
SERIES 942

VORTEX BREAKER KNIFE GATE VALVES FOR RECYCLE/REJECTS

TECHNICAL SALES MANUAL



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THE HIGH PERFORMANCE COMPANY

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TECHNICAL DATA

OVERVIEW

The Bray Series 942 Vortex Breaker Knife Gate Valve is engineered for on/off service and isolation of pulp and paper recycle and rejects applications. The 942 offers superior performance in demanding, high-cycle services that require shearing capabilities such as cyclone separators and recycle high density cleaners.

Bray Series 942 is an engineered solution featuring a standard replaceable Vortex Breaker designed to interrupt cyclonic flow formation which causes premature gate damage.

SPECIFICATIONS

Size Range	NPS 4 to 12 DN 100 to 300
Temperature Range	-40°F to 392°F -40°C to 200°C
Pressure Rating	NPS 4-12 150psi DN 100-300 10 bar
Body Style	Single Piece Lug

DESIGN STANDARDS

End Connections	Flanged
Face-to-Face	MSS SP-81
Flange Drilling	ASME B16.5 CL150
Design Standard	MSS SP-81

Consult factory for other flange drillings.

STANDARD CONSTRUCTION

Body	CF8M (316)
Gate	17-4PH H-1025
Seat	Hi-Chrome
Packing	4-layer (Copper-Kevlar-Quad Seal-Kevlar)
Vortex Breaker	Hi-Chrome

