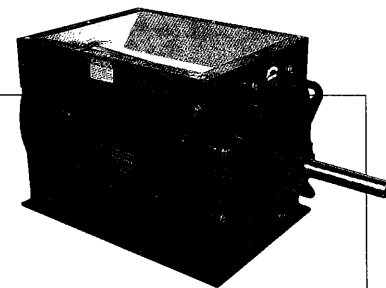
Precision Chip Feeders

Also available for any Precision Feeder is a feeder mounting frame with an injector tee, check valve and bottom knife access door custom designed to fit your line size and center lines.

Each Precision Chip Feeder is accompanied with instructions and safety stickers in the appropriate places and with your regular maintenance and inspection program, your Precision Chip Feeder will give you many years of service. Your Precision Chip Feeder has an extra thick barrel which means it can be rebuilt many times before needing a replacement. Allow us to rebuild your old feeder to "like new" condition and you may use one of our "loaners" to keep your downtime to a minimum. We also offer a trade-in allowance for your used feeder when you replace it with a new Precision Chip Feeder.

Design Features:

- Shaft seal packing glands to protect the bearings.
- Outboard spherical tapered roller bearings.
- Adjustable top shear knife and bottom wiper knife.
- Sealed access door to the top shear knife.
- Adjustable brass end seals.
- Rotor blades hard surfaced with stainless steel and machined.
- Rotor and barrel machined to application tolerances.
- A hard chromed barrel.
- A removable, replaceable drive shaft machined from stressproof steel.



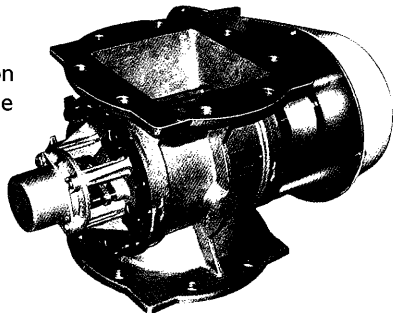
Standard Precision Chip Feeders (Other Sizes Upon Request)

Model	CFR	Max. Recom. RPM	Length	Height	Width	Recommended Capacities In UPH			Estimated Weight
						Screened Chips, Sawdust, Bark or Shavings	Unscreened Chips, Hammer Hog Bark, Scr. Hog Fuel	Unscreened Knife Hog Fuel	
PM 12	.66	45	15 3/4	16	16	4.0	—	—	400
PM 14x18	.93	45	19	18	18	5.0	—	—	550
PM 16x20	1.46	45	21	21	20	8.0	—	—	800
PM 16	1.49	40	20 1/2	21	21	10.0	9.0	—	800
PM 20x20	2.19	42	21	26	25	14.25	10.2	—	1,000
PM 20x25	2.93	42	26	26	25	19.25	13.7	—	1,100
PM 20	3.10	38	25	26	26	21.0	17.0	15.0	1,100
PM 20x30	3.66	42	31	26	25	24.50	17.5	15.5	1,200
PM 24	5.32	36	29 1/4	31	31	35.0	30.0	25.0	1,900
PM 25x30	5.65	38	31	32	31	37.2	28.7	20.7	2,000
PM 25x35	6.78	38	36	32	31	43.5	33.6	24.0	2,200
PM 30x30	8.45	35	31	38	38	52.5	42.9	34.8	2,400
PM 30x35	10.30	35	36	38	38	63.0	51.3	40.8	2,600
PM 30	10.33	34	35 1/4	38	38	68.0	58.0	50.0	2,750
PM 30x40	11.10	35	41	38	38	71.0	58.0	46.0	3,450
PM 30x45	12.70	35	46	38	38	83.5	68.0	54.0	3,600
PM 35x45	17.20	32	48	44	44	120.6	103.0	87.0	4,750
PM 36	18.56	30	43	44	44	117.0	98.0	85.0	4,300
PM 35x50	19.35	32	53	44	44	137.0	116.0	98.0	5,050
PM 35x55	21.50	32	58	44	44	152.0	130.0	109.0	5,750
PM 42	29.19	29	51 3/4	52	52	172.0	145.0	120.0	9,500
PM 45x45	30.00	29	55	56	56	195.0	172.0	144.0	10,000
PM 45x50	33.75	29	60	56	56	220.0	193.0	162.0	10,600
PM 45x55	37.50	29	65	56	56	244.0	214.0	180.0	11,000
PM 48	39.50	29	60	60	60	260.0	230.0	196.0	11,300

Max 100% Capacity CFRXPRMx60/200 = UPH @ 100% Loading

Tapered Rotary Valve (SR Series)

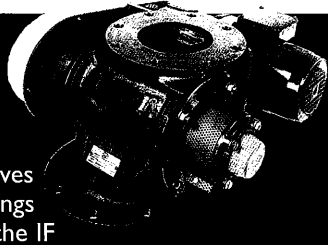
Designed to feed a wide range of solids and powders in gravity, pressure or vacuum applications. The exclusive Tapered Rotor Design allows rotor clearance to be field adjusted without rotor removal. This can be used to compensate for temperature, wear or product variations. The Tapered Rotor Design also simplifies tear-down and reassembly. The "V" neck inlet reduces product shearing. Cast bodies, precision machining, adjustable packing glands and permanently sealed outboard bearings assure high reliability and long operating life.



Design Features:

- Materials of Construction . cast iron, cast stainless, cast aluminum, cast steel, Hastelloy, Monel, Ni-resist and bronze
- Sizes 4" (new size) 6" 8" 10" 12" 14" 16" 18" with round/square combination flanges
- Rotor Type closed ends
- Pressure Rating (standard) 15 psig (high pressure designs available)
- Operating Temperature . . . 392°F
- Seal Type multi-ring adjustable packing gland (air purge option available)
- Seal Materials PTFE, graphite impregnated PTFE or Kevlar
- Rotor Bearings permanently sealed outboard roller bearings
- Design Options purged seals, body venting, quick-clean design, reduced capacity rotors, replaceable bolt-on rotor tips, metallic and polymer coatings, torque limiter, rotation detection.

Offset Flange Rotary Valve (OF Series)



The OF Series Rotary Valves share all the heavy duty castings and precision machining of the IF Series, with the exception of the offset flanges. Because the inlet flange is offset relative to the rotor, flooding and overflow of the rotor pockets is limited which greatly reduces product shearing. This design is recommended for granular and pelletized products such as plastic chips. Heavy cast bodies, end covers, oversized shafts, adjustable packing gland seals and sealed outboard roller bearings provide reliable service and long operating life.

Design Features:

- Materials of cast iron, cast stainless, cast aluminum, Hastelloy, Ni-resist, bronze and Monel
- Construction
- Sizes 4" 6" 8" 10" 12" 14" 16" 18" with round flanges
- Seal Type multi-ring adjustable packing gland (air purge option available)
- Seal Materials PTFE, graphite impregnated PTFE or Kevlar
- Rotor Bearings permanently sealed outboard roller bearings
- Pressure Rating (standard) 20 psig (high pressure designs available)
- Operating Temperature .392°F
- Design Options purged seals, body vent, bolt-on rotor tips, closed-end rotor, reduced capacity rotor, metallic and polymer coating, torque limiter, rotation detection, variable speed drive, metering baffles

Blow-Through Rotary Valve (BS Series)

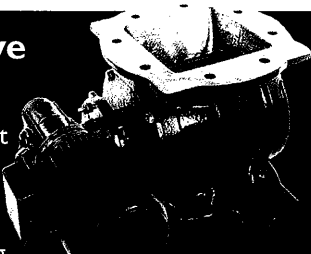


This valve is identical to the original IF Series Rotary Valves and shares all of the same heavy duty castings and precision machining but the BS Series valve has an integral pneumatic line loader. The line loader brings air turbulence close enough to dislodge solids from the rotor, but because air does not pass directly through the vanes wear is reduced and valve life greatly increased. This design also allows the rotor to be removed for inspection without disturbing the pneumatic connections. The "V" neck inlet reduces product shearing and the oversized rotor shaft and drive are designed to compensate for high torque loads due to high material loading and differential pressures. Heavy duty cast bodies, precision machining, adjustable packing gland seals and sealed outboard bearings provide reliable operation and long operating life.

Design Features:

- Materials of cast aluminum, cast iron, cast stainless also available in Hastelloy, Ni-resist, bronze and Monel
- Construction
- Sizes 6" 8" 10" 12" 14" with round flanges
- Pneumatic Connections . . threaded pipe or ANSI 150# flanges
- Seal Type multi-ring adjustable packing gland (air purge option available)
- Seal Materials PTFE, graphite impregnated PTFE or Kevlar
- Rotor Bearings permanently sealed outboard roller bearings
- Pressure Rating (standard) .20 psig (pressures to 325 psig available)
- Operating Temperature . .392°F
- Design Options purged seals, body venting, closed-end rotors, bolt-on rotor tips, metallic and polymer coatings, torque limiter, rotation detection, metering baffles

Dust Collector Valve (SRD Series)



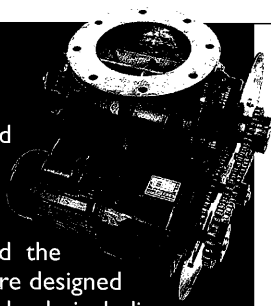
This valve is designed for light duty or intermittent applications including under dust collectors. The "V" neck inlet reduces product shearing and loading. The compact right angle drive is low maintenance for those out of the way locations. Economically designed with ring seals and oilite bearing, this rotary valve is built with the same heavy duty castings and precision machining that goes into all B&W valves. SRD Valves feature replaceable blade tips of steel or polyurethane.

Design Features:

- Materials of Construction . . cast iron or cast stainless
- Sizes 6" 8" 10" 12" combination round/square flanges
- Shaft Seal Nitrile O-rings
- Rotor Support oilite bushing
- Pressure Rating (standard) .1 psig
- Operating Temperature . . .158°F
- Design Options bolt-on rotor tips, reduced capacity rotors, closed-end rotors

**Heavy-Duty
(IF Series)**

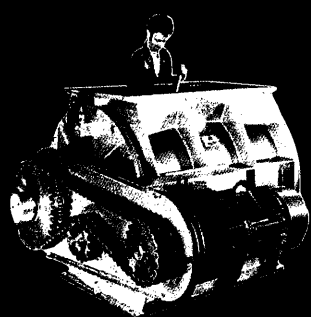
This heavy duty valve is designed for feeding and metering a wide variety of solids in gravity, pressure or vacuum applications. The "V" neck inlet reduces shearing and the oversized rotor shaft and drive are designed to compensate for high torque loads including those due to high material loading or differential pressure. Cast bodies and end covers, heavy duty rotors, adjustable packing glands and sealed outboard bearings ensure reliability and long operating life.



Design Features:

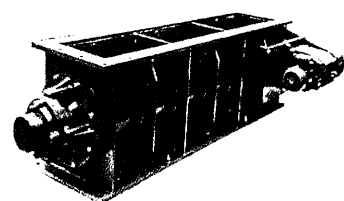
- Materials of cast aluminum, cast iron, cast stainless, Hastelloy, Construction Ni-resist, bronze and Monel
- Sizes 4" 6" 8" 10" 12" 14" 16" 18" 24" with round flanges
- Seal Type multi-ring adjustable packing gland (air purging option available)
- Seal Materials PTFE, graphite impregnated PTFE or Kevlar
- Rotor Bearings permanently sealed outboard roller bearings
- Pressure Rating 20 psig (designs to 325 psig available)
- Operating Temp. 392°F
- Design Options. purged seals, body venting, closed-end rotors, bolt-on rotor tips, reduced capacity rotors, metallic and polymer coatings, torque limiter, rotation detection and metering baffles

Extended Length and Oversized Valves are commonplace at B&W. There is virtually no limit to what we can do for you.



Design Features:

- Up to 46" x 46" square valve
- Up to 7' long rotary valve
- Special custom applications
- Coating and plating service
- Abrasion & wear resistance

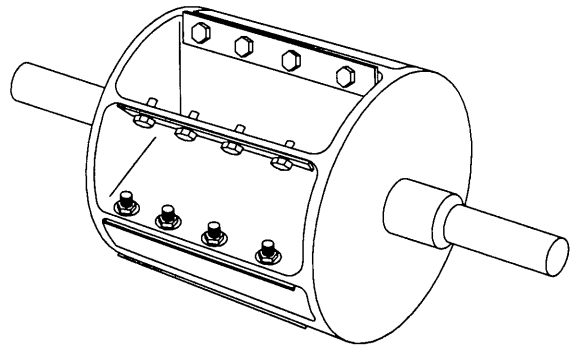
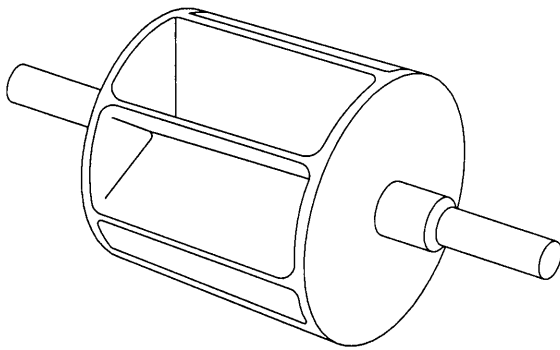


Tapered Rotor vs. Bolt-On Tips

There are three main reasons why you might want to use **bolt-on rotor tips** in your rotary valve design: **(1)** to adjust rotor clearance (to compensate for air leakage, temperature or product characteristics); **(2)** as replaceable wear parts; **(3)** as a scraping blade for sticky material. Our exclusive **Tapered Rotor** avoids many of the reasons bolt-on rotor tips might have been used. In most cases the **Tapered Rotor** eliminates two of the three reasons for using bolt-on tips including rotor clearance adjustment and for wear. Another benefit of the **Tapered Rotor** is that, unlike straight rotors, our rotor can be replaced without being machined for a specific valve body. The **Tapered Rotor** is simply installed and the desired rotor clearance set. The reduction in down time and cost is substantial.

Tramp Metal

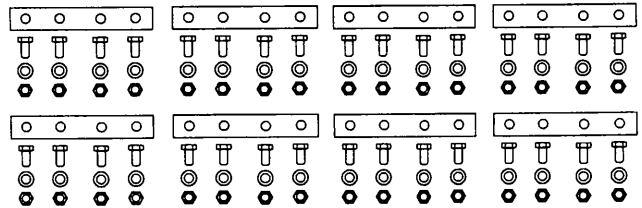
The last thing you need to risk is tramp metal going downstream to your sifter, packer or final product. The Tapered Rotor can help you avoid this problem.



Tapered Rotor = no loose parts

(We do offer bolt-on hardened steel, phosphor-bronze, polyurethane and PTFE tips for applications not fulfilled by the Tapered Rotor alone. Contact our engineering department for recommendations.)

Bolt-On Tips = 104 to 152 loose parts

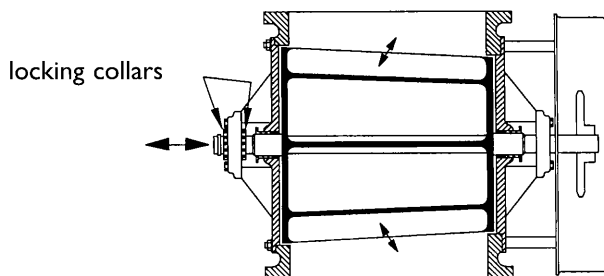


Rotor Clearance Adjustment

Proper rotor clearance is important for optimum rotary valve performance. The easier it is to adjust rotor clearance the more likely it will be maintained.

