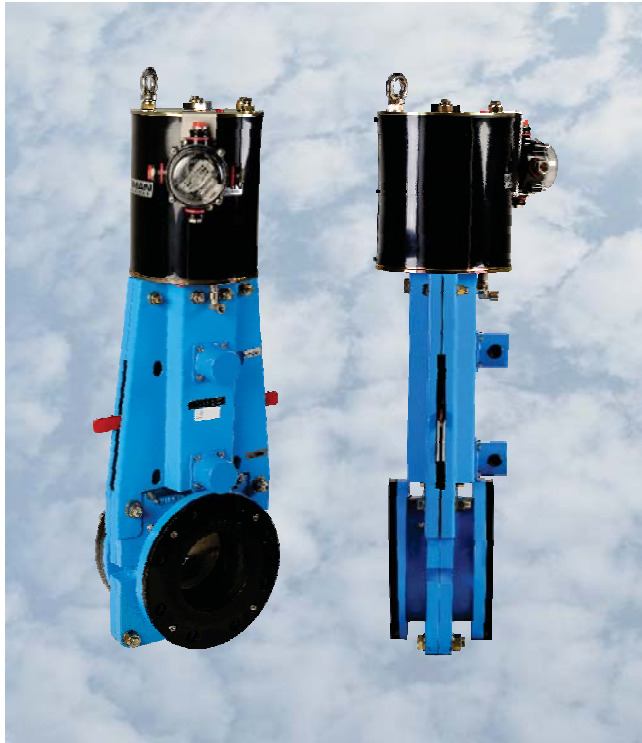


World Class Performance  
in Abrasive, Scaling and  
Corrosive Slurries, Sludge,  
Liquids, and Bulk Solids

**RF VALVES® SKG F & SKG W**  
*Flanged and Wafer Slurry Knife Gate Valves*



**RF VALVES® SKG F (Flanged)**



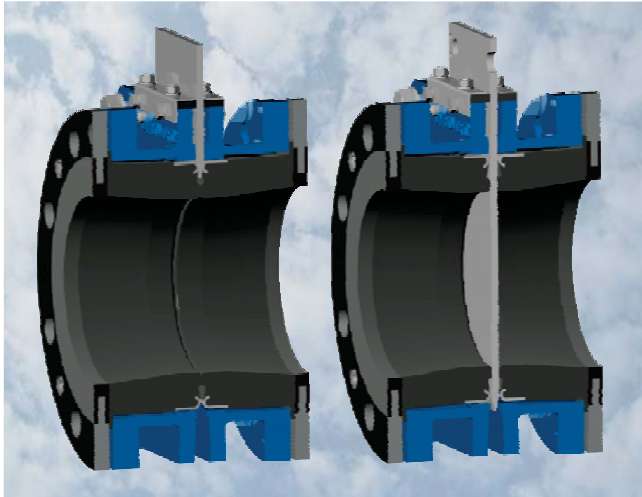
**RF VALVES® SKG W (Wafer)**

RF Valves' 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.

RF VALVES'® SKG range of wafer and flanged knife gate valves features a packingless design, replaceable elastomer sleeves and a fully enclosed yoke for severe slurry applications.

### 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 metal parts in contact with the flowing media when the valve is in the fully open position
- No seat cavity for unwanted solids to build-up and prevent full gate closure
- Field replaceable heavy duty elastomer sleeves
- Suitable for wet or dry service
- A yoke design which consists of two yoke plates that fully encloses the gate, spindle and clevis. The yoke protects these components from slurry splatter that can harden and affect the operation of the valve. The yoke allows for easy mounting of proximity or limit switches and accommodates all proximity switch sizes. Proximity switches are protected by robust covers to prevent damage during transport and operation
- Standard bellows provide additional protection for the spindle against scoring from abrasive particles
- Standard open and closed indicators
- Standard provision for lockouts in the open and closed position
- The top bracket is designed to accept manual, pneumatic or electric actuation for easy conversion in the field



**SKG F in Open and Closed Position**

## Sealing Principle

When the valve is fully opened the two identical elastomer sleeves push against each other to form a cavity free, bubble tight seal to contain the line pressure.

When the gate moves from the open to closed position, the gate separates the facing sleeves until it completely closes and seals the bore from both directions.

