Bray®

MANUAL BUTTERFLY VALVES

HIGH PRESSURE RESILIENT SEATED

SERIES 31H Lug
2"-20" (50mm - 500mm)
250 psi (17.2 Bar)

2"-20" (50mm-500mm)

Bray Controls is proud to offer a line of superior quality, high pressure manual butterfly valves that meet many of today's requirements. The Series 31H lug type is rated for 250 psi (17.2 Bar) bidirectional dead end service.

FEATURES

• Unique "tongue and groove" seat design, bonded to the body by aerospace adhesive, is designed to seal with slip-on or weld-neck flanges. Seat totally encases the valve interior to isolate the line media from the body.
• Molded seat O-ring provides seal between valve and pipe flanges. Flange gaskets should not be used with this valve.
• Primary and secondary seals are interference fits between seat and disc hub, and stem and seat stem hole respectively.
• Series 31H Lug valves are drilled and tapped to meet ANSI Class 125/150 and PN16 flanges.
• Valves are bidirectional and every valve is tested to 110% of full pressure rating.
• The unique close tolerance, double "D" connection drives the valve disc. This design eliminates the need for exposed stem retention components, such as disc screws, to the line media which commonly results in leak paths, corrosion, and vibration failures. Due to wear and corrosion, disc screws often require difficult machining for disassembly. Disassembly of the Bray stem is simply a matter of pulling the stem out of the disc.
• Disc edge sealing surface is spherically machined and hand polished to provide a bubble tight shut-off, with minimum torque and an extended seat cycle life.
• Patented "Spirolox®" retaining ring and stem retaining C-rings provide a blow-out proof stem.

The High Performance Company

SERIES 31H

FEATURES

• Non corrosive, heavy duty acetal bushing absorbs stem side thrusts.
• Stem packing gland is a self-adjusting double "U" cup design and gives positive sealing in both directions, preventing external substances from entering the stem bore.
• Mounting flange meets ISO 5211 and allows direct mounting of Bray manual operators.

PRESSURE RATINGS

For bidirectional or dead end service, bubble-tight shut off, disc in closed position:
2"-20" (50mm-500mm)
250 psi (17.2 Bar)

All valves are factory tested to 110% of full pressure rating before shipping.

TEMPERATURE RANGE OF SEATS

Aerospace-Bonded EPDM:
-40°F (-40°C) to 250°F (+121°C)
Aerospace-Bonded Buna-N (NBR):
-0°F (-18°C) to 212°F (+100°C)

VELOCITY LIMITS

For On/Off Services:
Fluids – 30 ft/sec (9m/sec)
Gases – 175 ft/sec (54m/sec)

MATERIALS SELECTION

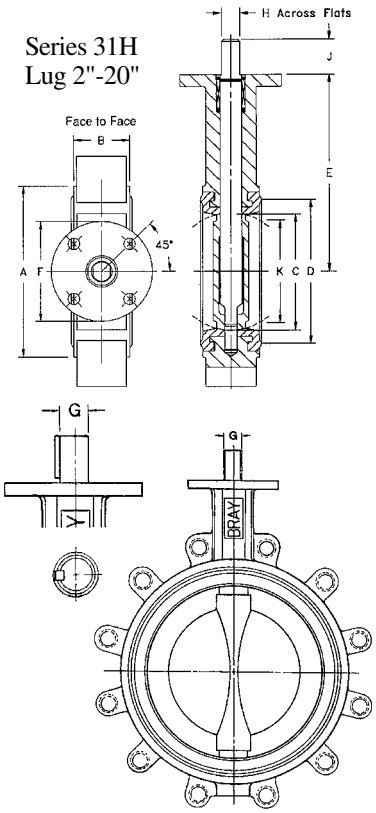
BODY: • Cast Iron, ASTM A126 Class B
Ductile Iron, ASTM A536 Gr. 65-45-12
DISC: • Aluminum Bronze, ASTM B148-954
• Ductile Iron, Nylon 11® Coated, ASTM A536 Gr. 65-45-12
• 316 Stainless Steel ASTM A351 CF8M
STEM: • Type 416 Stainless Steel, ASTM A 582
SEAT: • Aerospace-Bonded EPDM
• Aerospace-Bonded Buna-N (NBR)

