

KEYSTONE FIGURE PCS17 KNIFE GATE VALVE

PERIMETER SEAL

Bi-directional zero leakage knife gate valve. The new standard for innovation and performance with its drop-in new generation perimeter seat, that ensures zero leakage in either direction



FEATURES

- Unique drop-in next-generation perimeter cartridge seats ensure zero leakage and quick and cost-effective maintenance resulting in lower cost of ownership.
- Re-engineered seat geometry and a new precision moulding process ensure zero water leakage at low or high pressures.
- Seat material is available a variety of materials including EPDM, Viton (FKM), Nitrile (NBR)
- The seat is in-line replaceable.
- Solid cast, one piece body in 316 stainless steel or WCB cast carbon steel. Designed and qualified through FEA analysis for optimum performance and reliability.
- Four post yoke design makes it easier to make packing adjustments and is more efficient for seat repair/replacement. Also makes actuator retro-fitting quick and easy.
- Built to industry standards including; MSS SP-81 face to face and full port design to Schedule 40.

GENERAL APPLICATION

- Waste water
- Mining
- Power
- Chemical
- Petrochemical
- General process

TECHNICAL DATA

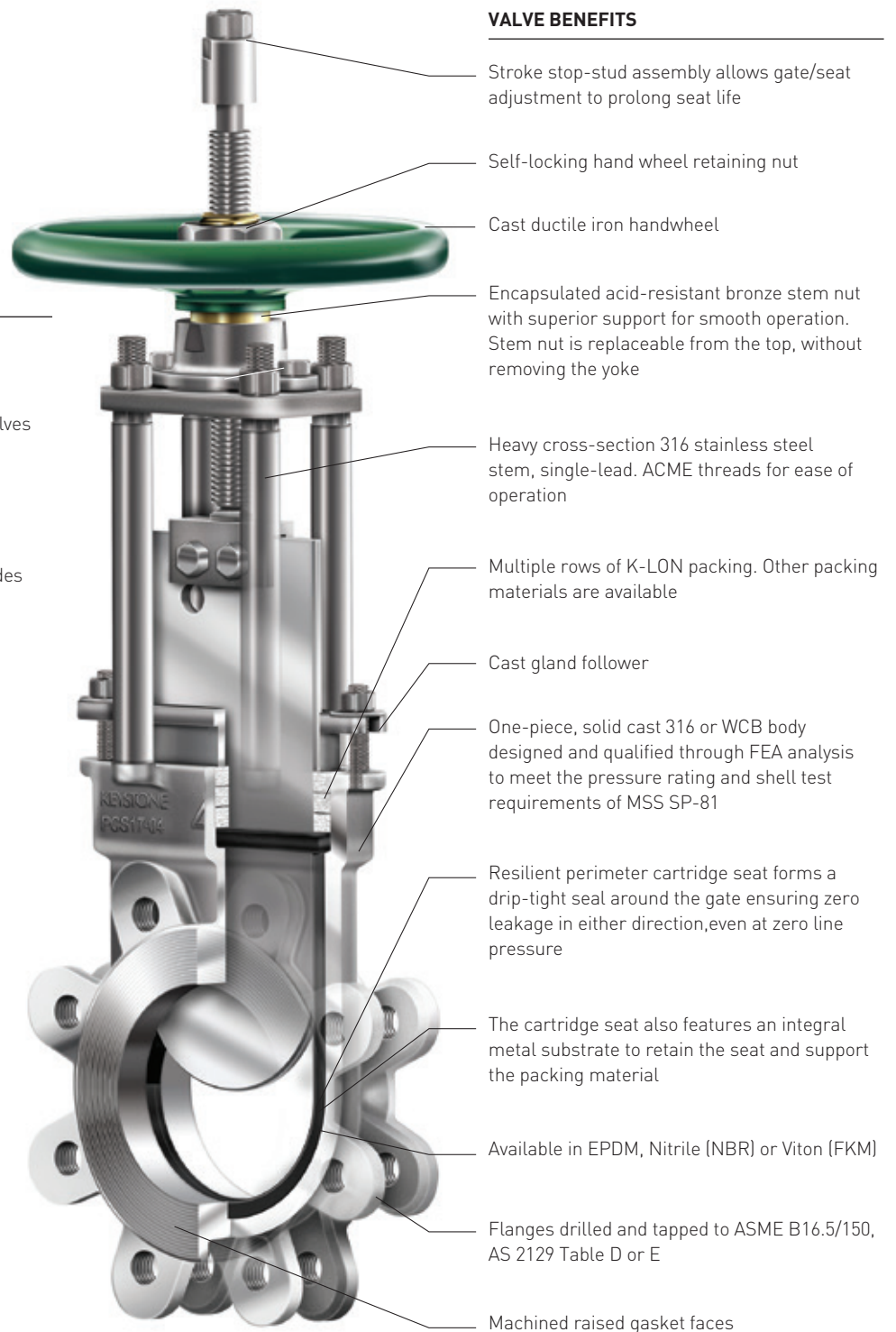
Size range:	DN 50 - 900
Temperature rating:	150°C EPDM (std) 95°C NBR 205°C FKM
Pressure rating:	DN 50 - 600 = 1000kPa DN 750 - 900 = 660kPa at ambient temperature
End connections:	MSS SP-81 Face to face

