



**KNIFE GATE VALVES**

# APPLICATIONS

JMC® Knife gate valves have an all cast stainless steel body, gate, packing gland and yoke to prevent corrosion problems that occur with cast iron or steel valves lined with stainless steel. They are designed for a wide range of industrial applications such as:

## Pulp and Paper

- Raw material lines
- Bleaching
- Chlorinated stock transfer
- High density stock cleaner
- Paper machine stock feed
- Slurries and sludge fluids

## Waste Water Treatment

- Oily sludge slurry pump isolation
- Sludge lines and disposal
- Filtration process
- Chlorine contact discharge
- Chemical batching tanks
- Sedimentation pools

## Power Generation

- Coal slurry pump isolation
- Bottom ash de-watering circuit
- Limestone slurry pump isolation
- pH balance flow control
- Sluice lines
- Boiler washdown circuit

## Coal Application

- Coal slurry transfer lines
- Coal slurry medium circuit isolation
- Fly ash slurry pump isolation

## Beverages

- Wine crush tank outlet
- Bottle washing machine outlet
- Brewery effluent discharge

## Food Processing - Agriculture

- All vegetables
- Meat waste in water
- Soy bean oil transfer lines
- Animal feedstuffs
- Pork and Poultry processing
- Potato or other mash

## Chemical Industries

- Acids with paste additives
- Fine feed and transfer lines
- Chemical slurries
- Paint mixtures
- Filter substances
- Hot pit cooling water
- Crystals in liquid
- Water glass

## Petrochemical Industries

- Crude and fuel oil
- Catalytic sludge
- Wax
- Crude tar with cake
- Slurries

## Cement Industries

- Cement slurry lines
- Dry cement pneumatic conveying
- Cement slurry routing
- Bin control

## Other Applications

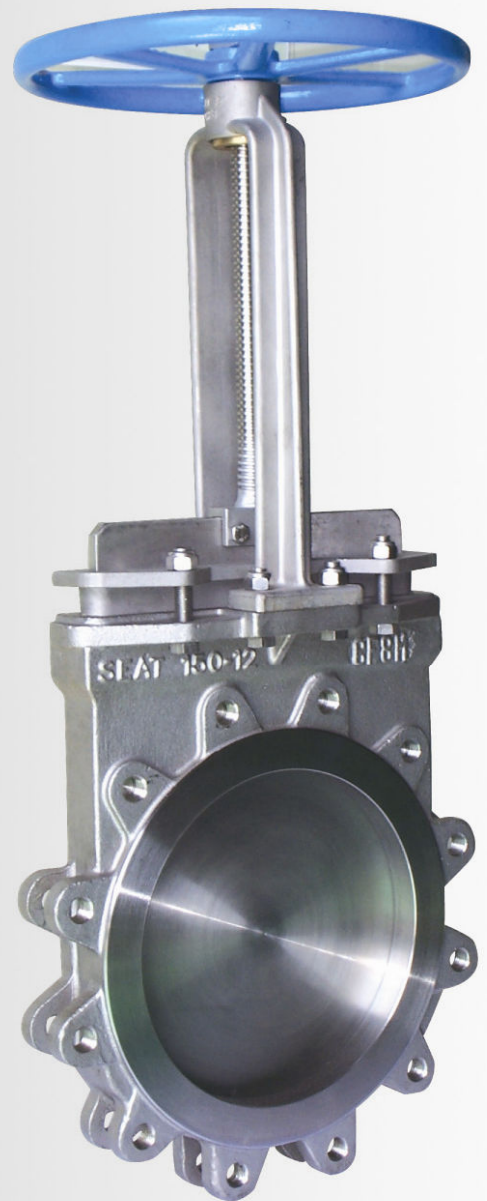
- Hydro power
- Textile Industries
- Building Industries
- Sand Industries
- Steel Industries



