
SERIES 746HP

BIDIRECTIONAL POLYURETHANE LINED HIGH PERFORMANCE SLURRY VALVES

TECHNICAL SALES MANUAL



Bray[®]

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THE HIGH PERFORMANCE COMPANY

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OVERVIEW

The Bray Series 746HP features a one-piece polyurethane liner molded throughout the body and chest providing Zero Leakage in the most abrasive applications. The liner extends over the front face of the body, ensuring total protection from abrasive media and eliminating the need for additional gaskets.

The one-piece, durable ductile iron body is offered in a compact wafer style for ease of handling and installation.

SPECIFICATIONS

Size Range	NPS 2 to 24 DN 50 to 600
Temperature Range	Polyurethane: -20°F to 194°F -29°C to 90°C
Pressure Rating	150psi 10bar 232psi 16bar
Body Style	One-Piece - Wafer

DESIGN STANDARDS

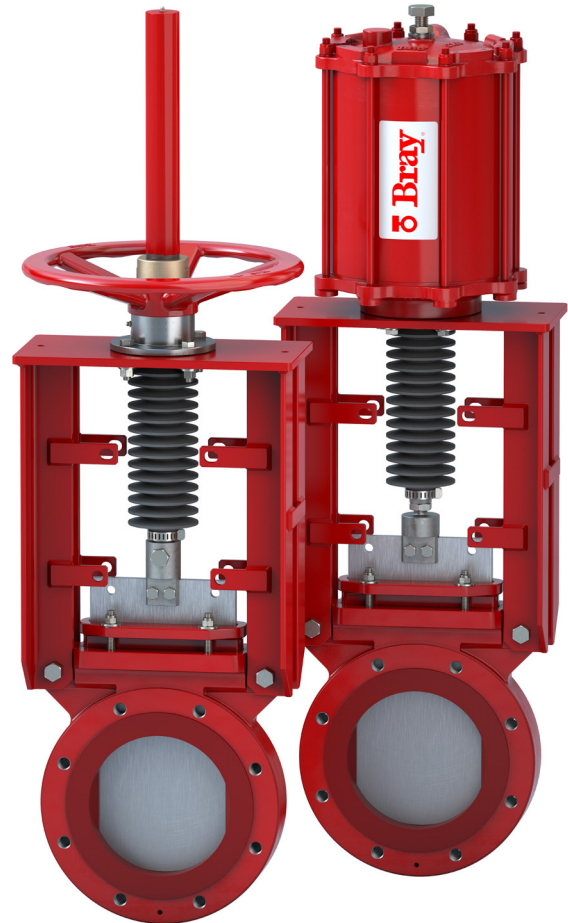
Face-to-Face	MSS SP-81
Flange Drilling	ASME B16.5 CL150
Design Standard	Manufacturer Standard
Testing Standard	MSS SP-151

STANDARD CONSTRUCTION

Body	Ductile Iron
Gate	10bar 316 Stainless Steel 16bar 2205
Liner	Polyurethane
Stem	304
Gland	Carbon Steel
Packing	PTFE Impregnated Synthetic Fiber + Quad Seal
Topworks	Carbon Steel

ACTUATOR OPTIONS

Direct Mounted Handwheel Bevel Gear Operator
Double Acting Pneumatic Hydraulic Electric



