RESILIENT SEAT BUTTERFLY VALVE
WAFER DN50 - DN600
MODEL: BFW

CHALLENGER
VALVES AND ACTUATORS

FEATURES AND BENEFITS

- Designed and tested in accordance with AS4795.1.
- AS4795.1 OceanaMark Certified product by Iapmo R&T Oceana Licence No. OMK32103.
- WaterMark Approved product by Iapmo R&T Oceana Licence No. WM-032103.
- WSAA Accredited—Appraisal number: PA 2102
- Water Quality tested and approved to AS4020.
- Bi – directional bubble tight sealing.
- Vulcanised seat held securely in position making it suitable for vacuum applications.
- High strength one piece through shaft secured by precision taper pins provides a strong and reliable disc to stem connection that is field replaceable.
- Blow-Out proof stem ensures operator safety and eliminates OH&S issues.
- Heavy duty shaft bushing ensures disc alignment & absorbs side thrusts, reducing valve wear whilst prolonging valve life.
- Suitable for high repetition, actuated applications.
- Precision disc machining ensures mirror image of seat profile enhancing low torque operation & reduced liner wear.
- ISO interface flange allows interchange and standardisation of actuation equipment.
- Stem seal connection is ensured with moulded double "O" rings, as well as an additional upper stem seal to provide greater design integrity.
- Robust, extended neck allows easy installation of insulation and ensures bearing integrity.
- Flange seal connection is ensured with moulded double "O" rings seals eliminating the requirement for flange gaskets.
- Lockable lever handle to prevent tampering.

OPTIONS

- Actuators
  - Electric
  - Pneumatic
  - Hydraulic
- Extensions
- Lockable Gearbox
- Chain wheel Operation
- Limit Switches

APPLICATIONS

Challenger Valves and Actuators are the ***"Right Choice for Valves and Actuation"*** when quality matters.

Servicing industries such as:
Water & Waste Water, Mining, Desalination, Pumping, Industrial Processing, Irrigation, Materials Handling and Chemical Services.

TECHNICAL SPECIFICATION

Construction:	Wafer Concentric Seal On Body Butterfly Valve
Size:	50mm - 600mm
Pressure Rating:	PN16
Face to Face:	ISO5752 Series 20 / AS4795.1
Flange Drilling:	AS4087 PN16 (Table D) AS2129 Table E ANSI B16.5 #150
Coating:	AS4158 Fusion Bonded Epoxy AKZO Nobel R4-ES HJF01R
Temperature Range:	**AS4020 Compliance** EPDM 0°C to 40°C **General Application** EPDM 0-85°C (Optimum Range) -10°C to 120°C (Intermittent) Nitrile -10°C to 80°C
Pressure Testing:	AS4795.1
Mounting Pad:	ISO5211
Max Velocity:	5m/s (max) 7.5m/s (emergency)
Negative Pressure:	0.1MPa (Vacuum)

