KITZ®

DJ SERIES BUTTERFLY VALVES

Quality in every choice, every time.

KITZ®
A PRODUCT OF TECHNOLOGY

GENERAL INDEX

DJ SERIES BUTTERFLY VALVES

CODE NUMBER SYSTEM

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
6	1	2	3	E	L	200

1 SERIES STYLE	CODE
WAFER	5
LUG	6

2 BODY	CODE
DUCTILE IRON	1

3 DISC/STEM	CODE
DUCTILE IRON + ENP / 410 SS	1
ALUMINUM BRONZE / 410 SS	2
316 SS / 329 SS	3

4 PRESSURE	CODE
150 PSI (4)	1
250 PSI (2)	3

5 LINER	CODE
NBR (BUNA-N)	B
EPDM	E

6 OPERATOR	CODE
LEVER (1)	L
GEAR (3)	G
BARE STEM	X

7 SIZE	CODE
2”	200
2 1/2”	212
3”	300
4”	400
5”	500
6”	600
8”	800
10”	910
12”	912
14”	914
16”	916
18”	918
20”	920
24”	924

NOTES:

(1) 2” - 8”
(2) 2” - 12”
(3) 10” - 24” Standard (2” - 8” Optional)
(4) Standard for 14” - 24”

DJ SERIES BUTTERFLY VALVES
ILLUSTRATED INDEX

NUMERICAL INDEX

2" - 8"	**10" - 12"**	**14" - 24"**
Ductile Iron Body - Extended Neck **DISC:** DI - AB - 316SS **LINER:** NBR - EPDM	Ductile Iron Body - Extended Neck **DISC:** DI - AB - 316SS **LINER:** NBR - EPDM	Ductile Iron Body - Extended Neck **DISC:** DI - AB - 316SS **LINER:** NBR - EPDM

WAFER

250 PSI
Code # 5113(B/E)(L/G)
Code # 5123(B/E)(L/G)
Code # 5133(B/E)(L/G)

WAFER

250 PSI
Code # 5113(B/E)G
Code # 5123(B/E)G
Code # 5133(B/E)G

WAFER

150 PSI
Code # 5111(B/E)G
Code # 5121(B/E)G
Code # 5131(B/E)G

LUG

250 PSI
Code # 6113(B/E)(L/G)
Code # 6123(B/E)(L/G)
Code # 6133(B/E)(L/G)

LUG

250 PSI
Code # 6113(B/E)G
Code # 6123(B/E)G
Code # 6133(B/E)G

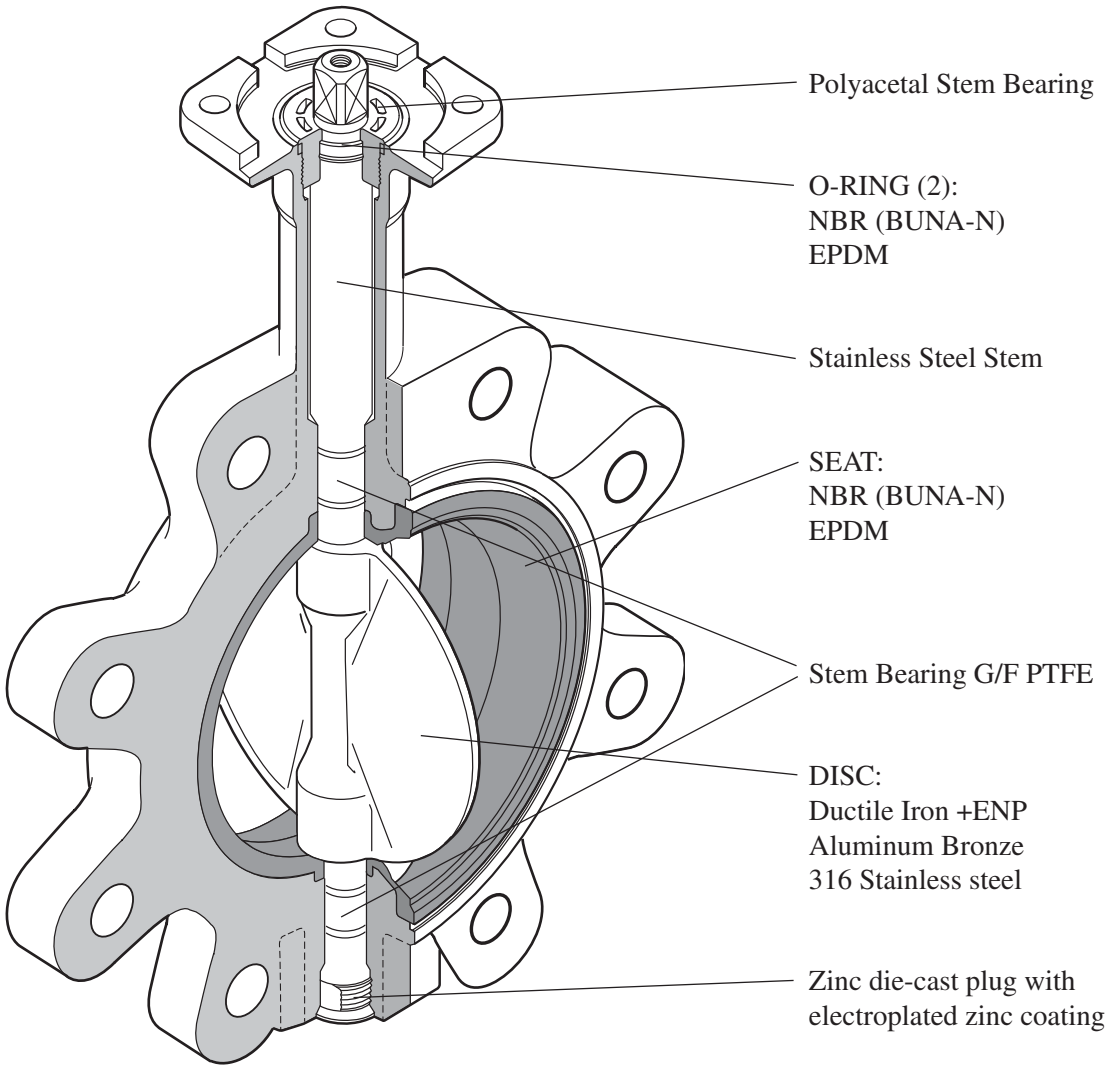
LUG

150 PSI
Code # 6111(B/E)G
Code # 6121(B/E)G
Code # 6131(B/E)G

KITZ®

DJ SERIES BUTTERFLY VALVES

SIZE 2" - 12"

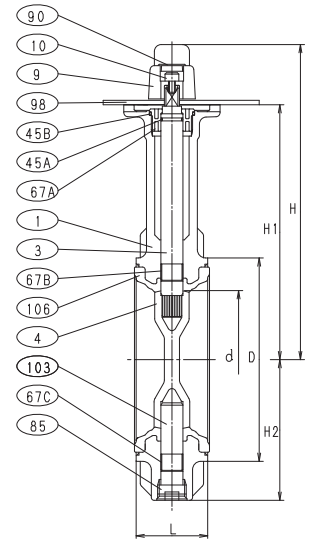


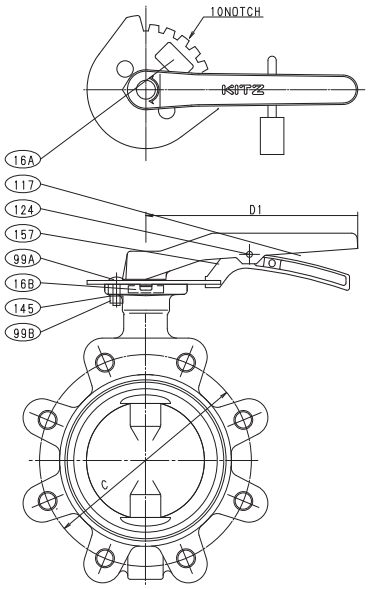
Lug Style

BUTTERFLY VALVES - 250 PSI

*NSF372 • Lug Design • Ductile Iron Body • Extended Neck
Bi-Directional • Molded Seat • ISO Mounting Pad • Locking Lever
SIZE 2" - 8"

STANDARDS: MSS SP-67 & API-609 Cat. A **END CONNECTION:** ANSI CL 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; AISI, Type 329)
4	DISC	DUCTILE IRON, AL. BRONZE, AND 316 SS
9	LEVER (LOCKING)	ALUMINUM DIE-CAST
10	HANDLE BOLT	CARBON STEEL
16A/B	NAME PLATE	ALUMINUM
45A	O-RING	NBR/EPDM
45B	O-RING	NBR/EPDM
67A	BEARING	POLYACETAL
67B/C	STEM BEARING	G/F PTFE, METAL BACKED PTFE (6", 8")
85	PLUG	ZINC DIE-CAST (2)
90	CAP	P.V.C. (2"-6")
98	INDEX PLATE	CARBON STEEL
99A	SET BOLT	CARBON STEEL
99B	NUT	CARBON STEEL
103	BOTTOM STEM	STAINLESS STEEL (A276, TYPE 410; AISI, Type 329)
106	SEAT RUBBER (3)	NBR/EPDM
145	SPRING WASHER	CARBON STEEL
	STOP LEVER (8")	DUCTILE IRON (A536 Gr. 65-45-12)

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

Code # 6113 (B/E) L
Disc: Ductile Iron
(A536 + ENP)

Code # 6123 (B/E) L
Disc: Aluminum Bronze*
(C95400)

Code # 6133 (B/E) L
Disc: 316 SS*
(A351 Gr. CF8M)

DIMENSIONS											
	SIZE	d	D	C	H	H1	H2	L	D1	**Wafer** Lbs **Kgs**	**Lug** Lbs **Kgs**
in.	2	1.97	3.54	4.75	7.52	5.79	2.64	1.69	7.09	4.2	6.6
mm	50	50	90	120.5	191	147	67	43	180	1.9	3.0
in	2 1/2	2.56	4.09	5.50	7.83	6.10	2.95	1.81	7.09	5.1	7.9
mm	65	65	104	139.5	199	155	75	46	180	2.3	3.6
in	3	3.15	4.88	6.00	8.54	6.81	3.58	1.81	7.09	6.8	11.0
mm	80	80	124	152.5	217	173	91	46	180	3.1	5.1
in	4	3.94	5.75	7.50	8.94	7.20	3.98	2.06	7.09	7.7	18.0
mm	100	100	146	190.5	227	183	101	52	180	3.5	8.1
in	5	4.92	6.93	8.50	10.43	8.31	5.00	2.19	9.06	13.0	25.0
mm	125	125	176	216	265	211	127	56	230	5.8	11.0
in	6	5.91	8.11	9.50	10.91	8.78	5.47	2.19	9.06	18.0	30.0
mm	150	150	206	241.5	277	223	139	56	230	8.0	14.0
in	8	7.76	10.12	11.75	11.61	9.76	6.65	2.38	13.78	28.0	48.0
mm	200	197	257	298.5	295	248	169	60	350	13.0	22.0

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.

