

Rovalve

Rovalve PCS17 with the all-new Resilient Perimeter Cartridge Seat is the next generation in Knife Gate Resilient Seat Technology.

Unique in the industry, the perimeter cartridge seat of the PCS17 is a precision molded, metal reinforced, one-piece design providing bi-directional, zero leakage shut-off. The cartridge-style seat is easily replaced from the top of the valve, even with the valve in-line, making repair a cost-effective choice.

Because the seat seals on the edge or perimeter of the gate, pressure against the gate is not required to obtain a zero leakage seal. The perimeter seat also makes the PCS17 inherently bi-directional, helping to eliminate concerns about direction of flow and pressure.

Features and Benefits

- Precision molded, one-piece, perimeter sealing, cartridge style seat.
- Integral packing support bar with metal substrate.
- Metal reinforced seal cross section.
- Chamfered seal edges to help reduce torque.
- Perimeter seat seals around the edge of the gate.
- Tested to zero leakage of water for bi-directional shut-off.
- Unsurpassed low pressure seal, the same performance in both directions.
- Solid cast, one-piece body designed and qualified through FEA analysis to meet the pressure rating and shell test requirements of MSS SP-81.
- 304, 316, 317 or WCB body materials.
- Gate packing is all-around the gate.
- Gate edge is beveled for easier packing seal and longer packing life.
- Face-to-face per MSS SP-81 through 36".
- Full port equal to Sch 40 through full size range.
- New 4-Post Yoke features top-removal stem nut and can be field modified to bevel gear or air cylinder without welding.

Note: Zero leakage is defined as no visible leakage of water past the seat at any test pressure up to the fully rated pressure of the valve.



Full Range of Operators and Accessories Available

- Handwheel (standard)
- Manual bevel gear
- Non-rising stem actuator
- Cable lockout for manual handwheel valves
- Lock-Pin style lockouts for open, closed or both positions
- Air/hydraulic/spring cylinders
- Electric motor operators
- Control accessories
- Extension stems, floorstands, stem guides

General Applications

- Pulp and paper
- Chemical
- Petrochemical
- Power
- Mining
- Waste water

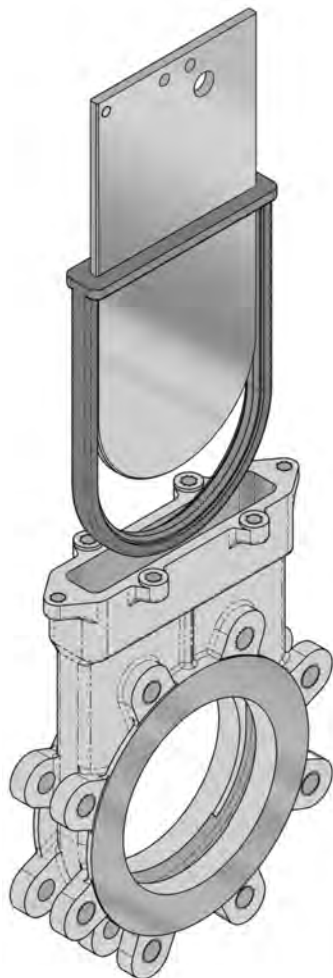
Technical Data

Size range: 2" to 24" 150 psi CWP
[50 to 600 mm, 10 bar]
30" and 36" 100 psi CWP
[750 and 900 mm, 6.6 bar]
at ambient temperature

Testing: Body tested per MSS SP-81
Shut-off test at max rated pressure for zero leakage

Note: Patent 7815170

The New Resilient Perimeter Cartridge Seat of the PCS17 is Different in Many Ways



Designed to help resolve many issues found in conventional perimeter seated valves, the Rovalve PCS17 Perimeter Cartridge Seated Knife Gate Valve from Tyco Flow Control has a combination of features not found in any other knife gate valve.

- Entire cartridge seat is easily replaced; simply pull the cartridge seat out through the packing box and replace it the same way, no need to remove* or completely disassemble valve to replace seat, making valve repair a cost effective choice.
- Perimeter Cartridge Seat seals around the perimeter of the gate.
 - The gate is mechanically pushed into the seat, helping create a perfect seal.
 - Pressure against the gate is not required to achieve a seal.
- Unsurpassed low pressure seal, the same performance in both directions.
- Precision molded, one-piece cartridge seat incorporates an integral packing support bar with metal substrate.
- Metal reinforced elastomer with chamfered seal edges to help reduce torque.