WaterMark
AS4795.1 Lic WM-032103
Iapmo R&T Oceana

IAPMO R&T OCEANA™
OceanaMark
AS4795.1 Lic OMK32103
Iapmo R&T Oceana

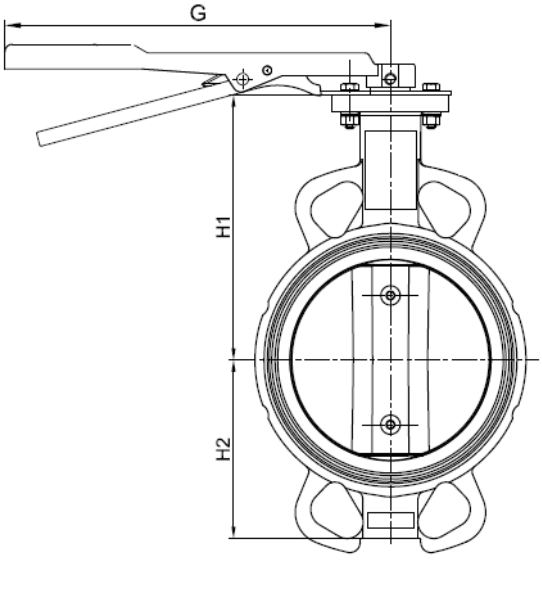
RESILIENT SEAT BUTTERFLY VALVE
WAFER DN50 - DN600
MODEL: BFW

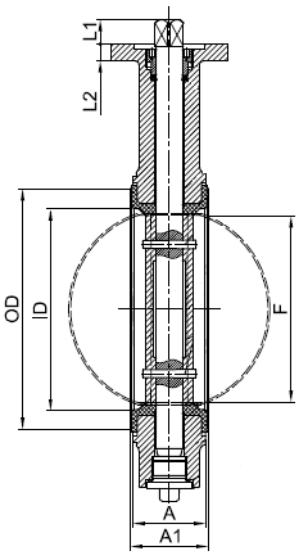
CHALLENGER VALVES AND ACTUATORS

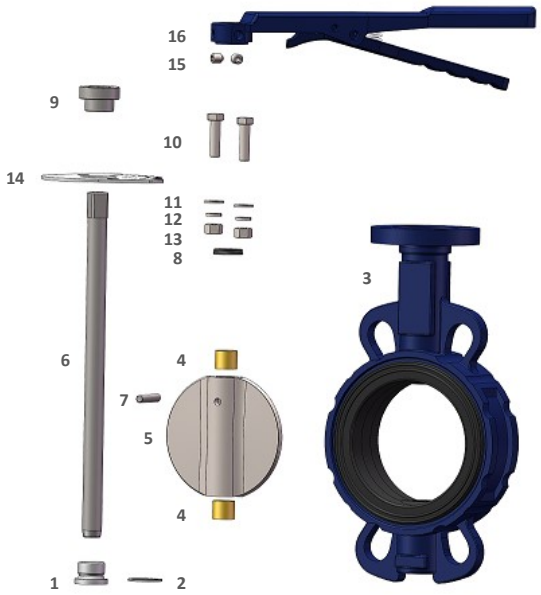
TECHNICAL: DN50 - DN300

TECHNICAL: VALVE DETAILS

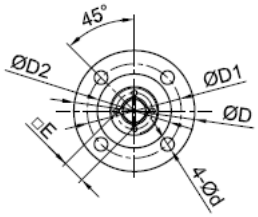
ITEM	COMPONENT	MATERIAL	GRADE	ITEM	COMPONENT	MATERIAL	GRADE
1	Plug	Stainless Steel	ASTM A276 - 304	**9**	Sealing Sleeve	Stainless Steel	ASTM A276 - 304
2	Sealing Gasket	PTFE		**10**	Hex Bolt	Stainless Steel	ASTM A276 - 316
3	Body and Vulcanized Seat	Ductile Iron Rubber	AS1831 - 450-10 AS1646 / AS681.1 - EPDM	**11**	Flat Washer	Stainless Steel	ASTM A276 - 316
4	Bushing	PTFE Steel Lined	PTFE / ASTM A276 - 316	**12**	Spring Washer	Stainless Steel	ASTM A276 - 316
5	Disc	Stainless Steel	ASTM A351 - CF8M	**13**	Hex Nut	Stainless Steel	ASTM A276 - 316
6	Stem	Stainless Steel	ASTM A276 - 431	**14**	Notch Plate	Stainless Steel	ASTM A276 - 304
7	Taper Pin	Stainless Steel	ASTM A276 - 316	**15**	Hex Bolt	Stainless Steel	ASTM A276 - 316
8	Y-Ring	Rubber	AS1646 / AS681.1 - EPDM	**16**	Lever	Ductile Iron	AS1831—450-10







ISO 5211 Mounting Pad



DIMENSIONS AND WEIGHTS

Size	A	A1	H1	H2	L1	L2	∅D	∅D1	∅D2	4-∅d	E	G	F	ID	OD	PCD		Compatible Flanges			Weight KG	
																Table D&E	ANSI# 150	Table D	Table E	ANSI#150	Lever	Gearbox
50	43	47	143	72	14	13	65	50 (F05)	35	4-7	11	266	24	56	71	114	121	4-M16	4-M16	4-UNC 5/8	4	6
65	46	50	156	78	14	13	65	50 (F05)	35	4-7	11	266	41	68	86	127	140	4-M16	4-M16	4-UNC 5/8	5	7
80	46	50	162	95	14	13	65	50 (F05)	35	4-7	11	266	61	82	102	146	152	4-M16	4-M16	4-UNC 5/8	5	7
100	52	56	177	108	18	13	90	70 (F07)	55	4-10	14	266	88	108	130	178	191	4-M16	8-M16	8-UNC 5/8	6	8
125	56	60	190	123	18	13	90	70 (F07)	55	4-10	14	266	108	127	155	210	216	8-M16	8-M16	8-UNC 3/4	8	10
150	56	60	205	117	18	13	90	70 (F07)	55	4-10	17	328	144	160	186	235	241	8-M16	8-M20	8-UNC 3/4	9	11
200	60	66	236	168	25	13	125	102 (F10)	70	4-12	17	386	192	207	239	292	299	8-M16	8-M20	8-UNC 3/4	14	17
250	68	74	267	207	25	13	125	102 (F10)	70	4-12	22	386	240	255	286	356	362	8-M20	12-M20	12-UNC 7/8	20	25
300	78	82	308	243	27	19	125	102 (F10)	70	4-12	22	386	290	307	341	406	432	12-M20	12-M24	12-UNC 7/8	32	37