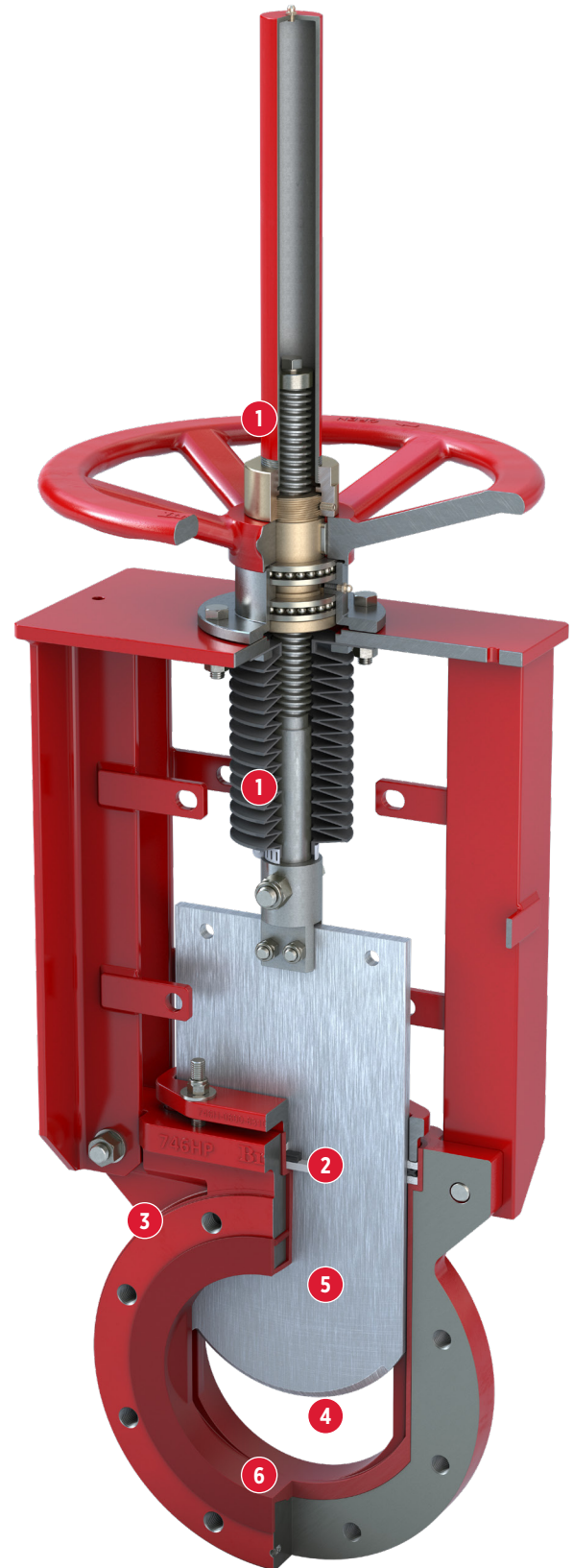
MATERIAL OPTIONS

Body	Carbon Steel (WCB) CF8 Stainless Steel CF8M Stainless Steel CF3M Stainless Steel SAF 2205 Duplex SAF 2507 Duplex
Gate	304, 317 Stainless Steel 17-4PH Stainless Steel SAF 2507 Duplex SAF 2205 Duplex Hastelloy® C Monel®
Stem	316
Packing	PTFE w/Copper Wiper Graphite PTFE w/Viton Quad Seal

FEATURES & BENEFITS

FEATURES

- 1 Upper and lower protective stem cover is standard in all models, increasing cycle life in hazardous environments.
- 2 Multi-layer square packing with energized quad seal provides exceptional gland sealing.
- 3 Standard one-piece ductile iron body with polyurethane bonded liner throughout. Polyurethane body liner is rated up to 194°F/90°C and completely protects valve body from abrasive line media.
- 4 Unrestricted flow path with minimal pressure drop achieved through full port valve design for extended valve life.
- 5 Available in a wide range of corrosion-resistant alloys, the robust tapered edge gate efficiently cuts through thick slurries or solids in the flow.
- 6 Seat and port designed to be flush eliminating cavities where media can collect and prevent full gate closure.