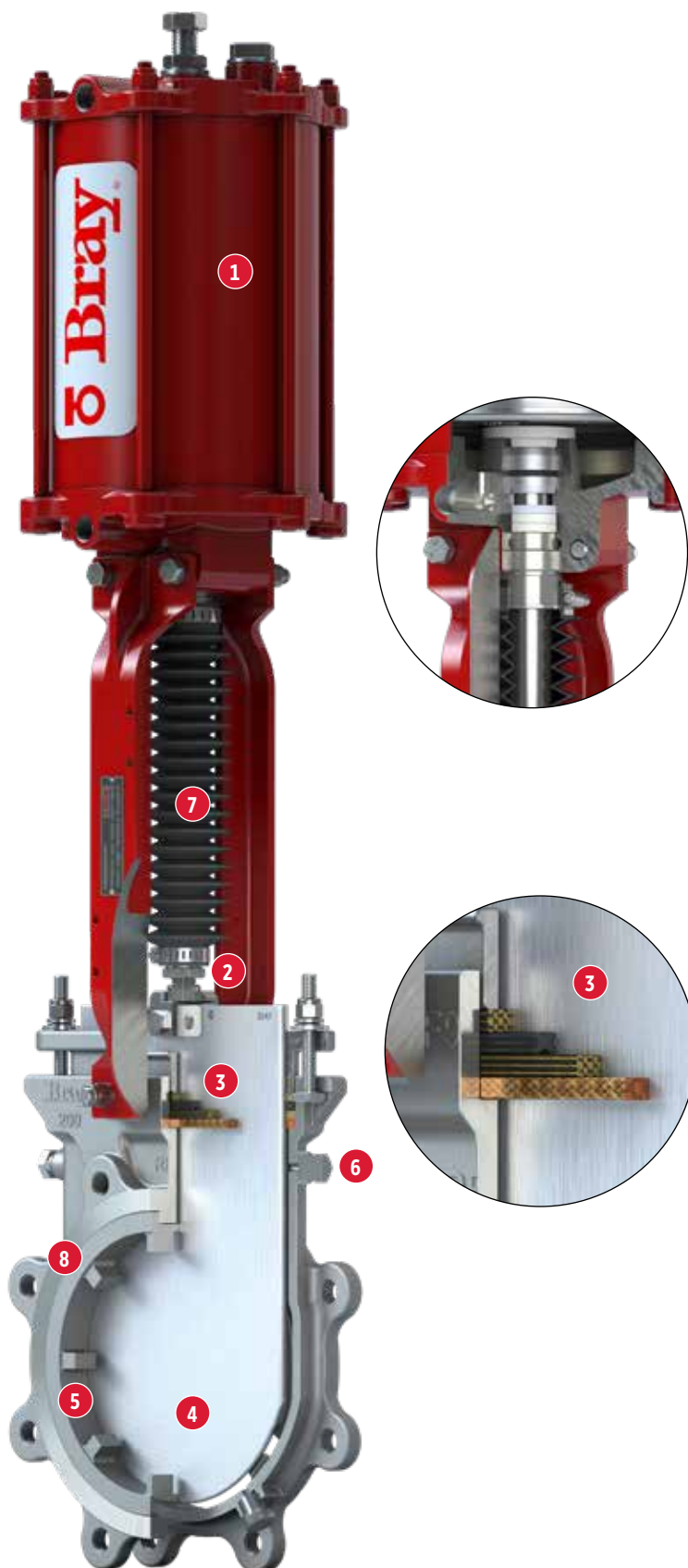
CERTIFICATIONS & APPROVALS

Certifications	CE/PED UKCA CRN
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FEATURES

- 1 Pneumatic actuator sized and designed for recycle/reject media and high cycle applications. Includes dual piston rod seals for greater performance.
- 2 High strength B8M Stainless steel bolting stabilizes the gate for proper alignment and addresses high-cycle challenges by incorporating a PTFE damper to alleviate the effects of vibration.
- 3 High performance packing system featuring a base layer copper scraper and rounded, machined packing chamber with live-loaded packing gland system extends service life and enhances performance.
- 4 Heat treated 17-4PH H-1025 gate with rounded edge, suitable for high cycles and longer packing life. Back-up ring ensures the gate is guided in horizontal orientations and remains aligned during cycling.
- 5 Hi-Chrome vortex breaker designed to disrupt cyclonic flow formation of reject materials (staples, wire, nails, sand, etc.) provides extended service life.
- 6 Purge ports in seat and chest enable complete flushing during cycling for enhanced maintenance and performance.
- 7 Bellows provided to protect the piston rod from accumulation of media that could damage the seals.
- 8 Tungsten Carbide coated bore to provide superior abrasion resistance.