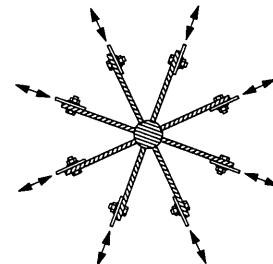
Tapered Rotor

No disassembly required. External adjustment simply by loosening two external locking collars and set screws.



Bolt-On Tips

The rotor must be removed from the valve and set on a jig in order to set each blade tip independently via the 4 to 6 retaining bolts or machined to the desired diameter.



SECTION 3 • PNEUMATIC CONVEYING

Bottom Diverter Valves

are designed to direct product into a vessel from a pneumatic conveying line. Compressed air is used to actuate the valve into either the divert or through position. In the **divert** position, conveying air and product are directed into the receiver, where product is separated from the air stream as the air leaves through the exit port. In the **through** position, product and conveying air by-pass the receiver.

Notes:

Electrical Supply — Standard solenoids and limit switches require 110V/single phase/60Hz control power (other voltages available upon request.)

Weather Resistant — Valves are sealed to resist moisture and can be machined to withstand a wide range of temperatures. Weather shields are available for outdoor applications.

Clean-In-Place Applications (CIP) — Available coupling/ferrule arrangement, allows quick disassembly and cleaning.

Exit Port Block — To avoid cross-contamination, the optional port block confines conveying air to the receiving vessel.

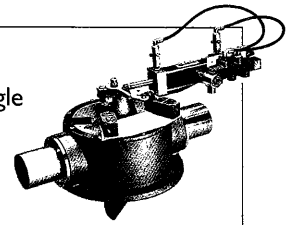
Actuation — Air cylinder actuation. Multiple sizes available for particular applications.

Limit Switches — Standard mechanical limit switch. Proximity switches are optional.

Maximum Line Pressure — 20 P.S.I.

Air Supply — 80-100 P.S.I. clean dry air. No lubrication.

Gasket — FDA approved, white natural sponge rubber standard. Others available upon request.



Weights *

3"/76.2m TUBE	95 lbs.
3"/76.2m PIPE	95 lbs.
4"/101.6m TUBE	140 lbs.
4"/101.6m PIPE	140 lbs.
5"/127m TUBE	150 lbs.
5"/127m PIPE	210 lbs.
6"/152m TUBE	210 lbs.

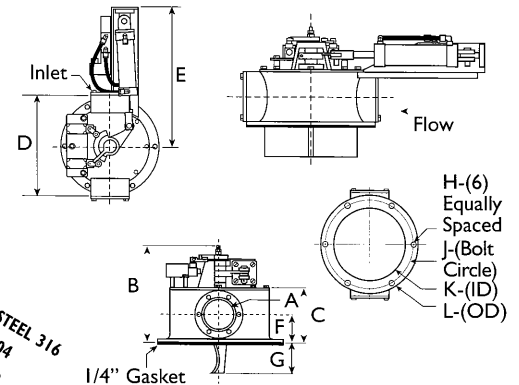
*Weights shown include cylinders.

Materials Of Construction

3"/76.2m TUBE	■	■	■	■
3"/76.2m PIPE	■	■	■	■
4"/101.6m TUBE	■	■	■	■
4"/101.6m PIPE	■	■	■	■
5"/127m TUBE	■	■	■	■
5"/127m PIPE	■	■	■	■
6"/152m TUBE	■	■	■	■

CAST IRON
ELECTROLESS NICKEL PLATED
STAINLESS STEEL 304
STAINLESS STEEL 316

Schematics



Dimensions - Unit

Inches										
A	B	C	D	E	F	G	H	J	K*	L
3" TUBE	10 1/4	6 1/4	11 5/8	19	3 1/4	3	1/2	10 1/4	8	11 3/4
3" PIPE	10 1/4	6 1/4	11 5/8	19	3 1/4	3	1/2	10 1/4	8	11 3/4
4" TUBE	12 1/4	6 3/4	15 1/2	21	3 1/2	3 1/2	5/8	13 3/4	11	15 1/4
4" PIPE	12 1/4	6 3/4	15 1/2	21	3 1/2	3 1/2	5/8	13 3/4	11	15 1/4
5" TUBE	12 1/2	7 3/4	15 1/2	21	3 5/8	3	5/8	13 3/4	11	15 1/4
5" PIPE	14 3/4	9	18 1/2	22	4 1/4	4	5/8	16 1/2	13 1/2	18
6" TUBE	14 3/4	9	18 1/2	22	4 1/4	4	5/8	16 1/2	13 1/2	18

NOTE: All dimensions are nominal.. *Add 1" for vessel opening.

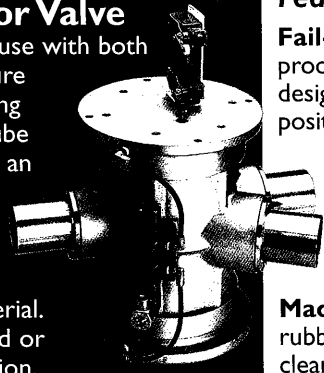
Millimeters

A	B	C	D	E	F	G	H	J	K*	L
76.2m TUBE	260	159	295	483	83	76	13	260	203	298
76.2m PIPE	260	159	295	483	83	76	13	260	203	298
101.6m TUBE	311	171	394	533	89	89	16	349	279	387
101.6m PIPE	311	171	394	533	89	89	16	349	279	387
127m TUBE	318	197	394	533	92	76	16	349	279	387
127m PIPE	375	229	470	559	108	102	16	419	343	457
152m TUBE	375	229	470	559	108	102	16	419	343	457

NOTE: All dimensions are nominal. *Add 25.4mm for vessel opening.

Tube Selector Valve

is constructed for use with both vacuum and pressure pneumatic conveying applications. The Tube Selector Valve uses an exclusive diverting piston design for effective convergence or divergence of material. The piston is raised or lowered into position, without rotation, by selectively injecting compressed air into each end of the cylinder. This movement allows the horizontal borings, located on two separate planes within the piston, to align with the housing ports to achieve a straight-through or divert position.



Features:

Fail-Safe Valve Position Indication — Dual-limit switch design confirms proof-positive valve position, eliminating the possibility of flow direction error. This design assures the Tube Selector Valve will be in either the straight-through or divert position, not somewhere in between.

Innovative Piston Operation — Shick's Tube Selector Valve uses a unique piston constructed of solid stock with the ports bored to precise specifications virtually eliminating the possibility of cross-contamination of conveyed material.

Nema — 4 and 9 standard, 4X and 7 available.

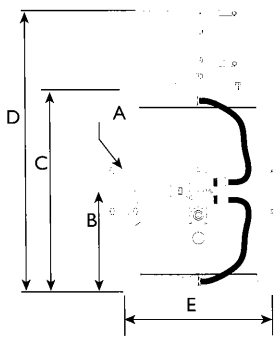
Machined Close Tolerances — Unlike other valves incorporating easily degradable rubber and plastic seats, Shick's valves are machined to precision metal-to-metal clearances eliminating frequent replacement of wearing parts.

Positive Line Connection — Removable port flange and O-ring seals provide secure pipe/tube to valve connection for quick installation without leakage.

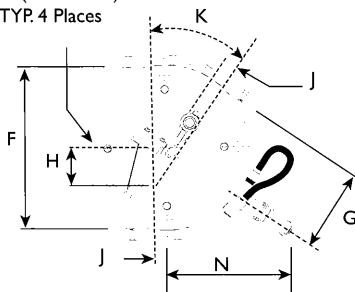
Abrasion Resistant Design — Valve design allows for smooth transition in the divert position, reducing pressure loss, friction and abrasive wear.

Easy Installation — Shick's Tube Selector Valve can be mounted in either the vertical or horizontal position. Mounting holes are also supplied in endplates for floor-mounting or when the valve is to be suspended from a structure.

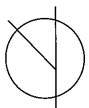
Schematics



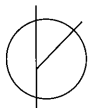
L-(Hole Diameter)
M-(Bolt Circle)
TYP. 4 Places



Operating direction (viewed from top)



Left Hand



Right Hand

Dimensions

Inches												
A	B	C	D	E	F	G	H	J	K	L	M	N
3" TUBE	6 1/2	13	18 1/4	9 5/8	9 1/4	4 5/8	2 3/8	3/4	35°	9/16	8 3/8	7 5/8
4" TUBE	9 1/4	18 1/2	24 5/8	13 1/2	14 5/8	7 5/16	3 23/32	1	30°	9/16	12 1/2	9 1/2
5" TUBE	10 5/8	21 1/4	29	15 1/4	17 1/2	8 3/4	4 7/16	1 3/16	30°	9/16	14	11
6" PIPE	14	28	37	21	23	11 1/2	6	1 9/16	30°	13/16	19	11
Millimeters												
A	B	C	D	E	F	G	H	J	K	L	M	N
76.2m TUBE	165	330	464	244	235	117	60	19	35°	14	213	194
101.6m TUBE	235	470	625	343	371	186	94	25	30°	14	318	241
127m TUBE	270	540	737	387	445	445	113	30	30°	14	356	279
152.4m PIPE	356	711	940	533	584	292	152	40	30°	21	483	279

NOTES: All dimensions are nominal.

Mounting holes for 6" TSV are on 45° instead of 90° as shown.

Valves are not designed to be actuated while product is in conveying stream.

Electrical Supply: Standard solenoids and limit switches require 110V/single phase /60Hz control power standard (other voltages available upon request.)

Weather Resistant: Valves are sealed to resist moisture and machined to withstand a wide range of temperatures. Weather shields are available for outdoor applications.

Clean-In-Place Applications (CIP): Available coupling/ferrule arrangement, allows quick disassembly and cleaning.

Limit Switches: Standard mechanical limit switch. Proximity switches are optional.

Maximum Line Pressure: 20 P.S.I.

Air Supply: 80 - 100 P.S.I. clean dry air. No lubrication.

Port Seals: All valves supplied with Buna-N O-rings standard. Other materials available upon request.

Piston Seals: All valves supplied with Buna-N O-rings standard.

Diverting Direction: Left hand or right hand available upon request.

Tube Selector Valve (continued)

Weights

3"/76.2m TUBE	120 lbs.
3"/76.2m PIPE	120 lbs.
4"/101.6m TUBE	155 lbs.
4"/101.6m PIPE	155 lbs.
5"/127m TUBE	195 lbs.
5"/127m PIPE	195 lbs.
6"/152.4m TUBE	505 lbs.

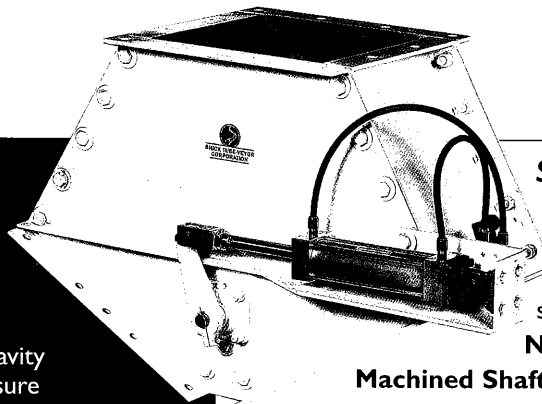
Materials Of Construction

3"/76.2 HOUSING	■		■	■	■
3"/76.2 PISTON	■		■	■	■
4"/101.6 HOUSING		■		■	■
4"/101.6 PISTON		■	■	■	■
5"/127m HOUSING		■		■	■
5"/127m PISTON		■	■	■	■
6"/152.4 HOUSING		■		■	■
6"/152.4 PISTON		■	■	■	■

CAST IRON
ALUMINUM
ELECTROLESS NICKEL PLATED
STAINLESS STEEL 304**
STAINLESS STEEL 316**

Two-Way Gravity Diverter Valve

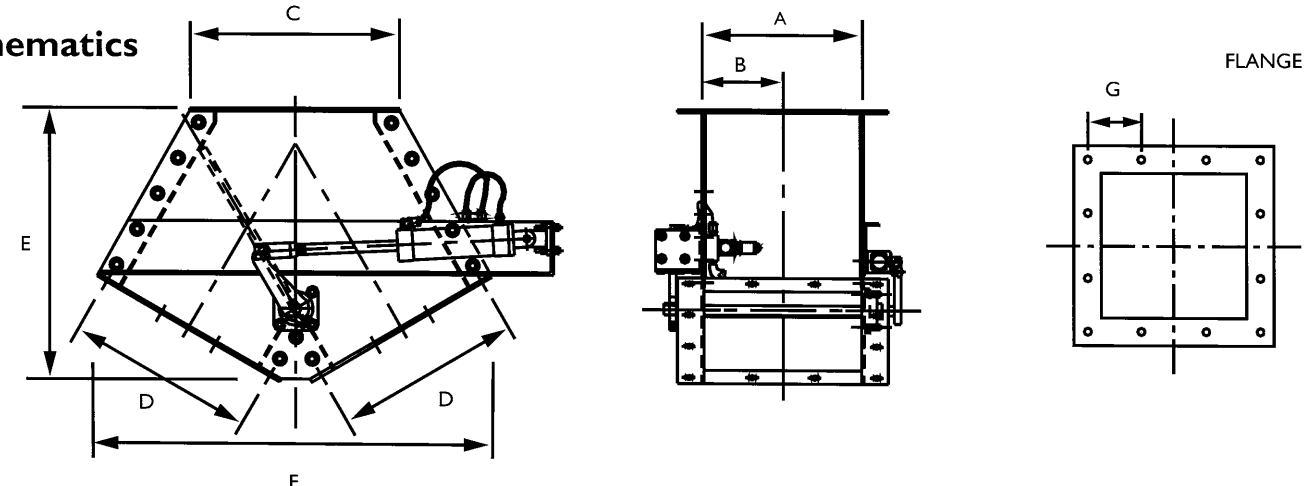
Designed for gravity drop, non-pressure applications. Available in 8", 10" and 12" square inlet.



Standard Features:

- Smooth Flow** — 30° divert angle ensures consistent flow of material.
- Rugged Construction** — Fabricated carbon steel or stainless steel housing.
- Nema** — 4 & 9, 4x and 7 available.
- Machined Shaft and End Bearing** — For long-lasting actuation of valve.
- Neoprene Coated Gate** — Provides a dust-tight seal.
- Proof-Positive Valve Position** — Dual limit switch configuration provides assurance of complete actuation of air cylinder.
- Air Cylinder Operated** — And solenoid actuated for automated discharging of material.

Schematics



Dimensions

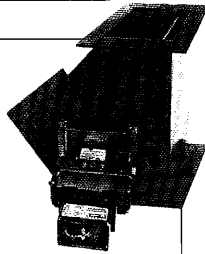
GDV	Weights KG/Lbs.	A In/mm	B In/mm	C In/mm	D In/mm	E In/mm	F In/mm	G In/mm
8"	23/50	8/203	4/102	11.375/288	11.375/208	14.5/36	30/762	4.875/124
10"	43/95	10/254	5/127	14/356	12.375/314	18.25/464	32/813	4.125/105
12"	59/131	12/305	6/152	16/406	16/406	21/533	35.5/902	4.75/121

Gravity Diverter DG (0°/30°) Series

This diverter is identical to the DG (30°/30°) except one leg is vertical for straight through feeding, and one leg is offset at 30° from vertical. When used with abrasive materials the straight through design will reduce wear on the more commonly used side. Or, this configuration may simple fit better in your layout. These diverters are designed to accommodate a wide range of gravity flow applications. Sturdy all welded fabrications are designed for reliable service and long life. Heavy duty ball bearings and shaft seals provide reliable actuation even under heavy loads. Inlet baffles reduce seepage on the closed leg. An optional polyurethane sandwiched flap can reduce leakage of very fine materials. Manual and pneumatic actuation is available.