INDUSTRIES

Wastewater

- > Slurry/Sludge Lines

Mining

- > Mineral Mining
- > Coal Washeries
- > Coal Preparation

Power

- > Fly Ash | Bottom Ash
- > Branch Lines

Chemical

- > Process Fluids & Chemicals
- > Petroleum Products

OPTIONS

BODY STYLES

SOLID FLANGE

NPS 2 to 12



DOUBLE FLANGE

NPS 14 to 24



PACKING MAXIMUM TEMPERATURE RANGE

Pure PTFE	500°F
	260°C
PTFE Impregnated Synthetic Fiber	450°F
	232°C
PTFE w/Buna-N Quad Seal¹	194°F
	90°C
PTFE w/Viton[®] Quad Seal¹	392°F
	200°C
PTFE w/EPDM Quad Seal¹	248°F
	120°C
PTFE w/Copper Wiper	450°F
	232°C



Pure PTFE



PTFE Impregnated Synthetic Fiber



PTFE w/Buna-N Quad Seal



PTFE w/Viton[®] Quad Seal



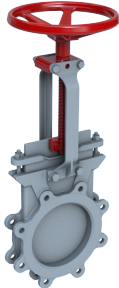
PTFE w/EPDM Quad Seal



PTFE w/Copper Wiper

NOTE ¹ Pure PTFE or PTFE Impregnated Synthetic Fiber can be used.

AVAILABLE ACCESSORIES



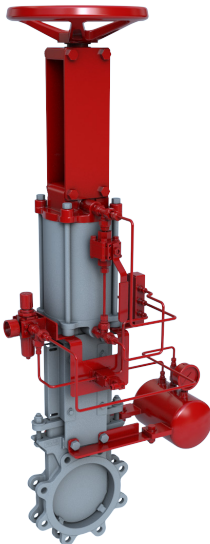
NON-RISING STEM



HANDWHEEL
LOCK OUT



GATE GUARD



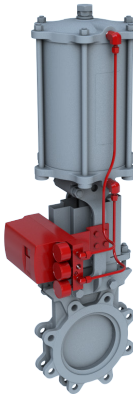
PNEUMATIC FAILSAFE



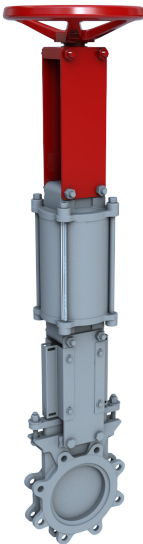
MECHANICAL
LIMIT SWITCH



PROXIMITY SENSOR



ELECTRO PNEUMATIC
POSITIONER

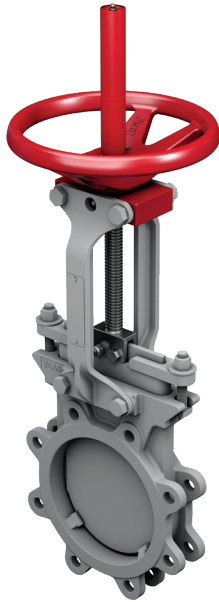


MANUAL OVERRIDE



CHAIN WHEEL

ACTUATOR OPTIONS



DIRECT MOUNTED HANDWHEEL



BEVEL GEAR OPERATOR



DOUBLE ACTING PNEUMATIC ACTUATOR



HYDRAULIC ACTUATOR



ELECTRIC ACTUATOR

ACTUATOR SELECTION

VALVE SIZE	NPS	2	3	4	6	8	10	12	14	16	18	20	24
	DN	50	80	100	150	200	250	300	350	400	450	500	600
ACTUATOR SIZING	10bar / 16bar	C3	C4	C6	C8	C10	C12	C14	C16	C20	C20	C24	C32

