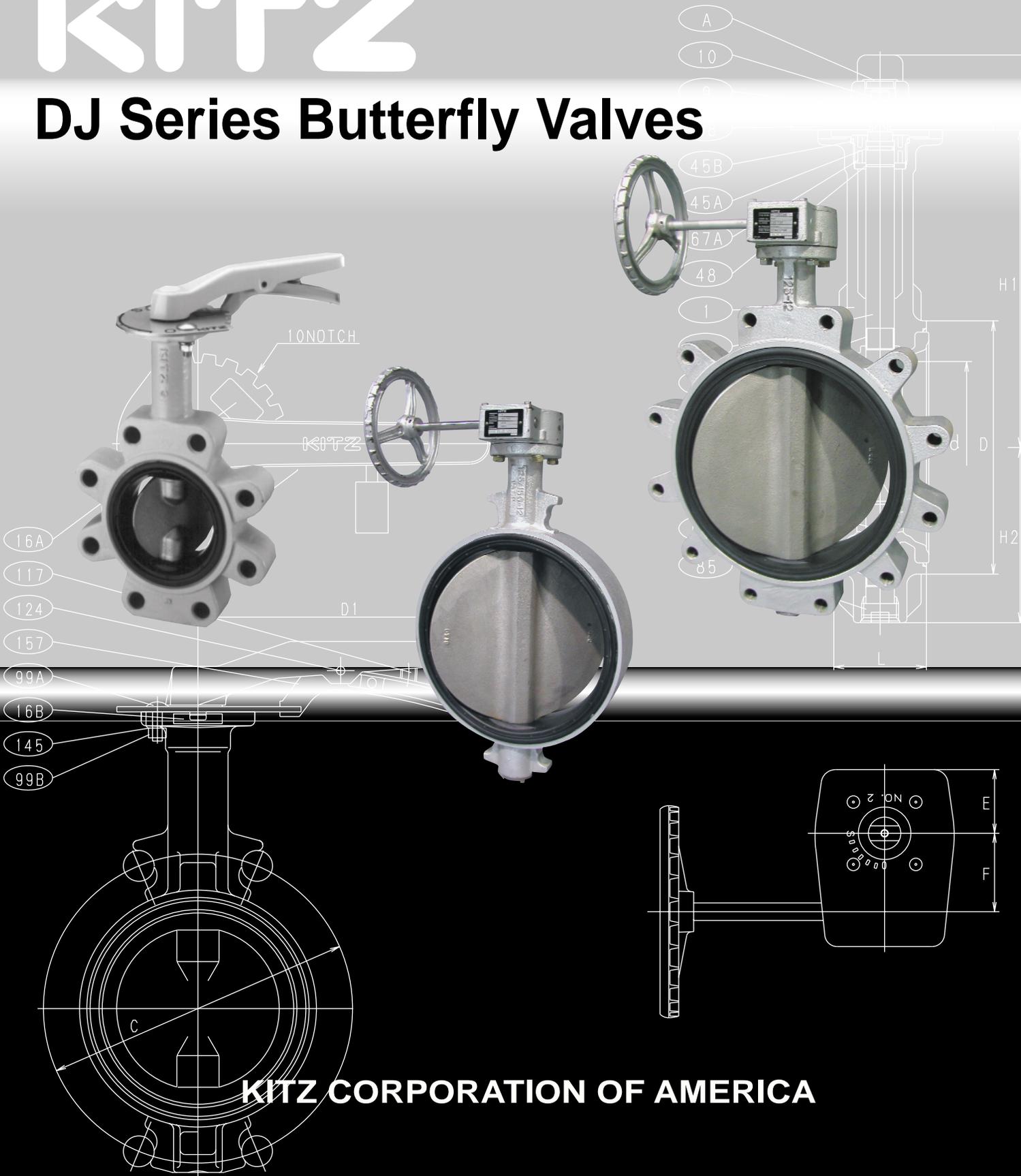


KITZ®

DJ Series Butterfly Valves

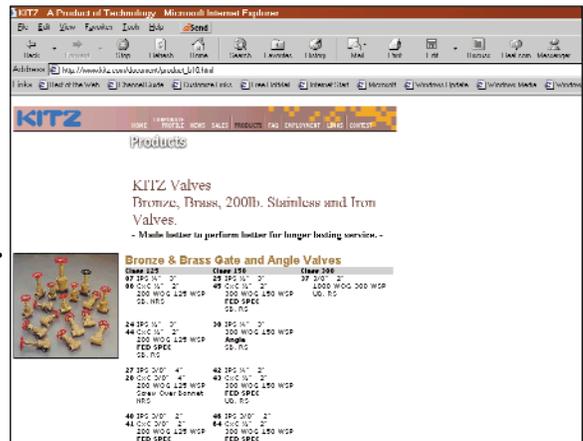
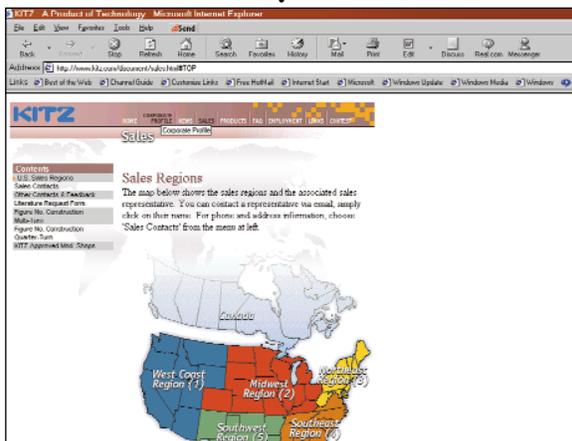
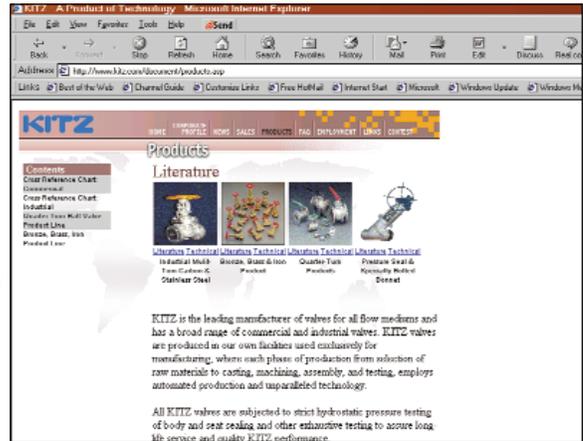


KITZ CORPORATION OF AMERICA

www.kitz.com

VISIT THE KITZ WEB SITE FOR IMPORTANT INFORMATION:

- **KITZ** Corporate Background - **Since 1951!**
- Product Specifics
- Contact Information (worldwide)
- Customer Access (MTR printout, etc.)
- Technical Data/Catalogs and much more...



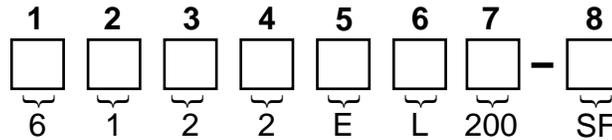
WELCOME TO OUR WEB SITE!

GENERAL INDEX

200/150 PSI DJ SERIES BUTTERFLY VALVES

GENERAL TERMS & CONDITIONS/	<i>Page</i>
WARRANTY	BFV-2
ILLUSTRATED INDEX SIZE: 2~12", 14~24	BFV-3
ENGINEERING DATA INDEX	BFV-10

CODE NUMBER SYSTEM



1	SERIES STYLE	CODE
	WAFER	5
	LUG	6
2	BODY	CODE
	DUCTILE IRON	1
3	DISC/STEM	CODE
	DUCTILE IRON / 410 SS	1
	ALUMINUM BRONZE / 410 SS	2
	316 SS / 329 SS	3
	316 SS / 316 SS (150 PSI) (P.O.A)	4
4	PRESSURE	CODE
	150 PSI	1
	200 PSI	2
5	LINER	CODE
	NBR (BUNA-N)	B
	EPDM	E
	FKM (VITON)	V

6	OPERATOR	CODE
	LEVER (2" - 8")	L
	GEAR (2" - 24")	G
	BARE STEM (2" - 24")	X
7	SIZE	CODE
	2"	200
	3"	300
	4"	400
	5"	500
	6"	600
	8"	800
	10"	910
	12"	912
	14"	914
	16"	916
	18"	918
	20"	920
	24"	924
8	SILICON FREE	CODE
	ASSEMBLED SILICON FREE (P.O.A)	SF

200 PSI - WAFER SIZES 2" - 12"

LEVER		
5112BL	5112EL	5112VL
5122BL	5122EL	5122VL
5132BL	5132EL	5132VL
GEAR		
5112BG	5112EG	5112VG
5122BG	5122EG	5122VG
5132BG	5132EG	5132VG

150 PSI - WAFER SIZES 14" - 24"

GEAR		
5111BG	5111EG	5111VG
5121BG	5121EG	5121VG
5141BG	5141EG	5141VG

200 PSI - LUG SIZES 2" - 12"

LEVER		
6112BL	6112EL	6112VL
6122BL	6122EL	6122VL
6132BL	6132EL	6132VL
GEAR		
6112BG	6112EG	6112VG
6122BG	6122EG	6122VG
6132BG	6132EG	6132VG

150 PSI - LUG SIZES 14" - 24"

GEAR		
6111BG	6111EG	6111VG
6121BG	6121EG	6121VG
6141BG	6141EG	6141VG

GENERAL TERMS AND CONDITIONS

ACCEPTANCE

All quotations are for acceptance within 30 days from date of quotation unless extended in writing. In the event a purchase order is placed after this time, the Seller's company reserves the right to requote prices of all valves offered. All orders and contracts are subject to credit approval and acceptance by KITZ.

FREIGHT

All materials will be shipped F.O.B. point of shipment – no freight allowance unless otherwise stated and agreed upon with the Buyer.

PRICES

There will be added to all prices quoted any sales, excise, or similar tax which Seller may be required to collect on or in connection with the sale. Seller reserves the right to cancel any order in the event that selling prices shall be established by Federal, State or other governmental regulation with respect to the products covered by the order which shall be lower than the prices specified in the order.

ESCALATION TERMS

Prices shown in this price schedule reflect the costs in effect at the time of publication. These prices will remain firm on all products with a quoted delivery of twenty six (26) weeks or less. On products with a quoted delivery of more than 26 weeks, the Seller has a right to price and invoice at the applicable price sheet in effect at the time of ship-

ment. In no event will the invoiced price be less than price originally quoted.

DEFERRED SHIPMENTS

If for any reason the Buyer desires to delay shipments more than 30 days after manufacturing or to place a hold or to stop the order during the manufacturing cycle, the Seller's company reserves the right to consider the order cancelled and to invoke cancellation charges.

CREDIT TERMS

As quoted. Overdue balances will be subject to 1.5% service charge per month on such indebtedness.

DELIVERIES

Shipments made to the Buyer shall at all times be subject to the approval of Seller's Credit Department. All schedules of shipments are estimated as closely as possible and Seller will use its best effort to ship within the time schedule but does not guarantee to do so. Seller shall not be liable for any direct, indirect, or consequential damage or loss caused by delay in delivery, regardless of the cause of delay. Items offered from stock are subject to prior sale.

RETURNS

No returns are allowed without prior arrangements made with the Seller. Product considered for return must be in new, resalable condition and of current design.

WARRANTY

Seller will replace without charge or refund the purchase price of products manufactured by Seller which prove to be defective in material or workmanship, provided in each case that the product is properly installed and is used in the service for which Seller recommends it and that written claim, specifying the alleged defect, is presented to the Seller within one year from the date of shipment. Seller shall in no event be responsible for claims of A) labor, expenses, or other damages occasioned by defective parts or products or for B) consequential or secondary damages. **The Warranty stated in this paragraph is in lieu of all other warranties, either expressed or implied. With respect to warranties, this paragraph states Buyer's exclusive remedy and Seller's exclusive liability.**

DESIGN

Because of a policy of continuous product improvement, Seller reserves the right to change design, materials or specifications without notice. There will be a charge for modifying an order after it has been entered when such change or modification results in additional engineering or clerical work for either KITZ or its suppliers.

NOTE

KITZ reserves the right to correct any obvious clerical errors in quotations, invoices and other contracts.