Rovalve has long been an innovator in resilient seated designs going back to the 1960's with the original Figure 17 perimeter seated valve. The all-new PCS17 incorporates 40 plus years of experience in numerous industries and applications to create a true stand-out in a crowded market.

* Relieve pressure and safety isolate line prior to seat replacement or valve removal

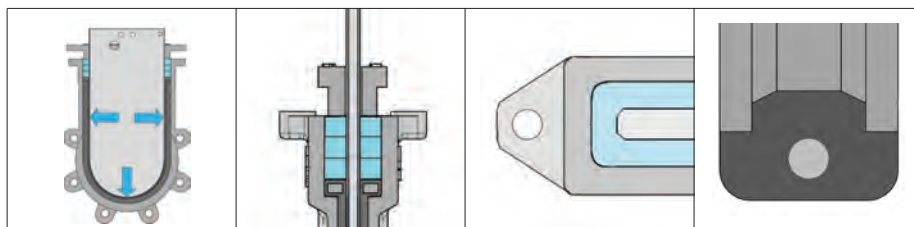
Available Seat Materials

Standard with EPDM: Maximum continuous operating temperature 300°F.

Optional materials (contact your sales representative for availability):

- NBR: Maximum continuous operating temperature 200°F.
- Urethane: Maximum continuous operating temperature 150°F.
- Fluoroelastomer: Maximum continuous operating temperature 400°F.

Contact your sales representative for temperatures higher than 400°F.



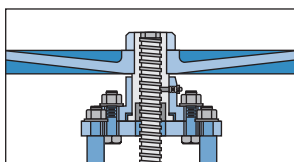
Perimeter seat seals around the edge of the gate, creating an ideal seal, pressure against the gate is not required to achieve a seal.

Integral packing support bar with metal substrate helps prevent packing from extruding into chest, increasing packing efficiency and service life.

Gate packing is all around the gate, helps eliminate leak paths found in other designs, gate edge is beveled for longer service life.

Metal reinforced cartridge seat with chamfered seal edges designed to reduce torque.

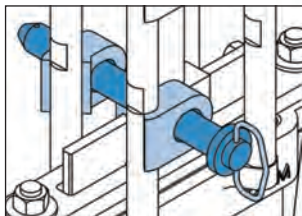
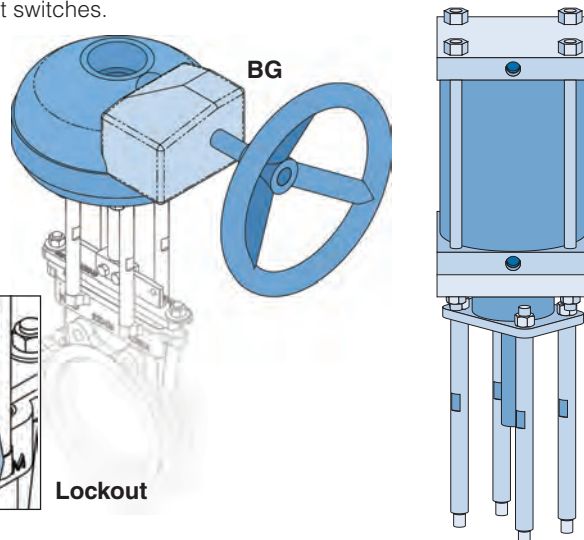
4-Post Yoke with Top-removal Stem Nut



To increase stem nut life and provide for easier maintenance, the new 4-Post Yoke includes a unique top removal encapsulated stem nut assembly. The stem nut is supported on both the top and bottom bearing surfaces, literally surrounded in a

blanket of lubrication. Maintenance is simple with the encapsulated stem nut, replacement is easy and quick; remove the handwheel and retaining bolts, pull the retainer free, and then rotate the old stem nut off the stem. There is no need to remove the yoke assembly. Reverse the process to reassemble, and you are back in operation.

