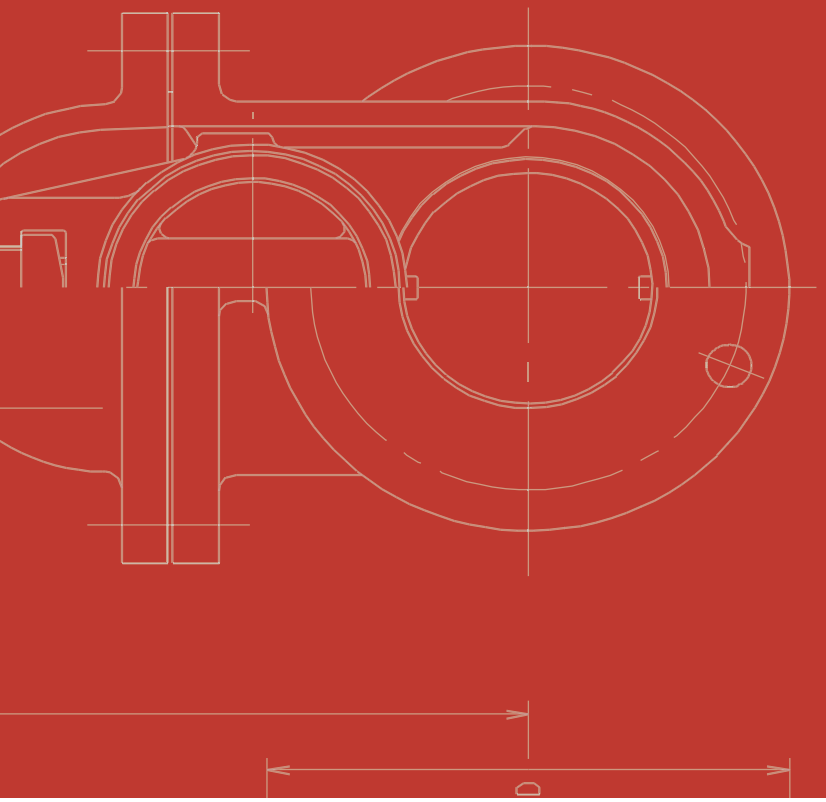
BIV-100-0205

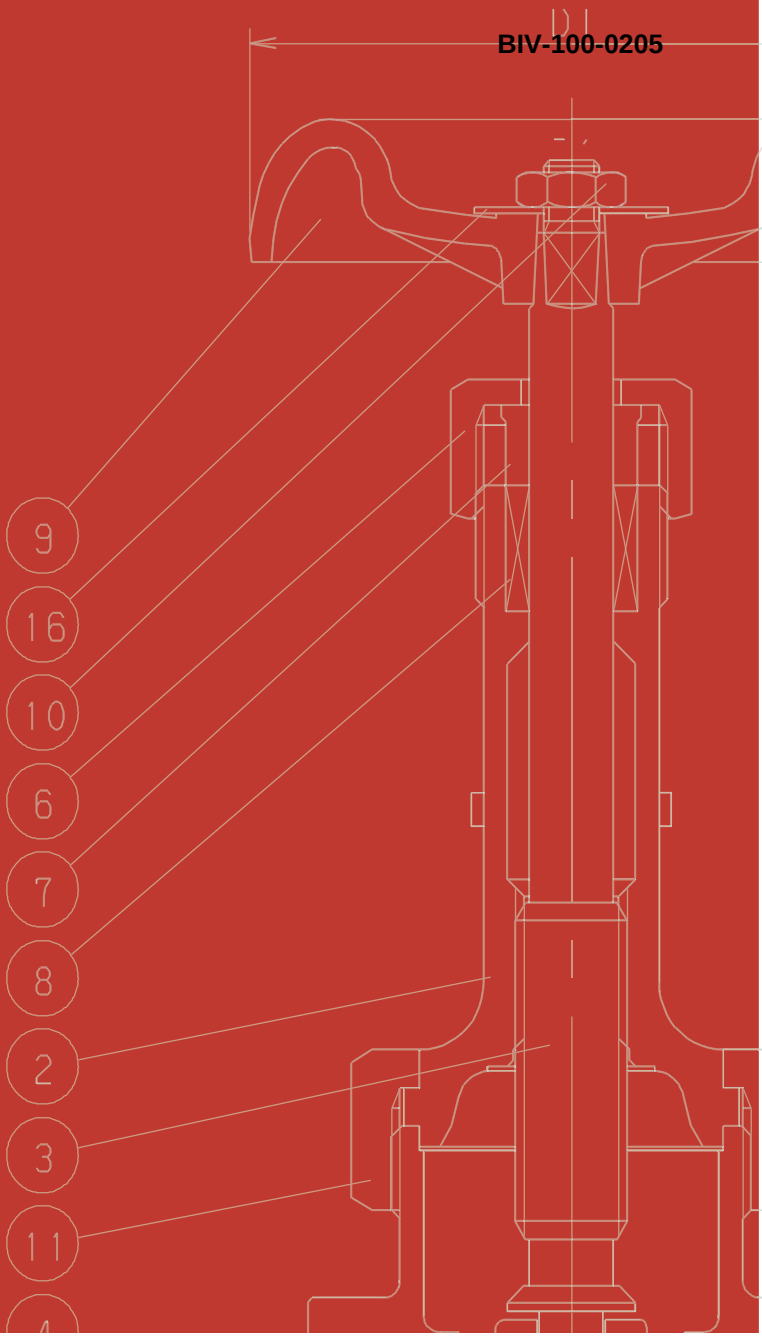
KITZ

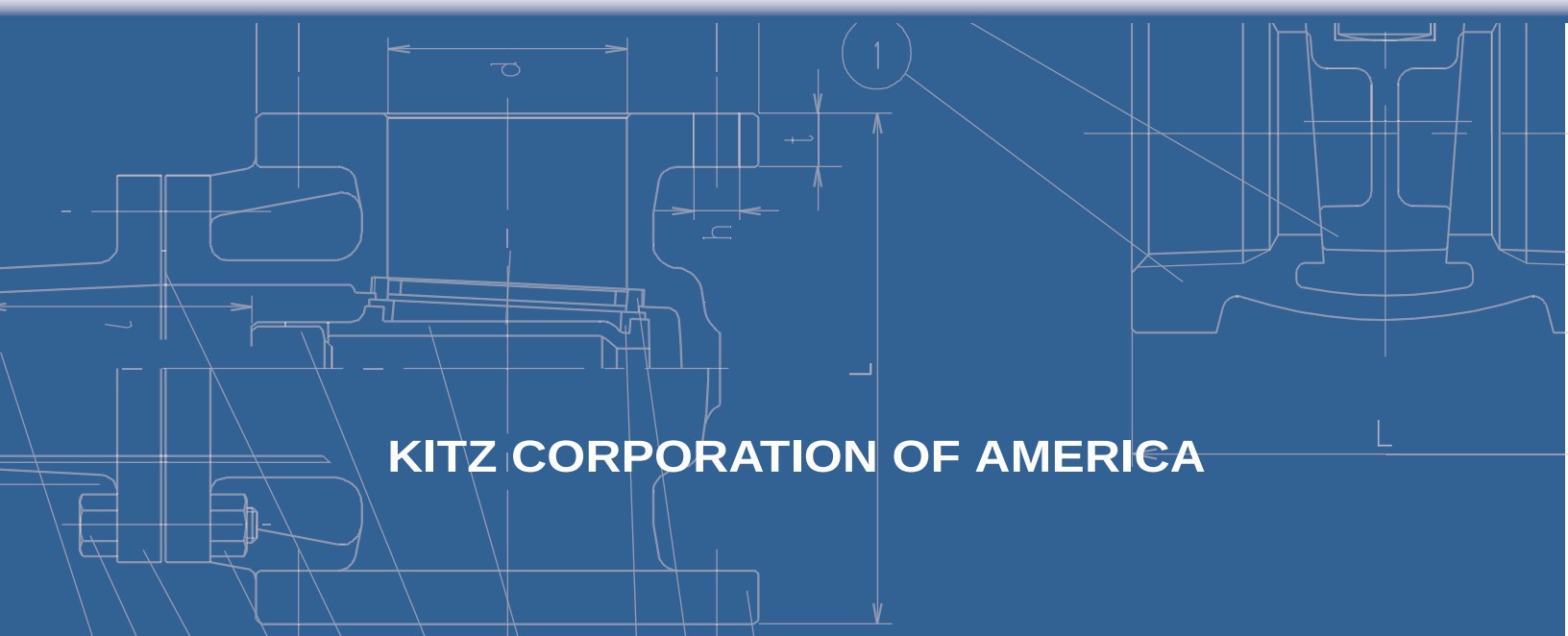
Bronze and Iron Valves

Including 13 Cr. Trimmed

200 WOG Stainless Valves and Strainers







KITZ CORPORATION OF AMERICA

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. 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.

KITZ®
A PRODUCT OF TECHNOLOGY

GENERAL INDEX

CODE # INDEX

BRONZE VALVES

KITZ Bronze Valves are built on fully automated molding and machining lines. This highly automated process achieves consistent precision in manufacturing Commercial and Industrial valves for water, oil, gas and steam services. More than a promise of excellent performance, they deliver the needed efficiency for all around problem-free flow control.

1. "Sure Grip" Handwheel - for easy operation.

2. Hex Head Packing Nut, made of Forged Brass (ASTM B283) for extra strength, can be easily loosened or tightened providing simple packing replacement.

3. Deep stuffing box has "NON-ASBESTOS PACKING". It's made of Aramid Fiber with Graphite, ideal for leak-free service and reduced operating torque.

4. The rising stem design provides visual indication that the valve is open or closed.

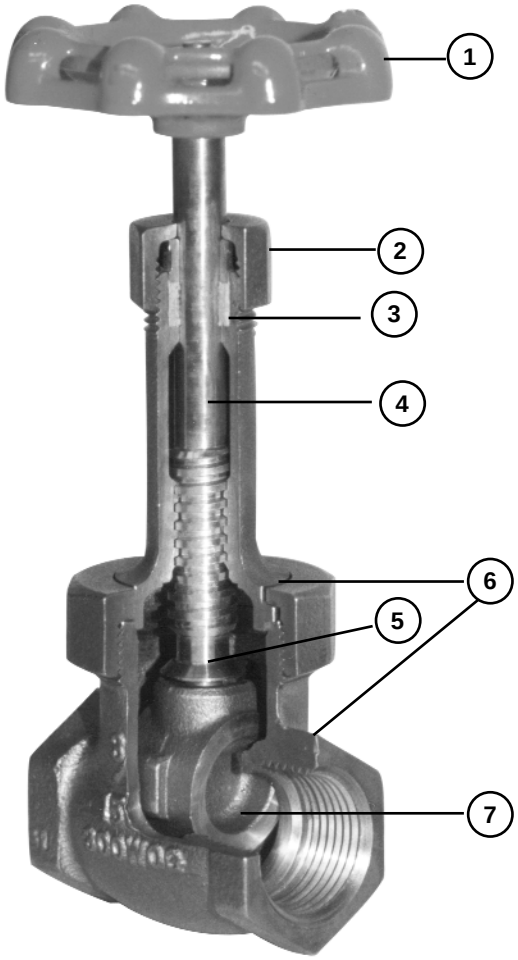
   Stems are made of ASTM B62 bronze. This heavy duty design assures long-life service and protection from dezincification.

5. Stem and integral back seat are precision machined for emergency repacking of the valve and keeps the stem thread out of direct contact with the flow media.

6. Union Bonnet construction assures leak-tight performance at higher pressures and elevated temperatures.

   Body and bonnets are made of ASTM B62 bronze. The design, material, and workmanship effectively help to lower maintenance costs and assures long-life service.

7. Discs are made of ASTM B62 Bronze and are fully guided on precision seating surfaces for accurate alignment and leak-free performance.



Code #42 (AK150LUT)

BRONZE GATE VALVES
ILLUSTRATED INDEX

NUMERICAL INDEX

125 WSP/200 WOG
Screw-Over-Bonnet
Non-Rising Stem

AKH Code # 27
Size 3/8″ - 4″
(Threaded)

CH Code # 28
Size 3/8″ - 4″
(Solder)

125 WSP/200 WOG
Screw-In-Bonnet
Rising Stem

AK125M Code # 24
Size 1/2″ - 3″
(Threaded)

C125M Code # 44
Size 1/2″ - 2″
(Solder)

125 WSP/200 WOG
Screw-In-Bonnet
Non-Rising Stem

AK125E Code # 40
Size 3/8″ - 2″
(Threaded)

C125E Code # 41
Size 3/8″ - 2″
(Solder)

150 WSP/300 WOG
Screw-In-Bonnet
Rising Stem

AK150L Code # 25
Size 1/2″ - 3″
(Threaded)

C150L Code # 45
Size 1/2″ - 2″
(Solder)

150 WSP/300 WOG
Union Bonnet
Rising Stem

AK150LUT Code # 42T
Size 1/4″ - 2″
(Threaded)

C150LU Code # 43
Size 1/2″ - 2″
(Solder)

150 WSP/300 WOG
Screw-In-Bonnet
Non-Rising Stem

AK150E Code # 46
Size 3/8″ - 2″
(Threaded)

C150E Code # 64
Size 1/2″ - 2″
(Solder)

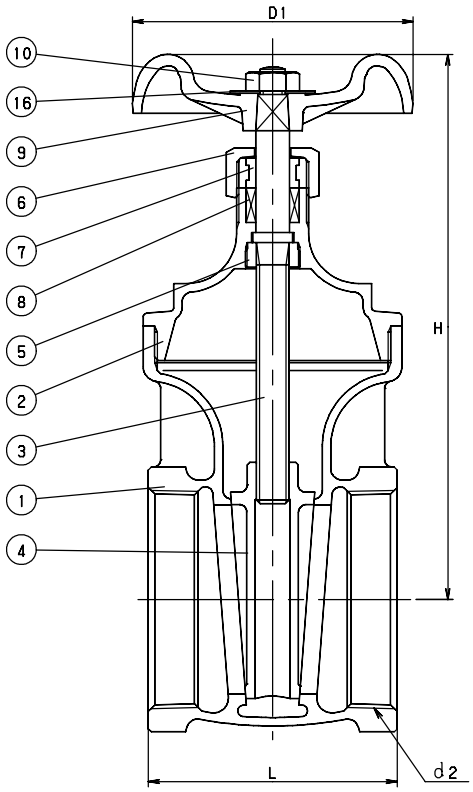
300 WSP/1000 WOG
Union Bonnet
Rising Stem

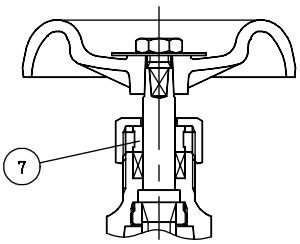
AK300LU Code # 37
Size 3/8″- 2″
(Threaded)

GATE
CLASS 125 BRONZE

Screw-Over-Bonnet • Non-Rising Stem
Solid Wedge Disc

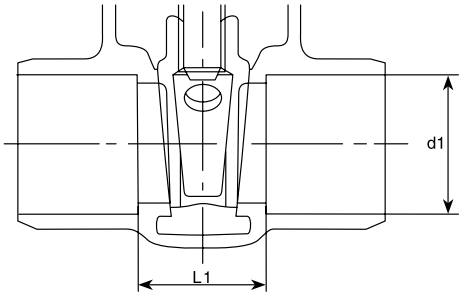
CODE # 27 (AKH)
THREADED





$1^1/_2$ & 2

CODE # 28 (CH)
SOLDER*



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
SOLDER JOINT ENDS	ANSI B16.18
WALL THICKNESS	KITZ
DESIGN	KITZ

PRESSURE/TEMPERATURE

125 PSI - SATURATED STEAM TO 353ºF
- FLUID TO 406ºF
200 PSI NON-SHOCK COLD WATER, OIL OR GAS

**SEE PRESSURE/TEMPERATURE LIMITATIONS FOR SOLDER JOINT VALVES - PAGE BIV-50.*

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (ASTM B62)
2	BONNET	CAST BRONZE (ASTM B62)
3	STEM	BRASS (KITZ “K” METAL)
4	DISC ($^3/_8$ – $^1/_2$)	KITZ "K" METAL
	($^3/_4$ – 2)	CAST BRONZE (ASTM B62)
5	LOCK NUT	BRASS ROD (B16)
6	PACKING NUT	FORGED BRASS (B283, C37700)
7	GLAND	BRASS ROD (B16)
8	GLAND PACKING	ARAMID FIBERS W/ GRAPHITE
9	HAND WHEEL ($^3/_8$ – $1^1/_4$)	ZINC DIE-CAST (B86)
	($1^1/_2$ – 2)	ALUMINUM DIE-CAST (B85)
10	WHEEL NUT	CARBON STEEL (A307 Gr. B)
16	NAME PLATE	ALUMINUM

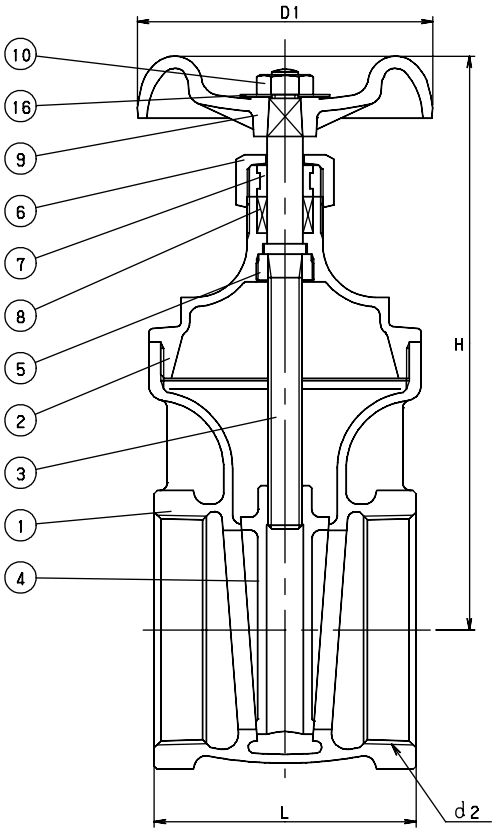
DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	H	D1	L	L1	d1 Max.	d1 Min.	APPROX. NET WT.	CARTON QTY
$^3/_8$	2.91	1.97	1.65	.78	.506	.502	0.58	96
$^1/_2$	3.15	1.97	1.77	.81	.631	.627	0.71	48
$^3/_4$	3.54	2.17	1.97	.90	.881	.877	0.90	30
1	4.13	2.36	2.24	1.01	1.132	1.128	1.43	40
$1^1/_4$	4.65	2.76	2.40	1.13	1.382	1.378	1.93	30
$1^1/_2$	5.31	3.15	2.64	1.25	1.633	1.628	2.63	24
2	6.26	3.54	2.91	1.34	2.133	2.128	4.19	16

GATE
CLASS 125 BRONZE

Screw-In-Bonnet • Non-Rising Stem
Solid Wedge Disc

CODE # 27 (AKH)
THREADED



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
SOLDER JOINT ENDS	ANSI B16.18
WALL THICKNESS	KITZ
DESIGN	KITZ

PRESSURE/TEMPERATURE

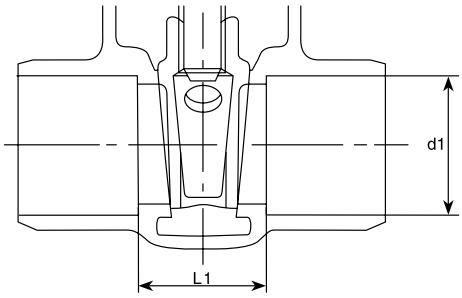
125 PSI - SATURATED STEAM TO 353ºF
- FLUID TO 406ºF
200 PSI NON-SHOCK COLD WATER, OIL OR GAS

**SEE PRESSURE/TEMPERATURE LIMITATIONS FOR SOLDER JOINT VALVES - PAGE BIV-50.*

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (ASTM B62)
2	BONNET	CAST BRONZE (ASTM B62)
3	STEM	BRASS (KITZ “K” METAL)
4	DISC	CAST BRONZE (ASTM B62)
5	LOCK NUT	BRASS ROD (B16)
6	PACKING NUT	FORGED BRASS (B283, C37700)
7	GLAND	BRASS ROD (B16)
8	GLAND PACKING	ARAMID FIBERS W/ GRAPHITE
9	HAND WHEEL	ALUMINUM DIE-CAST (B85)
10	WHEEL NUT	CARBON STEEL
16	NAME PLATE	ALUMINUM

CODE # 28 (CH)
SOLDER*



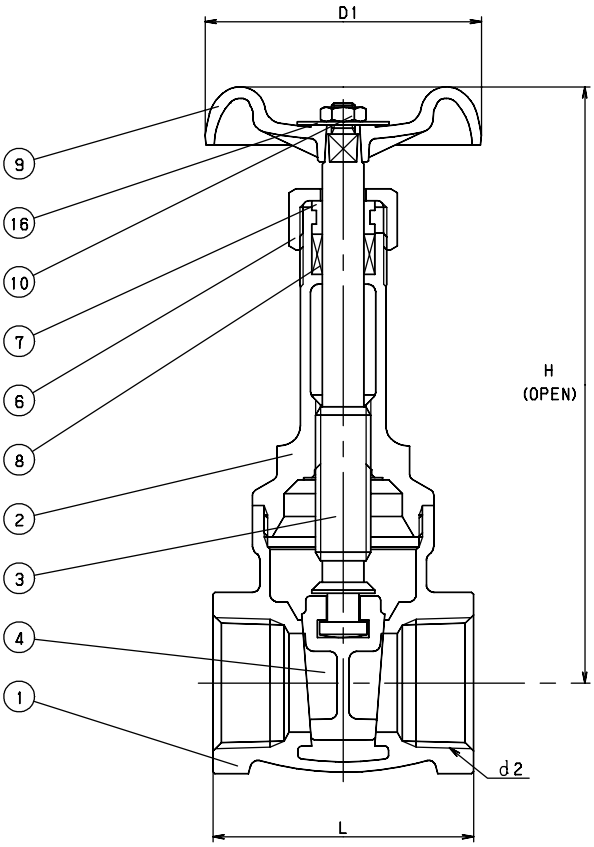
DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	H	D1	L	L1	d1 Max.	d1 Min.	APPROX. NET WT.	CARTON QTY
2 1/2	7.95	4.53	3.54	1.59	2.633	2.628	7.50	8
3	8.78	5.31	3.94	1.78	3.133	3.128	10.30	6
4	11.02	6.10	4.76	2.49	4.133	4.128	21.33	3

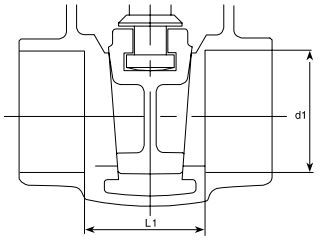
GATE
CLASS 125 BRONZE

Screw-In-Bonnet • Rising Stem
Solid Wedge Disc

CODE # 24 (AK125M)
THREADED



CODE # 44 (C125M)
SOLDER*



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
SOLDER JOINT ENDS	ANSI B16.18
DESIGN	MSS SP-80, TYPE 2
MILITARY	MSS SP-80, TYPE 2

PRESSURE/TEMPERATURE

125 PSI - SATURATED STEAM TO 353ºF
- FLUID TO 406ºF
200 PSI NON-SHOCK COLD WATER, OIL OR GAS

**SEE PRESSURE/TEMPERATURE LIMITATIONS FOR SOLDER JOINT VALVES - PAGE BIV-50.*

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (ASTM B62)
2	BONNET	CAST BRONZE (ASTM B62)
3	STEM	CAST BRONZE (ASTM B62)
4	DISC	CAST BRONZE (ASTM B62)
6	PACKING NUT	FORGED BRASS (B283, C37700)
7	GLAND	BRASS ROD (B16)
8	GLAND PACKING	ARAMID FIBERS W/ GRAPHITE
9	HAND WHEEL ($^1/_2$ – 1)	ZINC DIE-CAST (B86)
	($1^1/_4$ – 3)	ALUMINUM DIE-CAST (B85)
10	WHEEL NUT	BRASS ROD (B16)
16	NAME PLATE	ALUMINUM