# DESIGN FEATURES

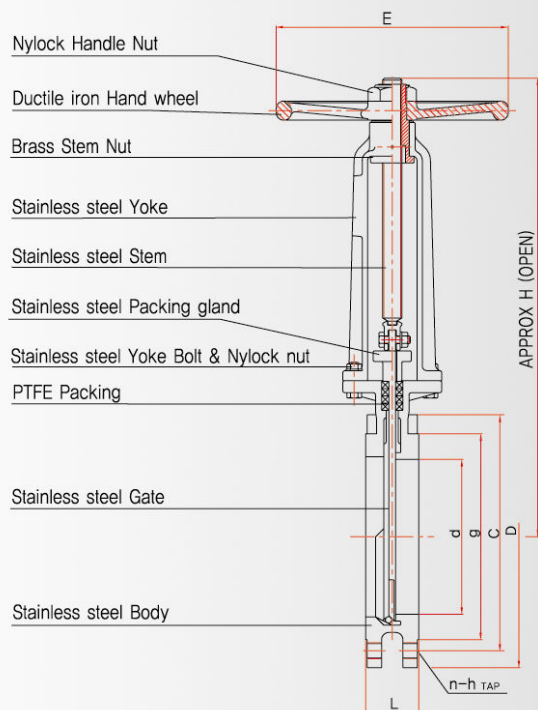
Cast stainless steel Body, Gate, Packing gland and Yoke  
Bonnetless, Rising stem, Non-rising handwheel, Outside screw- and-yoke

- Available in sizes from 2" to 24" diameter
- Meet TAPPI standard TIS 405-8 and MSS SP-81 for stainless steel bonnetless, flanged, wafer knife gate valves.
- Flanges are drilled and tapped to ANSI B16.5, BS 4504, JIS or DIN.
- 150 PSI maximum working pressure and 150°F (65 °C) maximum working temperature. Special design should be considered for applications outside of these conditions.
- Non-clogging full port design for smooth flow
- Easy conversion from handwheel to cylinder, bevel gear or electric motor operator with cast yoke.
- Precision machined gate for superior seating capability
- Stainless steel stem for corrosion resistance
- Resilient or PTFE replicable seat available
- O-ring resilient seat available
- Factory installed V-port seat insert available





# VALVE DIMENSIONS AND OPTIONS



## Options/Modifications

SAMJIN JMC offers many options. Knife gate valves can be modified to suit a customer specific requirements. These include, but are not limited to:

- Packing options for pH and temperature requirements
- Stem extension and non-rising stem adapters in carbon and stainless steel
- Stem covers to prevent ingress of foreign matters
- Mechanical or proximity limit switches for position indication
- V-port seat insert for metering and throttling service
- Actuation including chain wheels, gear operators, pneumatic & hydraulic cylinders, electric actuators, etc.

## Design Standards

Face to Face Dimensions	MSS SP-81 / TIS 405-8
End Flanges Dimensions	ANSI B16.5
Test	MSS SP-81 / TIS 405-8
Seat/Shell Test	MSS SP-81 / API 598
Pressure-Temperature rating	ASME B16.34

(unit : inch)

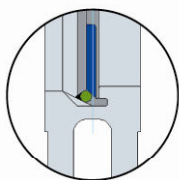
Size	L	d	FLANGE						E	H	H'
			D	C	g	t(min.)	n-h TAP				
2	1.88	2.0	6.00	4.75	3.62	0.50	4	5/8-11	8.00	12.60	14.60
3	2.00	3.0	7.50	6.00	5.00	0.50	4	5/8-11	8.00	14.57	16.57
4	2.00	4.0	9.00	7.50	6.19	0.50	8	5/8-11	8.00	16.54	18.54
6	2.25	6.0	11.00	9.50	8.50	0.63	8	3/4-10	12.00	21.00	23.00
8	2.75	8.0	13.50	11.75	10.62	0.63	8	3/4-10	12.00	23.74	25.74
10	2.75	10.0	16.00	14.25	12.75	0.75	12	7/8-9	16.00	28.35	30.35
12	3.00	12.0	19.00	17.00	15.00	0.75	12	7/8-9	16.00	32.24	34.24
14	3.00	13.25	21.00	18.75	16.25	0.81	12	1.00-8	16.00	36.42	38.42
16	3.50	15.25	23.50	21.25	18.50	0.88	16	1.00-8	18.00	40.16	42.16
18	3.50	17.25	25.00	22.75	21.00	0.94	16	1½-7	18.00	45.67	47.67
20	4.50	19.25	27.50	25.00	23.00	1.00	20	1½-7	20.00	53.15	55.15
24	4.50	23.25	32.00	29.50	27.25	1.00	20	1¼-7	20.00	61.22	63.22

(unit : mm)

