



**INSAMCOR<sup>®</sup>**

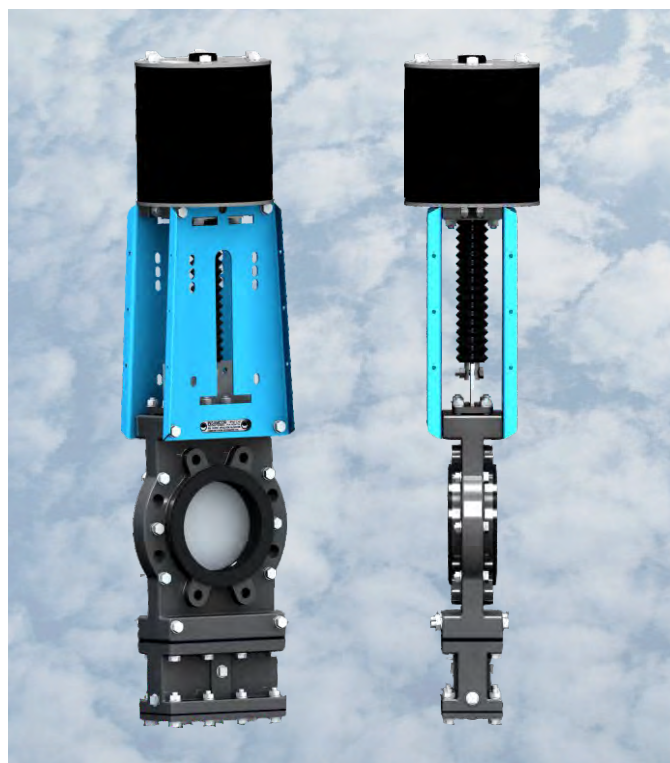
**World Class Performance  
in Abrasive, Scaling and  
Corrosive Slurries, Sludge,  
Liquids, and Bulk Solids**



***INSAMCOR<sup>®</sup> - PB***  
***Ported Blade Knife Gate Valves***



**INSAMCOR® PB (Handwheel)**



**INSAMCOR® PB (Pneumatic)**

**DFC'S purpose is to solve typical and perennial valve problems. We achieve this by providing quality valves that provide the lowest cost of ownership and operation, highest reliability and minimum lifetime maintenance.**

**DFC'S Insamcor range of ported blade knife gate valves features replaceable elastomer sleeves and a ported blade that enables large size particles to be drawn into the valve body and then flushed.**

### **Design Features and Advantages**

- 150 psi CWP (10 bar) pressure rating for all sizes
- Bi-directional flow and shut-off resulting in zero downstream leakage
- No seat cavity for unwanted solids to build-up and prevent full gate closure
- Field replaceable heavy duty elastomer sleeves
- Ported blade is always in contact with the replaceable sleeves on both sides
- Suitable for wet or dry service
- Capable of drawing granular dense slurries of size similar to the blade thickness through the seals and flushed out of the valve
- Ported blade bottom door extension with increased clearance and flushing points allows medium to be dumped or drained
- Standard bellows provide additional protection for the spindle against scoring from abrasive particles
- The mounting plate is designed to accept manual, pneumatic or electric actuation for easy conversion in the field



## ELASTOMER QUALITIES SELECTION

Elastomer Type Abbreviation	Natural Rubber NR	Ethylene Propylene EPDM	Fluorocarbon FKM/FPM	Nitrile NBR
Max continuous operating temp. (°F)	190	300	390	200
Max continuous operating temp. (°C)	88	149	199	93
Abrasion resistance	Excellent	Very Good	Good	Good
Generally resistant to	Moderate Chemicals, Organic Acids, Alcohols, Ketones, Aldehydes	Animal and Vegetable Oils, Ozone, Strong & Oxidizing Chemicals	All Aliphatic, Aromatic & Halogenated Hydrocarbons, Acids, Oils	Many Hydrocarbons, Fats, Oils, Greases, Hydraulic Fluids, Chemicals
Generally attacked by	Ozone, Strong Acids, Fats, Oils, Greases, Most Hydrocarbons	Mineral Oils & Solvents, Aromatic Hydrocarbons	Ketones, Esters & Nitro containing compounds	Ozone, Ketones, Esters, Aldehydes, Chlorinated and Nitro Hydrocarbons

## INSAMCOR® PB Specification

Heavy duty ported blade knife gate valve shall be a wafer, bi-directional valve with flushing abilities. The bore shall be formed by two heavy duty elastomer sleeves, one either side of the gate integrally moulded with a stiffener ring. The stiffener ring shall maintain the shape of the sleeve. The sleeves shall be compressed between the pipe flanges once installed.