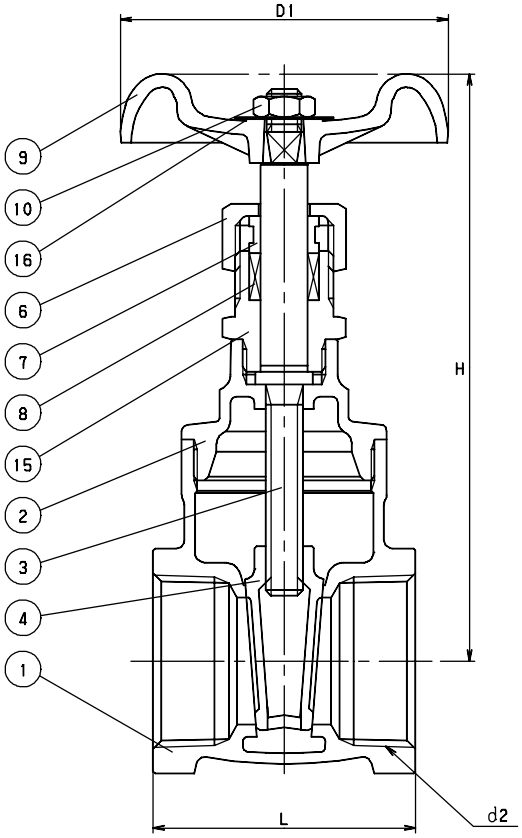
DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	H	D1	L	L1	d1 Max.	d1 Min.	APPROX. NET WT.	CARTON QTY
$^1/_2$	5.08	2.17	2.01	.93	.631	.627	0.98	48
$^3/_4$	6.10	2.36	2.20	1.02	.881	.877	1.58	36
1	7.09	2.76	2.60	1.17	1.132	1.128	2.13	24
$1^1/_4$	8.50	3.15	2.68	1.29	1.382	1.378	3.00	16
$1^1/_2$	10.12	3.54	2.91	1.21	1.633	1.628	4.33	12
2	11.65	3.94	3.31	1.61	2.133	2.128	6.38	8
$2^1/_2$	14.61	5.31	4.53	–	–	–	12.80	4
3	17.01	6.10	5.12	–	–	–	19.30	3

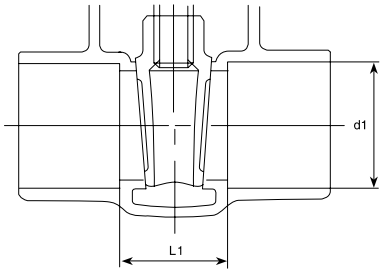
GATE
CLASS 125 BRONZE

Screw-In-Bonnet • Non-Rising Stem
Solid Wedge Disc

CODE # 40 (AK125E)
THREADED



CODE # 41 (C125E)
SOLDER*



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
SOLDER JOINT ENDS	ANSI B16.18
DESIGN	MSS SP-80, TYPE 1A
MILITARY	MSS SP-80, TYPE 1A

PRESSURE/TEMPERATURE

125 PSI - SATURATED STEAM TO 353ºF
- FLUID TO 406ºF
200 PSI NON-SHOCK COLD WATER, OIL OR GAS

**SEE PRESSURE/TEMPERATURE LIMITATIONS FOR SOLDER JOINT VALVES - PAGE BIV-50.*

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (ASTM B62)
2	BONNET	CAST BRONZE (ASTM B62)
3	STEM	CAST BRONZE (ASTM B62)
4	DISC	CAST BRONZE (ASTM B62)
6	PACKING NUT	FORGED BRASS (B283, C37700)
7	GLAND	BRASS ROD (B16)
8	GLAND PACKING	ARAMID FIBERS W/ GRAPHITE
9	HAND WHEEL ($^3/_8$ – 1)	ZINC DIE-CAST (B86)
	($1^1/_4$ – 2)	ALUMINUM DIE-CAST (B85)
10	WHEEL NUT	BRASS ROD (B16)
15	STUFFIN BOX	BRASS ROD (B16)
16	NAME PLATE	ALUMINUM

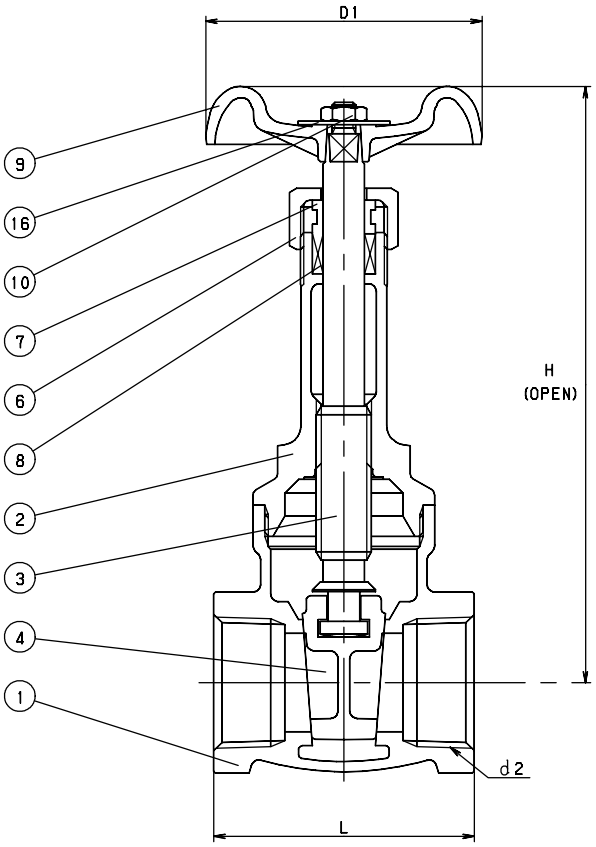
DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	H	D1	L	L1	d1 Max.	d1 Min.	APPROX. NET WT.	CARTON QTY
$^3/_8$	3.89	1.97	1.69	.78	.506	.502	0.70	96
$^1/_2$	3.66	2.17	1.93	.81	.631	.627	0.85	72
$^3/_4$	4.33	2.36	2.09	.86	.881	.877	1.17	54
1	4.96	2.76	2.40	.98	1.132	1.128	1.72	36
$1^1/_4$	5.71	3.15	2.52	1.17	1.382	1.378	2.42	24
$1^1/_2$	6.69	3.54	2.68	1.28	1.633	1.628	3.33	18
2	7.44	3.94	2.91	1.57	2.133	2.128	4.76	12

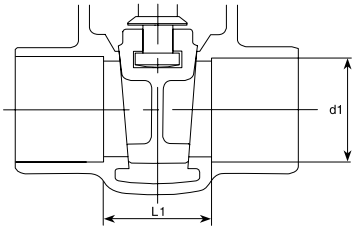
GATE
CLASS 150 BRONZE

Screw-In-Bonnet • Rising Stem
Solid Wedge Disc

CODE # 25 (AK150L)
THREADED



CODE # 45 (C150L)
SOLDER*



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
SOLDER JOINT ENDS	ANSI B16.18
DESIGN	MSS SP-80, TYPE 2
MILITARY	MSS SP-80, TYPE 2

PRESSURE/TEMPERATURE

150 PSI - SATURATED STEAM TO 366ºF
- FLUID TO 406ºF
300 PSI NON-SHOCK COLD WATER, OIL OR GAS

**SEE PRESSURE/TEMPERATURE LIMITATIONS FOR SOLDER JOINT VALVES - PAGE BIV-50.*

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (ASTM B62)
2	BONNET	CAST BRONZE (ASTM B62)
3	STEM	CAST BRONZE (ASTM B62)
4	DISC	CAST BRONZE (ASTM B62)
6	PACKING NUT	FORGED BRASS (B283, C37700)
7	GLAND	BRASS ROD (B16)
8	GLAND PACKING	ARAMID FIBERS W/ GRAPHITE
9	HAND WHEEL ($1/2$ – 1)	ZINC DIE-CAST (B86)
	($1\,1/4$ – 3)	ALUMINUM DIE-CAST (B85)
10	WHEEL NUT	BRASS ROD (B16)
16	NAME PLATE	ALUMINUM

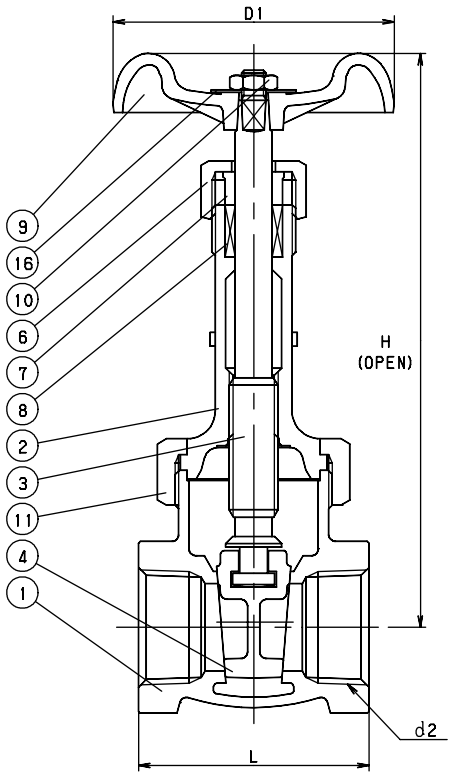
DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	H	D1	L	L1	d1 Max.	d1 Min.	APPROX. NET WT.	CARTON QTY
$1/2$	5.39	2.17	2.01	.93	.631	.627	1.00	48
$3/4$	6.18	2.76	2.20	1.02	.881	.877	1.50	36
1	7.09	2.76	2.60	1.17	1.132	1.128	1.72	24
$1\,1/4$	8.50	3.15	2.68	1.29	1.382	1.378	3.88	16
$1\,1/2$	10.12	3.54	2.91	1.21	1.633	1.628	4.33	12
2	11.65	3.94	3.31	1.61	2.133	2.128	6.38	8
$2\,1/2$	15.16	6.10	4.72	–	–	–	14.75	4
3	17.01	6.10	5.51	–	–	–	20.33	3

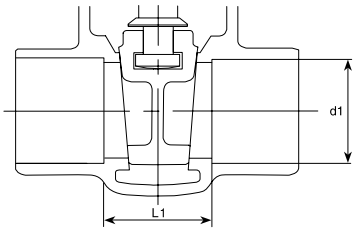
GATE
CLASS 150 BRONZE

Union Bonnet • Rising Stem
Solid Wedge Disc

CODE # 42T (AK150LUT)
THREADED



CODE # 43 (C150LU)
SOLDER*



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
SOLDER JOINT ENDS	ANSI B16.18
DESIGN	MSS SP-80, TYPE 2
MILITARY	MSS SP-80, TYPE 2

PRESSURE/TEMPERATURE

150 PSI - SATURATED STEAM TO 366ºF
- FLUID TO 406ºF
300 PSI NON-SHOCK COLD WATER, OIL OR GAS

**SEE PRESSURE/TEMPERATURE LIMITATIONS FOR SOLDER JOINT VALVES - PAGE BIV-50.*

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (ASTM B62)
2	BONNET	CAST BRONZE (ASTM B62)
3	STEM	CAST BRONZE (ASTM B62)
4	DISC	CAST BRONZE (ASTM B62)
6	PACKING NUT	FORGED BRASS (B283, C37700)
7	GLAND	BRASS ROD (B16)
8	GLAND PACKING	ARAMID FIBERS PTFE
9	HAND WHEEL (3/8 – 1)	ZINC DIE-CAST (B86)
	(1 1/4 – 2)	ALUMINUM DIE-CAST (B85)
10	WHEEL NUT	BRASS ROD
11	BONNET RING	CAST BRONZE (B62)
16	NAME PLATE	ALUMINUM
	* OPTION AVAILABLE: GRAPHOIL PACKING	

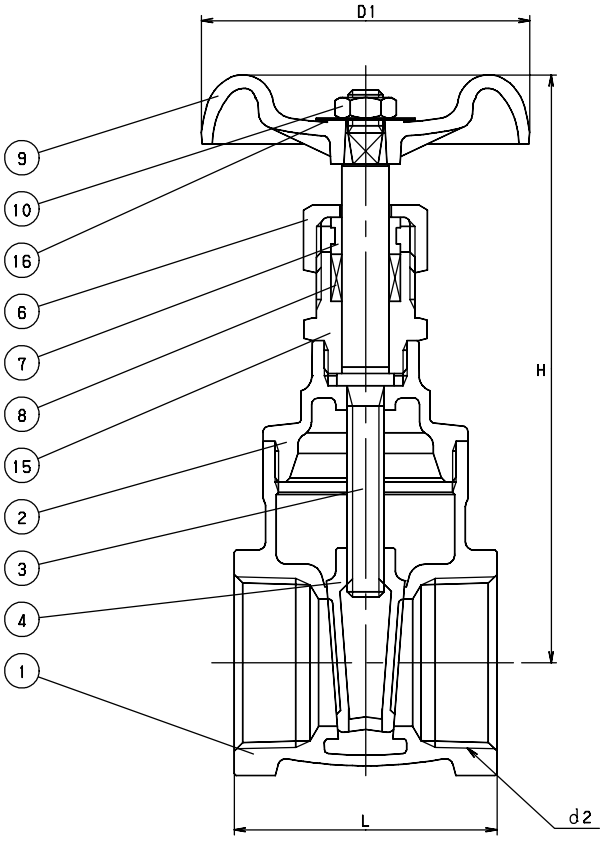
DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	H	D1	L	L1	d1 Max.	d1 Min.	APPROX. NET WT.	CARTON QTY
1/4	4.25	1.97	1.77	–	–	–	0.88	60
3/8	4.25	1.97	1.81	–	–	–	0.88	60
1/2	5.39	2.17	2.01	.93	.631	.627	1.13	48
3/4	6.18	2.76	2.20	1.02	.881	.877	1.64	36
1	7.09	2.76	2.60	1.17	1.132	1.124	2.46	24
1 1/4	8.50	3.15	2.68	1.29	1.382	1.378	3.50	16
1 1/2	10.12	3.54	2.91	1.21	1.633	1.628	4.84	12
2	11.65	3.94	3.31	1.61	2.133	2.128	7.25	8

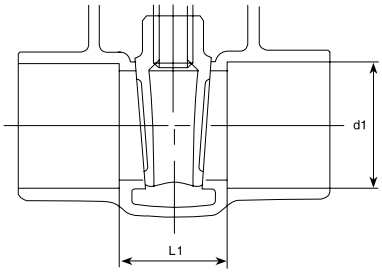
GATE
CLASS 150 BRONZE

Screw-In Bonnet • Inside Screw • Non-Rising Stem
Solid Wedge Disc

CODE # 46 (AK150E)
THREADED



CODE # 64 (C150E)
SOLDER*



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
SOLDER JOINT ENDS	ANSI B16.18
DESIGN	MSS SP-80, TYPE 1A
MILITARY	MSS SP-80, TYPE 1A

PRESSURE/TEMPERATURE

150 PSI - SATURATED STEAM TO 366ºF
- FLUID TO 406ºF
300 PSI NON-SHOCK COLD WATER, OIL OR GAS

**SEE PRESSURE/TEMPERATURE LIMITATIONS FOR SOLDER JOINT VALVES - PAGE BIV-50.*

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (ASTM B62)
2	BONNET	CAST BRONZE (ASTM B62)
3	STEM	CAST BRONZE (ASTM B62)
4	DISC	CAST BRONZE (ASTM B62)
6	PACKING NUT	FORGED BRASS (B283, C37700)
7	GLAND	BRASS ROD (B16)
8	GLAND PACKING	ARAMID FIBERS W/ GRAPHITE
9	HAND WHEEL ($3/8$ – 1)	ZINC DIE-CAST (B86)
	($1\,1/4$ – 2)	ALUMINUM DIE-CAST (B85)
10	WHEEL NUT	BRASS ROD
15	STUFFING BOX ($3/8$ – $1\,1/2$)	BRASS ROD (B16)
	(2)	FORGED BRASS (B283, 37700)
16	NAME PLATE	ALUMINUM

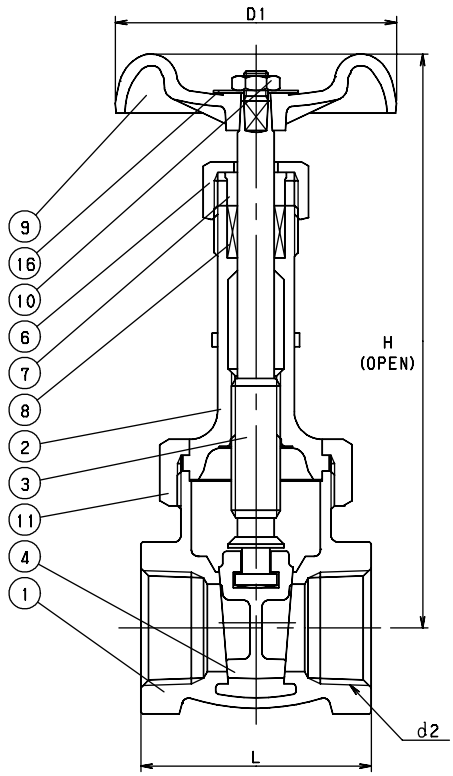
DIMENSIONS - WEIGHTS - QUANTITIES

SIZE d2	H	D1	L	L1	d1 Max.	d1 Min.	APPROX. NET WT.	CARTON QTY
$3/8$	3.39	1.97	1.69	–	–	–	0.68	96
$1/2$	3.86	2.17	1.93	.81	.631	.627	0.97	72
$3/4$	4.49	2.76	2.09	.86	.881	.877	1.24	54
1	4.96	2.76	2.40	.98	1.132	1.128	1.72	36
$1\,1/4$	5.70	3.15	2.68	1.17	1.382	1.378	2.75	24
$1\,1/2$	6.92	3.54	2.91	1.28	1.633	1.628	4.06	16
2	7.91	3.94	3.31	1.57	2.133	2.128	6.38	8

GATE
CLASS 300 BRONZE

Union Bonnet • Rising Stem
Solid Wedge Disc

CODE # 37 (AK300LU)
THREADED



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
DESIGN	MSS SP-80, TYPE 2
MILITARY	MSS SP-80, TYPE 2

PRESSURE/TEMPERATURE

300 PSI - SATURATED STEAM TO 421ºF
- FLUID TO 550ºF
1000 PSI NON-SHOCK COLD WATER, OIL OR GAS

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (ASTM B61)
2	BONNET	CAST BRONZE (ASTM B61)
3	STEM	CAST BRONZE (ASTM B62)
4	DISC	COPPER-NICKEL ALLOY (B584, C97600)
6	PACKING NUT	FORGED BRASS (B283, C37700)
7	GLAND	BRASS ROD (B16)
8	GLAND PACKING	FLEXIBLE GRAPHITE & ALUM.
9	HAND WHEEL ($^3/_8$ – $^1/_2$)	ZINC DIE-CAST (B86)
	($^3/_4$ – 2)	ALUMINUM DIE-CAST (B85)
10	WHEEL NUT	BRASS ROD
11	BONNET RING	CAST BRONZE (B61)
16	NAME PLATE	ALUMINUM

DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	H	D1	L	APPROX. NET WT.	CARTON QTY
$^3/_8$	4.92	2.36	1.81	1.04	48
$^1/_2$	5.87	2.76	2.01	1.31	36
$^3/_4$	6.81	3.15	2.20	1.79	24
1	7.64	3.15	2.60	2.50	18
$1^1/_4$	8.98	3.94	2.91	4.17	12
$1^1/_2$	10.79	4.53	3.31	6.00	8
2	12.32	5.31	3.86	9.50	4

KITZ®
A PRODUCT OF TECHNOLOGY

BRONZE GLOBE VALVES
ILLUSTRATED INDEX

NUMERICAL INDEX

125 WSP/200 WOG
Screw-In Bonnet
Rising Stem

AK125C Code # 11
Size 1/2″ - 3″
(Threaded)

C125C Code # 12
Size 1/2″ - 3″
(Solder)

150 WSP/300 WOG
Screw-In-Bonnet
Rising Stem

AKC Code # 02
Size 1/4″ - 3″
(Threaded)

150 WSP/300 WOG
Union Bonnet/PTFE Disc
Rising Stem

AK150D Code # 09
Size 1/4″ - 3″
(Threaded)

C150D Code # 10
Size 1/4″ - 3″
(Solder)

150WSP/300 WOG
Screw-In-Bonnet
Rising Stem

AKCA Code # 38
Size 1/4″ - 3″
(Threaded)

300 WSP/600 WOG
Union Bonnet
Rising Stem

AK300J Code # 17
Size 1/4″ - 2″
(Threaded)

300 WSP/600 WOG
Union Bonnet / S.S. Disc & Seat
Rising Stem

AK300JS Code # 17S
Size 1/2″ - 2″
(Threaded)

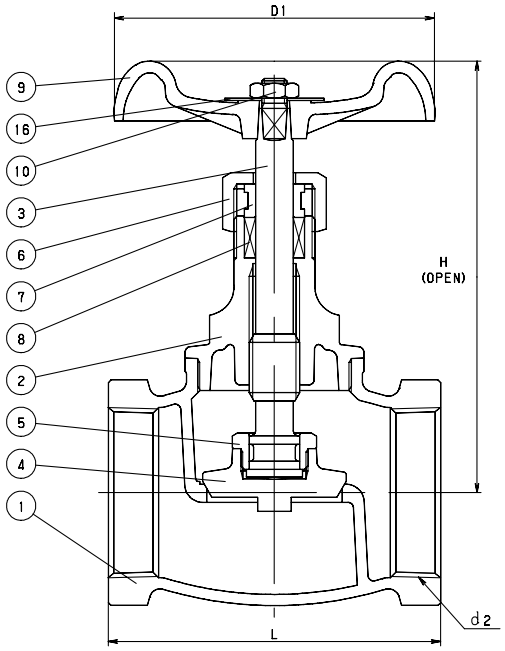
300 WSP/600 WOG
Union Bonnet / PTFE Seat
Rising Stem

AK300D Code # 18
Size 1/4″ - 2″
(Threaded)

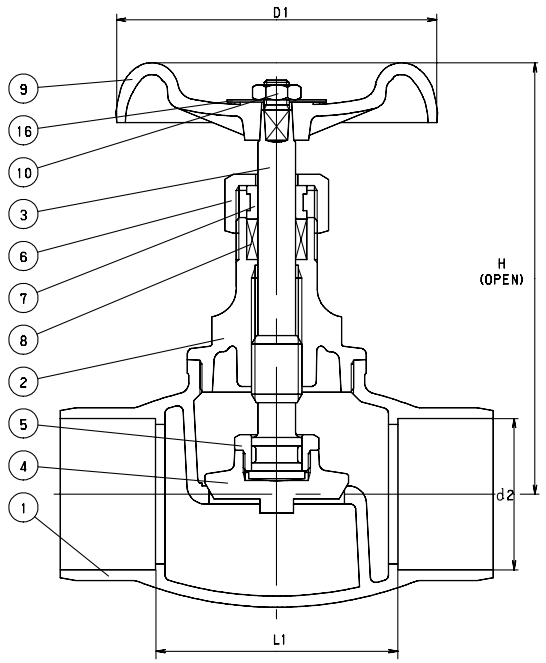
GLOBE
CLASS 125 BRONZE

Screw-In-Bonnet • Inside Screw • Rising Stem
Integral Seat • Solid Wedge Disc

CODE # 11 (AK125C)
THREADED



CODE # 12 (C125C)
SOLDER



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
DESIGN	MSS SP-80, TYPE 1
MILITARY	MSS SP-80, TYPE 1

PRESSURE/TEMPERATURE

125 PSI - SATURATED STEAM TO 353ºF
- FLUID TO 406ºF
200 PSI NON-SHOCK COLD WATER, OIL OR GAS

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (B62)
2	BONNET (1/2 – 2)	FORGED BRASS (B283 C37700)
	(2 1/2, 3)	CAST BRONZE (B62)
3	STEM	BRASS (B62)
4	DISC	CAST BRONZE (B62)
5	LOCK NUT	FORGED BRASS (B124, C37700)
6	PACKING NUT	FORGED BRASS (B283, C37700)
7	GLAND	BRASS ROD (B16)
8	GLAND PACKING	ARAMID FIBERS W/ GRAPHITE
9	HAND WHEEL (1/4 – 3/4)	ZINC DIE-CAST (B86)
	(1 – 3)	ALUMINUM DIE-CAST (B85)
10	WHEEL NUT	BRASS ROD (B16)
16	NAME PLATE	ALUMINUM