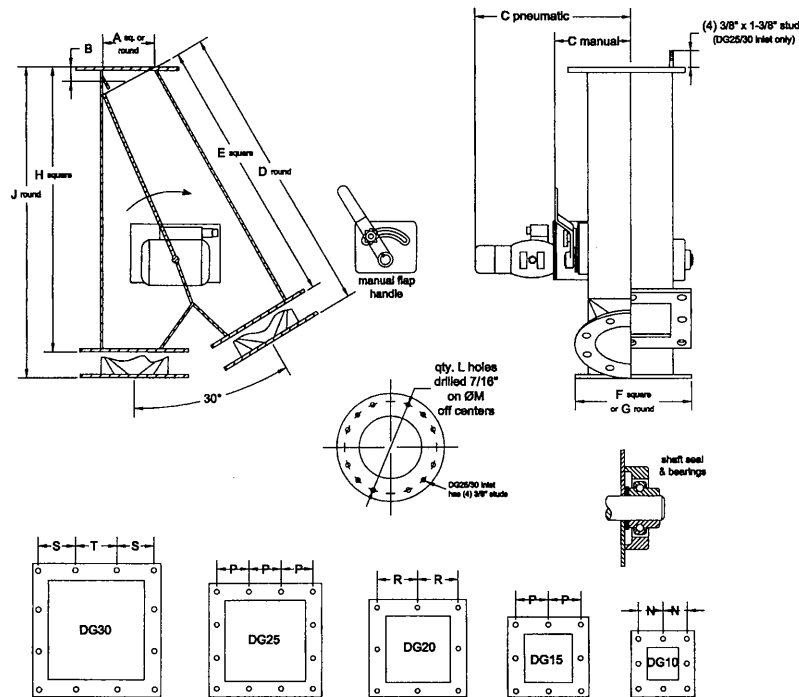
Design Features:

- Materials of mild steel, stainless steel or
- Construction abrasion resistant steel (AR400)
- Sizes 4" 6" 8" 10" 12" (custom sizes to 36" available)
- Connections round or square flanges
- Leg Angle one leg vertical, one leg 30° from vertical
- Flap/Deflector Types steel plate or polyurethane sandwiched between two steel plates (provides near dust tight seal)
- Shaft Seal Type PTFE or felt ring
- Shaft Support permanently sealed outboard roller bearings
- Actuation manual or pneumatic with optional solenoid valve and position indicating limit switches
- Pressure Rating atmospheric
- Operating 176°F (high temp. designs available)
- Temperature Range



Custom designs are always possible - specifications may change without notice

Schematics



Dimensions are approximate and subject to change without notice.

Dimensions are approximate and subject to change without notice.

Model	A	B	C(Man)	C(Pneu)	D	E	F	G	H	J	K	L	M	N	P	R	S	T	Weight
DG(0°/30°)-10	4	1-9/16	6-7/8	14-5/8	18	15-1/2	7-7/8	9	17-1/8	19-5/8	3/8	8	7-1/2	3					77
DG(0°/30°)-15	6	1-9/16	7-7/8	15-1/2	22	19-1/2	9-7/8	11	21	23-5/8	3/8	8	9-1/2	3-15/16					99
DG(0°/30°)-20	8	1-9/16	9	16-1/2	26	23-1/2	11-13/16	13-1/2	25	27-5/8	3/8	8	11-3/4		4-13/16				121
DG(0°/30°)-25	10	3-1/8	10-1/2	17-1/2	30-3/8	27-3/4	13-13/16	16	30-15/16	33-1/2	3/8	12	14-1/4	3-15/16					154
DG(0°/30°)-30	12	3-1/8	11-7/8	18-1/2	36-1/4	33-5/8	15-3/4	19	36-13/16	39-3/8	3/8	12	17				4-1/2	5	198

Wall thickness is typical 3/32" up to Model DG30 (12") - Custom sizes over 12" typically have wall thickness of 3/16".

SECTION 3 • PNEUMATIC CONVEYING

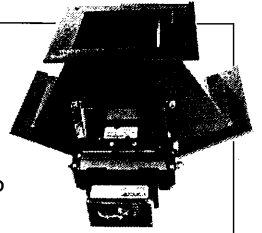
Gravity Diverter DG (30°/30°) Series

These diverters are designed to accommodate a wide range of gravity flow applications. Sturdy all welded fabrications are designed for reliable service and long life. Heavy duty ball bearings and shaft seals provide reliable actuation even under heavy loads. Inlet baffles reduce seepage on the closed leg. An optional polyurethane-sandwiched flap can reduce leakage of very fine materials. Manual and pneumatic actuation available.

The DG (0°/30°) Series Gravity Diverters have one straight through 0° leg and one leg off set 30°.

Design Features:

- Materials of mild steel, stainless steel
- Construction or abrasion resistant steel (AR400)
- Sizes 4" 6" 8" 10" 12" (custom sizes to 36" available)
- Connections round or square flanges
- Leg Angle 60° combined, each leg is 30° from vertical
- Flap/Deflector Types solid steel or polyurethane sandwiched between two steel plates (provides near dust tight seal)
- Shaft Seal Type PTFE or felt ring
- Shaft Support permanently sealed outboard roller bearings
- Actuation manual or pneumatic with optional solenoid valve and position indicating limit switches
- Pressure Rating atmospheric
- Operating 176°F (high temp. designs available)
- Temperature Range



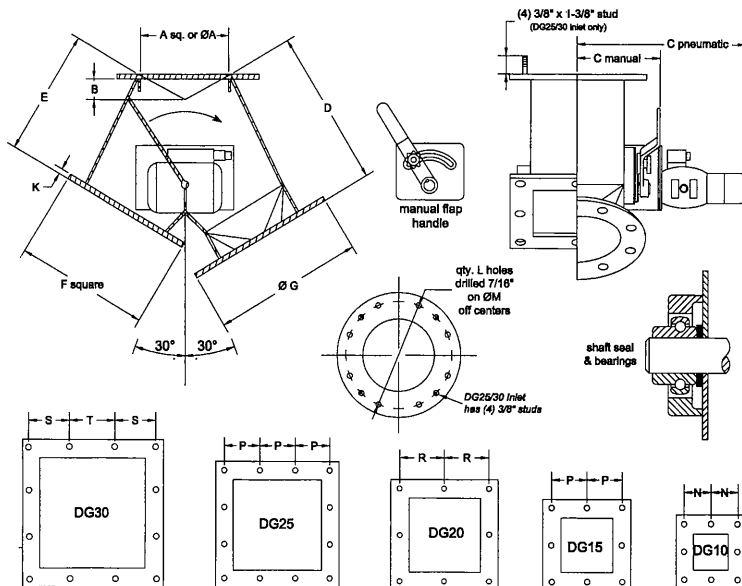
Custom designs are always possible - specifications may change without notice

Dimensions are approximate and subject to change without notice.

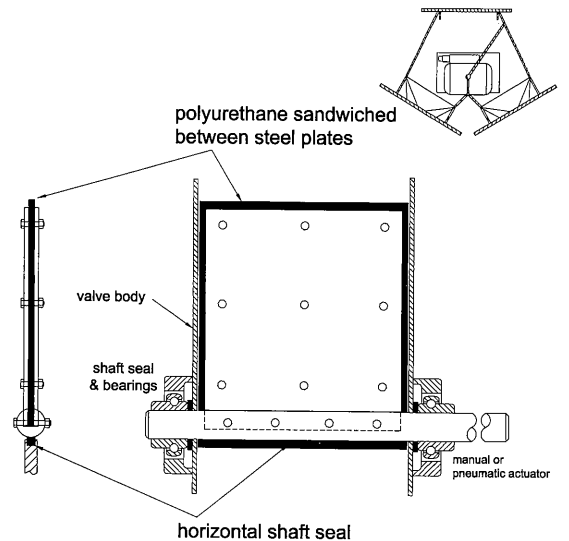
Model	A	B	C(Man)	C(Pneu)	D	E	F	G	H	J	K	L	M	N	P	R	S	T	Weight
DG(30°/30°)-10	4	1-9/16	6-7/8	14-5/8	10	7-1/2	7-7/8	9	10	12-5/8	3/8	8	7-1/2	3					55
DG(30°/30°)-15	6	1-9/16	7-7/8	15-1/2	11-13/16	9-1/4	9-7/8	11	12-3/8	15	3/8	8	9-1/2		3-15/16				66
DG(30°/30°)-20	8	1-9/16	9	16-1/2	13-3/8	10-7/8	11-13/16	13-1/2	14-9/16	17-1/4	3/8	8	11-3/4			4-13/16			82
DG(30°/30°)-25	10	3-1/8	10-1/2	17-1/2	15-1/8	12-5/8	13-13/16	16	17	19-5/8	3/8	12	14-1/4		3-15/16				106
DG(30°/30°)-30	12	3-1/8	11-7/8	18-1/2	16-15/16	14-3/8	15-3/4	19	19	22-1/8	3/8	12	17				4-1/2	5	132

Wall thickness is typically 3/32" up to Model DG30 (12") - Custom sizes over 12" typically have wall thickness of 3/16".

Schematics



PolyFlap Seal for DG Type Gravity Diverters

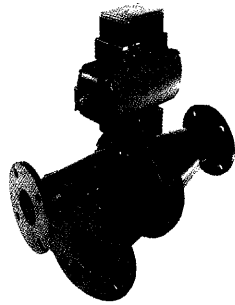


Diverter Valves

Our Diverter Valve range comprises a wide variety of construction options, actuation and applications. Utilizing sealed flap, rotary plug, slidegate or pinch valve methods in cast and fabricated bodies, a diversity of powdered and granular products can be handled in gravity, pressure and vacuum driven environments. The Box Slider design is of particular interest where a minimum of product degradation and component wear is critical.

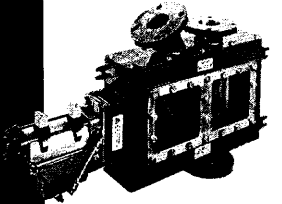
DM Conveying Diverters

for gravity feed, dilute or dense phase pneumatic conveyors. Available with flanged or tube connections. For abrasive applications, polyurethane liners and hardened steel flaps are available. Sizes from 2" to 12" in cast iron, cast aluminum or cast stainless steel.



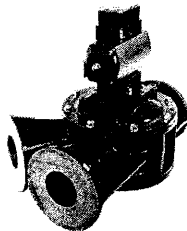
DBS Slide Box Diverters

are unique and have proven themselves in applications requiring dust tight operation. Friable products such as tobacco are perfect for this valve because there is no place for product to hang up. A smooth bore is all the product sees when being conveyed through this diverter. On-the-fly diverting is possible under many conditions. Available in sizes from 2" to 6" in cast iron, cast aluminum, cast stainless steel and, for abrasive applications, Ni-hard.



DP Plug Diverters

are used on all types of pneumatic systems because of their simplicity and reliability. The machined plug with a bored "Y" through the center rotates in the machined body to divert flow. On-the-fly diverting is possible under many conditions. Available in sizes from 3" to 12" in cast iron, cast aluminum or cast stainless steel.



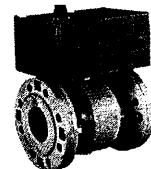
DS Double Slide Gate Diverters

are used where the two legs must operate independently. This is the only diverter (other than the pinch valve) that can close both legs at the same time. Available in sizes 6" to 12" in aluminum, mild or stainless steel.



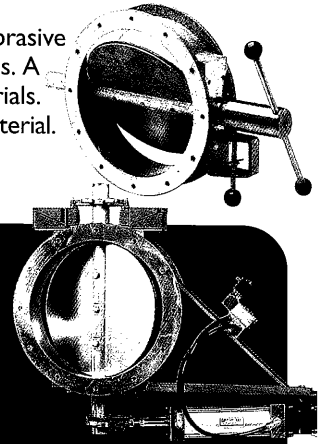
AKO Pinch Valve Diverters

are used in abrasive applications such as cement. The simplicity of two (or more) pinch valves allows independent operation of the diverter legs. Simple operation and a smooth bore makes these diverters ideal for dense or dilute phase pneumatic systems. Available in sizes 1.5" to 8".



SECTION 3 • PNEUMATIC CONVEYING

Shick Tube-Veyor Corporation's Butterfly Valves are available in two different models. For non-abrasive applications, Shick provides an O-ring damper which effectively seals the flow of dry powdered materials. A machined, beveled damper is available to seal the flow of granular materials and some semi-abrasive materials. Shick's Butterfly Valves are typically used during filling and scaling operations or to seal off the flow of air or material.



BUTTERFLY VALVES

The Butterfly Valve has been developed to answer demands from the process industry for a performance valve that's capable of giving a high degree of shut-off while still achieving a minimal amount of damage to the product that is being handled. The Butterfly Valve handles a wide and varied range of products, including powders, granules and liquids. An extensive choice of valve sizes are available in either manual or pneumatic actuation.

Butterfly Valves are available in two different models. For non-abrasive applications, we provide an O-ring damper which effectively seals the flow of dry powdered materials. A machined, beveled damper is available to seal the flow of granular materials and some semi-abrasive materials. Butterfly Valves are typically used during filling and scaling operations or to seal off the flow of air or material.

Features:

Positive Seal - Machined inner face and resilient O-ring guarantee a positive seal for material insuring years of dependable operation.

Quick Acting - Quick-acting cylinder actuates internal damper quickly and effectively for accurate scaling.

Construction - Cast aluminum housing is designed for long life.

Stainless Steel Lining - Optional stainless lining for appropriate sanitary or abrasive applications.

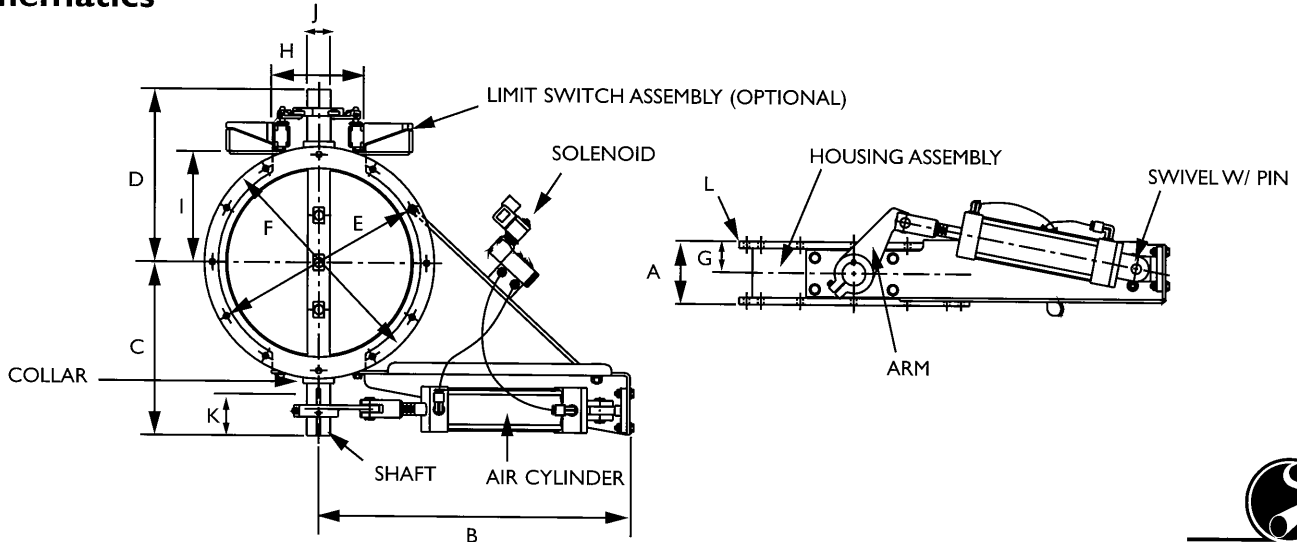
NEMA - 4 & 9 standard, 4X and 7 available.

