

Incoval SERIES 140 /141

Industrial Split Body Butterfly Valves



Sizes 2"-24" / DN 50 - DN 600

Wafer & Lug Design



Leading the Industry with Innovation by Design

Incoval Controls is pleased to offer top-of-the-line products in pipeline flow control. The Incoval Series 140 (wafer body) and Series 141 (lug body) Industrial Split Body Butterfly Valves have been developed with extensive application, design and manufacturing expertise. These products are produced by employing modern manufacturing practices under a robust quality assurance system. These practices ensure consistent product quality and dependable performance. The Incoval Series 140/141 Industrial Split Body Butterfly Valves have been designed to include state-of-the-art features that are described in this bulletin.

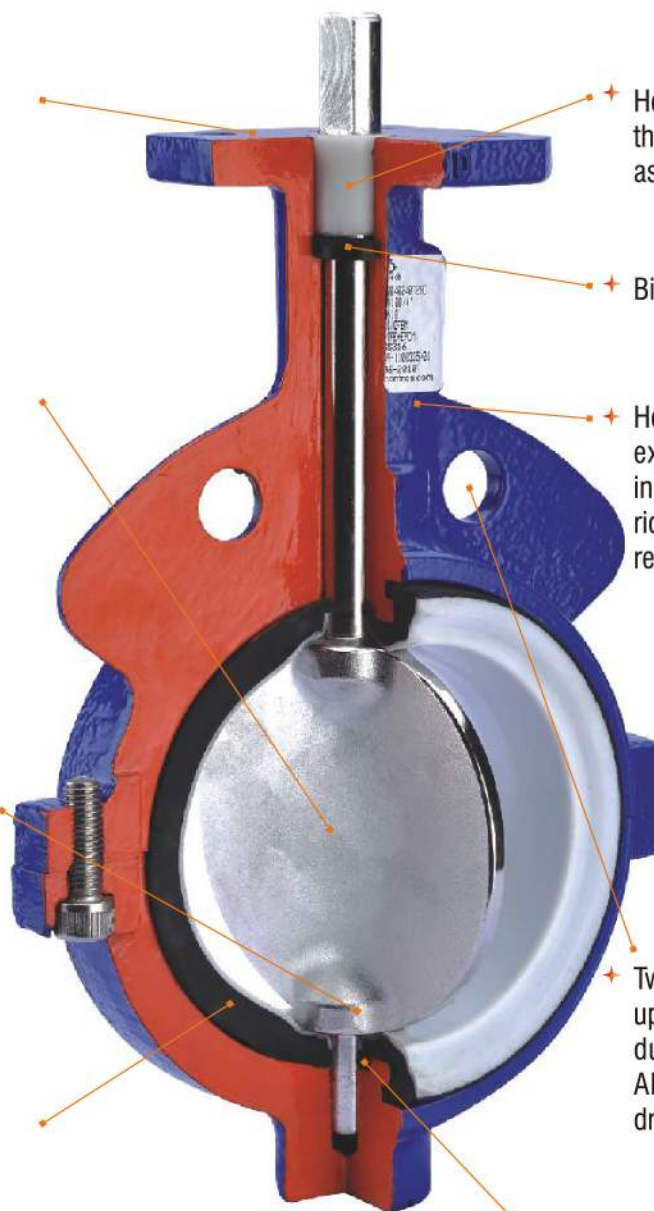
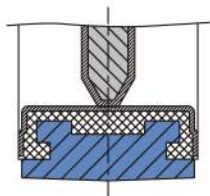
Features

✦ Top plate drilled to fit ISO 5211 bolt circle dimensions. All handles, gear operators and Incoval actuators are designed to mount directly to Incoval Valves.

✦ One-piece disc/stem in high strength design. Available in options such as 316 stainless steel (thin profile, with hand polished edge and hubs), PTFE, Nylon 12 Coated or rubber covered with the covering extending on the stem in the sealing area.

✦ Precision machined radius on the upper and lower disc hubs is pressed against upper and lower seat sealing faces for achieving primary sealing between disc and stem.

✦ Unique heavy-duty, square grooved "Center Lock" seat design virtually eliminates any seat movement during the seating and unseating of the disc. Available in PTFE lined EPDM and various elastomer materials.



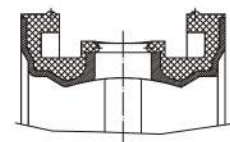
✦ Heavy-duty acetal bushing absorbs the forces acting on the stem/disc assembly due to line pressure.