DJ SERIES BUTTERFLY VALVES

ILLUSTRATED INDEX

NUMERICAL INDEX

<u>CODE #</u>	<u>PAGE</u>
2~8"	
5112	BFV-5-6
5122	BFV-5-6
5132	BFV-5-6
6112	BFV-5-6
6122	BFV-5-6
6132	BFV-5-6
10~12"	
5112	BFV-7
5122	BFV-7
5132	BFV-7
6112	BFV-7
6122	BFV-7
6132	BFV-7
14~24"	
5111	BFV-9
5121	BFV-9
5141	BFV-9
6111	BFV-9
6121	BFV-9
6141	BFV-9

**200 PSI
WAFFER**

Ductile Iron Body • Extended Neck
DISC: DI • AB • 316SS
LINER: NBR • EPDM • FKM
SIZE: 2"- 8"



Code # 5112(B/E/V)(L/G)
Code # 5122(B/E/V)(L/G)
Code # 5132(B/E/V)(L/G)

**200 PSI
WAFFER**

Ductile Iron Body • Extended Neck
DISC: DI • AB • 316SS
LINER: NBR • EPDM • FKM
SIZE: 10"- 12"



Code # 5112(B/E/V)G
Code # 5122(B/E/V)G
Code # 5132(B/E/V)G

**150 PSI
WAFFER**

Ductile Iron Body • Extended Neck
DISC: DI • AB • 316SS
LINER: NBR • EPDM • FKM
SIZE: 14"- 24"



Code # 5111(B/E/V)G
Code # 5121(B/E/V)G
Code # 5141(B/E/V)G

**200 PSI
LUG**

Ductile Iron Body • Extended Neck
DISC: DI • AB • 316SS
LINER: NBR • EPDM • FKM
SIZE: 2"- 8"



Code # 6112(B/E/V)(L/G)
Code # 6122(B/E/V)(L/G)
Code # 6132(B/E/V)(L/G)

**200 PSI
LUG**

Ductile Iron Body • Extended Neck
DISC: DI • AB • 316SS
LINER: NBR • EPDM • FKM
SIZE: 10"- 12"



Code # 6112(B/E/V)G
Code # 6122(B/E/V)G
Code # 6132(B/E/V)G

**150 PSI
LUG**

Ductile Iron Body • Extended Neck
DISC: DI • AB • 316SS
LINER: NBR • EPDM • FKM
SIZE: 14"- 24"

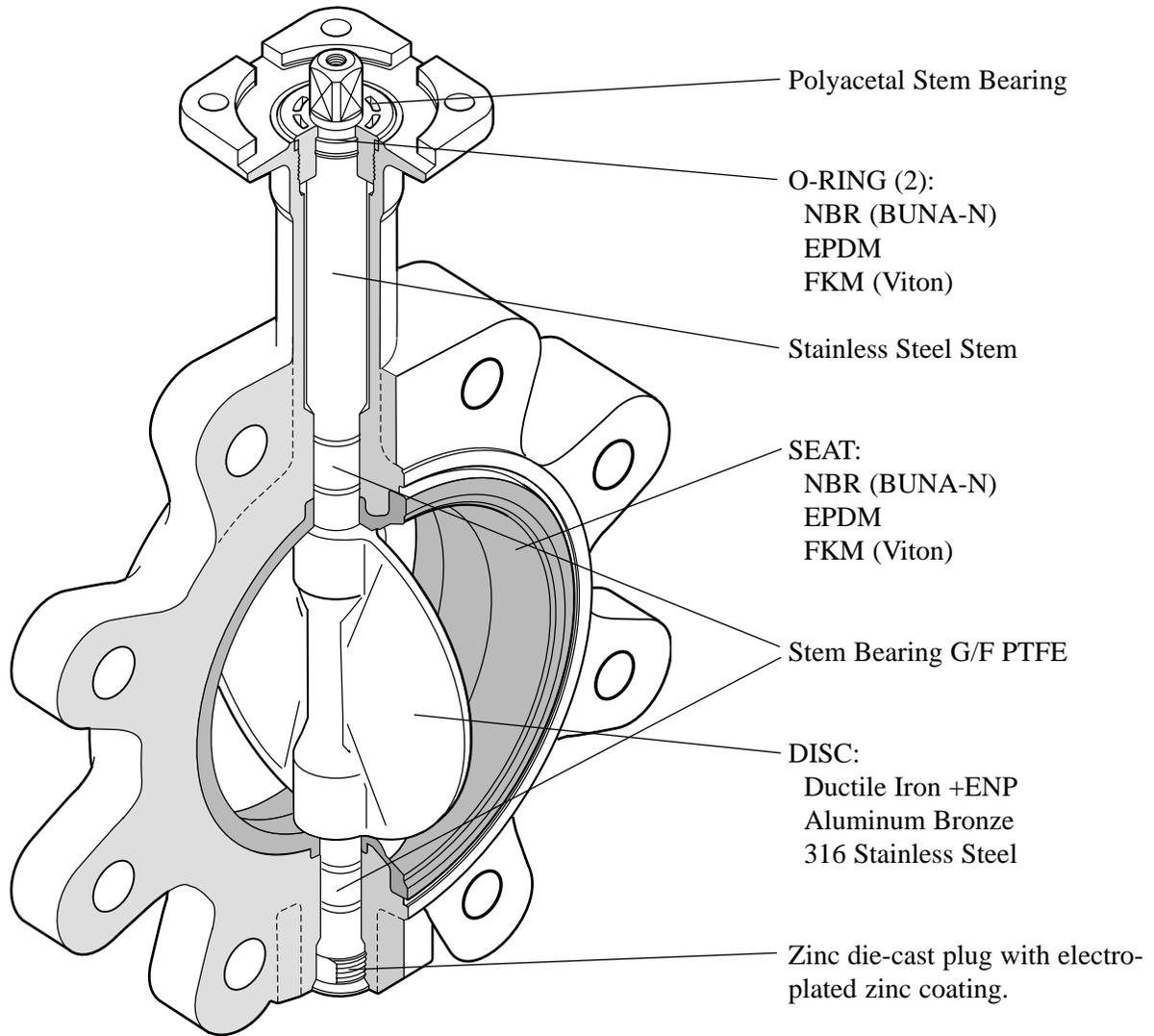


Code # 6111(B/E/V)G
Code # 6121(B/E/V)G
Code # 6141(B/E/V)G

DJ SERIES BUTTERFLY VALVES

200 PSI

SIZE 2" ~ 12"

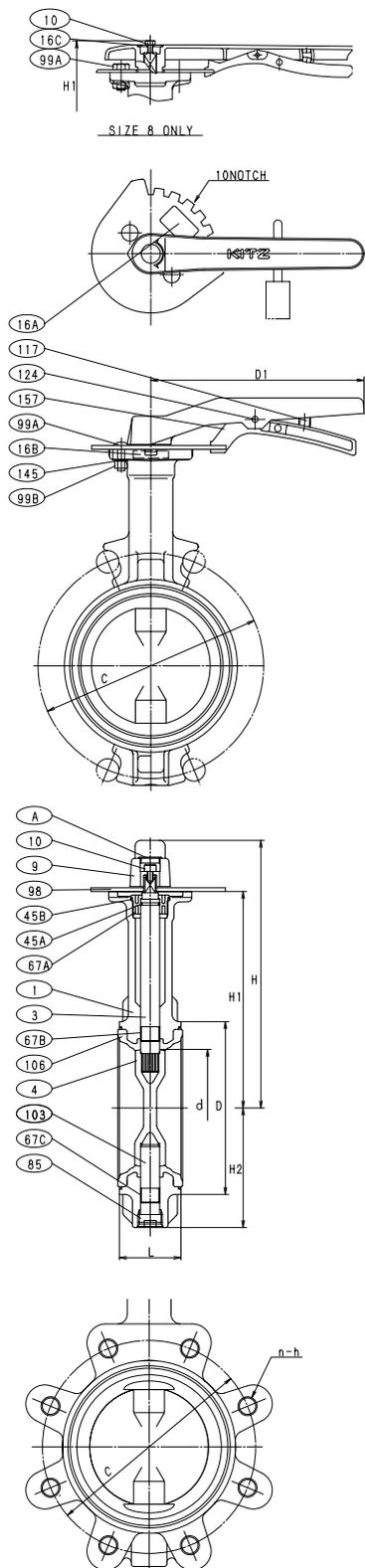


Lug Style

BUTTERFLY VALVES - 200 PSI

Ductile Iron Body • Extended Neck • ISO Mounting Pad
Bi-Directional • Spline Drive • Molded Seat Liner • Locking Lever Operator • Lug & Wafer Design
SIZE 2" ~ 8"

DESIGN STANDARDS: MSS SP-67, MSS SP-25 & API-609 END CONNECTION: ANSI CLS. 125/150 FLANGES WALL THICKNESS: KITZ STD



MATERIAL LIST		
NO.	NAME OF PART	SPECIFICATION
1	BODY	DUCTILE IRON (A536 Gr. 65-45-12)
3	STEM (1)	STAINLESS STEEL (A276, Type 410)
4	DISC	DUCTILE IRON, AL. BRONZE, AND 316 SS
9	HANDLE	ALUMINUM DIE-CAST (B85, SC102A)
	HANDLE (2")	DUCTILE IRON (A536 Gr. 65-45-12)
10	HANDLE BOLT	CARBON STEEL (2" - A307 Gr. B)
16A/B	NAME PLATE	ALUMINUM (B209, ALLOY 1080)
16C	HANDLE WASHER (2")	CARBON STEEL (A36)
45A	O-RING	NBR/EPDM
45B	O-RING	NBR/EPDM
67A	BEARING	POLYACETAL
67B/C	STEM BEARING	G/F PTFE
85	PLUG	ZINC DIE-CAST (B86) (2)
98	INDEX PLATE	CARBON STEEL (A109)
99A	SET BOLT	CARBON STEEL (A307 Gr. B)
99B	NUT	CARBON STEEL (A583 Gr. A)
103	BOTTOM STEM	STAINLESS STEEL (A276, TYPE 410)
106	SEAT RUBBER (3)	NBR/EPDM/FKM (Viton)
117	HANDLE SPRING	STAINLESS STEEL (A276, TYPE 304)
124	SPRING PIN	STAINLESS STEEL (A276, TYPE 304)
145	SPRING WASHER	CARBON STEEL
157	STOP LEVER	ALUMINUM DIE-CAST (B86, SC102A)
	STOP LEVER (2")	DUCTILE IRON (A536 Gr. 65-45-12)
A	CAP	P.V.C. (2"-6")

- (1) Line scribed on top of the stem indicates the disc direction.
(2) Chromate Coating
(3) Vulcanized to the Body

DIMENSIONS											
SIZE	d	H	H1	H2	L	D	D1	a	b	h	
in. 2	1.97	7.52	5.79	3.43	1.69	3.54	7.09	3.94	.47	.28	
mm 50	50	191	147	87	43	90	180	100	12	7	
in. 2 1/2	2.56	25.4	6.10	2.95	1.81	4.09	7.09	3.94	.47	.28	
mm 65	65	199	155	75	46	104	180	100	12	7	
in. 3	3.15	8.54	6.81	3.58	1.81	4.88	7.09	3.94	.47	.28	
mm 80	80	217	173	91	46	124	180	100	12	7	
in. 4	3.94	8.94	7.20	3.98	2.05	5.75	7.09	3.94	.47	.28	
mm 100	100	227	183	101	52	146	180	100	12	7	
in. 5	4.92	10.43	8.31	5.00	2.20	6.93	9.05	3.94	.47	.28	
mm 125	125	265	211	127	56	176	230	100	12	7	
in. 6	5.91	10.91	8.78	5.47	2.20	8.11	9.05	3.94	.47	.28	
mm 150	150	277	223	139	56	206	230	100	12	7	
in. 8	7.76	11.20	9.76	6.65	2.36	10.12	13.78	5.16	.47	.28	
mm 200	197	284.5	248	169	60	257	350	131	12	7	

FLANGE BOLTING DATA/WEIGHTS										
SIZE	C	h	n	Wafer	Lug	Stud Bolt	Wafer	Lug		
				Length	Length	Length	Lbs.	Kgs.	Lbs.	Kgs.
in. 2	4.75	5/8-11UNC	4	4.25	1.50	5.00	4.2	1.9	6.4	2.9
mm 50	120.5	5/8-11UNC	4	103.5	38.1	127.0	-	-	-	-
in. 2 1/2	5.50	5/8-11UNC	4	4.75	1.625	5.50	5.0	2.3	7.6	3.5
mm 65	139.5	5/8-11UNC	4	113.1	41.3	139.7	-	-	-	-
in. 3	6.00	5/8-11UNC	4	4.75	1.675	5.50	6.8	3.1	9.1	4.1
mm 80	152.5	5/8-11UNC	4	116.2	42.5	139.7	-	-	-	-
in. 4	7.50	5/8-11UNC	8	5.00	1.875	5.75	7.4	3.4	14.4	6.4
mm 100	190.5	5/8-11UNC	8	122.2	47.6	146.0	-	-	-	-
in. 5	8.50	3/4-10UNC	8	5.25	1.875	5.75	12.9	5.8	20.9	9.6
mm 125	216	3/4-10UNC	8	130.0	47.6	146.0	-	-	-	-
in. 6	9.50	3/4-10UNC	8	5.50	2.0	6.50	15.9	7.2	23.9	10.4
mm 150	241.5	3/4-10UNC	8	133.1	50.8	165.1	-	-	-	-
in. 8	11.75	3/4-10UNC	8	5.75	2.125	6.75	29.9	13.3	38.9	17.3
mm 200	298.5	3/4-10UNC	8	143.2	54.0	171.4	-	-	-	-

Note: KITZ lug style butterfly valves are rated for bi-directional dead end service to full working pressure of the valve with the downstream flange removed. In dead end service exceeding 96 hours, a downstream flange is recommended.