The RF SKG F valve utilizes a J-ring design with stiffener

## Specifications

### Size Range

3" – 24" (DN80 – 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

316L stainless steel

### Retainer/Counter flanges

Natural rubber encapsulated mild steel

### Flange Drilling

ANSI B16.5 Class 150

AS 2129 Table D & E

PN10 & PN16



**SKG W in Open and Closed Position**

lugs to maintain the rounded shape of the sleeves during opening and closing.

The round shape of the RF SKG W 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, which allows the rubber displaced by the closing gate to move axially.

## Optional

### Pressure rating

Optional gate materials can be used to increase the pressure rating of the RF SKG F and RF SKG W to 200psi (14bar) depending on the valve size and application – please consult the factory

### Sleeves

EPDM, FKM/FPM or NBR

### Gate

Different gate materials available on request

### Actuators

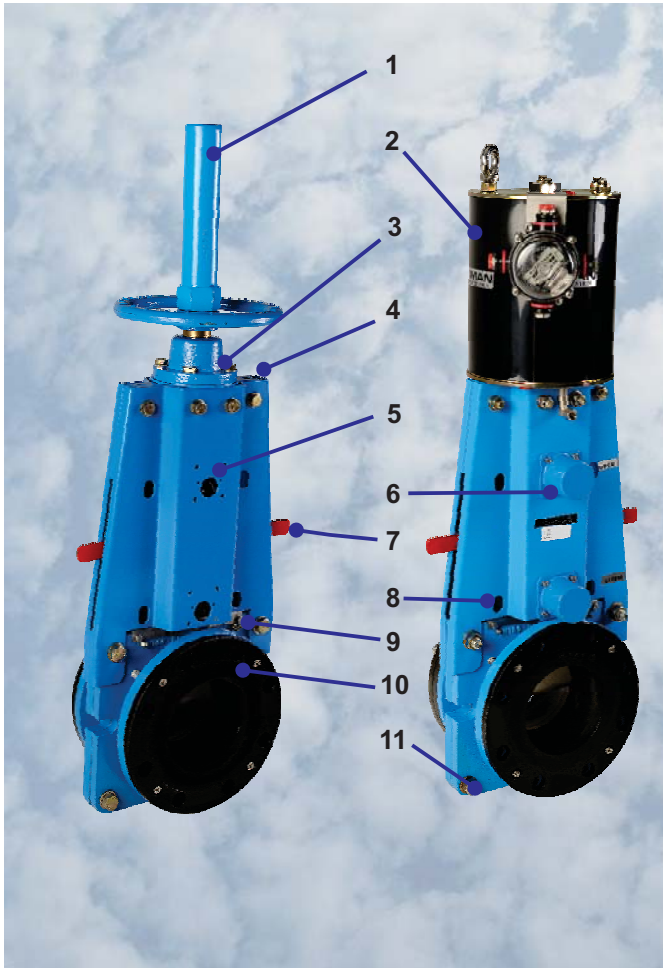
Manual, manual bevel gear, pneumatic, electro-mechanical and hydraulic

### Retainer flanges

Standard on the SKG F for 10" (DN250) and larger sizes

### Purge Ports

Removable bottom cover with flush-out connections



## Features

1. **Spindle cover** to protect the spindle against slurry splatter
2. **Actuators** – pneumatic cylinder, electric, hydraulic cylinder, manual bevel gear and hand wheel with rising stem
3. **Thrust housing assembly** - generous oversizing of the thread length of the gunmetal (LG2) thrust nut ensures lowest possible opening and closing torques. Sizes 12" (DN300) and larger comes standard with thrust bearings and smaller sizes are fitted with Vesconite thrust pads
4. **Top bracket** - designed to accept manual, pneumatic or electric actuation without any modification
5. **Yoke** - design consists of two yoke plates that fully encloses the gate, spindle and clevis
6. **Steel proximity switch covers** to prevent damage during transport and operation
7. **Indicator** - open and closed indicators (standard)
8. **Lockout** - provision for lockouts in the open and closed position (standard on all sizes)
9. **Wiper Blade** - retains internal lubricants
10. **Retainer flange** - standard on the SKG F for sizes 10" (DN250) and larger
11. **Washout Chamber** - closure plate with flush-out connection (optional)

## RF VALVES® SKG F Specification

The heavy duty slurry knife gate valve shall be a flanged, bi-directional valve with a packingless design. The full port bore shall be formed by two heavy duty elastomer sleeves, one on either side of the gate. Each sleeve shall have a J-ring design stiffener to maintain the shape of the sleeve. Upon closing, the gate will progressively separate the sleeves and once fully closed, will form a bubble tight seal with the upstream sleeve. The yoke shall consist of two yoke plates that fully enclose the gate, spindle and clevis to protect these components from slurry splatter. The yoke design will allow for easy mounting of proximity or limit switches. Steel proximity switch covers must be provided to prevent damage during transport and operation. Provision must be made for lockouts in the open and closed position with open and closed indicators. The top bracket must accept manual, pneumatic or electric actuation for easy conversion in the field.