Size	L	d	FLANGE						E	H	H'
			D	C	g	t(min.)	n-h TAP				
50	47,8	51	152	121	92	12,7	4	5/8-11	200	320	350
80	50,8	76	191	152	127	12,7	4	5/8-11	200	370	420
100	50,8	102	229	191	157	12,7	8	5/8-11	200	420	470
150	57,2	152	279	241	216	16,0	8	3/4-10	300	530	580
200	69,8	203	343	298	270	16,0	8	3/4-10	300	600	650
250	69,8	254	406	362	324	19,1	12	7/8-9	400	720	770
300	76,2	305	483	432	381	19,1	12	7/8-9	400	820	870
350	76,2	337	533	476	413	20,6	12	1,00-8	400	925	975
400	88,9	387	597	540	470	22,4	16	1,00-8	450	1020	1070
450	88,9	438	635	578	533	23,9	16	1½-7	450	1160	1210
500	114,0	489	698	635	584	25,4	20	1½-7	500	1350	1400
600	114,0	591	813	749	692	25,4	20	1½-7	500	1555	1605

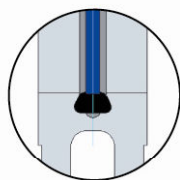
Note : H' for rubber seated type

# SEAT DESIGN AND STANDARD MATERIAL SPECIFICATIONS



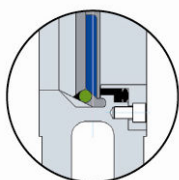
## Metal to Metal Type (MMT)

- Integral stainless seat
- Uni-directional flow
- Fluid pressure assists sealing capacity
- Full flow port area



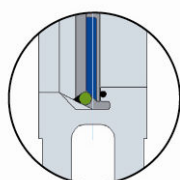
## Metal to Rubber Type (MRT)

- Bi-directional bubble-tight shut off
- Positively retained seat
- No grooves or pockets to collect product



## Metal to PTFE Type (MPT)

- O-ring energized PTFE seat ring
- Uni-directional flow
- Easily replaceable seat
- Other materials available such as Polyethylene or Nylon



## Metal to O-ring Type (MOT)

- Resilient O-ring in omega-shaped groove
- Uni-directional flow
- Bubble-tight shut off
- Lower torque

Note : Uni-directional valves must be installed with seat downstream.

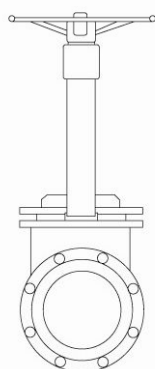
## Standard Material Specifications

NO	MATERIALS OF CONSTRUCTION	MODEL	
	Part Name	MK & RK SERIES	MK & RK SERIES
1	Body	ASTM A351 Gr. CF8(304) St/Stl	CF8M (316) St/Stl
2	Disc/Gate)	ASTM A240 TP 304 St/Stl	316 St/Stl
3	Packing	PTFE Impregnated Syntax Yarn (Non-asbestos)	
4	Packing Gland	ASTM A351 Gr. CF8 (304) St/Stl	CF8M (316) St/Stl
5	Gland Bolt and Nut	ASTM A193 Gr. B8 / ASTM A194 Gr. 8 (Nyloc)	
6	Stem	ASTM A479 TP 304 St/Stl	
7	Disc Bolt and Nut	ASTM A193 Gr. B8 / ASTM A194 Gr. 8 (Nyloc)	
8	Stem Nut	Brass or Bronze	
9	Yoke	ASTM A351 Gr. CF8 (304) St/Stl	
10	Yoke Bolt and Nut	ASTM A193 Gr. B8 / ASTM A194 Gr. 8 (Nyloc)	
11	Thrust Bearing Washer	Brass (Sizes 300mm and Smaller)	
12	Hand Wheel	Cast Ductile Iron	
13	Wheel Nut	AISI 1020 with Cr. PLATE (Nyloc)	
14	Set Screw	N/A	
15	Grease Nipple	Assembly	
16	Name Plate	ASTM A240 TP 304 St/Stl	
17	Rivet	Aluminium	
18	Body Seat* (MRT)	Buna - N	
19	Stopper and Nut (MRT)	ASTM A479 Ty. 304 / ASTM A194 Gr. 8 (Nyloc)	
20	Body Seat Ring (MPT)	Reinforced PTFE	
21	V-Port Body Seat Ring (MVT)	ASTM A276 TP 304 St/Stl	ASTM A276 TP 316 St/Stl
22	O-Ring* (MOT)	Hycar Rubber	
23	Seat Retainer (MPT)	ASTM A351 Gr. CF8 (304) St/Stl or EQ,	CF8M (316) St/Stl or EQ,
24	Wrench Bolt (MPT)	ASTM A193 Gr. B8	
25	Bearing Housing	ASTM A351 Gr. CF8 (304) St/Stl	CF8M (316) St/Stl
26	Housing Bolt and Nut	ASTM A193 Gr. B8 / ASTM A194 Gr. 8 (Nyloc) B8M	
27	Thrust Ball Bearing	Assembly	
28	Sleeve Gland	ASTM A351 Gr. CF8 (304) St/Stl	

