



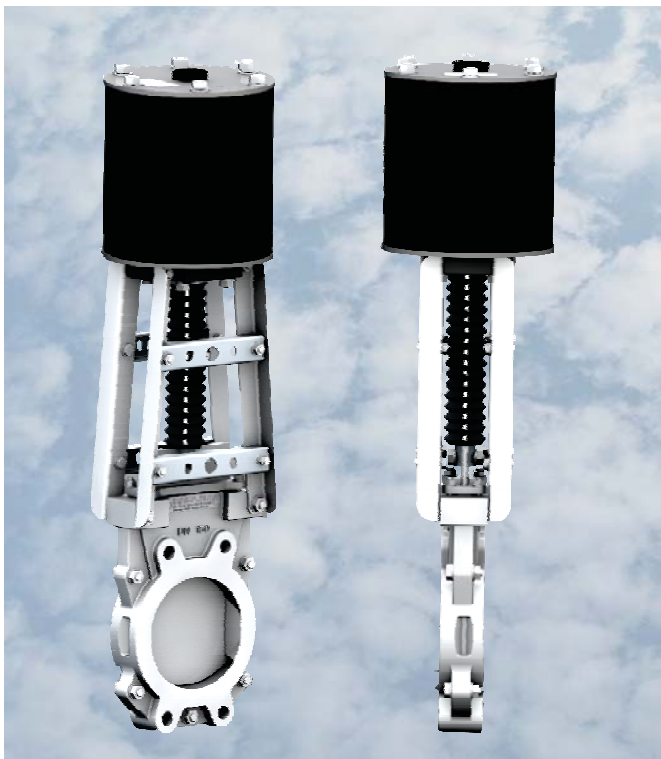
World Class Performance
in Abrasive, Scaling and
Corrosive Slurries, Sludge,
Liquids, and Bulk Solids



INSAMCOR® - LW
Lugged Wafer Knife gate valves



DUCTILE IRON - INSAMCOR® LW



STAINLESS STEEL - INSAMCOR® LW

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 lugged wafer ductile iron & stainless steel bi-directional knife gate valves feature a unique moulded body seal without seat pockets or cavities providing trouble free operation in slurry applications.

Design Features and Advantages

- Mechanically retained moulded body seal
- Gate guided through full length of the stroke
- Self-cleaning flush out corners prevent deposit build-up in sealing area
- Full bore unrestricted flow area - no seat pockets or cavities
- Bi-directional leak-proof sealing
- 150 psi CWP (10 bar) pressure rating for all sizes
- Adjustable stuffing box and gland design ensures leak-proof sealing to atmosphere
- Secondary transverse seal increases the wear life of the primary seal
- Built in PTFE scrapers keep the blade free from any foreign matter over the whole width of the blade during operation
- Yoke design allows for easy mounting of proximity and limit switches and also includes lockouts in both the open and closed position
- The mounting plate is designed to accept manual, pneumatic or electric actuation

Ductile Iron - Soft Rubber Lined INSAMCOR® LW Specification

The knife gate valve will be of wafer style and semi lugged design with the bore and connecting faces soft rubber lined. The design will allow for bi-directional flow against maximum operating pressure. The body seal must be fully moulded with a lip seal and must be mechanically retained in the valve body. The gate's sides must remain in contact with the body seal during opening and closing of the valve and the gate must be guided by the valve body. The sealing to atmosphere must be achieved through a combination adjustable stuffing box acting as the primary seal and a secondary transverse seal. The internal bore will include self-cleaning flush out corners and there will be no seat pockets or cavities in the bore for media to settle in. The valve must incorporate PTFE scrapers to keep the blade free from any foreign matter over the whole width of the gate during operation.

Ductile Iron - Fusion Bonded Epoxy INSAMCOR® LW Specification

The knife gate valve will be of wafer style and semi lugged design with a fusion bonded epoxy coated ductile iron body. The design will allow for bi-directional flow against maximum operating pressure. The body seal must be fully moulded with a lip seal and must be mechanically retained in the valve body. The gate's sides must remain in contact with the body seal during opening and closing of the valve and the gate must be guided by the valve body. The sealing to atmosphere must be achieved through a combination adjustable stuffing box acting as the primary seal and secondary transverse seal. The internal bore will include self-cleaning flush out corners and there will be no seat pockets or cavities in the bore for media to settle in. The valve must incorporate PTFE scrapers to keep the blade free from any foreign matter over the whole width of the gate during operation.