COMPENSATION RINGS AND GASKETS MAY BE REQUIRED WHEN MOUNTING AGAINST SOME PIPES, PLEASE CHECK SEALING FACES.

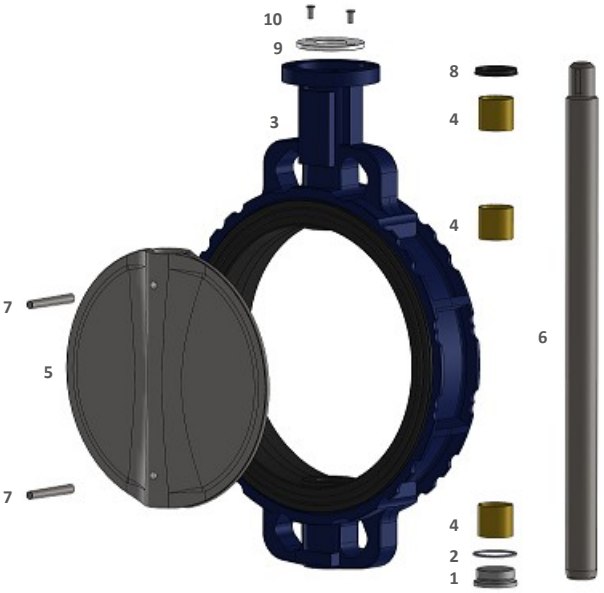
RESILIENT SEAT BUTTERFLY VALVE
WAFER DN50 - DN600
MODEL: BFW

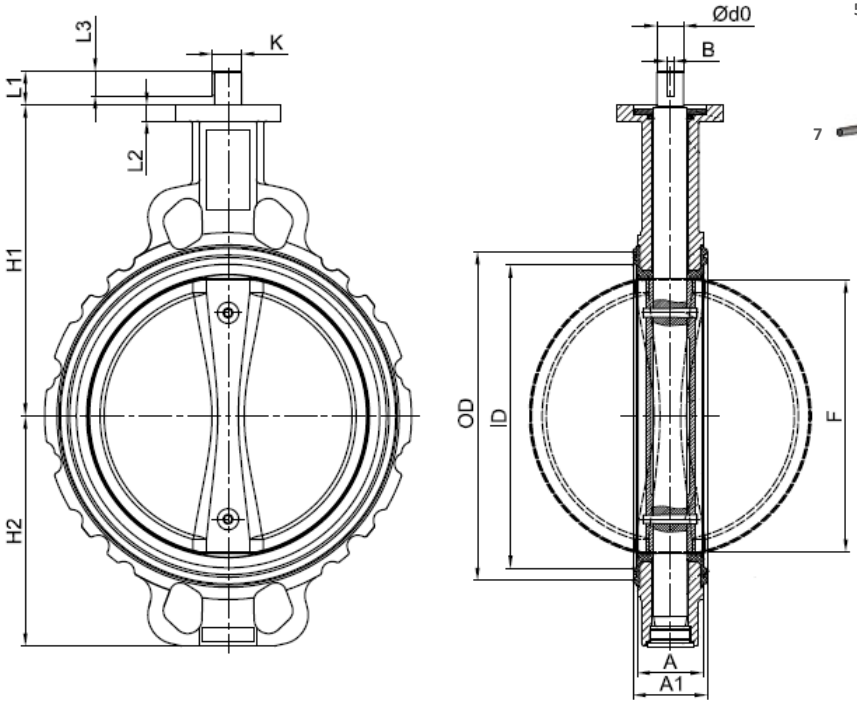
CHALLENGER VALVES AND ACTUATORS

TECHNICAL: DN350

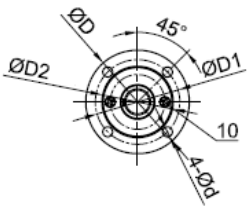
TECHNICAL: VALVE DETAILS

ITEM	COMPONENT	MATERIAL	GRADE	ITEM	COMPONENT	MATERIAL	GRADE
1	Plug	Stainless Steel	ASTM A276 - 304	**6**	Stem	Stainless Steel	ASTM A276 - 431
2	Sealing Gasket	PTFE		**7**	Taper Pin	Stainless Steel	ASTM A276 - 316
3	Body and Vulcanized Seat	Ductile Iron Rubber	AS1831 - 450-10 AS1646 / AS681.1 - EPDM	**8**	Y-Ring	Rubber	AS1646 / AS681.1 - EPDM
4	Bushing	PTFE Steel Lined	PTFE / ASTM A276 - 316	**9**	Gland	Stainless Steel	ASTM A276 - 304
5	Disc	Stainless Steel	ASTM A351 - CF8M	**10**	Cross Countersunk Head Screw	Stainless Steel	ASTM A276 - 316





ISO 5211 Mounting Pad



DIMENSIONS AND WEIGHTS

Size	A	A1	H1	H2	L1	L2	L3	∅d0	F	K	ID	OD	B	∅D	∅D1	∅D2	4-∅d	PCD		Compatible Flanges			Weight KG	
																		Table D&E	ANSI# 150	Table D	Table E	ANSI#150	Bare Shaft	Gear Box
350	78	88	368	272	40	19	29.3	31.6	323	34.6	367	389	8	125	102 (F10)	86	4-12	470	476	12-M24	12-M24	12-UNC 1	42	56

COMPENSATION RINGS AND GASKETS MAY BE REQUIRED WHEN MOUNTING AGAINST SOME PIPES, PLEASE CHECK SEALING FACES.