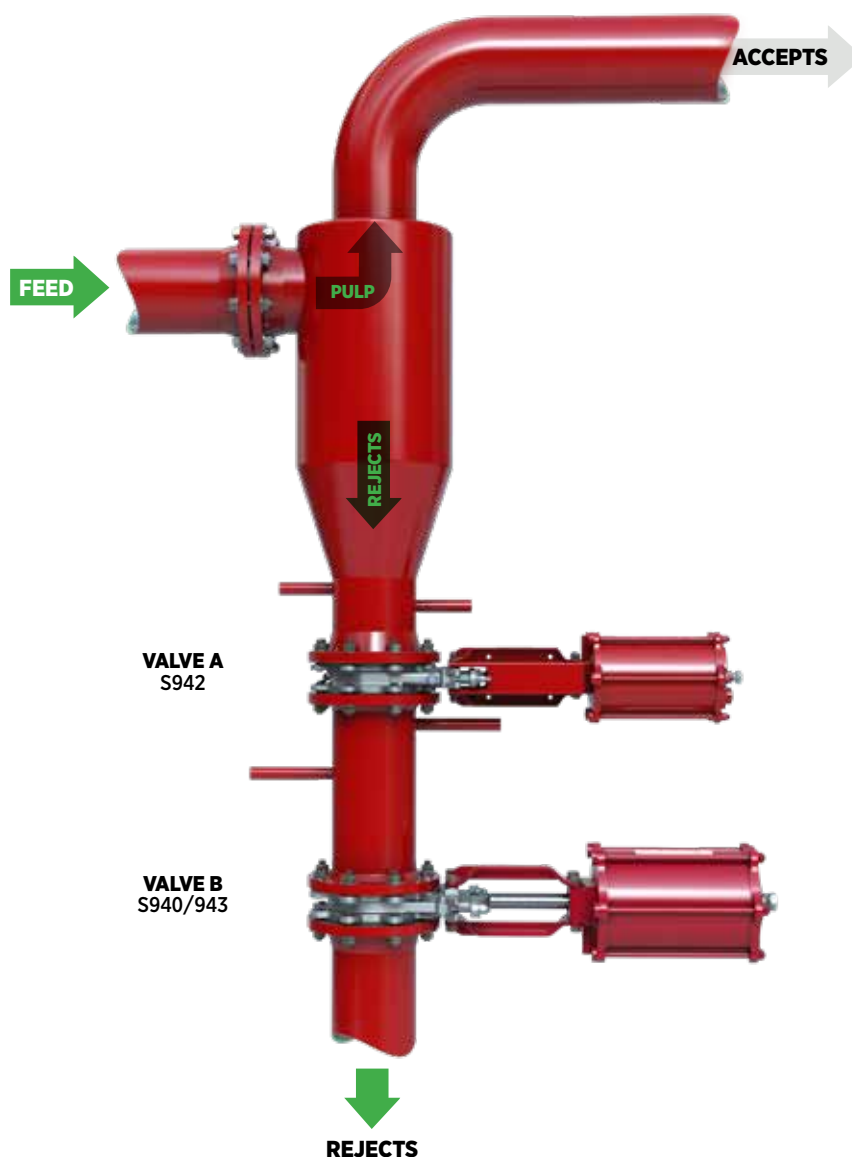


INDUSTRIES

- > Pulp & Paper

APPLICATIONS

- > Knotter
- > Rejects
- > Pulpers
- > HD Cleaners
- > Cyclone Separators
- > Junk Trap



FEED: Ground cardboard including staples, nails and heavy debris is pneumatically conveyed to inlet of cyclone separation.