Proof-Positive Valve Position - Dual limit switch configuration provides assurance of complete actuation of cylinder.

Free Flow Design - Completely opened or closed.

Flange Locating Holes - Provide quick and proper alignment of valve during installation.

Schematics



Dimensions

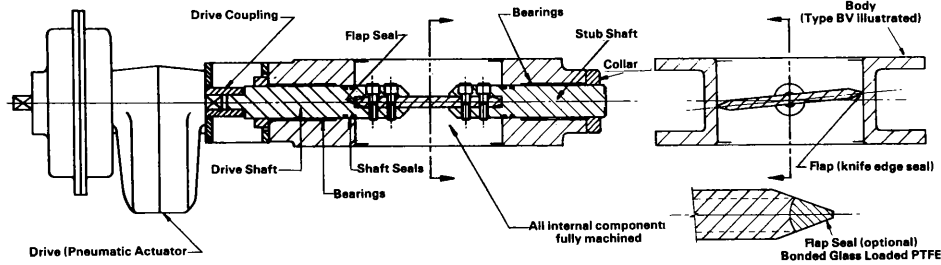
Size	Weight* Lbs.	# of Holes	A inch/mm	B inch/mm	C inch/mm	D inch/mm	E inch/mm	F inch/mm	G inch/mm	H inch/mm	I inch/mm	J inch/mm	K inch/mm	L inch/mm
8"	36	8	4.5/114	15.25/387	9/229	9/229	9.75/248	11/279	2.25/57	6/152	5/127	1.5/38	3/76	.75/19
12"	55	12	4.5/114	15.25/387	11/279	11/279	13.75/349	15/381	2.25/57	8/203	6.5/165	1.5/38	3/76	.75/19
16"	74	12	4.5/114	15.25/387	13/330	13/330	17.75/451	18.75/476	2.25/57	8/203	9/229	1.5/38	3/76	.75/19
20"	96	12	4.5/114	20.4/508	16/406	16/406	21.75/552	2.3/584	2.25/57	8/203	11.5/292	1.5/38	3/76	.75/19

* Complete units.

Butterfly Valves *(continued)*

BUSH & WILTON, INC.

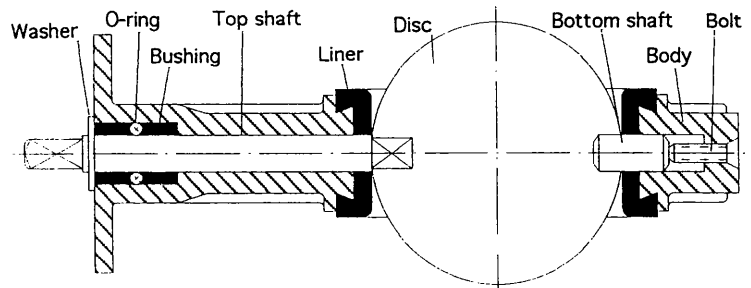
Design Details BW/BV



BW & BV Series

Methods of Actuation	Hand lever, Handwheel and Reduction gearbox, Pneumatic actuator
Size range	75mm - 400mm diameter ASA 150
Materials of Construction	Cast Iron/Mild Steel, Stainless Steel, Aluminum or combinations
Internal Seals	Shaft seals - Silicon or Nitrile (square section) 'O' rings Flap Seal - Metal to metal precision machined Flap/Shaft seal Prescollan rubber
Operating Temperatures	-10°C to +175°C, Specials -40°C to +400°C Bonded glass loaded PTFE and Silicon rubber flap seals max 200°C
Optional Equipment	Bonded glass loaded PTFE or Silicon rubber flap sealing rings (PTFE seals max. 400mm diameter) Limit switches, fail safe operation
Typical leakage rates	Metal to metal (knife edge seal) 28-85 ltrs/min dependent on size PTFE flap seal 14-43 ltrs/min dependent on size

Design Details FL



FL Series

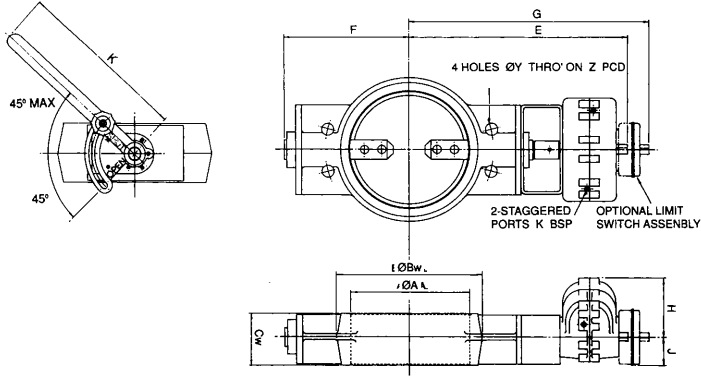
Size range	40mm - 350mm Wafer pattern suitable for mounting between PN 10/16 or ASA 150 flanges, with replaceable liners
Materials of Construction	Cast Iron epoxy coated or Stainless Steel
Internal Seals	'O' Rings
Liner	Replaceable. Standard Ethylene Propylene EPDM. Other liners on request
Operating Temperatures FL Series	-4°C to +110°C (for EPDM liner)
Max Operating Pressures FL Series	DN40 - 350 10 Bar

SECTION 3 • PNEUMATIC CONVEYING

BW & BV Series *(continued)*

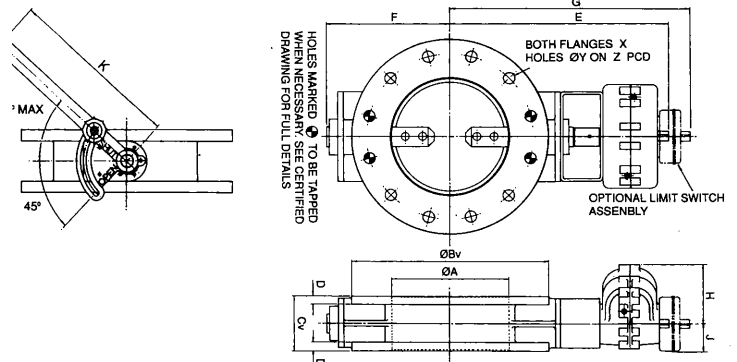
BWP/M Pneumatic/Manual

Operation & Control | **Pneumatic** - actuator with single solenoid valve 4 way, 5 port and limit switches.
Manual - lever with locking quadrant.



BVP/M Pneumatic/Manual

Operation & Control | **Pneumatic** - actuator with single solenoid valve 4 way, 5 port and limit switches.
Manual - lever with locking quadrant.

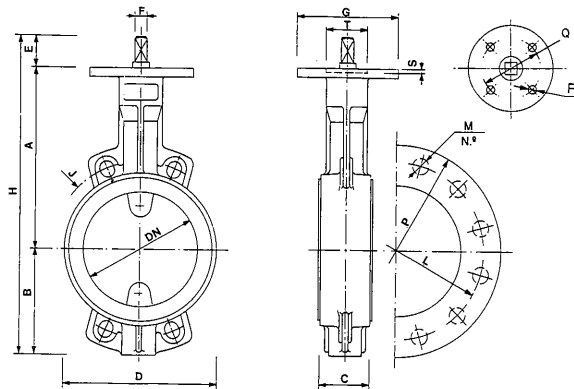


Valve Size	A	Bv	Bw	Cv	Cw	D	E	F	G	H	J	K	ASA 150			Weight KG
													X	Y	Z	
BV/BW 08	76	191	127	89	64	13	289	124	333	104	43	184	4	19	152	8
BV/BW 10	102	229	152	89	64	13	308	143	352	104	43	184	8	19	191	10
BV/BW 12	127	254	178	89	70	13	322	159	367	114	41	260	8	22	216	13
BV/BW 15	152	279	203	89	76	13	354	191	399	114	41	260	8	22	241	16
BV/BW 20	203	343	260	114	89	13	430	223	468	132	54	260	8	22	299	23
BV/BW 25	254	406	318	114	114	19	474	267	512	132	54	330	12	25	362	40
BV/BW 30	305	483	375	114	114	19	499	292	537	132	54	406	12	25	432	55
BV/BW 35	356	533	429	114	127	19	543	296	592	171	64	406	12	29	476	72
BV/BW 40	406	599	480	127	140	25	597	349	646	171	64	457	16	29	540	90

FL Series

FLP/M Pneumatic/Manual

Operation & Control | **Pneumatic** - actuator with single solenoid valve 4 way, 5 port and limit switches.
Manual - lever with locking quadrant.



Valve Size	A	B	C	D	E	F	G	H	J	L	P	M	N°	L	ASA 150							Weight KG
															P	M	N	S	T	Q	R	
40mm	132	61	33	76	45	12	100	238	110	110	150	18	4	99	127	16	4	3	55	70	9	2.2
50mm	140	80	43	98	45	12	100	265	125	125	165	18	4	121	153	19	4	3	55	70	9	2.8
65mm	154	91	46	113	45	12	100	290	145	145	185	18	4	140	178	19	4	3	55	70	9	3.5
80mm	160	100	46	128	45	12	100	305	160	160	200	18	4/8	153	191	19	4	3	55	70	9	3.8
100mm	180	114	52	154	45	12	100	339	180	180	220	18	8	191	229	19	8	3	55	70	9	4.9
125mm	197	130	56	182	45	16	100	372	210	210	250	18	8	216	254	23	8	3	55	70	9	6.5
150mm	210	145	56	208	45	16	100	400	240	240	285	22	8	241	279	23	8	3	55	70	9	8
200mm	240	175	60	260	45	16	100	475	295	295	340	22	8	298	343	23	8	3	55	70	9	11.5
250mm	280	210	68	328	45	24	160	535	362	362	395	22	12	362	406	25	12	3	70	102	11	20

Overview Of B&W Slide Gate Valves

These versatile valves are designed for a wide range of gravity flow applications. All share the same one piece cast bodies and heavy duty components that ensure reliable low maintenance operation for many years. Slides are sealed internally by a replaceable polyurethane or steel wiper ring. The end of the slide plate is sealed with a full-length adjustable packing gland. Both the inlet and outlet flanges are drilled and tapped with identical patterns to simplify installation.



SLIDE GATE VALVE WITH PNEUMATIC ACTUATOR - MODEL SB-P

These versatile valves are designed for a wide range of gravity flow applications. The one piece cast housing and heavy duty components ensure reliable operation for many years. The combination slide seal and deflector is a replaceable polyurethane, PTFE or steel ring. The slide is sealed externally by an adjustable packing gland. Both the inlet and outlet flanges are drilled and tapped with identical patterns to facilitate installation. The SB series slide gate valves are available with various manual, pneumatic and electric actuators.

Design Features:

Materials of Construction (body) — one piece cast aluminum, cast iron, cast stainless steel

Slide Materials — mild steel or stainless steel

Flange Sizes — 6" 8" 10" 12"

Slide Support — adjustable eccentric guides (Nylon, PTFE, phosphor bronze)

Slide Face Seal/Deflector — Ulon (cast polyurethane), PTFE, cast iron, stainless steel

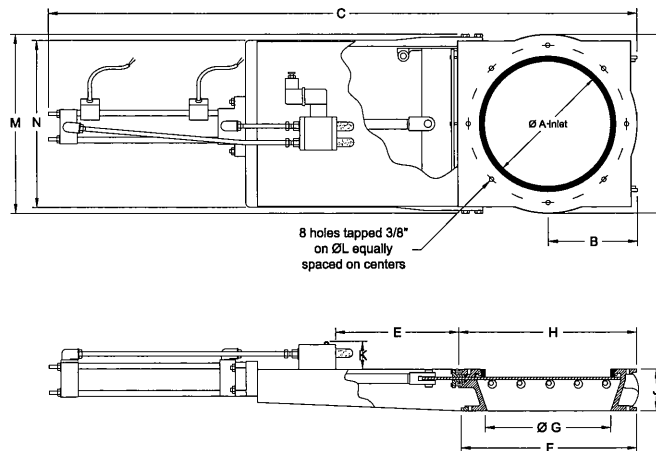
Slide Scraper — scraper blade on top of slide (Nylon, PTFE, brass)

Slide End Seal — adjustable packing gland (PTFE, graphite impregnated PTFE)

Actuation — single pneumatic piston with optional solenoid valve and magnetic position indicating switches

Operating Temperature — 194°F with polyurethane seal/deflector & Nylon guides, 536°F with phosphor bronze guides and steel or iron deflector

Schematics



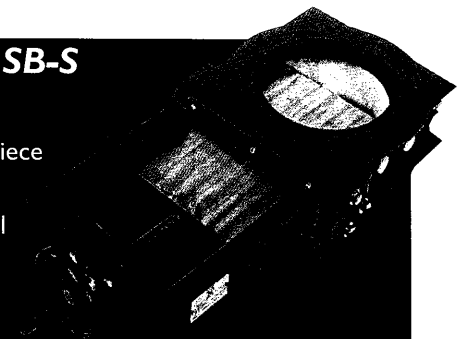
Dimensions are approximate and subject to change without notice.

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	Weight
SB15P	6	5-5/16	33-1/4	10-5/8	4-1/2	10-5/8	6	10-5/8	3-1/2	2-1/4	9	11-5/8	9-3/8	35
SB20P	8	6-5/16	39-1/4	12-5/8	6-1/2	12-5/8	8	12-5/8	3-1/2	2-1/4	11	13-5/8	11-1/4	40
SB25P	10	7-5/16	45	14-5/8	8-1/2	14-5/8	10	14-5/8	3-1/2	2-1/4	13	15-1/2	13-1/4	49
SB30P	12	8-5/15	51	16-5/8	10-1/2	16-5/8	12	16-5/8	3-1/2	2-1/4	15	17-1/2	15-1/4	44

Weights are for aluminum - iron & stainless are 2X the weights shown

SECTION 3 • PNEUMATIC CONVEYING

SLIDE GATE VALVE WITH MANUAL LEAD SCREW - MODEL SB-S



These versatile valves are designed for a wide range of gravity flow applications. The one piece cast bodies and heavy duty components ensure reliable operation for many years. The manual lead screw assures reliable opening and closing of the slide even with heavy loading. The combination slide seal and deflector is a replaceable polyurethane, PTFE or steel ring. The slide is sealed externally by an adjustable packing gland. Both the inlet and outlet flanges are drilled and tapped with identical patterns to facilitate installation. The SB series of slide gate valves are available with various manual, pneumatic and electric actuators.