The valve shall be of full port design. When in the open and closed position the stainless steel gate shall always be in contact between both elastomer sleeves. On closing particles of similar size to the valves blade thickness shall be capable of

being deposited into the lower chest area of the valve where a flushing arrangement is preferred. In order to prevent build-up of product the flushing ports shall be piped up and fully operational or the bottom door removed. The sealing to atmosphere must be achieved through an adjustable stuffing box seal.

The yoke design will allow for easy mounting of proximity or limit switches. Provision must be made for lockouts in the open and closed position. The mounting plate must accept manual, pneumatic or electric actuation for easy conversion in the field.

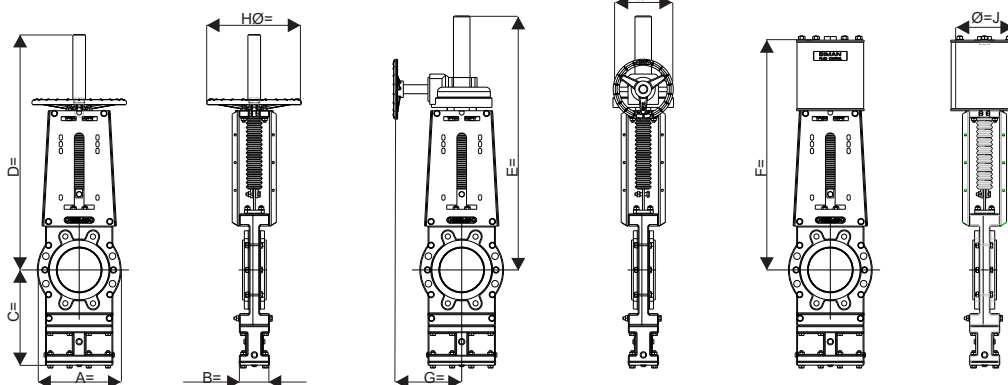


## Dimensions and Weights of the PB

MH (MANUAL HANDWHEEL)

BG (BEVEL GEAR)

AC (AIR CYLINDER)