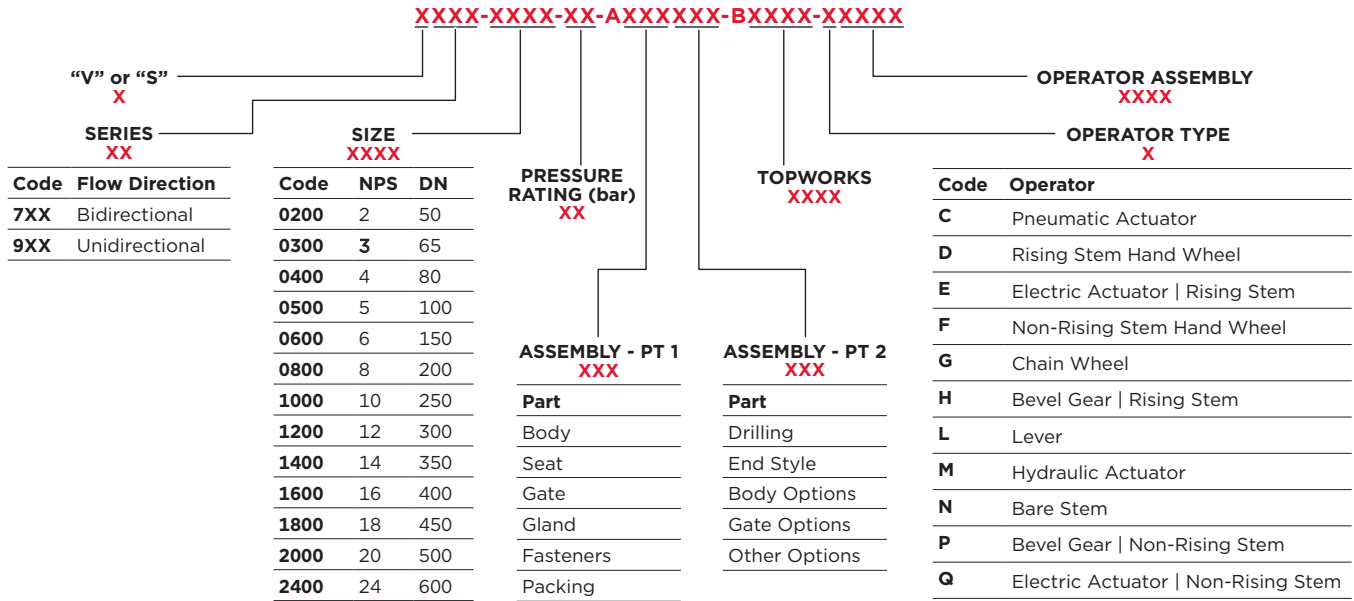
NOTES

- 1 Actuator sizing done based on actuator supply pressure of 5 bar
- 2 Factor Of Safety (FOS) on design thrust >= 2.0

VALVE SELECTION

VALVE PART NUMBERING SYSTEM

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



NOTES:

1 For a complete list of standard materials and descriptions, refer to MATERIALS OF CONSTRUCTION. Other materials are available, please contact Bray for additional information.