Code # 5112 (B/E/V)L
Disc: Ductile Iron (A538 + ENP)

Code # 5122 (B/E/V)L
Disc: Aluminum Bronze (C95400)

Code # 5132 (B/E/V)L
Disc: 316 SS (A351 Gr. CF8M)
Stem: 329 SS (A276, Type 329)

Liner Options: NBR (Buna-N)/
EPDM/FKM (Viton)



Code # 6112 (B/E/V)L
Disc: Ductile Iron (A538 + ENP)

Code # 6122 (B/E/V)L
Disc: Aluminum Bronze (C95400)

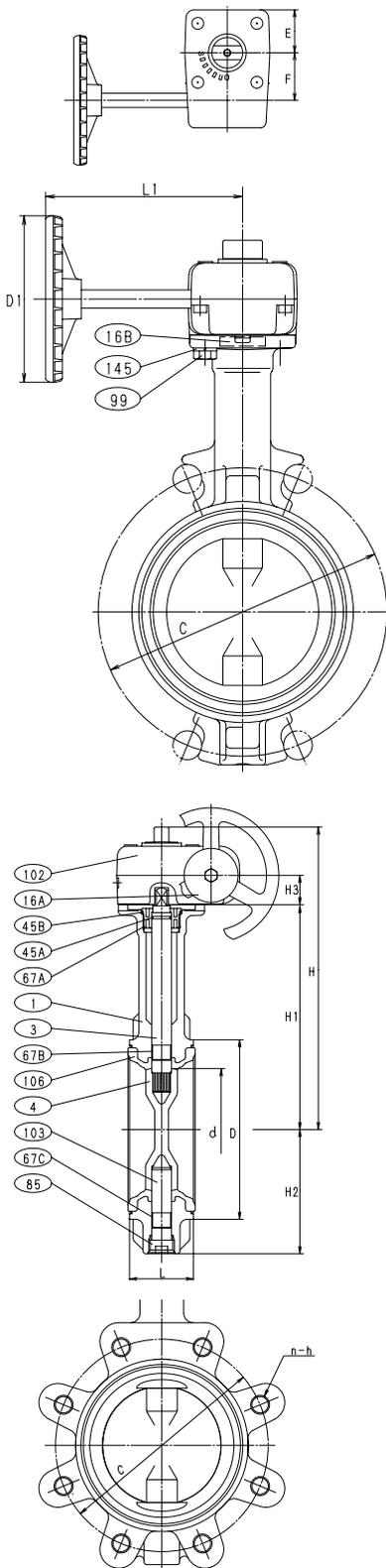
Code # 6132 (B/E/V)L
Disc: 316 SS (A351 Gr. CF8M)
Stem: 329 SS (A276, Type 329)

Liner Options: NBR (Buna-N)/
EPDM/FKM (Viton)

BUTTERFLY VALVES - 200 PSI

Ductile Iron Body • Extended Neck • ISO Mounting Pad
 Bi-Directional • Spline Drive • Molded Seat Liner • Gear Operator • Lug & Wafer Design
SIZE 2" ~ 8"

DESIGN STANDARDS: MSS SP-67, MSS SP-25 & API-609 END CONNECTION: ANSI CLS. 125/150 FLANGES WALL THICKNESS: KITZ STD



MATERIAL LIST		
NO.	NAME OF PART	SPECIFICATION
1	BODY	DUCTILE IRON (A536)
3	STEM	STAINLESS STEEL (A276, Type 410)
4	DISC	DUCTILE IRON, AL. BRONZE, AND 316 SS
16A/B	NAME PLATE	ALUMINUM
45A/B	O-RING	NBR/EPDM
67A	BEARING	POLYACETAL
67B/C	STEM BEARING	G/F PTFE
85	PLUG	ZINC DIE-CAST (2)
99	SET BOLTS	CARBON STEEL
102	GEAR UNIT	ALUMINUM DIE-CAST (B85, SC102A)
103	BOTTOM STEM	STAINLESS STEEL (A276, TYPE 410)
106	SEAT RUBBER (3)	NBR/EPDM/FKM (Viton)
145	SPRING WASHER	CARBON STEEL

- (1) Line scribed on top of the stem indicates the disc direction.
- (2) Chromate Coating
- (3) Vulcanized to the Body

DIMENSIONS												
SIZE	d	H	H1	H2	H3	L	D	D1	L1	E	F	
in. 2	1.97	7.64	5.79	2.64	.73	1.69	3.54	3.15	4.78	1.14	1.10	
mm 50	50	194	147	86	18.5	43	90	80	121.5	29	28	
in. 2 1/2	2.56	7.95	6.10	2.95	.73	1.81	4.09	3.15	4.78	1.14	1.10	
mm 65	65	202	155	75	18.5	46	104	80	121.5	29	28	
in. 3	3.15	9.29	6.81	3.58	.94	1.81	4.88	4.33	5.31	1.44	1.59	
mm 80	80	236	173	91	24	46	124	110	135	36.5	40.5	
in. 4	3.94	9.69	7.20	3.98	.94	2.06	5.75	4.33	5.31	1.44	1.59	
mm 100	100	246	183	101	24	52.3	146	110	135	36.5	40.5	
in. 5	4.92	10.79	8.31	5.00	.94	2.19	6.93	4.33	5.91	1.44	1.59	
mm 125	125	274	211	127	24	55.6	176	110	150	36.5	40.5	
in. 6	5.91	11.26	8.78	5.47	.94	2.19	8.11	4.33	5.91	1.44	1.59	
mm 150	150	286	223	139	24	55.6	206	110	150	36.5	40.5	
in. 8	7.76	12.80	9.76	6.65	1.26	2.38	10.12	6.69	7.09	2.01	2.48	
mm 200	197	325	248	169	32	60.5	257	170	180	51	63	

FLANGE BOLTING DATA/WEIGHTS										
SIZE	C	h	n	Wafer Length	Lug Length	Stud Bolt Length	Wafer Lbs.	Wafer Kgs.	Lug Lbs.	Lug Kgs.
in. 2	4.75	3/8-11UNC	4	4.25	1.50	5.00	4.9	1.8	7.1	2.8
mm 50	120.5	3/8-11UNC	4	103.5	38.1	127.0	-	-	-	-
in. 2 1/2	5.50	3/8-11UNC	4	4.75	1.625	5.50	5.7	2.2	8.3	3.4
mm 65	139.5	3/8-11UNC	4	113.1	41.3	139.7	-	-	-	-
in. 3	6.00	3/8-11UNC	4	4.75	1.675	5.50	8.6	3.9	10.9	4.9
mm 80	152.5	3/8-11UNC	4	116.2	42.5	139.7	-	-	-	-
in. 4	7.50	3/8-11UNC	8	5.00	1.875	5.75	9.2	4.2	16.2	7.2
mm 100	190.5	3/8-11UNC	8	122.2	47.6	146.0	-	-	-	-
in. 5	8.50	3/4-10UNC	8	5.25	1.875	5.75	14.2	6.2	22.2	10.2
mm 125	216	3/4-10UNC	8	130.0	47.6	146.0	-	-	-	-
in. 6	9.50	3/4-10UNC	8	5.50	2.0	6.50	17.2	7.8	25.2	11.0
mm 150	241.5	3/4-10UNC	8	133.1	50.8	165.1	-	-	-	-
in. 8	11.75	3/4-10UNC	8	5.75	2.125	6.75	33.6	15.0	42.6	19.0
mm 200	298.5	3/4-10UNC	8	143.2	54.0	171.4	-	-	-	-

Note: KITZ lug style butterfly valves are rated for bi-directional dead end service to full working pressure of the valve with the downstream flange removed. In dead end service exceeding 96 hours, a downstream flange is recommended.



Code # 5112 (B/E/V)G
 Disc: Ductile Iron (A538 + ENP)

Code # 5122 (B/E/V)G
 Disc: Aluminum Bronze (C95400)

Code # 5132 (B/E/V)G
 Disc: 316 SS (A351 Gr. CF8M)
 Stem: 329 SS (A276, Type 329)

Liner Options: NBR (Buna-N)/
 EPDM/FKM (Viton)



Code # 6112 (B/E/V)G
 Disc: Ductile Iron (A538 + ENP)

Code # 6122 (B/E/V)G
 Disc: Aluminum Bronze (C95400)

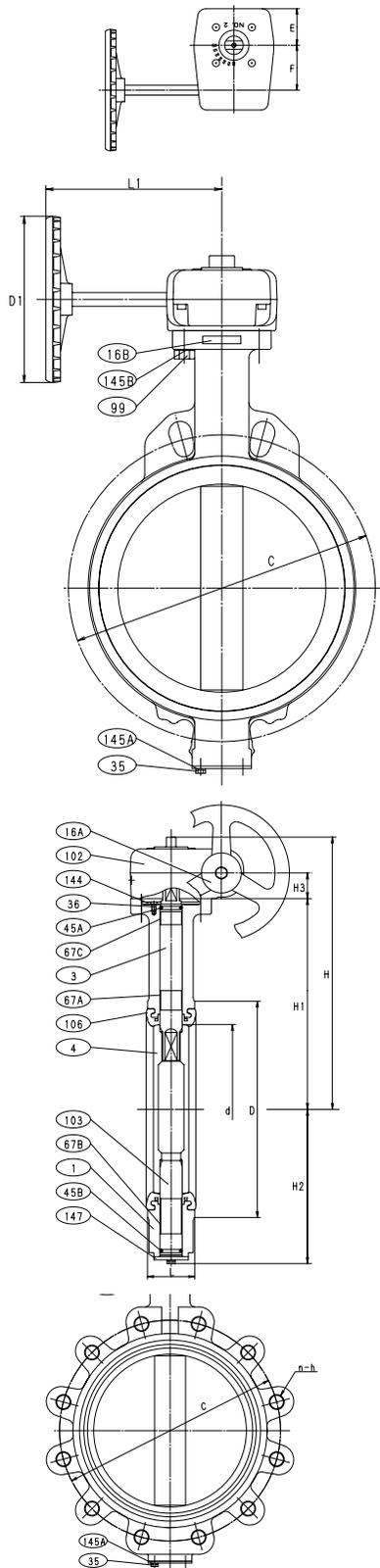
Code # 6132 (B/E/V)G
 Disc: 316 SS (A351 Gr. CF8M)
 Stem: 329 SS (A276, Type 329)

Liner Options: NBR (Buna-N)/
 EPDM/FKM (Viton)

BUTTERFLY VALVES - 200 PSI

Ductile Iron Body • Extended Neck • ISO Mounting Pad
 Bi-Directional • Square Drive • Molded Seat Liner • Gear Operator • Lug & Wafer Design
SIZE 10" ~ 12"

DESIGN STANDARDS: MSS SP-67, MSS SP-25 & API-609 **END CONNECTION:** ANSI CLS. 125/150 FLANGES **WALL THICKNESS:** KITZ STD



MATERIAL LIST		
NO.	NAME OF PART	SPECIFICATION
1	BODY	DUCTILE IRON (A536)
3	STEM	STAINLESS STEEL (A276, Type 410)
4	DISC	DUCTILE IRON, AL. BRONZE, AND 316 SS
16A/B	NAME PLATE	ALUMINUM
35	END PLATE BOLTS	CARBON STEEL
36	GLAND PLATE BOLT	STAINLESS STEEL
45A/B	O-RING	NBR/EPDM
60	KEY (12")	CARBON STEEL
67A/B/C	STEM BEARING	G/F PTFE
99	SET BOLTS	CARBON STEEL
102	GEAR UNIT	
106	SEAT RUBBER (2)	NBR/EPDM/FKM (Viton)
144	GLAND PLATE	CARBON STEEL
145A/B	SPRING WASHER	CARBON STEEL
147	END PLATE	CARBON STEEL

(1) Line scribed on top of the stem indicates the disc direction.
 (2) Vulcanized to the Body

DIMENSIONS											
SIZE	d	H	H1	H2	L	D	D1	L1	E	F	
in.	10	9.69	15	11.97	8.62	2.69	12.28	6.69	7.09	2.01	2.48
mm	250	246	381	304	219	68.3	312	170	180	51	63
in.	12	11.61	15.98	12.95	9.61	3.06	14.33	6.69	7.09	2.01	2.48
mm	300	295	406	329	244	77.7	364	170	180	51	63

FLANGE BOLTING DATA/WEIGHTS											
SIZE	C	h	n	Wafer Length	Lug Length	Stud Length	Bolt Length	Wafer Lbs.	Wafer Kgs.	Lug Lbs.	Lug Kgs.
in.	10	14.25	7/8-9 UNC	12	6.50	2.375	7.5	55.6	25.0	79.6	36.0
mm	250	362	7/8-9 UNC	12	158.75	60.325	190.5	-	-	-	-
in.	12	17.00	7/8-9 UNC	12	7.00	2.625	8	70.6	32.0	106.6	48.0
mm	300	432	7/8-9 UNC	12	171.79	66.675	203.2	-	-	-	-

Note: KITZ lug style butterfly valves are rated for bi-directional dead end service to full working pressure of the valve with the downstream flange removed. In dead end service exceeding 96 hours, a downstream flange is recommended.