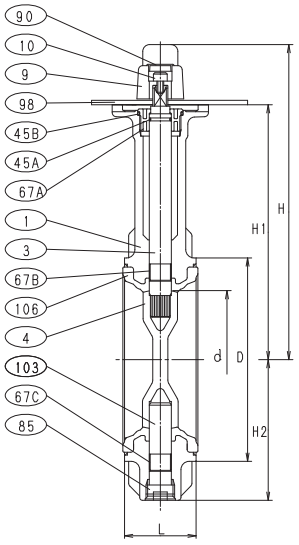
NSF/ANSI 372

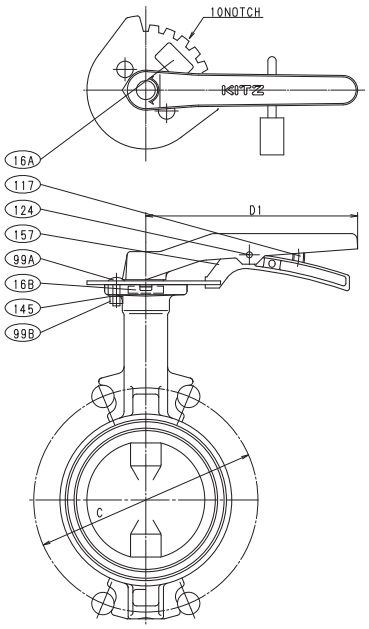
*Butterfly valves with AlBrz or SS disc conform with lead content requirements for "lead free" plumbing as defined by California, Vermont, Maryland, and Louisiana state laws and the U.S. Safe Drinking Water Act. These products futher conform with the requirements of NSF/ANSI Standard 372.

BUTTERFLY VALVES - 250 PSI

*NSF372 • Wafer Design • Ductile Iron Body • Extended Neck
Bi-Directional • Molded Seat • ISO Mounting Pad • Locking Lever
SIZE 2" - 8"

STANDARDS: MSS SP-67 & API-609 Cat. A **END CONNECTION:** ANSI CL 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; AISI, Type 329)
4	DISC	DUCTILE IRON, AL. BRONZE, AND 316 SS
9	LEVER (LOCKING)	ALUMINUM DIE-CAST
10	HANDLE BOLT	CARBON STEEL
16A/B	NAME PLATE	ALUMINUM
45A	O-RING	NBR/EPDM
45B	O-RING	NBR/EPDM
67A	BEARING	POLYACETAL
67B/C	STEM BEARING	G/F PTFE, METAL BACKED PTFE (6", 8")
85	PLUG	ZINC DIE-CAST (2)
90	CAP	P.V.C. (2"-6")
98	INDEX PLATE	CARBON STEEL
99A	SET BOLT	CARBON STEEL
99B	NUT	CARBON STEEL
103	BOTTOM STEM	STAINLESS STEEL (A276, TYPE 410; AISI, Type 329)
106	SEAT RUBBER (3)	NBR/EPDM
145	SPRING WASHER	CARBON STEEL
	STOP LEVER (8")	DUCTILE IRON (A536 Gr. 65-45-12)

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

DIMENSIONS

	SIZE	d	D	C	H	H1	H2	L	D1	Wafer Lbs Kgs	Lug Lbs Kgs
in.	2	1.97	3.54	4.75	7.52	5.79	2.64	1.69	7.09	4.2	6.6
mm	50	50	90	120.5	191	147	67	43	180	1.9	3.0
in	2 1/2	2.56	4.09	5.50	7.83	6.10	2.95	1.81	7.09	5.1	7.9
mm	65	65	104	139.5	199	155	75	46	180	2.3	3.6
in	3	3.15	4.88	6.00	8.54	6.81	3.58	1.81	7.09	6.8	11.0
mm	80	80	124	152.5	217	173	91	46	180	3.1	5.1
in	4	3.94	5.75	7.50	8.94	7.20	3.98	2.06	7.09	7.7	18.0
mm	100	100	146	190.5	227	183	101	52	180	3.5	8.1
in	5	4.92	6.93	8.50	10.43	8.31	5.00	2.19	9.06	13.0	25.0
mm	125	125	176	216	265	211	127	56	230	5.8	11.0
in	6	5.91	8.11	9.50	10.91	8.78	5.47	2.19	9.06	18.0	30.0
mm	150	150	206	241.5	277	223	139	56	230	8.0	14.0
in	8	7.76	10.12	11.75	11.61	9.76	6.65	2.38	13.78	28.0	48.0
mm	200	197	257	298.5	295	248	169	60	350	13.0	22.0

Code # 5113 (B/E) L
Disc: Ductile Iron
(A536 + ENP)

Code # 5123 (B/E) L
Disc: Aluminum Bronze*
(C95400)

Code # 5133 (B/E) L
Disc: 316 SS*
(A351 Gr. CF8M)

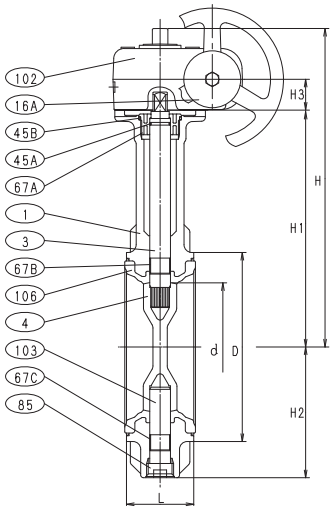
NSF/ANSI 372

*Butterfly valves with AlBrz or SS disc conform with lead content requirements for "lead free" plumbing as defined by California, Vermont, Maryland, and Louisiana state laws and the U.S. Safe Drinking Water Act. These products futher conform with the requirements of NSF/ANSI Standard 372.

BUTTERFLY VALVES - 250 PSI

*NSF372 • Lug Design • Ductile Iron Body • Extended Neck
Bi-Directional • Molded Seat • ISO Mounting Pad • Gear Operator
SIZE 2" - 8"

STANDARDS: MSS SP-67 & API-609 Cat. A **END CONNECTION:** ANSI CL 125/150 FLANGES **WALL THICKNESS:** KITZ STD



MATERIAL LIST

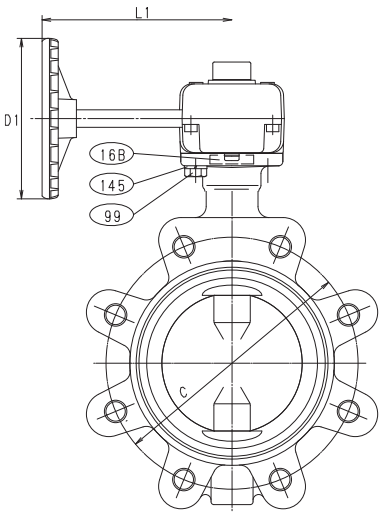
NO.	NAME OF PART	SPECIFICATION
1	BODY	DUCTILE IRON (A536 Gr. 65-45-12)
3	STEM*	STAINLESS STEEL (A276, Type 410; AISI, Type 329)
4	DISC (1)	DUCTILE IRON, AL. BRONZE, AND 316 SS
16A/B	NAME PLATE	ALUMINUM
45A/B	O-RING	NBR/EPDM
67A	BEARING	POLYACETAL
67B/C	STEM BEARING	G/F PTFE (2" - 5") METAL BACKED PTFE (6", 8")
85	PLUG	ZINC DIE-CAST **(2)**
99A	SET BOLTS	CARBON STEEL
102	GEAR UNIT	ALUMINUM DIE-CAST (B85, SC102A)
103	BOTTOM STEM	STAINLESS STEEL (A276, TYPE 410; AISI, Type 329)
106	SEAT RUBBER (3)	NBR/EPDM
145	SPRING WASHER	CARBON STEEL

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

Code # 6113 (B/E) G
Disc: Ductile Iron
(A536 + ENP)

Code # 6123 (B/E) G
Disc: Aluminum Bronze*
(C95400)

Code # 6133 (B/E) G
Disc: 316 SS*
(A351 Gr. CF8M)



DIMENSIONS

	SIZE	d	D	C	H	H1	H2	L	D1	L1	Wafer Lbs Kgs	Lug Lbs Kgs
in.	2	1.97	3.54	4.75	7.64	5.79	2.64	1.69	3.15	4.78	4.9	7.1
mm	50	50	90	120.5	194	147	67	42.9	80	121.5	2.2	3.2
in.	2 1/2	2.56	4.09	5.50	7.95	6.10	2.95	1.81	3.15	4.78	5.7	8.4
mm	65	65	104	139.5	202	155	75	46	80	121.5	2.6	3.8
in	3	3.15	4.88	6.00	9.29	6.81	3.58	1.81	4.33	5.31	8.6	13.0
mm	80	80	124	152.5	236	173	91	46	110	135	3.9	5.8
in	4	3.94	5.75	7.50	9.69	7.20	3.98	2.06	4.33	5.31	9.2	19.0
mm	100	100	146	190.5	246	183	101	52.3	110	135	4.2	8.8
in	5	4.92	6.93	8.50	10.79	8.31	5.00	2.19	4.33	5.91	14.0	26.0
mm	125	125	176	216	274	211	127	55.6	110	150	6.3	12.0
in	6	5.91	8.11	9.50	11.26	8.78	5.47	2.19	4.33	5.91	19.0	32.0
mm	150	150	206	241.5	286	223	139	55.6	110	150	8.5	15.0
in	8	7.76	10.12	11.75	12.80	9.76	6.65	2.38	6.69	7.09	30.0	49.0
mm	200	197	257	298.5	325	248	169	60.5	170	180	13.0	22.0

For gear operator details, refer to page 24.