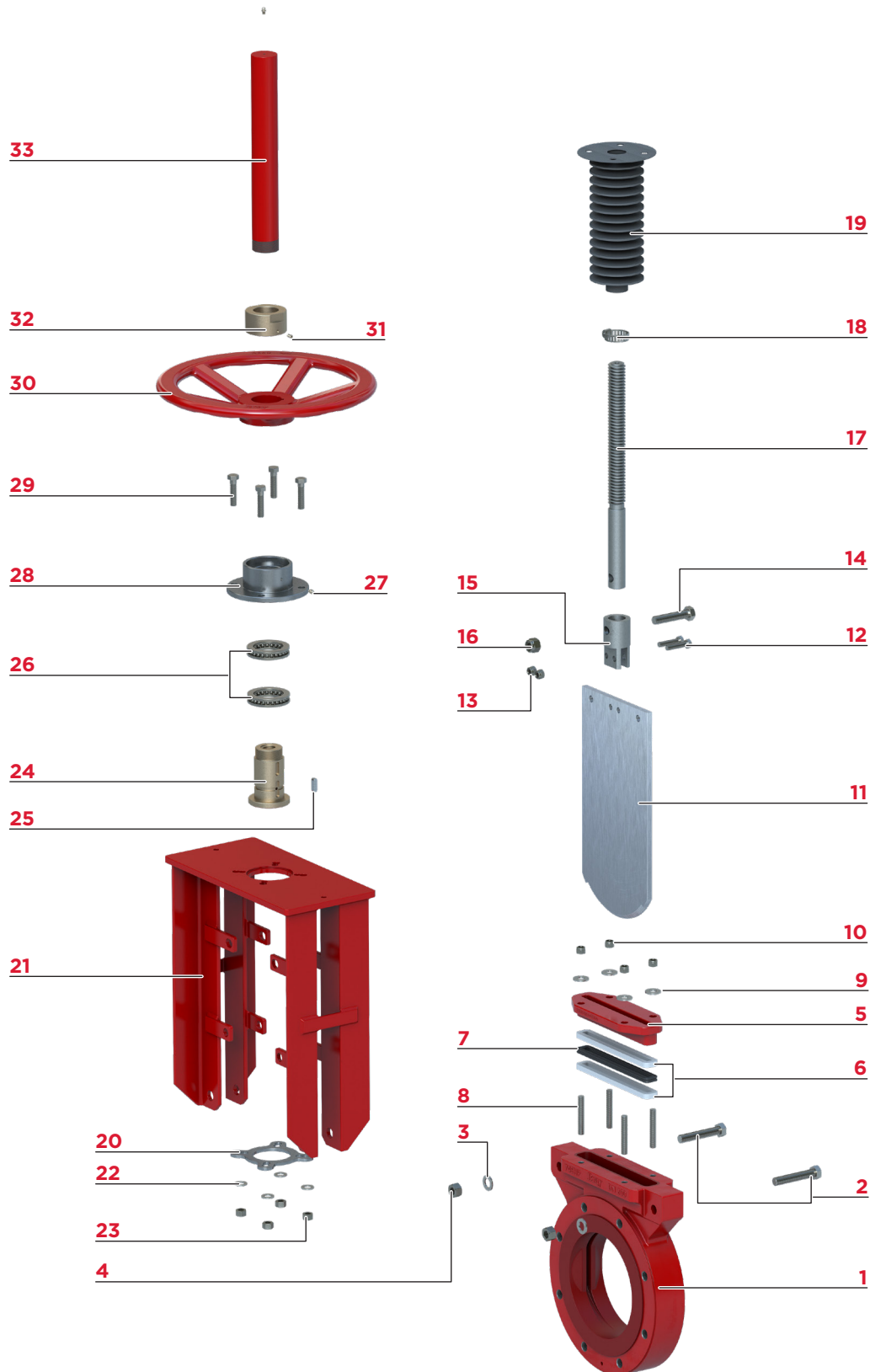
2 No assigned code, ASSEMBLY NUMBER is generated by Engineering configurator.

EXAMPLE

S-746-0800-10-A610610-B0610-D6110

- > Bidirectional, Slurry
- > 8 inch (200 mm)
- > 175 psi (10 bar) rated valve
- > Standard build assembly
- > Rising Stem Hand Wheel