The wide stance of the 4-Post Yoke provides excellent support and easy access to the gate bolts. Can be converted to AC or BG in the field; the clean design allows simple adaptation of lockouts and limit switches.



Lockout

Optional Lockouts

The new PCS17 features several different lockout assembly alternatives:

- Cable lockout for manual handwheel.
- Heavy duty lockout assembly with lockpin for both open and closed positions for MH or AC valves.
- BG Lockout for use on bevel gear actuators.
- Energy lockouts for AC or HC valves.

Features

Stroke stop-stud assembly allows gate/seat adjustment, prolongs seat life

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

Edge of gate is beveled for longer packing life

Cast packing gland

Multiple rows of AFPL or other packing

One-piece, Solid cast, 304, 316, 317 or WCB body designed and qualified through FEA analysis to meet the pressure rating and shell test requirements MSS SP-81

Full port to Sch 40 pipe through full size range

Machined raised gasket faces

Unique resilient seat is a perimeter sealing, cartridge style, metal reinforced, precision molded one-piece design with integral packing support bar

Flanges drilled and tapped to ANSI B16.5/150

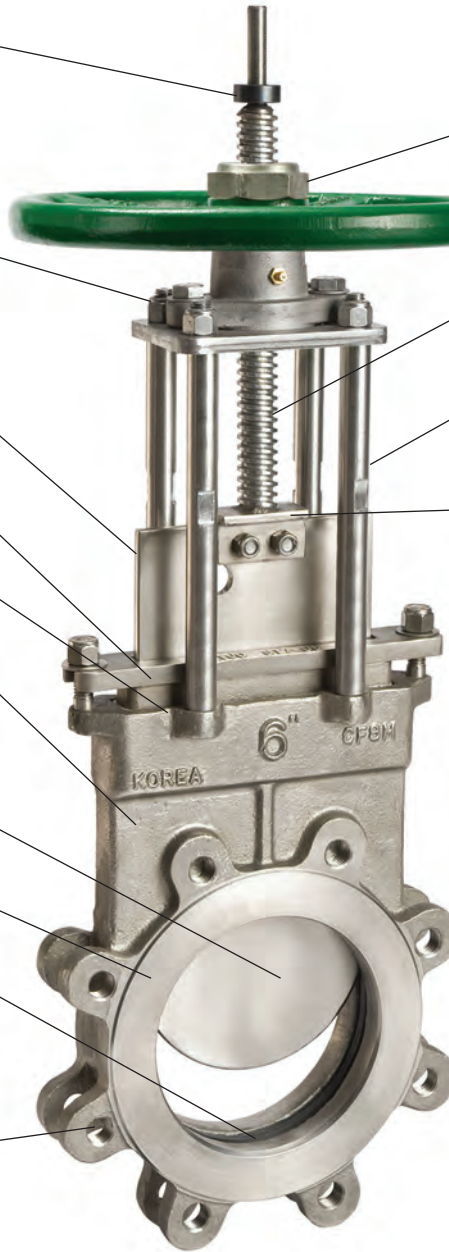
Self-locking handwheel retaining nut

Cast ductile iron handwheel

Heavy cross-section 304 stainless steel stem, single-lead, ACME threads for ease of operation

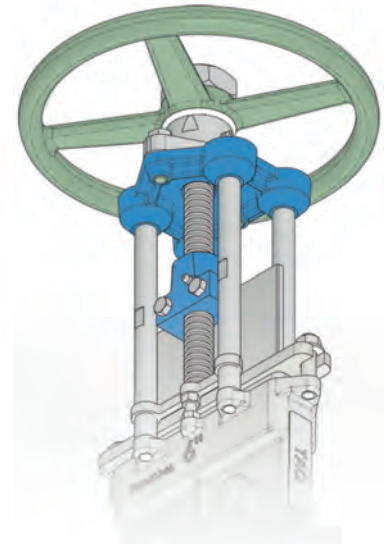
New 4-Post Yoke, available in stainless or carbon steel, can be field modified to bevel gear or air cylinder without welding.