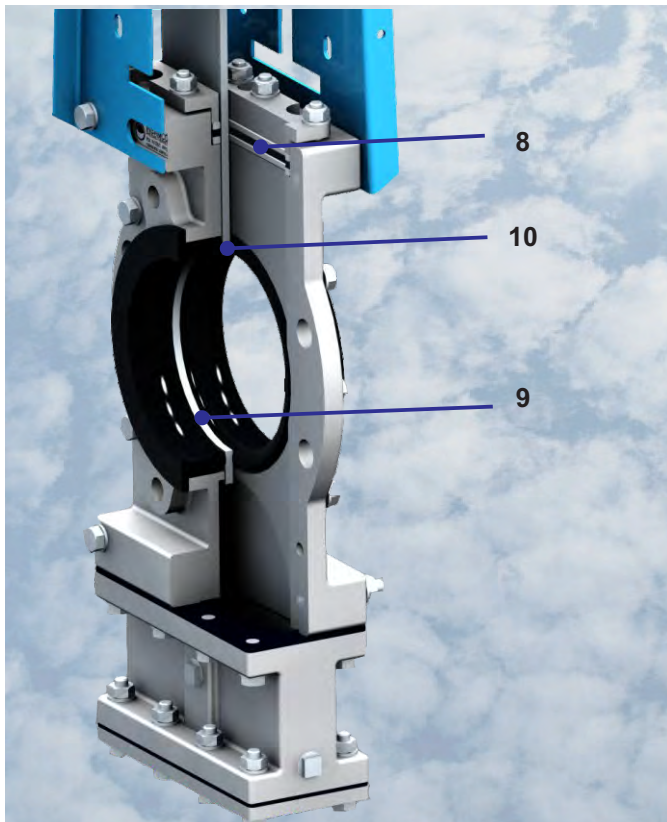
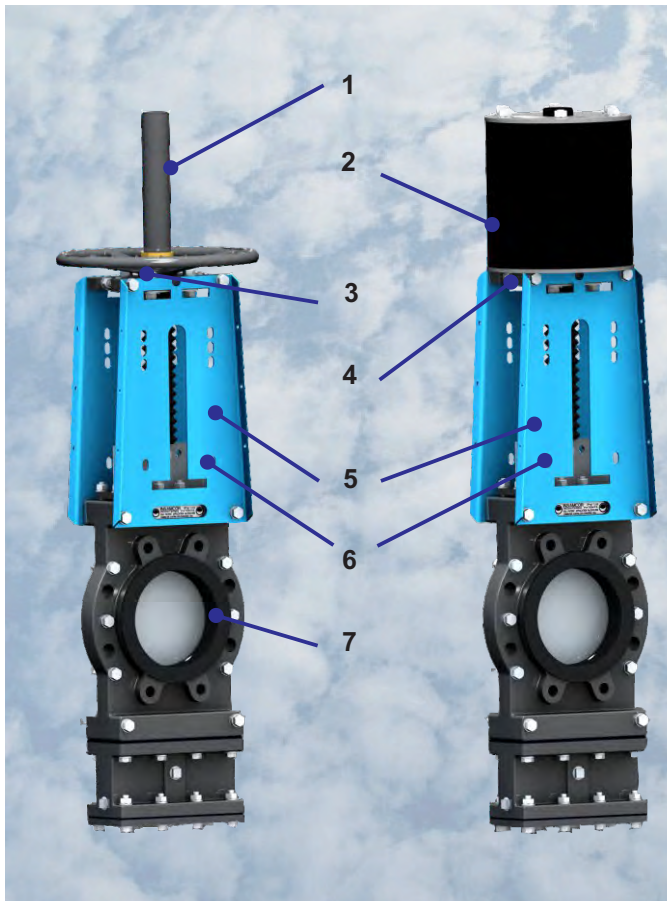


### Dimensions (mm) and Weights (kg)

Valve Size	A	B	C	D	E	F	G	H	I	J	Weight MH	Weight BG	Weight AC
50	165	61	132	531	551	474	303	315	200	80	19	35	27
65	185	64	214	572	592	528	303	315	200	80	28	43	36
80	200	52	214	607	627	574	303	315	200	100	30	45	38
100	235	70	231	725	745	669	303	315	200	100	36	51	48
125	270	74	277	798	818	740	303	315	300	160	42	58	57
150	279	80	317	791	819	769	303	400	300	160	49	64	71
200	360	98	413	1089	1109	1015	328	400	300	200	112	130	150
250	425	104	502	1217	1237	1137	328	400	300	250	148	165	204
300	484	111	602	1355	1375	1271	328	500	400	300	191	211	261
350	555	112	691	1627	1647	1498	328	500	400	300	242	263	337
400	620	134	762	1661	1681	1611	328	500	400	400	288	309	408
450	642	110	863	1676	1696	1696	328	695	600	450	583	600	743
500	715	120	969	1937	1957	1851	328	695	600	450	758	775	918
600	840	142	1125	2274	2294	2261	328	695	600	550	986	1003	1203

### Dimensions (inches) and Weights (lbs)

Valve Size	A	B	C	D	E	F	G	H	I	J	Weight MH	Weight BG	Weight AC
2	6.49	2.40	5.19	20.90	21.69	18.66	11.92	12.40	7.87	3.14	19	35	27
2.5	7.28	2.51	8.42	22.51	23.30	20.78	11.92	12.40	7.87	3.14	28	43	36
3	7.87	2.04	8.42	23.89	24.68	22.59	11.92	12.40	7.87	3.93	30	45	38
4	9.25	2.75	9.09	28.54	29.33	26.33	11.92	12.40	7.87	3.93	36	51	48
5	10.60	2.91	10.90	31.41	32.20	29.13	11.92	12.40	11.81	6.29	42	58	57
6	10.90	3.14	12.48	31.14	32.24	30.27	11.92	15.74	11.81	6.29	49	64	71
8	14.17	3.85	16.25	42.87	43.66	39.96	12.91	15.74	11.81	7.87	112	130	150
10	16.70	4.09	19.76	47.91	48.70	44.76	12.91	15.74	11.81	9.84	148	165	204
12	19.05	4.37	23.70	53.34	54.13	50.03	12.91	19.68	15.74	11.81	191	211	261
14	21.85	4.40	27.20	64.05	64.84	58.97	12.91	19.68	15.74	11.81	242	263	337
16	24.40	5.27	30.00	65.39	66.18	63.42	12.91	19.68	15.74	15.74	288	309	408
18	25.27	4.33	33.97	65.98	66.77	66.77	12.91	27.36	23.62	17.71	583	600	743
20	28.14	4.72	38.14	76.25	77.04	72.87	12.91	27.36	23.62	17.71	758	775	918
24	33.07	5.59	44.29	89.52	90.31	89.01	12.91	27.36	23.62	21.65	986	1003	1203