Design Features:

Materials of Construction (body) — one piece cast aluminum, cast iron, cast stainless steel

Slide Materials — mild steel or stainless steel

Flange Sizes — 6" 8" 10" 12"

Slide Support — adjustable eccentric guides (Nylon, PTFE, Phosphor Bronze)

Slide Face Seal/Deflector — Ulon (cast polyurethane), PTFE, cast iron, stainless steel

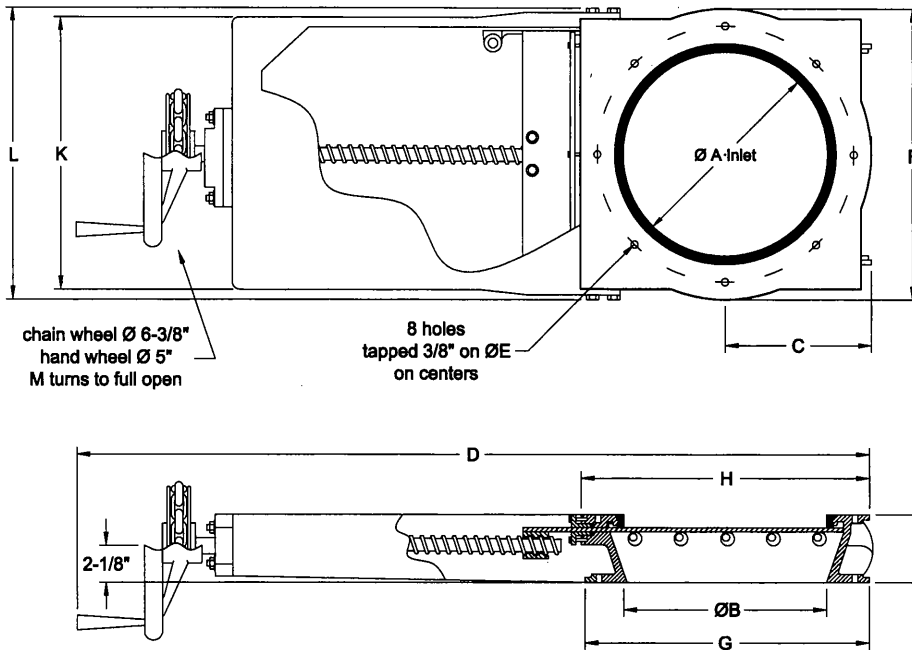
Slide Scraper — scraper blade on top of slide (Nylon, PTFE, Brass)

Slide End Seal — adjustable packing gland (PTFE, graphite impregnated PTFE)

Actuation — lead screw with hand wheel or chain wheel

Operating Temperature — 194°F with polyurethane seal/deflector & Nylon guides, 536°F with phosphor bronze guides and steel or iron inlet deflector

Schematics



Dimensions are approximate and subject to change without notice.

Model	A	B	C	D	E	F	G	H	J	K	L	M	Weight
SB15S	6	6	5-5/16	26	9	10-5/8	10-5/8	10-5/8	3-1/2	9-3/8	11-5/8	36	26
SB20S	8	8	6-5/16	30	11	12-5/8	12-5/8	12-5/8	3-1/2	11-3/8	13-5/8	48	29
SB25S	10	10	7-5/16	34	13	14-5/8	14-5/8	14-5/8	3-1/2	13-3/8	15-1/2	58	44
SB30S	12	12	8-5/16	38	15	16-1/2	16-1/2	16-1/2	3-1/2	15-1/4	17-1/2	69	44

Weights are for aluminum - iron & stainless are 2X the weight shown

COMPACT SLIDE GATE VALVE WITH TWIN PISTON ACTUATION - MODEL SB-T

These versatile valves are designed for a wide range of gravity flow applications. The one piece cast bodies and heavy duty components ensure reliable operation for many years. The twin piston design decreases overall length and assures reliable actuation of the slide even with heavy loading. The combination slide seal/inlet deflector is replaceable polyurethane, PTFE or stainless steel or iron ring. The slide plate is sealed externally with a full-length adjustable packing gland. The inlet and outlet flanges are drilled and tapped with identical patterns to facilitate installation. The SB series of slide gate valves are available with various manual, pneumatic and electric actuators.

Design Features:

Materials of Construction (body) — one piece cast aluminum, cast iron, cast stainless steel

Slide Materials — mild steel or stainless steel

Flange Sizes — 6" 8" 10" 12" 14" 16"

Slide Supports — adjustable eccentric guides (Nylon, PTFE, or phosphor bronze)

Slide Seal/Inlet Deflector — Ulon (polyurethane), PTFE, cast iron, stainless steel

Slide Scraper — single scraper blade on top of slide (Nylon, PTFE or brass)

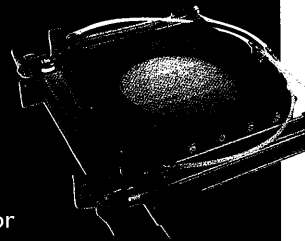
Slide End Seal — full length adjustable packing gland (PTFE or graphite impregnated PTFE)

Slide Extension Area Guard — ABS impact resistant plastic guard (optional)

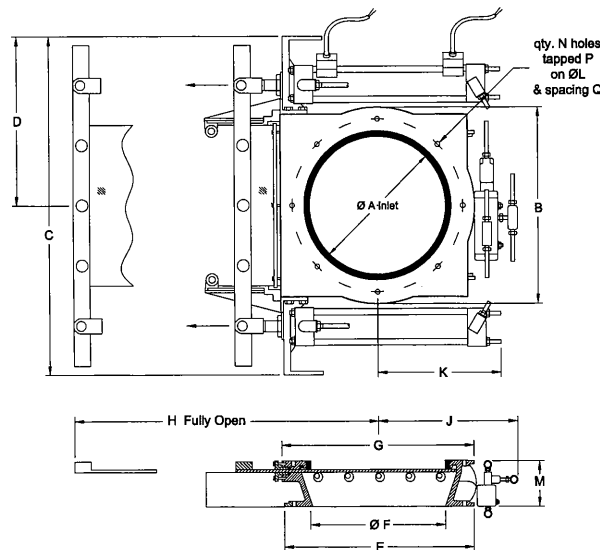
Actuation — twin pneumatic pistons optional solenoid valve & magnetic reed position indicating switches

Bulk/Dribble Feed — optional system for both full and part open control

Operating Temperature — 194°F with polyurethane seal/deflector & Nylon guides, 536°F with phosphor bronze guides and steel or iron ring deflector



Schematics

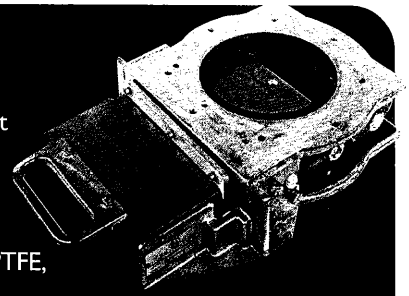


Dimensions are approximate and subject to change without notice.

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	Weight
SB15T	6	10-5/8	20-3/4	10-3/8	10-5/8	6	10-5/8	15	8-3/4	6-7/8	9	3-1/2	8	3/8	45° on centers	42
SB20T	8	12-5/8	22-5/8	11-3/8	12-5/8	8	12-5/8	18	9-3/4	7-7/8	11	3-1/2	8	3/8	45° on centers	44
SB25T	10	15-5/8	24-5/8	12-3/8	14-5/8	10	14-5/8	21	10-3/4	8-7/8	13	3-1/2	8	3/8	45° on centers	57
SB30T	12	15-1/2	26-5/8	13-3/8	16-1/2	12	16-1/2	24	11-5/8	9-7/8	15	3-1/2	8	3/8	45° on centers	57
SB35T	14	21	29-3/8	14-5/8	21	14	21	30-1/2	12-3/4	8-7/8	18-3/4	4	12	1/2	30° off centers	66
SB40T	16	23-1/2	35-1/2	17-3/4	23-1/2	16	23-1/2	35-5/8	14	8-7/8	21-1/4	4	16	1/2	22.5° off centers	75

Weights are for aluminum - iron & stainless are 2X the weight shown

MANUAL SLIDE GATE VALVE - MODEL SB-M



These versatile valves are designed for a wide range of gravity flow applications. The one piece cast housing and heavy duty components ensure reliable operation for many years. The combination inlet slide seal and deflector is replaceable polyurethane, PTFE or steel ring. The slide is sealed externally by an adjustable packing gland. Both the inlet and outlet flanges are drilled and tapped with identical patterns to facilitate installation. The SB series of slide gate valves are available with various pneumatic and electric actuators.

Design Features:

Materials of Construction (body) — one piece cast aluminum, cast iron, cast stainless steel

Slide Materials — mild steel or stainless steel

Flange Sizes — 6" 8" 10" 12" 14" 16"

Slide Supports — adjustable eccentric guides (Nylon, PTFE, phosphor bronze)

Slide Face Seal/Inlet Deflector — Ulon (cast polyurethane), PTFE, cast iron, stainless steel

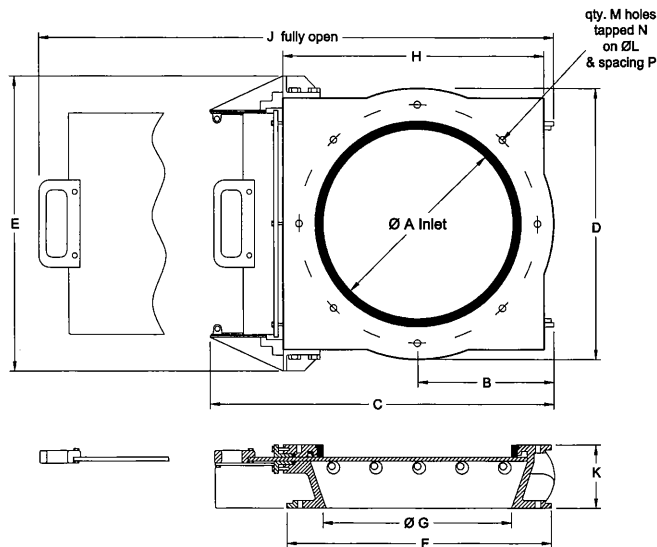
Slide Scraper — scraper blade on top of slide (Nylon, PTFE, brass)

Slide End Seal — adjustable packing gland (PTFE or graphite impregnated PTFE)

Actuation — manual

Operating Temperature — 194°F with polyurethane seal/deflector & Nylon guides, 536°F with phosphor bronze guides and steel or iron ring deflector

Schematics



Dimensions are approximate and subject to change without notice.

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Weight
SB15M	6	5-3/16	15-1/2	14-5/8	11-7/8	10-5/8	6	10-5/8	17	3-1/2	9	8	3/8"	45° on centers	20
SB20M	8	6-3/8	17-1/2	12-5/8	13-7/8	12-5/8	8	12-5/8	20	3-1/2	11	8	3/8"	45° on centers	22
SB25M	10	7-3/8	19-1/2	14-5/8	15-7/8	14-5/8	10	14-5/8	23	3-1/2	13	8	3/8"	45° on centers	34
SB30M	12	8-3/8	21-3/8	16-1/2	17-7/8	16-1/2	12	16-1/2	26	3-1/2	15	8	3/8"	45° on centers	35
SB35M	14	10-1/2	26-3/4	21	20-1/4	21	14	21	32	4	18-3/4	12	1/2"	30° off centers	64
SB40M	16	11-13/16	31-1/2	23-1/2	23-5/8	23-1/2	16	23-1/2	36	4	21-1/4	16	1/2"	22.5° off centers	90

Weights are for aluminum - iron & stainless are 2X the weight shown

FAST ACTION MANUAL SLIDE GATE VALVE - MODEL SB-C

These versatile valves are designed for a wide range of gravity flow applications. The one piece cast bodies and heavy duty components ensure reliable operation for many years. The fast action (<2.5 turns) parallel chain crank decreases overall length and assures reliable actuation even with heavy loading. The combination slide seal and deflector is a replaceable polyurethane, PTFE or steel ring. The slide plate is sealed externally with an adjustable packing gland. Between the two seals is a wiper blade that increases seal life. Both the inlet and outlet flanges are drilled and tapped with identical patterns to facilitate installation. The SB series of slide gate valves are available with various manual, pneumatic and electric actuators.

Design Features:

Materials of Construction (body) — one piece cast aluminum, cast iron, cast stainless steel

Slide Materials — mild steel or stainless steel

Flange Sizes — 6" 8" 10" 12" 14" 16"

Slide Supports — adjustable eccentric guides (Nylon, PTFE, phosphor bronze)

Slide Face Seal/Inlet Deflector — Ulon (cast polyurethane), PTFE, cast iron, stainless steel

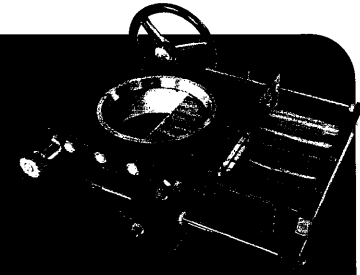
Slide Scraper — scraper blade on top of slide (Nylon, PTFE brass)

Slide End Seal — adjustable packing gland (PTFE or graphite impregnated PTFE)

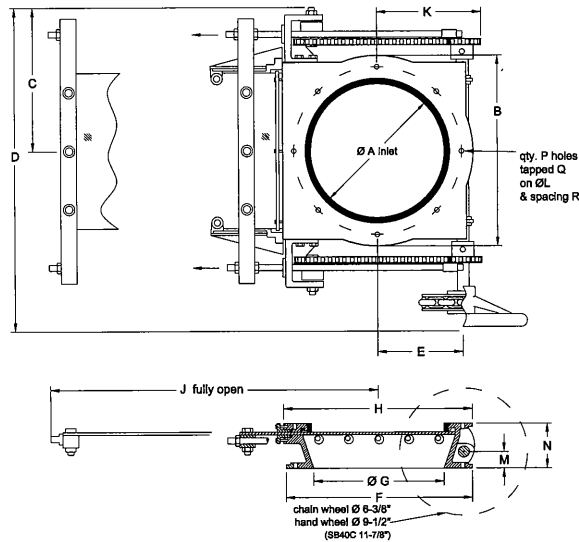
Actuation — manual crank with parallel chain drive (2-2.5 turns to fully open)

Guards — ABS guards over chain/sprocket area - optional over slide extension area

Operating Temperature — 194°F with polyurethane seal/deflector & Nylon guides, 536°F with phosphor bronze guides and steel or iron deflector



Schematics



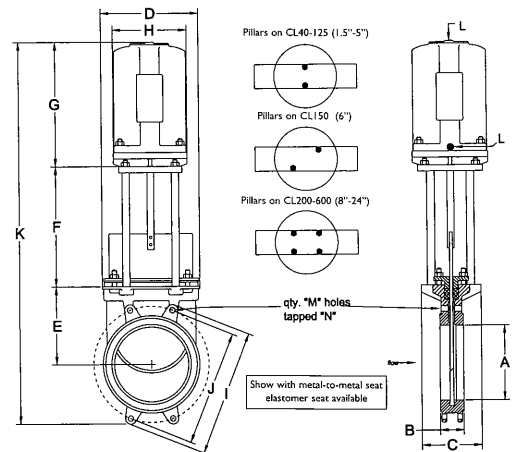
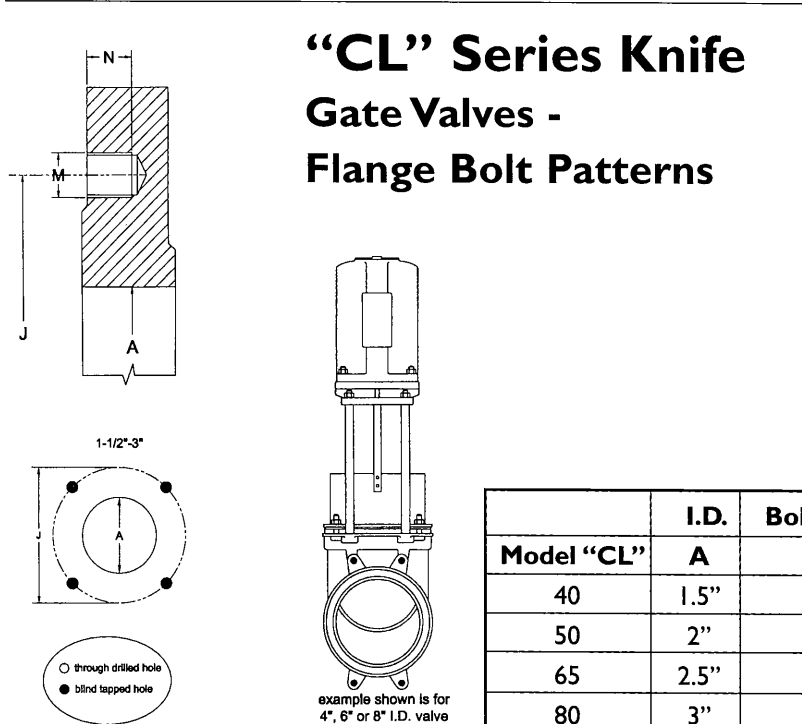
Dimensions are approximate and subject to change without notice.