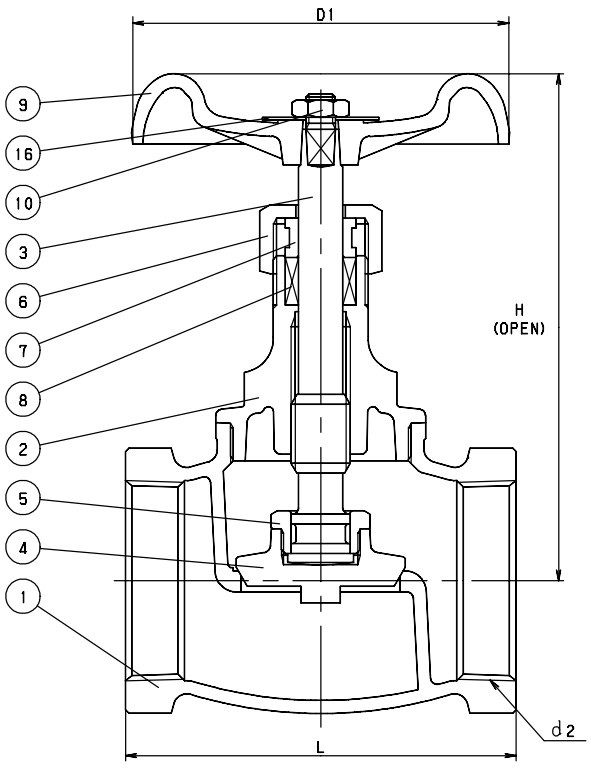
DIMENSIONS - WEIGHTS - QUANTITIES

SIZE d2	H	D1	L	L1	APPROX. NET WT.	CARTON QTY
1/2	2.99	2.36	2.09	1.52	0.71	48
3/4	3.86	2.76	2.56	1.80	1.37	36
1	4.25	3.15	3.03	2.12	1.80	36
1 1/4	5.39	3.54	3.35	2.60	2.63	16
1 1/2	6.30	3.94	3.94	2.94	3.88	12
2	7.09	4.53	4.69	3.43	6.63	8
2 1/2	7.95	5.31	5.91	4.61	10.51	4
3	9.69	6.10	7.01	5.81	15.54	3

GLOBE
CLASS 150 BRONZE

Screw-In-Bonnet • Inside Screw • Rising Stem
Integral Seat • Solid Wedge Disc

CODE # 02 (AKC)
THREADED



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
DESIGN	KITZ

PRESSURE/TEMPERATURE

150 PSI - SATURATED STEAM TO 366ºF
- FLUID TO 406ºF
300 PSI NON-SHOCK COLD WATER, OIL OR GAS

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (B584, C84400)
2	BONNET ($1/4$ – $2\,1/2$)	FORGED BRASS (B283, C37700)
	(3)	CAST BRONZE (B584, C84400)
3	STEM	BRASS (KITZ “K” METAL)
4	DISC	CAST BRONZE (B584, C84400)
5	LOCK NUT	FORGED BRASS (B124, C37700)
6	PACKING NUT	FORGED BRASS (B283, C37700)
7	GLAND	BRASS ROD (B16)
8	GLAND PACKING	ARAMID FIBERS W/ GRAPHITE
9	HAND WHEEL ($1/4$ – $3/4$)	ZINC DIE-CAST (B86)
	(1 – 3)	ALUMINUM DIE-CAST (B85)
10	WHEEL NUT	CARBON STEEL
16	NAME PLATE	ALUMINUM

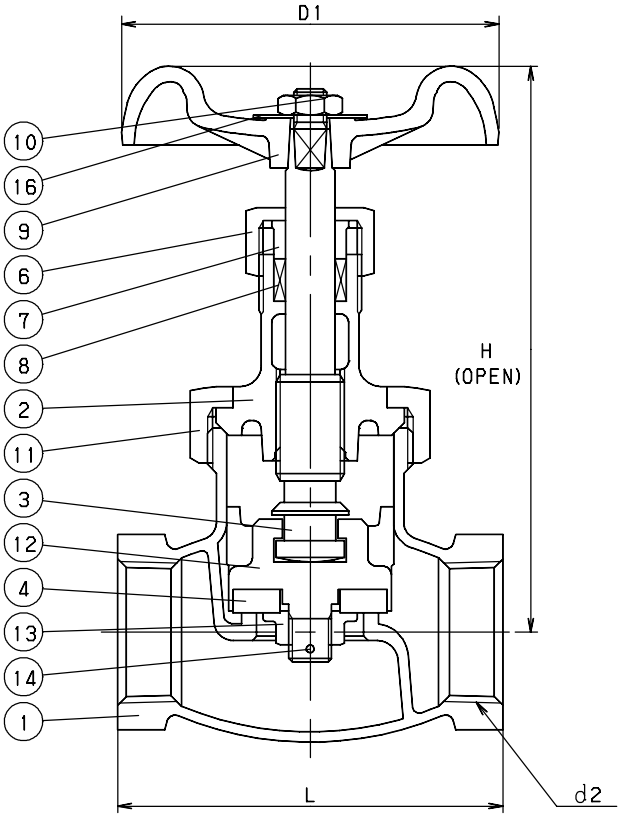
DIMENSIONS - WEIGHTS - QUANTITIES

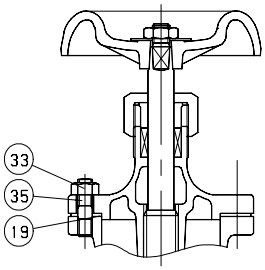
d2 SIZE	H	D1	L	APPROX. NET WT.	CARTON QTY
$1/4$	2.60	1.97	1.73	35	80
$3/8$	2.68	1.97	1.73	43	80
$1/2$	3.11	2.36	2.09	43	60
$3/4$	3.66	2.76	2.56	65	56
1	4.09	3.15	3.03	60	36
$1\,1/4$	5.00	3.54	3.35	65	25
$1\,1/2$	5.71	3.94	3.94	66	16
2	6.85	4.53	4.69	51	8
$2\,1/2$	7.83	5.31	5.47	55	6
3	8.46	6.10	6.22	55	4

GLOBE
CLASS 150 BRONZE

Union-Bonnet • Inside Screw • Rising Stem
G/F PTFE Disc

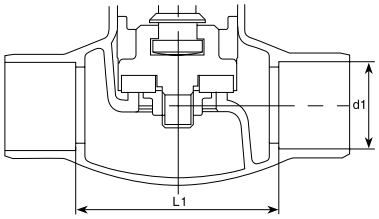
CODE # 09 (AK150D)
THREADED





$2^1/_2$" & Larger

CODE # 10 (C150D)
SOLDER*



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
SOLDER JOINT ENDS	ANSI B16.18
DESIGN	MSS SP-80, TYPE 2
MILITARY	MSS SP-80, TYPE 2

PRESSURE/TEMPERATURE

150 PSI - SATURATED STEAM TO 366ºF
- FLUID TO 406ºF
300 PSI NON-SHOCK COLD WATER, OIL OR GAS

**SEE PRESSURE/TEMPERATURE LIMITATIONS FOR SOLDER JOINT VALVES - PAGE BIV-50.*

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (ASTM B62)
2	BONNET	CAST BRONZE (ASTM B62)
3	STEM	CAST BRONZE (ASTM B62)
4	DISC	G/F PTFE
6	PACKING NUT	FORGED BRASS (B283, C37700)
7	GLAND	BRASS ROD (B16)
8	GLAND PACKING	ARAMID FIBERS W/ GRAPHITE
9	HAND WHEEL ($^1/_4$ – $^1/_2$)	ZINC DIE-CAST (B86)
	($^3/_4$ – $2^1/_2$)	ALUMINUM DIE-CAST (B85)
	(3)	DUCTILE IRON (A536)
10	WHEEL NUT	BRASS ROD (B16)
11	BONNET RING ($^1/_4$ – 2)	CAST BRONZE (B62)
12	DISC HOLDER	CAST BRONZE (B62)
13	DISC NUT ($^1/_4$ – $^3/_4$)	BRASS ROD (B16)
	(1 – 3)	FORGED BRASS (B283, C37700)
14	SPLIT PIN	COPPER
16	NAME PLATE	ALUMINUM
19	GASKET	ARAMID FIBER SHEET
33	BONNET NUT	BRASS ROD (B16)
35	BONNET BOLT	CARBON STEEL

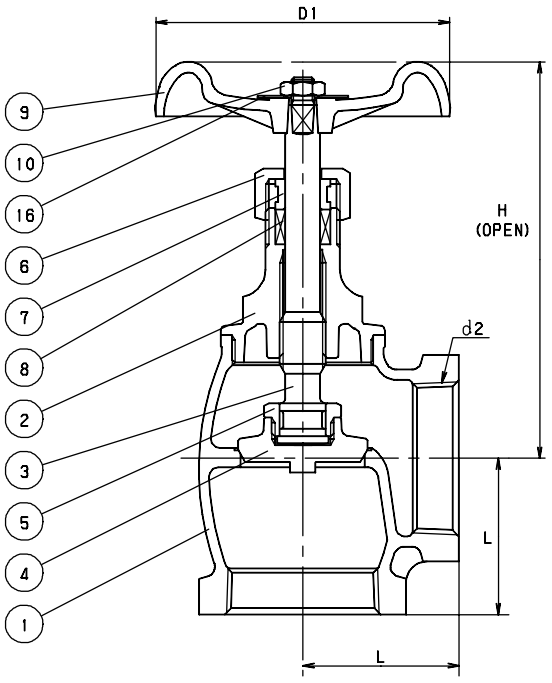
DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	H	D1	L	L1	d1 Max.	d1 Min.	APPROX. NET WT.	CARTON QTY
$^1/_4$	4.29	2.36	2.09	1.66	.381	.377	0.96	48
$^3/_8$	4.29	2.36	2.17	1.64	.506	.502	0.98	48
$^1/_2$	4.57	2.76	2.52	1.83	.631	.627	1.11	36
$^3/_4$	5.35	3.54	3.07	2.24	.881	.877	1.88	24
1	5.87	3.94	3.54	2.59	1.132	1.128	3.13	16
$1^1/_4$	6.81	4.53	4.13	3.02	1.382	1.378	4.42	12
$1^1/_2$	7.17	4.53	4.72	3.53	1.633	1.628	5.75	8
2	8.23	5.31	5.71	4.41	2.133	2.128	10.50	4
$2^1/_2$	9.72	6.10	6.69	5.13	2.633	2.628	17.33	3
3	10.83	7.09	7.87	6.29	3.133	3.128	28.00	1

ANGLE GLOBE
CLASS 150 BRONZE

Screw-In-Bonnet • Inside Screw • Rising Stem
Bronze Disc

CODE # 38 (AKCA)
THREADED



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
DESIGN	KITZ

PRESSURE/TEMPERATURE

150 PSI - SATURATED STEAM TO 366ºF
- FLUID TO 406ºF
300 PSI NON-SHOCK COLD WATER, OIL OR GAS

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (B584, C84400)
2	BONNET ($1/4$ – $2\,1/2$)	FORGED BRASS (B283, C37700)
	(3)	CAST BRONZE (B584, C84400)
3	STEM	BRASS (KITZ "K" METAL)
4	DISC	CAST BRONZE (B584, C84400)
5	LOCK NUT	FORGED BRASS (B124, C37700)
6	PACKING NUT	FORGED BRASS (B283, C37700)
7	GLAND	BRASS ROD (B16)
8	GLAND PACKING	ARAMID FIBERS W/ GRAPHITE
9	HAND WHEEL ($1/4$ – $3/4$)	ZINC DIE-CAST (B86)
	(1 – 3)	ALUMINUM DIE-CAST (B85)
10	WHEEL NUT	CARBON STEEL
16	NAME PLATE	ALUMINUM

DIMENSIONS - WEIGHTS - QUANTITIES

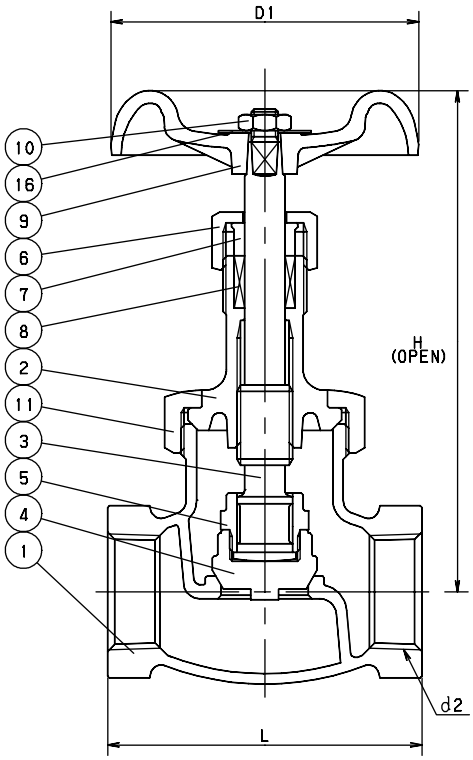
d2 SIZE	H	D1	L	APPROX. NET WT.	CARTON QTY
$1/4$	2.60	1.97	.83	0.44	80
$3/8$	2.68	1.97	.95	0.51	80
$1/2$	3.11	2.36	1.10	0.58	60
$3/4$	3.66	2.76	1.34	0.98	56
1	4.09	3.15	1.57	1.42	36
$1\,1/4$	5.00	3.54	1.85	2.28	25
$1\,1/2$	5.71	3.94	2.05	3.56	16
2	6.85	4.53	2.40	6.13	8
$2\,1/2$	7.83	5.31	2.91	8.50	6
3	8.46	6.10	3.35	11.50	4

NOTE: NOT INTENDED FOR USE IN A POTABLE WATER SYSTEM - COMPLIANT STATEMENT PROP 65, STATE OF CALIFORNIA

GLOBE
CLASS 300 BRONZE

Union Bonnet • Inside Screw • Rising Stem
Integral Seat • Bronze Disc

CODE # 17 (AK300J)
THREADED



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
DESIGN	MSS SP-80, TYPE 1
MILITARY	MSS SP-80, TYPE 1

PRESSURE/TEMPERATURE

300 PSI - SATURATED STEAM TO 421ºF
- FLUID TO 550ºF
600 PSI NON-SHOCK COLD WATER, OIL OR GAS

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (ASTM B61)
2	BONNET	CAST BRONZE (ASTM B61)
3	STEM	CAST BRONZE (ASTM B62)
4	DISC	CAST BRONZE (ASTM B61)
5	LOCK NUT	BRASS ROD (B16)
6	PACKING NUT	FORGED BRASS (B283, C37700)
7	GLAND	BRASS ROD (B16)
8	GLAND PACKING	FLEXIBLE GRAPHITE & ALUM.
9	HAND WHEEL ($1/4$ – $3/8$)	ZINC DIE-CAST (B86)
	($1/2$ – 2)	ALUMINUM DIE-CAST (B85)
10	WHEEL NUT	BRASS ROD (B16)
11	BONNET RING	CAST BRONZE (B61)
16	NAME PLATE	ALUMINUM

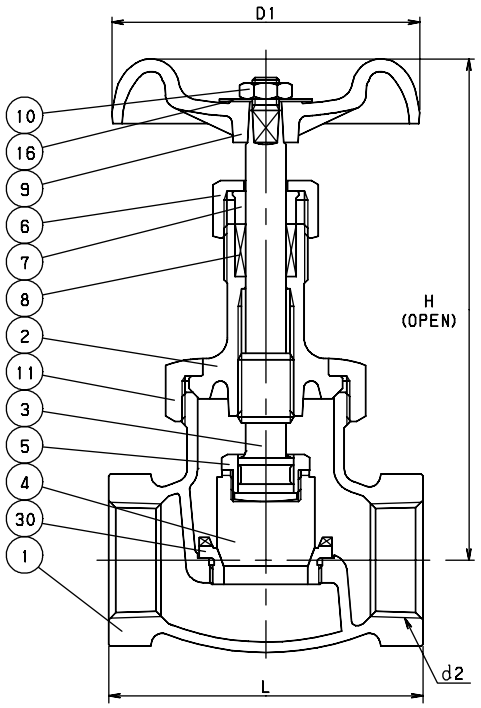
DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	H	D1	L	APPROX. NET WT.	CARTON QTY
$1/4$	4.45	2.36	2.09	1.00	48
$3/8$	4.45	2.36	2.17	1.04	48
$1/2$	4.96	3.15	2.52	1.31	36
$3/4$	5.47	3.54	3.07	1.96	24
1	6.26	3.94	3.54	2.94	16
$1\,1/4$	7.36	4.53	4.13	5.00	12
$1\,1/2$	7.68	5.31	4.72	6.38	8
2	8.82	6.10	5.71	10.25	4

GLOBE
CLASS 300 BRONZE

Union Bonnet • Inside Screw • Rising Stem
Stainless Steel Disc & Seat

CODE # 17S (AK300JS)
THREADED



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
DESIGN	MSS SP-80, TYPE 3
MILITARY	MSS SP-80, TYPE 3

PRESSURE/TEMPERATURE

300 PSI - SATURATED STEAM TO 421ºF
- FLUID TO 550ºF
600 PSI NON-SHOCK COLD WATER, OIL OR GAS

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (ASTM B61)
2	BONNET	CAST BRONZE (ASTM B61)
3	STEM	CAST BRONZE (ASTM B62)
4	DISC	STAINLESS STEEL (A276, TYPE 403) (HB 310 ~ 360)
5	LOCK NUT	BRASS ROD (B16)
6	PACKING NUT	FORGED BRASS (B283, C37700)
7	GLAND	BRASS ROD (B16)
8	GLAND PACKING	FLEXIBLE GRAPHITE & ALUM.
9	HAND WHEEL	ALUMINUM DIE-CAST (B85)
10	WHEEL NUT	BRASS ROD (B16)
11	BONNET RING	CAST BRONZE (B61)
16	NAME PLATE	ALUMINUM
30	BODY SEAT RING	STAINLESS STEEL (A276, TYPE 403) (HB 220 ~ 260)

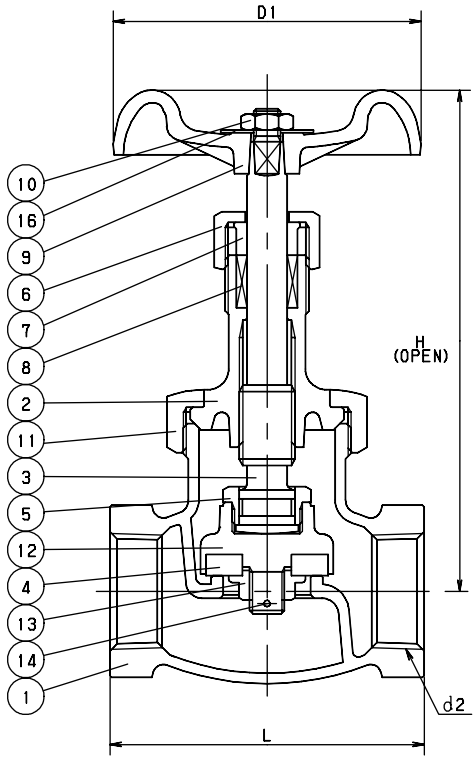
DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	H	D1	L	APPROX. NET WT.	CARTON QTY
1/2	4.92	3.15	2.52	1.31	36
3/4	5.47	3.54	3.07	1.96	24
1	6.14	3.94	3.54	2.94	16
1 1/4	7.36	4.53	4.13	5.00	12
1 1/2	7.56	5.31	4.72	6.38	8
2	8.66	6.10	5.71	10.25	4

GLOBE
CLASS 300 BRONZE

Union Bonnet • Inside Screw • Rising Stem
G/F PTFE Disc

CODE # 18 (AK300D)
THREADED



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
DESIGN	MSS SP-80, TYPE 2
MILITARY	MSS SP-80, TYPE 2

PRESSURE/TEMPERATURE

300 PSI - SATURATED STEAM TO 421ºF
- FLUID TO 421 ºF
600 PSI NON-SHOCK COLD WATER, OIL OR GAS

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (ASTM B61)
2	BONNET	CAST BRONZE (ASTM B61)
3	STEM	CAST BRONZE (ASTM B62)
4	DISC	G/F PTFE
5	LOCK NUT	BRASS ROD (B124 C37700)
6	PACKING NUT	FORGED BRASS (B283, C37700)
7	GLAND	BRASS ROD (B16)
8	GLAND PACKING	FLEXIBLE GRAPHITE & ALUM.
9	HAND WHEEL ($1/4$ – $3/8$)	ZINC DIE-CAST (B86)
	($1/2$ – 2)	ALUMINUM DIE-CAST (B85)
10	WHEEL NUT	BRASS ROD (B16)
11	BONNET RING	CAST BRONZE (B61)
12	DISC HOLDER ($1/4$ – $3/4$)	BRASS ROD (B16)
	(1 – 2)	CAST BRONZE (B61)
13	DISC NUT ($1/4$ – $3/4$)	BRASS ROD (B16)
	(1 – 2)	FORGED BRASS (B283, C37700)
14	SPLIT PIN	COPPER
16	NAME PLATE	ALUMINUM

DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	H	D1	L	APPROX. NET WT.	CARTON QTY
$1/4$	4.45	2.36	2.09	1.00	48
$3/8$	4.45	2.36	2.17	1.04	48
$1/2$	4.96	3.15	2.52	1.31	36
$3/4$	5.47	3.54	3.07	1.96	24
1	6.18	3.94	3.54	2.94	16
$1\,1/4$	7.36	4.53	4.13	5.00	12
$1\,1/2$	7.56	5.31	4.72	6.38	8
2	8.70	6.10	5.71	10.25	4

BRONZE CHECK VALVES
ILLUSTRATED INDEX

NUMERICAL INDEX

125 WSP/200 WOG
Horizontal Swing Check
T-Pattern

AKR Code # 04
Size 3/8″ - 4″
(Threaded)

CR Code # 14
Size 3/8″ - 3″
(Solder)

125 WSP/200 WOG
Horizontal Swing Check
Y-Pattern

AKYR Code # 22
Size 1/2″ - 4″
(Threaded)

CYR Code # 23
Size 1/2″ - 3″
(Solder)

125 WSP/200 WOG
Horizontal Swing Check
Y-Pattern PTFE Disc

AK125YRT Code # 22T
Size 1/2″ - 2″
(Threaded)

C125YRT Code #23T
Size 1/2″ - 2″
(Solder)

150 WSP/300 WOG
Horizontal Swing Check
Y-Pattern

AK150YR Code # 29
Size 3/8″ - 3″
(Threaded)

C150YR Code # 30
Size 3/8″ - 3″
(Solder)

250 WOG
Vertical Lift Check
Silent Type With FPM Disc

AKAF Code # 36
Size 1/2″ - 2″
(Threaded)

CAF Code # 26
Size 1/2″ - 2″
(Solder)

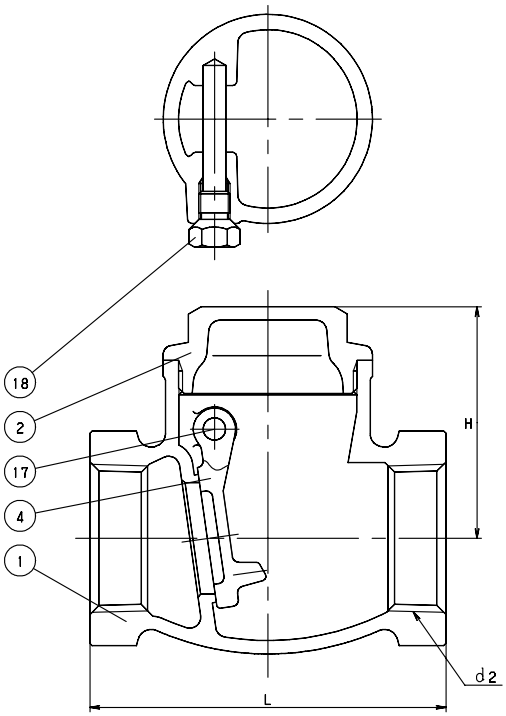
300 WSP/600 WOG
Horizontal Swing Check
Y-Pattern