PARTS CALLOUT



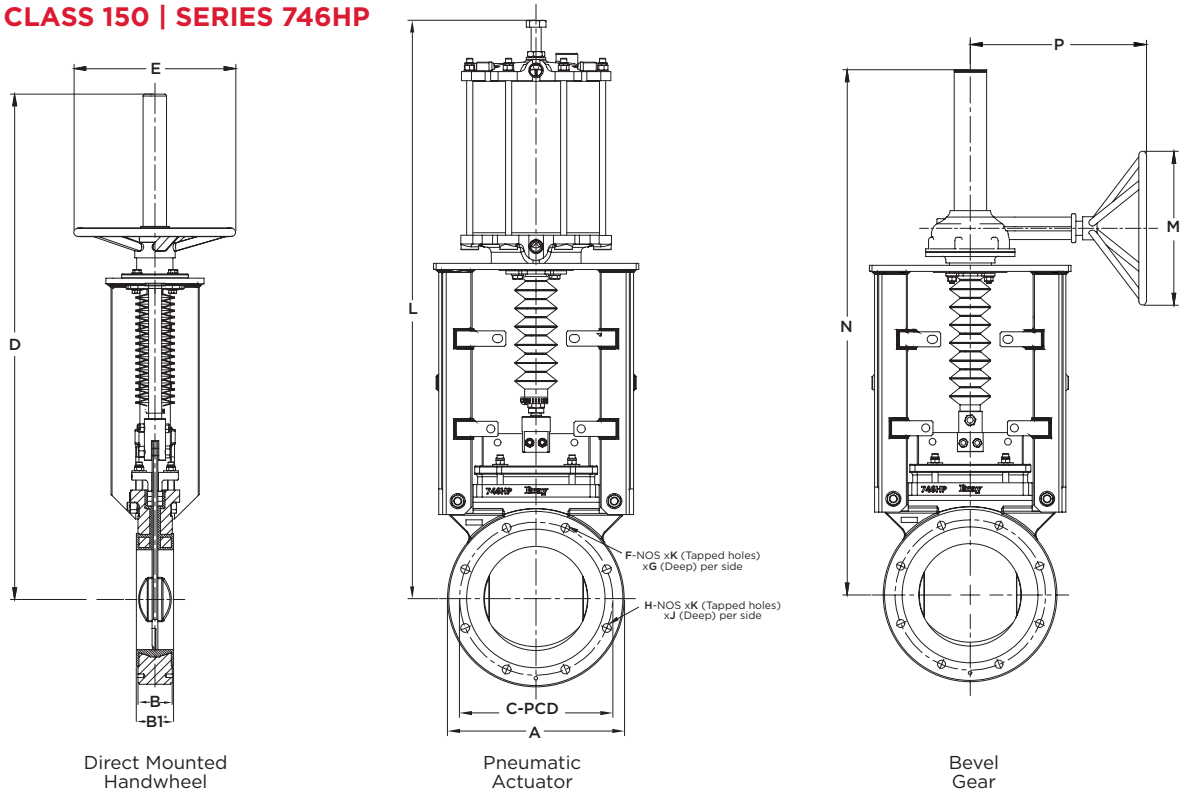
PARTS LIST AND MATERIAL SPECIFICATIONS

ITEM	DESCRIPTION	MATERIAL
1	Body (Polyurethane Lined)	Ductile Iron
2	Tower Mounting Bolt	Carbon steel
3	Tower Mounting Washer	Carbon steel
4	Tower Mounting Nut	Carbon steel
5	Gland	Carbon steel
6	Gland Packing	PTFE Impregnated Synthetic Fiber
7	Quad Seal	Viton
8	Gland Mounting Stud	Carbon steel
9	Gland Mounting Washer	Carbon steel
10	Gland Mounting Nut	Carbon steel
11	Gate	SS316 / SS 2205
12	Clevis Gate Bolt	SS 304
12	Clevis Gate Nut	SS 316
14	Stem Clevis Bolt	SS 304
15	Clevis	SS 316
16	Stem Clevis Nut	SS 316
17	Stem	SS 304
18	Bellows Hose Clip	Steel
19	Bellows	Canvaas
20	Bellow Flange	Carbon steel
21	Superstructure/Tower Assembly	Carbon steel
22	Handwheel Mounting Washer	Carbon steel
23	Handwheel Mounting Nut	Carbon steel
24	Stem Nut	Brass
25	Key	Carbon steel
26	Thrust Ball Bearing	Steel
27	Handwheel Grease Nipple	Stainless Steel
28	Handwheel Housing	Carbon steel
29	Handwheel Housing Bolt	Carbon steel
30	Handwheel	Ductile Iron
31	Grub Screw	Carbon steel
32	Handwheel Lock Nut	Brass
33	Stem Guard	Carbon steel