## Features

**1.Spindle cover** - for protection against slurry splatter

**2.Drive Mechanisms** – pneumatic cylinder, electric, hydraulic cylinder, manual bevel gear and handwheel with rising spindle

**3.Thrust assembly** - all sizes fitted with thrust bearings as standard

**4.Mounting Plate** - designed to accept manual, pneumatic or electric actuation without modification

**5.Yoke** - design allows for easy mounting of proximity and limit switches

**6.Lockout** - provision for lockouts in the open and closed position (standard on all sizes)

**7.Sleeve** - natural rubber moulded sleeve

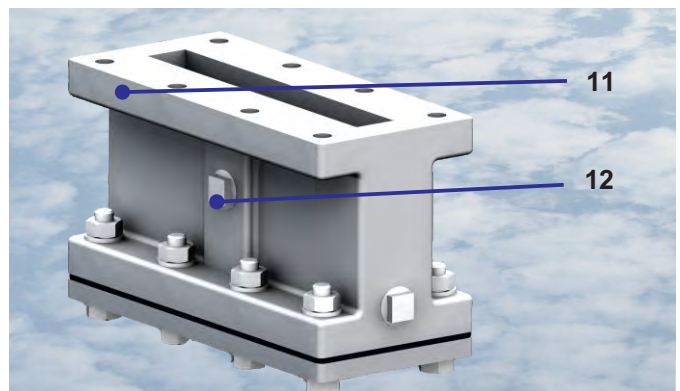
**8.Stuffing Box** - external seal arrangement to atmosphere by means of an adjustable external stuffing box design and gland packing

**9.Seat Pockets** - full bore, unrestricted flow area. No valve seat pocket or cavity

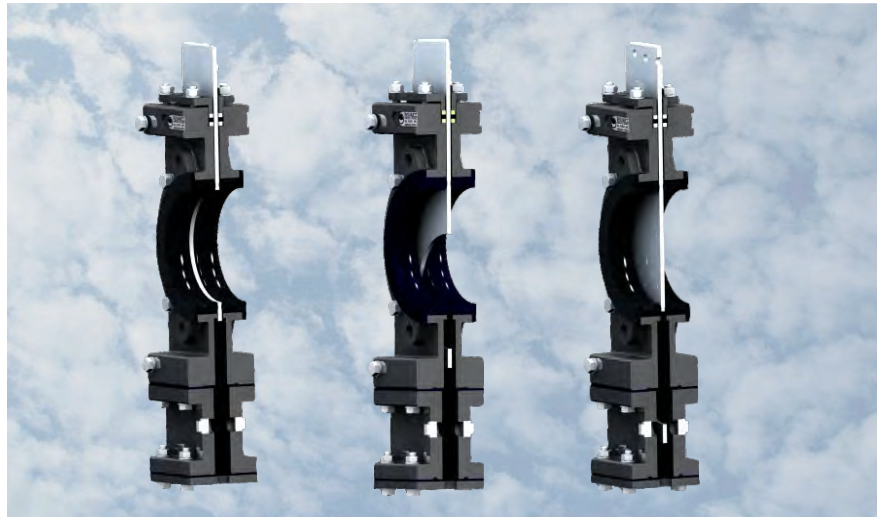
**10.Gate** - Ported, to draw granular media into the valve body to be dumped or drained

**11.Bottom Door** - chamber designed to catch all dumped media. The removal of the bottom door permits material to be dumped with each operation. This option is only advised if spillage is allowed and the preferred flushing system cannot be installed

**12.Flushing Points** - five flushing points allocated for flushing. The flushing system permits material to be flushed out with each operation eliminating material build up. This option is preferred as spillage is contained







**PB in Open, Intermediate and Closed Position**

## Sealing Principle

Two identical elastomer sleeves are permanently compressed against either side of the ported gate in both the open and the closed position. When the valve is fully opened the port in the gate aligns itself perfectly with the elastomer sleeves forming a full bore cavity free bubble tight seal to contain the line pressure.