## RF VALVES® SKG W Specification

The heavy duty slurry knife gate valve shall be a wafer style, bi-directional valve with a packingless design. The full port bore shall be formed by two heavy duty elastomer sleeves, one on either side of the gate. The roundness of the sleeve shall be maintained by an embedded stiffener ring near the sealing face and a steel disc on the mating face. Upon closing, the gate will progressively separate the sleeves and once fully closed, will form a bubble tight seal with the upstream sleeve. The yoke shall consist of two yoke plates that fully enclose the gate, spindle and clevis to protect these components from slurry splatter. The yoke design will allow for easy mounting of proximity or limit switches. Steel proximity switch covers must be provided to prevent damage during transport and operation. Provision must be made for lockouts in the open and closed position with open and closed indicators. The top bracket must accept manual, pneumatic or electric actuation for easy conversion in the field.

# World Class Performance

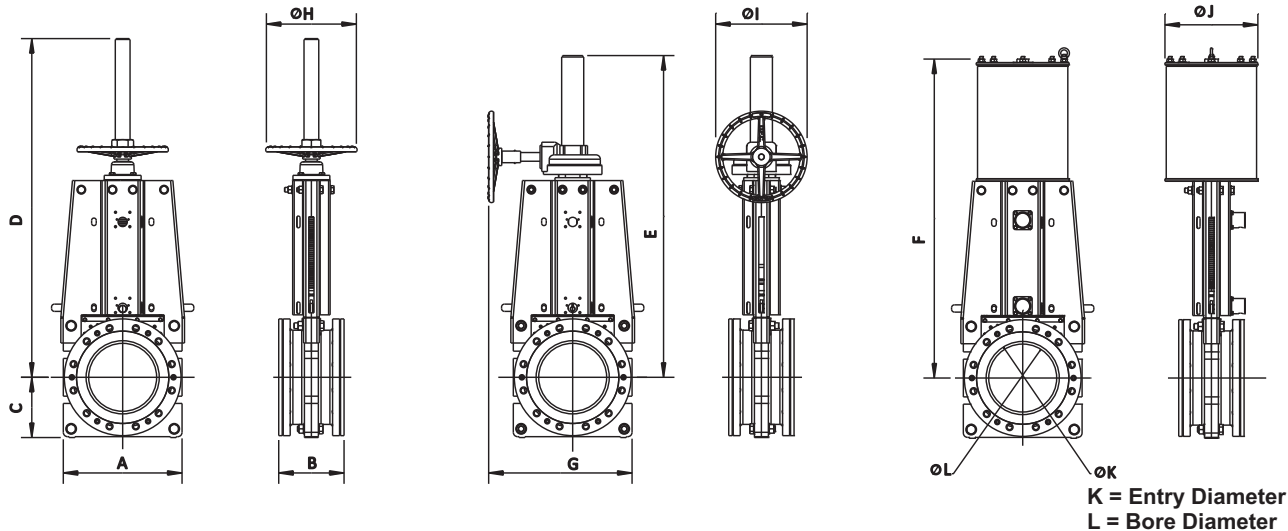


## Dimensions and Weights of the SKG F (Flanged)

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	K	L	Weight MH	Weight BG	Weight AC
80	219	175	100	643	-	551	-	200	-	160	65	71	25	-	40
100	256	175	116	711	-	645	-	200	-	225	90	98	30	-	45
150	307	177	140	885	416	796	415	250	250	225	138	149	53	72	60
200	359	183	176	957	468	902	441	250	250	283	182	200	90	106	97
250	409	225	208	1167	1108	1087	466	315	315	320	234	252	95	108	148
300	481	257	244	1352	1251	1277	530	400	315	400	272	292	127	150	210
350	534	257	267	1496	1425	1372	610	400	315	400	305	328	182	205	236
400	595	280	280	-	1619	1530	690	630	400	485	352	378	-	295	328
450	639	316	320	-	1744	1695	712	-	400	485	392	430	-	400	430
500	695	364	348	-	2240	1840	801	-	500	485	438	473	-	480	565
600	815	378	408	-	-	2180	-	-	-	485	540	590	-	-	652