Code # 5112 (B/E/V)G
 Disc: Ductile Iron (A538 + ENP)

Code # 5122 (B/E/V)G
 Disc: Aluminum Bronze (C95400)

Code # 5132 (B/E/V)G
 Disc: 316 SS (A351 Gr. CF8M)
 Stem: 329 SS (A276, Type 329)

Liner Options: NBR (Buna-N)/
 EPDM/FKM (Viton)



Code # 6112 (B/E/V)G
 Disc: Ductile Iron (A538 + ENP)

Code # 6122 (B/E/V)G
 Disc: Aluminum Bronze (C95400)

Code # 6132 (B/E/V)G
 Disc: 316 SS (A351 Gr. CF8M)
 Stem: 329 SS (A276, Type 329)

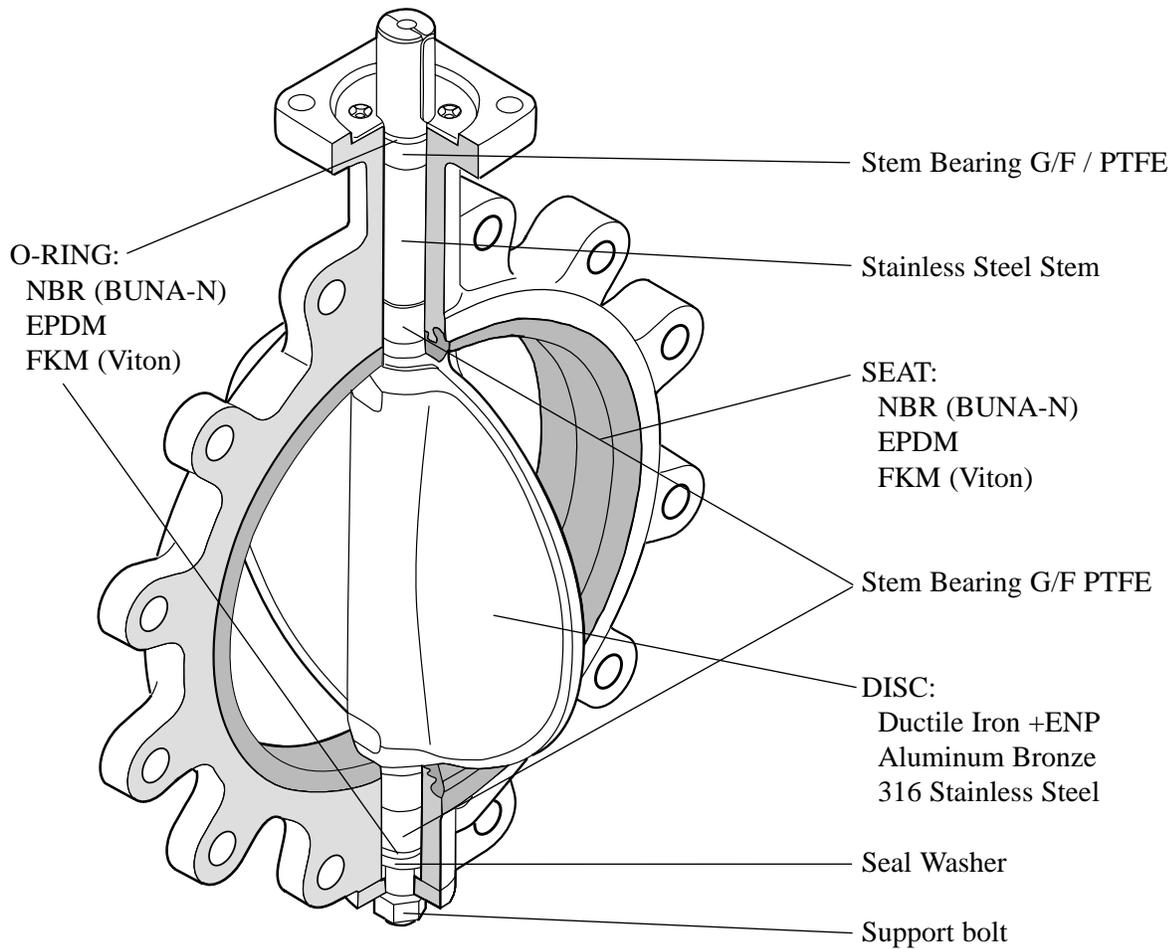
Liner Options: NBR (Buna-N)/
 EPDM/FKM (Viton)

DJ SERIES BUTTERFLY VALVES - 200 PSI - GEAR OPERATOR

DJ SERIES BUTTERFLY VALVES

150 PSI
SIZE 14" ~ 24"

DJ SERIES BUTTERFLY VALVES - 150 PSI

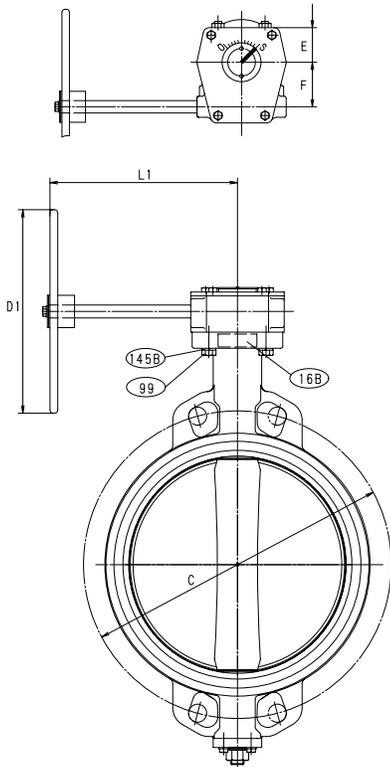


Lug Style

BUTTERFLY VALVES - 150 PSI

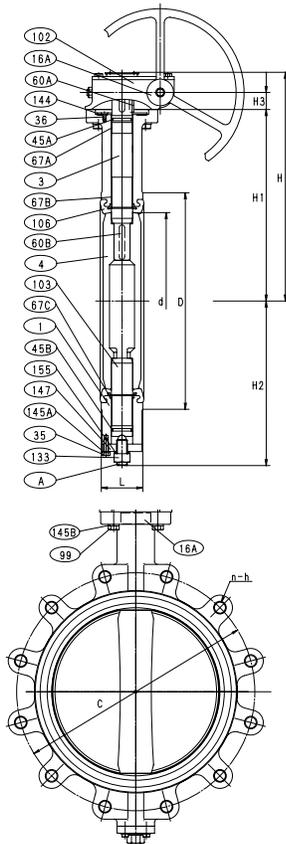
Ductile Iron Body • Extended Neck • ISO Mounting Pad
Bi-Directional • Key Drive • Bonded Seat Liner • Gear Operator • Lug & Wafer Design
SIZE 14" ~ 24"

DESIGN STANDARDS: MSS SP-67, MSS SP-25 & API-609 END CONNECTION: ANSI CLS. 125/150 FLANGES WALL THICKNESS: KITZ STD



MATERIAL LIST		
NO.	NAME OF PART	SPECIFICATION
1	BODY	DUCTILE IRON (A536)
3	STEM (14")	STAINLESS STEEL (A276, Type 410)
	STEM (16"-24")	STAINLESS STEEL (A276, Type 420)
4	DISC	DUCTILE IRON, AL. BRONZE, AND 316 SS
16A/B	NAME PLATE	ALUMINUM
35	END PLATE BOLTS	CARBON STEEL
36	GLAND PLATE BOLT	STAINLESS STEEL
45A/B	O-RING	NBR/EPDM
60A/B	KEY	CARBON STEEL
67A/B/C	STEM BEARING	G/F PTFE
99	SET BOLTS	CARBON STEEL
102	GEAR UNIT	
103	BOTTOM STEM (14")	STAINLESS STEEL
	BOTTOM STEM (16"-24")	STAINLESS STEEL (A276, Type 420)
106	SEAT RUBBER	NBR/EPDM/FKM (Viton)
133	NUT	CARBON STEEL
144	GLAND PLATE	CARBON STEEL
145A/B	SPRING WASHER	CARBON STEEL
147	END PLATE	CARBON STEEL
155	SEAL WASHER	CARBON STEEL
A	SUPPORT BOLT	ALLOY STEEL

(1) Line scribed on top of the stem indicates the disc direction.



DIMENSIONS												
SIZE	d	H	H1	H2	H3	L	D	D1	L1	E	F	
in. 14	13.15	17.60	14.17	12.17	1.85	3.06	16.02	12.20	8.66	2.13	2.58	
mm 350	334	447	360	309	47	77.7	407	310	220	54	65.5	
in. 16	15.16	19.76	16.34	13.43	1.85	4.00	18.35	12.20	8.66	2.13	2.58	
mm 400	385	502	415	341	47	101.6	466	310	220	54	65.5	
in. 18	17.09	20.71	17.28	14.37	1.85	4.50	20.55	12.20	8.66	2.13	2.58	
mm 450	434	526	439	365	47	114.3	522	310	220	54	65.5	
in. 20	18.98	23.11	19.21	16.30	2.36	5.00	22.64	19.69	14.17	2.68	3.48	
mm 500	482	587	488	414	60	127	575	500	360	68	88.5	
in. 24	22.80	25.00	21.10	18.23	2.36	6.06	26.77	19.69	14.17	2.68	3.48	
mm 600	579	635	536	463	60	153.9	680	500	360	68	88.5	

FLANGE BOLTING DATA/WEIGHTS											
SIZE	C	h	n	Wafer	Lug	Stud Bolt	Wafer		Lug		
				Length	Length	Length	Lbs.	Kgs.	Lbs.	Kgs.	
in. 14	18.75	1-8UNC	12	7.50	2.75	8.75	119	54	160	72	
mm 350	476.5	1-8UNC	12	182.63	69.85	222.25	-	-	-	-	
in. 16	21.25	1-8UNC	16	8.50	3.25	9.75	172	78	247	112	
mm 400	539.5	1-8UNC	16	209.68	82.55	247.65	-	-	-	-	
in. 18	22.75	1 1/8-7UNC	16	9.25	3.625	10.75	252	114	337	153	
mm 450	578	1 1/8-7UNC	16	232.31	92.075	273.05	-	-	-	-	
in. 20	25.00	1 1/8-7UNC	20	10.25	4.0	11.5	309	140	430	195	
mm 500	635	1 1/8-7UNC	20	251.92	101.6	292.10	-	-	-	-	
in. 24	29.50	1 1/4-7UNC	20	11.75	4.625	13.25	529	240	712	323	
mm 600	749.5	1 1/4-7UNC	20	291.35	117.475	336.55	-	-	-	-	

Note: KITZ lug style butterfly valves are rated for bi-directional dead end service to full working pressure of the valve with the downstream flange removed. In dead end service exceeding 96 hours, a downstream flange is recommended.



Code # 5111 (B/E/V)G
Disc: Ductile Iron (A538 + ENP)

Code # 5121 (B/E/V)G
Disc: Aluminum Bronze (C95400)

Code # 5141 (B/E/V)G
Disc: 316 SS (A351 Gr. CF8M)
Stem: 316 SS (A351 Gr. CF8M)

Liner Options: NBR (Buna-N)/
EPDM/FKM (Viton)



Code # 6111 (B/E/V)G
Disc: Ductile Iron (A538 + ENP)

Code # 6121 (B/E/V)G
Disc: Aluminum Bronze (C95400)

Code # 6141 (B/E/V)G
Disc: 316 SS (A351 Gr. CF8M)
Stem: 316 SS (A351 Gr. CF8M)

Liner Options: NBR (Buna-N)/
EPDM/FKM (Viton)

ENGINEERING DATA INDEX

	PAGE NO.
Specifications .....	.BFV-11
Metal Used in the Manufacture of Valves and Fittings .....	.BFV-12
Properties of Valve Material .....	.BFV-13
Resilient Liner Materials .....	.BFV-14
Chemical Resistance Chart .....	.BFV-15
Flow Data - Cv .....	.BFV-16
Storage/Handling and Installation Guide .....	.BFV-17
Flange Bolt Data .....	.BFV-18
Ductile Series Butterfly - Exploded View .....	.BFV-19
Locking Lever Data .....	.BFV-20
Gear Operator Data .....	.BFV-21
Bare Stem Dimensional Data for Actuation .....	.BFV-22
Torque Data .....	.BFV-23
Cross Reference Chart .....	.BFV-24



SPECIFICATIONS

KITZ Butterfly valves are designed and manufactured to provide maximum performance on recommended service applications at the lowest possible Initial and Life Cycle cost. They meet or exceed the following standards developed through research, laboratory tests and years of experience.