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.

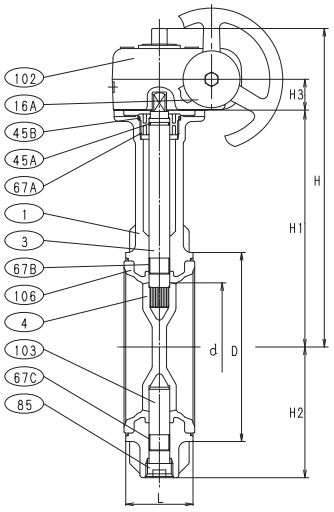
NSF/ANSI 372

*Butterfly valves with AlBrz or SS disc conform with lead content requirements for "lead free" plumbing as defined by California, Vermont, Maryland, and Louisiana state laws and the U.S. Safe Drinking Water Act. These products futher conform with the requirements of NSF/ANSI Standard 372.

BUTTERFLY VALVES - 250 PSI

*NSF372 • Wafer Design • Ductile Iron Body • Extended Neck
Bi-Directional • Molded Seat • ISO Mounting Pad • Gear Operator
SIZE 2" - 8"

STANDARDS: MSS SP-67 & API-609 Cat. A **END CONNECTION:** ANSI CL 125/150 FLANGES **WALL THICKNESS:** KITZ STD



MATERIAL LIST

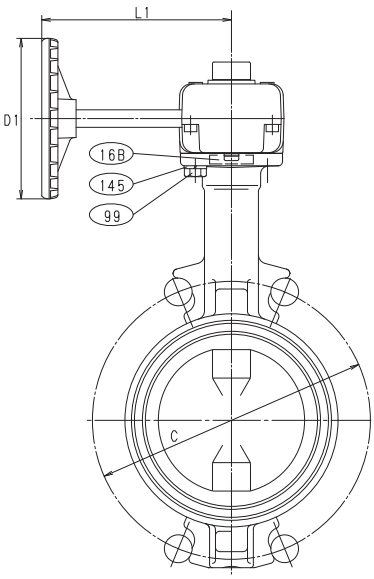
NO.	NAME OF PART	SPECIFICATION
1	BODY	DUCTILE IRON (A536 Gr. 65-45-12)
3	STEM*	STAINLESS STEEL (A276, Type 410; AISI, Type 329)
4	DISC (1)	DUCTILE IRON, AL. BRONZE, AND 316 SS
16A/B	NAME PLATE	ALUMINUM
45A/B	O-RING	NBR/EPDM
67A	BEARING	POLYACETAL
67B/C	STEM BEARING	G/F PTFE (2" - 5") METAL BACKED PTFE (6", 8")
85	PLUG	ZINC DIE-CAST **(2)**
99A	SET BOLTS	CARBON STEEL
102	GEAR UNIT	ALUMINUM DIE-CAST (B85, SC102A)
103	BOTTOM STEM	STAINLESS STEEL (A276, TYPE 410; AISI, Type 329)
106	SEAT RUBBER (3)	NBR/EPDM
145	SPRING WASHER	CARBON STEEL

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

Code # 5113 (B/E) G
Disc: Ductile Iron
(A536 + ENP)

Code # 5123 (B/E) G
Disc: Aluminum Bronze*
(C95400)

Code # 5133 (B/E) G
Disc: 316 SS*
(A351 Gr. CF8M)



DIMENSIONS

	SIZE	d	D	C	H	H1	H2	L	D1	L1	Wafer Lbs Kgs	Lug Lbs Kgs
in.	2	1.97	3.54	4.75	7.64	5.79	2.64	1.69	3.15	4.78	4.9	7.1
mm	50	50	90	120.5	194	147	67	42.9	80	121.5	2.2	3.2
in.	2 1/2	2.56	4.09	5.50	7.95	6.10	2.95	1.81	3.15	4.78	5.7	8.4
mm	65	65	104	139.5	202	155	75	46	80	121.5	2.6	3.8
in	3	3.15	4.88	6.00	9.29	6.81	3.58	1.81	4.33	5.31	8.6	13.0
mm	80	80	124	152.5	236	173	91	46	110	135	3.9	5.8
in	4	3.94	5.75	7.50	9.69	7.20	3.98	2.06	4.33	5.31	9.2	19.0
mm	100	100	146	190.5	246	183	101	52.3	110	135	4.2	8.8
in	5	4.92	6.93	8.50	10.79	8.31	5.00	2.19	4.33	5.91	14.0	26.0
mm	125	125	176	216	274	211	127	55.6	110	150	6.3	12.0
in	6	5.91	8.11	9.50	11.26	8.78	5.47	2.19	4.33	5.91	19.0	32.0
mm	150	150	206	241.5	286	223	139	55.6	110	150	8.5	15.0
in	8	7.76	10.12	11.75	12.80	9.76	6.65	2.38	6.69	7.09	30.0	49.0
mm	200	197	257	298.5	325	248	169	60.5	170	180	13.0	22.0

For gear operator details, refer to page 24.

NSF/ANSI 372

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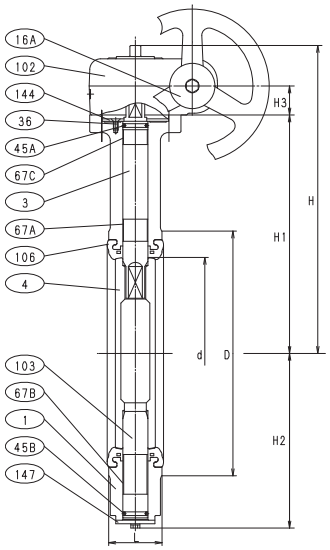
BUTTERFLY VALVES - 250 PSI

*NSF372 • Lug Design • Ductile Iron Body • Extended Neck
Bi-Directional • Molded Seat • ISO Mounting Pad • Gear Operator
SIZE 10" - 12"

STANDARDS: MSS SP-67 & API-609 Cat. A **END CONNECTION:** ANSI CL 125/150 FLANGES **WALL THICKNESS:** KITZ STD



MATERIAL LIST

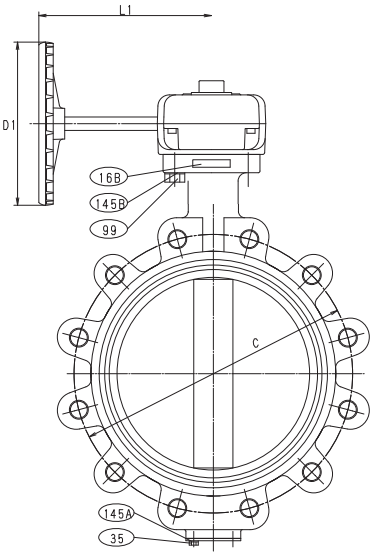
NO.	NAME OF PART	SPECIFICATION
1	BODY	DUCTILE IRON (A536 Gr. 65-45-12)
3	STEM	STAINLESS STEEL (A276, Type 410; AISI, Type 329)
4	DISC	DUCTILE IRON, AL. BRONZE, AND 316 SS
16A/B	NAME PLATE	ALUMINUM
35	END PLATE BOLTS	CARBON STEEL
36	GLAND PLATE BOLTS	STAINLESS STEEL
45A/B	O-RING	NBR/EPDM
60	KEY (12")	CARBON STEEL
67A/B/C	STEM BEARING	METAL BACKED PTFE
99	SET BOLTS	CARBON STEEL
102	GEAR UNIT	
103	BOTTOM STEM	STAINLESS STEEL (A276, TYPE 410; AISI, Type 329)
106	SEAT RUBBER (2)	NBR/EPDM
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 position
(2) Vulcanized to the Body

Code # 6113 (B/E) G
Disc: Ductile Iron
(A536 + ENP)

Code # 6123 (B/E) G
Disc: Aluminum Bronze*
(C95400)

Code # 6133 (B/E) G
Disc: 316 SS*
(A351 Gr. CF8M)



DIMENSIONS

	SIZE	d	D	C	H	H1	H2	L	D1	L1	Wafer Lbs Kgs	Lug Lbs Kgs
in.	10	9.72	12.28	14.25	15	11.97	8.62	2.69	9.84	9.84	59.5	81
mm	250	247	312	362	381	304	219	68.3	250	250	27.0	37.0
in.	12	11.65	14.33	17.00	15.98	12.95	9.61	3.06	9.84	9.84	77.2	106.6
mm	300	296	364	432	406	329	244	77.7	250	250	35.0	48.0

For gear operator details, refer to page 24.

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.

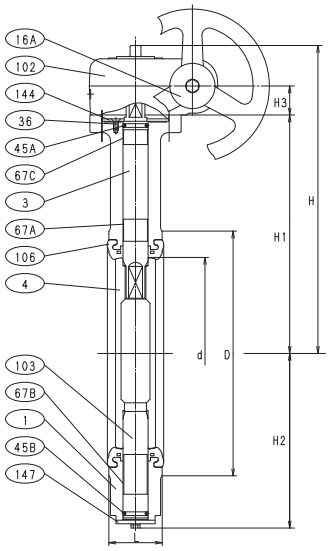
NSF/ANSI 372

*Butterfly valves with AlBrz or SS disc conform with lead content requirements for "lead free" plumbing as defined by California, Vermont, Maryland, and Louisiana state laws and the U.S. Safe Drinking Water Act. These products futher conform with the requirements of NSF/ANSI Standard 372.