ACCEPTS: Recyclable “light” material is recovered for reprocessing.

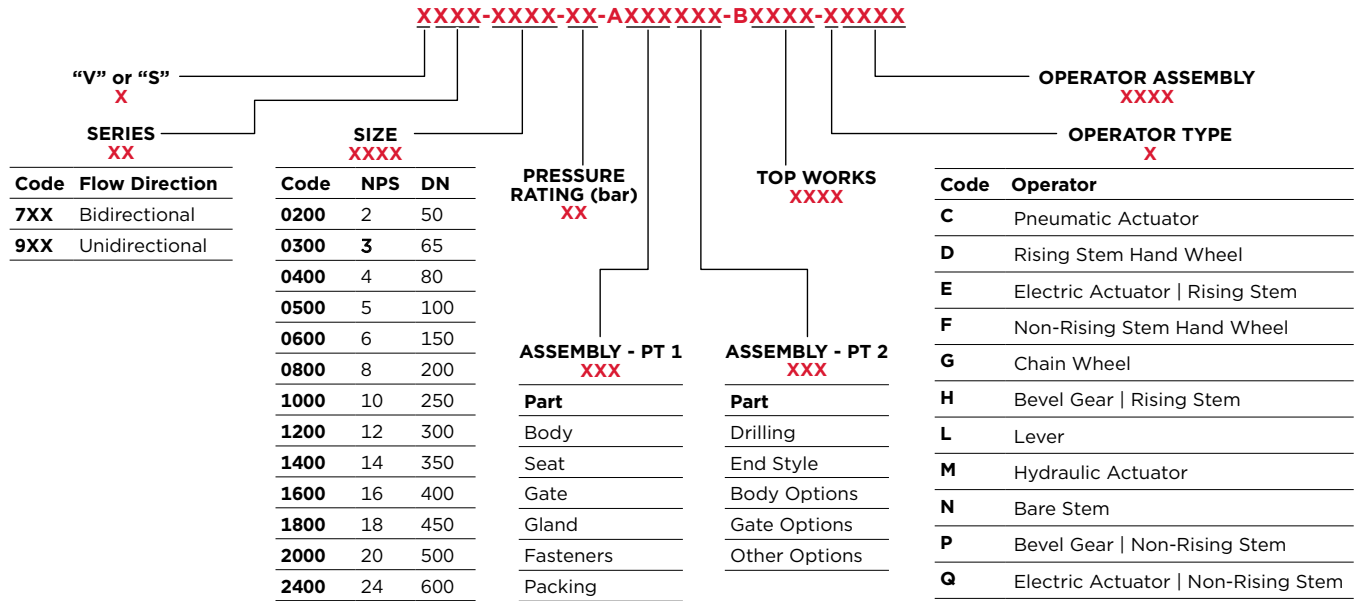
REJECTS: “Heavies” or rejected product drops to the inlet of Valve A. Vacuum pulling the recoverable material creates a “cyclonic” action of rejected material on the face of the gate.