NOTES

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

ASME CLASS 150 | SERIES 746HP

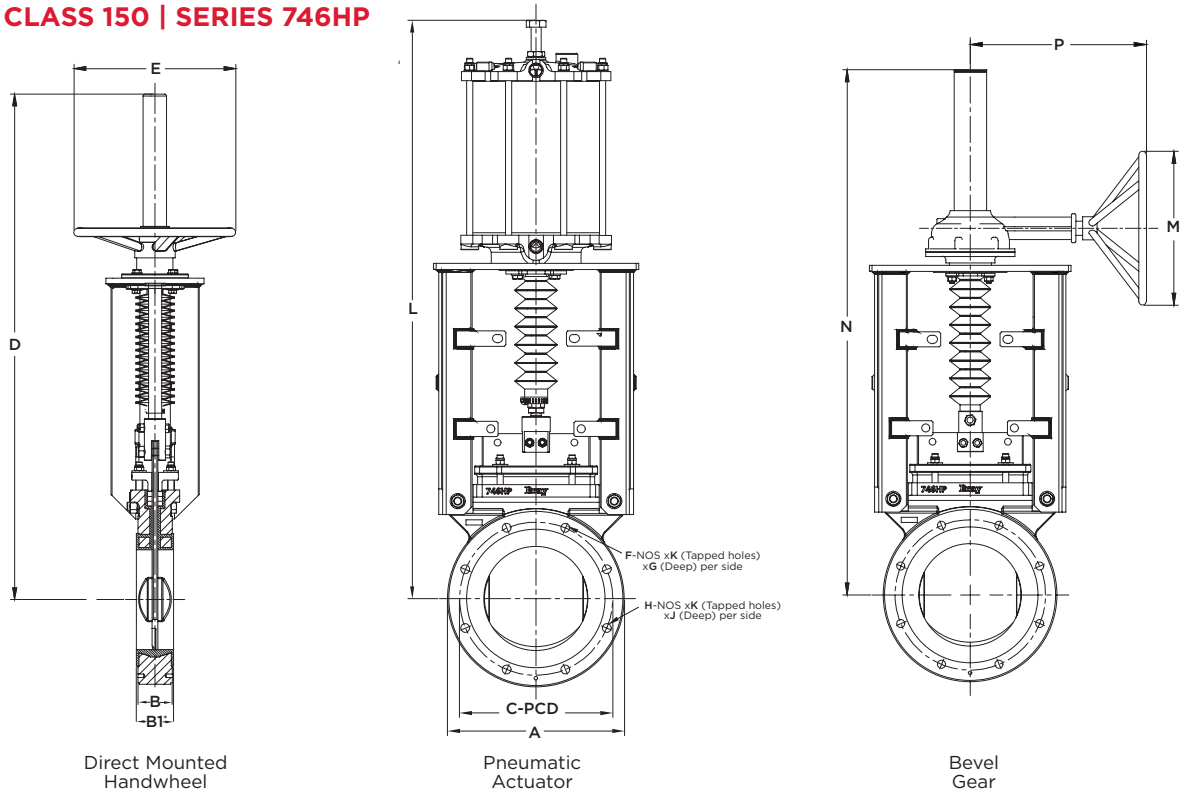


DIMENSIONS (inch)																WEIGHT (lbs)		
NPS	A	B	B1*	C-PCD	D	ØE	F	G	H	J	K	L	ØM	N	P	HAND WHEEL	PNEUMATIC ACTUATOR	GEAR OPERATOR
2	6.5	1.89	2.01	4.75	21.46	11.81	2	10	2	0.79	5/8"-11 UNC	22.05	11.81	19.09	9.06	2	6.5	1.89
3	7.9	2.01	2.13	6.00	23.62	11.81	2	10	2	0.79	5/8"-11 UNC	25.00	11.81	22.83	9.06	3	7.9	2.01
4	9.1	2.01	2.13	7.50	27.56	11.81	2	10	6	0.79	5/8"-11 UNC	29.33	11.81	25.39	9.06	4	9.1	2.01
6	11.4	2.24	2.36	9.50	35.83	15.75	2	12	6	0.79	3/4"-10 UNC	38.58	11.81	33.46	13.39	6	11.4	2.24
8	13.6	2.76	2.87	11.75	40.35	19.69	2	13	6	1.18	3/4"-10 UNC	44.29	11.81	38.58	13.39	8	13.6	2.76
10	16.1	2.76	2.87	14.25	46.85	19.69	4	14	8	1.18	7/8"-9 UNC	51.97	11.81	44.88	13.39	10	16.1	2.76
12	19.1	2.99	3.11	17.00	-	-	4	14	8	1.18	7/8"-9 UNC	58.66	19.69	51.57	18.7	12	19.1	2.99
14	21.0	2.99	3.11	18.75	-	-	4	16	8	1.18	1"-8 UNC	68.11	19.69	56.30	18.7	14	21.0	2.99
16	23.6	3.50	3.62	21.25	-	-	6	16	10	1.26	1"-8 UNC	75.59	19.69	64.57	22.83	16	23.6	3.50
18	25.2	3.50	3.62	22.75	-	-	6	18	10	1.26	1-1/8"-8 UN	79.92	19.69	68.90	22.83	18	25.2	3.50
20	28.1	4.49	4.61	25.00	-	-	10	20	10	1.30	1-1/8"-8 UN	90.55	29.53	74.80	22.83	20	28.1	4.49
24	33.1	4.49	4.61	29.50	-	-	12	21	8	1.65	1-1/4"-8 UN	101.57	39.37	89.76	25.2	24	33.1	4.49

NOTES

- 1 Consult factory for hydraulic and electric actuator dimensions.