BUTTERFLY VALVES - 250 PSI

*NSF372 • Wafer Design • Ductile Iron Body • Extended Neck
Bi-Directional • Molded Seat • ISO Mounting Pad • Gear Operator
SIZE 10" - 12"

STANDARDS: MSS SP-67 & API-609 Cat. A **END CONNECTION:** ANSI CL 125/150 FLANGES **WALL THICKNESS:** KITZ STD



MATERIAL LIST

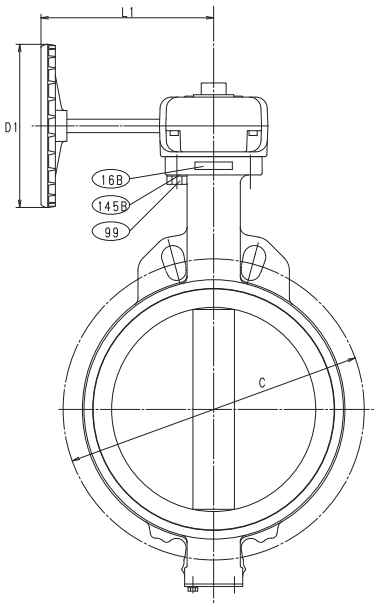
NO.	NAME OF PART	SPECIFICATION
1	BODY	DUCTILE IRON (A536 Gr. 65-45-12)
3	STEM	STAINLESS STEEL (A276, Type 410; AISI, Type 329)
4	DISC	DUCTILE IRON, AL. BRONZE, AND 316 SS
16A/B	NAME PLATE	ALUMINUM
35	END PLATE BOLTS	CARBON STEEL
36	GLAND PLATE BOLTS	STAINLESS STEEL
45A/B	O-RING	NBR/EPDM
60	KEY (12")	CARBON STEEL
67A/B/C	STEM BEARING	METAL BACKED PTFE
99	SET BOLTS	CARBON STEEL
102	GEAR UNIT	
103	BOTTOM STEM	STAINLESS STEEL (A276, TYPE 410; AISI, Type 329)
106	SEAT RUBBER (2)	NBR/EPDM
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 position
(2) Vulcanized to the Body

Code # 5113 (B/E) G
Disc: Ductile Iron
(A536 + ENP)

Code # 5123 (B/E) G
Disc: Aluminum Bronze
(C95400)

Code # 5133 (B/E) G
Disc: 316 SS
(A351 Gr. CF8M)



DIMENSIONS

	SIZE	d	D	C	H	H1	H2	L	D1	L1	Wafer Lbs Kgs	Lug Lbs Kgs
in.	10	9.72	12.28	14.25	15	11.97	8.62	2.69	9.84	9.84	59.5	81
mm	250	247	312	362	381	304	219	68.3	250	250	27.0	37.0
in.	12	11.65	14.33	17.00	15.98	12.95	9.61	3.06	9.84	9.84	77.2	106.6
mm	300	296	364	432	406	329	244	77.7	250	250	35.0	48.0

For gear operator details, refer to page 24.

NSF/ANSI 372

*Butterfly valves with AlBrz or SS disc conform with lead content requirements for "lead free" plumbing as defined by California, Vermont, Maryland, and Louisiana state laws and the U.S. Safe Drinking Water Act. These products futher conform with the requirements of NSF/ANSI Standard 372.

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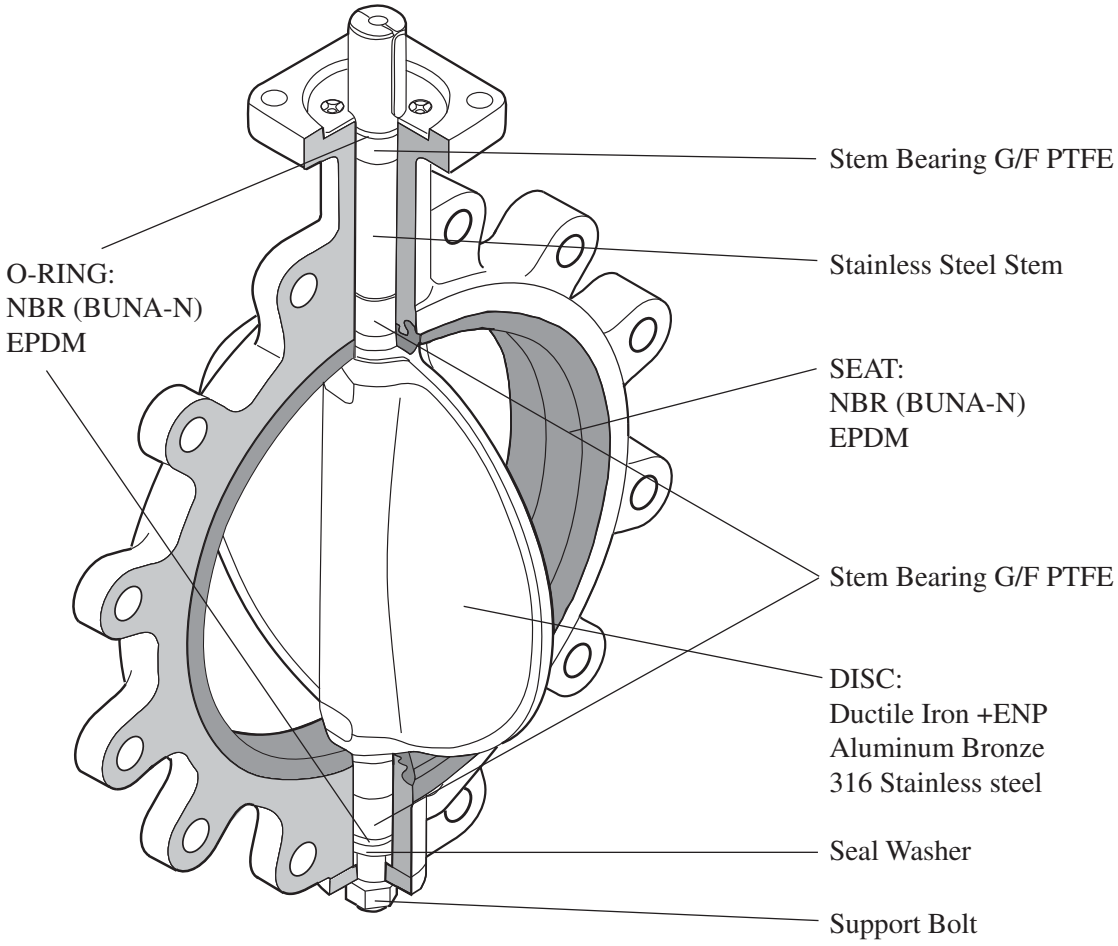
DJ SERIES BUTTERFLY VALVES

150 PSI

SIZE 14" - 24"

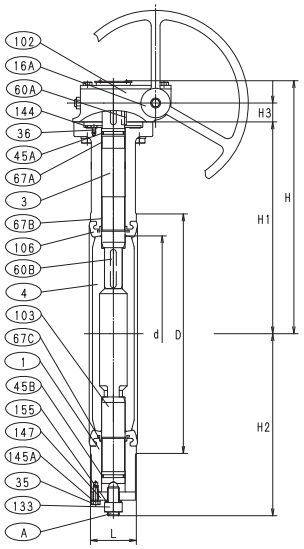


Lug Style

BUTTERFLY VALVES - 150 PSI

*NSF372 • Lug Design • Ductile Iron Body • Extended Neck
Bi-Directional • Booted Seat • ISO Mounting Pad • Gear Operator
SIZE 14" - 24"

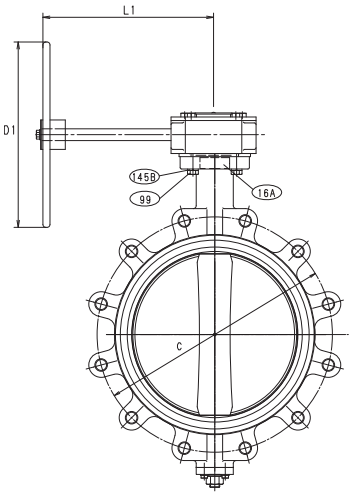
STANDARDS: MSS SP-67, MSS SP-25 & API-609 Cat. A **END CONNECTION:** ANSI CL 125/150 FLANGES **WALL THICKNESS:** KITZ STD



MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	DUCTILE IRON (A536 Gr. 65-45-12)
3	STEM (1) (2)	STAINLESS STEEL (A276, Type 410, 420, or AISI Type 329)
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 (A276, TYPE 410 or AISI 329)
	BOTTOM STEM (16 - 24")	STAINLESS STEEL (A276, TYPE 420 or AISI 329)
106	SEAT RUBBER	NBR/EPDM
133	NUT	CARBON STEEL
144	GLAND PLATE	CARBON STEEL
145 A/B	SPRING WASHER	CARBON STEEL
147	END PLATE	CARBON STEEL
155	SEAL WASHER	CARBON STEEL
A	SUPPORT BOLT	ALLOY STEEL

(1) Type 410 is standard in 14" with D.I. and Al.Bz. disc



DIMENSIONS

	SIZE	d	D	C	H	H1	H2	H3	L	D1	L1	Wafer Lbs Kgs	Lug Lbs Kgs
in.	14	13.15	16.02	18.75	17.60	14.17	12.17	1.85	3.06	12.20	8.66	119	160
mm	350	334	407	476.5	447	360	309	47	77.7	310	220	54	72
in.	16	15.16	18.35	21.25	19.76	16.34	13.43	1.85	4.00	12.20	8.66	172	247
mm	400	385	466	539.5	502	415	341	47	101.6	310	220	78	112
in.	18	17.09	20.55	22.75	20.71	17.28	14.37	1.85	4.50	12.20	8.66	252	337
mm	450	434	522	578	526	439	365	47	114.3	310	220	114	153
in.	20	18.98	22.64	25.00	23.11	19.21	16.30	2.36	5.00	19.69	14.17	309	430
mm	500	482	575	635	587	488	414	60	127	500	360	140	195
in.	24	22.80	26.77	29.50	25.00	21.10	18.23	2.36	6.06	19.69	14.17	529	712
mm	600	579	680	749.5	635	536	463	60	153.9	500	360	240	323

For gear operator details, refer to page 24.

Code # 6111 (B/E)G
Disc: Ductile Iron
(A536 + ENP)

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

Code # 6131 (B/E)G
Disc: 316/316 SS*

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.

