

Bray[®]

SERIES 31U Lugged
50mm-300mm (2"-12")

BUTTERFLY VALVES
25 BAR RESILIENT SEATED

SERIES 31U

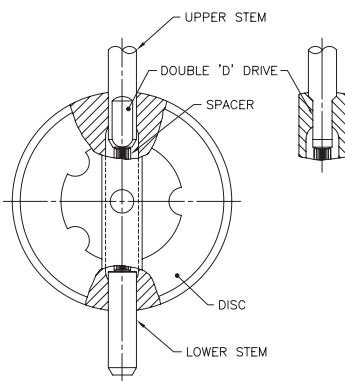
50mm-300mm

Bray Controls offers our high quality, high pressure resilient-seated butterfly valves to meet the requirements of today's industrial market.

D.O.T 54 Firemains Approval

The Series 31U valve is tested and approved under D.O.T 54 for firemains fittings and is suitable for operating pressures to a maximum of 20 bar.

DISC AND STEM RETENTION



High Strength upper and lower stem incorporate a close tolerance double 'D' disk drive connection. This eliminates stem retention components being exposed to the live media, such as disc screws and taper pins, which commonly result in leak paths, corrosion and vibration failures. The double 'D' stem retention also allows for easy disassembly for maintenance purposes, unlike disc screws and taper pins, due to wear and corrosion, often require difficult machining for disassembly.

BODY

One-piece lugged style, available as ANSI 150, flange configuration, with a choice of either Carbon Steel polyester coated or Aluminium Bronze.

DISC

Casting is spherically machined and hand polished to provide bubble-tight shut-off with minimum torque and an extended seat life.

STEM BUSHING

Non-corrosive heavy duty acetal bushing absorbs actuator side thrusts.

STEM SEAL

Patented stem retaining ring and C-rings prevent unintentional removal up the stem during field service.

FEATURES

BRAY UNIQUE SEAT DESIGN

Bray's unique bonded tongue and groove resilient seat design offers lower torque than many valves on the market today and provides complete isolation of flowing media from the body by a totally encasing design. The seat is specifically designed to deal with weld-neck flanges.

The seat features a moulded tangential O-ring eliminating any need for flange gaskets.

NECK

Extended neck length allows for piping insulation and is easily accessible for mounting operators.

PRIMARY AND SECONDARY SEALS

The primary seal is achieved by an interference fit up the moulded seat socket with the disc hub. The secondary seal is created because the stem diameter is greater than the diameter up the seat stem hole. The seals prevent the line media from coming in contact with the stem or body.

MODULAR DESIGN

All Bray hand levers, manual gear operators, electric and pneumatic actuators mount directly to the S31U, with no brackets or adaptors required.

All valves are bi-directional and are tested to 110% of full rated pressure.



SELECTION DATA

C_v VALUES-VALVE SIZING COEFFICIENT

Valve Size		Disc Position (degrees)								
mm	ins	90°	80°	70°	60°	50°	40°	30°	20°	10°
50	2	144	114	84	61	43	27	16	7	1
65	2½	282	223	163	107	67	43	24	11	1½
80	3	461	364	267	154	96	61	35	15	2
100	4	841	701	496	274	171	109	62	27	3
125	5	1376	1146	775	428	268	170	98	43	5
150	6	1850	1542	1025	567	354	225	129	56	6
200	8	3316	2842	1862	1081	680	421	241	102	12
250	10	5430	4525	2948	1710	1076	667	382	162	19
300	12	8077	6731	4393	2563	1594	1005	555	235	27

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 0.07 Bar (1 psi) at room temperature. Recommended control angles are between 25° - 70° open. Preferred angle for control valve sizing is 60° - 65° open.

EXPECTED SEATING/UNSEATING TORQUES (Nm)

Valve Size		Full-Rated Pressure Valves			
		ΔP (Bar)			
mm	ins	12	16	20	25
50	2	13	20	23	27
65	2½	28	30	33	37
80	3	38	41	45	53
100	4	59	62	68	76
125	5	95	99	109	125
150	6	132	138	150	168
200	8	240	252	274	305
250	10	368	384	426	480
300	12	570	593	656	735

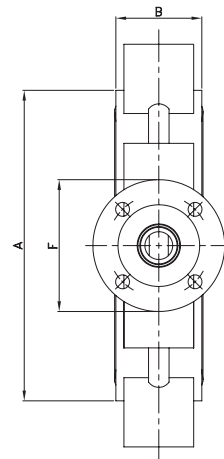
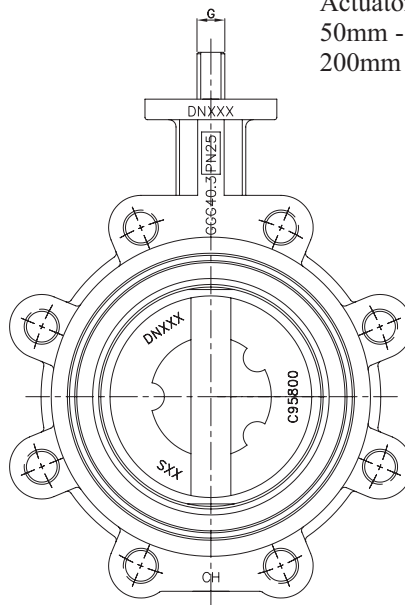
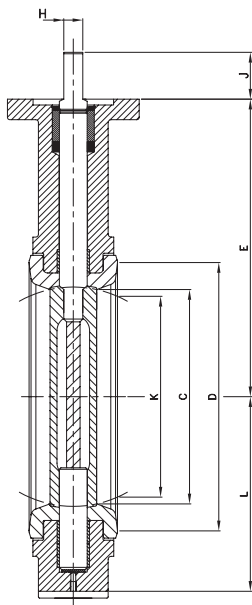
DIMENSIONS SERIES 31U