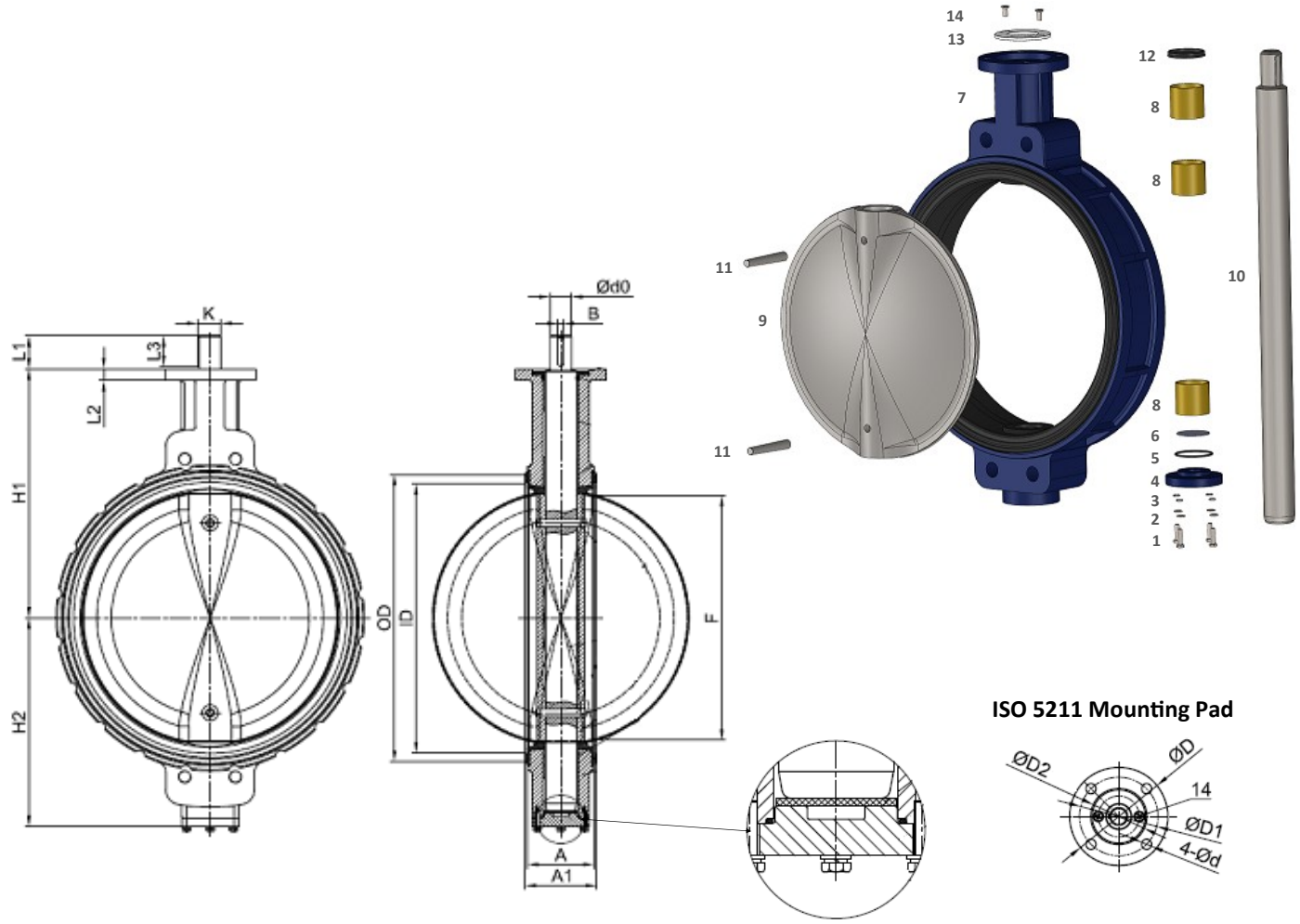
RESILIENT SEAT BUTTERFLY VALVE
WAFER DN50 - DN600
MODEL: BFW

CHALLENGER VALVES AND ACTUATORS

TECHNICAL: DN400 - DN600

TECHNICAL: VALVE DETAILS

ITEM	COMPONENT	MATERIAL	GRADE	ITEM	COMPONENT	MATERIAL	GRADE
1	Hex Bolt	Stainless Steel	ASTM A276 - 316	8	Bushing	PTFE Steel Lined	PTFE / ASTM A276 - 316
2	Spring Washer	Stainless Steel	ASTM A276 - 316	9	Disc	Stainless Steel	ASTM A351 - CF8M
3	Flat Washer	Stainless Steel	ASTM A276 - 316	10	Stem	Stainless Steel	ASTM A276 - 431
4	Bottom Cover	Ductile Iron	AS1831 - 450-10	11	Taper Pin	Stainless Steel	ASTM A276 - 316
5	O-Ring	Rubber	AS1646 / AS681.1 - EPDM	12	Y-Ring	Rubber	AS1646 / AS681 - EPDM
6	Adjusting Gasket	Nylon		13	Gland	Ductile Iron	AS1831 - 450-10
7	Body and Vulcanized Seat	Ductile Iron Rubber	AS1831 - 450-10 AS1646 / AS681.1 - EPDM	14	Counter Sunk Head Screw	Stainless Steel	ASTM A276 - 316



ISO 5211 Mounting Pad