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	Weight
SB15C	6	10-5/8	8-7/8	20-1/4	4-1/8	10-5/8	6	10-5/8	14-1/4	5-7/8	9	1-5/16	3-1/2	8	3/8"	45° on center	35
SB20C	8	12-5/8	9-7/8	22-1/4	5-3/16	12-5/8	8	12-5/8	17-1/4	6-7/8	11	1-5/16	3-1/2	8	3/8"	45° on center	40
SB25C	10	14-5/8	10-7/8	24-1/4	6-1/8	14-5/8	10	14-5/8	20	7-7/8	13	1-5/16	3-1/2	8	3/8"	45° on center	53
SB30C	12	16-1/2	11-7/8	26-1/8	7-1/8	16-1/2	12	16-1/2	23	8-7/8	15	1-5/16	3-1/2	8	3/8"	45° on center	73
SB35C	14	21	13	28-5/8	9	21	14	21	30	10-1/4	18-3/4	1-1/2	4	12	1/2"	30° off center	99
SB40C	16	23-1/2	15-3/16	32	9-7/8	23-1/2	16	23-1/2	34	11-7/8	21-1/4	1-1/2	4	16	1/2"	22.5° off center	132

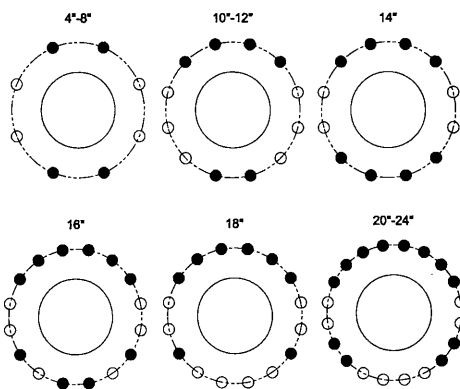
Weights are for aluminum - iron & stainless are 2X the weights shown

“CL” Series Knife Gate Valves

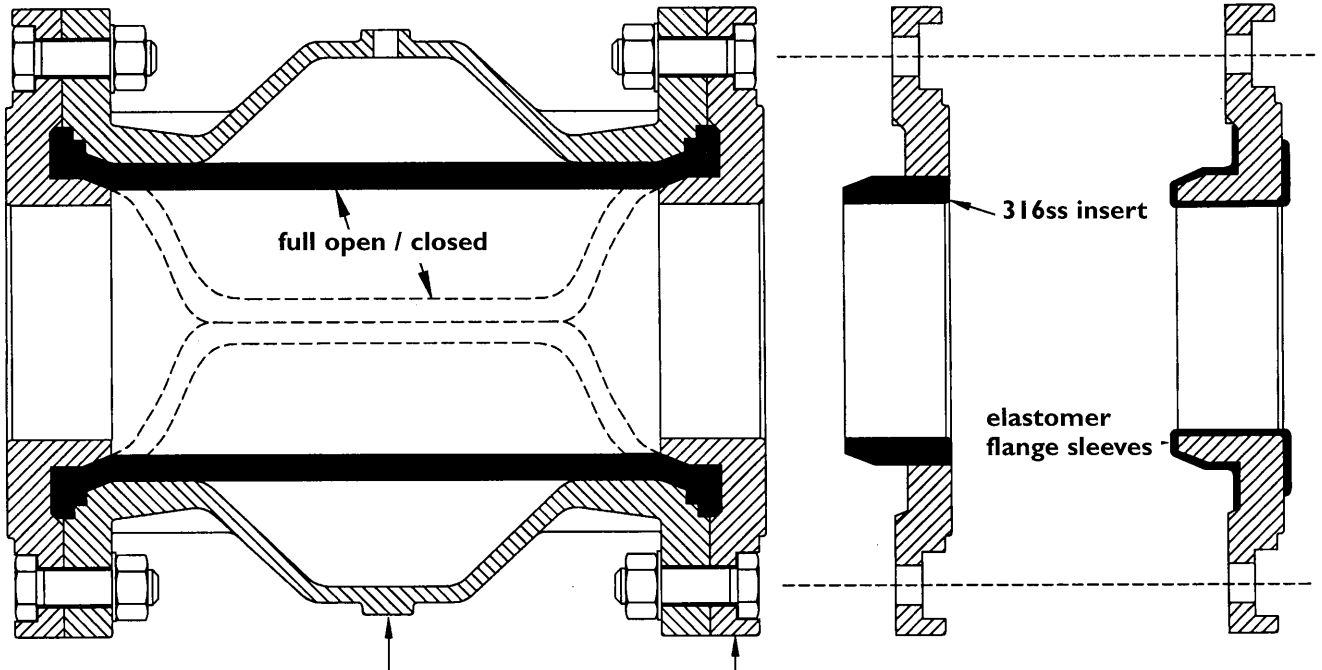
CL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	pressure	weight
40	1.5"	2	4	5	4	5	8	5	5	3-7/8"	21	1/4"	4	1/2"	150	24
50	2"	2	4	5	4	5	8	5	6	4-3/4"	21	1/4"	4	5/8"	150	24
65	2.5"	2	4	5	5	6	8	5	7	5-1/2"	23	1/4"	4	5/8"	150	26
80	3"	2	4	6	5	6	8	5	8	6"	24	1/4"	4	5/8"	150	31
100	4"	2	4	6	5	7	8	5	9	7-1/2"	26	1/4"	4	5/8"	150	33
125	5"	2	4	7	6	8	15	7	10	8-1/2"	34	1/4"	4	3/4"	150	58
150	6"	2	4	8	7	9	15	7	11	9-1/2"	36	1/4"	4	3/4"	100	64
200	8"	2	5	11	8	12	15	7	14	11-3/4"	41	1/4"	4	3/4"	95	88
250	10"	2	5	13	10	15	18	10	16	14-1/4"	50	1/4"	6	7/8"	65	150
300	12"	3	5	15	12	17	20	10	19	17"	58	1/4"	6	7/8"	65	187
350	14"	3	6	18	12	18	21	10	21	18-3/4"	62	1/4"	8	1"	50	242
400	16"	3	6	20	14	20	23	10	24	21-1/4"	69	1/4"	10	1"	45	308
450	18"	3	6	23	17	24	27	11	25	22-3/4"	80	1/2"	8	1-1/8"	45	485
500	20"	4	6	2	19	26	29	11	28	25"	88	1/2"	12	1-1/8"	30	618
600	24"	4	7	29	23	31	34	13	32	29-1/2"	104	3/4"	12	1-1/4"	30	915



Model "CL"	I.D. A	Bolt Circle Dia. J	Tapped M	Depth N	Quantity of Holes	
					Tapped	Thru
40	1.5"	3-7/8"	1/2"	3/8"	4	0
50	2"	4-3/4"	5/8"	3/8"	4	0
65	2.5"	5-1/2"	5/8"	3/8"	4	0
80	3"	6"	5/8"	3/8"	4	0
100	4"	4-1/2"	5/8"	3/8"	4	4
125	5"	8-1/2"	3/4"	1/2"	4	4
150	6"	9-1/2"	3/4"	1/2"	4	4
200	8"	11-3/4"	3/4"	9/16"	4	4
250	10"	14-1/4"	7/8"	9/16"	6	6
300	12"	17"	7/8"	9/16"	6	6
350	14"	18-3/4"	1"	23/32"	8	4
400	16"	21-1/4"	1"	25/32"	10	6
450	18"	22-3/4"	1-1/8"	25/32"	8	8
500	20"	25"	1-1/8"	15/16"	12	8
600	24"	29-1/2"	1-1/4"	1"	12	8



AK Series 1.5"-10" Pinch Valve Materials of Construction



Standard Design: aluminum body with cast iron end flanges.
(AK25 is all mild steel)

Body & Flange Materials

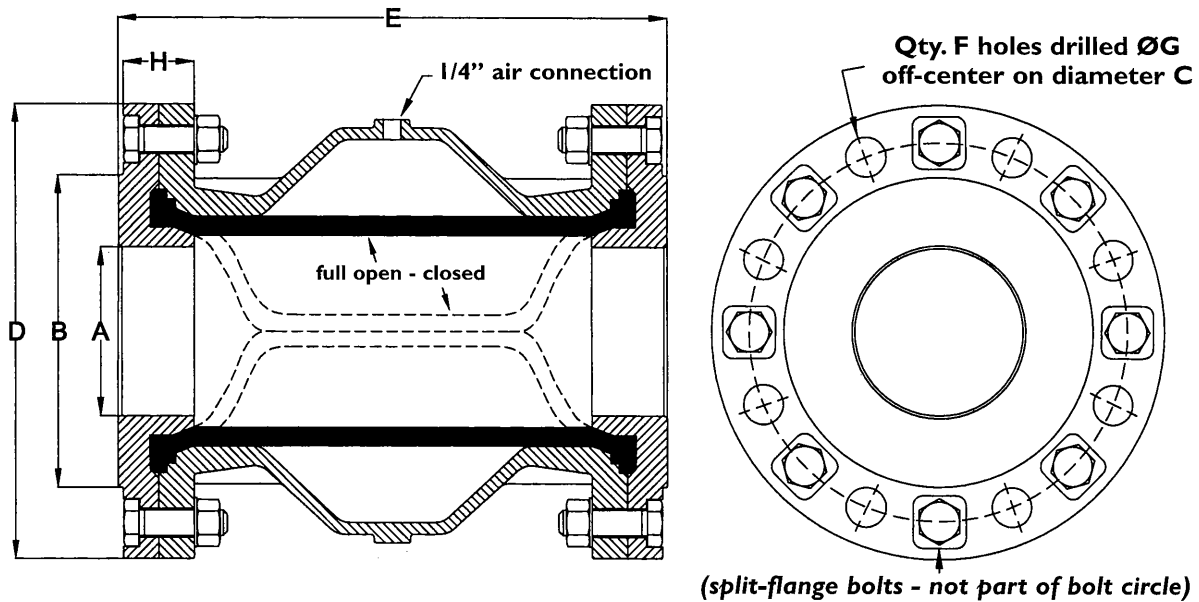
Body & Flange Materials	cast aluminum body & cast iron flange ends (aluminum flange ends optional) (AK25 is all mild steel)
Flange Options	316 stainless steel inserts or elastomer flange sleeves (sleeves are available in the same range of materials as liners)

Liner & Flange Sleeve Materials

Elastomers	Max. Temp.	Applications (these are general properties - not recommendations)
White Natural Rubber (food grade)	176°F	suitable for foods, wine, potable water, alcohol
Neoprene	194°F	resistant to dilute solvents, oils, acids, lubricants
Natural Gum Rubber (standard)	212°F	high abrasion resistant to sand, mineral slurries, waste water - <i>not oil resistant</i>
EPDM	266°F	resistant to hot water, steam, acids, alkalis - suitable for foods
Hypalon	266°F	resistant to hot water, steam, oxidants, acids, bases
Viton	302°F	resistant to solvents, oils, petrochemicals, aromatic hydrocarbons - avoid abrasives
Butyl	302°F	resistant to inorganic acids, bases, hot water, steam, aliphatic hydrocarbons
Nitrile	302°F	resistant to petrochemicals, inorganic acids & alkalis
Silicone	320°F	resistant to abrasives, solvents, steam, petrochemicals, H ₂ SO ₄ and HCL

Air Operated Pinch Valves

Shown with ANSI 150# Bolt Pattern (also available with PN10-BS4504 bolt pattern)



Model	psig[1]	Nominal I.D.	A	B	C	D	E	F	G	H	air vol. (cu. ft.)	weight
AK04	87	1.5	1-5/16	3-1/2	3-7/8	5-29/32	6-3/32	4	5/8	1-3/16	0.01	7
AK05[2]	87	2.5	2-3/8	4	4-3/4	6-1/2	7-7/32	4	3/4	1-3/16	0.02	9
AK06[3]	87	2.5	2-3/8	4-13/16	5-1/2	7-9/32	7-7/32	4	3/4	1-3/16	0.03	11
AK08	87	3	3	5-5/16	6	7-7/8	8-21/32	8	3/4	1-3/16	0.05	13
AK10	87	4	3-3/4	6-7/32	7-1/2	8-21/32	11	8	3/4	1-5/16	0.11	18
AK12[3]	87	5	4-23/32	7-1/4	8-1/4	9-27/32	13-23/32	8	3/4	1-1/2	0.21	24
AK15	87	6	5-23/32	8-11/32	9-1/2	11-7/32	16-7/16	8	7/8	1-5/8	0.26	39
AK20	58	8	7-1/2	10-9/16	11-3/4	13-3/8	21-27/32	8	7/8	2-5/16	0.49	78
AK25	36	10	9-29/32	11-13/16	14-1/4	15-3/8	24	12	7/8	2-9/16	1.06	154[4]

Dimensions are approximate and subject to change without notice.

[1] Air pressure must be 20-30 psig higher than product line pressure for optimal valve closure.

[2] AK05 approximates 2" ANSI - actual I.D. is 2.5" with 2" ANSI bolt pattern.

[3] AK06 (2.5") & AK12 (5") have no true ANSI equivalents.

[4] AK25 body & flange ends are mild steel.

Liner Materials	natural gum rubber, white rubber, EPDM, Viton, Neoprene, Nitrile, Silicone, Butyl
Body & Flange Materials	cast aluminum body & cast iron flange ends (Ak25 is all mild steel)
Flange Options	all aluminum, 316 stainless steel flange inserts or elastomer flange sleeves

Cyclone Separator

There are four different sizes of cyclone separator. These cyclones provide an efficient and costs effective means of separating particulates (material) from air in a pressure or vacuum pneumatic conveying airstream. Cyclones operate by generating a vortex of particulate laden air. Centrifugal force pushes the particulates toward the outer cyclone wall where they lose velocity and spiral downward to the discharge. The relatively particulate-free air is then exhausted through the clean air discharge port which is attached to the top of the cyclone. Efficiency of this process depends on the material being conveyed, material/air flow rates, and cyclone design. Typical applications for cyclones are at material processing points, such as sifter stations, pulverizers, and liquid mixers.