1. Valve A and B are closed during the recycling process.
2. Trash accumulates on the face of valve A during separation process.
3. Valve A cycles to drop “heavies” to valve B.
4. Valve A closes/Valve B opens to discard debris to trash collection.
5. Valve B closes, and the recycling separation process cycle commences.
6. ***Valves cycle every 6 minutes***

VALVE SELECTION

VALVE PART NUMBERING SYSTEM

Select one code from each category to build a complete valve order number.



NOTES:

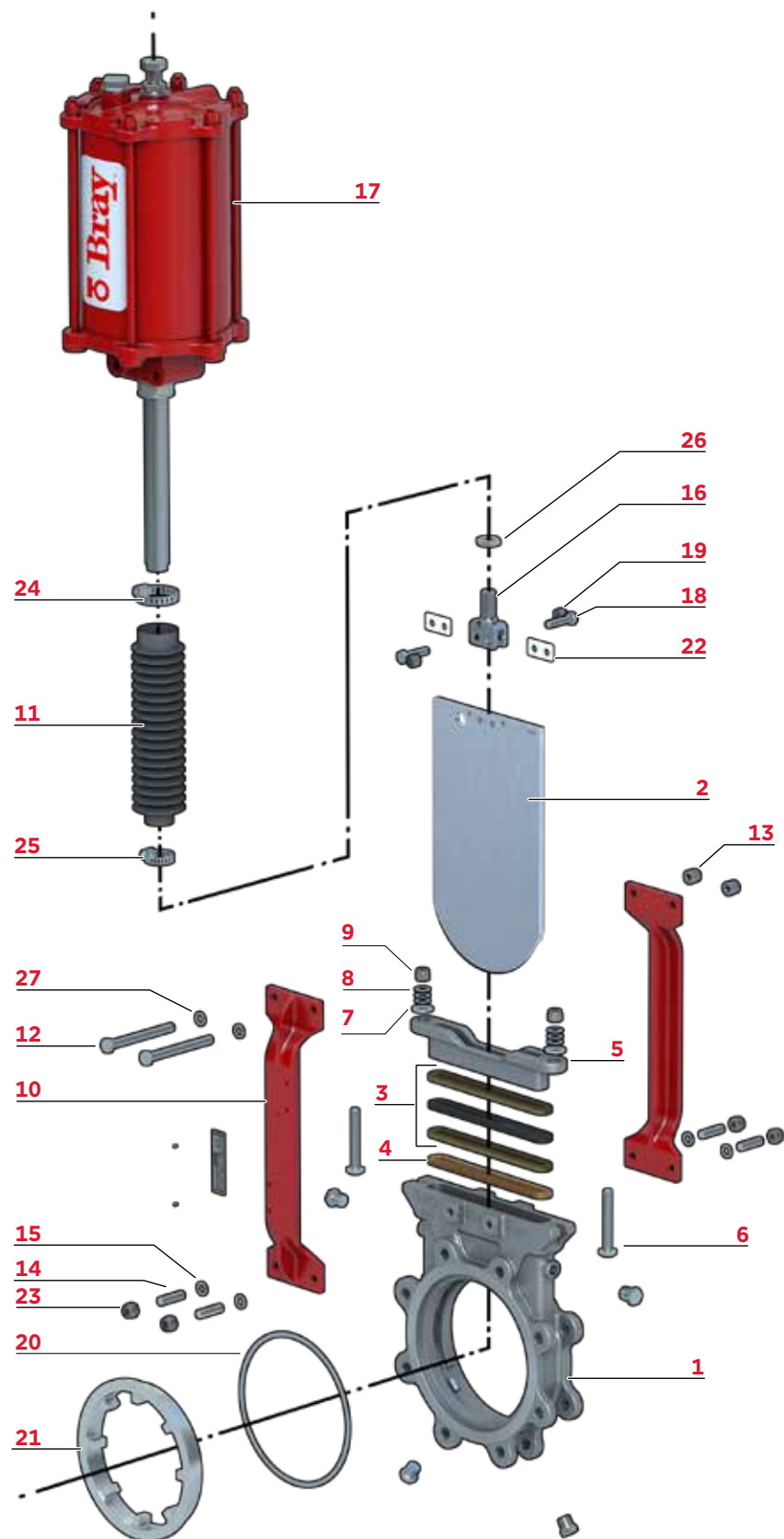
- For a complete list of standard materials and descriptions, refer to MATERIALS OF CONSTRUCTION. Other materials are available, please contact Bray for additional information.
- No assigned code, ASSEMBLY NUMBER is generated by Engineering configurator.