C_V VALUES–VALVE SIZING COEFFICIENT

Valve Size		Disc Position (degrees)								
ins	mm	90°	80°	70°	60°	50°	40°	30°	20°	10°
2	50	144	114	84	61	43	27	16	7	1
2½	65	282	223	163	107	67	43	24	11	1.5
3	80	461	364	267	154	96	61	35	15	2
4	100	841	701	496	274	171	109	62	27	3
5	125	1376	1146	775	428	268	170	98	43	5
6	150	1850	1542	1025	567	354	225	129	56	6
8	200	3316	2842	1862	1081	680	421	241	102	12
10	250	5430	4525	2948	1710	1076	667	382	162	19
12	300	8077	6731	4393	2563	1594	1005	555	235	27
14	350	10538	8874	5939	3384	2149	1320	756	299	34
16	400	13966	11761	7867	4483	2847	1749	1001	397	45
18	450	17214	14496	10065	5736	3643	2237	1281	507	58
20	500	22339	18812	12535	7144	4536	2786	1595	632	72

C_V is defined as the number of U.S.G.P.M. of water that will flow through a given restriction or valve opening with a pressure drop of one (1) p.s.i. at room temperature. Recommended control angles are between 25°–70° open.

Series 31H
Lug 2"-20"



DIMENSIONS (125/150 ANSI Valves) Series 31H Lug 2"-20"

Valve Size		A	B	C	D	E	F	Mounting Flange Data			G	H	J	K	Lug Bolting Data		
ins	mm							BC	No. Holes	Hole Dia.					BC	No. Holes	Threads UNC-2B
2	50	3.69	1.62	2.00	2.84	5.50	3.54	2.76	4	.39	.55	.39	1.25	1.32	4.75	4	.62-11
2½	65	4.19	1.75	2.50	3.34	6.00	3.54	2.76	4	.39	.55	.39	1.25	1.91	5.50	4	.62-11
3	80	4.88	1.75	3.00	4.03	6.25	3.54	2.76	4	.39	.55	.39	1.25	2.55	6.00	4	.62-11
4	100	6.06	2.00	4.00	5.16	7.00	3.54	2.76	4	.39	.63	.43	1.25	3.57	7.50	8	.62-11
5	125	7.12	2.12	5.00	6.16	7.50	3.54	2.76	4	.39	.75	.51	1.25	4.63	8.50	8	.75-10
6	150	8.12	2.12	5.75	7.02	8.00	3.54	2.76	4	.39	.75	.51	1.25	5.45	9.50	8	.75-10
8	200	10.50	2.50	7.75	9.47	9.50	5.91	4.92	4	.57	.87	.63	1.25	7.45	11.75	8	.75-10
10	250	12.75	2.50	9.75	11.47	10.75	5.91	4.92	4	.57	1.18	.87	2.00	9.53	14.25	12	.88-9
12	300	14.88	3.00	11.75	13.47	12.25	5.91	4.92	4	.57	1.18	.87	2.00	11.47	17.00	12	.88-9

Valve Size		A	B	C	D	E	F	Mounting Flange Data			G	H	KEY SIZE	K	Lug Bolting Data		
ins	mm							BC	No. Holes	Hole Dia.					BC	No. Holes	Threads UNC-2B
14	350	16.94	3.00	13.25	15.28	13.62	5.91	4.92	4	.57	1.38	2.00	.39x.39	13.04	18.75	12	1.00-8
16	400	19.06	4.00	15.25	17.41	14.75	5.91	4.92	4	.57	1.38	2.00	.39x.39	14.85	21.25	16	1.00-8
18	450	21.12	4.25	17.25	19.47	16.00	8.27	6.50	4	.81	1.97	2.50	.47x.39	16.85	22.75	16	1.12-7
20	500	23.25	5.00	19.25	21.59	17.25	8.27	6.50	4	.81	1.97	2.50	.47x.39	18.73	25.00	20	1.12-7

LLOYD'S REGISTER QUALITY ASSURANCE ISO9001

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