Features

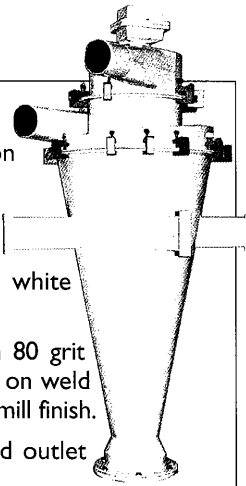
Material of construction - 12 GA, ASTM 569 carbon steel or ASTM A240 304 stainless steel sheet metal.

Carbon Finishes - Internal welds are ground to a 36 grit finish on weld seams only. Internal finish is clear phenolic or epoxy. External paint is primed with white enamel finish coat.

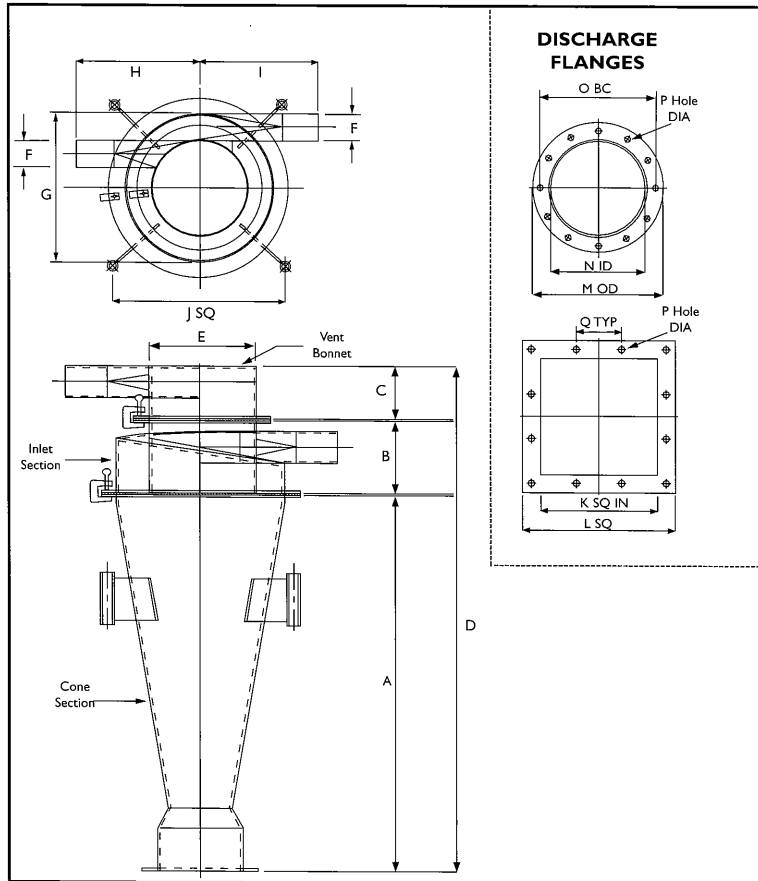
Stainless Finishes - Interior welds are ground to an 80 grit finish with no cracks, pits or crevices, hard wheel finish on weld seams only. Exterior welds to be cleaned. Sheet is a 2B mill finish.

Adjustable Inlet & Outlet - Positioning of inlet and outlet over the entire 360° range.

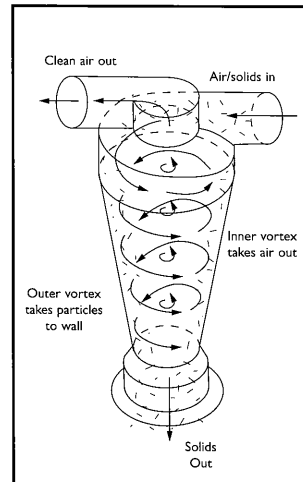
Easy Installation - With (4) mounting lugs to accept 1/2" diameter hanger rods.



Schematics



Operation



Notes

1. Round discharge flange for 16"
2. Square discharge flange for 20", 24", or 30"
3. Flanges are built to mate to an airlock.

Options For

Level Indicator: Vent Bonnet is available as shown or can be fitted with rotary or probe-type level indicator to indicate product accumulation.

Finish: Stainless: 4B finish sheet with interior welds ground to a 150 grit finish.

Dimensions - Unit

Dia-meter	A In/mm	B In/mm	C In/mm	D In/mm	E ID In/mm	F ID In/mm	G ID In/mm	H In/mm	I In/mm	J SQ In/mm	K SQ In/mm	L SQ In/mm	M OD In/mm	N ID In/mm	O BC In/mm	P DIA In/mm	Q TYP In/mm	Wt. Lbs.
16	36/914	7/176	5/127	48.25/1226	10/254	3/76	16/406	13/330	13/330				11/279	8/203	9.75/248	.5/13		75
20	43/1092	8/203	6/152	57.25/1454	12/305	4/102	20/508	13/330	13/330	22.625/575	10.5/267	14.5/371				.625/16	4.125/105	95
24	51.375/1305	9/229	8/203	68.625/1743	14/356	5/127	24/610	13/330	13/330	26.125/664	10.5/267	14.5/371				.625/16	4.125/105	115
30	68/1727	10/254	8/203	86.25/2191	18/457	6/152	30/762	22/559	22/559	32.5/826	10.5/267	14.5/371				.625/16	4.125/105	135

Tubing & Pipe

Specifications

Tube	Pipe
<ul style="list-style-type: none"> • 1-1/2" through 10" DD • Wall thickness: 16, 14, 12, 11 Gauge • Materials: Carbon, Stainless, Aluminum • Zinc-Coated (Galvanized) tubing is also available. • Alloys <ul style="list-style-type: none"> - Carbon - 1006/1010 ERW - Stainless - 304 - Aluminum - 6061/6063 Extruded • Our standard stock is in 20 ft. lengths, but we will cut to your specifications. <p>Special services we provide include:</p> <ul style="list-style-type: none"> - Shot Peening - Spiral Groove - Inside & Outside Diameter Polishing - Ceramic Lining - Ceramic Coating - Part Variations 	<ul style="list-style-type: none"> • 2" through 8" NPS • Wall thickness: Schedule 5, 10, 40, 80 • Materials: Carbon, Stainless, Aluminum • Zinc-Coated (Galvanized) tubing is also available. • Alloys <ul style="list-style-type: none"> - Carbon - 1006/1010 ERW - Stainless - 304 - Aluminum - 6061/6063 Extruded • Our standard stock is in 20 ft. lengths, but we will cut to your specifications. <p>Special services we provide include:</p> <ul style="list-style-type: none"> - Shot Peening - Spiral Groove - Ceramic Lining - Ceramic Coating - Part Variations

Tube Bends

Tube Bending Capabilities

OD (Inches)	Center Line Radius (Inches)	Gauge	Wall Thickness Inches
1-1/2	1-3/4, 2-1/2, 3, 3-1/4, 4, 6, 7-1/2, 9, 12, 15, 18, 24, 30, 36	11, 14, 16, 18	.120, .083, .065, .049
1-5/8	2-1/8	16	.065
1-3/4	2-1/2, 8, 9, 12, 15, 18, 24, 30, 36	11, 14, 16	.120, .083, .065
2	2, 2-1/2, 3, 4, 5, 6, 8, 9, 10, 12, 15, 18, 24, 30, 36, 48	11, 14, 16, 18, 20	.120, .083, .065, .049, .035
2-1/8	2-7/8, 3-1/2, 4-1/4, 5, 18, 20, 24, 36	11, 16	.120, .065
2-1/4	2-1/2, 3, 4, 5-1/2, 8, 9, 12, 15, 18, 24, 30, 36, 42	11, 13, 14, 16, 18, 20	.120, .095, .083, .065, .049, .035
2-3/8	2-3/8, 6, 8	16, 18	.065, .049
2-1/2	2-1/2, 3-1/4, 3-3/4, 4, 5, 6, 9, 12, 15, 18, 24, 30, 36, 48	11, 13, 14, 16	.120, .095, .083, .065, .049
2-3/4	2-3/4, 3-7/8, 9, 15, 24, 30	11, 14, 16, 18	.120, .083, .065, .049
2-7/8	10, 10-1/2, 60	15, 16	.072, .065
3	3, 4-1/2, 6, 7-1/2, 9, 12, 15, 18, 24, 30, 36, 38, 48	11, 12, 13, 14, 16, 18	.120, .109, .095, .083, .065, .049
3-1/8	6	16	.065
3-1/2	4.5, 8, 8-3/4, 9, 12, 13, 15, 18, 24, 30, 36, 48, 60	11, 14, 15, 16, 18	.120, .083, .072, .065, .049
4	4, 6, 8, 9, 10, 12, 18, 24, 30, 32, 36, 48, 60	10, 11, 14, 16, 18	.134, .120, .083, .065, .049
4-1/4	60	11, 13, 14	.120, .095, .083
4-1/2	9, 12, 16, 18, 20, 24, 30, 32, 36, 48, 60	11, 14, 16	.120, .083, .065
5	7-1/2, 12, 12-1/2, 18, 24, 30, 36, 48, 60, 72	10, 11, 14, 16	.134, .120, .083, .065
6	9, 15, 24, 30, 36, 48, 60, 72	10, 11, 14, 16	.134, .120, .083, .065
8	12, 20, 32, 48, 60, 72	11, 14	.120, .083
10	32, 48, 60, 72	11, 12	.120, .109

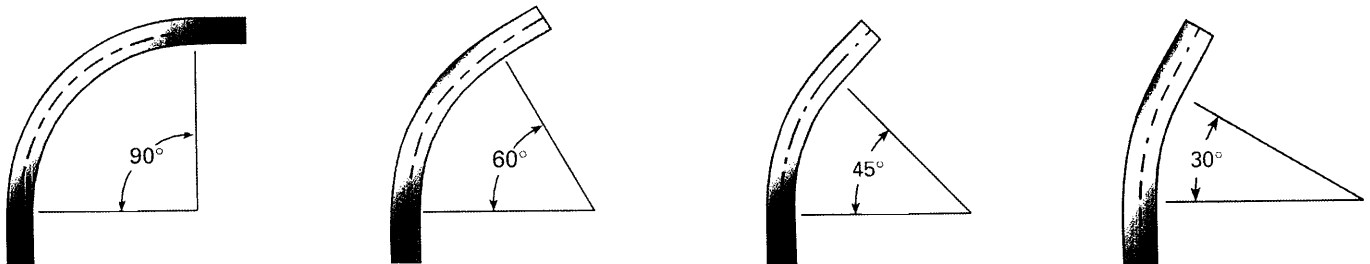
Pipe Bends

Pipe Bending Capabilities

NPS (Inches)	Outside Diameter (Inches)	Center Line Radius (Inches)	Schedule (Inches)				
			5	10	40	80	Other
1-1/4	1.660	5, 12, 18	-	-	.140	-	-
1-1/2	1.900	6, 9, 12, 18, 36	-	-	.145	-	.200
2	2.375	6, 8, 12, 18, 24, 30, 36, 48	.065	.109	.154	.218	.218
2-1/2	2.875	9, 10, 10-1/2, 12, 24, 30, 36, 48	.083	.120	.203	.276	-
3	3.500	5, 8, 8-3/4, 9, 12, 13, 15, 18, 24, 30, 36, 48, 60	.083	.120	.216	.300	.188
3-1/2	4.000	6, 8, 9, 10, 12, 18, 24, 30, 36, 48, 60	.083	.120	-	.300	-
4	4.500	9, 12, 16, 18, 20, 24, 30, 36, 48, 60	.083	.120	.237	.337	.188, .337
5	5.563	24, 30, 36, 48, 60, 72	-	.134	.258	.375	-
6	6.625	24, 30, 36, 48, 60, 72	-	.134	.280	.432	.188, .250
8	8.625	32, 48, 60, 72	-	.148	.322	-	.188, .250

Tube & Pipe Bends Specifications

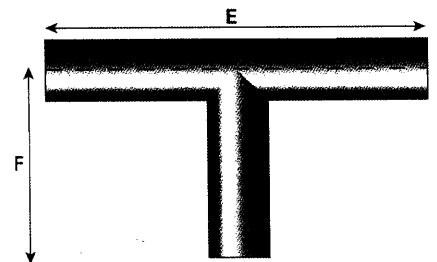
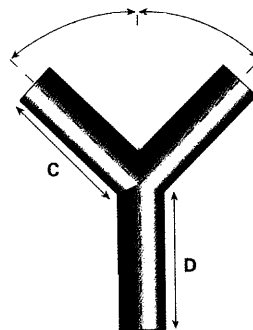
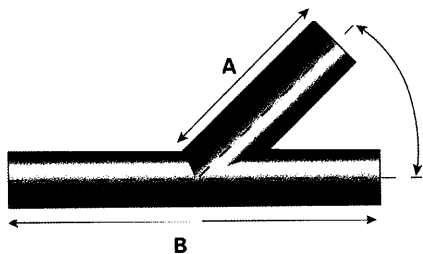
Tube	Pipe
<ul style="list-style-type: none"> • 1-1/2" through 10"OD • Inventories include a wide range of parts: <ul style="list-style-type: none"> - Short Radius (1-1/2 times OD) - Standard Radius (2-1/2 times OD) - Long Radius Bends (up through 72" center line) • Nominal standard tangents are 2 times OD with a 6" minimum for easy connection • Wall thickness: 16, 14, 12, 11 Gauge • Materials: Carbon, Stainless, Aluminum • Zinc-Coated (Galvanized) tubing is also available • Center Line Radius from 1-3/4" through 72" <p>Special services we provide include:</p> <ul style="list-style-type: none"> - Shot Peening - Spiral Groove - Inside & Outside Diameter Polishing - Ceramic Lining - Ceramic Coating - Part Variations 	<ul style="list-style-type: none"> • 2" through 8" NPS • Inventories include a wide range of parts: <ul style="list-style-type: none"> - Short Radius (1-1/2 times NPS) - Standard Radius (2-1/2 times NPS) - Long Radius Bends (up through 72" CLR) • Nominal standard tangents are 2 times NPS with a 6" minimum for easy connection • Wall thickness: Schedule 5, 10, 40, (SCH 80 available) • Materials: Carbon, Stainless, Aluminum • Zinc-Coated (Galvanized) tubing is also available • Degree of Bends: 90, 60, 45, 30 • Center Line Radius: 5" through 72" <p>Special services we provide include:</p> <ul style="list-style-type: none"> - Ceramic Coating - Shot Peening - Spiral Grooving - Ceramic Lining - Part Variations