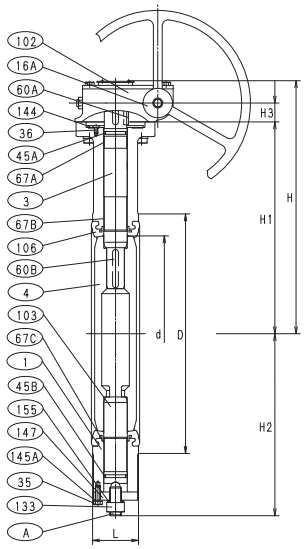
NSF/ANSI 372

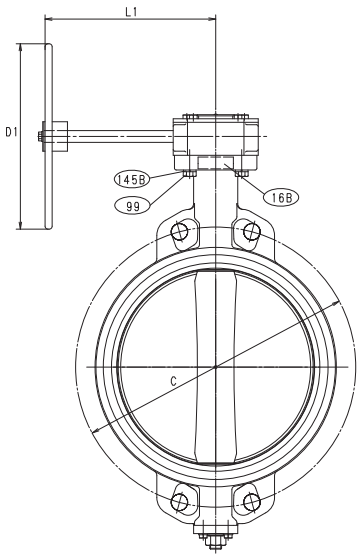
*Butterfly valves with AlBrz or SS disc conform with lead content requirements for "lead free" plumbing as defined by California, Vermont, Maryland, and Louisiana state laws and the U.S. Safe Drinking Water Act. These products futher conform with the requirements of NSF/ANSI Standard 372.

BUTTERFLY VALVES - 150 PSI

*NSF372 • Wafer Design • Ductile Iron Body • Extended Neck
Bi-Directional • Booted Seat • ISO Mounting Pad • Gear Operator
SIZE 14" - 24"

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





MATERIAL LIST		
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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 (A276, TYPE 410 or AISI 329)
	BOTTOM STEM (16 - 24")	STAINLESS STEEL (A276, TYPE 420 or AISI 329)
106	SEAT RUBBER	NBR/EPDM
133	NUT	CARBON STEEL
144	GLAND PLATE	CARBON STEEL
145 A/B	SPRING WASHER	CARBON STEEL
147	END PLATE	CARBON STEEL
155	SEAL WASHER	CARBON STEEL
A	SUPPORT BOLT	ALLOY STEEL

(1) Type 410 is standard in 14" with D.I. and Al.Bz. disc

Code # 5111 (B/E)G
Disc: Ductile Iron (A536 + ENP)

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

Code # 5131 (B/E)G
Disc: 316/316 SS*

DIMENSIONS													
												Wafer	**Lug**
	SIZE	d	D	C	H	H1	H2	H3	L	D1	L1	Lbs	Lbs
												Kgs	**Kgs**
in.	14	13.15	16.02	18.75	17.60	14.17	12.17	1.85	3.06	12.20	8.66	119	160
mm	350	334	407	476.5	447	360	309	47	77.7	310	220	54	72
in.	16	15.16	18.35	21.25	19.76	16.34	13.43	1.85	4.00	12.20	8.66	172	247
mm	400	385	466	539.5	502	415	341	47	101.6	310	220	78	112
in.	18	17.09	20.55	22.75	20.71	17.28	14.37	1.85	4.50	12.20	8.66	252	337
mm	450	434	522	578	526	439	365	47	114.3	310	220	114	153
in.	20	18.98	22.64	25.00	23.11	19.21	16.30	2.36	5.00	19.69	14.17	309	430
mm	500	482	575	635	587	488	414	60	127	500	360	140	195
in.	24	22.80	26.77	29.50	25.00	21.10	18.23	2.36	6.06	19.69	14.17	529	712
mm	600	579	680	749.5	635	536	463	60	153.9	500	360	240	323

For gear operator details, refer to page 24.

NSF/ANSI 372

*Butterfly valves with AlBrz or SS disc conform with lead content requirements for "lead free" plumbing as defined by California, Vermont, Maryland, and Louisiana state laws and the U.S. Safe Drinking Water Act. These products futher conform with the requirements of NSF/ANSI Standard 372.

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ENGINEERING DATA INDEX

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

• API-609	Category A Design
• MSS SP-25	Marking
MSS SP-67	Design & Testing

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 250 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 booted 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" shall be Lever Operated with 10 position throttling plate and Sizes 8" and larger shall be Gear Operated and manufactured in accordance to MSS SP-67, MSS SP-25 and API-609.

KITZ Code Numbers:

5123EL - Wafer (2" - 6") Lever Operated

6123EL - Lug (2" - 6") Lever Operated

5123EG - Wafer (8" - 12") Gear Operated

6123EG - Lug (8" - 12") Gear Operated

5121EG - Wafer (14" - 24") Gear Operated

6121EG - Lug (14" - 24") Gear Operated

ASTM (UNS)	Alloy	Cu	Sn	Pb	Zn	Bi	C	Ni	S	P	CR	Mn	Mo	Si	Fe	Al	Other	Physical Properties (min.) Tensile (ksi)	Yield (ksi)	Elong. (%)
COPPER ALLOWS																				
B16 (C36000)	Free Cutting Brass	60.0-63.0	...	2.5-3.7	bal	...	...	...	...	...	...	...	...	...	0.35	...	...	*	*	*
B61 (C92200)	Navy "M" (Steam Bronze)	86.0-90.0	5.5-6.5	1.0-2.0	3.0-5.0	...	...	1.00	...	...	...	...	...	...	...	...	...	...	...	...
B62 (C83600)	Composition Bronze	84.0-86.0	4.0-6.0	4.0-6.0	4.0-6.0			1.00	...	...	...	...	...	...	...	...	...	30	14	20
A148 (C95400)	Aluminum Bronze	85.0	...	..	...	...	...	...	...	...	...	...	...	...	4.0	11.0	...	...	...	...
B283 (C37700)	Forged Brass	58.0-61.0	...	1.5-2.5	bal	...	...	...	...	...	...	...	...	...	0.30	...	...	50	18	25
	Naval Brass	59.0-62.0	0.50-1.0	0.20	bal										0.10			52	22	25
B584 (C84400)	Leaded Semi-Red Brass	81.0	3.0	7.0	9.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
B763 (C89530)	Cast Bi-Se Alloy	84.0-89.0	3.5-6.0	0.20	7.0-9.0	1.0-2.0	...	1.00	...	0.05	...	...	...	0.01	0.30	0.01	.10-.30	...	...	...
B967 (B49300)	Cu-Zn-Sn-Bi Alloy	58.0-62.0	1.3-1.8	0.01	bal	0.50-2.0	...	1.50	...	0.20	...	0.03	...	0.10	0.10	0.50	0.80	...	...	...
IRON																				
A126 Class B	Cast Gery Iron	...	...	...	...	...	...	...	0.15	0.75	...	...	...	...	bal	...	...	31	...	...
A536†	Ductile Iron (65-45-12)	...	...	...	...	...	3.5-3.8	...	0.01	.02-.05	...	.15-.40	...	2.3-2.8	bal	...	0.05	65	45	12
A395	Ductile Iron (Ferritic)	...	...	...	...	...	3.00 min	...	...	0.08	...	...	...	2.50	bal	...	...	60	40	18
A439 Type D2	Ductile Ni-Resist	...	...	...	...	...	3.00	18.0-22.0	...	0.08	2.75-4.0	0.7-1.25	...	1.5-3.0	bal	...	...	58	30	7
STAINLESS STEEL																				
		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
A351, GR CF8	304 (Cast) J92600	...	...	...	...	...	0.08	8.0-11.0	0.04	0.04	18.0-21.0	1.50	0.50	2.00	...	...	...	70	30	35
A351, GR CF8M	316 (Cast) J92900	...	...	...	...	...	0.08	9.0-12.0	0.04	0.04	18.0-21.0	1.50	2.0-3.0	1.50	...	...	...	70	30	30
A276, Type 304	304 (Wrought) S30400	...	...	...	...	...	0.08	8.0-11.0	0.03	0.05	18.0-20.0	2.00	...	1.00	...	...	...	75	30	40
A276, Type 316	316 (Wrought) S31600	...	...	...	...	...	0.08	10.0-14.0	0.03	0.05	16.0-18.0	2.00	2.0-3.0	1.00	...	...	...	75	30	40
AISI Type 329	329 (Wrought) S32900	...	...	...	...	...	0.08	3.0-6.0	0.03	0.04	23.0-28.0	1.50	1.0-3.0	1.00	...	...	...	105	80	25
A276, Type 410	410 (Wrought) S41000	...	...	...	...	...	0.08-0.015	...	0.03	0.04	11.0-13.0	1.00	...	1.00	...	...	0.05-0.30Cb	...	...	...
CARBON STEEL																				
A105	Forged Carbon Steel	...	...	...	...	...	0.04	...	0.05	0.04	...	0.60-1.05	...	0.35	...	...	...	70	36	22
A216, Gr. WCB	Cast Carbon Steel J03002	...	...	...	...	...	0.30	...	0.05	0.04	...	1.00	...	0.60	...	...	1.0 max	70	36	22
BOLTING																				
A307, Gr. B	Carbon Steel Bolt & Stud	...	...	...	...	...	0.29	...	0.05	0.04	...	0.90	...	...	...	...	...	60	...	18
A193 Gr. B7 B-7	Alloy Stud	...	...	...	...	...	0.37-0.49	...	0.04	0.04	0.75-1.20	0.65-1.10	0.15-0.25	0.15-0.35	...	...	...	125	105	16
A193 Gr. B8 Cl.2	304 SS Stud	...	...	...	...	...	0.08	8.0-11.0	0.03	0.45	16.0-20.0	2.00	...	1.00	...	...	...	125	100	12

** SubjecttoTemper, Size and Form*

† Chemical requirements are not specified under this specification, composition is suborinate to the mechanical properties specified under A536.

PROPERTIES OF VALVE MATERIALS

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.