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OPTIONS

- Handwheel (standard)
- Bevel gear operators
- Non-rising stem actuator
- Cable lockout for manual handwheel valves
- Lock-pin style lockouts for open/closed positions
- Pneumatic/hydraulic/spring cylinders
- Electric actuators
- Control accessories
- Extension stems, floorstands, stem guides
- Safety guards and shrouds

VALVE BENEFITS



Stroke stop-stud assembly allows gate/seat adjustment to prolong seat life

Self-locking hand wheel retaining nut

Cast ductile iron handwheel

Encapsulated acid-resistant bronze stem nut with superior support for smooth operation. Stem nut is replaceable from the top, without removing the yoke

Heavy cross-section 316 stainless steel stem, single-lead. ACME threads for ease of operation

Multiple rows of K-LON packing. Other packing materials are available

Cast gland follower

One-piece, solid cast 316 or WCB body designed and qualified through FEA analysis to meet the pressure rating and shell test requirements of MSS SP-81

Resilient perimeter cartridge seat forms a drip-tight seal around the gate ensuring zero leakage in either direction, even at zero line pressure

The cartridge seat also features an integral metal substrate to retain the seat and support the packing material

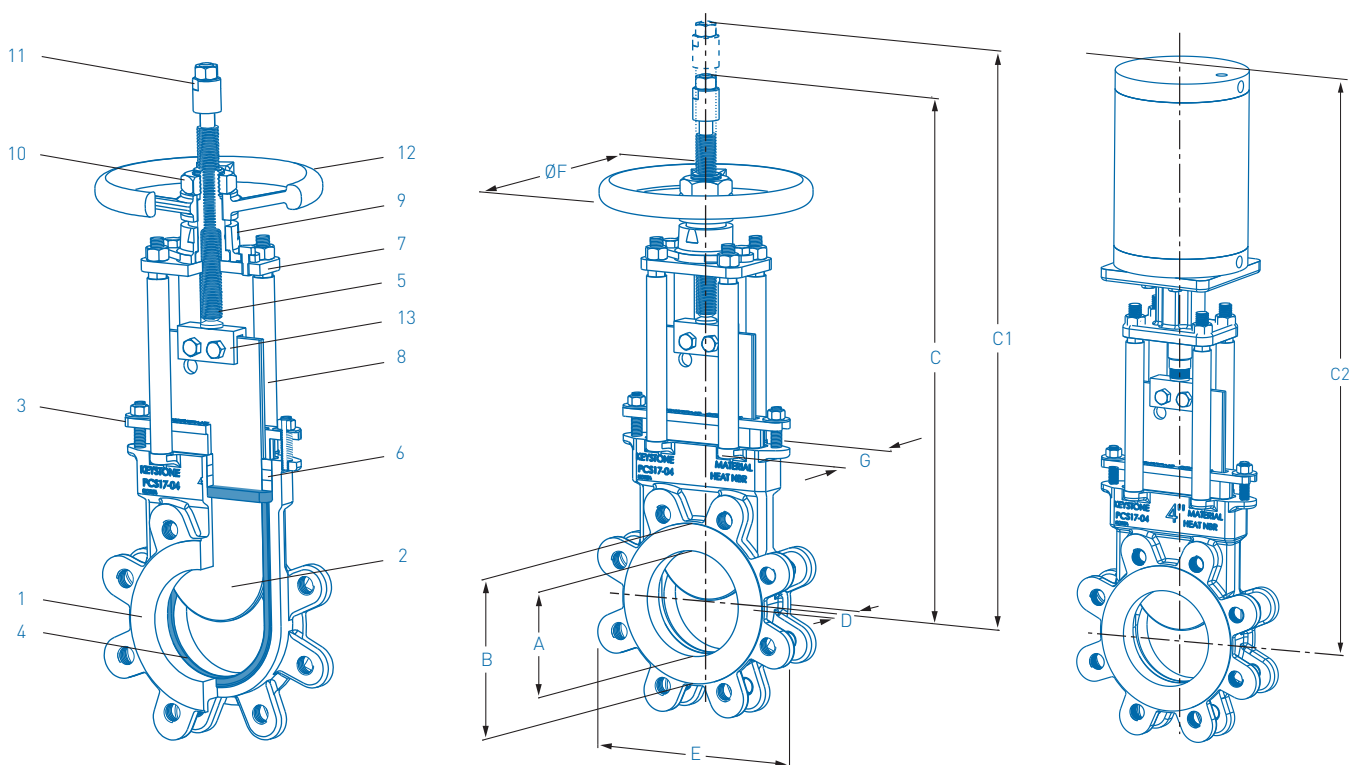
Available in EPDM, Nitrile (NBR) or Viton (FKM)

Flanges drilled and tapped to ASME B16.5/150, AS 2129 Table D or E

Machined raised gasket faces