BUTTERFLY VALVES

- | | |
|--|------------------------|
| - American Petroleum Institute | API-609 |
| - Manufacturers Standardization Society
of the Valve and Fitting Industry | MSS SP-25
MSS SP-67 |

SAMPLE BUTTERFLY VALVE SPECIFICATION

Valves shall have Ductile Iron Body with 2" Extended Neck to allow for insulation. Body design shall be Full Lug or Wafer style having a bi-directional differential pressure rating of 200 psi (2 ~ 12") and 150 psi (14 ~ 24"). Stem shall be of Stainless Steel with top and bottom bushing of dissimilar materials with positive stem retention mechanism. Valve shall have (Aluminum Bronze) Disc and bonded or cartridge style seat of (EPDM) rubber. Lug style valve shall be capable of providing bi-directional "Dead End Service" at full rated pressure with the down stream flange removed. Sizes 2 ~ 6 inch shall be Lever Operated with 10 position throttling plate and Sizes 8 inch and larger shall be Gear Operated and manufactured in accordance to MSS SP-67, MSS SP-25 and API-609.

KITZ Code Numbers:

- 5122EL - Wafer (2 ~ 8") Lever Operated
- 6122EG - Lug (2 ~ 12") Gear Operated
- 5121EG - Wafer (14 ~ 24") Gear Operated
- 6121EG - Lug (14 ~ 24") Gear Operated

METAL USED IN THE MANUFACTURE OF VALVES AND FITTINGS

Aluminum - A non-ferrous metal. Its chemical weight is about one-third as much as steel. Aluminum resistant to atmospheric corrosion but can be very reactive with other metals. Thus, its main use in valve is for handwheels and identification tags.

Copper - Among the most important properties of wrought copper materials are their thermal and electrical conductivity, corrosion resistance, wear resistance and ductility. Wrought copper performs well in high temperature applications and is easily joined by soldering or brazing. Wrought copper is exclusively used for fittings.

Bronze - One of the first alloys developed in the Bronze Age. It is generally accepted as the industry standard for pressure rated bronze valves and fittings. Bronze has a higher strength than pure copper. It casts easily. Machinability is excellent and is joined easily with solder or brazing. Bronze is very resistant to pit corrosion, and is generally more resistant to most chemicals than pure copper.

Silicon Bronze - Has the ductility of copper with equal or greater corrosion strength than copper. Silicon Bronze has greater resistance to stress cracking than most brasses and the increase in strength makes it an excellent choice for a stem material in pressure rated valves.

Aluminum Bronze - The most widely accepted disc material used in butterfly valves. Aluminum Bronze is heat treatable and is equal in strength to carbon steel. Formation of an aluminum oxide layer on exposed surfaces makes this metal very corrosion resistant. However, it's not recommended for high pH wet system applications.

Brass - Generally has good corrosion resistance and machinability. It is susceptible to de-zincification in some valve design and specific application. The primary uses for wrought brass: iron valve stems and the ball and stem in ball valves.

Gray Iron - An alloy of iron, carbon and silicon that is easily cast and machined. In the as-cast condition, becomes a good pressure vessel but is susceptible to shock load and can fracture under stress. Gray iron has superior corrosion resistance to steel in certain environments making it a standard choice for iron bodies and bonnets of Class 125 & 250 Gate, Globe and Check.

Ductile Iron - Has similar chemical composition to Gray iron but special treatment in the casting process modifies the metallurgical structure yielding mechanical properties equal to carbon steel but retains the superior corrosion resistance in certain environments. This metallurgical structure change make it an ideal choice for butterfly valve bodies.

Cast Steel - Has excellent mechanical properties, good resistance to stress corrosion and sulfides. Carbon Steel has high and low temperature strength as well as excellent fatigue strength characteristics. Primarily used in the manufacture of gate, globe, check and ball valves for application up to 850 °F.

Nickel-Plated Ductile Iron - Nickel coatings has received wide acceptance for use in chemical processing industry. These coatings have a high tensile strength - 50 to 225 ksi, which improves the abrasion and wear characteristics. This is plating is widely specified as a disc coating for butterfly valves.

400 Series Stainless Steel - An alloy of iron, carbon and chromium. This stainless is normally magnetic due to its martensitic structure and iron content. Four Hundred Series stainless steel is resistant to high temperature oxidation and has improved physical and mechanical properties over carbon steel. The most common application in valves is for stem materials in gate, butterfly valves and for backseat busing and wedges in Cast Steel valves.

316 Stainless Steel - An alloy of iron, carbon, nickel and chromium. This material is non-magnetic and has more ductility than 400 Series Stainless Steel. Austenitic in structure, it has very good corrosion resistance to a wide range of environments, is not susceptible to stress cracking corrosion cracking, and is not affected by heat treatment. Most common uses in valves are for body, ball and stem materials.

329 Series Stainless Steel - Duplex stainless steel's have a micro-structure that is a mixture of austenite and ferrite. This blend produces alloys with twice the yield strength of austenitic alloys and upgrade in general corrosion resistance in parts that are not going to be welded. The most common application in valves is for stem materials in ball and butterfly valves.

PROPERTIES OF VALVE MATERIALS																					
ASTM No.	ALLOY	CHEMICAL COMPOSITION - NOMINAL OR MAXIMUM														NOMINAL PHYSICAL PROPERTIES					
		ALU. AL	CARBON C	CHROME Cr	COBALT Co	COPPER Cu	IRON Fe	LEAD Pb	MAGN. Mn	MOLY. Mo	NICKLE Ni	PHOS. P	SILICON SI	SULFUR S	TIN SN	ZINC Zn	TENSIL STRENGTH (PSI)	YIELD STRENGTH (PSI)	ELONGATION (%)	HARDNESS	
BRONZE & BRASS																					
B-85	Die Cast Aluminum	87.0				1.0	1.3		0.4		0.5		12.0		0.2	0.5	42,000	19,000	3.5		
B-16	Free Cutting Brass					61.5		3.0								35.5	50,000	20,000	15.0	75 HRB	
B-61	Navy "M" (Steam Bronze)	0.005				88.0	0.3	1.5			1.0	0.04	0.005	0.05	6.0	4.5	34,000	16,000	22.0	65 HB	
B-62	Composition Bronze	0.005				85.0	0.3	5.0			1.0	0.05	0.005	0.08	5.0	5.0	30,000	14,000	20.0	60 HB	
B-148	Alu. Bronze (Cast)	11.0				85.0	4.0				4.0						75,000	30,000	7.0	170 HB	
B-283	Forging Brass					61.0	0.3	2.5								38.0	50,000	18,000	25.0	80 HB	
B-584	Leaded Semi-Red Brass	0.005				81.0	0.4	7.0				0.02	0.005	0.08	3.0	9.0	29,000	13,000	16.0	55 HB	
IRON																					
A-126	Gray Iron (Class B)												0.75		0.15		1.5	31,000			195 HB
A-395	Ductile Iron (Ferritic)		3.2										0.08	2.5				60,000	40,000	18.0	167 HB
A-536*	Ductile Iron (Austenitic)		3.2										0.08	2.5				80,000	55,000	6.0	160 HB
STAINLESS STEEL																					
A-276-304	304 (Wrought)		0.08	19.0					2.0		9.0	.045	1.0	0.03				75,000	30,000	40.0	202 HB
A-276-316	316 (Wrought)		0.08	17.0					2.0	2.5	12.0	.045	1.0	0.03				75,000	30,000	30.0	202 HB
A-276-329	329 (Wrought)		0.15	26.0					2.0	1.5	4.5	.045	1.0	0.03				90,000	70,000	15.0	202 HB
A-276-410	410 (Wrought)		0.15	13.0					1.0		0.5	0.04	1.0	0.15				100,000	80,000	15.0	200/225 HB
A-351- CF8M	316 (Cast)		0.08	20.0					1.5	2.5	12.0	.045	1.0	0.03				75,000	30,000	30.0	202 HB
CARBON STEEL																					
A-105	Forged Carbon Steel		0.35						1.0			0.04	0.035	0.05				70,000	36,000	22.0	187 HB
A-216-WCB	Cast Carbon Steel		0.30						1.1			0.04	0.6	0.45				70,000	36,000	22.0	187 HB
TRIM STEEL																					
A-307 Gr. B	Carbon Steel		0.2						0.45			0.04		0.05				100,000		18.0	121/212 HB
A-583 Gr. A	Carbon Steel		.37						1.0		0.35	0.04	0.2	0.05				-			
A193-B7	B-7 Alloy Steel Studs		0.4	1.0					0.85	0.2		0.035	0.25	0.04				125,000	105,000	16.0	126/300 HB
A-194-GR8	304 Stainless Steel Nuts		0.08	19.0					2.0		9.0	0.045	1.0	0.03				125,000	105,000	16.0	126/300 HB

*Chemical composition may be changed in favor of physical properties. This is permitted by ASTM A-536.

RESILIENT LINER MATERIALS

EPDM

EPDM is a terpolymer elastomer made from ethylene-propylene diene monomer. EPDM has good abrasion and tear resistance and offers excellent chemical resistance to a variety of acids and alkalines. It is susceptible to attack by oil and is not recommended for applications involving petroleum oils, strong acids, or strong alkalines. It should not be used for compressed air lines. It has exceptionally good weather aging and ozone resistance and has fairly good resistance to ketones and alcohols.

BUNA-N (Nitrile) (NBR)

Buna-N is a general-purpose oil resistant polymer known as Nitrile rubber. It is a copolymer of butadiene and acrylonitrile. It has good resistance to Hydraulic fluid, oil, water, and solvents. It shows good tensile strength and abrasion resistance while displaying good compression set. It is not recommended for highly polar solvents such as acetone and methyl ethyl ketone nor in chlorinated hydrocarbons, ozone or nitro hydrocarbons.

FLUOROELASTOMER FKM (VITON*)

Fluoroelastomers are inherently compatible with a broad spectrum of chemicals. They gained broad acceptance for butterfly valve O-ring seals and liners because of their wide chemical compatibility, which span significant concentration and temperature range. It can be used in most applications involving mineral acids, salt solutions, chlorinated hydrocarbons and petroleum oils. On the whole it is excellent in hydrocarbon service. However, FKM is not recommended for use in high temperature water.

* ® Trademark of E.I. Dupont Company

LINER MATERIAL TEMPERATURE RANGE

LINER MATERIAL	TEMPERATURE	
	<u>Continuous</u>	<u>Intermittent</u>
EPDM	-34 ~ 135 °C / -30 ~ 275 °F	-40 ~ 150 °C / -40 ~ 300 °F
BUNA-N (Nitrile)	-12 ~ 82 °C / -10 ~ 180 °F	-12 ~ 93 °C / -10 ~ 200 °F
FKM (Fluoroelastomer)	-10 ~ 150 °C / -14 ~ 302 °F	

KITZ utilizes proprietary compound formulas for each elastomer. They provide the right combination of seat compression, abrasion and chemical resistance to match a broad range of applications.

Note: Elastomeric seat materials are not suitable for steam service.

CHEMICAL RESISTANCE GUIDE

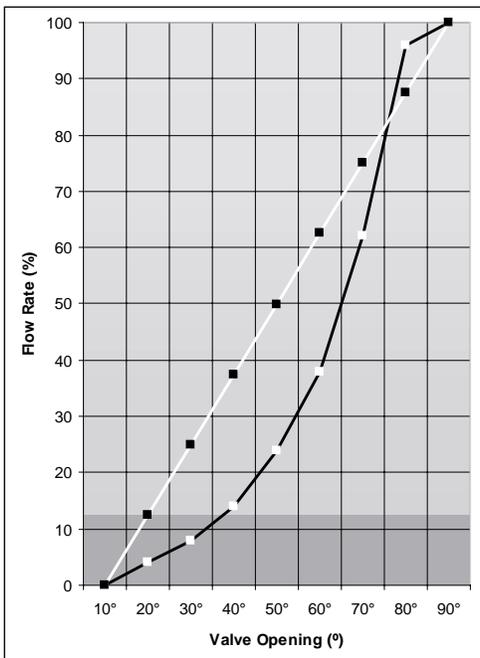
FLUID / MATERIAL	DISC			SEAT		
	AL-BRZ	DUCTILE	316	NBR	EPDM	VITON
Acetic Acid (10%)	Very Poor	Poor	Excellent	Very Poor	Good	Very Poor
Air	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Ammonia (anhydrous liquid)	Very Poor	Good	Excellent	Poor	Good	Very Poor
Ammonia (solution)	Very Poor	Good	Excellent	Good	Good	Very Poor
Ammonium Sulfate	Very Poor	Poor	Good	Excellent	Excellent	Good
Animal Oil	Good	Excellent	Excellent	Excellent	Good	Good
Calcium Carbonate	Very Poor	Very Poor	Good	Excellent	Excellent	Excellent
Carbonic Acid	--	Very Poor	Good	Good	Good	Excellent
Chlorinated Water	Very Poor	--	Poor	Good	-	Excellent
Ethane	-	Good	Good	Excellent	Very Poor	Excellent
Ethyl Alcohol	Good	Good	Excellent	Good	Excellent	Good
Freon12	Excellent	Good	Excellent	Good	Excellent	Poor
Gasoline (refined/unleaded)	Good	Good	Excellent	Poor	Very Poor	Excellent
Hydrochloric Acid	Very Poor	Very Poor	Very Poor	Poor	Good	Excellent
Hydrogen Gas (cold)	Excellent	Good	Excellent	Good	Good	Excellent
Lubricating Oil (petroleum base)	Good	Excellent	Excellent	Excellent	Very Poor	Excellent
Methyl Alcohol	Excellent	Good	Excellent	Good	Excellent	Poor
Mineral Oil	Good	Good	Excellent	Excellent	Very Poor	Excellent
Natural Gas	Excellent	Excellent	Excellent	Good	Very Poor	Excellent
Oxygen (cold)	Excellent	Good	Excellent	Good	Good	Excellent
Petroleum Oil (refined)	Good	-	-	Good	Very Poor	Good
Propane Gas	-	Good	Excellent	Excellent	Very Poor	Excellent
Sea Water	Excellent	Very Poor	Good	Excellent	Excellent	Excellent
Soybean Oil	-	Poor	Excellent	Excellent	Poor	Excellent
Sulfuric Acid (7%)	Very Poor	Very Poor	Good	Good	Good	Excellent
Sulfuric Acid (20%)	Very Poor	Very Poor	Very Poor	Very Poor	Good	Excellent
Sulfuric Acid (50% & larger)	Very Poor	Very Poor	Very Poor	Very Poor	Good	Good
Sulfurous Acid	Very Poor	Very Poor	Good	Poor	Poor	Excellent
Steam (100°C)	Excellent	Excellent	Excellent	Very Poor	Good	Poor
Vegetable Oil	Good	Poor	Excellent	Excellent	Poor	Excellent
Water (hot, 150°F)	Excellent	Poor	Excellent	Very Poor	Good	Excellent

The above performance data has been developed from field testing, customer field reports and/or in-house testing. Properties/applications shown are typical. Your specific application should not be undertaken without independent study and evaluation for suitability. While the utmost care has been used in compiling this data, we assume no responsibility for errors.