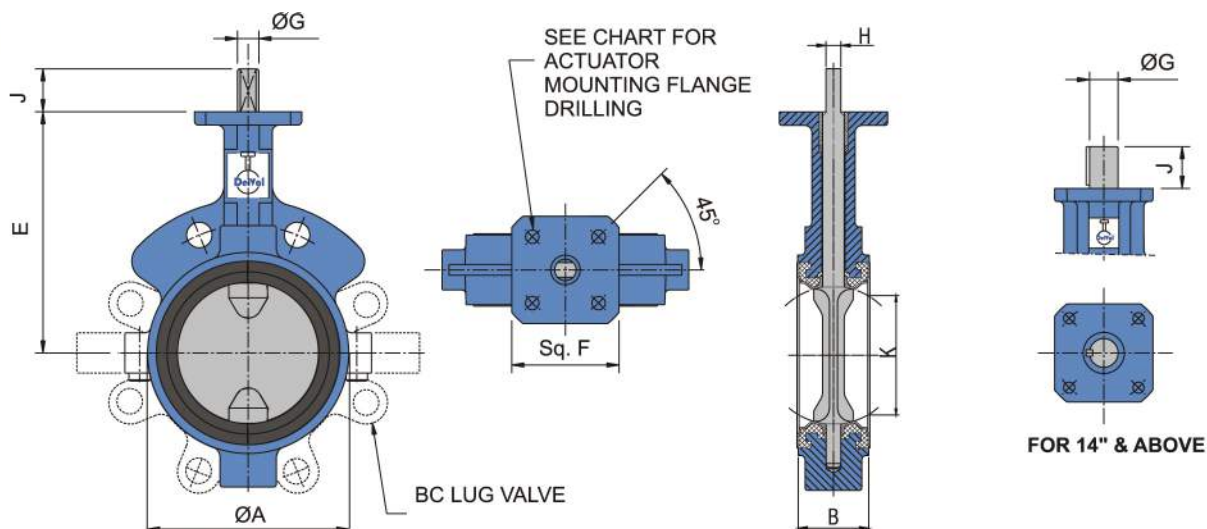
✦ Bi-directional "U" cup stem seal.

✦ Heavy-duty, two-piece body with extended neck for 2" piping insulation. Two coats of hard, zinc-rich epoxy for excellent corrosion resistance is optional.

✦ Two flange locating holes for sizes up to 12" for easy alignment of valve during installation. They meet ANSI#125/150 or other world drilling standards.

✦ O-ring molded in both upper and lower journals provide superior secondary seal.





DIMENSIONS (Inch)

Valve Size		ØA	*B	E	Sq'F'	Top Flange Drilling			ØG	H	J	Key Size	K	Lug Bolting Data			Weight in Lbs.	
Inch	DN					BC	No. of Holes	Hole Dia						BC	No. of Holes	Threads UNC-2B	Wafer (Series 40)	Lug (Series 41)
2	50	3.46	1.62	5.51	3.15	2.76	4	0.39	0.55	0.39	1.25	---	1.32	4.75	4	5/8-11	5.07	6.79
2 1/2	65	4.02	1.75	5.98	3.15	2.76	4	0.39	0.55	0.39	1.25	---	2.05	5.50	4	5/8-11	5.80	7.91
3	80	4.72	1.75	6.30	3.15	2.76	4	0.39	0.55	0.39	1.25	---	2.70	6.00	4	5/8-11	6.83	8.92
4	100	5.91	2.00	7.09	3.15	2.76	4	0.39	0.63	0.43	1.25	---	3.61	7.50	8	5/8-11	10.87	16.37
5	125	6.89	2.12	7.56	3.93	2.76/4.01	4	0.39/0.47	0.75	0.51	1.25	---	4.62	8.50	8	3/4-10	13.91	21.56
6	150	7.87	2.12	8.07	3.93	2.76/4.01	4	0.39/0.47	0.75	0.51	1.25	---	5.50	9.50	8	3/4-10	16.31	25.35
8	200	10.04	2.50	9.49	4.72	2.76/4.01/4.92	4	0.39/0.47/0.55	0.87	0.63	1.25	---	7.39	11.75	8	3/4-10	28.00	37.92
10	250	12.21	2.50	10.75	4.72	4.01/4.92	4	0.55	1.18	0.87	2.00	---	9.31	14.25	12	7/8-9	49.09	61.73
12	300	14.17	3.00	12.24	4.72	4.92	4	0.55	1.18	0.87	2.00	---	11.12	17.00	12	7/8-9	60.85	92.26
14	350	16.34	3.00	13.62	4.72	4.92	4	0.55	1.38	---	2.00	0.39x0.39	12.92	18.75	12	1-8	87.96	122.80
16	400	18.58	4.00	14.76	4.72	4.92	4	0.55	1.38	---	2.00	0.39x0.39	14.80	21.25	16	1-8	130.51	184.31
18	450	20.67	4.25	15.98	6.70	6.50	4	0.83	1.97	---	2.50	0.39x0.47	16.59	22.75	16	1 1/8-7	194.45	239.42
20	500	22.83	5.00	17.24	6.70	6.50	4	0.83	1.97	---	2.50	0.39x0.47	18.61	25.00	20	1 1/8-7	236.78	306.88
24	600	27.24	5.94	19.49	Ø8.27	6.50	4	0.83	2.50	---	4.00	0.62x0.62	22.55	29.50	20	1 1/4-7	385.81	477.08