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PARTS LIST

No.	Description	Material	No.	Description	Material
1	Body	Carbon steel, 316 S/S	8	Yoke post	316 S/S
2	Gate	304 S/S, 316 S/S	9	Bushing retainer	304 S/S
3	Gland follower	Carbon steel, 316 S/S	10	Stern nut	Bronze
4	Seat	EPDM, Nitrile, FKM	11	Stroke adjustment nut	304 S/S
5	Spindle	304 S/S, 316 S/S	12	Handwheel	Iron
6	Gland packing	K-LON	13	Clevis	304 S/S, 316 S/S
7	Yoke top plate	Carbon steel, 316 S/S	14	Fasteners	304 S/S

DIMENSIONS (mm)

Valve size	Bore		Rising spindle		C2	D	E	OF	G	Mass (kg)	K _v at full open
	A	B	(closed) C	(open) C1							
50	50	105	362	419	439	48	152	203	70	9.5	65
80	80	138	406	486	527	51	191	203	73	11.5	154
100	100	157	454	559	602	51	229	203	73	14.5	291
150	150	216	597	756	782	57	279	305	89	27.5	722
200	200	270	699	895	978	70	342	305	89	38.0	1236
250	250	328	810	1067	1144	70	406	406	127	63.0	2037
300	300	381	927	1232	1361	76	483	406	127	86.0	3080
350	350	438	1026	1359	1549	76	533	508	127	130.0	3515
400	400	490	1130	1511	1699	89	597	508	178	172.0	4450
450	450	552	1232	1664	1850	89	635	508	267	205.0	5573
500	500	610	1346	1826	2019	114	711	508	289	285.0	6938
600	600	725	1581	2160	2353	114	838	508	397	430.0	10192
750	731	858	2082	2661	-	118	985	457	356	775.0	17535
900	877	1023	2388	3115	-	118	1169	457	458	1141.0	25230

NOTE:

Dimension D = The face to face dimension.

Dimension E = The maximum valve or upstand clearance dimension for installation.

* K_v = The flow rate of water or upstand clearance dimension for installation.