Stainless Steel - INSAMCOR® LW Specification

The knife gate valve will be of wafer style and semi lugged design with a CF8M stainless steel body. The design will allow for bi-directional flow against maximum

operating pressure. The body seal must be machined PTFE and must be mechanically retained in the valve body. The gate's sides must remain in contact with the body seal during opening and closing of the valve and the gate must be guided by the valve body. The sealing to atmosphere must be achieved through an adjustable stuffing box and gland design. The internal bore will include self-cleaning flush out corners and there will be no seat pockets or cavities in the bore for media to settle in. The valve must incorporate PTFE scrapers to keep the blade free from any foreign matter over the whole width of the gate during operation and PTFE anti-friction pads to keep the gate centralised and eliminate scoring between the gate and the body.

Applications

With a proven reputation of more than 25 years, Insamcor knife gate valves are well suited for a wide variety of industrial applications.

DFC has one of the largest installed bases of mineral processing valves in the world and manufacturing facilities in South Africa, Finland and the USA. With sales and support facilities in Australia, North and South America, Europe, Asia, the middle East and Africa. DFC's staff and agents are readily available and committed to solving your problems and providing you with the best possible service wherever your business is located.

Insamcor valves have been proven in a wide array of industries and applications. Examples include:

Mining

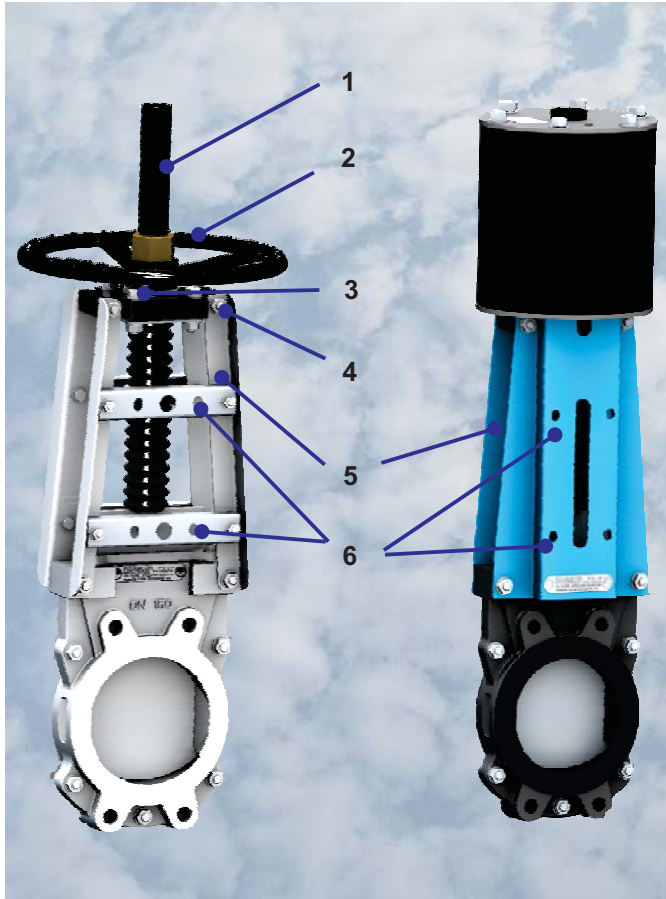
- Grinding
- Size separation - hydro cyclones
- Flotation
- Thickening