AK300YR Code # 19
Size 1/2″ - 2″
(Threaded)

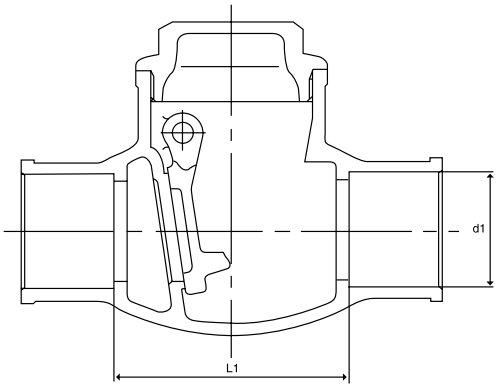
CHECK
CLASS 125 BRONZE

Screw Cap • Integral Seat • Horizontal Swing Type Disc
T-Pattern

CODE # 04 (AKR)
THREADED



CODE # 14 (CR)
SOLDER*



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
SOLDER JOINT ENDS	ANSI B16.18
DESIGN	MSS SP-80, Type 3

PRESSURE/TEMPERATURE

125 PSI - SATURATED STEAM TO 353ºF
- FLUID TO 406ºF
200 PSI NON-SHOCK COLD WATER, OIL OR GAS

**SEE PRESSURE/TEMPERATURE LIMITATIONS FOR SOLDER JOINT VALVES - PAGE BIV-50.*

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (B62)
2	CAP (3/8 – 3)	FORGED BRASS (B283, C37700)
	(4)	CAST BRONZE (B62)
4	DISC (3/8 – 3)	FORGED BRASS (B283, C37700)
	(4)	CAST BRONZE (B62)
17	HINGE PIN	FORGED BRASS (B16)
18	PLUG	BRASS ROD (B16)

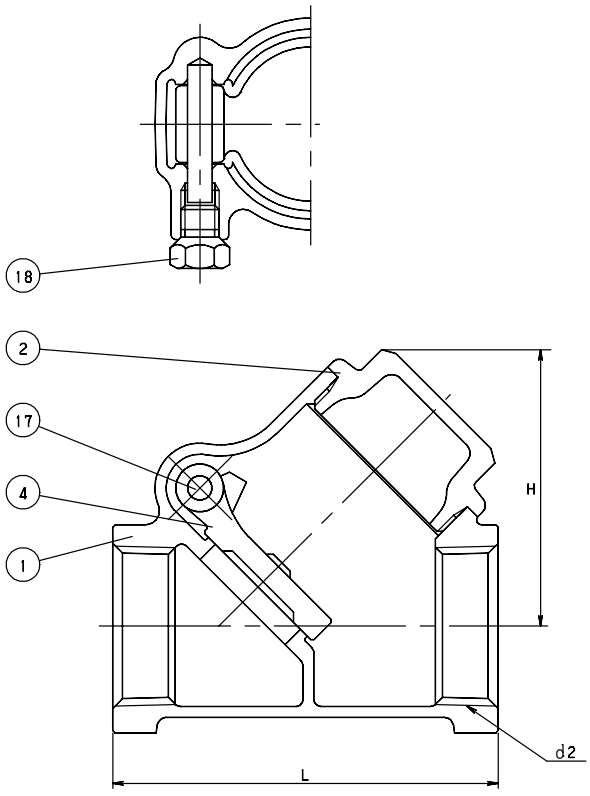
DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	H	L	L1	d1 Max.	d1 Min.	APPROX. NET WT.	CARTON QTY
3/8	1.54	2.09	–	.506	.502	0.53	96
1/2	1.54	2.36	1.64	.631	.627	0.68	96
3/4	1.77	2.76	1.88	.881	.877	1.00	60
1	2.05	3.15	2.31	1.132	1.128	1.54	48
1 1/4	2.44	3.62	2.83	1.382	1.378	2.33	24
1 1/2	2.64	4.02	3.21	1.633	1.628	3.00	18
2	3.11	4.80	4.02	2.133	2.128	4.92	12
2 1/2	3.58	5.91	4.69	2.633	2.628	7.75	8
3	4.02	6.50	5.42	3.133	3.128	10.33	6
4	4.69	7.68	–	–	–	16.00	4

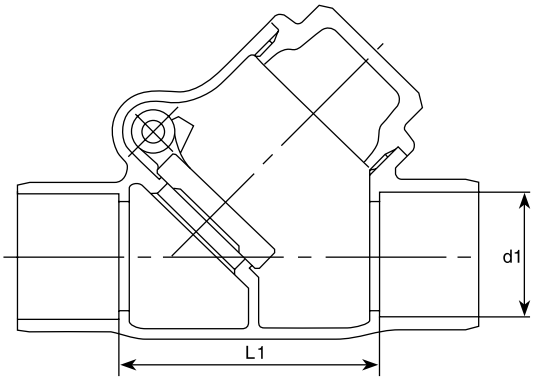
CHECK
CLASS 125 BRONZE

Screw Cap • Integral Seat
Y-Pattern Swing Type Disc

CODE # 22 (AKYR)
THREADED



CODE # 23 (CYR)
SOLDER*



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
SOLDER JOINT ENDS	ANSI B16.18
DESIGN	MSS SP-80, TYPE 3
MILITARY	MSS SP-80, TYPE 3

PRESSURE/TEMPERATURE

125 PSI - SATURATED STEAM TO 353ºF
- FLUID TO 406ºF
200 PSI NON-SHOCK COLD WATER, OIL OR GAS

**SEE PRESSURE/TEMPERATURE LIMITATIONS FOR SOLDER JOINT VALVES - PAGE BIV-50.*

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (ASTM B62)
2	CAP	FORGED BRASS (B283, C37700)
4	DISC	CAST BRONZE (ASTM B62)
17	HINGE PIN	COPPER
18	PLUG	BRASS ROD (B16)

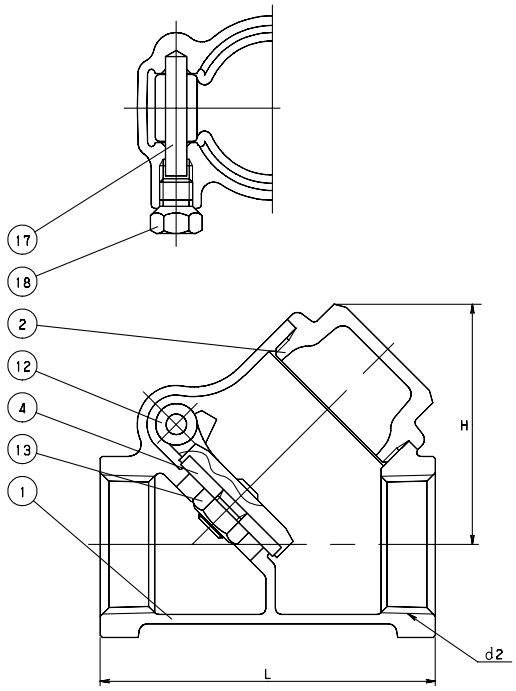
DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	H	L	L1	d1 Max.	d1 Min.	APPROX. NET WT.	CARTON QTY
1/2	1.57	2.20	1.64	.631	.627	0.52	96
3/4	1.93	2.76	1.88	.881	.877	0.88	60
1	2.28	3.15	2.31	1.132	1.128	1.33	48
1 1/4	2.80	3.74	2.83	1.382	1.378	2.04	24
1 1/2	3.15	4.33	3.21	1.633	1.628	2.78	18
2	3.74	5.04	4.02	2.133	2.128	4.58	12
2 1/2	4.49	6.14	4.69	2.633	2.628	7.67	6
3	5.16	7.24	5.42	3.133	3.128	11.00	4

CHECK
CLASS 125 BRONZE

Screw Cap • Integral Seat • PTFE Disc
Y-Pattern Swing Type

CODE # 22T (AKYRT)
THREADED



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
SOLDER JOINT ENDS	ANSI B16.18
DESIGN	MSS SP-80, TYPE 4
MILITARY	MSS SP-80, TYPE 4

PRESSURE/TEMPERATURE

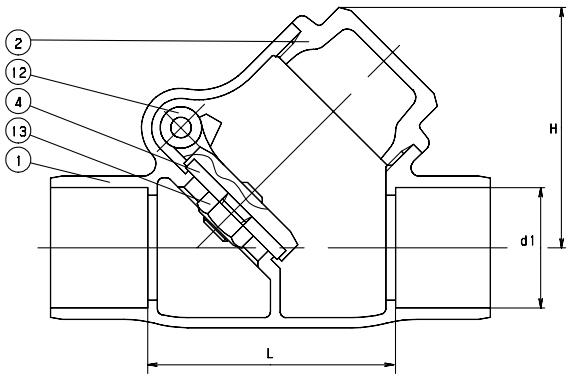
125 PSI - SATURATED STEAM TO 353ºF
- FLUID TO 406º
200 PSI NON-SHOCK COLD WATER, OIL OR GAS

**SEE PRESSURE/TEMPERATURE LIMITATIONS FOR SOLDER JOINT VALVES - PAGE BIV-50.*

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (ASTM B62)
2	CAP	FORGED BRASS (B283, C37700)
4	DISC	PTFE
12	DISC HOLDER	CAST BRONZE (B62)
13	DISC NUT ($1/2$ ~ 1)	BRASS ROD (B16)
	($1\,1/4$ ~ 2)	FORGED BRASS (B283, C37700)
17	HINGE PIN	COPPER
18	PLUG	BRASS ROD (B16)

CODE # 23T (CYRT)
SOLDER*



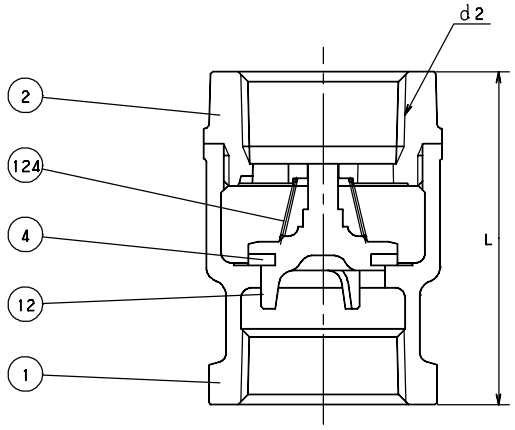
DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	H	L	L1	d1 Max.	d1 Min	APPROX. NET WT.	CARTON QTY
$1/2$	1.57	2.20	1.64	.631	.627	0.53	96
$3/4$	1.93	2.76	1.88	.881	.877	0.89	60
1	2.28	3.15	2.31	1.132	1.128	1.30	48
$1\,1/4$	2.80	3.74	2.83	1.382	1.378	1.87	24
$1\,1/2$	3.15	4.33	3.21	1.633	1.628	2.70	18
2	3.74	5.04	4.02	2.133	2.128	4.14	12

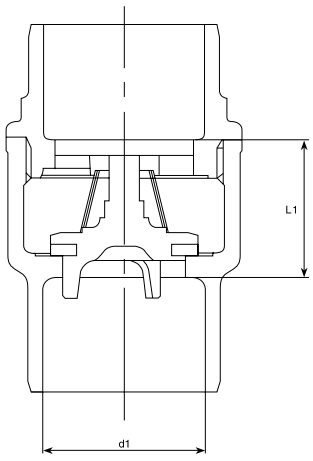
CHECK
250 WOG BRONZE

Silent Type • Spring Loaded Vertical Lift Check
Renewable FPM disc

CODE # 36 (AKAF)
THREADED



CODE # 26 (CAF)
SOLDER*



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
SOLDER JOINT ENDS	ANSI B16.18
DESIGN	KITZ

PRESSURE/TEMPERATURE

175 PSI @ 176ºF - MAX. PRESSURE/TEMP. RATING
250 PSI NON-SHOCK COLD WATER, OIL OR GAS

**SEE PRESSURE/TEMPERATURE LIMITATIONS FOR SOLDER JOINT VALVES - PAGE BIV-50.*

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (B584, C84400)
2	CAP	CAST BRONZE (B584, C84400)
4	DISC	FPM
12	DISC HOLDER	CAST BRONZE (B584, C84400)
124	SPRING	PHOSPHOR BRONZE

DIMENSIONS - WEIGHTS - QUANTITIES

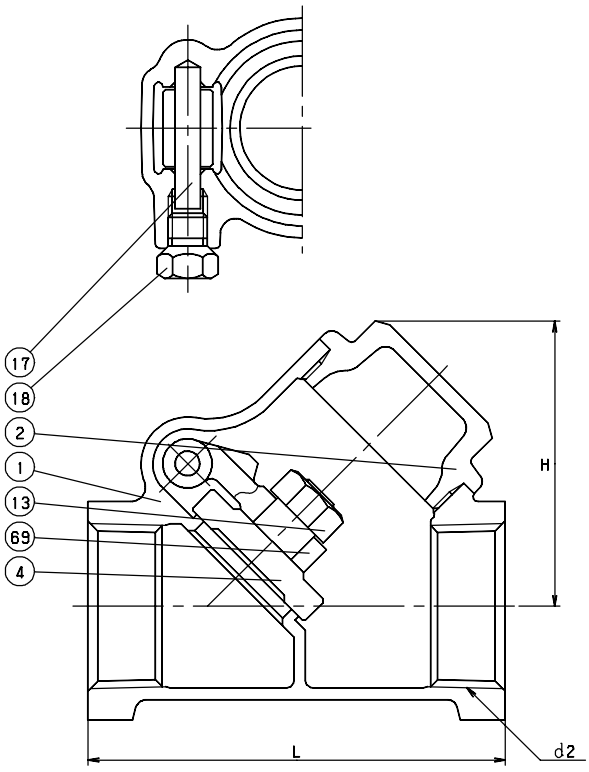
d2 SIZE	L	L1	d1 Max.	d1 Min.	APPROX. NET WT.	CARTON QTY
1/2	2.09	1.40	.631	.627	0.38	160
3/4	2.32	1.50	.881	.877	0.56	96
1	2.64	1.68	1.132	1.128	0.86	72
1 1/4	3.07	1.88	1.382	1.378	1.25	48
1 1/2	3.31	2.15	1.633	1.628	1.78	36
2	3.86	2.52	2.133	2.128	2.88	24

Note: Cracking pressure all sizes 2.85 PSI.

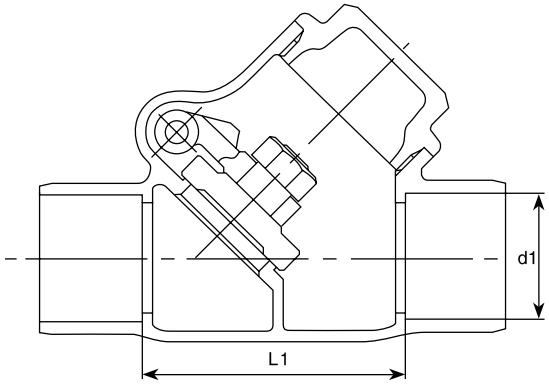
CHECK
CLASS 150 BRONZE

Y-Pattern Swing Check • Integral Seat
Swing Type Disc

CODE # 29 (AK150YR)
THREADED



CODE # 30 (C150YR)
SOLDER*



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
SOLDER JOINT ENDS	ANSI B16.18
DESIGN	MSS SP-80, TYPE 3
MILITARY	MSS SP-80, TYPE 3

PRESSURE/TEMPERATURE

150 PSI - SATURATED STEAM TO 366ºF
- FLUID TO 406ºF
300 PSI NON-SHOCK COLD WATER, OIL OR GAS

**SEE PRESSURE/TEMPERATURE LIMITATIONS FOR SOLDER JOINT VALVES - PAGE BIV-50.*

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (ASTM B62)
2	CAP	FORGED BRASS (B283, C37700)
4	DISC	CAST BRONZE (ASTM B62)
13	DISC NUT	BRASS ROD (B16)
17	HINGE PIN	COPPER
18	PLUG	BRASS ROD (B16)
69	ARM	CAST BRONZE (ASTM B62)

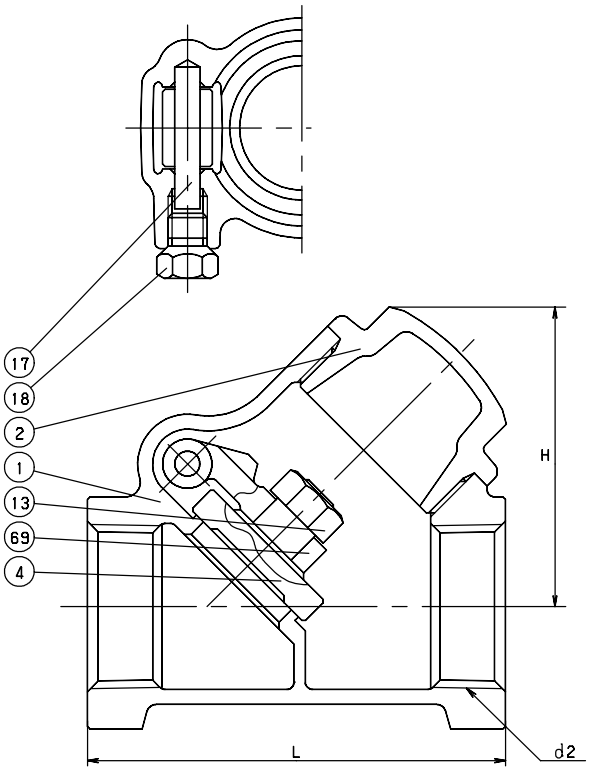
DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	H	L	L1	d1 Max.	d1 Min.	APPROX. NET WT.	CARTON QTY
3/8	1.54	2.13	1.64	.506	.502	0.44	96
1/2	1.54	2.36	1.64	.631	.627	0.54	80
3/4	1.93	2.83	1.89	.881	.877	1.00	48
1	2.28	3.31	2.31	1.132	1.128	1.25	36
1 1/4	2.76	3.90	2.82	1.382	1.378	2.00	24
1 1/2	3.11	4.45	3.21	1.633	1.628	2.81	16
2	3.74	5.16	4.01	2.133	2.128	5.13	8
2 1/2	4.49	6.38	4.70	2.633	2.628	12.50	4
3	5.20	7.32	5.42	3.133	3.128	16.00	3

CHECK
CLASS 300 BRONZE

Y-Pattern Swing Check • Integral Seat
Swing Type Disc

CODE # 19 (AK300YR)
THREADED



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
DESIGN	MSS SP-80, TYPE 3
MILITARY	MSS SP-80, TYPE 3

PRESSURE/TEMPERATURE

300 PSI - SATURATED STEAM TO 421ºF
- FLUID TO 550ºF
600 PSI NON-SHOCK COLD WATER, OIL OR GAS

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (ASTM B61)
2	CAP	CAST BRONZE (ASTM B61)
4	DISC	CAST BRONZE (ASTM B61)
13	DISC NUT	BRASS ROD (B16)
17	HINGE PIN	COPPER
18	PLUG	BRASS ROD (B16)
69	ARM	CAST BRONZE (ASTM B61)

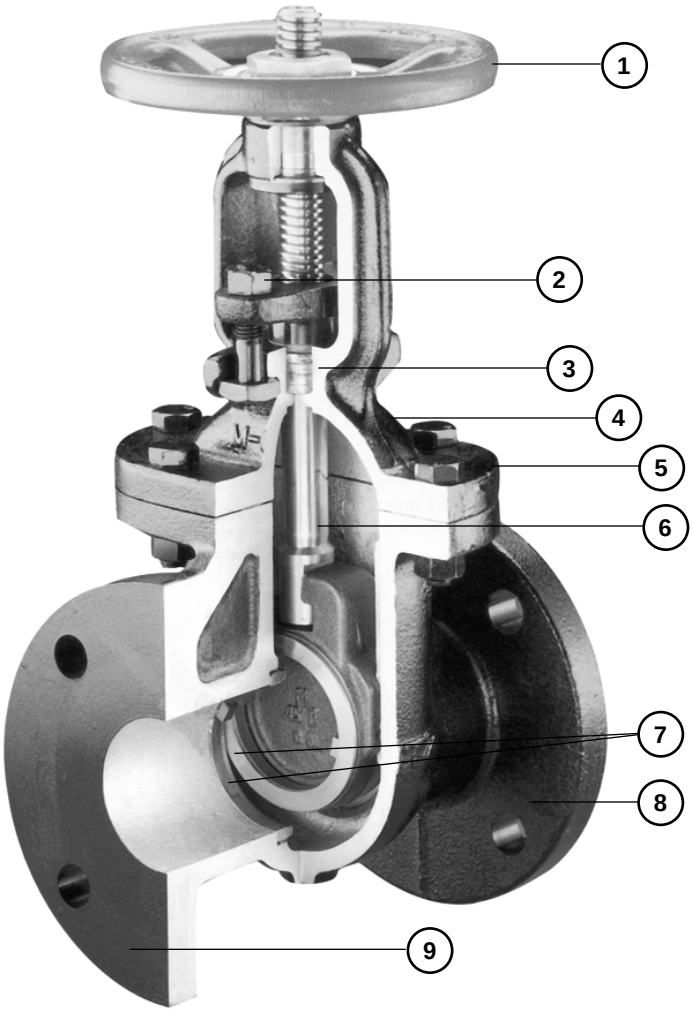
DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	H	L	APPROX. NET WT.	CARTON QTY
1/2	1.65	2.36	0.76	80
3/4	2.01	2.83	1.15	48
1	2.40	3.31	1.78	36
1 1/4	2.91	3.90	3.00	24
1 1/2	3.27	4.45	3.94	16
2	3.86	5.16	6.25	8

CAST IRON VALVES

KITZ Iron Valves are manufactured in an integrated valve works exclusively devoted to all valve manufacturing phases such as casting, machining, and assembling, under rigorous quality control. As the performance of iron valves depends greatly on the quality of the castings, we carefully control the quality of molten iron with the most advanced casting facilities and quality control. KITZ Iron Valves are widely used in building piping systems, water treatment plants, and industrial facilities.

1. Functionally designed handwheel for easy gripping and operation.
2. Gland bolt made of carbon steel resistant to breaking and bending under high tightening stress.
3. Stuffing box of ample depth filled with non asbestos packing to completely eliminate leakage around the stem.
4. Sturdy bonnet, designed to withstand high internal pressure.
5. Bonnet bolt and nut made of carbon steel of high tensile strength.
6. Stem made of brass for I.B.B.M., and of 403 stainless steel for 13Cr mounted.
7. Body and disc seat rings are either made of bronze or 13Cr stainless steel.
8. Flange dimensions conform to ANSI B16.1.
9. Face-to-face dimensions conform to ANSI B16.10.