When the gate moves from the open to closed position the elastomer sleeves remain compressed against the sides of the gate and allow media particles the diameter of the gate thickness and smaller to be drawn into the valve body and flushed.

## Specifications

### Size Range

2" – 24" (DN50 – DN600)

### Pressure rating

150 psi CWP (10 bar)

### Body & Yoke

Fusion bonded epoxy ductile iron body with fusion bonded epoxy mild steel yoke plates

### Sleeves

Natural rubber standard

### Gate

304L stainless steel

### Flange Drilling

ANSI B16.5 Class 150

AS 2129 Table D & E

PN10 & PN16

When the gate has completed its full stroke and is in the fully closed position the sleeves remain compressed against the sides of the gate and seals the bore from both directions

The round shape of the INSAMCOR PB sleeve is maintained by an embedded stiffener ring located near the sealing face and a steel disc on the mating face. Flexibility in the axial direction is achieved through the provision of a 360° groove located along the inner surface of the sleeve.

## Optional

### Pressure rating

Sizes 2" - 6" (DN50-DN150) available as a 230 psi CWP (16 bar) valve

### Sleeves

EPDM, FKM/FPM or NBR

### Gate

Different gate materials available on request

### Actuators

Manual, manual bevel gear, pneumatic, electromechanical and hydraulic

## Other DFC World Class Performance Related Valves

### RF Valve® and aiRFlex® pinch valves

The world's most complete line of pinch valves in standard ASME/ANSI B16, DIN and ISO face-to-face dimensions from 1" to 60" (DN25 to DN1500)

- Patented non-stretch, anti-stress folds in all elastomer tubes
- In-line elastomer tube change capability without removing the valve from the pipeline
- Most advanced wear sensing technology for preventative maintenance alert



### DFC® SKG F & W slurry valves

Heavy duty bi-directional knife gate valve designed for slurry applications

- Flanged & Wafer design available
- Packingless design
- Full port formed by two heavy duty elastomer sleeves
- No seat cavity for unwanted solids to build and prevent gate closure
- No metal parts in contact with flowing media



### Saunders® A Type and KB Type diaphragm valves

Simplicity in design coupled with more than 75 years of cutting edge innovation has resulted in the Saunders diaphragm's ability to handle a wider range of fluids than any other valve type

- Available in weir and straight through type
- Available in either flanged or screwed ends
- Various lining and diaphragm material options



DFC manufactures this range under license from CPFT Ltd and is only available in selected African countries.

### Insamcor® MH slurry valves

Bi-directional high pressure wafer mono-flange knife gate valves suitable for end-of-line installation

- Sizes 2" to 24" (DN50 - DN600)
- Available in 230 psi CWP (16 bar) pressure rating on all sizes
- Combination re-packable primary transverse seal and secondary adjustable stuffing box seal for severe applications
- Mechanically retained moulded seal with no seat pockets
- Gate guided through full length of the stroke



### Insamcor® MLB slurry valves

Bi-directional large bore wafer mono-flange knife gate valves suitable for end-of-line installation

- Sizes 28" to 48" (DN700 - DN1200)
- Pressure ratings varies according to size and application
- Combination re-packable primary transverse seal and secondary adjustable stuffing box seal for severe applications
- Mechanically retained moulded seal with no seat pockets
- Gate guided through full length of the stroke



### Insamcor® LW semi-lugged slurry valves

Bi-directional wafer semi-lugged knife gate valve designed for slurry applications.

- Adjustable stuffing box to atmosphere
- Mechanically retained moulded seal with no seat pockets
- Self-cleaning flush out corners prevent slurry build-up in sealing area
- Easy mounting of proximity or limit switches
- Sizes 2" to 24" (DN50 to DN600)



**INSAMCOR®**



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**DYNAMIC**  
**FLUID CONTROL**

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