



Bray®

SERIES 31H/36H Lug
 2" - 20" (50mm - 500mm) 250 psi
 24" (600mm) 150 psi

MANUAL BUTTERFLY VALVES

HEATING, VENTILATING & AIR CONDITIONING (HVAC)
 HIGH PRESSURE RESILIENT SEATED

2" - 24" (50mm - 600mm)

Bray Controls is proud to offer a line of superior quality, high pressure manual butterfly valves that meet today's Heating, Ventilating & Air Conditioning (HVAC) requirements. The Series 31H lug type is rated for 250 psi bidirectional dead end service, the Series 36H is rated 150 psi bidirectional dead end service.

FEATURES

- Lug valves (S31H, 2-20") and flanged (S36H, 24") are drilled and tapped to meet ANSI Class 125/150 flanges.
- Bidirectional and tested to 110% of full pressure rating.
- The unique close tolerance, double "D" connection drives the valve disc on S31H. 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 just a matter of pulling the stem out of the disc.

- Disc casting 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 on S31H.
- 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.
- Non corrosive, heavy duty acetal bushing absorbs side thrusts on S31H, bronze bearing on S36H.
- Stem packing gland on S31H is a self-adjusting double "U" cup design and gives positive sealing in both directions, preventing external substances from entering the stem bore. The S36H has an adjustable packing gland.
- Mounting flange meets ISO 5211 and allows direct mounting of Bray manual operators.

SPECIFICATIONS

PRESSURE RATINGS

For bidirectional or dead end service, bubble-tight shut off, disc in closed position:

2"-20" (50mm-500mm) 250 psi
24" (600mm) 150 psi

TEMPERATURE RANGE OF SEATS

Aerospace-Bonded EPDM:
-40°F (-40°C) to 250°F (+121°C)

VELOCITY LIMITS

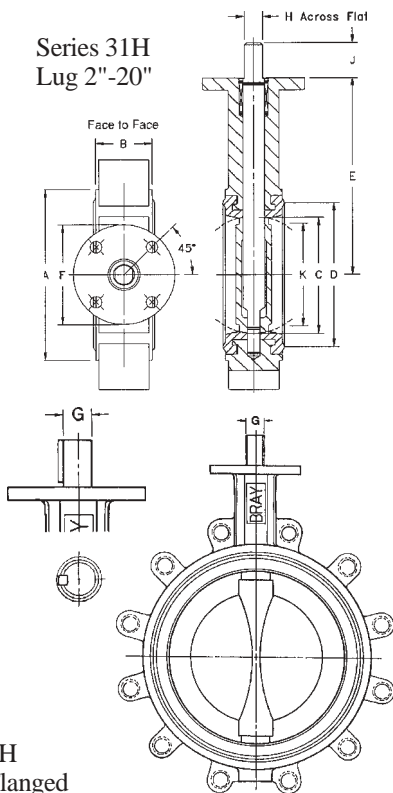
For On/Off Services:
Fluids – 30 ft/sec (9m/sec)
Gases – 175 ft/sec (54m/sec)

MATERIALS SELECTION

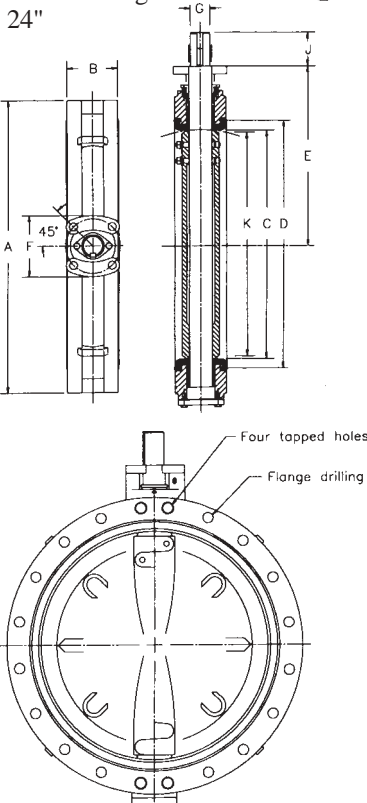
BODY: Cast Iron, ASTM A126 Class B
DISC: Aluminum Bronze, ASTM B148-954
STEM: Type 416 Stainless Steel, ASTM A 582
SEAT: EPDM

INSTALLATION AND MAINTENANCE

Please refer to Bray Technical Bulletin 1071 for Series 31 valves and Technical Bulletin 1114 for Series 36 valves.