Cast 304 SS lifter



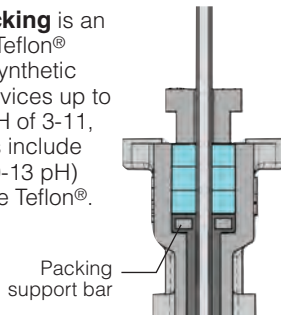
Optional Non-Rising Stem Assembly

Well-suited for tight spaces, the optional non-rising stem assembly is available on a new valve or as a field conversion kit.

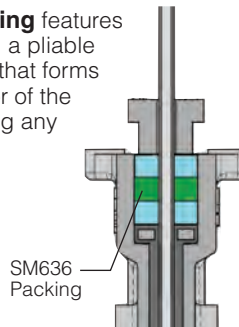


The Rovalve PCS17 is available with numerous optional packing types and special packing arrangements to help ensure superior performance.

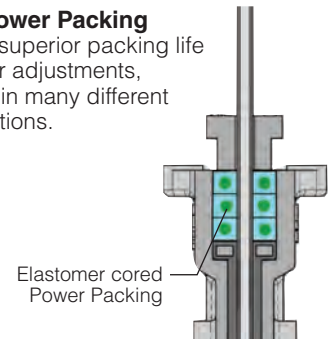
Standard Packing is an asbestos free Teflon® impregnated synthetic suitable for services up to 500°F and a pH of 3-11, other packings include pure Teflon® (0-13 pH) and food-grade Teflon®.



Enhanced Packing features Self-Mold SM636, a pliable packing material that forms itself to the interior of the packing box, filling any voids.



Cored Power Packing provides superior packing life with fewer adjustments, available in many different configurations.



Rovalve PCS17 Knife Gate Valve

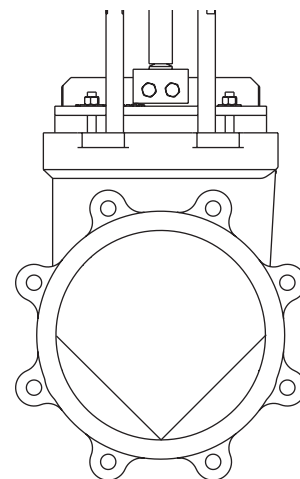
Resilient Perimeter Cartridge Seat, 2" to 36"

Specification

2" to 24" [50 to 600 mm]

Bonnetless, perimeter sealing, bi-directional shut-off knife gate valve with cartridge style resilient seat, 150 psi design for 150 psi CWP, with MSS SP-81 face-to-face, cast [specify material] body and cast [specify material] packing gland. Valve to be provided with a [specify material] gate with beveled edges for increased packing life. Valve seating shall be provided by a precision molded, perimeter sealing, cartridge style, one-piece seat incorporating an integral packing support bar with metal substrate and a metal reinforced seal cross section with chamfered seal edges to reduce torque. The entire seat shall be replaceable from the top of the valve, through the packing box without the need to remove or disassemble valve. The cartridge-style seat shall seal around the perimeter of the gate creating an ideal seal and designed to achieve zero leakage of water in both directions. Line pressure against the gate is not required to achieve the zero leakage shut-off and pressure assisted seats are not allowed. To help deter atmospheric leakage, the valve features an adjustable packing assembly consisting of multiple layers of braided asbestos free Teflon®

impregnated synthetic (AFPL*) or equal packing which goes all-around the around gate, evenly compressed by a one piece packing gland against an integral packing support bar. The valve body to be lug style, drilled and tapped to ANSI B16.5/150 with machined raised gasket faces. It shall be solid cast, one-piece, designed and qualified through FEA analysis to meet the pressure rating and shell test requirements MSS SP-81. Valve is equipped with manual handwheel operator assembly featuring a cast ductile iron handwheel, a 4-post [specify material] yoke with a fully encapsulated acid resistant bronze stem nut which is completely replaceable from the top of the yoke without removing the yoke, including a 304 stainless steel rising stem. All non-stainless exterior surfaces shall be painted to factory standard. Specify Rovalve Figure PCS17 from Tyco Flow Control.