Coal Fired Power Plants

- Lime slurry
- Fly ash slurry
- Scrubber slurry

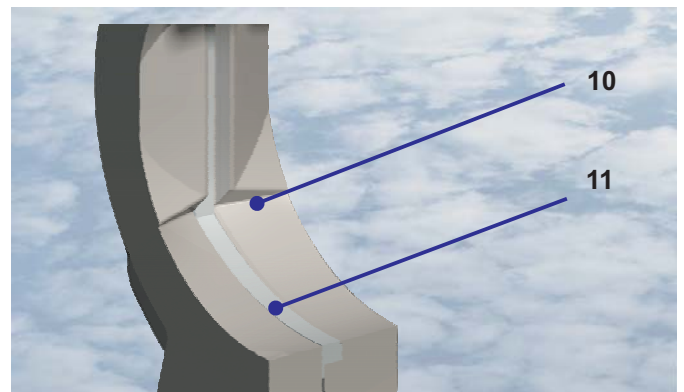
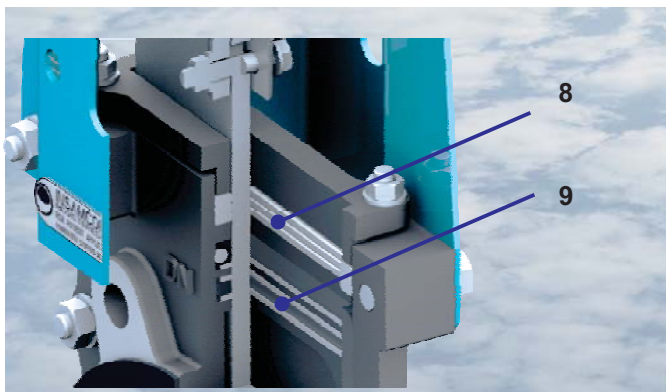
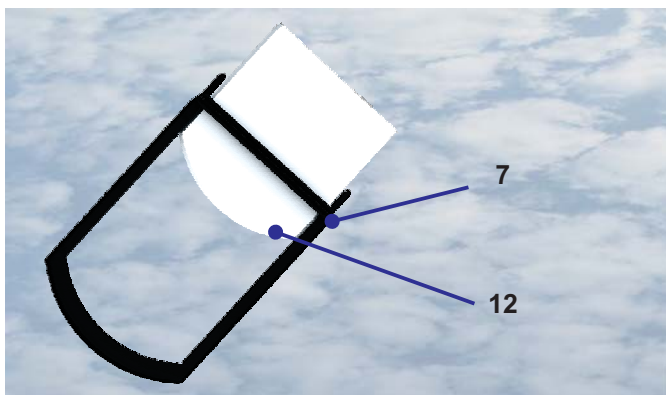
Other

- Coal washing
- Steel
- Chemical
- Pulp & paper



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. **Moulded seal** - mechanically retained resilient moulded seal guides the gate throughout its travel and ensures bi-directional leak proof sealing
8. **Stuffing Box** - external seal arrangement to atmosphere by means of an adjustable external stuffing box design and gland packing
9. **Scrapers** - during operation PTFE scrapers keep the blade free from any foreign matter over the whole width of the gate
10. **Flushout corners** - self cleaning flushout corners prevent deposit build up in sealing area
11. **Seat pockets** - full bore, unrestricted flow area. No valve seat pocket or cavity
12. **Gate** - polished stainless steel with bevelled edge at the base to cut through dense media





**DUCTILE IRON - INSAMCOR® LW
OPEN & CLOSED**



**STAINLESS STEEL - INSAMCOR® LW
OPEN & CLOSED**

Sealing Principle

In the fully open position the valve is sealed to atmosphere through a combination adjustable stuffing box acting as the primary seal and a secondary transverse seal. The purpose of the secondary seal is to act as a scraper and extends the life of the primary seal.

As the valve closes the gate remains in contact with the mechanically retained moulded body seal throughout the stroke and is guided by the valve body. When the gate approaches the fully closed position, the angle between

the blade and the flush-out corners create turbulent flow of the media over the seating area. The turbulent flow removes all the sediment from the seat which allows the gate to fully close on the seating area free from any slurry build-up.

When the valve opens the gate again remains in contact with the body seal and is wiped clean by scraper blades that ensure trouble free operation during the next closing cycle.

Specifications

| | LW - DUCTILE IRON | LW - STAINLESS STEEL |
|------------------------|--|--|
| Size Range | 2" - 24" (DN50 - DN600) | 2" - 24" (DN50-DN600) |
| Pressure | 150psi CWP (10 bar) | 150psi CWP (10 bar) |
| Body | FBE coated Ductile Iron, or etch primed Ductile Iron with SRL faces & bore | CF8M-Stainless Steel |
| Seals | Molded Nitrile Body Seal | Machined PTFE |
| Yoke | Fusion bonded epoxy | 304L Stainless Steel |
| Gate | 304L Stainless Steel | 316L Stainless Steel |
| Flange Drilling | ANSI B16.5 Class 150 AS 2129 Table D & E PN 10 & PN 16 | ANSI B16.5 Class 150 AS 2129 Table D & E PN 10 & PN 16 |