KITZ®
A PRODUCT OF TECHNOLOGY

CAST IRON VALVES
ILLUSTRATED INDEX

NUMERICAL INDEX

GATE

125 WSP/200 WOG
OS & Y
Bronze Mounted

125 FCL Code # 72
Size 2″ - 14″
(Flanged)

125 WSP/200 WOG
OS & Y
Cr 13 Mounted

125FCLS # 73
Size 2″ - 14″
(Flanged)

125 WSP/200 WOG
Non-Rising Stem
Bronze Mounted

125FCWI Code # 75
Size 2″ - 12″
(Flanged)

GLOBE

125 WSP/200 WOG
OS & Y
Bronze Mounted

125FCJ Code # 76
Size 2″ - 8″
(Flanged)

125 WSP/200 WOG
OS & Y
Cr13 Mounted

125FCJS Code # 77
Size 2″ - 8″
(Flanged)

CHECK

125 WSP/200 WOG
Horizontal Swing Check
Bronze Mounted

125 FCO Code # 78
Size 2″ - 10″
(Flanged)

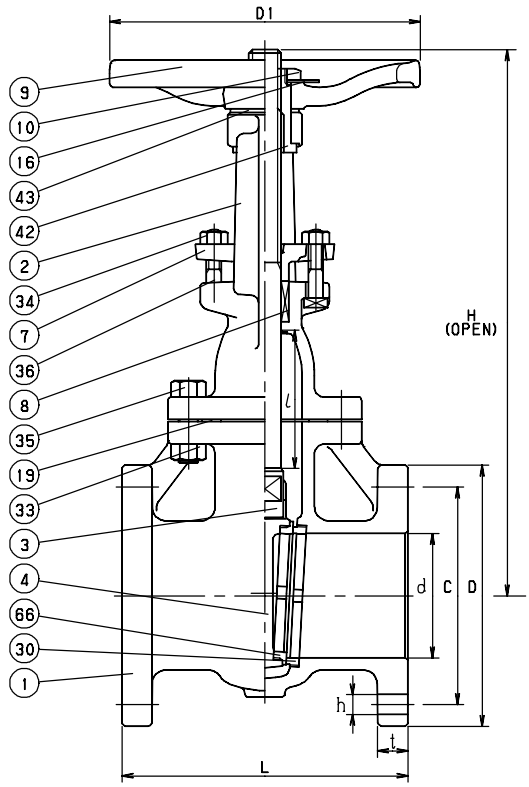
125 WSP/200 WOG
Horizontal Swing Check
Cr 13 Mounted

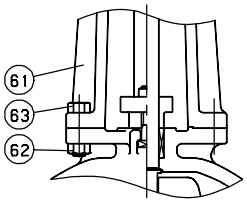
125FCOS Code # 79
Size 2″ - 10″
(Flanged)

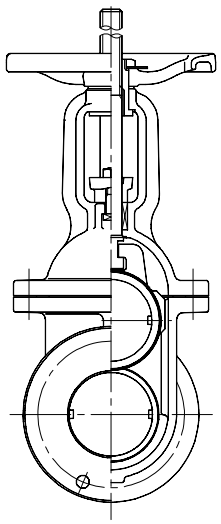
GATE
CLASS 125 CAST IRON

Outside Screw & Yoke • Bolted Bonnet
Bronze Mounted • Solid Wedge Disc

CODE # 72 (125FCL)







STANDARDS	
END TO END	ANSI B16.10, CLASS 125
END CONNECTION	ANSI B16.1, CLASS 125
DESIGN	MSS SP-70, TYPE I
MILITARY	MSS SP-70, TYPE I

PRESSURE/TEMPERATURE

125 PSI - SATURATED STEAM TO 353ºF
- FLUID TO 406ºF
200 PSI NON-SHOCK COLD WATER, OIL OR GAS
150 PSI NON-SHOCK COLD WATER, OIL OR GAS (14" only)

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST IRON (A126 CLASS B)
2	BONNET	CAST IRON (A126 CLASS B)
3	STEM	FORGED BRASS (B124, C37700)
4	DISC	CAST IRON (A126 CLASS B)
7	GLAND	DUCTILE IRON (A395)
8	GLAND PACKING	NON-ASBESTOS PACKING
9	HAND WHEEL (2 – 10)	CAST IRON (A126 CLASS B)
	(12 – 14)	DUCTILE IRON (A536)
10	WHEEL NUT	CARBON STEEL (A307 Gr. B)
16	NAME PLATE	ALUMINUM
19	GASKET	NON ASBESTOS SHEET
30	BODY SEAT RING	CAST BRONZE (B62)
33	BONNET NUT	CARBON STEEL (A307 Gr. B)
34	GLAND NUT	CARBON STEEL (A307 Gr. B)
35	BONNET BOLT	CARBON STEEL (A307 Gr. B)
36	GLAND BOLT	CARBON STEEL (A307 Gr. B)
42	YOKE SLEEVE	CAST BRONZE (B62)
43	WHEEL WASHER	CAST BRONZE (B62)
61	YOKE (10-14)	CAST IRON (A126 CLASS B)
62	YOKE NUT (10-14)	CARBON STEEL (A307 Gr. B)
63	YOKE BOLT (10-14)	CARBON STEEL (A307 Gr. B)
66	DISC SEAT RING	CAST BRONZE (B62)

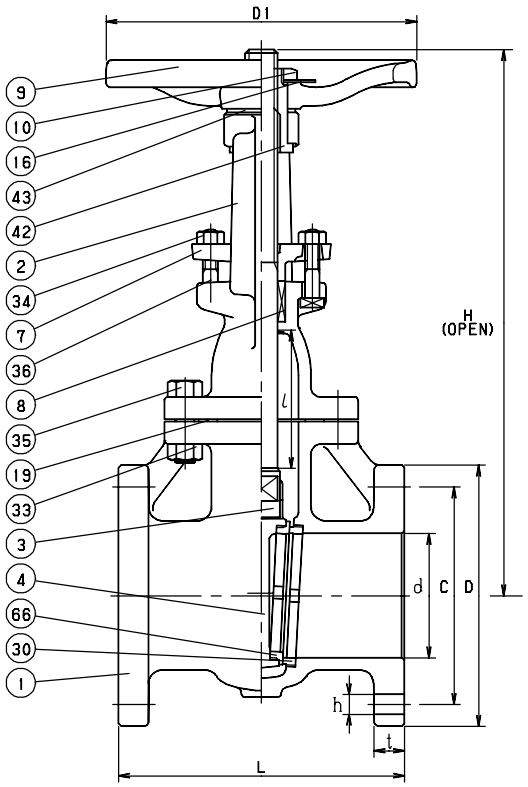
DIMENSIONS - WEIGHTS - QUANTITIES

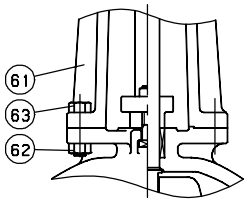
d2 SIZE	d	H	D1	L	l	D	BOLT HOLE C	BOLT HOLE No.	BOLT HOLE h	BOLT SIZE	t	APPROX. NET WT.
2	1.97	12.91	6.30	7.00	2.28	6.00	4.75	4	.75	5/8	.62	33
2½	2.56	15.04	6.69	7.50	2.87	7.00	5.50	4	.75	5/8	.69	43
3	3.15	17.17	6.69	8.00	3.50	7.50	6.00	4	.75	5/8	.75	53
4	3.94	20.94	8.86	9.00	4.29	9.00	7.50	8	.75	5/8	.94	81
5	4.92	24.69	8.86	10.00	5.35	10.00	8.50	8	.88	3/4	.94	116
6	5.91	28.58	9.84	10.50	6.34	11.00	9.50	8	.88	3/4	1.00	157
8	7.87	36.18	11.02	11.50	8.39	13.50	11.75	8	.88	3/4	1.12	244
10	9.84	44.65	13.78	13.00	10.43	16.00	14.25	12	1.00	7/8	1.19	394
12	11.81	53.66	17.72	14.00	12.36	19.00	17.00	12	1.00	7/8	1.25	541
14	13.39	61.40	19.69	15.00	14.17	21.00	18.75	12	1.12	1	1.38	755

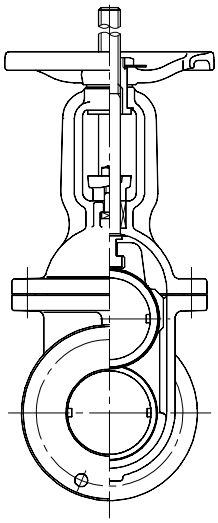
GATE
CLASS 125 CAST IRON

Outside Screw & Yoke • Bolted Bonnet
13 Cr Mounted • Solid Wedge Disc

CODE # 73 (125FCLS)







STANDARDS	
END TO END	ANSI B16.10, CLASS 125
END CONNECTION	ANSI B16.1, CLASS 125
DESIGN	MSS SP-70, TYPE I
MILITARY	MSS SP-70, TYPE I

PRESSURE/TEMPERATURE

125 PSI - SATURATED STEAM TO 353ºF
- FLUID TO 406ºF
200 PSI NON-SHOCK COLD WATER, OIL OR GAS
150 PSI NON-SHOCK COLD WATER, OIL OR GAS (14" only)

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST IRON (A126 CASS. B)
2	BONNET	CAST IRON (A126 CLASS B)
3	STEM	STAINLESS STEEL (A276, TYPE 403)
4	DISC	CAST IRON (A126 CLASS B)
7	GLAND	DUCTILE IRON (A395)
8	GLAND PACKING	NON-ASBESTOS PACKING
9	HAND WHEEL (2 – 10)	CAST IRON (A126 CLASS B)
	(12 & 14)	DUCTILE IRON (A536)
10	WHEEL NUT	CARBON STEEL (A307 Gr. B)
16	NAME PLATE	ALUMINUM
19	GASKET	NON ASBESTOS SHEET
30	BODY SEAT RING	STAINLESS STEEL (A182 Gr. F6a)
33	BONNET NUT	CARBON STEEL (A307 Gr. B)
34	GLAND NUT	CARBON STEEL (A307 Gr. B)
35	BONNET BOLT	CARBON STEEL (A307 Gr. B)
36	GLAND BOLT	CARBON STEEL (A307 Gr. B)
42	YOKE SLEEVE	CAST BRONZE (B62)
43	WHEEL WASHER	CAST BRONZE (B62)
61	YOKE (10 – 14)	CAST IRON (A126 CLASS B)
62	YOKE NUT (10 – 14)	CARBON STEEL (A307 Gr. B)
63	YOKE BOLT (10 – 14)	CARBON STEEL (A307 Gr. B)
66	DISC SEAT RING	STAINLESS STEEL (B182 Gr. F6a)

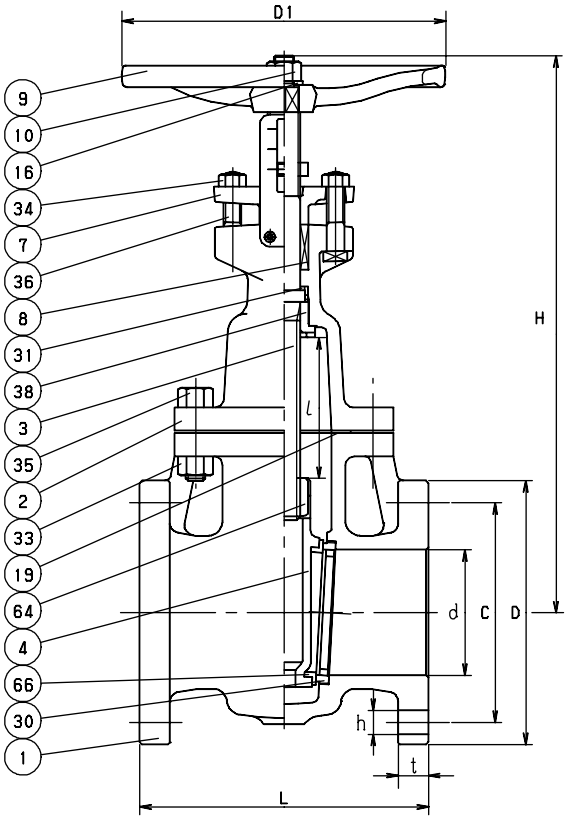
DIMENSIONS - WEIGHTS - QUANTITIES

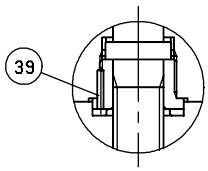
d2 SIZE	d	H	D1	L	l	D	BOLT HOLE C	No.	h	BOLT SIZE	t	APPROX. NET WT.
2	1.97	12.91	6.30	7.00	2.28	6.00	4.75	4	.75	5/8	.62	33
2½	2.56	15.04	6.69	7.50	2.87	7.00	5.50	4	.75	5/8	.69	43
3	3.15	17.17	6.69	8.00	3.50	7.50	6.00	4	.75	5/8	.75	53
4	3.94	20.94	8.86	9.00	4.29	9.00	7.50	8	.75	5/8	.94	81
5	4.92	24.69	8.86	10.00	5.35	10.00	8.50	8	.88	3/4	.94	116
6	5.91	28.58	9.84	10.50	6.34	11.00	9.50	8	.88	3/4	1.00	157
8	7.87	36.18	11.02	11.50	8.39	13.50	11.75	8	.88	3/4	1.12	244
10	9.84	44.65	13.78	13.00	10.43	16.00	14.25	12	1.00	7/8	1.19	394
12	11.81	53.66	17.72	14.00	12.36	19.00	17.00	12	1.00	7/8	1.25	541
14	13.39	61.40	19.69	15.00	14.17	21.00	18.75	12	1.12	1	1.38	755

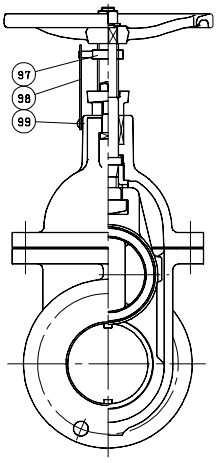
GATE
CLASS 125 CAST IRON

Non-Rising Stem • Bolted Bonnet with Open/Close Indicator
Bronze Mounted • Solid Wedge Disc

CODE # 75 (125FCWI)







STANDARDS	
END TO END	ANSI B16.10, CLASS 125
END CONNECTION	ANSI B16.1, CLASS 125
DESIGN	MSS SP-70, TYPE I
MILITARY	MSS SP-70, TYPE I

PRESSURE/TEMPERATURE

125 PSI - SATURATED STEAM TO 353ºF
- FLUID TO 406ºF
200 PSI NON-SHOCK COLD WATER, OIL OR GAS

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST IRON (A126 CLASS B)
2	BONNET	CAST IRON (A126 CLASS B)
3	STEM	FORGED BRASS (B124, C37700)
4	DISC	CAST IRON (A126 CLASS B)
7	GLAND	DUCTILE IRON (A395)
8	GLAND PACKING	NON-ASBESTOS PACKING
9	HAND WHEEL	CAST IRON (A126 CLASS B)
10	WHEEL NUT	CARBON STEEL (A307 Gr. B)
16	NAME PLATE	ALUMINUM
19	GASKET	NON ASBESTOS SHEET
30	BODY SEAT RING	CAST BRONZE (B62)
33	BONNET NUT	CARBON STEEL (A307 Gr. B)
34	GLAND NUT	CARBON STEEL (A307 Gr. B)
35	BONNET BOLT	CARBON STEEL (A307 Gr. B)
36	GLAND BOLT	CARBON STEEL (A307 Gr. B)
38	BONNET BUSH	CAST BRONZE (B62)
39	SET PIN (8 – 12)	CARBON STEEL
64	STEM NUT	CAST BRONZE (B62)
66	DISC SEAT RING	CAST BRONZE (B62)
97	INDICATOR	ZINC DIE-CAST (B85)
98	PLATE	ALUMINUM
99	SET BOLT	CARBON STEEL (A307 Gr. B)

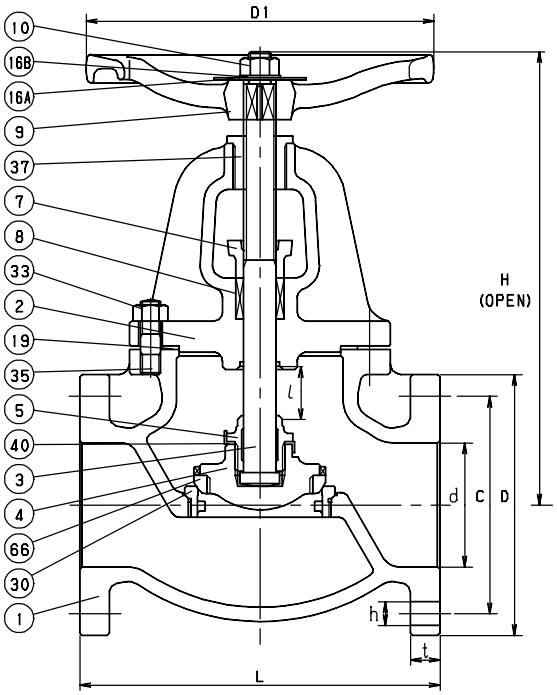
DIMENSIONS - WEIGHTS - QUANTITIES

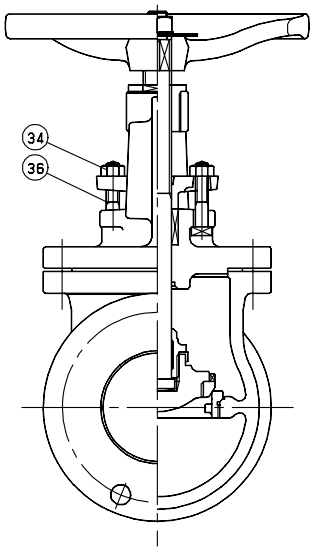
d2 SIZE	d	H	D1	L	l	D	BOLT HOLE C	BOLT HOLE No.	BOLT HOLE h	BOLT SIZE	t	APPROX. NET WT.
2	1.97	9.84	5.51	7.00	2.36	6.00	4.75	4	.75	5/8	.62	39
2 1/2	2.56	11.22	6.30	7.50	2.95	7.00	5.50	4	.75	5/8	.69	50
3	3.15	13.78	6.30	8.00	3.58	7.50	6.00	4	.75	5/8	.75	59
4	3.94	15.75	7.09	9.00	4.41	9.00	7.50	8	.75	5/8	.94	90
5	4.92	18.31	8.86	10.00	5.39	10.00	8.50	8	.88	3/4	.94	128
6	5.91	20.28	8.86	10.50	6.30	11.00	9.50	8	.88	3/4	1.00	174
8	7.87	24.80	11.81	11.50	8.39	13.50	11.75	8	.88	3/4	1.12	260
10	9.84	29.92	13.78	13.00	10.39	16.00	14.25	12	1.00	7/8	1.19	416
12	11.81	34.25	13.78	14.00	12.60	19.00	17.00	12	1.00	7/8	1.25	581

GLOBE
CLASS 125 CAST IRON

Outside Screw & Yoke • Bolted Bonnet
Bronze Mounted • Beveled Wedge Disc

CODE # 76 (125FCJ)





STANDARDS	
END TO END	ANSI B16.10, CLASS 125
END CONNECTION	ANSI B16.1, CLASS 125
DESIGN	MSS SP-85, TYPE I
MILITARY	MSS SP-85, TYPE I

PRESSURE/TEMPERATURE

125 PSI - SATURATED STEAM TO 353ºF
- FLUID TO 406ºF
200 PSI NON-SHOCK COLD WATER, OIL OR GAS

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST IRON (A126 CLASS B)
2	BONNET	CAST IRON (A126 CLASS B)
3	STEM	FORGED BRASS (B124, C37700)
4	DISC (2)	CAST BRONZE (B62)
	(2½ – 8)	CAST IRON (A126 CLASS B)
5	LOCK NUT	CAST BRONZE (B62)
7	GLAND	DUCTILE IRON (A395)
8	GLAND PACKING	NON-ASBESTOS PACKING
9	HAND WHEEL (2 – 6)	CAST IRON (A126 CLASS B)
	(8)	DUCTILE IRON (A536)
10	WHEEL NUT	CARBON STEEL (A307 Gr. B)
16A	NAME PLATE	ALUMINUM
19	GASKET	NON ASBESTOS SHEET
30	BODY SEAT RING	CAST BRONZE (B62)
33	BONNET NUT	CARBON STEEL (A307 Gr. B)
34	GLAND NUT	CARBON STEEL (A307 Gr. B)
35	BONNET BOLT	CARBON STEEL (A307 Gr. B)
36	GLAND BOLT	CARBON STEEL (A307 Gr. B)
37	YOKE BUSH	CAST BRONZE (B62)
40	LOCK PLATE	STAINLESS STEEL (A167, TYPE 304)
66	DISC SEAT RING	CAST BRONZE (B62)

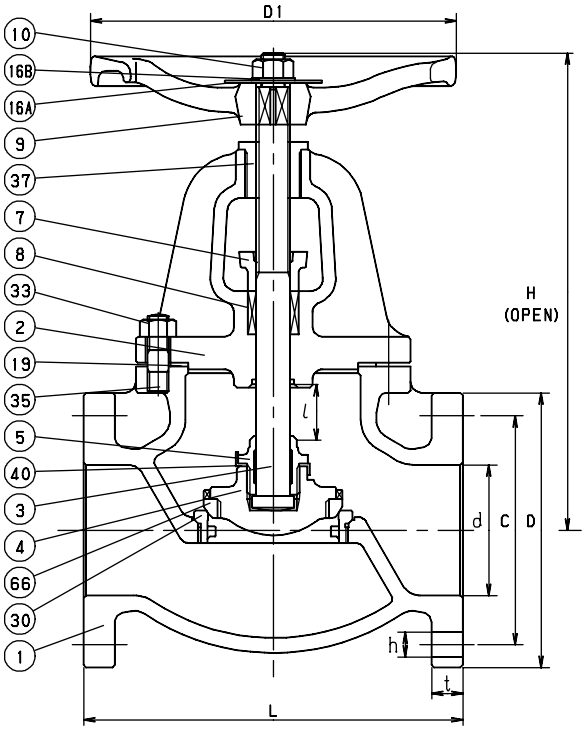
DIMENSIONS - WEIGHTS - QUANTITIES

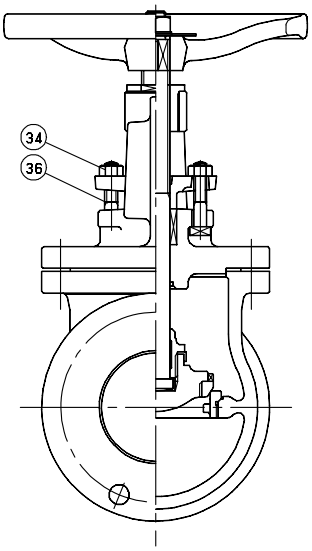
d2 SIZE	d	H	D1	L	l	D	BOLT HOLE C	BOLT HOLE No.	BOLT HOLE h	BOLT SIZE	t	APPROX. NET WT.
2	1.97	10.91	7.09	8.00	.79	6.00	4.75	4	.75	5/8	.62	30
2½	2.56	12.09	7.09	8.50	1.02	7.00	5.50	4	.75	5/8	.69	46
3	3.15	13.90	8.86	9.50	1.18	7.50	6.00	4	.75	5/8	.75	66
4	3.94	15.91	11.02	11.50	1.50	9.00	7.50	8	.75	5/8	.94	92
5	4.92	17.87	11.81	13.00	1.81	10.00	8.50	8	.88	3/4	.94	141
6	5.91	20.98	13.78	14.00	2.28	11.00	9.50	8	.88	3/4	1.00	197
8	7.87	25.28	17.72	19.50	2.91	13.50	11.75	8	.88	3/4	1.12	323

GLOBE
CLASS 125 CAST IRON

Outside Screw & Yoke • Bolted Bonnet
13 Cr Mounted • Beveled Wedge Disc

CODE # 77 (125FCJS)





STANDARDS	
END TO END	ANSI B16.10, CLASS 125
END CONNECTION	ANSI B16.1, CLASS 125
DESIGN	MSS SP-85, TYPE I
MILITARY	MSS SP-85, TYPE I

PRESSURE/TEMPERATURE

125 PSI - SATURATED STEAM TO 353ºF
- FLUID TO 406ºF
200 PSI NON-SHOCK COLD WATER, OIL OR GAS

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST IRON (A126 CLASS B)
2	BONNET	CAST IRON (A126 CLASS B)
3	STEM	STAINLESS STEEL (A276, TYPE 403)
4	DISC (2)	STAINLESS STEEL (A182 Gr. F6a)
	(2½ – 8)	CAST IRON (A126 CLASS B)
5	LOCK NUT (2 – 4)	STAINLESS STEEL (A743 Gr. CA-15)
	(5 – 8)	STAINLESS STEEL (A276, TYPE 403)
7	GLAND	DUCTILE IRON (A395)
8	GLAND PACKING	NON-ASBESTOS PACKING
9	HAND WHEEL (2 – 6)	CAST IRON (A126 CLASS B)
	(8)	DUCTILE IRON (A536)
10	WHEEL NUT	CARBON STEEL (A307 Gr. B)
16A	NAME PLATE	ALUMINUM
16B	WASHER	CARBON STEEL (A36)
19	GASKET	NON ASBESTOS SHEET
30	BODY SEAT RING	STAINLESS STEEL (A182 Gr. F6a)
33	BONNET NUT	CARBON STEEL (A307 Gr. B)
34	GLAND NUT	CARBON STEEL (A307 Gr. B)
35	BONNET BOLT	CARBON STEEL (A307 Gr. B)
36	GLAND BOLT	CARBON STEEL (A307 Gr. B)
37	YOKE BUSH	CAST BRONZE (B62)
40	LOCK PLATE	STAINLESS STEEL (A167, TYPE 403)
66	DISC SEAT RING	STAINLESS STEEL (A182 Gr. F6a)