DIMENSIONS (mm)

Valve Size		ØA	*B	E	Sq'F'	Top Flange Drilling			ØG	H	J	Key Size	K	Lug Bolting Data			Weight in Kg.	
Inch	DN					BC	No. of Holes	Hole Dia						BC	No. of Holes	Threads UNC-2B	Wafer (Series 40)	Lug (Series 41)
2	50	91	41	140	80	70	4	10	14	10	32	---	33.5	120.7	4	5/8-11	2.30	3.08
2 1/2	65	105	44	152	80	70	4	10	14	10	32	---	52.1	139.7	4	5/8-11	2.63	3.59
3	80	120	44	160	80	70	4	10	14	10	32	---	68.5	152.4	4	5/8-11	3.10	4.05
4	100	150	51	180	80	70	4	10	16	11	32	---	91.7	190.5	8	5/8-11	4.93	7.42
5	125	175	54	192	100	70/102	4	10/12	19	13	32	---	117.3	215.9	8	3/4-10	6.31	9.78
6	150	205	54	205	100	70/102	4	10/12	19	13	32	---	139.7	241.3	8	3/4-10	7.40	11.50
8	200	259	64	241	120	70/102/125	4	10/12/14	22	16	32	---	187.6	298.5	8	3/4-10	12.70	17.20
10	250	310	64	273	120	102/125	4	14	30	22	51	---	236.4	362.0	12	7/8-9	20.00	28.00
12	300	364	76	311	120	125	4	14	30	22	51	---	282.4	431.8	12	7/8-9	27.60	41.85
14	350	415	76	346	120	125	4	14	35	---	51	10x10	328.3	476.2	12	1-8	39.90	55.70
16	400	472	102	375	120	125	4	14	35	---	51	10x10	375.8	539.7	16	1-8	59.20	83.60
18	450	525	108	406	170	165	4	21	50	---	64	10x12	421.4	577.8	16	1 1/8-7	88.20	108.60
20	500	580	127	438	170	165	4	21	50	---	64	10x12	472.6	635.0	20	1 1/8-7	107.40	139.20
24	600	692	151	495	Ø210	165	4	21	63.5	---	102	15.88x15.88	572.7	749.3	20	1 1/4-7	175.00	216.40

*Face to face dimension "B" generally conforming to API 609 Category A/BS EN 558-1 Series 120/ISO 5752 Series 120/MSS SP 67 / ASME B 16.10

TORQUE (Lbf-Inch)

Valve Size		2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
Full Rated Pressure Valve ΔP, PSI	50	124	166	281	352	460	627	1221	1957	2948	4060	5582	7685	9815	15640
	100	159	196	331	414	542	737	1437	2302	3468	4777	6567	9253	11547	18400
	150	195	230	389	487	637	867	1690	2708	4080	5620	7726	10886	13585	21647

TORQUE (Nm)

Full Rated Pressure Valve ΔP, Bar	3.5	14	19	32	40	52	71	138	221	333	459	631	889	1109	1767
	7	18	22	37	47	61	83	162	260	392	540	742	1046	1305	2079
	10	22	26	44	55	72	98	191	306	461	635	873	1230	1535	2446

Note : Above Torque values are for valves with SS disc and Teflon / elastomer seat.

For torque values with Teflon disc and Teflon seat / Elastomer lined disc and Elastomer seat ,multiply the value by 1.4

Specifications

The Series 140/141 valve has a two-piece (split body) cast iron body available in wafer and full lug construction. All wafer valves have a flange with locating holes that meet ANSI Class 125/150 (or BS 10 Table D and E, BS 4504 PN10/16, DIN PN 10/16, AS 2129 and JIS 10) drilling. The disc/stem is a one-piece design having a thin profile, high flow capacity disc. If a PTFE or rubber covered disc is required, the entire disc material is encapsulated and the encapsulating material is homogeneous up and down a portion of the stem so as not to expose any part of the stem or disc to the line media. The seat is of the heavy-duty, square groove "center lock" seat design with primary hub seal and molded O-ring. The 316 SS disc has spherically machined and hand polished disc edge and hubs for minimum torque and maximum sealing capacity. The valve has a non-corrosive bushing and a self-adjusting stem seal.