Optional

Pressure Rating

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

Gate

Different gate materials available on request

Actuators

Manual, manual bevel gear, pneumatic, electromechanical, hydraulic and lever

Deflector Cones

Replaceable Ni-hard wear cone with gasket Polyurethane deflector cones

Seals

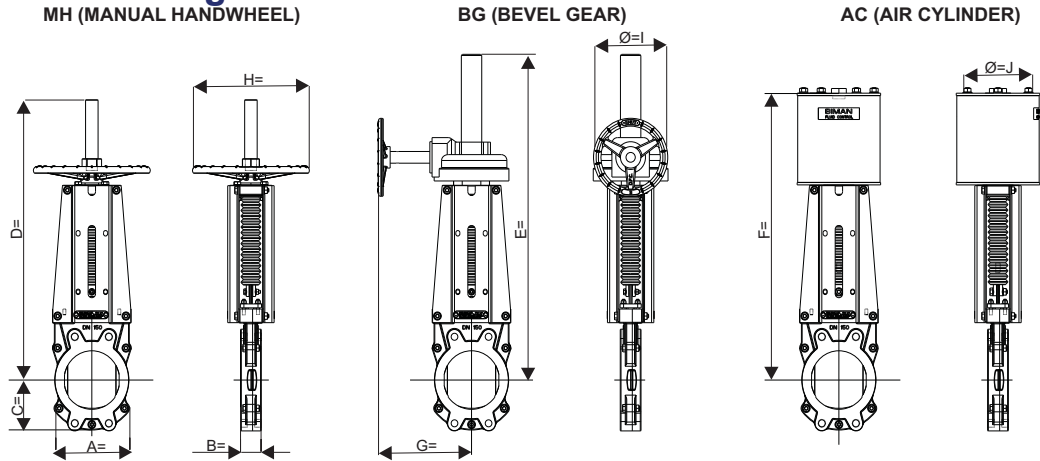
Various elastomers available

Ports

Vee & pentagonal ports for flow control



Dimensions and Weights of the Ductile Iron LW



Dimensions (mm) and Weights (kg)

| Valve Size | A | B-FBE | B-SRL | C | D | E | F | G | H | I | J | Weight MH | Weight BG | Weight AC |
|------------|-----|-------|-------|-----|------|------|------|-----|-----|-----|-----|-----------|-----------|-----------|
| 50 | 132 | 43 | 49 | 65 | 378 | 500 | 380 | 303 | 200 | 200 | 100 | 12 | 23 | 17 |
| 65 | 146 | 46 | 52 | 65 | 428 | 500 | 380 | 303 | 200 | 200 | 100 | 16 | 26 | 21 |
| 80 | 126 | 46 | 52 | 89 | 480 | 500 | 484 | 303 | 250 | 200 | 100 | 15 | 24 | 24 |
| 100 | 142 | 52 | 58 | 98 | 548 | 568 | 552 | 303 | 250 | 200 | 100 | 20 | 29 | 27 |
| 125 | 200 | 56 | 62 | 118 | 448 | 568 | 552 | 303 | 250 | 200 | 160 | 24 | 33 | 33 |
| 150 | 200 | 56 | 64 | 130 | 713 | 733 | 715 | 328 | 315 | 300 | 160 | 29 | 34 | 40 |
| 200 | 303 | 60 | 68 | 155 | 884 | 1004 | 874 | 328 | 400 | 300 | 200 | 62 | 65 | 83 |
| 250 | 322 | 68 | 76 | 161 | 1019 | 1039 | 1017 | 328 | 400 | 300 | 250 | 83 | 85 | 118 |
| 300 | 374 | 78 | 86 | 187 | 1234 | 1254 | 1185 | 328 | 500 | 400 | 300 | 102 | 101 | 145 |
| 350 | 444 | 78 | 86 | 222 | 1388 | 1400 | 1354 | 328 | 500 | 400 | 300 | 131 | 134 | 194 |
| 400 | 504 | 102 | 110 | 251 | 1508 | 1528 | 1474 | 328 | 500 | 400 | 400 | 182 | 182 | 263 |
| 450 | 568 | 114 | 124 | 284 | 1709 | 1739 | 1691 | 351 | 720 | 600 | 450 | 208 | 222 | 336 |
| 500 | 622 | 127 | 137 | 311 | 1871 | 1901 | 1853 | 351 | 720 | 600 | 450 | 268 | 282 | 396 |
| 600 | 712 | 154 | 164 | 355 | 2104 | 2134 | 2136 | 351 | 720 | 600 | 550 | 380 | 395 | 517 |