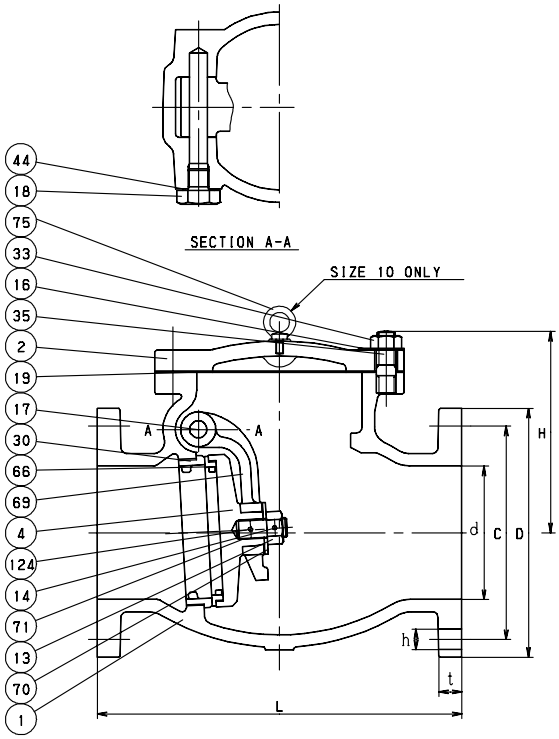
DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	d	H	D1	L	l	D	BOLT HOLE C	No.	h	BOLT SIZE	t	APPROX. NET WT.
2	1.97	10.91	7.09	8.00	.79	6.00	4.75	4	.75	5/8	.62	30
2½	2.56	12.09	7.09	8.50	1.02	7.00	5.50	4	.75	5/8	.69	46
3	3.15	13.90	8.86	9.50	1.18	7.50	6.00	4	.75	5/8	.75	66
4	3.94	15.91	11.02	11.50	1.50	9.00	7.50	8	.75	5/8	.94	92
5	4.92	17.87	11.81	13.00	1.81	10.00	8.50	8	.88	3/4	.94	141
6	5.91	20.98	13.78	14.00	2.28	11.00	9.50	8	.88	3/4	1.00	197
8	7.87	25.28	17.72	19.50	2.91	13.50	11.75	8	.88	3/4	1.12	323

SWING CHECK
CLASS 125 CAST IRON

Bolted Cover • Bronze Mounted
Swing Type Disc

CODE # 78 (125FCO)



STANDARDS	
END TO END	ANSI B16.10, CLASS 125
END CONNECTION	ANSI B16.1, CLASS 125
DESIGN	MSS SP-71, TYPE I
MILITARY	MSS SP-71, TYPE I

PRESSURE/TEMPERATURE

125 PSI - SATURATED STEAM TO 353ºF
- FLUID TO 406ºF
200 PSI NON-SHOCK COLD WATER, OIL OR GAS

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST IRON (A126 CLASS B)
2	COVER	CAST IRON (A126 CLASS B)
4	DISC (2 – 4)	CAST BRONZE (B62)
	(5 – 10)	CAST IRON (A126 CLASS B)
13	DISC NUT	CARBON STEEL (A307 Gr. B)
14	SPLIT PIN	STAINLESS STEEL (A580 Type 304)
16	NAME PLATE	ALUMINUM
17	HINGE PIN	FORGED BRASS (B124, C37700)
18	PLUG	CARBON STEEL (A36)
19	GASKET	NON ASBESTOS SHEET
30	BODY SEAT RING	CAST BRONZE (B62)
33	COVER NUT	CARBON STEEL (A307 Gr. B)
35	COVER BOLT	CARBON STEEL (A307 Gr. B)
44	GASKET	NON ASBESTOS SHEET
66	DISC SEAT RING	CAST BRONZE (B62)
69	ARM	DUCTILE IRON (A536 Gr.60-40-18)
70	WASHER	CARBON STEEL (A36)
71	DISC BOLT	CARBON STEEL (A307 Gr. B)
124	SPRING PIN	CARBON STEEL (A686 Type W1)

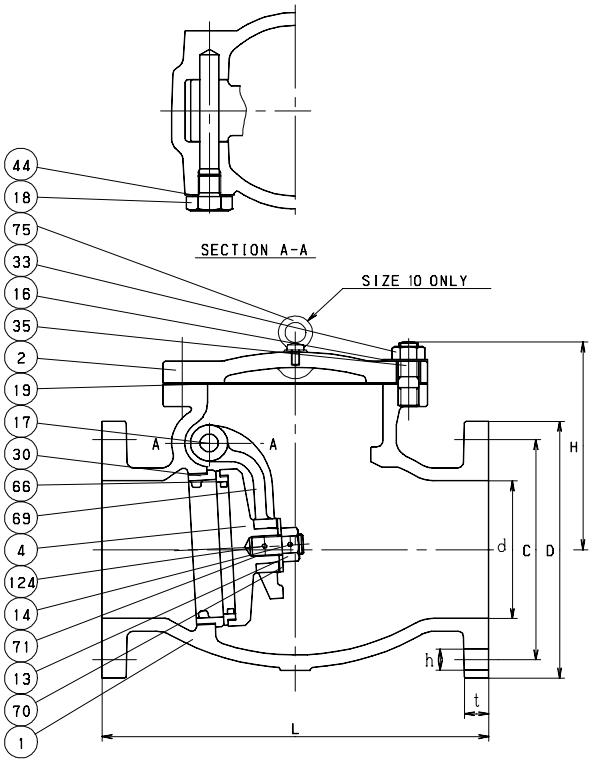
DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	d	H	L	D	BOLT HOLE C	BOLT HOLE No.	BOLT HOLE h	BOLT SIZE	t	APPROX. NET WT.
2	1.97	4.37	8.00	6.00	4.75	4	.75	5/8	.62	24
2 1/2	2.56	4.76	8.50	7.00	5.50	4	.75	5/8	.69	38
3	3.15	5.71	9.50	7.50	6.00	4	.75	5/8	.75	47
4	3.94	6.50	11.50	9.00	7.50	8	.75	5/8	.94	66
5	4.92	8.15	13.00	10.00	8.50	8	.88	3/4	.94	111
6	5.91	8.86	14.00	11.00	9.50	8	.88	3/4	1.00	153
8	7.87	10.55	19.50	13.50	11.75	8	.88	3/4	1.12	251
10	9.84	12.40	24.50	16.00	14.25	12	1.00	7/8	1.19	396

SWING CHECK
CLASS 125 CAST IRON

Bolted Cover • 13 Cr. Mounted
Swing Type Disc

CODE # 79 (125FCOS)



STANDARDS	
END TO END	ANSI B16.10, CLASS 125
END CONNECTION	ANSI B16.1, CLASS 125
DESIGN	MSS SP-71, TYPE I
MILITARY	MSS SP-71, TYPE I

PRESSURE/TEMPERATURE

125 PSI - SATURATED STEAM TO 353ºF
- FLUID TO 406ºF
200 PSI NON-SHOCK COLD WATER, OIL OR GAS

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST IRON (A126 CLASS B)
2	COVER	CAST IRON (A126 CLASS B)
4	DISC (2 – 4)	STAINLESS STEEL (A182 Gr. F6a)
	(5 – 10)	CAST IRON (A126 CLASS B)
13	DISC NUT	CARBON STEEL (A307 Gr. B)
14	SPLIT PIN	STAINLESS STEEL (A580 Type 304
16	NAME PLATE	ALUMINUM
17	HINGE PIN	STAINLESS STEEL (A276, TYPE 403)
18	PLUG	CARBON STEEL (A36)
19	GASKET	NON ASBESTOS SHEET
30	BODY SEAT RING	STAINLESS STEEL (A182 Gr. F6a)
33	COVER NUT	CARBON STEEL (A307 Gr. B)
35	COVER BOLT	CARBON STEEL (A307 Gr. B)
44	GASKET	NON ASBESTOS SHEET
66	DISC SEAT RING	STAINLESS STEEL (A182 Gr. F6a)
69	ARM	DUCTILE IRON (A536 Gr. 60-40-18)
70	WASHER	CARBON STEEL (A36)
71	DISC BOLT	CARBON STEEL (A307 Gr. B)
124	SPRING PIN	CARBON STEEL (A686 Type W1)

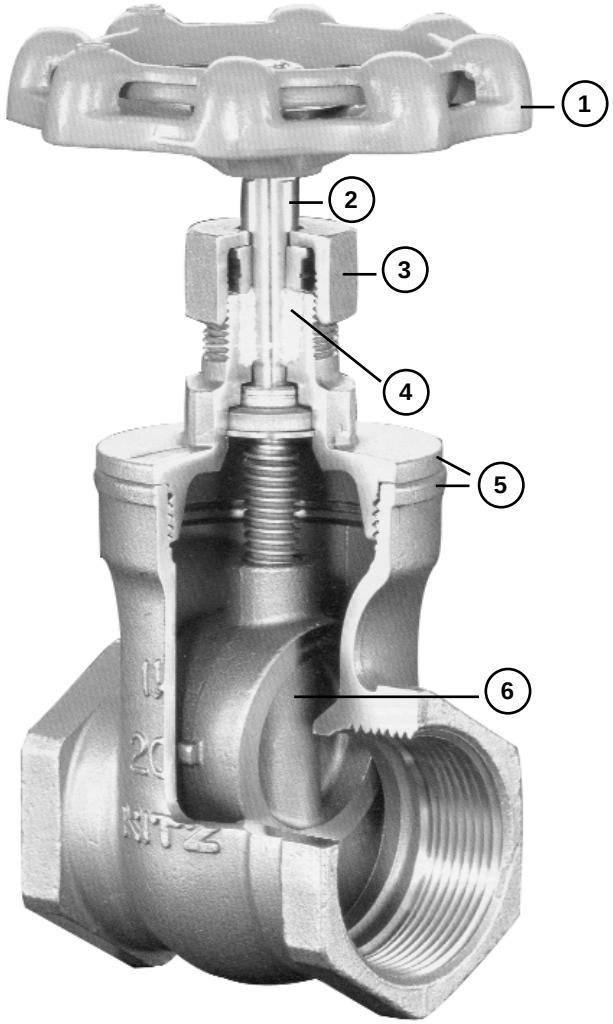
DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	d	H	L	D	BOLT HOLE C	No.	h	BOLT SIZE	t	APPROX. NET WT.
2	1.97	4.37	8.00	6.00	4.75	4	.75	5/8	.62	24
$2^1/_2$	2.56	4.76	8.50	7.00	5.50	4	.75	5/8	.69	38
3	3.15	5.71	9.50	7.50	6.00	4	.75	5/8	.75	47
4	3.94	6.50	11.50	9.00	7.50	8	.75	5/8	.94	66
5	4.92	8.15	13.00	10.00	8.50	8	.88	3/4	.94	111
6	5.91	8.86	14.00	11.00	9.50	8	.88	3/4	1.00	153
8	7.87	10.55	19.50	13.50	11.75	8	.88	3/4	1.12	251
10	9.84	12.40	24.50	16.00	14.25	12	1.00	7/8	1.19	396

STAINLESS STEEL VALVES

KITZ Stainless Steel Valves are designed for use within the chemical industry. Extensive factory testing is carried out at each step of the integrated production process — beginning with raw materials selection and the unique KITZ casting process and ending with finishing of the service-ready product. The special attention given to production, testing and quality control make KITZ Stainless Steel Valves a reliable choice for the process industries.

1. "Sure Grip" Handwheel - for easy operation.
2. Non-rising Stem is made of Type 316 stainless steel and has a construction that makes it particularly suitable for installation where head space is limited.
3. Hex Head Packing Nut can be easily loosened or tightened and packing replacement is a simple task.
4. Deep Stuffing Box allows the use of generous packing to assure positive stem sealing.
5. Body and Bonnet are made of ASTM CF8M by investment casting. The design and workmanship not only economize on maintenance, they assure a long service life in a wide range of industrial applications.
6. The disc and integral seat are tapered to extreme precision to provide leak-tight sealing. The guide channels are beveled at the top of the body for correct alignment and easy assembly.



KITZ®
A PRODUCT OF TECHNOLOGY

STAINLESS STEEL (316/CF8M) VALVES
ILLUSTRATED INDEX

NUMERICAL INDEX

GATE

STAINLESS STEEL GATE
Non-Rising Stem
200 WOG

AKUELM Code # 31
Size 1/2″ - 4″
(Threaded)

GLOBE

STAINLESS STEEL GLOBE
Non-Rising Stem
200 WOG

AKUJM Code # 33
Size 3/8″ - 3″
(Threaded)

CHECK

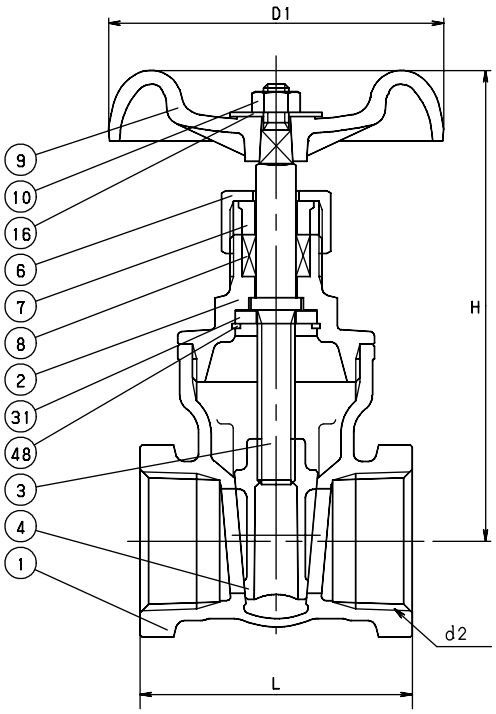
STAINLESS STEEL CHECK
Swing Type Disc
200 WOG

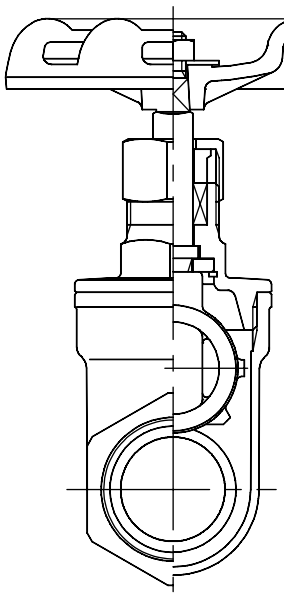
AKUOM Code # 34
Size 1/2″ - 3″
(Threaded)

GATE
200 WOG STAINLESS STEEL

Screw-In-Bonnet • Inside Screw • Non-Rising Stem
Stainless Steel Disc

CODE # 31 (AKUELM) 1/2 - 2
(AKUEM) 2 1/2 - 4
THREADED





STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
WALL THICKNESS	KITZ
DESIGN	KITZ

PRESSURE/TEMPERATURE

200 PSIG @ 250ºF – STATIC FLUID
150 PSIG @ 250°F – PULSATING FLUID / GAS
120 PSIG @ 350°F – SATURATED STEAM

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	STAINLESS STEEL (A351 Gr. CF8M)
2	BONNET	STAINLESS STEEL (A351 Gr. CF8M)
3	STEM	STAINLESS STEEL (A276, TYPE 316)
4	DISC	STAINLESS STEEL (A351 Gr. CF8M)
6	PACKING NUT	STAINLESS STEEL (A351 Gr. CF8M)
7	GLAND	STAINLESS STEEL (A276, TYPE 316)
8	GLAND PACKING	ARAMID FIBERS WITH GRAPHITE
9	HAND WHEEL (1/2 – 3/4)	ZINC DIE-CAST (B86)
	(1 – 2)	ALUMINUM DIE-CAST (B85)
	(2 1/2)	CAST IRON (A126 CLASS B)
	(3 – 4)	DUCTILE IRON (A536)
10	WHEEL NUT	CARBON STEEL (A307 Gr. B)
16	NAME PLATE	ALUMINUM
31	STEM WASHER	STAINLESS STEEL (A276, TYPE 316)
48	SNAP RING	STAINLESS STEEL

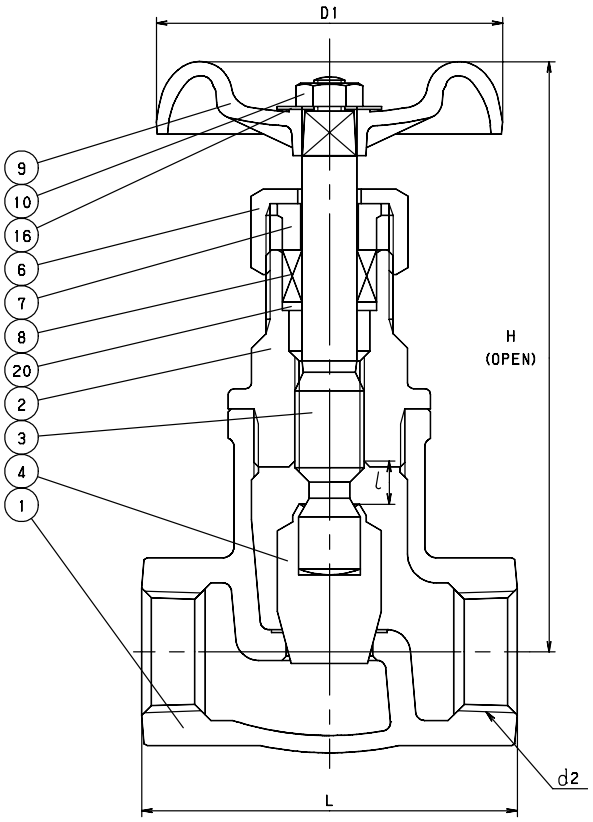
DIMENSIONS - WEIGHTS - QUANTITIES

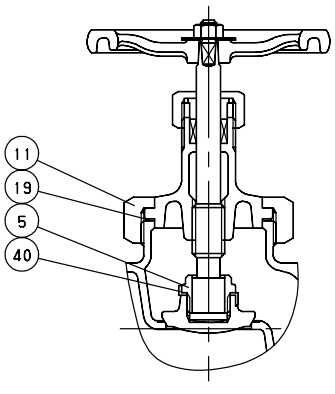
d2 SIZE	H	D1	L	APPROX. NET WT.	CARTON QTY
1/2	3.78	2.76	2.13	1.35	48
3/4	3.98	2.76	2.28	1.69	32
1	4.41	3.15	2.56	2.21	24
1 1/4	4.84	3.15	2.91	3.19	16
1 1/2	5.91	3.94	3.07	6.17	12
2	6.57	3.94	3.43	8.13	8
2 1/2	9.76	5.31	4.53	16.25	4
3	10.83	6.10	5.12	20.00	3
4	12.40	7.87	6.10	32.00	1

GLOBE
200 WOG STAINLESS STEEL

Screw-In-Bonnet • Inside Screw • Rising Stem
Stainless Steel Disc

CODE # 33 (AKUJM)
THREADED





2 1/2 and Larger

STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
WALL THICKNESS	KITZ
DESIGN	KITZ

PRESSURE/TEMPERATURE

200 PSIG @ 250ºF – STATIC FLUID
150 PSIG @ 250°F – PULSATING FLUID / GAS
120 PSIG @ 350°F – SATURATED STEAM

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	STAINLESS STEEL (A351 Gr. CF8M)
2	BONNET	STAINLESS STEEL (A351 Gr. CF8M)
3	STEM	STAINLESS STEEL (A276, TYPE 316)
4	DISC	STAINLESS STEEL (A276, TYPE 316)
5	LOCK NUT	STAINLESS STEEL (A276, TYPE 316)
6	PACKING NUT	STAINLESS STEEL (A276, TYPE 304) or (A351 Gr. CF8)
7	GLAND	STAINLESS STEEL (A276, TYPE 316)
8	GLAND PACKING	ARAMID FIBERS WITH GRAPHITE
9	HAND WHEEL (3/8 – 3/4)	ZINC DIE-CAST (B86)
	(1 – 3)	ALUMINUM DIE-CAST (B85)
10	WHEEL NUT	CARBON STEEL (A307 Gr. B)
11	BONNET RING	STAINLESS STEEL (A351 Gr. CF8M)
16	NAME PLATE	ALUMINUM
19	GASKET	ARAMID FIBER SHEET
20	PACKING WASHER	STAINLESS STEEL (A276, TYPE 316)
40	LOCK PLATE	STAINLESS STEEL

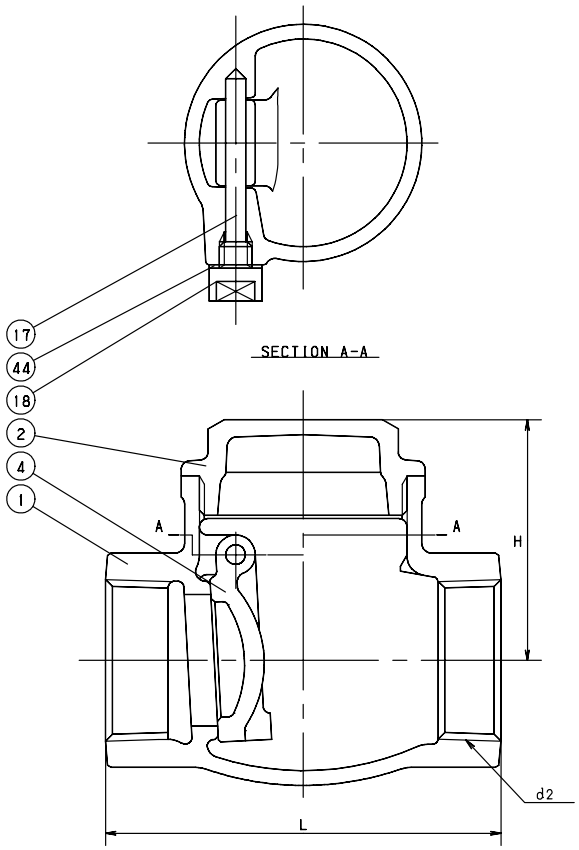
DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	H	D1	L	APPROX. NET WT.	CARTON QTY
3/8	4.29	2.36	2.17	1.31	48
1/2	4.37	2.36	2.56	1.44	48
3/4	4.41	2.76	3.15	2.06	30
1	5.59	3.54	3.54	3.04	24
1 1/4	5.91	3.54	4.13	4.33	15
1 1/2	6.73	3.94	4.72	6.25	12
2	7.44	4.53	5.51	9.83	6
2 1/4	9.96	7.09	7.09	14.67	3
3	11.02	8.86	7.87	21.50	2

SWING CHECK
200 WOG STAINLESS STEEL

Integral Seat • Threaded Cap
Swing Type Disc

CODE # 34 (AKUOM)



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
WALL THICKNESS	KITZ
DESIGN	KITZ

PRESSURE/TEMPERATURE

200 PSIG @ 250ºF – STATIC FLUID
150 PSIG @ 250°F – PULSATING FLUID / GAS
120 PSIG @ 350°F – SATURATED STEAM

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	STAINLESS STEEL (A351 Gr. CF8M)
2	CAP	STAINLESS STEEL (A351 Gr. CF8M) or (A182 Gr. F316)
4	DISC	STAINLESS STEEL (A351 Gr. CF8M)
17	HINGE PIN	STAINLESS STEEL (A276, TYPE 316)
18	PLUG	STAINLESS STEEL (A276, TYPE 316)
44	GASKET	ARAMID FIBER SHEET GASKET

DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	H	L	APPROX. NET WT.	CARTON QTY
1/2	1.77	2.56	0.94	72
3/4	2.17	3.15	1.44	48
1	2.40	3.54	2.06	32
1 1/4	2.80	4.13	3.05	20
1 1/2	2.83	4.72	4.31	16
2	3.19	5.51	6.33	9
2 1/4	3.66	7.09	13.25	4
3	4.09	7.87	15.50	2

BRONZE & CAST IRON STRAINERS
ILLUSTRATED INDEX

NUMERICAL INDEX

BRONZE STRAINERS
Y-Pattern
304 S.S. Punched Screen
150 WSP/300 WOG

AKYU Code # 15
Size 1/4″ - 2″
(Threaded)

CYU Code # 16
Size 1/2″ - 2″
(Solder)

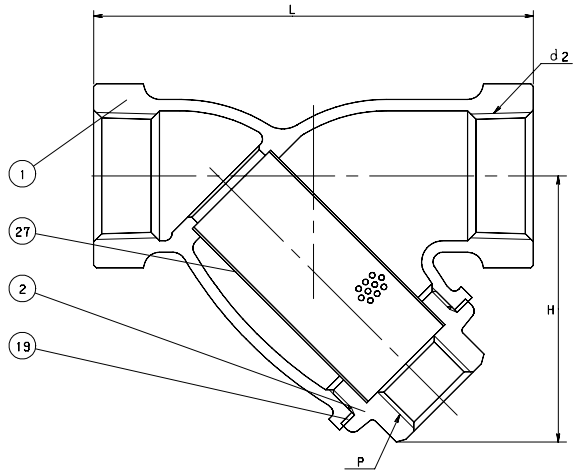
IRON STRAINERS
Y-Pattern
304 S.S. Punched Screen
125 WSP/200 WOG

125FCYU Code # 80
Size 2″ - 12″
(Flanged)

STRAINER
CLASS 150 BRONZE

Y-Pattern • Threaded Cap and Ends
Stainless Steel (304) Punched Screen

CODE # 15 (AKYU)
THREADED



STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B1.20.1
SOLDER JOINT ENDS	ANSI B16.18
WALL THICKNESS	KITZ
DESIGN	KITZ

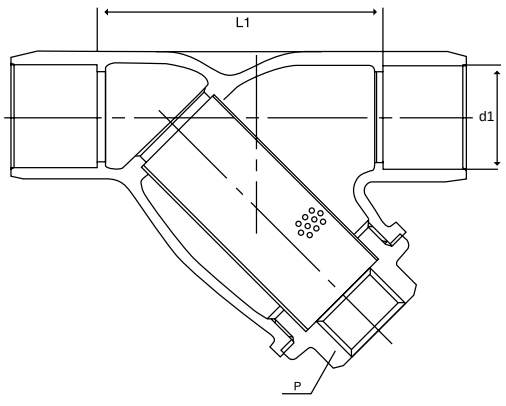
PRESSURE/TEMPERATURE
150 PSI - SATURATED STEAM TO 366ºF
- FLUID TO 406ºF
300 PSI NON-SHOCK COLD WATER, OIL OR GAS

**SEE PRESSURE/TEMPERATURE LIMITATIONS FOR SOLDER JOINT VALVES - PAGE BIV-50.*

MATERIAL LIST		
NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST BRONZE (B584, C84400)
2	*CAP	FORGED BRASS (B283, C37700)
19	GASKET	NON-ASBESTOS SHEET
27	SCREEN	STAINLESS STEEL (A167, TYPE 304)

* Cap supplied without plug. Blind cap optionally available.