EXAMPLE

S942-0400-10-A02C691-B0294-C0240

- > Unidirectional
- > 4 inch
- > 10 bar rated
- > Pneumatic actuator

PARTS CALLOUT



PARTS LIST AND MATERIAL SPECIFICATIONS

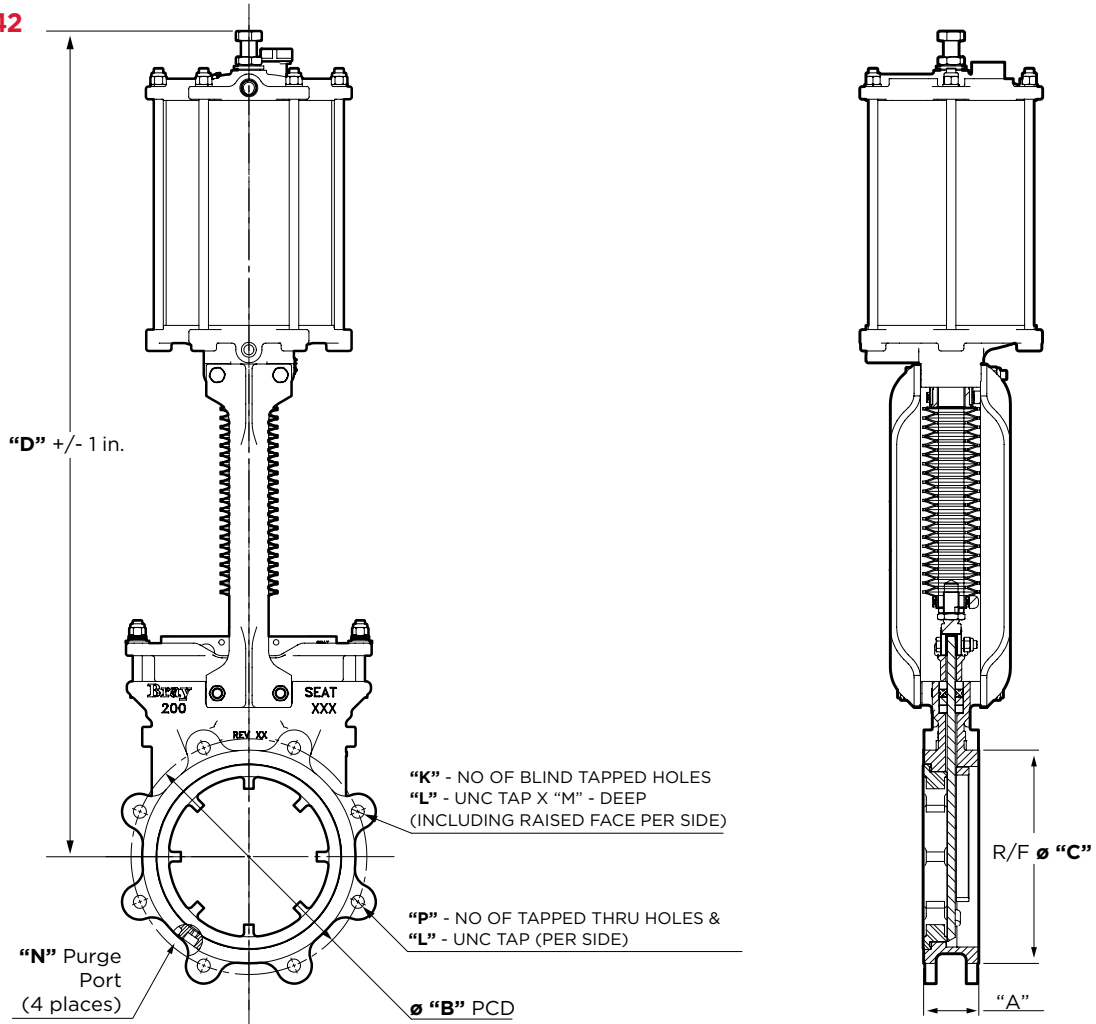
ITEM	DESCRIPTION	MATERIAL
1	Body	ASTM A351 GR. CF8M + Tungsten Carbide coated body bore
2	Gate	ASTM A693 TYPE 630, Precipitation Hardening @ 1025 °F
3	HP Packing Set	PTFE/GraphitE yarn with aramid fibre +Viton quad seal
4	Copper Scraper	copper wiper
5	Packing Gland	ASTM A351 Gr.CF8 / ASTM A240 TYPE 304
6	Gland Bolt	ASTM A193 GR. B8M CL 2
7	Gland Washer	ASTM A276 Type 304
8	Belleville Washer Set	17-7PH,ASTM A313 Type 631
9	Gland Nut	ISO 3506-2 Grade A4 Class 70
10	Yoke	ASTM A351 Gr.CF8
11	Bellows	CANVAS
12	Mounting Bolt (Top)	ISO 3506-1, Grade A2, Class 70
13	Mounting Nut	ISO 3506-2 Grade A4 Class 70
14	Mounting Stud (Bottom)	ISO 3506-1, Grade A2, Class 70
15	Nordlock Washer	Stainless Steel (EN 1.4404)
16	Clevis	ASTM A351 Gr.CF8
17	Cylinder Actuator	304/DI/FRP/304/NBR/CBEL
18	Clevis Bolt	ISO 3506-1, Grade A2, Class 70
19	Clevis Nut	ISO 3506-2 Grade A4 Class 70
20	Vortex Breaker Gasket	White Virgin Teflon
21	Vortex Breaker	ASTM A532 Class III Type A (25% Cr)
22	Dampener	White Virgin Teflon
23	Mounting Nut	ISO 3506-2 Grade A4 Class 70
24	Bellows Clamp (Top)	SS304
25	Bellows Clamp (Bottom)	SS304
26	Clevis Nut	ISO 3506-2 Grade A4 Class 70
27	Nordlock Washer	Stainless Steel (EN 1.4404)