\* Other materials are available : FPM(Viton), EPDM, CR(Neoprene), NBR, etc.

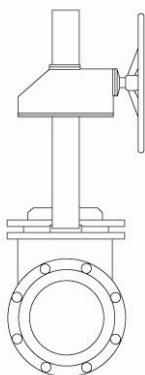
# OPERATORS AND SEAT MATERIAL PROPERTIES

## Valve Operators



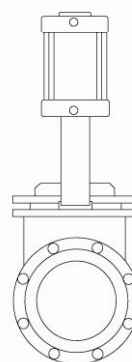
### Handwheel

Valves are equipped with handwheels as basic for manual operation.



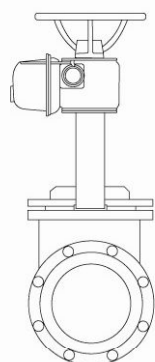
### Bevel Gear

Bevel gear operation is designed to minimize the effort to operate larger sized manual-operated valves which is out or reach.



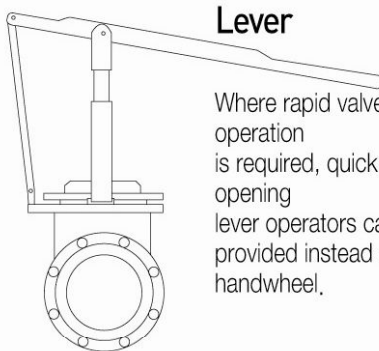
### Cylinder

valve can be available with air or hydraulic cylinder operator if remote operation is required



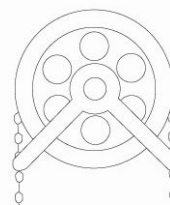
### Electric & Air Motor

Valves can be furnished with electric, pneumatic or hydraulic motor drives for remote, automatic or frequent operation.



### Lever

Where rapid valve operation is required, quick opening lever operators can be provided instead of handwheel.



### Chain Wheel

Chain wheel is an efficient means of operating the valves overhead and out-of-reach

## Guide to Chemical Resistance for Resilient Seats

COMMON NAME	ASTM CODE	MAX. TEMP.	ABRA-SION	AGING	SUN LIGHT RESIS-TANCE	WATER RESIS-TANCE	OIL RESIS-TANCE	SOLVENT	STRONG ACID	WEAK ACID	STRONG ALKALI	WEAK ALKALI
BUNA-N	NBR	200°F	◎	◎	○	◎	◎	△	×	○	○	◎
NEOPRENE	CR	200°F	◎	◎	◎	◎	◎	×	×	○	○	◎
NATURAL RUBBER	NR	150°F	◎	○	○	◎	×	×	×	○	○	◎
EPT.	EPDM(EPT)	250°F	○	◎	◎	◎	×	×	○	◎	◎	◎
SILICON	Si	300°F	○	◎	◎	○	×~○	△	×	○	○	◎
VITON	FPM	300°F	○	◎	◎	◎	◎	○	○	◎	◎	◎
PTFE	D-1457	500°F	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

Note : ◎ excellent, ○ good, △ fair, × poor



# VALVE FIGURE NUMBER - PART SELECTION CODES

<b>KG</b>	<b>-</b>	<b>10</b>	<b>A</b>	<b>-</b>	<b>2</b>	<b>A</b>	<b>-</b>	<b>H</b>
1	-	2	3	-	4	5	-	6

## 1 - Valve Type

Knife gate valve	KG
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## 2 - Size

2"	02
3"	03
4"	04
6"	06
8"	08
10"	10
12"	12
14"	14
16"	16
18"	18
20"	20
24"	24

## 3 - Flanges

ANSI B16.5	A
BS 4504	B
DIN 2501	D
AS 2129 Table D	E
AS 2129 Table E	F
JIS B2219	J
Other	X