CODE # 16 (CYU)
SOLDER*



DIMENSIONS - WEIGHTS - QUANTITIES								
d2 SIZE	H	L	P	L1	d1 Max.	d1 Min.	APPROX. NET WT.	CARTON QTY
1/4	1.73	2.76	1/4	–	–	–	0.56	96
3/8	1.73	2.76	1/4	–	.506	.502	0.56	96
1/2	1.93	3.15	1/4	2.15	.631	.627	0.76	80
3/4	2.28	3.94	1/4	2.63	.881	.877	1.29	48
1	2.80	4.53	1/2	3.10	1.132	1.128	1.86	36
1 1/4	3.19	5.31	1/2	3.77	1.382	1.378	2.92	24
1 1/2	3.82	6.30	3/4	4.51	1.633	1.628	4.31	16
2	4.72	7.68	1	5.59	2.133	2.128	7.25	8
2 1/2	5.83	9.06	1 1/4	–	2.633	2.628	13.00	1
3	7.09	9.45	1 1/2	–	3.133	3.128	19.00	1

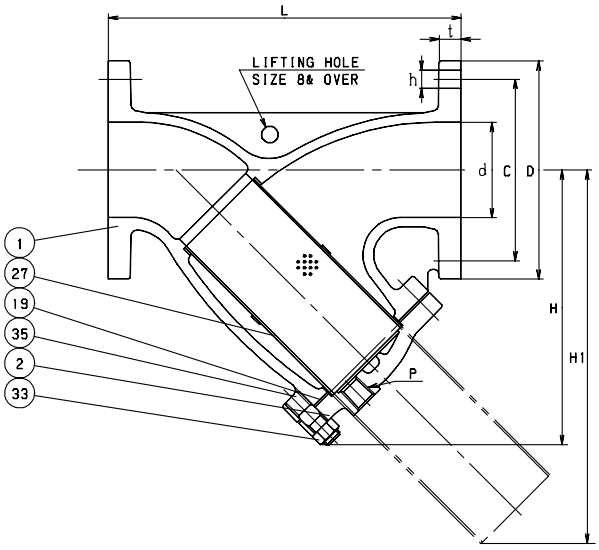
NOTE: The standard punched screen is approximately 12 mesh screen. Other mesh screens are available (see spare parts in price sheet).

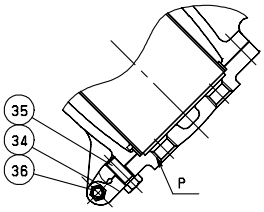
NOTE: NOT INTENDED FOR USE IN A POTABLE WATER SYSTEM - COMPLIANT STATEMENT PROP 65, STATE OF CALIFORNIA

STRAINER
CLASS 125 IRON

Y-Pattern • Bolted Cover • Blow-Out-Plug
Stainless Steel (304) Screen

CODE # 80 (125FCYU)





8 & Larger

STANDARDS	
END TO END	KITZ
THREADED ENDS	ANSI B16.1, CLASS 125
WALL THICKNESS	KITZ
DESIGN	KITZ

PRESSURE/TEMPERATURE

125 PSI - SATURATED STEAM TO 353ºF
- FLUID TO 406ºF
200 PSI NON-SHOCK COLD WATER, OIL OR GAS

MATERIAL LIST

NO.	NAME OF PART	SPECIFICATION
1	BODY	CAST IRON (A126 CLASS B)
2	COVER	CAST IRON (A126 CLASS B)
19	GASKET	NON-ASBESTOS SHEET
27	SCREEN	STAINLESS STEEL (A167, TYPE 304)
33	COVER NUT (2 - 6) (1S)	CARBON STEEL (A307 GR. B)
34	COVER HINGE NUT	STAINLESS STEEL (A194 GR. B8)
35	COVER BOLT (2 - 6) (1S)	CARBON STEEL (A307 GR. B)
	(8 - 12)	STAINLESS STEEL (A193 GR. B8)
36	COVER HINGE BOLT	STAINLESS STEEL (A193 GR. B8)

1S = 1 Set

DIMENSIONS - WEIGHTS - QUANTITIES

d2 SIZE	d	L	H	H1	D	P	BOLT HOLE C	BOLT HOLE No.	BOLT HOLE h	BOLT SIZE	t	APPROX. NET WT.
2	1.97	9.84	6.61	8.58	6.00	1/2	4.75	4	.75	5/8	.62	30
2 1/2	2.56	11.22	8.35	11.22	7.00	1/2	5.50	4	.75	5/8	.68	50
3	3.15	12.40	9.53	13.39	7.50	1/2	6.00	4	.75	5/8	.75	77
4	3.94	14.57	11.18	15.39	9.00	1/2	7.50	8	.75	5/8	.94	76
5	4.92	16.54	12.80	17.72	10.00	1/2	8.50	8	.87	3/4	.94	126
6	5.91	19.29	14.57	19.76	11.00	3/4	9.50	8	.87	3/4	1.00	171
8	7.87	22.44	17.32	23.35	13.50	3/4	11.75	8	.87	3/4	1.12	242
10	9.84	26.77	20.28	27.48	16.00	1	14.25	12	.98	7/8	1.18	411
12	11.81	31.50	23.62	32.40	19.00	1	17.00	12	.98	7/8	1.25	561

ENGINEERING DATA INDEX

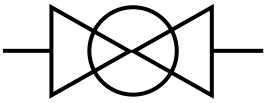
VALVE TERMS AND PIPING SYMBOLS

ABBREVIATIONS USED IN THE VALVE
AND FITTING INDUSTRY

AFS	American Foundrymen's Society
AGA	American Gas Association
ANSI	American National Std. Institute
ASME	American Society of Mechanical Engineers
ASTM	American Society of Testing & Materials
AWWA	American Water Works Association
BB	Bolted Bonnet
BFV	Butterfly Valve
BHN	Brinell Hardness Number
BTU	British Thermal Unit
BW	Butt Weld
BWE	Butt Weld Ends
C	Celcius Degrees
CxC	Copper to Copper
CDA	Copper Development Association
CI	Cast Iron
Cr 13	13% Chromium Stainless Steel
CSA	Canadian Standards Association
DD	Double Disc
DI	Ductile Iron
F	Fahrenheit Degrees
FE	Flanged End
FF	Flat Faced
FM	Factory Mutual Laboratories
FOB	Free On Board
GPM	Gallons Per Minute
Hg	Hydragyrum (Mercury)
HB	Brinell Hardness
HRC	Rockwell C Hardness
IBBM	Iron Body Bronze Mounted
ID	Inside Diameter
IPS	Iron Pipe Size
ISNRS	Inside Screw Non-Rising Stem
ISO	International Standards Organization
ISRS	Inside Screw Rising Stem
MSS	Manufacturers Standardization Society
MTR	Material Test Report
NPT	National Pipe Taper (Pipe Thread)
NSR	Non-Rising Stem
OD	Outside Diameter
OS&Y	Outside Screw and Yoke
PN	Pressure Nominal (Metric)
PSI	Pounds Per Square Inch
PSIA	Pounds Per Square Inch Absolute
PSIG	Pounds Per Square Inch Gage
P–T	Pressure – Temperature
Rc	Rockwell "C"
RF	Raised Face
RPM	Revolutions Per Minute
RS	Rising Stem
SB	Screw-In-Bonnet
SE	Screwed Ends
SJ	Solder Joint
SS	Stainless Steel
STD	Standard
SWP	Steam Working Pressure
TRIM	Certain Valve Parts – Stems, Seats, Etc.
UB	Union Bonnet
UL	Underwriter's Laboratories
WOG	Working Pressure: Water, Oil and Gas
WSP	Working Steam Pressure
WWP	Water Working Pressure

VALVE SELECTION GUIDE

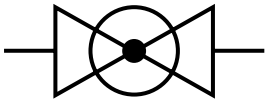
GATE



Recommended for:

- Full Open/Closed Service
- Minimal Line Pressure Drop
- Infrequent Operation

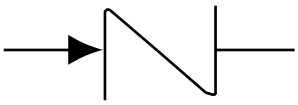
GLOBE



Recommended for:

- Throttling of flow
- Frequent Operation
- Service with some line resistance to flow
- Angle Valves offer less resistance to flow than valve and elbow.

CHECK



Recommended for:

- Control of direction of flow and quick automatic reaction to flow change.
- Use in conjunction with gate valve.
  - They should not be used in air compressor service or on a reciprocating pump as these services will cause chattering and valve vibration damage.

REFERENCED SPECIFICATIONS AND DESIGN STANDARDS

KITZ valves are manufactured under strict quality control throughout all stages of production, beginning with inspection of chemical composition and mechanical properties of materials. Extra care is given to inspection and testing at all machine shops and assembly plants, utilizing up-to-date precision equipment. All KITZ valves are subject to strict hydrostatic pressure testing of the body and seat sealing as well as other exhaustive testing to assure long life service and Quality KITZ Performance.

KITZ valves meet or exceed the following Standards Practice of the Manufacturers Standardization Society of Valve and Fitting Industry:

STANDARD PRACTICE – 80
MSS SP-80
BRONZE GATE, GLOBE, ANGLE AND CHECK VALVES

STANDARD PRACTICE – 70
MSS SP-70
CAST IRON GATE VALVES, FLANGED AND THREADED ENDS

STANDARD PRACTICE – 85
MSS SP-85
CAST IRON GLOBE AND ANGLE VALVES, FLANGED AND THREADED ENDS

STANDARD PRACTICE – 71
MSS SP-71
GRAY IRON SWING CHECK VALVES, FLANGED AND THREADED ENDS

NOTE: ***Federal Specifications WW-V-54 and WW-V-58 were cancelled April 1983 and replaced with the above Standard Practices.***

OTHER RELEVANT STANDARDS:

AMERICAN NATIONAL STANDARDS INSTITUTE (A.N.S.I.)
STANDARD B1.1
The Unified Screw Thread Standard cover manufacturing tolerances of screw threads.

STANDARD B1.20.1
This standard covers pipe screw threads.

STANDARD B2.4
This standard covers hose coupling screw threads.

STANDARD 16.18
This standard covers solder cup tolerances.

STANDARD B16.1
This standard covers Class 125/250 Cast Iron pipe flanges and flanged fittings.

STANDARD B16.10
This standard covers face-to-face and end-to-end dimension of ferrous valves.

DEZINCIFICATION

Deterioration of water quality and changes in piping materials have amplified valve dezincification problems.

What is Dezincification?

The copper alloy used in bronze valves contains zinc, tin, and lead with copper as a base. When bronze valves are subjected to unfavorable operating conditions the zinc component contained in the copper alloy separates from the copper base, and the metal corrodes. This is called dezincification.

In a bronze valve, the body, bonnet, and other bronze cast parts hardly corrode at all due to the small percentage of zinc in the alloy. Brass parts with a 40% zinc content (stems in particular) are subject to extreme dezincification.

Why Does Dezincification Occur?

The following factors cause dezincification. These factors are generally believed to occur together, rather than independently.

1) Aqueous solutions high in acidity.
2) Warm water with a high free carbonic acid content and high electrical conductivity.
3) High electrical conductivity with large quantities of chlorides and sulfides present.
4) With copper or vinyl chloride pipes.
5) With a large quantity of dissolved oxygen.

What is K-Metal?

To combat dezincification KITZ developed "K-Metal," used in the stems of all KITZ brass valves and any other valves not using Bronze Alloy B62. The charts below compare K-Metal with B124, B16, B62, and a competitor's dezincification material. Compared are tensile strength, corrosion quantity, hardness, and dezincification. The comparisons clearly show K-Metal's overall superiority and explain why KITZ valves provide superior performance and give longer life.
Figures 1 through 4 compare "K-Metal" with other materials. Material manufactured by a competitor is a dezincification-resistant material.

Fig. 1 Comparison of Tensile Strength

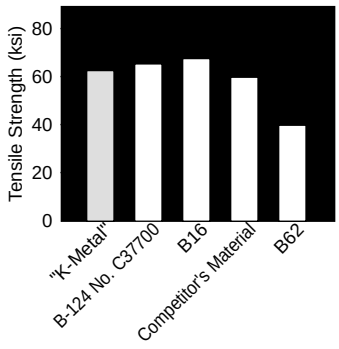


Fig. 2 Hardness Comparison

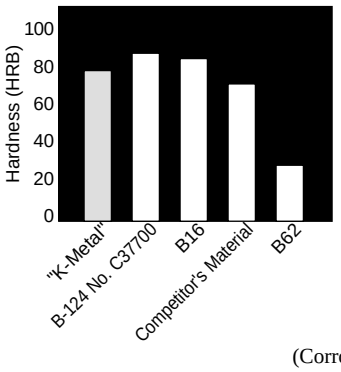


Fig. 3 Corrosion Quantity Comparison
(1mg/cm²=0.014 mlb/in²)

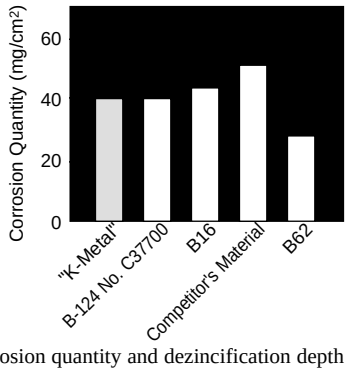
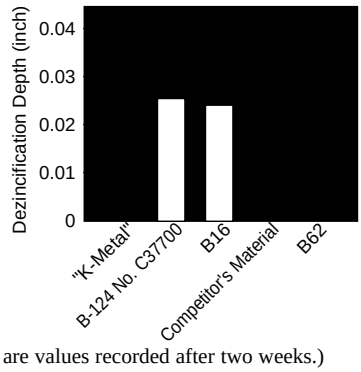


Fig. 4 Comparison of Dezincification Depth



(Corrosion quantity and dezincification depth are values recorded after two weeks.)

NOTE: The dezincification test was based on the Australian Standard AS C316.

Conclusion

By using dezincification-resistant copper-based alloy "K-Metal", KITZ maintains strict quality control. You can depend on KITZ bronze and brass valves to be free of corrosion problems.

TEMPERATURE LIMITATION OF MATERIALS

PRESSURE/TEMPERATURE RATINGS FOR BRONZE PRESSURE RATED VALVES*

PRESS. CLASS	PRESSURE (1) –– PSI			
	ASTM B-62		ASTM B-61	
END CONN. TEMP. °F	125 (2) THD.	150 THD. MATERIAL	300 THD.	300(3) THD.
-20 TO 150	200	300	600	1000
200	185	270	560	920
250	170	240	525	830
300	155	210	490	740
350	140	180	450	650
400	—	—	410	560
406	125	150	—	—
450	120(4)	145(4)	375	480
500	—	—	340	390
550	—	—	300	300

(1) Refer to pressure/temperature of copper piping systems below.
(2) PTFE Disc materials are limited to 450°F.
(3) Alternative rating for valves sizes 1/8 – 2 having a union ring body/bonnet joint.
(4) ASME BPVC, Section 1 limits the rated temperature of indicated materials to 406°F.
* Extracted from MSS-SP-80.

PRESSURE/TEMPERATURE RATINGS FOR GRAY IRON VALVES*

TEMPERATURE °F 1) 2)	PRESSURE –– PSI			
	CLASS 125 200 WOG		CLASS 250 500 WOG	
	2"–12"	14"–24"	2"–12"	14"–24"
-20 TO 150	200	150	500	300
200	190	135	460	280
225	180	130	440	270
250	175	125	415	260
275	170	120	395	250
300	165	110	375	240
325	155	105	355	230
350	150	100	335	220
375	145	–	315	210
400	140	–	290	200
425	130	–	270	–
450 (1)	125	–	250	–
500	–	–	–	–
550	–	–	–	–
600	–	–	–	–
650	–	–	–	–

The temperature shown for the corresponding rating shall be the metal temperature of the pressure retaining parts. It shall be assumed that the metal temperature will be the temperature of the contained fluid. Use of a pressure rating at a metal temperature other than that of the contained fluid shall be the responsibility of the user.
(1) Maximum temperature for bronze trim.
* Extracted from MSS-SP-70

RATED WORKING PRESSURES OF JOINTS MADE OF COPPER WATER TUBE AND SOLDER JOINT VALVES AND FITTINGS, PSI (BAR)

SOLDER ALLOY'S USED IN JOINTS	SERVICE TEMPERATURE		Copper Water Tube K,L and M - Nominal Size: Inch (mm)										SATURATED STEAM (All Sizes)	
			WATER [a]											
			1/4" ~ 1"		1 1/4" ~ 2"		2 1/2" ~ 4"		5" ~ 8"		10" ~ 12"			
	°F	°C											Lbs.	(kg)
50-50 Tin-Lead[b e]	100	(38)	200	(14)	175	(12)	150	(10)	135	(9)	100	(7)	15[d]	(6.8)[d]
	150	(66)	150	(19)	125	(8)	100	(7)	90	(6)	70	(4)		
	200	(93)	100	(9)	90	(6)	75	(5)	70	(4)	50	(3)		
	250	(121)	85	(6)	75	(5)	50	(3)	45	(3)	40	(2)		
95-5 Tin-Antimony[c]	100	(38)	635	(43)	560	(39)	375	(26)	340	(23)	150	(10)	15[d]	(6.8)[d]
	150	(66)	635	(43)	560	(39)	375	(26)	340	(23)	150	(10)		
	200	(93)	630	(43)	480	(33)	375	(26)	340	(23)	140	(10)		
	250	(121)	435	(30)	330	(23)	265	(18)	245	(16)	110	(7)		

The values in the above table are based on data in the National Bureau of Standard publications, "Building Materials and Structures Reports".

[a] Including other non-corrosive liquids and gases
[b] ASTM B32, Alloy Grade Sn50
[c] ASTM B32, Alloy Grade Sb5
[d] This pressure is determined by the temperature of saturated steam @ 15 lbs. (6.8 kg) @ 250° F.
[e] The Safe Drinking Water Act Amendment of 1986 prohibits the use in potable water systems of any solder having a lead content in excess of 0.2%.

PROPERTIES OF VALVE MATERIALS

BRONZE AND BRASS

ASTM NO.	ALLOY NAME	CHEMICAL COMPOSITION nominal or maximum	MATERIAL (PSI)	NOMINAL PHYSICAL PROPERTIES		
				TENSIL STRENGTH (PSI)	YIELD STRENGTH (PSI)	ELONGATION (%)
B62	COMPOSITION BRONZE Suitable to 450°F	86.0 6.0 6.0 6.0	COPPER (Cu) TIN (Sn) LEAD (Pb) ZINC (Zn)	30,000	14,000	20
B61	NAVY M BRONZE (Steam Bronze) Suitable to 550°F	88.0 6.0 2.0 4.0	COPPER (Cu) TIN (Sn) LEAD (Pb) ZINC (Zn)	34,000	16,000	22
B283 (37700)	FORGING BRASS Suitable to 406°F	61.0 2.5 0.30 Rem.	COPPER (Cu) LEAD (Pb) IRON (Fe) ZINC (Zn)	50,000	18,000	25
B584 (C84400)	LEADED BRASS Suitable to 406°F	82.0 3.5 8.0 10.0 1.0 0.40 0.08 0.02	COPPER (Cu) TIN (Sn) LEAD (Pb) ZINC (Zn) NICKEL IRON (Fe) SULPHER (S) PHOSPHORUS(P)	29,000	13,000	18
"K" METAL	DEZINCIFICATION RESISTANT Suitable to 406°F	62.0 3 3 Rem.	COPPER (Cu) LEAD (Pb) IRON (Fe) ZINC (Zn)	110,000	20,000	11

GRAY IRON

A126 CLASS B	GRAY IRON	.75 .15	PHOSPHORUS(P) SULPHER (S)	31,000	—	—

CARBON STEEL

A307 Gr. B	STEEL BOLTING STEEL NUTS	.20 .45 .04 .05	COPPER (C) MAGANESE (Mn) PHOSPHORUS(P) SILICON (Si)	100,000	—	18

STAINLESS STEEL

A182-F6a	FORGED 410	.15 13 1.0 .04 1.0 .03	COPPER (C) CHROME (Cr) MAGANESE (Mn) PHOSPHORUS(P) SILICON (Si) SULFUR (S)	85,000	55,000	18
A-351	CAST 316 (CF8M)	.08 20 1.5 2.5 11 .04 2.0 .04	COPPER (C) CHROME (Cr) MAGANESE (Mn) MOLYBDENUM(Mo) NICKEL (Ni) PHOSPHORUS(P) SILICON (Si) SULFUR (S)	75,000	30,000	25
A276-316	WROUGHT 316	.08 17 2.0 12 .045 1.0 .03	COPPER (C) CHROME (Cr) MAGANESE (Mn) NICKEL (Ni) PHOSPHORUS(P) SILICON (Si) SULFUR (S)	75,000	30,000	30

OTHER PHYSICAL PROPERTIES OF MATERIAL AVAILABLE UPON REQUEST.

BRONZE VALVES
SEATING AND PACKING OPTIONS

SEATING MATERIAL

Material:	**PTFE**
Maximum Pressure:	300 WSP / 600 CWP
Maximum Temperature:	-20 °F to 406 °F / *Maximum Service Range*
Service:	PTFE is suitable for oxygen, steam, and all services where the media being handled is not corrosive to the metallic parts of the valve.

Material:	**Bronze ASTM B62**
Maximum Pressure:	150 WSP / 300 CWP
Maximum Temperature:	406 °F / *Maximum Service Range*
Service:	Bronze ASTM B62 provides good seating properties for clean moderate service. However, it should not be used for close throttling or for handling material containing abrasive or corrosive particles.