FLOW DATA

Cv Values for DJ Series Butterfly Valves

Flow Characteristics (Static Clean Water)



Flow Rate Cv* Values

SIZE		% OPEN									
Inch	mm	10°	20°	30°	40°	50°	60°	70°	80°	90°	
2	50	0	5	10	18	29	47	75	107	124	
2 1/2	65	0	12	22	39	64	102	163	232	270	
3	80	0	17	33	57	94	149	240	341	397	
4	100	0	29	55	96	158	252	404	577	671	
5	125	0	44	83	145	369	381	610	871	1013	
6	150	0	66	126	219	362	576	922	1318	1532	
8	200	0	125	230	400	660	1050	1680	2400	2792	
10	250	0	160	325	575	950	1514	2423	3462	4024	
12	300	0	258	493	859	1418	2260	3618	5168	6010	
14	350	0	324	617	1076	1776	2829	4530	6472	7525	
16	400	0	433	826	1441	2378	3760	6068	8669	10080	
18	450	0	564	1076	1876	3096	4933	7898	11283	13120	
20	500	0	588	1311	2286	3774	6012	9626	13751	15990	
24	600	0	1018	1942	3388	5590	8907	14688	22742	23690	

* Cv is defined as the flow in GPM that a valve will carry with a pressure drop of 1.0 psi, when the media is 60 °F water.

LIQUID FLOW:

$$Q = Cv \sqrt{\Delta P/S}$$

Q = liquid flow rate (gallons per minute)
 ΔP = pressure drop across valve (psi)
 S = specific gravity of media
 Cv is defined as the flow in GPM that a valve will carry with a pressure drop of 1.0 psi when the media is water at 60°.

GAS FLOW:

$$Q = 1360 Cv \sqrt{\Delta P \times P_1/S T}$$

Q = gas flow rate (SCFH — std. cu. ft./hr.)
 S = specific gravity of gas (air = 1.0)
 T = temp. - degrees rankin (°F + 460)
 DP = pressure drop across valve (psi)
 P₁ = upstream pressure (psia) absolute

Note that ΔP must be less than .5
 (Flow is critical when ΔP is greater than .5 P₁).

VALVE SIZING

- On/Off Service

Simply select a valve which is the same as the piping system.

- Throttling Service

Select Cv data from above table: 30 ~ 60° and follow these steps:

- 1) Define:
 - (Q) - System flow requirements
 - (DP) - Maximum allowable pressure drop
 - (S) - Specific gravity of the pipeline media
- 2) Calculate Cv using above formula
- 3) Select valve size between (30 ~ 60°)
- 4) Do not exceed maximum velocity:

Liquids: 20 ft./second
Gases: 15,000 ft./ minute
 $V = \frac{S \times .321}{A}$ (liquid only)

A = Area of pipe in square inches

Example: Throttling Service

Given:

Q - 975 GPM (Flow)
 ΔP - 1.50 (Pressure Drop)
 S = (Specific Gravity)

$$1) Cv = Q \sqrt{\frac{S}{\Delta P}} = 975 \sqrt{\frac{1.50}{1.0}}$$

2) From Cv table:
 8" Valve Cv Flow Rate
 Open range 30~60°: 230 ~ 1050

$$3) \text{Velocity} - V = \frac{S \times .321}{A}$$

$$\frac{975 \times .321}{50.3} = 6.22 \text{ ft./sec.}$$

6.22 ft./sec. is within the limits. So for given conditions, an 8" valve should be used.

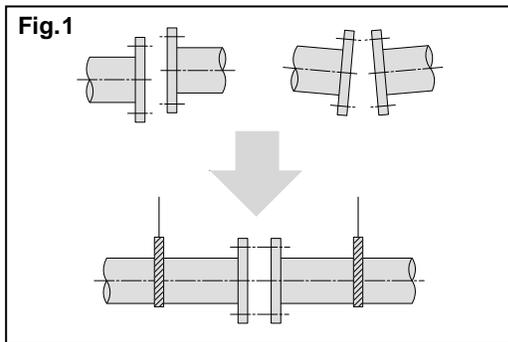
STORAGE / HANDLING AND INSTALLATION GUIDE

STORAGE AND HANDLING

Store valves in a dry, clean and corrosion-free environment with no direct exposure to the sun, leaving valves 10° open for prevention of permanent distortion of the resilient seat. Care should be exercised while storing valves. Avoid dropping valves on a hard surface or stacking too high to prevent damage to valve or injury to the handler.

INSTALLATION ON PIPELINE

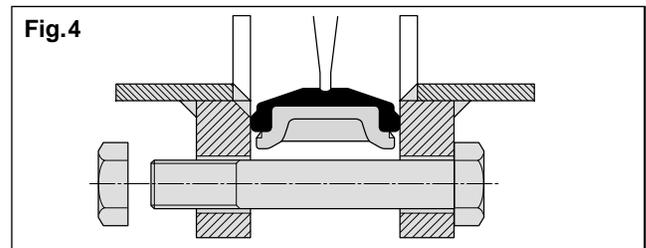
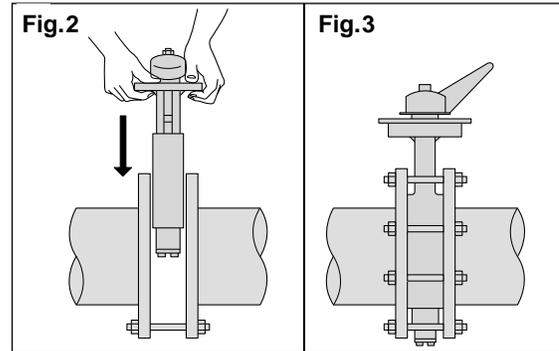
1. Mount valve onto flanges only after flanges have been welded to pipes and cooled down to room temperature to prevent damage to resilient seat.
2. Inspect flange surface finish to assure that it is smooth and free of damage / deformation. Remove rust, welding splatters and any foreign objects from flange finish and bore that may affect sealing performance and operation.
3. For trouble-free operation it is essential to center and align both upstream and downstream flanges as shown in Fig. 1



4. To begin valve mounting, set jack bolts under the piping for flat support at the same height, and adjust the flange-to-flange distance so the it is roughly ¼ inch (6 mm) clearance on both sides of valve body.
5. Set two alignment bolts into lower mounting guides/lug of valve and install valve being careful not to force to prevent damage to resilient seat (Fig. 2).
6. Insert the next set of bolts in the upper mounting guides/lugs and center valve within flanges. Before flange bolts are tightened carefully open to assure unobstructed disc movement. Interference of the disc may be the result of heavy wall pipe, plastic lined pipe, cast flanges or when bolted directly to a reducing flange and or another valve.

It may be necessary to taper bore the pipe to allow free disc movement or you may need to install a spool piece/spacer between the two valves.

Remove jack bolts and set all bolts and tighten alternating diagonally until the flange contacts the valve body (Fig. 3 & 4).



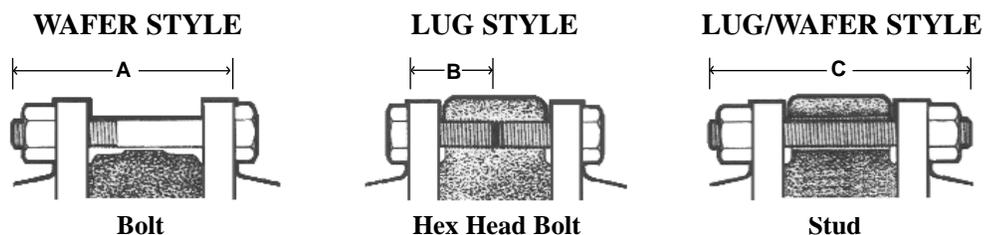
VALVE OPERATION

1. Valve operation should be limited to lever, gears or actuation. The use of cheater bar may result in the malfunction of the valve and operator.
2. Valves should be fully opened before loop test of the piping system with higher than normal pressure. The use of closed valve in place of a blind flange is not recommended.
3. Before dismantling valves from piping system, take the following precautions.
 - a. Do not loosen bolts while under pressure
 - b. Do Relieve line pressure
 - c. Completely drain piping system

Note:

1. Use piping flanges conforming to ANSI Class 125 / 150.
2. Mechanical or rubber faced flanges are **not** recommended.
3. NBR, EPDM and FKM (Viton) are **not** recommended for steam service.

FLANGE BOLT DATA

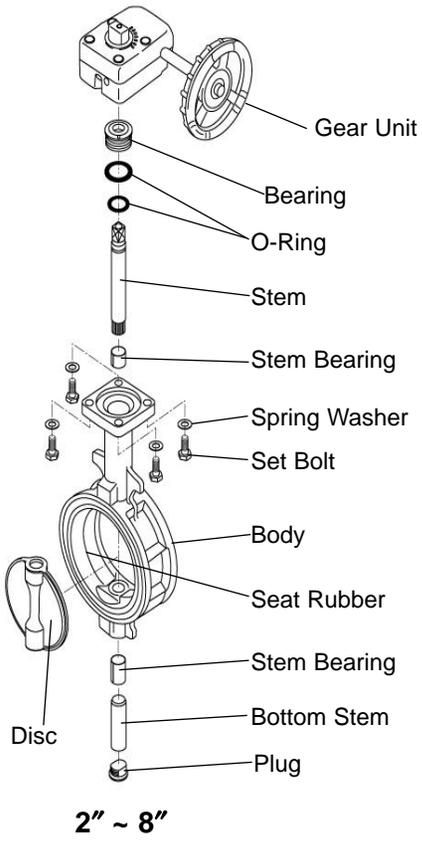
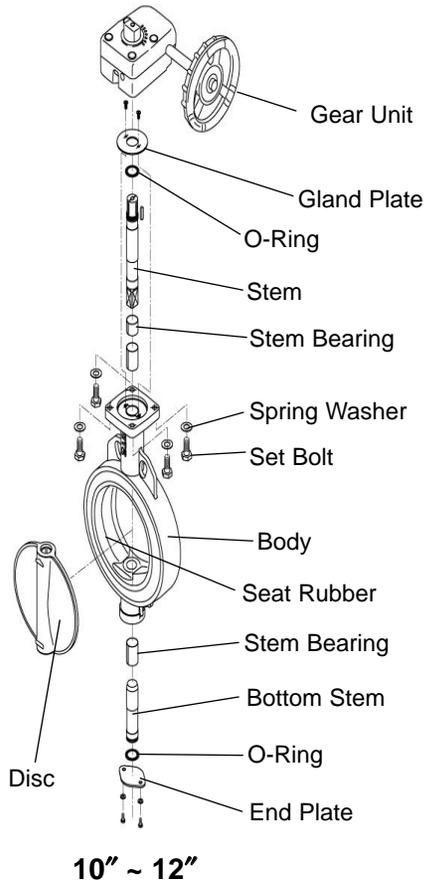
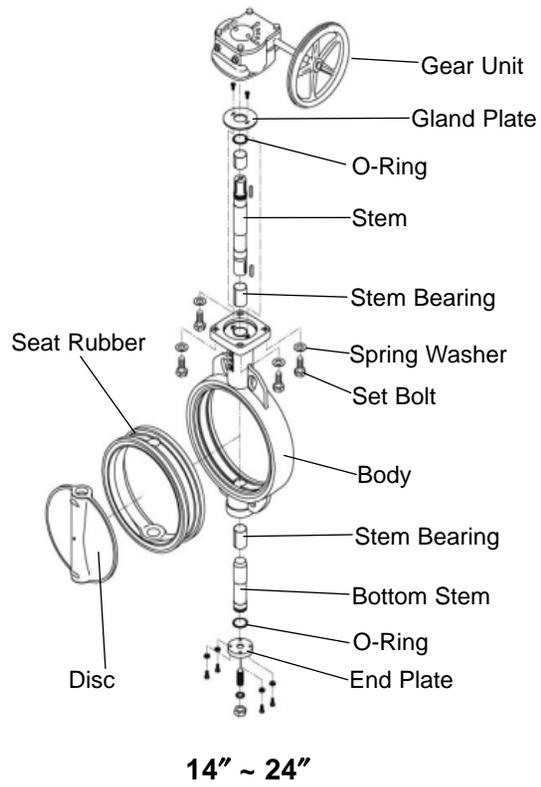