## 4 - Valve Material

A351-CF8 (304)	1
A351-CF8M (316)	2
A351-CF3 (304L)	3
A351-CF3M (316L)	4
A351-CG8M (317)	5
Other	0

## 5 - Seat Design

Integral Metal Seat	A
Resilient Seat	B
PTFE Seat	C
V-port	D
Other	X

## 6 - Actuation

Handwheel	H
Lever (max. 8")	L
Gear Operator	G
Electric Operator	E
Pneumatic Cylinder	P
Hydraulic Cylinder	Y
Other	X

## GENERAL TERMS OF SALE

**GENERAL.** On the terms and subject to the conditions set forth, Seller agrees to sell to Buyer and Buyer agrees to buy from seller, the products or services specified in the sales contract agreement which includes Seller's offer.

**PRICE AND PAYMENT.** All sales are subject to approval of Seller's credit department. If Buyer fails to make a payment when due, Seller may withhold all subsequent deliveries until full payment is made and require such security as Seller deems appropriate to secure future payments. Full risk of loss shall pass to the Buyer upon delivery to FOB point or destination port in case of CIF, however, Seller retains title, for security purposes only, to all products until paid for in full in cash. Unless other terms are specified hereof, payment is due in U.S. dollars, thirty (30) days after invoice date or by Letter of Credit. Amounts not paid by Buyer on or before due date shall bear interest at the lesser rate of eighteen percent (18.0%) per annum or the maximum rate allowed by law from the due until paid. If delivery is delayed by or at the request of Buyer, the date of readiness for delivery shall be deemed date of delivery for invoice purposes and Seller may impose a storage charge.

**SHIPMENT.** Shipment dates offered are estimates and represent the date materials may be available. Shipment dates offered commence only after receipt of Buyer's Purchase Order, clarification of required technical information, resolution of engineering and/or commercial issues of customer's written drawings when required. Any product offered from stock is subject to prior sale.

**WARRANTY.** All JMC® Ball Valves are guaranteed against defects in workmanship for a period of twelve (12) months after being placed in service, but not exceeding eighteen (18) months after shipment, when products are properly installed and used within the service and pressure range for which they were manufactured. This guarantee is limited to replacement free of charge any parts found to be defective in material or workmanship. This liability does not extend to cost of labor, freight or any consequential charges. The unauthorized use of third party components and workmanship in JMC® Ball Valve products voids this warranty.

**CANCELLATION.** No order may be canceled by the Buyer except upon written notice to Seller and upon payment to Seller of all costs incurred by it arising out of, or in connection with, the order. Seller shall have the right to cancel any order or to refuse to ship or to shipment in the event

Buyer fails to submit payments when due or perform any other obligations of Buyer. Export of goods covered hereby is subject to Korean Government control. In the event a validated Export License is denied by the Korean Government, Buyer's order(s) will be immediately canceled and Buyer will be liable for the order value or actual costs incurred, whichever the greater.

**RETURN OF GOODS.** No product shall be returned to seller without written authorization and shipping instructions having been obtained from Seller. Products authorized for return are to be shipped freight prepaid to the FOB manufacture point and are subject to a restocking charge.

**LIMITATION OF LIABILITY.** The liability of Seller under this agreement or with respect to any products supplied or services performed pursuant to this agreement, whether in contract, in tort, in strict liability or otherwise, shall not exceed the purchase price paid by Buyer with respect thereto. In no event will Seller be liable in contract, in tort, in strict liability or otherwise for any special, indirect, incidental or consequential damages, including, but not limited to, loss of anticipated profits or revenue, loss of use, non-operation or increased expense of operation of equipment, cost of capital, or claims of customers of Buyer for failure or delay in achieving anticipated profits or products.

## Notice

- Data listed in this catalogue, including pressure / temperature rating, material specifications, and other performance related data are intended to provide general information, and guidelines about SAMJIN JMC products.
- For any specific application, users are kindly requested to contact SAMJIN JMC for technical advice. Failure to follow this request may result in property damage and / or personal injury, for which we shall not be liable.
- While this catalogue has been compiled with the utmost care, we assume no responsibility for errors, impropriety or inadequacy relevant to any information provided in this catalogue. Any information in this catalogue is subject to change without prior notice.



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