C_v = 1.155 K_v

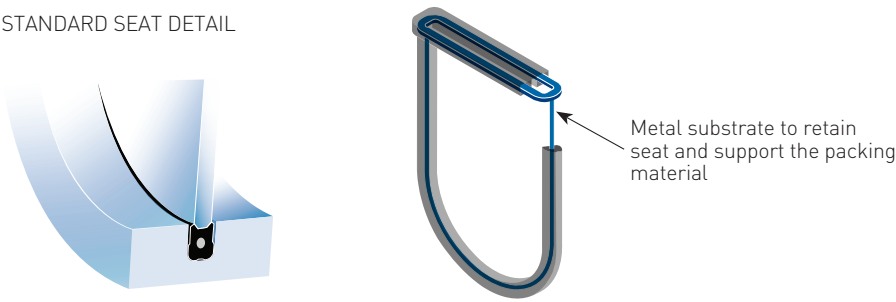
Dimensions are nominal.

DN 750 and 900 are with bevel gear operator.

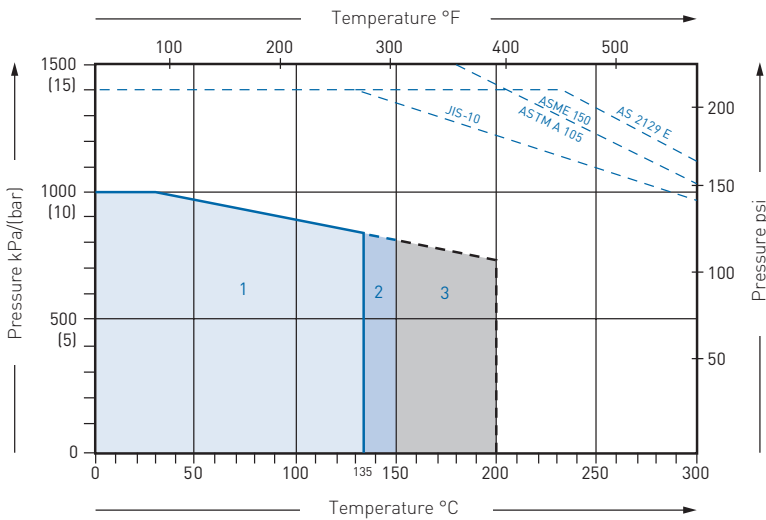
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STANDARD SEAT DETAIL



PRESSURE/TEMPERATURE GRAPH



PRESSURE/TEMPERATURE RATINGS

Nitrile seated
 1000 kPa/(10 bar) at 20°C
 820 kPa/(8.2 bar) at 135°C

EPDM seated
 1000 kPa/(10 bar) at 20°C
 770 kPa/(7.7 bar) at 150°C

FKM seated
 1000 kPa/(10 bar) at 20°C
 720 kPa/(7.2 bar) at 200°C

1. Nitrile seated valve trim code numbers are 521 and 531
2. EPDM seated valve trim code numbers are 520 and 530
3. FKM seated valve trim code numbers are 522 and 532

SELECTION GUIDE

Example:	250	PCS17	520	AS 2129 E
Valve size	DN 50 - 900			
Figure number	PCS17 Resilient perimetre seat			
Trim code	See table			
End connections	AS 2129 E			

Trim code	Body	Gate	Seat	Gland follower	Bridge	Spindle	Packing
520	316 S/S	316 S/S	EPDM	316 S/S	316 S/S	316 S/S	K-LON
530	Carbon steel	304 S/S	EPDM	Carbon steel	Carbon steel	304 S/S	K-LON
521	316 S/S	316 S/S	Nitrile	316 S/S	316 S/S	316 S/S	K-LON
531	Carbon steel	304 S/S	Nitrile	Carbon steel	Carbon steel	304 S/S	K-LON
522	316 S/S	316 S/S	FKM	316 S/S	316 S/S	316 S/S	K-LON
532	Carbon steel	304 S/S	FKM	Carbon steel	Carbon steel	304 S/S	K-LON

NOTE:

To minimize risk to personnel, Pentair recommend the use of purpose built guards and shrouds. Refer to the Pentair data sheet or consult factory for details.



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