Valve Size								Mounting Flange Dirg.							
mm	ins	A	B	C	D	E	F	PCD	No. Holes	Hole Dia.	G	H	J	K	L
50	2	100	43	51	72	140	90	70	4	9.5	14	10	32	33	60
65	2½	113	46	64	85	152	90	70	4	9.5	14	10	32	49	83
80	3	130	46	76	102	159	90	70	4	9.5	14	10	32	65	92
100	4	158	52	102	131	178	90	70	4	9.5	16	11	32	91	108
125	5	187	56	127	156	190	90	70	4	9.5	19	13	32	118	132
150	6	212	56	146	178	203	90	70	4	9.5	19	13	32	138	137
200	8	273	60	197	241	241	150	125	4	14	22	16	32	189	174
250	10	332	68	248	291	273	150	125	4	14	30	22	50	242	212
300	12	386	78	298	342	311	150	125	4	14	30	22	50	291	243

Actuator Mounting Flange ISO recess dimensions.

50mm - 150mm valves F07

200mm - 300mm valves F12



SPECIFICATIONS

INSTALLATION AND MAINTENANCE

Please refer to IOM Manual (Bray technical bulletin 1071U).

PRESSURE RATINGS

20 bar
End of line - 17.5 bar

TEMPERATURE RANGE OF SEATS

Buna -18°C to +100°C

VELOCITY LIMITED

Fluids - 54M/s (175 ft./sec.)
Gases - 108M/s (350 ft./sec.)

MATERIALS SELECTION

BODY -

- Carbon Steel (ASTM A-216 WCB)
- Nickel Aluminium Bronze (ASTM B-148, UNS 95800)

DISC -

- Stainless Steel (ASTM A-351 CF8M)
- Nickel Aluminium Bronze (ASTM A-148, UNS 95800)

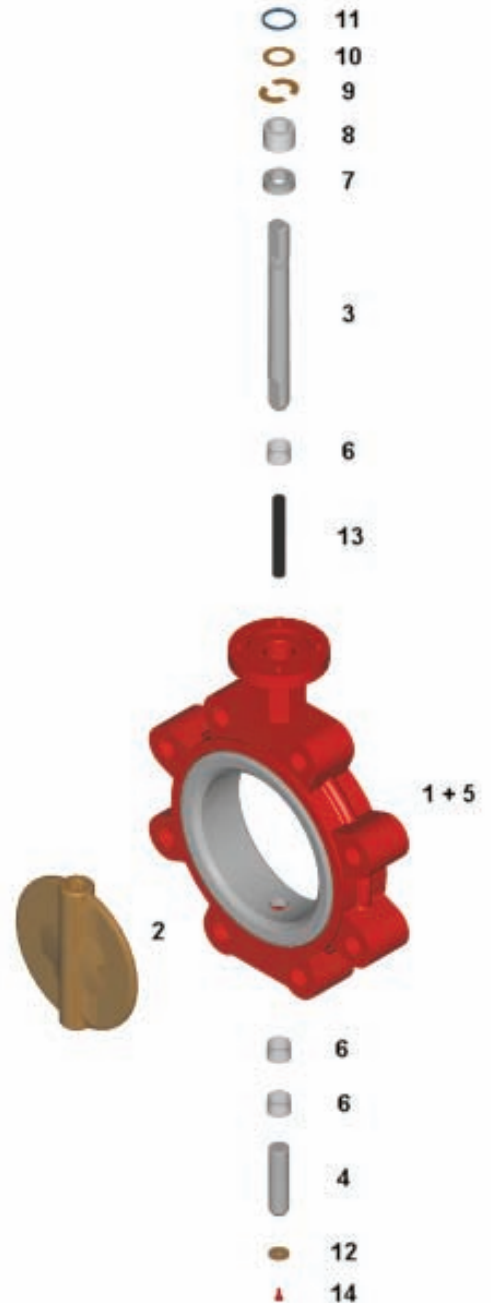
STEM -

- 17-4PH Stainless Steel (ASTM A-564 Type 630 Cond. H900)
- Monel K500 (ASTM B-865, UNS N05500)
- Stainless Steel (ASTM A-582 Type 416 Cond.T)

SEAT -

- Buna-N

Item	Description	No off	Remarks
1	Body	1	As per order
2	Disc	1	As per order
3	Upper stem	1	As per order
4	Lower stem	1	As per order
5	Seat	1	As per order
6	Bearing	3	Stainless Steel - Teflon lined
7	Stem Seal	1	Nitrile
8	Stem Bush	1	Acetal
9	Stem Retainer - C Washers	2	Bronze
10	Upper thrust washer	1	Bronze
11	Retaining ring	1	Stainless steel
12	Lower thrust washer	1	Bronze
13	Spacer	1	Acetal
14	Seal plug	1	Plastic



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Patents applied for.