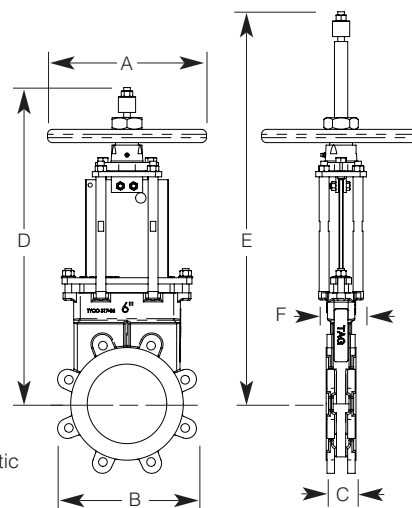


For throttling, the PCS17 is available with a V-Port option.

Note: See Material Code Chart for specific materials of construction.

30" and 36" [750 mm and 900 mm]

Same as 2" to 24", 100 psi design for 100 psi CWP, flanges drilled and tapped per MSS SP-44, with manual bevel gear actuator. Specify Rovalve Figure PCS17 from Tyco Flow Control.



Code of Material

Part	A	B	C	D	F	K
Seat	EPDM	EPDM	EPDM	EPDM	EPDM	EPDM
Cast body	304	316	304	316	WCB	317
Gate	304	316	304	316	304	317L
Stem	304	304	304	304	304	304
Cast Packing Gland	WCB	WCB	304	316	WCB	317
Packing	AFPL	AFPL	AFPL	AFPL	AFPL	AFPL
Bolting	Plated steel	Plated steel	304	304	Plated Steel	304
Yoke	CS	CS	304	304	CS	304
Handwheel	Ductile	Ductile	Ductile	Ductile	Ductile	Ductile

Note: Cast materials are as follows: 304 SS = CF8
316 SS = CF8M
317 SS = CG8M

* AFPL is an asbestos free Teflon® impregnated synthetic packing suitable for services up to 500°F and a pH of 3-11, other packings are available.

Dimensions and Weights; Imperial – inches and pounds

Valve Size	A	B	C	D	E	F	Weight
2	8	6	17/8	14 1/4	16 1/2	23/4	20
3	8	7 1/2	2	16	19 1/8	27/8	24
4	8	9	2	17 7/8	22	27/8	32
6	12	11	2 1/4	23 1/2	29 3/4	3 3/4	59
8	12	13 1/2	2 3/4	24 1/2	35 1/4	3 1/2	83
10	16	16	2 3/4	31 7/8	42	4 1/2	135
12	16	19	3	36 1/2	48 1/2	4 1/2	184
14	20	21	3	40 3/8	56 1/2	5	285
16	20	23 1/2	3 1/2	44 1/2	59 1/2	7	379
18	20	25	3 1/2	68 1/2	85 3/8	10 1/2	451
20	20	27 1/2	4 1/2	53	71 7/8	11 3/8	626
24	20	32	4 1/2	62 1/4	85	15 5/8	948
30	18	38 1/2	4 5/8	82	104 3/4	18	1709
36	18	46	4 5/8	94	122 5/8	18	2516

Metric – Millimeters and kilograms

A	B	C	D	E	F	Weight
203.2	152.4	47.6	362	419.1	69.9	8.9
203.2	190.5	50.8	406.4	485.8	73	10.7
203.2	228.6	50.8	454	558.8	73	14.3
304.8	279.4	57.2	596.9	755.7	95.3	26.3
304.8	342.9	69.9	622.3	895.4	88.9	37
406.4	406.4	69.9	809.6	1066.8	114.3	60.3
406.4	482.6	76.2	927.1	1231.9	114.3	82.1
508	533.4	76.2	1025.5	1435.1	127	127.2
508	596.9	88.9	1130.3	1511.3	177.8	169.1
508	635	88.9	1739.9	2168.5	66.7	201.3
508	698.5	114.3	1346.2	1825.6	288.9	279.4
508	812.8	114.3	1581.2	2159	396.9	423.1
457.2	977.9	117.5	2082.8	2660.7	457.2	762.7
457.2	1168.4	117.5	2387.6	3114.7	457.2	1122.9

Notes:

- 30" and 36" dimensions are with bevel gear actuator
- Face-to-face (C Dimension) per MSS SP-81
- Flange drilling matches ANSI B16.5/150 through 24", MSS SP-44, 30" and 36"