DIMENSIONS AND WEIGHTS

Size	A	A1	H1	H2	L1	L2	L3	Ød0	F	K	ID	OD	B	ØD	ØD1	ØD2	4-Ød	PCD		Compatible Flanges			Weight KGs	
																		Table D&E	ANSI#150	Table D	Table E	ANSI#150	Bare Shaft	Gear Box
400	102	112	400	342	52	20	48	33.15	374	36.15	421	443	10	175	140(F14)	100	4-18	521	540	12-M24	12-M24	16-UNC 1	63	77
450	114	124	422	372	52	20	48	38	424	41	447	499	10	175	140(F14)	100	4-18	584	578	12-M24	16-M24	16-UNC 11/8	72	93
500*	127	137	480	402	64	22	59	41.15	472	44.15	531	553	10	175	140(F14)	110	4-18	641	635	16-M24	16-M24	20-UNC 11/8	100	121
600*	154	164	562	467	70	22	69	50.65	518	54.65	619	643	16	210	165(F16)	130	4-23	756	749	16-M27	16-M30	20-UNC 11/4	190	214

*ANSI#150 IS A SPECIAL PURCHASE.
TOP AND BOTTOM FLANGE HOLES FOR DN500 AND DN600 ANSI#150 VALVES WILL HAVE DRILLED AND TAPPED BLIND HOLES.
COMPENSATION RINGS AND GASKETS MAY BE REQUIRED WHEN MOUNTING AGAINST SOME PIPES, PLEASE CHECK SEALING FACES.