Dimensions (inches) and Weights (lbs)

| Valve Size | A | B-FBE | B-SRL | C | D | E | F | G | H | I | J | Weight MH | Weight BG | Weight AC |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|-----------|-----------|
| 2" | 5.20 | 1.69 | 1.93 | 2.59 | 14.88 | 19.69 | 14.98 | 11.93 | 7.87 | 7.87 | 3.94 | 26 | 50 | 37 |
| 2.5" | 5.75 | 1.81 | 2.05 | 2.59 | 16.86 | 19.69 | 14.98 | 11.93 | 7.87 | 7.87 | 3.94 | 35 | 57 | 46 |
| 3" | 4.96 | 1.81 | 2.05 | 3.50 | 18.90 | 19.69 | 19.06 | 11.93 | 9.84 | 7.87 | 3.94 | 33 | 52 | 52 |
| 4" | 5.59 | 2.05 | 2.28 | 3.86 | 21.57 | 22.36 | 21.73 | 11.93 | 9.84 | 7.87 | 3.94 | 44 | 63 | 59 |
| 5" | 7.87 | 2.20 | 2.44 | 4.65 | 17.64 | 22.36 | 21.73 | 11.93 | 9.84 | 7.87 | 6.30 | 52 | 72 | 72 |
| 6" | 7.87 | 2.20 | 2.52 | 5.12 | 28.07 | 28.86 | 28.15 | 12.91 | 12.40 | 11.81 | 6.30 | 63 | 75 | 89 |
| 8" | 11.93 | 2.36 | 2.68 | 6.10 | 34.80 | 39.53 | 34.41 | 12.91 | 15.75 | 11.81 | 7.87 | 136 | 143 | 183 |
| 10" | 12.68 | 2.68 | 2.99 | 6.34 | 40.12 | 40.91 | 40.04 | 12.91 | 15.75 | 11.81 | 9.84 | 183 | 187 | 260 |
| 12" | 14.72 | 3.07 | 3.39 | 7.36 | 48.58 | 49.37 | 46.65 | 12.91 | 19.69 | 15.75 | 11.81 | 224 | 222 | 319 |
| 14" | 17.48 | 3.07 | 3.39 | 8.74 | 54.65 | 55.12 | 53.31 | 12.91 | 19.69 | 15.75 | 11.81 | 288 | 295 | 427 |
| 16" | 19.84 | 4.02 | 4.33 | 9.88 | 59.37 | 60.16 | 58.03 | 12.91 | 19.69 | 15.75 | 15.75 | 401 | 401 | 579 |
| 18" | 22.36 | 4.49 | 4.88 | 11.18 | 67.28 | 68.46 | 66.57 | 13.82 | 28.35 | 23.62 | 17.72 | 458 | 489 | 740 |
| 20" | 24.49 | 5.00 | 5.39 | 12.24 | 73.66 | 74.84 | 72.95 | 13.82 | 28.35 | 23.62 | 17.72 | 590 | 621 | 874 |
| 24" | 28.03 | 6.06 | 6.46 | 13.98 | 82.83 | 84.02 | 84.09 | 13.82 | 28.35 | 23.62 | 21.65 | 837 | 870 | 1139 |

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 |

Other World Class Performance Slurry 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



Insamcor® MH and MLB slurry valves

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

- Combination primary transverse seal and secondary stuffing box seal for severe applications
- Mechanically retained moulded seat with no seat pockets
- MH sizes 2" to 24" (DN50 to DN600)
- MLB sizes 28" to 48" (DN700 to DN1200)



Insamcor® LW semi-lugged slurry valves

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

- Stuffing box seal to atmosphere
- Mechanically retained moulded seat 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® PB ported blade slurry valves

Bi-directional ported blade valve suitable for slurries containing large particles.

- Two heavy duty elastomer sleeves are compressed against a ported blade through its entire travel
- The ported blade allows granular slurries of size similar to the blade thickness to be drawn through the seals and flushed out of the valve
- Sizes 2" to 24" (DN50 to DN600)



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