LINER MATERIAL TEMPERATURE RANGE

LINER MATERIAL	**TEMPERATURE**	
	Continuous	Intermittent
EPDM	-29 ~ 107°C / -20 ~ 225°F	-29 ~ 121°C / -20 ~ 250°F
BUNA-N (Nitrile)	-12 ~ 82°C / 10 ~ 180°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

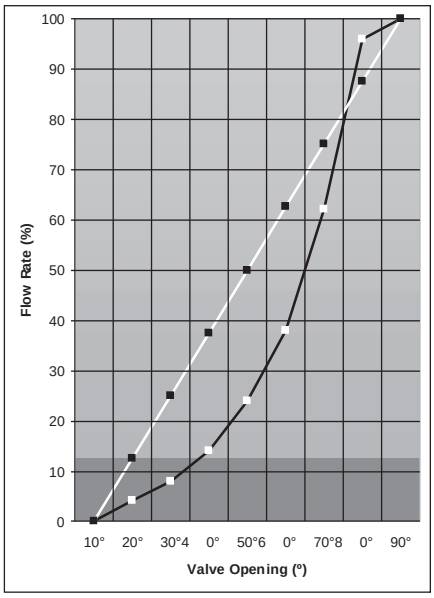
MATERIALS/FLUID	DISC			SEAT	
	AL-BRZ	DUCTILE	316	NBR	EPDM
Acetic Acid (10%)	Very Poor	Poor	Excellent	Very Poor	Good
Air	Excellent	Excellent	Excellent	Excellent	Excellent
Ammonia (anhydrous liquid)	Very Poor	Good	Excellent	Poor	Good
Ammonia (solution)	Very Poor	Good	Excellent	Good	Good
Ammonium Sulfate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

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**	**10º**	**20º**	**30º**	**40º**	**50º**	**60º**	**70º**	**80º**	**90º**
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 60ºF 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 60º.

GAS FLOW:

$Q = 1360\ Cv \sqrt{\Delta P \times P1/ST}$

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

Note that DP must be less than .5
(Flow is critical when DP 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 - 60º 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 - 60º)
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)
DP - 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 - 60º: 230 - 1050

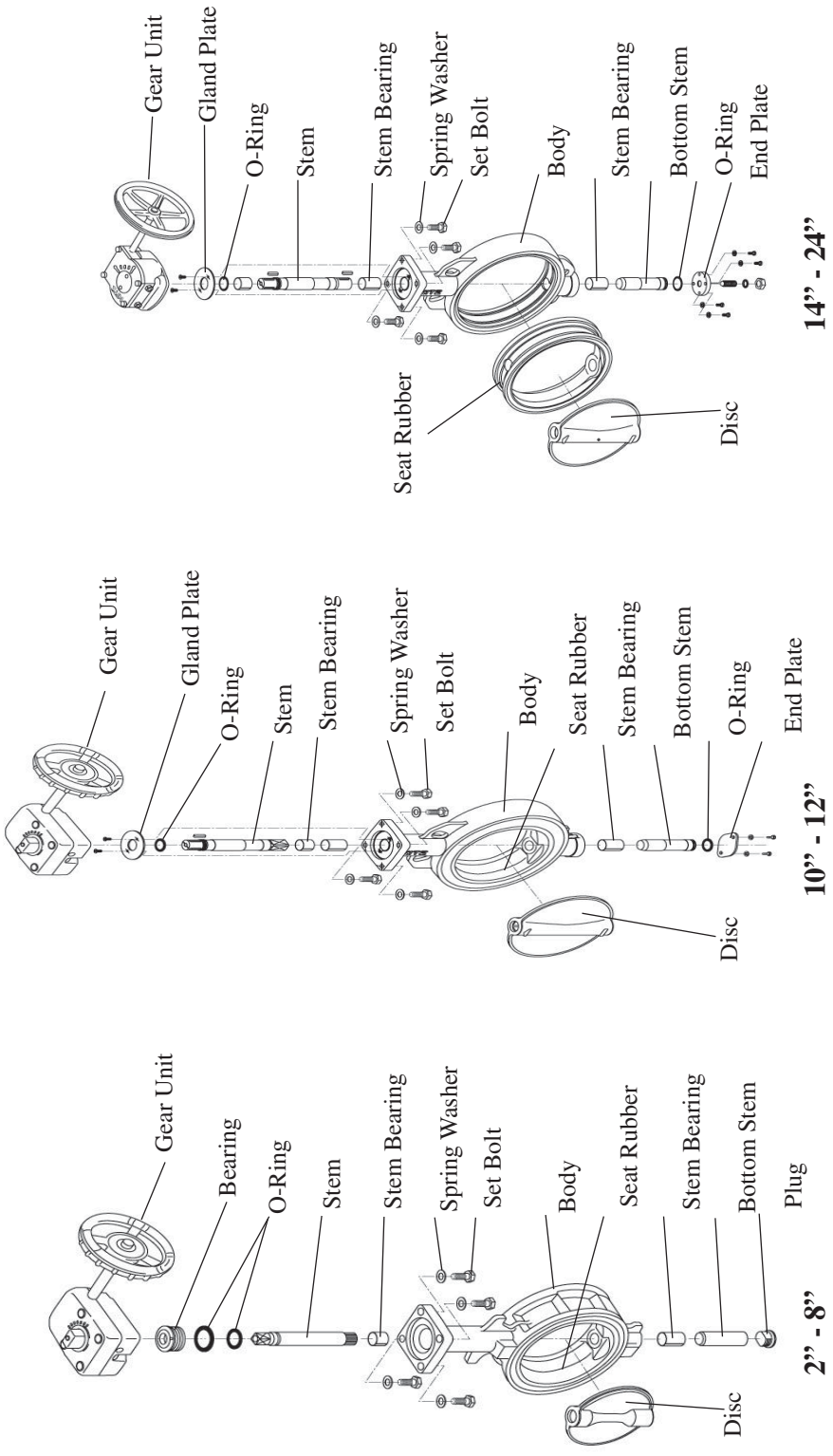
3) Velocity - $V - \frac{S \times .321}{A}$

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

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

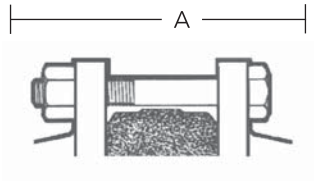
KITZ®

DJ SERIES BUTTERFLY VALVES
EXPLODED VIEW



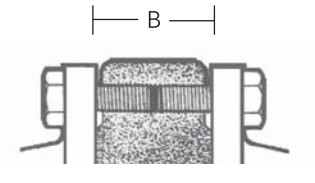
FLANGE BOLT DATA

WAFER STYLE



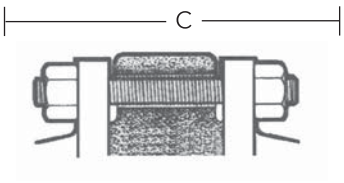
Bolt

LUG STYLE



Hex Head Bolt

LUG/WAFER STYLE



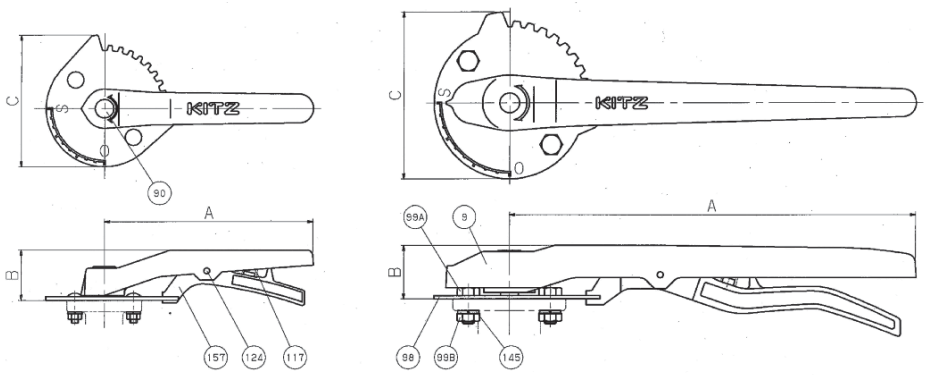
Stud

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).

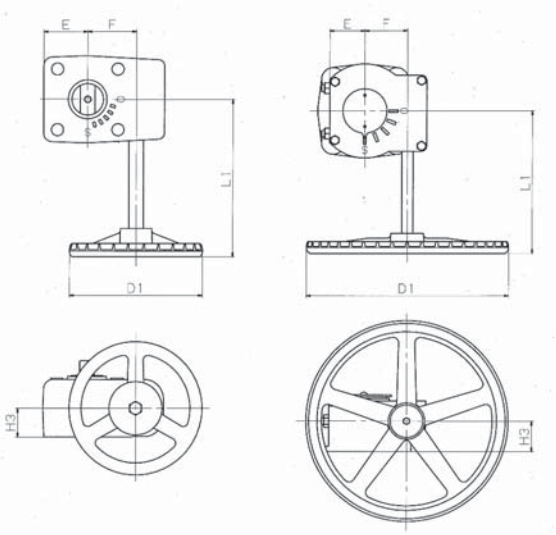
LOCKING LEVER DATA
5000 & 6000 DUCTILE SERIES



MATERIAL LIST			
NO.	**NAME OF PART**	**MATERIAL**	**SPECIFICATION**
9	HANDLE	ALUMINUM DIE-CAST	B85, SC102A
	HANDLE (2")	DUCTILE IRON	A536 Gr. 65-4.5-12
10	HANDLE BOLT	ALLOY STEEL (not shown)	
		CARBON STEEL (8" Only)	1307 Gr. B
16C	HANDLE WASHER	CARBON STEEL (8" Only)(not shown)	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. 65-4.5-12
90	CAP	P.V.C. (2" - 6")	
98	INDEX PLATE	-	-
99A	SET BOLT	-	-
99B	NUT	-	-
145	SPRING WASHER	-	-

DIMENSIONS - SPECIFICATIONS						
	SIZE	**A**	**B**	**C**	**Wt.**	
In.	2	7.09	1.73	4.45	Lbs.	0.4
mm	50	180	44	113	kgs.	0.2
in.	2 1/2	7.09	1.73	4.45	Lbs.	0.4
mm	65	180	44	113	kgs.	0.2
in.	3	7.09	1.73	4.45	Lbs.	0.4
mm	80	180	44	113	kgs.	0.2
in.	4	7.09	1.73	4.45	Lbs.	0.4
mm	100	180	44	113	kgs.	0.2
in.	5	9.06	2.13	4.45	Lbs.	0.9
mm	125	230	54	113	kgs.	0.4
in.	6	9.06	2.13	4.45	Lbs.	0.9
mm	150	230	54	113	kgs.	0.4
in.	8	13.78	1.54	5.67	Lbs.	2.9
mm	200	350	39	144	kgs.	1.3

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. 6123EG.