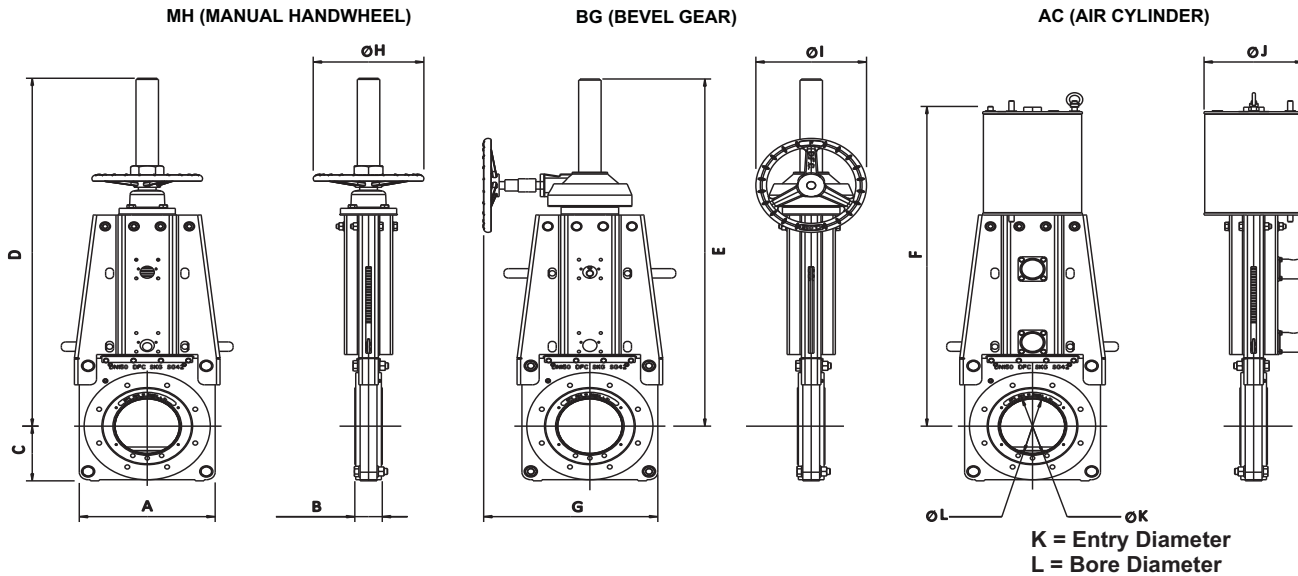
Dimensions (inches) and Weights (lbs)

Valve Size	A	B	C	D	E	F	G	H	I	J	K	L	Weight MH	Weight BG	Weight AC
3	8.62	6.89	3.94	25.31	-	21.69	-	7.87	-	6.30	2.56	2.80	55	-	88
4	10.08	6.89	4.57	27.99	-	25.39	-	7.87	-	8.86	3.54	3.86	66	-	99
6	12.09	6.97	5.51	34.84	16.38	31.34	16.34	9.84	9.84	8.86	5.43	5.87	117	159	132
8	14.13	7.20	6.93	37.68	18.43	35.51	17.36	9.84	9.84	11.14	7.17	7.87	198	234	214
10	16.10	8.86	8.19	45.94	43.62	42.80	18.35	12.40	12.40	12.60	9.21	9.92	209	238	326
12	18.94	10.12	9.61	53.23	49.25	50.28	20.87	15.75	12.40	15.75	10.71	11.50	280	331	463
14	21.02	10.12	10.51	58.90	56.10	54.02	24.02	15.75	12.40	15.75	12.01	12.91	401	452	520
16	23.43	11.02	11.02	-	63.74	60.24	27.17	24.80	15.75	19.09	13.86	14.88	-	650	723
18	25.16	12.44	12.60	-	68.66	66.73	28.03	-	15.75	19.09	15.43	16.93	-	882	948
20	27.36	14.33	13.70	-	88.19	72.44	31.54	-	19.69	19.09	17.24	18.62	-	1058	1246
24	32.09	14.88	16.06	-	-	85.83	-	-	-	19.09	21.26	23.23	-	-	1438

Face to face dimensions (B) includes the counter / retainer flanges. Counter / retainer flanges are optional on sizes 8" (DN200) and smaller.