Size		Diameter		Number		Bolt Length "A"		Hex Head Bolt Length "B"		Stud Length "C"	
				Bolt/Stud	Hex Head Bolt						
inch	mm	inch	mm	inch	inch	inch	mm	inch	mm	inch	mm
2	50	5/8-11	15.875	4	8	4 ¹ / ₄	107.95	1 ¹ / ₂	38.1	5	127.00
2 ¹ / ₂	65	5/8-11	15.875	4	8	4 ³ / ₄	120.65	1 ⁵ / ₈	41.275	5 ¹ / ₂	139.70
3	80	5/8-11	15.875	4	8	4 ³ / ₄	120.65	1 ³ / ₄	44.45	5 ¹ / ₂	139.70
4	100	5/8-11	15.875	8	16	5	127.00	1 ⁷ / ₈	47.625	5 ³ / ₄	146.05
5	125	3/4-10	19.05	8	16	5 ¹ / ₄	133.35	1 ⁷ / ₈	47.625	6 ¹ / ₄	158.75
6	150	3/4-10	19.05	8	16	5 ¹ / ₂	139.70	2	50.8	6 ¹ / ₂	165.10
8	200	3/4-10	19.05	8	16	5 ³ / ₄	146.05	2 ¹ / ₈	53.975	6 ³ / ₄	171.45
10	250	7/8-9	22.225	12	24	6 ¹ / ₂	165.10	2 ³ / ₈	60.325	7 ¹ / ₂	190.50
12	300	7/8-9	22.225	12	24	7	177.80	2 ⁵ / ₈	66.675	8	203.20
14	350	1-8	25.4	12	24	7 ¹ / ₂	190.50	2 ³ / ₄	69.85	8 ³ / ₄	222.25
16	400	1-8	25.4	16	32	8 ¹ / ₂	215.90	3 ¹ / ₄	82.55	9 ³ / ₄	247.65
18	450	1 ¹ / ₈ -7	28.575	16	32	9 ¹ / ₄	234.95	3 ⁵ / ₈	92.075	10 ³ / ₄	273.05
20	500	1 ¹ / ₈ -7	28.575	20	40	10 ¹ / ₄	260.35	4	101.6	11 ¹ / ₂	292.10
24	600	1 ¹ / ₄ -7	31.75	20	40	11 ³ / ₄	298.45	4 ⁵ / ₈	117.475	13 ¹ / ₄	336.55

Note: Use pipe flanges conforming to ANSI Class 125 or 150. Steel, Cast Iron, Bronze and Plastic may be used. The use of additional flange gaskets are not required.

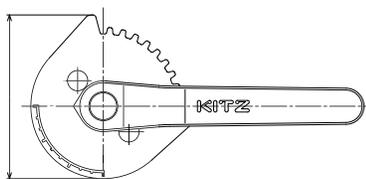
Threads on bolts, studs and nuts shall be in accordance with the Unified Course Thread Series (UNC), Class A&B (ANSI B-1.1).

DJ SERIES BUTTERFLY VALVES EXPLODED VIEW

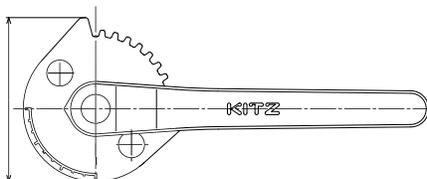


LOCKING LEVER DATA

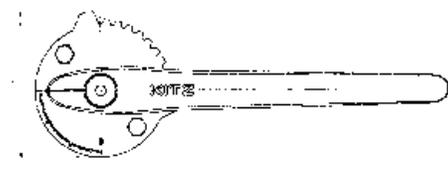
5000 & 6000 DUCTILE SERIES



2-4"



5-6"



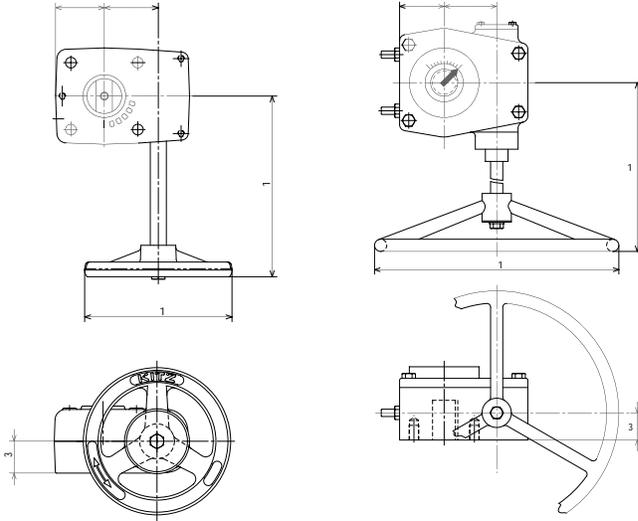
8"

MATERIAL LIST			
NO.	NAME OF PART	MATERIAL	SPECIFICATION
9	HANDLE	ALUMINUM DIE-CAST	B85, SC102A
	HANDLE (2")	DUCTILE IRON (8" Only)	A536 Gr. 65-45-12
10	HANDLE BOLT	ALLOY STEEL	
		CARBON STEEL (8" Only)	A307 Gr. B
16C	HANDLE WASHER	CARBON STEEL (8" Only)	A36
117	HANDLE SPRING	STAINLESS STEEL	A276 Type 304
124	SPRING PIN	STAINLESS STEEL	A276 Type 304
157	STOP LEVER	ALUMINUM DIE-CAST	B85 SC102A
		DUCTILE IRON (8" Only)	A538 Gr. 65-45-12
A	CAP	P.V.C. (2~6")	

DIMENSIONS - SPECIFICATIONS									
SIZE	A	B	C	Wt.		TORQUE RATING OUTPUT - In./kg-cm			
						50#'S PULL		100#'S PULL	
In. 2	7.09	1.73	4.45	Lbs.	0.4	In.	280	560	
mm 50	180	44	113	kgs.	0.2	kg-cm	322	644	
In. 2½	7.09	1.73	4.45	Lbs.	0.4	In.	280	560	
mm 65	180	44	113	kgs.	0.2	kg-cm	322	644	
In. 3	7.09	1.73	4.45	Lbs.	0.4	In.	280	560	
mm 80	180	44	113	kgs.	0.2	kg-cm	322	644	
In. 4	7.09	1.73	4.45	Lbs.	0.4	In.	280	560	
mm 100	180	44	113	kgs.	0.2	kg-cm	322	644	
In. 5	9.06	2.13	4.45	Lbs.	0.9	In.	380	760	
mm 125	230	54	113	kgs.	0.4	kg-cm	437	874	
In. 6	9.06	2.13	4.45	Lbs.	0.9	In.	380	760	
mm 150	230	54	113	kgs.	0.4	kg-cm	437	874	
In. 8	13.78	1.54	5.67	Lbs.	2.9	In.	615	1230	
mm 200	350	39	144	kgs.	1.3	kg-cm	707	1414	

GEAR OPERATOR

5000 & 6000 DUCTILE SERIES



The Ductile Series butterfly valves can be operated with a heavy-duty operator with indicator. The gear operator is recommended for valves 8" and larger for trouble-free operation in all moisture and weather conditions. The gear operator is a self-locking worm gear type with adjustable stops for open/close position.

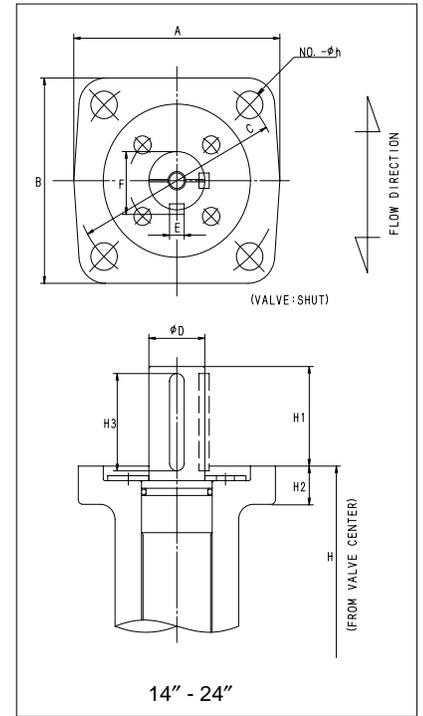
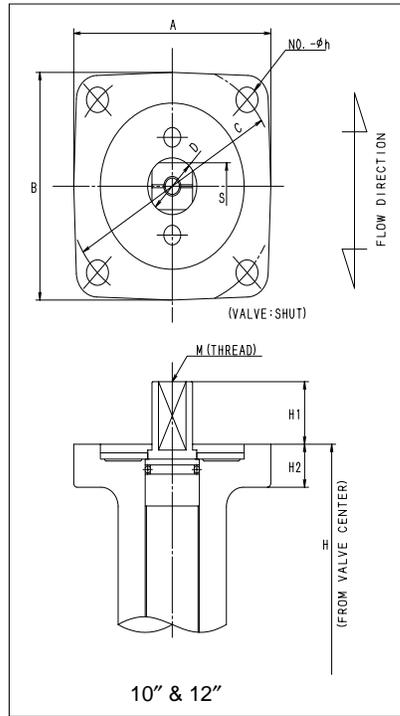
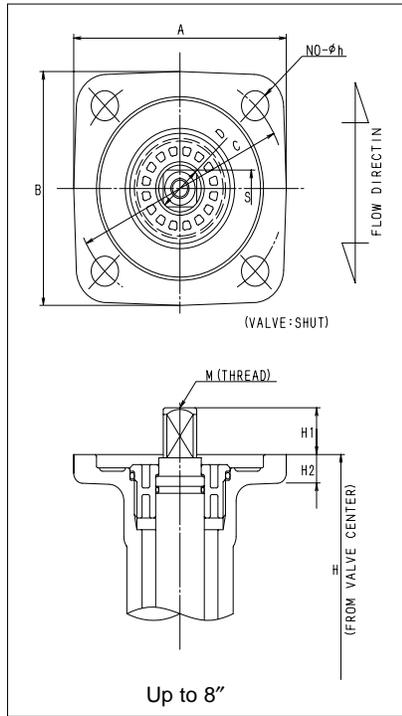
Ordering: Specify by adding (G) to the Code Number, i.e. 6122EG.