Pressure Rating : Valve is bi-directional and tested to 110% of full rating. EPDM or Buna N molded disc/stem with resilient seat are rated at 150 psi. PTFE molded disc/stem with PTFE seat are rated at 150 psi.

Dead-End Service : Lug bodies for use in dead end services with no downstream flanges are equal to bi-directional ratings as stated above. The valve design permits optimum performance without any field adjustment. The valve is a Incoval Series 140 Wafer/141 Lug Teflon Butterfly valve or equal.

PTFE Advantages and Applications :

PTFE is a superior material for use in highly corrosive applications. It is inert to most chemicals at high temperatures and pressures. It also has a low coefficient of friction. PTFE is ideal for use in the chemical industry, in processes with hazardous fluids, in the food and beverage industry, pharmaceutical facilities, electronics production plants and other industries where the media must not come in contact with any organic or metallic materials.

Codes and Standards :

General Design and Manufacturing Standards : API 609 / BS EN 593 / MSS SP-67

Testing Standards : API 598 / BS EN 12266-1 / MSS SP-67

Material Selection

Body :

- ◆ Epoxy Painted Cast Iron ASTM A126 Class B
- ◆ Ductile Iron ASTM A 536 65-45-12
- ◆ 316 Stainless steel ASTM A 351 CF8M
- ◆ Carbon Steel ASTM A 216 WCB

Seat :

- ◆ Buna-N - Food Grade
- ◆ EPDM - Food Grade
- ◆ VITON[®] / FKM
- ◆ White Buna-N - Food Grade
- ◆ White EPDM - Food Grade
- ◆ PTFE - Lined EPDM

Seat Temperature Range:

Seat Type	Temperature Range	
	Min.	Max.
EPDM	-13° F (-25°C)	302° F (150°C)
BUNA-N	-13° F (-25°C)	212° F (100°C)
Viton [®] / FKM	23° F (-5°C)	392° F (200°C)
White BUNA-N	-13° F (-25°C)	212° F (100°C)
PTFE-Lined EPDM	-20° F (-29°C)	302° F (150°C)

Viton[®] is registered trademark of E.I. DuPont.

Disc / Stem :

Stainless Steel:

- ◆ 2"-24" (DN50-DN600) SS316 Disc/Stem
- ◆ 2"-12" Investment Cast
- ◆ 14"-24" Fabricated
- ◆ 2"-24" Fabricated (Electro-Polished optional)

Nylon 12 Coated :

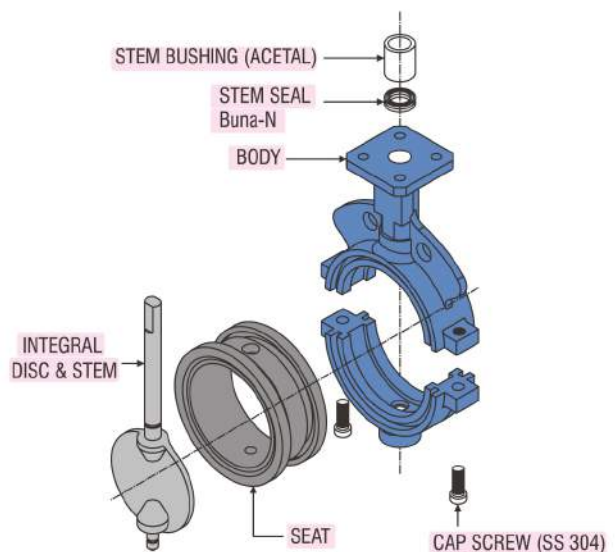
- ◆ 2"-24" (DN50-DN600) with Nylon 12 Coating over one-piece Stainless Steel disc / stem

Rubber Molded :

- ◆ 2"-24" (DN50-DN600) with EPDM, Buna-N rubber molded over One-piece Carbon Steel Disc and 17-4-PH Stem.

PTFE Molded :

- ◆ 2"-24" (DN 50-DN 600) with PTFE material molded over one-piece CB7CU-1 (17-4-PH) Disc/Stem.



All statements, technical information and recommendations in the bulletin are for general use only. Incoval is not responsible for suitability or compatibility of these products in relation to system requirements. Consult Incoval distributors or factory for the specific requirements and material selection for your intended application. Incoval reserves the right to change or modify product design or product without prior notice. Incoval - Registered trademark of Incoval Controls.

Distributor