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

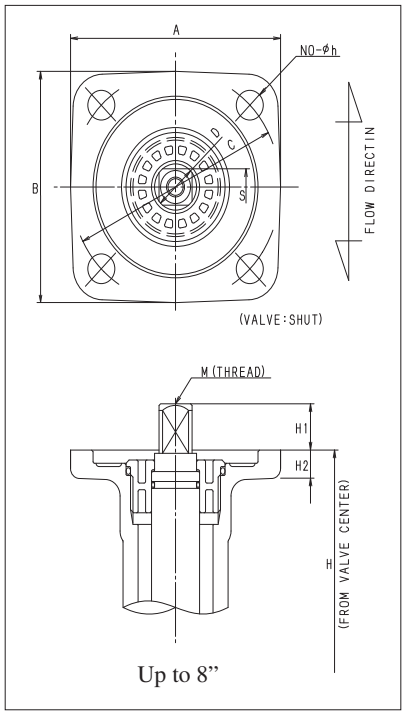
MATERIAL LIST	
NAME OF PART	**MATERIAL**
Gear Operator 14" - 24"	
Gear Case	Cast Iron
Handle	Carbon Steel
Handle Shaft	Stainless Steel

DIMENSIONS - 2" - 12"

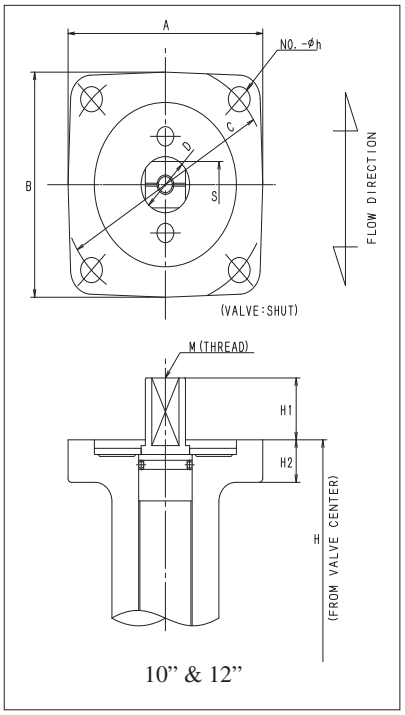
	SIZE	H3	D1	L1	E	F	Gear No.	Wt.	
in.	2	0.73	3.15	4.78	1.14	1.10	No. 0	Lbs.	1.1
mm	50	18.5	80	121.5	29	28		kgs.	.05
in.	21/2	0.73	3.15	4.78	1.14	1.10	No. 0	Lbs.	1.1
mm	65	18.5	80	121.5	29	28		kgs.	.05
in.	3	0.94	4.33	5.31	1.44	1.59	No. 1a	Lbs.	2.2
mm	80	24	110	135	36.5	40.5		kgs.	1.0
in.	4	0.94	4.33	5.31	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	5.91	1.44	1.59	No. 1b	Lbs.	2.2
mm	125	24	110	150	36.5	40.5		kgs.	1.0
in.	6	0.94	4.33	5.91	1.44	1.59	No. 1b	Lbs.	2.2
mm	150	24	110	150	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	9.84	9.84	2.01	2.48	No. 2b	Lbs.	6.6
mm	250	32	250	250	51	63		kgs.	3.0
in.	12	1.26	9.84	9.84	2.01	2.48	No. 2c	Lbs.	6.6
mm	300	32	250	250	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

KITZ®

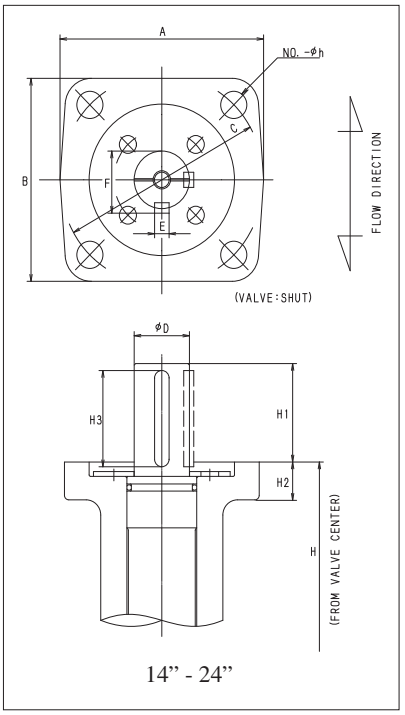
BARE STEM DIMENSIONAL DATA FOR ACTUATION



Up to 8”



10” & 12”



14” - 24”

DIMENSIONS - SPECIFICATIONS

	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	F5
mm	50	9	12	147	14	8.5	50x50	50	4	7	M6	F5
in.	21/2	.35	.47	6.10	.55	.33	1.97x1.97	1.97	4	.28	M6	F5
mm	65	9	12	155	14	8.5	50x50	50	4	7	M6	F5
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	F10
mm	250	24	29	304	32	10	98x98	102	4	11	M10	F10
in.	12	1.06	1.28	12.95	1.26	.39	3.86x3.86	4.02	4	.43	M10	F10
mm	300	27	32.5	329	32	10	98x98	102	4	11	M10	F10

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	3.70	1.10	3.15	6.69x6.38	6.50	4	.87	F16
mm	500	50	14	53.5	488	94	28	80	170x162	165	4	22	F16
in.	24	1.97	.55	2.11	21.10	3.70	1.10	3.15	6.69x6.38	6.50	4	.87	F16
mm	600	50	14	53.5	536	94	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) and EPDM.
- 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 / TORQUE VALUES

SIZE	50 PSI	100 PSI	150 PSI	200 PSI	250 PSI
2	90	97	100	103	105
2 1/2	135	146	148	154	156
3	216	233	238	246	250
4	270	291	296	308	312
5	496	534	544	565	572
6	690	743	759	781	797
8	1,169	1,259	1,286	1,328	1,349
10	2,347	2,528	2,582	2,673	2,708
12	3,544	3,817	3,898	4,036	4,089
14	3,331	3,470	3,608	-	-
16	5,395	5,620	5,844	-	-
18	6,458	6,727	6,996	-	-
20	9,576	9,975	10,374	-	-
24	15,498	16,144	16,789	-	-

BUTTERFLY VALVES

DUCTILE IRON								
STYLE	**KITZ**	**CENTERLINE**	**CRANE**	**DEMCO**	**GRINNELL**	**JENKINS**	**MILWAUKEE**	**NIBCO**
WAFER	5111BG	A2621015	42FXB3G	NF-C-111531A	WD-8102-3	2223BGJ	MW332B	WD1110-5
	5111EG	A2621055	42FXZ3G	NF-C-111535A	WD-8202-3	2223EGJ	MW332E	WD1010-5
	5113BG	A2021015	42FXB3G	NE-C-111531A	WD-8102-3	2223BGJ	MW332B	WD2110-5
	5113BL	A2021013	42FXB3	NE-C-1115311	WD-8101-3	2223BLJ	MW232B	WD2110-3
	5113EG	A2021055	42FXZ3G	NE-C-111535A	WD-8202-3	2223ELJ	MW332E	WD2010-5
	5113EL	A2021053	42FXZ3	NE-C-1115351	WD-8201-3	2223EGJ	MW232E	WD2010-3
	5121BG	A2661055	42BXB3G	NF-C-111431A	WD-8282-3	2222BGJ	MW333B	WD-1100-5
	5121EG	A2661055	42BXZ3G	NF-C-111435A	WD-8282-3	2222EGJ	MW333E	WD-1000-5
	5123BG	A2061055	42BXB3G	NE-C-111431A	WD-8182-3	2222BGJ	MW333B	WD-2100-5
	5123BL	A2061053	42BXB3	NE-C-1114311	WD-8181-3	2222BLJ	MW233B	WD-2100-3
	5123EG	A2061055	42BXZ3G	NE-C-111435A	WD-8282-3	2222EGJ	MW333E	WD-2000-5
	5123EL	A2061053	42BXZ3	NE-C-1114351	WD-8281-3	2222ELJ	MW233E	WD-2000-3
	5133BG	A2044015	42SSB3G	NE-C-112231A	WD-8172-4	2221BGJ	MW334B	WD2128-5
	5133BL	A2044013	42SSB3	NE-C-1122311	WD-8171-4	2221BLJ	MW234B	WD2128-3
	5133EG	A2044055	42SSE3G	NE-C-112235A	WD-8272-4	2221EGJ	MW334E	WD2028-5
	5133EL	A2044053	42SSE3	NE-C-1122351	WD-8271-4	2221ELJ	MW234E	WD2028-3
	5141BG	A2644015	42SSB3G	NF-C-112231A	WD-8172-4	2221BGJ	MW334B	WD1128-5
	5141BL	A2044013	42SSB3	NE-C-1122311	WD-8171-4	2221BLJ	MW234B	WD2128-3
	5141EG	A2644055	42SSZ3G	NF-C-1122351	WD-8272-4	2221EGJ	MW334E	WD1028-5
	5141EL	A2044053	42SSE3	NE-C-1122351	WD-8271-4	2221ELJ	MW234E	WD2028-3
LUG	6111BG	B2621015	44FXB3G	NF-C-511531A	LD-8102-3	223BGJ	ML332B	LD1110-5
	6111EG	B2621055	44FXZ3G	NF-C-511535A	LD-8202-3	2233EGJ	ML332E	LD1010-5
	6113BG	B2021015	44FXB3G	NE-C-511531A	LD-8102-3	2233BGJ	ML332B	LD2110-5
	6113BL	B2021013	44FXB3	NE-C-5115311	LD-8101-3	2233BLJ	ML232B	LD2110-3
	6113EG	B2021055	44FXZ3G	NE-C-511535A	LD-8202-3	2233EGJ	ML332E	LD2010-5
	6113EL	B2021053	44FXZ3	NE-C-5115351	LD-8201-3	2233ELJ	ML232E	LD2010-3
	6121BG	B2661055	44BXB3G	NF-C-511431A	LD-8182-3	2232BGJ	ML333B	LD-1100-5
	6121EG	B2661053	44BXZ3G	NF-C-511435A	LD-8282-3	2232EGJ	ML333E	LD-1000-5
	6123BG	B2061055	44BXB3G	NE-C-511431A	LD-8182-3	2232BGJ	ML333B	LD-2100-5
	6123BL	B2061053	44BXB3	NE-C-5114311	LD-8181-3	2232BLJ	ML233B	LD-2100-3
	6123EG	B2061055	44BXZ3G	NE-C-511435A	LD-8282-3	2232EGJ	ML333E	LD-2000-5
	6123EL	B2061053	44BXZ3	NE-C-5114351	LD-8281-3	2232ELJ	ML233E	LD-2000-3
	6133BG	B2044015	44SSB3G	NE-C-512231A	LD-8172-4	2231BGJ	ML334B	LD2128-5
	6133BL	B2044013	44SSB3	NE-C-5122311	LD-8171-4	2231BLJ	ML234B	LD2128-3
	6133EG	B2044055	44SSZ3G	NE-C-512235A	LD-8272-4	2231EGJ	ML334E	LD2028-5
	6133EL	B2044053	44SSZ3	NE-C-5122351	LD-8271-4	2231ELJ	ML234E	LD2028-3
	6141BG	B2644015	44SSB3G	NF-C-512231A	LD-8172-4	2231BGJ	ML334B	LD1128-5
	6141BL	B2044013	44SSB3	NE-C-5122311	LD-8171-4	2231BLJ	ML234B	LD2128-3
	6141EG	B2644055	44SSZ3G	NF-C-512235A	LD-8272-4	2231EGJ	ML334E	LD1028-5
	6141EL	B2044053	44SSZ3	NE-C-5122351	LD-8271-4	2231ELJ	ML234E	LD2028-3