- 2 Dimensions are approximate and subject to change. Consult factory for certified drawings.
- 3 Drilling in conformance with ASME B16.5, Class 150 for sizes NPS 2 (DN50) through NPS 24 (DN600.)
- * in-built with PU gasket and does not required additional flange gasket

ASME CLASS 150 | SERIES 746HP



DIMENSIONS (mm)																WEIGHT (kg)		
DN	A	B	B1*	C-PCD	D	ØE	F	G	H	J	K	L	ØM	N	P	HAND WHEEL	PNEUMATIC ACTUATOR	GEAR OPERATOR
50	165	48	51	120.6	545	300	2	10	2	20	5/8"-11 UNC	560	300	485	230	27	22	26
80	200	51	54	152.4	600	300	2	10	2	20	5/8"-11 UNC	635	300	580	230	33	29	31
100	230	51	54	190.5	700	300	2	10	6	20	5/8"-11 UNC	745	300	645	230	40	41	39
150	290	57	60	241.3	910	400	2	12	6	20	3/4"-10 UNC	980	300	850	340	70	78	68
200	345	70	73	298.4	1025	500	2	13	6	30	3/4"-10 UNC	1125	300	980	340	92	108	89
250	408	70	73	362.0	1190	500	4	14	8	30	7/8"-9 UNC	1320	300	1140	340	124	158	121
300	485	76	79	431.8	-	-	4	14	8	30	7/8"-9 UNC	1490	500	1310	475	-	229	172
350	533	76	79	476.2	-	-	4	16	8	30	1"-8 UNC	1730	500	1430	475	-	320	196
400	600	89	92	539.8	-	-	6	16	10	32	1"-8 UNC	1920	500	1640	580	-	483	300
450	640	89	92	577.8	-	-	6	18	10	32	1-1/8"-8 UN	2030	500	1750	580	-	525	345
500	715	114	117	635.0	-	-	10	20	10	33	1-1/8"-8 UN	2300	750	1900	580	-	835	450
600	840	114	117	749.3	-	-	12	21	8	42	1-1/4"-8 UN	2580	1000	2280	640	-	1120	725

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