RESILIENT SEAT BUTTERFLY VALVE
WAFER DN50 - DN600
MODEL: BFW

CHALLENGER VALVES AND ACTUATORS

TECHNICAL DATA

CV VALUES

Cv is defined as the volume of water in U.S.G.P.S 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.
Cv =1.167Kv

Cv VALUES														
Open° vs Size	**50**	**65**	**80**	**100**	**125**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**	**600**
10°	0.1	0.2	0.3	0.5	0.8	2	3	4	5	6	8	11	14	22
20°	5	8	12	17	29	45	89	151	234	338	464	615	791	1222
30°	12	20	22	36	61	95	188	320	495	715	983	1302	1674	2587
40°	24	37	39	78	133	205	408	694	1072	1549	2130	2822	3628	5605
50°	45	65	70	139	237	366	727	1237	1911	2761	3797	5028	6465	9989
60°	64	98	116	230	392	605	1202	2047	3162	4568	6282	8320	10698	16528
70°	90	144	183	364	620	958	1903	3240	5005	7230	9942	13168	16931	26157
80°	125	204	275	546	930	1437	2854	4859	7507	10844	14913	19752	25396	39236
90°	135	220	302	600	1022	1579	3136	5340	8250	11917	16388	21705	27908	43116

TORQUE DATA

Torque is the measure of the turning force on an object. For a butterfly valve the turning force is determined by the friction of the disc and the seat, bushing friction and fluid dynamic torque.

***TORQUE NOTES:**
Results provided are differential pressure conditions with clean municipal water.
Torque figures provided do not include safety margin.
For conditions that vary from those noted, apply the following Application Factor Multipliers:
- Operated less than once per day x 1.2
- Dry Service with gas or air x 1.5
- Dry Service with abrasive powder x 1.7
- Lubricant oils x 0.5
- Temperature - lower than –4.5°C x 1.2
  - higher than 93°C x 1.2
- For NBR (Nitrile) Seat Figures will be 1.1 times

TORQUE VALUES (Nm)														
Size	**50**	**65**	**80**	**100**	**125**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**	**600**
16 BAR	8	11	15	25	35	62	129	245	340	475	730	1050	1270	2150

HOW TO ORDER								
Series	**Design**	**Seat**	**Disc & Stem**	**Connection**	**Rating**	**Size**	**Actuator**	**Accessories**
BF	W	E	E	S	4	0100	H	

Example: DN100 BF Wafer Butterfly Valve, EPDM Seat, SS Trim, Wafer Style, PN16 with Lever Handle

Series
BF = AS4795.1 Certified Seal on Body Butterfly Valve

Design
W = Wafer Construction

Seat
E = EPDM
N = Nitrile (NBR)*
V = Viton*

Disc & Stem
E = CF8M Stainless Steel Disc & 431 Stainless Steel Stem

Connection
S = AS2129 Table E/D & ANSI #150 (Wafer Only)

Rating
1 = PN3* 2 = PN6*
3 = PN10* 4 = PN16

Size
0050 = 2” (50mm) 0150 = 6” (150mm) 0400 = 16” (400mm)
0065 = 2 1/2” (65mm) 0200 = 8” (200mm) 0450 = 18” (450mm)
0080 = 3” (80mm) 0250 = 10” (250mm) 0500 = 20” (500mm)
0100 = 4” (100mm) 0300 = 12” (300mm) 0600 = 24” (600mm)
0125 = 5 ” (125mm) 0350 = 14” (350mm)

Actuator
BS = ISO Bare Shaft
H = Lever Handle DI (Not Available for DN350 - DN600)
W = Worm Gearbox (Standard—Clock Close Only)
WSA = SAMBO Gearbox (Anti Clockwise Close)
WSC = SAMBO Gearbox (Clockwise Close)
WD = Declutch able Gearbox
K = Gear Box with Key Cap
X = Other (Must Specify)

Accessories
Left Blank = No Accessories
CH = Chain Wheel (Chain Drop to be specified)
I = Input Stop Box
T = Torque Limiter
L = Lockout Device
D = Dial Position Indicator
B = Buried Service
X = Other (Must specify)

Note:
To include electric or pneumatic actuators, please specify the required part number by visiting the relevant data sheet.

For valve extension spindles, please specify the required part number as per the code builder on the relevant data sheet.

Visit the Challenger website to access further data sheets.

*** Denotes valve not certified to AS4795.1 with these options.**