** This cross reference chart is provided for the convenience of our customers. Valves listed may not be identical in design or materials of construction.*

Precautions for Trouble-free Operation of KITZ Butterfly Valves

Valve Selection

1. Make sure to select a valve with design specifications that are appropriate for the fluid type and the pressure and temperature conditions expected.
2. Lubricants are applied to discs and rubber seats to protect their surfaces.
   Oil-free treated types are also available. Contact the KITZ Corporation or one of its local distributors for the details.
3. Contact the KITZ Corporation or one of its local distributors for service with fine particles.

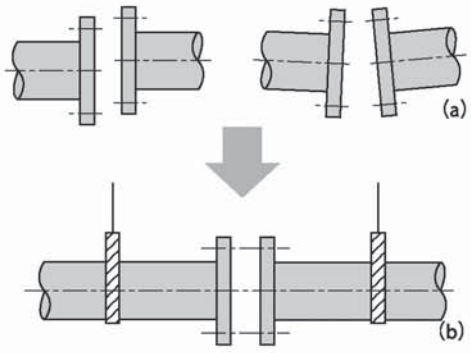
Storage and Handling

1. Valves must be stored in a clean, dry, corrosion-free environment with no direct exposure to the sunlight. Valves should be left open 10° to prevent permanent distortion of the resilient seats. Refrain from overloading valves and their actuators by storing them in piles or placing other objects on them.

Mounting on Pipelines

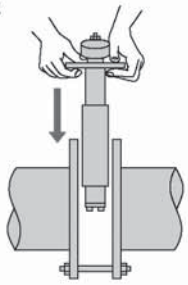
1. Valves must be mounted on flanges only after flanges have been welded to pipes and cooled down to the ambient temperature. Otherwise, the welding heat may affect the quality of the resilient seats.
2. Edges of welded flanges must be machined to achieve a smooth surface finish so that they will not damage the resilient seats during valve mounting. Flange faces must be free from damage or deformation and must be cleaned to remove rust and any foreign objects to prevent leakage through the valve and flange connections. Gaskets are not required for mounting KITZ DJ series butterfly valves.
3. Flanges and pipe bores must be cleaned thoroughly to remove welding spatters, scales, and foreign objects that may have been left inside.
4. Accurate centering of each pair of upstream and downstream pipes is essential for trouble-free operation of the valves mounted between them. Incorrect centering, shown in **Fig.1,** must be avoided at all costs.

Fig.1



5. When mounting valves, set jack bolts under the pipes to provide support at a consistent height and adjust the flange-to-flange distance to allow 6 to 10 mm of space on each side of the valve body. Remember that valves must be left open 10° from the fully closed position (**Fig.2**).
6. Set two bolts into the lower mounting guides of a valve and mount it carefully so that the flange faces do not damage the resilient seats.
7. Then set another two bolts into the upper mounting guides of the valve, ensuring the correct centering between the pipes and the valve.
8. Try opening the valve to check that there is no obstructing contact between the valve disc and the flanges.
9. Remove the jack bolts, set all bolts around the valve body, and tighten the bolts alternately and diagonally until the flanges come into contact with the valve body (**Fig.3**).
   Refer to the table shown below for recommended torque values.

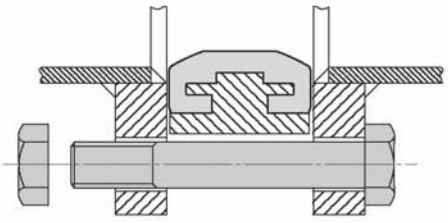
Fig.2



Recommended torque values

DN	N·m (kgf·m)
40	49(5)
50	
65	
80	
100	
125	88(9)
150	
200	
250	118(12)
300	

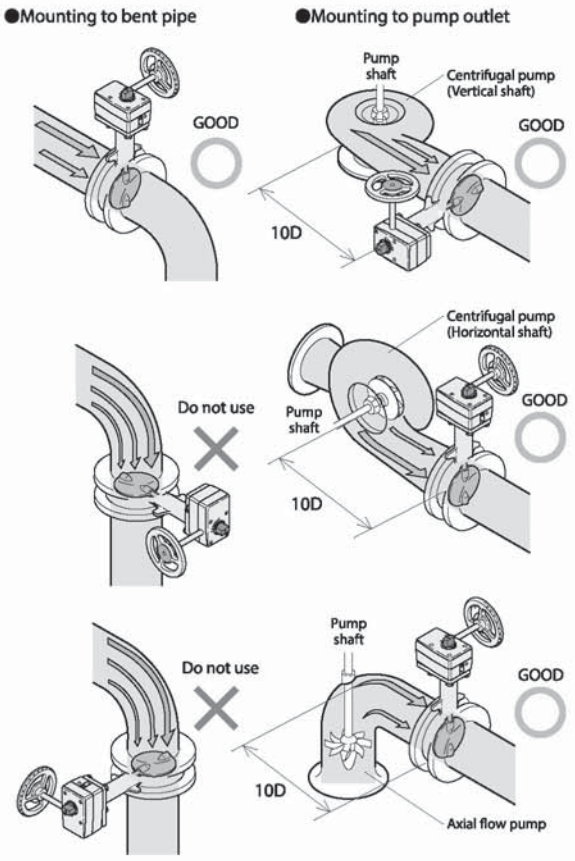
Fig.3



10. For mounting actuated valves, provide valve supports to prevent bending of valve necks and reduce valve and pipe vibration.
11. Do not step on valve necks or valve hand-wheels.
12. Do not mount butterfly valves directly to check valves or pumps; this may result in damage caused by the disc contacts.
13. Do not mount valves on the downstream sides of elbows, reducers, or regulating valves where the fluid velocity changes. It is recommended that valves be installed at distances of approximately 10 times the nominal valve sizes in such cases.

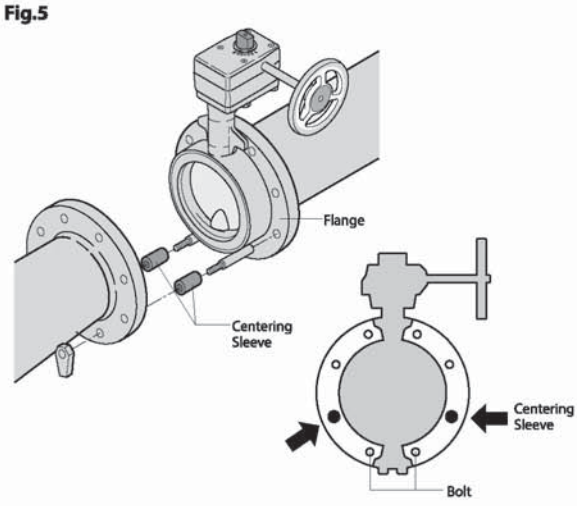
⑭ Mount valves taking into consideration the effects on discs of fluid velocity or pressure changes in the piping. Refer to the illustrations. **(Fig.4)**
Contact the KITZ Corporation or one of its local distributors for the details.

Fig.4



Note:
Centering with centering sleeves is required for valves equipped with such sleeves for accurate centering (Fig.5)
Refer to page 3 for applicable sizes.

Fig.5



Valve Operation

① Valves equipped with manual operators such as levers, handles and gears, must be MANUALLY OPERATED ONLY. Application of excessive external force to operate valves may result in malfunction of valves and their operators.

② Make sure to open valves fully before conducting a loop test of the piping system at a line pressure higher than the nominal pressure of the tested valves. Never use closed valves in place of blind flanges.

③ When valves need to be removed from pipes for maintenance or any other reason, make sure to thoroughly relieve the line pressure beforehand. Loosening piping bolts under line pressure is dangerous. Any residual fluid left inside the pipeline must be completely drained.

④ Users should contact the KITZ Corporation or one of its local distributors for technical advice when valves need to be continuously pressurized while left open 30° or less.

⑤ Do not use position indicators to operate valves or overload position indicators. These actions may cause damage to the indicators.

⑥ Make sure to use blind flanges when butterfly valves are mounted at the end of pipelines.

⑦ Standard actuators are referenced in this catalog for actuated valve operation. Contact the KITZ Corporation or one of its local distributors for information on mounting optional actuators.

⑧ Contact the KITZ Corporation for service at hopper or pump outlets.

⑨ Avoid touching gear operators and actuator stopper bolts accidentally.

⑩ Periodic inspection is recommended to
- •Check the valve opening degree
- •Check loosened bolts and leakage at each connection
- •Check vibration and noise

⑪ Refer to instruction manual for other precautions. Refer to actuator catalogs and instruction manuals for actuated valves.

⚠WARNING

To prevent stem blow-out, do not disassemble necks while a valve is pressurized. Do not dismantle valve operating devices because this may cause valve discs to rotate and may result in valve malfunction.

NOTES

NOTES

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 shipment. 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. For Copper Alloy and Iron valves sold and installed in the U.S. the warranty is five years. 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.

PRODUCT CATALOGS

KITZ has a wide selection of products available.

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

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