Series 36H
Double Flanged
24"



HOW TO ORDER

2"-20": 31-Valve Size-13000-120
24": 36-2400-13010-120

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
24	600	33154	27186	18235	11040	6962	4244	2387	1028	259

C_v is defined as the volume of water in U.S.G.P.M. 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. Preferred angle for control valve sizing is 60°-65° open.

DIMENSIONS Series 31H Lug 2"-20", Series 36H Double Flanged 24"

Valve Size		A	B	C	D	E	F	Mounting Flange Drig.			G	H	J	K
ins	mm							BC	No. Holes	Hole Dia.				
2	50	3.69	1.62	2.00	2.84	5.50	3.54	2.76	4	.38	.55	.39	1.25	1.32
2½	65	4.19	1.75	2.50	3.34	6.00	3.54	2.76	4	.38	.55	.39	1.25	1.91
3	80	4.88	1.75	3.00	4.03	6.25	3.54	2.76	4	.38	.63	.43	1.25	2.55
4	100	6.06	2.00	4.00	5.16	7.00	3.54	2.76	4	.38	.75	.51	1.25	3.57
5	125	7.12	2.12	5.00	6.16	7.50	3.54	2.76	4	.38	.75	.51	1.25	4.63
6	150	8.12	2.12	5.75	7.02	8.00	3.54	2.76	4	.38	.75	.51	1.25	5.45
8	200	10.50	2.50	7.75	9.47	9.50	5.91	4.92	4	.56	.87	.63	1.25	7.45
10	250	12.75	2.50	9.75	11.47	10.75	5.91	4.92	4	.56	1.18	.87	2.00	9.53
12	300	14.88	3.00	11.75	13.47	12.25	5.91	4.92	4	.56	1.18	.87	2.00	11.47

Lug Bolting Data		
BC	No. Holes	Threads UNC-2B
4.75	4	5/8-11
5.50	4	5/8-11
6.00	4	5/8-11
7.50	8	5/8-11
8.50	8	3/4-10
9.50	8	3/4-10
11.75	8	3/4-10
14.25	12	7/8-9
17.00	12	7/8-9

Valve Size		A	B	C	D	E	F	Mounting Flange Drig.			G	J	KEY SIZE	K
ins	mm							BC	No. Holes	Hole Dia.				
14	350	16.94	3.00	13.25	15.28	13.62	5.91	4.92	4	.56	1.38	2.00	.39x.39	13.04
16	400	19.06	4.00	15.25	17.41	14.75	5.91	4.92	4	.56	1.38	2.00	.39x.39	14.85
18	450	21.12	4.25	17.25	19.47	16.00	8.27	6.50	4	.81	1.97	2.50	.39x.47	16.85
20	500	23.25	5.00	19.25	21.59	17.25	8.27	6.50	4	.81	1.97	2.50	.39x.47	18.73
24	600	33.00	5.94	23.25	25.75	19.50	8.27	6.50	4	.81	2.50	4.00	.62x.62	22.69

Lug Bolting Data		
BC	No. Holes	Threads UNC-2B
18.75	12	1-8
21.25	16	1-8
22.75	16	1 1/8-7
25.00	20	1 1/8-7
29.50	20	1 1/4-7



All statements, technical information, and recommendations in this bulletin are for general use only. Consult Bray representatives or factory for the specific requirements and material selection for your intended application. The right to change or modify product design or product without prior notice is reserved.

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