## Dimensions and Weights of the SKG W (Wafer)



Dimensions (mm) and Weights (kg)

Valve Size	A	B1	B2	C	D	E	F	G	H	I	J	K	L	Weight MH	Weight BG	Weight AC
80	219	57	62	100	656	-	564	-	200	-	160	83	78	20	-	35
100	256	57	62	116	741	-	675	-	200	-	225	106	100	24	-	39
150	307	64	70	140	923	454	834	415	250	250	225	149	146	51	70	58
200	359	76	83	176	997	508	942	441	250	250	283	207	200	82	98	89
250	409	76	83	208	1198	1139	1118	466	315	315	320	251	248	68	90	130
300	481	83	90	244	1377	1276	1302	530	400	315	400	301	299	103	126	186
350	534	83	90	267	1544	1473	1420	610	400	315	400	348	346	146	169	200
400	595	96	103	280	-	1709	1620	690	630	400	485	391	383	-	260	292
450	639	96	103	320	-	1804	1755	712	-	400	485	442	336	-	350	380
500	695	121	131	348	-	2310	1910	801	-	500	485	490	486	-	430	515
600	815	121	131	408	-	-	2260	-	-	-	485	595	589	-	-	602

Dimensions (inches) and Weights (lbs)

Valve Size	A	B1	B2	C	D	E	F	G	H	I	J	K	L	Weight MH	Weight BG	Weight AC
3	8.62	2.24	2.44	3.94	25.83	-	22.20	-	7.87	-	6.30	3.27	3.07	44	-	77
4	10.08	2.24	2.44	4.57	29.17	-	26.57	-	7.87	-	8.86	4.17	3.94	53	-	86
6	12.09	2.52	2.76	5.51	36.34	17.87	32.83	16.34	9.84	9.84	8.86	5.87	5.75	112	154	128
8	14.13	2.99	3.27	6.93	39.25	20.00	37.09	17.36	9.84	9.84	11.14	8.15	7.87	180	216	196
10	16.10	2.99	3.27	8.19	47.17	44.84	44.02	18.35	12.40	12.40	12.60	9.88	9.76	150	198	286
12	18.94	3.27	3.54	9.61	54.21	50.24	51.26	20.87	15.75	12.40	15.75	11.85	11.77	227	277	409
14	21.02	3.27	3.54	10.51	60.79	57.99	55.91	24.02	15.75	12.40	15.75	13.70	13.62	321	372	440
16	23.43	3.78	4.06	11.02	-	67.28	63.78	27.17	24.80	15.75	19.09	15.39	15.08	-	572	642
18	25.16	3.78	4.06	12.60	-	71.02	69.09	28.03	-	15.75	19.09	17.40	13.23	-	770	836
20	27.36	4.76	5.16	13.70	-	90.94	75.20	31.54	-	19.69	19.09	19.29	19.13	-	946	1133
24	32.09	4.76	5.16	16.06	-	-	88.98	-	-	-	19.09	23.43	23.19	-	-	1324

B1 = installed face-to-face dimension, B2 = recommended installation allowance

# World Class Performance



## Applications

In-house developed and manufactured sleeves and elastomers, coupled with more than 40 years' experience in polymer and rubber technology, ensure consistent quality and superior abrasion resistance in a wide range of mineral processing applications.

RF VALVES' range of elastomers have a proven track record and were developed to maximize rebound resilience and elastic recovery to improve abrasion resistance and sealing performance in mineral processing slurries.

The RF VALVES SKG was developed and refined in conjunction with mineral processing end-users to solve the problems typically experienced in harsh mining conditions.

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.

RF Valves SKGs are used in a wide array of industries and applications. Examples include:

### Mining Industry

- Grinding
- Size separation – hydro cyclones
- Process water
- Flotation
- Thickening
- Tailings discharge
- Water reclamation

### Coal Fired Power Plants

- Lime slurry
- Fly ash slurry
- Scrubber slurry
- Bottom ash
- FGD systems

### Other industries

- Coal washing
- Steel
- Cement
- Chemical
- Phosphates



Platinum Slurry



IsaMill™ Inlet



Uranium Slurry



Coal Washing Plant

## 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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