MATERIAL LIST	
NAME OF PART	MATERIAL
Gear Operator 2" - 12"	
Gear Case	Aluminum Die-Cast
Handle	Aluminum Die-Cast
Handle Shaft	Stainless Steel

MATERIAL LIST	
NAME OF PART	MATERIAL
Gear Operator 14" - 24"	
Gear Case	Cast Iron
Handle	Carbon Steel
Handle Shaft	Stainless Steel

DIMENSIONS - SPECIFICATIONS								
	SIZE	H3	D1	L1	E	F	Gear No.	Wt.
In.	2"	0.73	3.15	4.78	1.14	1.10	No. 0	Lbs. 1.1
mm	50	18.5	80	121.5	29	28		kgs. .05
In.	2 1/2"	0.73	3.15	4.78	1.14	1.10	No. 0	Lbs. 1.1
mm	65	18.5	80	121.5	29	28		kgs. .05
In.	3"	0.94	4.33	5.31	1.44	1.59	No. 1a	Lbs. 2.2
mm	80	24	110	135	36.5	40.5		kgs. 1.0
In.	4"	0.94	4.33	5.31	1.44	1.59	No. 1a	Lbs. 2.2
mm	100	24	110	135	36.5	40.5		kgs. 1.0
In.	5"	0.94	4.33	5.31	1.44	1.59	No. 1b	Lbs. 2.2
mm	125	24	110	135	36.5	40.5		kgs. 1.0
In.	6"	0.94	4.33	5.31	1.44	1.59	No. 1b	Lbs. 2.2
mm	150	24	110	135	36.5	40.5		kgs. 1.0
In.	8"	1.26	6.69	7.09	2.01	2.48	No. 2a	Lbs. 6.6
mm	200	32	170	180	51	63		kgs. 3.0
In.	10"	1.26	6.69	7.09	2.01	2.48	No. 2b	Lbs. 6.6
mm	250	32	170	180	51	63		kgs. 3.0
In.	12"	1.26	6.69	7.09	2.01	2.48	No. 2c	Lbs. 6.6
mm	300	32	170	180	51	63		kgs. 3.0
In.	14"	1.85	12.20	8.66	2.13	2.58	No. 3	Lbs. 20.0
mm	350	47	310	220	54	65.5		kgs. 9.0
In.	16"	1.85	12.20	8.66	2.13	2.58	No. 3	Lbs. 20.0
mm	400	47	310	220	54	65.5		kgs. 9.0
In.	18"	1.85	12.20	8.66	2.13	2.58	No. 3	Lbs. 20
mm	450	47	310	220	54	65.5		kgs. 9.0
In.	20"	2.36	19.69	14.17	2.68	3.48	No. 4	Lbs. 53.0
mm	500	60	500	360	68	88.5		kgs. 24.0
In.	24"	2.36	19.69	14.17	2.68	3.48	No. 4	Lbs. 53.0
mm	600	60	500	360	68	88.5		kgs. 24.0

BARE STEM DIMENSIONAL DATA FOR ACTUATION



DIMENSIONS - 2" - 12"												
SIZE	S	D	H	H1	H2	AxB	C	No.	h	M	FLANGE TYPE	
in. 2	.35	.47	5.79	.55	.33	1.97x1.97	1.97	4	.28	M6	F6	
mm 50	9	12	147	14	8.5	50x50	50	4	7	M6	F6	
in. 2 1/2	.35	.47	6.10	.55	.33	1.97x1.97	1.97	4	.28	M6	F6	
mm 65	9	12	155	14	8.5	50x50	50	4	7	M6	F6	
in. 3	.43	.55	6.81	.55	.33	2.76x2.76	2.76	4	.39	M6	F7	
mm 80	11	14	173	14	8.5	70x70	70	4	10	M6	F7	
in. 4	.43	.55	7.20	.55	.33	2.76x2.76	2.76	4	.39	M6	F7	
mm 100	11	14	183	14	8.5	70x70	70	4	10	M6	F7	
in. 5	.51	.63	8.31	.87	.33	2.76x2.76	2.76	4	.39	M6	F7	
mm 125	13	16	211	22	8.5	70x70	70	4	10	M6	F7	
in. 6	.51	.63	8.78	.87	.33	2.76x2.76	2.76	4	.39	M6	F7	
mm 150	13	16	223	22	8.5	70x70	70	4	10	M6	F7	
in. 8	.61	.83	9.76	.94	.39	3.86x3.86	4.02	4	.43	M6	F10	
mm 200	15.5	21	248	24	10	98x98	102	4	11	M6	F10	
in. 10	.94	1.14	11.97	1.26	.39	3.86x3.86	4.02	4	.43	M10	F12	
mm 250	24	29	304	32	10	98x98	102	4	11	M10	F12	
in. 12	1.06	1.28	12.95	1.26	.39	3.86x3.86	4.02	4	.43	M10	F12	
mm 300	27	32.5	329	32	10	98x98	102	4	11	M10	F12	

DIMENSIONS - 14" - 24"												
SIZE	D	E	F	H	H1	H2	H3	AxB	C	No.	h	FLANGE TYPE
in. 14	1.50	.39	1.61	14.17	2.56	.98	2.56	5.51x5.28	5.51	4	.71	F14
mm 350	38	10	41	360	65	25	65	140x134	140	4	18	F14
in. 16	1.50	.39	1.61	16.34	2.56	.98	2.56	5.51x5.28	5.51	4	.71	F14
mm 400	38	10	41	415	65	25	65	140x134	140	4	18	F14
in. 18	1.50	.39	1.61	17.28	2.56	.98	2.56	5.51x5.28	5.51	4	.71	F14
mm 450	38	10	41	439	65	25	65	140x134	140	4	18	F14
in. 20	1.97	.55	2.11	19.21	3.15	1.10	3.15	6.69x6.38	6.50	4	.87	F16
mm 500	50	14	53.5	488	80	28	80	170x162	165	4	22	F16
in. 24	1.97	.55	2.11	21.10	3.15	1.10	3.15	6.69x6.38	6.50	4	.87	F16
mm 600	50	14	53.5	536	80	28	80	170x162	165	4	22	F16

TORQUE INFORMATION / DATA

TORQUE

Torque is the rotary effort required to operate a valve.
There are three factors that determine the valves torque:

- 1) Disc / Seat Interference Friction
- 2) Bearing Friction
- 3) Dynamic torque

BREAKING TORQUE

Breaking torque is a combination of the above mentioned frictions at any given differential pressure. This value is normally the highest required torque for “wet” (water and other non-lubricating medias at ambient temperature) on/off service.

- The listed torque is for NBR (BUNA-N), EPDM and FKM (Viton).
- For “dry” service (non-lubricating, dry gas media), multiply highest value by 1.6.
- For “lubed” service (clean, non-abrasive lubricating media) multiply highest value by .85.
- When sizing actuators for single valve applications, multiply highest value by 1.25.

5000 & 6000 SERIES / ACTUAL TORQUE VALUES

SIZE	50 PSI	100 PSI	150 PSI	200 PSI
2	80	82	85	87
2½	121	124	127	130
3	189	197	204	208
4	239	247	252	261
6	546	577	595	477
8	1000	1044	1089	1128
10	2036	2142	2213	2257
12	2824	2912	3009	3408
14	3231	3399	3470	-
16	5116	5399	5621	-
18	6054	6461	6727	-
20	9179	9674	9976	-
24	14693	15489	16304	-

CROSS REFERENCE CHART

DUCTILE IRON

KITZ	5122E	6122E	5112B	6112B	6112E	5112E	6112	5112B	5132B	6132B
NIBCO	WD2000	LD2000	WD2000	LD2100	WD3010	LD3010	WD3110	LD3110	WD3022	LD3022
BRAY	30-11010-120	31-11010-120	30-11010-684	31-11010-684	30-11010-119	31-11010-119	30-11010-713	31-11010-713	30-11010-124	31-11010-124
CENTERLINE	A2-061-05	B2-061-05	A2-061-01	B2-061-01	A2-021-05	B2-021-05	A2-021-01	B2-021-01	A2-044-05	B2-044-05
DEMCO	NEC1114351	NEC5114351	NEC1114311	NEC5114311	NEC51115351	NEC1115311	NEC5115311	NEC5115311	NEC1122351	NEC5122351
GRINNELL	WD-8281-3	LD-8281-3	WD-8181-3	LD-8181-3	WD-8201-3	LD-8201-3	WD-8101-3	LD-8101-3	WD-8271-4	LD-8271-4
KEYSTONE	AR-1	AR-2	AR-1	AR-2	AR-1	AR-2	AR-1	AR-2	AR-1	AR-2
MILWAUKEE	MW-233-E	ML-233-E	MW-233-8	ML-233-B	MW-232-E	ML-232-E	MW-232-B	ML-232-B	MW-234-E	ML-234-E
MUELLER STEAM	55-ANK6-1	56-ANK6-1	55-ANK3-1	56-ANK3-1	55-ANK6-1	56-ANK-1	55-ANK3-1	56-ANK3-1	55-AHH6-1	56-AHH6-1

CAST IRON

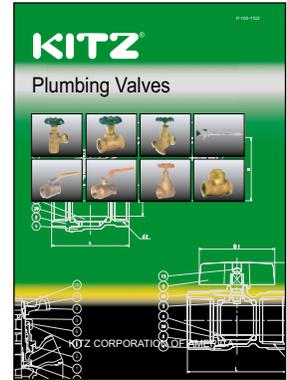
KITZ	6122E	5122E	6122B	5122B	6112E	5112E	6112B	5112B
CENTERLINE	B106135	A106145	B106181	A106131	B102135	A102135	B102131	A102131
GRINNELL	LC-128-3	WC-128-3	LC-118-3	WC-118-3	LC-120-3	WC-120-3	LC-110-3	WC-110-3
MILWAUKEE	CL223E	CW223E	CL223B	CW223B	CL222E	CW222E	CL223B	CW222B
NIBCO	N200235	N200135	N200245	N200145	N200236	N200138	N200246	N200148
WATTS	BF04-121-1	BF04-121-1	BF-03-121-2	BF04-121-2	BF03-111-1	BF04-111-1	BF03-111-2	BF04-111-2

Charts indicate comparable figure numbers of other manufacturers' products of similar design or use and should only be used as a guide, some variation in detail is possible.

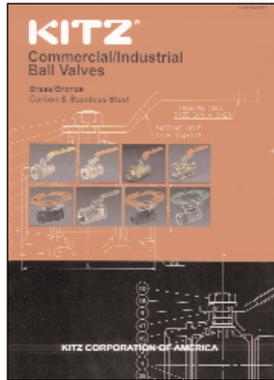
PRODUCT CATALOGS

Your Performance Valve Source

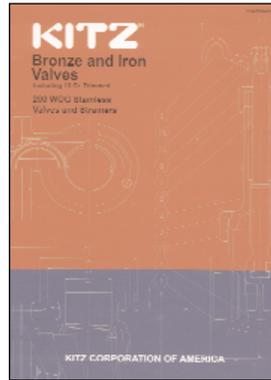
Please call Customer Service at 800-772-0073 for additional catalog requests.



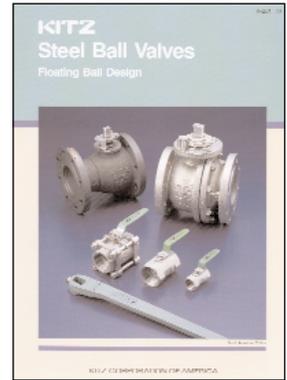
P-100-1102



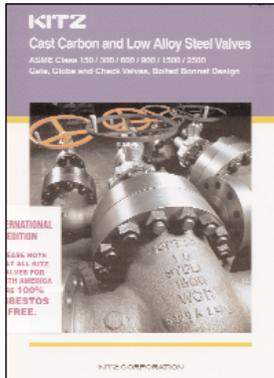
BV-100-0701



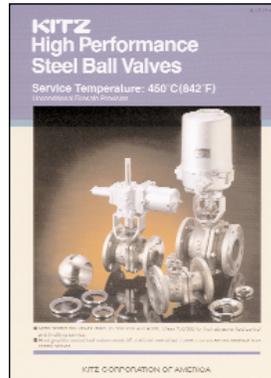
BIV-100-00



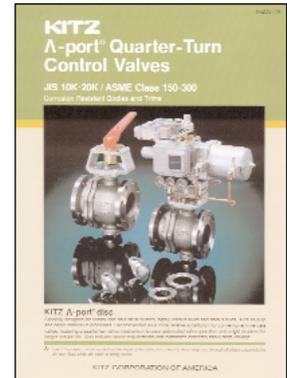
K-201-08



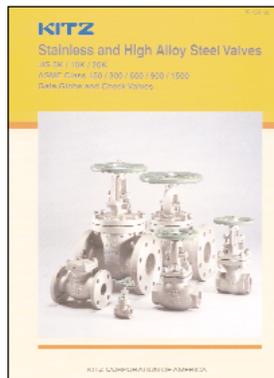
K-170-06



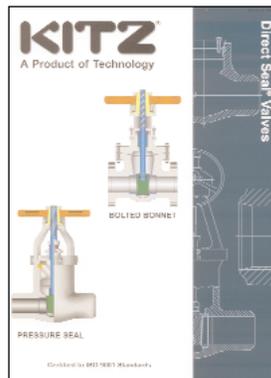
K-204-08



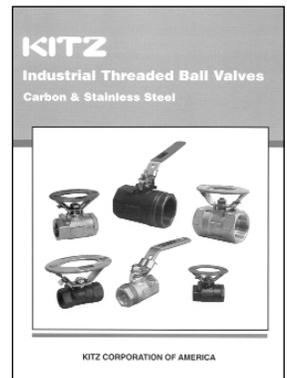
K-203-08



K-150-06



KCCGP 0900



ITBV0031100



CAUTION

Pressure-temperature ratings and other performance data published in this catalog have been developed from our design calculation, in-house testing, field reports provided by our customers and/or published official standards or specifications. They are good only to cover typical applications as a general guideline to users of KITZ products introduced in this catalog.

For any specific application, users are kindly requested to contact KITZ Corporation for technical advice, or to carry out their own study and evaluation for proving suitability of these products to such an application. Failure to follow this request could result in property damage and/or personal injury, for which we shall not be liable.

While this catalog has been compiled with the utmost care, we assume no responsibility for errors, impropriety or inadequacy. Any information provided in this catalog is subject to change without notice for error rectification, product discontinuation, design modification, new product introduction or any other cause that KITZ Corporation considers necessary. This edition cancels all previous issues.

ISO 9001 Certified since 1989

KITZ[®]

KITZ CORPORATION OF AMERICA

10750 CORPORATE DRIVE • STAFFORD, TEXAS 77477 U.S.A.
PHONE (281) 491-7333 • TOLL FREE (800) 772-0073 • FACSIMILE (281) 491-9402

Visit our web site at: www.kitz.com

— Distributed by —