NOTES

- 1 Material specifications provided for reference only, and are subject to change without notice.
- 2 Additional materials available upon request.

DIMENSIONS & WEIGHTS | ASME (in & lb)

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DIMENSIONS (inch)									
NPS	A	B PCD	R/F Ø C	D	K	L	M	N	P
4	2.01	7.50	6.22	28.74	2	5/8"-11 UNC	0.39	¼ NPT	6
5	2.24	8.50	7.32	32.28	2	3/4"-10 UNC	0.47	⅜ NPT	6
6	2.24	9.50	8.50	35.63	2	3/4"-10 UNC	0.43	⅜ NPT	6
8	2.76	11.75	10.63	41.15	2	3/4"-10 UNC	0.47	⅜ NPT	6
10	2.76	14.25	12.76	48.82	4	7/8"-9 UNC	0.47	½ NPT	8
12	2.99	17.00	15.00	53.19	4	7/8"-9 UNC	0.49	½ NPT	8

WEIGHT (lbs)	
PNEUMATIC ACTUATOR	
	59.4
	70.4
	99
	129.8
	191.4
	308

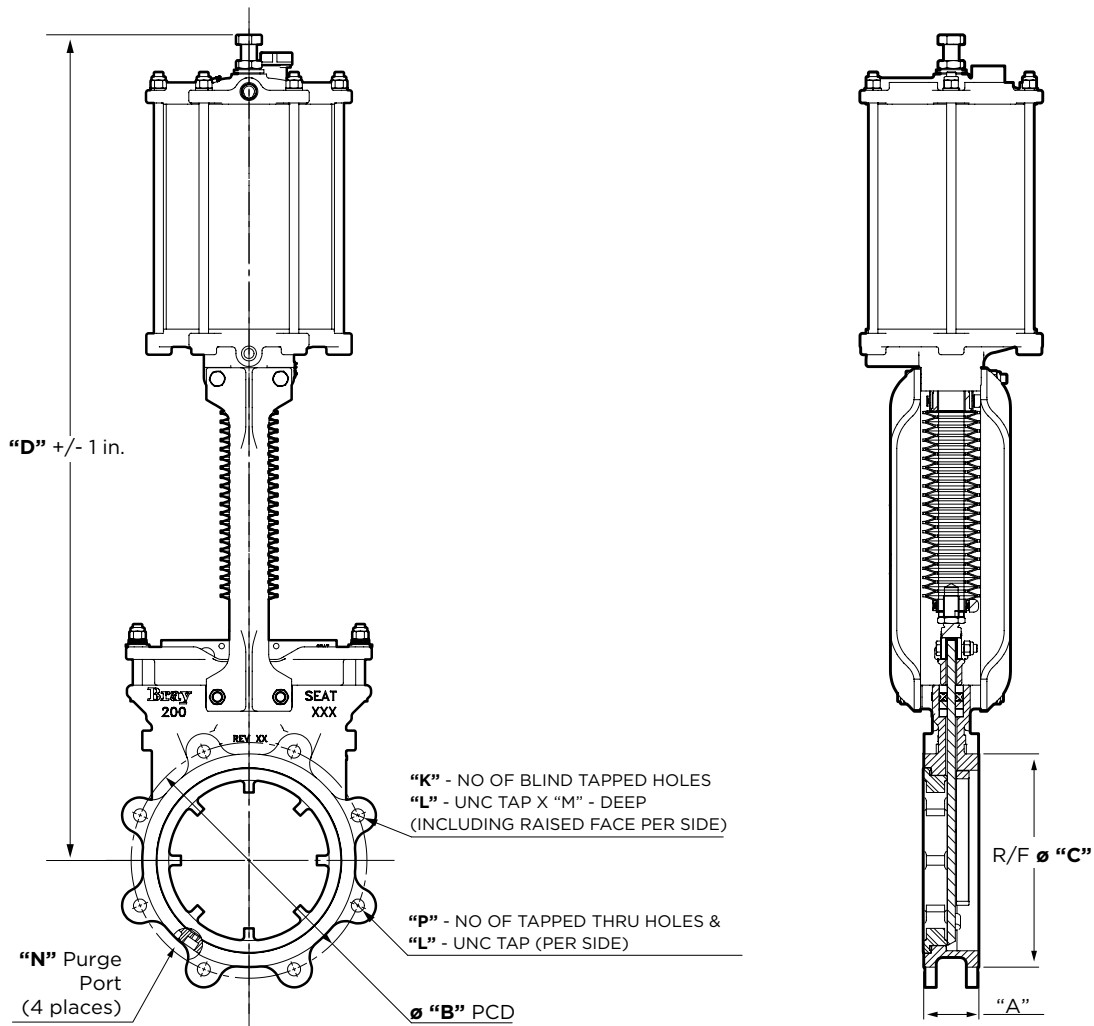
NOTES:

1. Pressure Rating (CWP) - 10 Bar
2. All dimensions are in mm unless specified
3. Valve is shown in closed position
4. PCD, size of bolt hole, no of bolts to suit ASME B16.5 Cl150 flanges
5. Valve internals are shown for reference only
6. Valve shall be painted two coat epoxy polyurethane system - Bray Red (Ral-3001); on all non stainless steel parts
7. Seat test is not applicable

NOTES:

1. Consult factory for other actuator types.
2. Dimensions are approximate and subject to change. Consult factory for certified drawings.
3. Drilling in conformance with ASME B16.5 for sizes NPS 4 through NPS 12. Consult factory for other drilling types.
4. Flange gaskets not required for installation.

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DIMENSIONS (mm)									
DN	A	B PCD	R/FØC	D	K	L	M	N	P
100	51	190.5	158	730	2	5/8"-11 UNC	10	¼ NPT	6
125	57	215.9	186	820	2	3/4"-10 UNC	12	⅜ NPT	6
150	57	241.3	216	905	2	3/4"-10 UNC	11	⅜ NPT	6
200	70	298.5	270	1045	2	3/4"-10 UNC	12	⅜ NPT	6
250	70	362	324	1240	4	7/8"-9 UNC	12	½ NPT	8
300	76	431.8	381	1350	4	7/8"-9 UNC	12.5	½ NPT	8

WEIGHT (kg)
PNEUMATIC ACTUATOR
27
32
45
59
87
140

NOTES:

1. Pressure Rating (CWP) - 10 Bar
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HEADQUARTERS

Bray International, Inc.

13333 Westland East Blvd.

Houston, Texas 77041

Tel: +1.281.894.5454

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