Tube & Pipe Fittings

Laterals, Wyes, and Tees Specifications

Laterals & Wyes (Tube)	Laterals & Wyes (Pipe)	Tees (Tube)
<ul style="list-style-type: none"> • 1-1/2" through 8" OD • Wall thickness: 16, 14, 11 Gauge • Degrees: 30, 45, 60 • Materials: Carbon, Stainless, Aluminum • Zinc-Coated (Galvanized) parts are also available. <p>Special services we provide include:</p> <ul style="list-style-type: none"> - Shot Peening - Spiral Groove - Inside & Outside Diameter Polishing - Ceramic Lining - Ceramic Coating - Part Variations 	<ul style="list-style-type: none"> • 2" through 8" NPS • Wall thickness: 5, 10, 40, (SCH 80 available) • Degrees: 30, 45, 60 • Materials: Carbon, Stainless, Aluminum • Zinc-Coated (Galvanized) parts are also available. <p>Special services we provide include:</p> <ul style="list-style-type: none"> - Ceramic Coating - Shot Peening - Spiral Grooving - Ceramic Lining - Part Variations 	<ul style="list-style-type: none"> • 1 1/2" through 8"OD • Wall thickness: 16, 14, 11 Gauge • Materials: Carbon, Stainless, Aluminum • Zinc-Coated (Galvanized) parts are also available. <p>Special services we provide include:</p> <ul style="list-style-type: none"> - Shot Peening - Spiral Groove - Inside & Outside Diameter Polishing - Ceramic Lining - Ceramic Coating - Part Variations



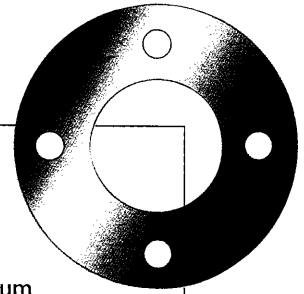
Laterals OD/NPS	30 Degree		45 Degree		60 Degree	
	A	B	A	B	A	B
1-1/2" - 2-1/2"	8"	16"	8"	16"	8"	16"
3" - 3-1/2"	10"	20"	8"	16"	8"	16"
4"	12"	24"	10"	20"	10"	20"
4-1/2"	12"	24"	10"	20"	10"	20"
5"	15"	30"	12"	24"	12"	24"
6"	18"	36"	15"	30"	15"	30"
8"	22"	40"	18"	36"	18"	36"

Wyes OD/NPS	30 Degree		45 Degree		60 Degree	
	C	D	C	D	C	D
1-1/2" - 4"	8"	8"	8"	8"	8"	8"
4-1/2"	10"	10"	10"	10"	10"	10"
5"	11"	11"	11"	11"	11"	11"
6"	12"	12"	12"	12"	12"	12"
8"	14"	14"	14"	14"	14"	14"

Tees OD/NPS	E	F
1-1/2" - 4"	16"	8"
4-1/2"	18"	9"
5"	18"	9"
6"	20"	10"
8"	24"	12"

Tube & Pipe Fitting *(continued)*

Plate Flanges Specifications



Tube	Pipe
<ul style="list-style-type: none"> • For 2" through 12"OD • Slip-on, flat face style • 1/2" thick, 150 lb. drilling • Materials: Carbon, Stainless, Aluminum • Zinc-Coated (Galvanized) tubing is also available • Ask about other sizes and styles 	<ul style="list-style-type: none"> • For 2" through 12" NPS • Slip-on, flat face style • 1/2" thick, 150 lb. drilling • Materials: Carbon, Stainless, Aluminum • Zinc-Coated (Galvanized) tubing is also available • Ask about other sizes and styles • Forged Flanges are also available for pipe

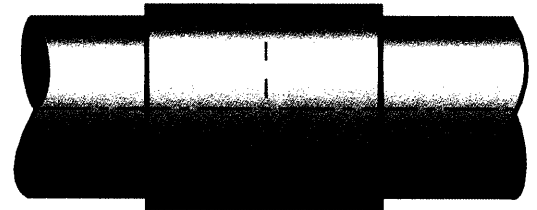
Male & Female Adapters

- For 1-1/2" through 10" sizes
- Wall thickness: 16, 14, 12, 11 Gauge
- Materials: Carbon, Stainless, Aluminum
- Zinc-Coated (Galvanized) parts are also available
- Part variations are available for your unique requirements



Slip Couplings (Tube)

- A method of joining that can be used for joining any two straight ends of tubing or fittings.
- The slip coupling is a solid sleeve that fits the OD of the joint which can then be glued, brazed, welded or covered by a shrink sleeve.
- 1-1/2" through 10" OD
- Wall thickness: 16, 14, 12, 11 Gauge
- Materials: Carbon, Stainless, Aluminum
- Zinc-Coated (Galvanized) parts are also available
- Part variations are available for your unique requirements



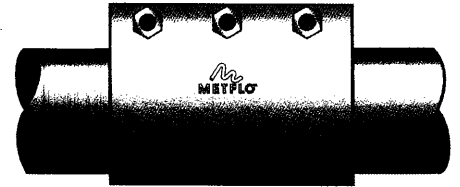
Shrink Sleeves (Tube)

- A heat shrinkable polyolefin band that literally shrinks and encircles the connection giving it mechanical strength and a positive seal. It can be used in conjunction with a slip coupling or when using expanded fittings. Gluing, brazing and welding operations are eliminated.
- 1-1/2" through 10" OD
- For use in systems under 15 PSIG



MetFlo™ Compression Couplings (Tube & Pipe)

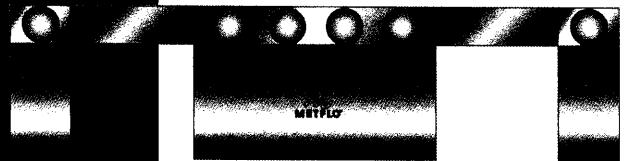
- 1-1/2" through 14" OD for tube
- 1-1/4" through 12" NPS for pipe
- The MetFlo Compression Coupling offers superior strength
- Zinc plated, steel reinforcement bars provide additional strength and stability
- Grade 5 stress relieved bolts ensure a trouble-free installation
- G90 galvanized exterior coating provides superior corrosion resistance
- Heavy 16 gauge outer shell on all couplings over 3-1/4" in diameter provides added strength and dimensional stability
- Industry compatible, precision diecut gasket ensures a tight seal
- Stainless steel strip guards against static electricity build-up
- Our standard material is Zinc-Coated (Galvanized) with Stainless and Aluminum as options
- The standard gasket is Black Neoprene
- Optional Gaskets include:
 - White Nitrile
 - Red Rubber
 - Silicone
 - EPDM
 - Viton
- Stainless Steel gasket protectors are also available
- We can furnish you with Replacement Nuts, Bolts, Gaskets and Static Strips



Eliminators (Tube & Pipe)

The Eliminator, with its extra holding power, is ideal for higher pressure systems. Bands at either end of the Eliminator provide metal to metal "gripping" to eliminate end pull. There is even an Elbow Eliminator that offers extra holding power at problem turns in the system. The Elbow Eliminator allows for minimum tangents and can be used for either side.

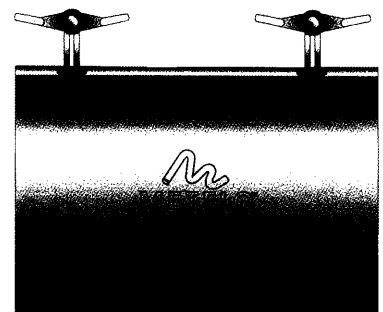
- **Eliminator Kits** are available to convert existing couplings into Eliminators
- 2" to 12" NPS for Pipe
- Available in 3 and 4 Bolt
- Standard gasket is Black Neoprene
- Other gaskets are available:
 - White Nitrile
 - Red Rubber
 - Silicone
 - EPDM
 - Viton



Super Grips (Tube & Pipe)

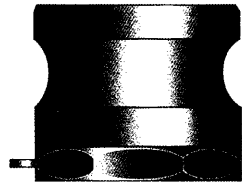
The Super Grip was devised as a quick coupler for dry bulk transport tank tubing. This unique coupling slides onto the tubing or wraps around it and is tightened by hand in seconds, and it provides better support than rubber hose and band clamps. Our exclusive fail-safe clamping action keeps its hold despite expansion, contraction and vibration. The Super Grip positive sealing, interlocking gum rubber gasket allows for tube and pipe variations. And because it's made of 100% Stainless steel, it will not corrode due to harsh weather or road conditions.

- Fast action, positive locking
- Fail-Safe Clamp
- Interlocking Gum Rubber Gasket
- 100% Stainless Steel
- No Tools Required
- Quick Disconnect
- F.D.A. approved gaskets are also available
- 1-1/2" through 12" OD for tube
- 1-1/4" through 12" NPS for pipe
- Stainless Steel grounding strip is standard
- Ask about our other gasket options

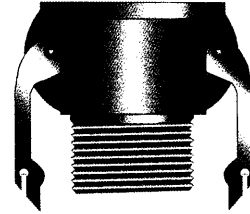


Cam & Groove Couplings

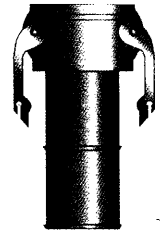
- Parts A, B, C, D, E, F, V, W
- 1-1/2" through 8"
- Standard and Premium styles
- Materials: Aluminum and Stainless
- Replacement Gaskets and Arms, plus Security Chains are available
- Other sizes and materials are also available



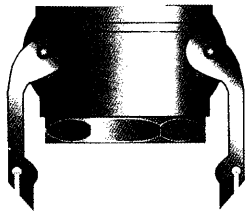
**Part A
Adapter X
Female NPT Thread**



**Part B
Coupler X
Male NPT Thread**



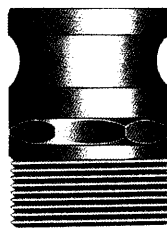
**Part C
Coupler X
Hose Shank**



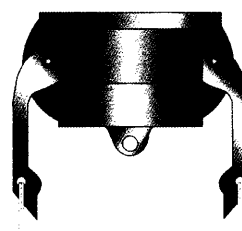
**Part D
Coupler X
Female NPT Thread**



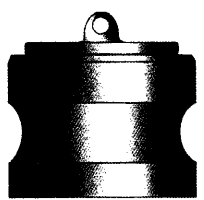
**Part E
Adapter X
Hose Shank**



**Part F
Adapter X
Male NPT Thread**



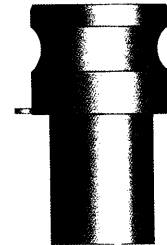
**Part V
Coupler Dust Cap**



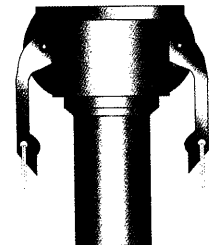
**Part W
Adapter Dust Plug**

Quick Adapters & Couplers

- Our Quick Adapter (AW) or Coupler (DW) is welded to a short length of tube or pipe for easy installation or dismantling.
- 2" through 6" OD, 16, 15, 11 Gauge Stubs
- 2" through 6" NPS, Schedule 10, 40 Stubs (SCH 5 available)
- Available in Aluminum and Stainless
- Replacement Gaskets and Arms, plus Security Chains are available



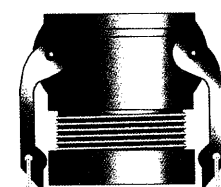
**Part AW
Adapter**



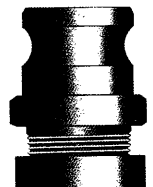
**Part DW
Coupler**

Compression Quick Adapters & Couplers

- 1-1/2" to 3"
- Replacement nuts and gaskets are available
- Standard material is Aluminum with a Buna Gasket
- Designed for quick assembly, with a compression nut, to 16 Gauge (.065") tubing



Part BC Couple



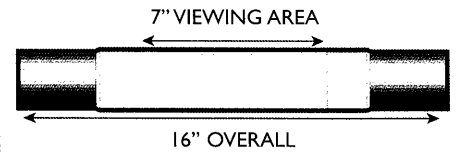
Part FC Adapter

Accessories

Sight Glasses (Tube & Pipe)

The Acrylic Sight Glass (ASG) allows you to see at a glance the material flowing through your conveying system. It's precision made by aligning the acrylic with the tube or pipe to insure smooth material flow with no turbulence. A stainless steel ground strip is included to eliminate static build up. The ASG is easy to install in new or existing lines by using two MetFlo™ compression Couplings.

- Tube or pipe ends are made of carbon steel, stainless or aluminum
- Zinc-coated (Galvanized) is also available
- Special sight glasses are available upon request
- Wall Thickness: Tube - 16, 14, 12, 11 Gauge Pipe - Schedule 5, 10, 40, 80
- Overall Length is 16" with 7" Viewing Area



Fabricated Blast Gate Assemblies (Tube & Pipe)

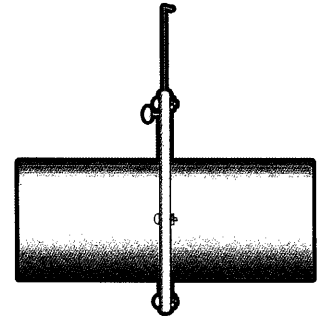
These parts are made to order for your tube or pipe needs.

- Materials: Carbon, Zinc-Coated (Galvanized), Stainless Steel, Aluminum
- Standard slide is Zinc-Coated (Galvanized) Steel

Standard Stub Lengths:

Tube or Pipe Size Stub Length, Each Side

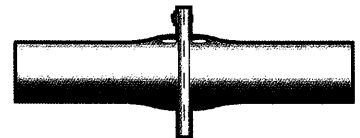
1.5" through 4.5"	6"
5" through 6"	7"
Over 6" - 14"	8"



Blast Gate Assemblies (For Tube)

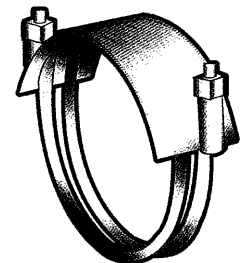
Blast Gate consists of an aluminum, full gate, casting with a Zinc-Coated (Galvanized) slice and aluminum stubs (straight ends).

- Available in 2" - 8" Tube OD Sizes
- For other materials and sizes, inquire about our Fabricated Blast Gates.



Clamps Available For Use On PVC Hose

- 1-1/2" through 8" ID
- Zinc-coated (Galvanized) is also available
- Two clamps are recommended, for each end, on 5" ID hose and larger
- For use on counter clockwise spiral, PVC Hose



Accessories *(continued)*

Metal Flexible Hose

- 1-1/2" through 14" ID sizes are made from Stainless or Galvanized Steel
- Variety of material thicknesses are available
- Unlined (rough bore) or lined (smooth bore)
- Packing options include cotton, stainless steel wire, apyrous, elastomeric (gas tight) and silicone
- We offer a wide selection of end fittings, including Cam & Groove, Flanges, Tube Stubs and Nipples
- All hoses are made to customer specifications



Standard Duty PVC - Food Grade Hose - Clear

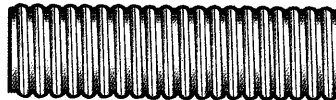
- 1-1/2" through 4" ID
- Static Wire is available
- Service Temperature Range: -4° F to 150° F
- Counter Clockwise Spiral

Heavy Duty PVC - Food Grade Hose - Clear

- 1-1/2" through 8" ID
- Service Temperature Range: -4° F to 150° F
- Counter Clockwise Spiral

Heavy Duty PVC - Food Grade Hose - With Static Wire - Clear

- 1-1/2" through 6" ID
- Service Temperature Range: -4° F to 150° F
- Counter Clockwise Spiral



Standard Duty Polyurethane Abrasion Resistant PVC Hose - Black: Formulated with Anti-Static Compound

- 1-1/2" through 8" ID
- Service Temperature Range: -4° F to 150° F
- Counter Clockwise Spiral

Heavy Duty Polyurethane Abrasion Resistant PVC Hose - Blue: Formulated with Anti-Static Compound

- 1-1/2" through 8" ID
- Service Temperature Range: -4° F to 150° F
- Counter Clockwise Spiral