Material:	**Bronze ASTM B61**
Maximum Pressure:	300 WSP / 1000 CWP
Maximum Temperature:	550 °F / *Maximum Service Range*
Service:	Bronze ASTM B61 provides good seating properties for clean moderate service. However, it should not be used for close throttling or for handling material containing abrasive or corrosive particles.

Material:	**Stainless Steel ASTM A276, Type 403**
Maximum Pressure:	300 WSP / 600 CWP
Maximum Temperature:	550 °F / *Maximum Service Range*
Service:	Stainless Steel ASTM Type 403 is recommended for close throttling and most all services conditions that do not exceed the valves service rating.

PACKING MATERIAL*

Aramid Fibers with Graphite
Standard packing material offered in Class 125 & 150 Bronze and Brass Valves.

Aramid Fibers with PTFE
Standard packing material offered in our Figure Number AK150L Code #42

Flexible Graphite with Aluminum
Standard packing material offered in Class 300 Bronze Gate and Globe valves.

Packing Materials are designed to service the Pressure, Temperature and Media for the metallic body material in which they reside.

KITZ Corporation reserves the right to change seating and packing material without notice.

IRON VALVES SEATING, PACKING & GASKET MATERIAL OPTIONS

SEATING MATERIAL

Material:	Bronze ASTM B62
Maximum Pressure:	125 WSP / 200 CWP
Maximum Temperature:	450 °F / *Maximum Service Range*
Service:	ASTM B 62 Bronze is suitable for Steam / Water, Oil and Gas. This material is standard on all KITZ Iron Body Valves unless otherwise specified.

Material:	Stainless Steel ASTM A276, Type 403
Maximum Pressure:	125 WSP / 200 CWP
Maximum Temperature:	450 °F / *Maximum Service Range*
Service:	Use this material when bronze trim is not permitted and for applications that demand a more abrasive resistant seat material. Available on KITZ iron, gate, globe and check valves.

PACKING MATERIAL*

1) The standard packing material for Gate valves is a combination structure of two parts. The end rings are metal wire (SUS 304) reinforced glass fiber braided packing impregnated with tetrafluoroethylene resin. The middle ring is Aramid Fibers reinforced expanded graphite packing impregnated with tetrafluoroethylene resin. Service range to 500 °F

2) The standard packing material for Globe valves is a combination structure of two parts. The end rings are metal wire (SUS 304) reinforced glass fiber braided packing impregnated with tetrafluoroethylene resin. The middle ring is Aramid Fibers reinforced expanded graphite packing impregnated with tetrafluoroethylene resin. Service range to 660 °F

GASKET MATERIAL*

The standard gasket material used in KITZ Gate, Globe and Check valves is a non-asbestos jointing sheets made of inorganic fiber and filler, heat resisting organic fiber and oil resisting rubber as a binder.

Packing Materials are designed to service the Pressure, Temperature and Media for the metallic body material in which they reside.

KITZ Corporation reserves the right to change seating and packing material without notice.

Cv VALUES

BRONZE/BRASS/STAINLESS

CODE & FIG. NO.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
GATE											
05 AKFH	4	-	-	-	-	-	-	-	-	-	-
06 CFH	-	8	-	-	-	-	-	-	498	742	-
07 AKFS	-	8	13	37	68	108	141	272	276	395	-
08 CFS	-	-	20	37	61	108	176	280	-	-	-
24 AK125M	-	-	20	38	64	109	177	287	513	773	-
25 AK150L	-	-	20	38	64	109	177	287	513	773	-
27 AKH	-	8	13	36	57	101	140	271	273	392	926
28 CH	-	8	21	38	62	109	177	282	498	742	1200
31 AKUEM/AKUELM	-	-	20	39	64	110	180	292	498	773	1220
37 AK300LU	-	8	20	31	64	109	177	287	-	-	-
40 AK125E	-	8	13	36	57	101	140	271	-	-	-
41 C125E	-	8	13	36	57	101	140	271	-	-	-
42 AK150LU	6	8	20	38	64	109	177	287	-	-	-
43 C150LU	-	-	20	38	64	109	177	287	-	-	-
44 C125M	-	-	20	38	64	109	177	287	-	-	-
45 C150L	-	-	20	38	64	109	177	287	-	-	-
46 AK150E	-	8	13	36	57	101	140	271	-	-	-
47 AKHD	-	-	-	36	57	-	-	-	-	-	-
48 CHD	-	-	-	36	57	-	-	-	-	-	-
GLOBE											
01 AKA	1.2	1.9	3	3.6	7.4	11	20	26	44	66	133
02 AKC	1.2	1.9	3.5	7.4	11	20	26	45	68	87	-
03 AKG	1	1.6	2.6	5	8.6	15	22	40	62	77	-
09 AK 150D	1.2	1.9	3.6	7.5	12	21	27	46	70	89	-
10 C150D	1.2	1.9	3.6	7.5	12	21	27	46	70	89	-
17 AK300J	1.2	1.9	4.3	7.3	11	20	31	48	-	-	-
17S AK300SJ	1.2	1.9	4.3	7.3	11	20	31	48	-	-	-
18 AK300D	1.2	1.2	3.6	7.5	12	21	27	46	-	-	-
33 AKUJM	-	1.9	4.5	7.3	11	20	29	44	76	112	-
38 AKCA	1.2	1.9	3.5	7.4	11	20	26	45	68	87	-
CHECK											
04 AKR	-	3.6	6.0	13	24	41	59	108	188	285	390
14 CR	-	3.0	6.0	13	24	40	59	108	182	265	-
19 AK300YR	-	-	4.0	5.0	9.0	15	26	39	-	-	-
22 AKYR	-	-	4.0	5.0	9.0	15	26	39	70	110	-
23 CYR	-	-	4.0	8.0	15	26	37	68	110	162	-
26 CAF	-	-	3.0	6.0	10	16	25	42	-	-	-
29 AK150YR	-	3.0	4.0	5.0	9.0	126	39	70	110	-	-
30 C150YR	-	3.0	4.0	5.0	9.0	15	26	39	70	110	-
34 AKOUM	-	-	8.0	15	24	40	66	108	188	278	-
36 AKAF	-	-	3.0	6.0	10	16	25	42	-	-	-
STRAINERS											
15 AKYR		4.0	5.4	10	17	25	35	67	106	167	-
16 CYR		-	5.4	10	17	25	35	67	106	167	-

IRON

CODE & FIG. NO.	2	$2^1/_2$	3	4	5	6	8	10	12	14	-
GATE											
72 125FCL	261	476	756	1220	1980	2940	5440	8650	12,700	15,100	-
73 125FCLS	261	476	756	1220	1980	2940	5440	8650	12,700	15,100	-
75 125FCWI	261	476	756	1220	1980	2940	5440	8650	12,700	15,100	-
GLOBE											
76 125FCJ	51	84	121	189	297	436	793	1270	1800	-	-
77 125FCJS	51	84	121	189	297	436	793	1270	1800	-	-
CHECK											
78 125FCO	110	193	292	468	735	1060	1880	2940	-	-	-
79 125FCOS	110	193	292	468	735	1060	1880	2940	-	-	-
STRAINERS											
80 125FCYU	63	106	167	241	370	530	940	1400	2035	-	-

SATURATED STEAM TABLE
PRESSURE/TEMPERATURE

Vacuum Inches Mercury	Pressure Absolute (P.S.I.A.)	Temperature °F	Pressure Gauge (P.S.I.G.)	Temperature °F	Pressure Gauge (P.S.I.G.)	Temperature °F	Pressure Gauge (P.S.I.G.)	Temperature °F	Pressure Gauge (P.S.I.G.)	Temperature °F
29.74	0.089	32.0	0	212.0	135	358.3	285	417.2	570	483.4
29	0.451	76.5	2	218.5	140	360.8	290	418.7	580	485.2
28	0.942	99.7	4	224.4	145	363.4	295	420.2	590	487.0
27	1.43	114.0	6	229.8	–	–	–	–	–	–
26	1.92	124.6	8	234.6	**150**	**365.9**	**300**	**421.7**	600	488.8
–	–	–	–	–	155	368.3	310	424.6	650	497.4
25	2.42	133.3	10	239.0	160	370.6	320	427.4	700	505.4
24	2.91	140.3	15	249.7	165	372.9	330	430.3	–	–
23	3.40	146.3	20	258.8	170	375.2	340	433.0	750	513.1
22	3.89	151.7	–	–	–	–	–	–	800	520.3
21	4.38	156.5	25	266.8	175	377.4	350	435.6	850	527.3
			30	274.0	180	379.5	360	438.2	900	533.9
20	4.87	161.0	35	280.6	185	381.7	370	440.8	950	540.3
19	5.36	165.2	40	286.7	190	383.7	380	443.3	–	–
18	5.85	168.9	45	292.4	195	385.8	390	445.7	1000	546.4
17	6.35	172.5	–	–	–	–	–	–	–	–
16	6.84	175.8	50	297.7	200	387.8	400	448.1	–	–
–	–	–	55	302.6	205	389.7	410	450.5	–	–
15	7.33	178.9	60	307.3	210	391.7	420	452.8	–	–
14	7.82	181.8	65	311.8	215	393.6	430	455.1	–	–
13	8.31	184.6	70	316.0	220	395.4	440	457.3	–	–
12	8.80	187.2	–	–	–	–	–	–	–	–
11	9.29	189.7	75	320.0	225	397.3	450	459.5	–	–
–	–	–	80	323.9	230	399.1	460	461.7	–	–
10	9.78	192.1	85	327.6	235	400.8	470	463.8	–	–
9	10.27	194.4	90	331.1	240	402.6	480	465.9	–	–
8	10.77	196.7	95	334.6	245	404.3	490	468.0	–	–
7	11.26	198.8	–	–	–	–	–	–	–	–
6	11.75	200.9	100	337.9	**250**	**406.0**	500	470.0	–	–
–	–	–	105	341.1	255	407.7	510	472.0	–	–
5	12.24	202.9	110	344.1	260	409.3	520	474.0	–	–
4	12.73	204.8	115	347.1	265	410.9	530	475.9	–	–
3	13.22	206.7	120	350.0	270	412.5	540	477.8	–	–
2	13.71	208.5	–	–	–	–	–	–	–	–
1	14.20	210.3	**125**	**352.8**	275	414.1	550	479.7	–	–
0	14.696	212.0	130	355.6	280	415.7	560	481.6	–	–

BRONZE
FLANGE DIMENSIONS

Flange diameters and drilling templates of 150-lb. bronze flanges are the same as the 125-lb. USA Cast-Iron Standard (B16.1). Flange diameters and drilling templates of 250-lb. and 300-lb. bronze flanges are the same as the 250-lb. USA Cast-Iron Flange Standard (B16.5). The faces of these flanges are machined with a serrated spiral finish. When cast iron or steel flanges with raised faces are bolted to these flanges, the raised faces should be removed. Full face gaskets should be used. Metallic gaskets should not be used.

CLASS 125 BRONZE FLANGES

(meets 125 lb. ASME Standard)

(Inch)

Nominal Size of Pipe	A Outside Diameter of Flange	B Minimum Thickness of Flange	C Diameter of Bolt Circle	Diameter of Drilled Bolt Holes	Diameter of Bolts	Length of Bolts	Number of Bolts
1/2	3 1/2	3/16	2 3/8	5/8	1/2	1 1/4	4
3/4	3 3/8	3/16	2 3/4	5/8	1/2	1 1/2	4
1	4 1/4	1/4	3 1/8	5/8	1/2	1 1/2	4
1 1/4	4 5/8	1/4	3 1/2	5/8	1/2	1 1/2	4
1 1/2	5	3/16	3 7/8	5/8	1/2	1 1/2	4
2	6	3/8	4 3/4	3/4	5/8	1 3/4	4
2 1/2	7	3/8	5 1/2	3/4	5/8	2	4
3	7 1/2	7/16	6	3/4	5/8	2	4
4	9	7/16	7 1/2	3/4	5/8	2	8
5	10	7/16	8 1/2	7/8	3/4	2 1/4	8
6	11	1/2	9 1/2	7/8	3/4	2 1/4	8
8	13 1/2	5/8	11 3/4	7/8	3/4	2 1/2	8
10	16	5/8	14 1/4	1	7/8	2 1/2	12
12	19	11/16	17	1	7/8	2 3/4	12

CLASS 150 BRONZE FLANGES

(meets ANSI B16.24 & Federal Spec. WW-F-406)

(Inch)

Nominal Size of Pipe	A Outside Diameter of Flange	B Minimum Thickness of Flange	C Diameter of Bolt Circle	Diameter of Drilled Bolt Holes	Diameter of Bolts	Length of Bolts	Number of Bolts
1/2	3 1/2	5/16	2 3/8	5/8	1/2	1 1/4	4
3/4	3 7/8	11/32	2 3/4	5/8	1/2	1 1/2	4
1	4 1/4	3/8	3 1/8	5/8	1/2	1 1/2	4
1 1/4	4 5/8	13/32	3 1/2	5/8	1/2	1 1/2	4
1 1/2	5	7/16	3 7/8	5/8	1/2	1 1/2	4
2	6	1/2	4 3/4	3/4	5/8	1 3/4	4
2 1/2	7	9/16	5 1/2	3/4	5/8	2	4
3	7 1/2	5/8	6	3/4	5/8	2	4
4	9	11/16	7 1/2	3/4	5/8	2 1/4	8
5	10	3/4	8 1/2	7/8	3/4	2 1/2	8
6	11	13/16	9 1/2	7/8	3/4	2 1/2	8
8	13 1/2	15/16	11 3/4	7/8	3/4	2 3/4	8
10	16	1	14 1/4	1	7/8	3 1/4	12
12	19	1 1/16	17	1	7/8	3 1/4	12

BRONZE
FLANGE DIMENSIONS

CLASS 250 BRONZE FLANGES

(meets ASME/ANSI B16.24)

(Inch)

Nominal Size of Pipe	A Outside Diameter of Flange	B Minimum Thickness of Flange	C Diameter of Bolt Circle	Diameter of Drilled Bolt Holes	Diameter of Bolts	Length of Bolts	Number of Bolts
1/2	3 1/4	13/32	2 1/8	5/8	1/2	1 1/2	4
3/4	4 3/8	7/16	3 1/4	3/4	5/8	1 3/4	4
1	4 7/8	1/2	3 1/2	3/4	5/8	1 3/4	4
1 1/4	5 1/4	17/32	3 7/8	3/4	5/8	2	4
1 1/2	6 1/8	9/16	4 1/2	7/8	3/4	2	4
2	6 1/2	5/8	5	7/8	3/4	2	8
2 1/2	7 1/2	11/16	5 7/8	3/4	5/8	2 1/4	8
3	8 1/4	3/4	6 3/8	7/8	3/4	2 1/2	8
4	10	7/8	7 7/8	7/8	3/4	2 3/4	8
5	11	13/16	9 1/4	7/8	3/4	2 3/4	8
6	12 1/2	1	10 3/8	7/8	3/4	3	12
8	15	1 1/8	13	1	7/8	3 1/4	12
10	17 1/2	1 3/16	15 1/4	1 1/8	1	3 1/4	16
12	20 1/2	1 1/4	17 3/4	1 1/4	1 1/8	3 1/4	16

CLASS 300 BRONZE FLANGES

(meets ASME/ANSI B16.24)

(Inch)

Nominal Size of Pipe	A Outside Diameter of Flange	B Minimum Thickness of Flange	C Diameter of Bolt Circle	Diameter of Drilled Bolt Holes	Diameter of Bolts	Length of Bolts	Number of Bolts
1/2	3 3/4	1/2	2 5/8	5/8	1/2	1 1/4	4
3/4	4 5/8	17/32	3 1/4	3/4	5/8	2	4
1	4 7/8	19/32	3 1/2	3/4	5/8	2	4
1 1/4	5 1/4	5/8	3 7/8	3/4	5/8	2	4
1 1/2	6 1/8	11/16	4 1/2	3/4	5/8	2 1/4	4
2	6 1/2	3/4	5	7/8	3/4	2 1/4	8
2 1/2	7 1/2	13/16	5 7/8	7/8	3/4	2 1/2	8
3	8 1/4	29/32	6 5/8	7/8	3/4	2 3/4	8
4	10	1 1/16	7 7/8	7/8	3/4	3	8
5	11	1 1/8	9 1/4	7/8	3/4	1 1/4	8
6	12 1/2	1 3/16	10 5/8	7/8	3/4	3 1/4	12
8	15	1 3/8	13	1	7/8	3 3/4	12

CAST IRON
FLANGE DIMENSIONS

CLASS 125 CAST IRON FLANGES

(ASME/ANSI STANDARD B16.1)

Mates with 150-lb. steel flanges ASME/ANSI Standard B16.5

(Inch)

Nominal Size of Pipe	A Outside Diameter of Flange	B Minimum Thickness of Flange	C Diameter of Bolt Circle	Diameter of Drilled Bolt Holes	Diameter of Bolts	*Length of Bolts	Number of Bolts
2	6	5/8	4 3/4	3/4	5/8	2 1/4	4
2 1/2	7	11/16	5 1/2	3/4	5/8	2 1/2	4
3	7 1/2	3/4	6	3/4	5/8	2 1/2	4
3 1/2	8 1/2	13/16	7	3/4	5/8	2 3/4	8
4	9	15/16	7 1/2	3/4	5/8	3	8
5	10	15/16	8 1/2	7/8	3/4	3	8
6	11	1	9 1/2	7/8	3/4	3 1/4	8
8	13 1/2	1 1/8	11 3/4	7/8	3/4	3 1/2	8
10	16	1 3/16	14 1/4	1	7/8	3 3/4	12
12	19	1 1/4	17	1	7/8	3 3/4	12
14	21	1 3/8	18 3/4	1 1/8	1	4 1/4	12
16	23 1/2	1 7/16	21 1/4	1 1/8	1	4 1/2	16
18	25	1 9/16	22 3/4	1 1/4	1 1/8	4 3/4	16
20	27 1/2	1 11/16	25	1 1/4	1 1/8	5	20
24	32	1 7/8	29 1/2	1 3/8	1 1/4	5 1/2	20

*When bolting to steel flanges, longer bolts may be required.

CLASS 250 CAST IRON FLANGES

(ANSI STANDARD B16.1)

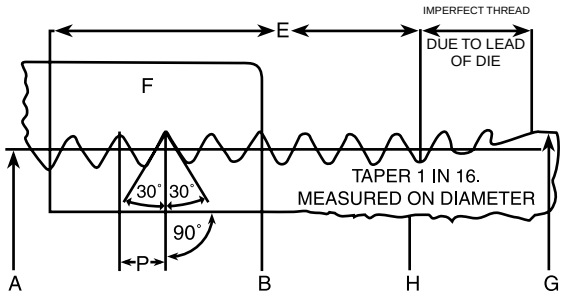
Mates with 300-lb. steel flanges ASME/ANSI Standard B16.5

(Inch)

Nominal Size of Pipe	A Outside Diameter of Flange	B Minimum Thickness of Flange	C Diameter of Bolt Circle	Diameter of Drilled Bolt Holes	Diameter of Bolts	*Length of Bolts	Number of Bolts
2	6 1/2	7/8	5	3/4	5/8	2 3/4	8
2 1/2	7 1/2	1	5 7/8	7/8	3/4	3 1/4	8
3	8 1/4	1 1/8	6 5/8	7/8	3/4	3 1/2	8
3 1/2	9	1 3/16	7 1/4	7/8	3/4	3 1/2	8
4	10	1 1/4	7 7/8	7/8	3/4	3 3/4	8
5	11	1 3/8	9 1/4	7/8	3/4	4	8
6	12 1/2	1 7/16	10 5/8	7/8	3/4	4	12
8	15	1 5/8	13	1	7/8	4 1/2	12
10	17 1/2	1 7/8	15 1/4	1 1/8	1	5 1/4	16
12	20 1/2	2	17 3/4	1 1/4	1 1/8	5 1/2	16
14	23	2 1/8	20 1/4	1 1/4	1 1/8	6	20
16	25 1/2	2 1/4	22 1/2	1 3/8	1 1/4	6 1/4	20
18	28	2 3/8	24 3/4	1 3/8	1 1/4	6 1/2	24
20	30 1/2	2 1/2	27	1 3/8	1 1/4	6 3/4	24
24	36	2 3/4	32	1 5/8	1 1/2	7 1/2	24

*When bolting to steel flanges, longer bolts may be required.

ASME/ANSI STANDARD IRON PIPE TAPER THREADS



A = G–(0.05 + 1.1) P
B = A + .0625 F
E = P(0.8G + 6.8)
Depth of Thread = 0.8 P
Total Taper 3/4 in. per foot

(Inch)

	A	B	E	F	G	H		P	
Nominal Size of Pipe	Pitch Dia. at End of Pipe	Pitch Dia. at Gauging Notch	Length of Effective Thread	Normal Engagement by Hand Between Male and Female Thread	Outside Dia. of Pipe	Actual Inside Dia. of Pipe	Number of Threads	Pitch of Thread	Depth of Thread
1/8	.36351	.37476	.2638	.180	.405	.269	27	.0370	.02963
1/4	.47739	.48989	.4018	.200	.540	.364	18	.0556	.04444
3/8	.61201	.62701	.4078	.240	.675	.493	18	.0556	.04444
1/2	.75843	.77843	.5337	.320	.840	.622	14	.0714	.05714
3/4	.96768	.98886	.5457	.339	1.050	.824	14	.0714	.05714
1	1.21363	1.23863	.6828	.400	1.315	1.049	11 1/2	.0870	.06956
1 1/4	1.55713	1.58338	.7068	.420	1.660	1.380	11 1/2	.0870	.06956
1 1/2	1.79609	1.82234	.7235	.420	1.900	1.610	11 1/2	.0870	.06956
2	2.26902	2.29627	.7565	.436	2.375	2.067	11 1/2	.0870	.06956
2 1/2	2.71953	2.76216	1.1375	.682	2.875	2.469	8	.1250	.10000
3	3.34063	3.38850	1.2000	.766	3.500	3.068	8	.1250	.10000
3 1/2	3.83750	3.88881	1.2500	.821	4.000	3.548	8	.1250	.10000
4	4.33438	4.38713	1.3000	.844	4.500	4.026	8	.1250	.10000
5	5.39073	5.44929	1.4063	.937	5.563	5.047	8	.1250	.10000
6	6.44609	6.50597	1.5125	.958	6.625	6.065	8	.1250	.10000
8	8.43359	8.50003	1.7125	1.063	8.625	7.981	8	.1250	.10000
10	10.54531	10.62094	1.9250	1.210	10.750	10.020	8	.1250	.10000
12	12.53281	12.61781	2.1250	1.360	12.750	12.000	8	.1250	.10000

Data abstracted from ASME/ANSI Standard B1.20.1–1983 – Gages and Gaging for Unified Inch Screw Threads.

ASME/ANSI STANDARD COPPER WATER TUBE & SOLDER-JOINT ENDS VALVES & FITTINGS

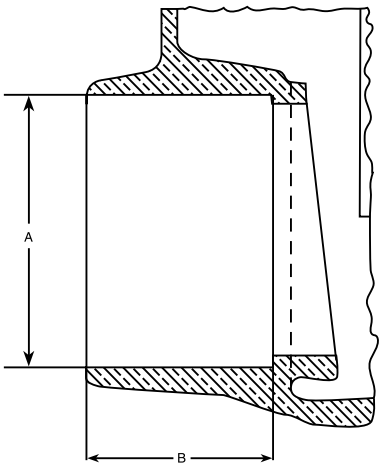
SERVICE RECOMMENDATIONS

Seamless copper water tube is used for such services as steam, water or air and oil, gas or similar fluids.

Type K Tube is especially recommended for underground use and where service conditions are severe. It is also recommended for general plumbing and heating systems and is used for gas, oil and steam.

Type L Tube is for interior use in general plumbing and heating work.

Type M Tube is for use with solder-joint fittings only, for waste, vent and interior drainage lines and other non-pressure applications.



As steam installations, the successful application of copper tube depends upon weight of tube and solder used when making joints. The solder must have a melting point high enough to remain unaffected by the temperature of the steam.

HARD COPPER TUBE: Hard copper tube is intended primarily for use in straight lengths. Without proper bending equipment, its use is not recommended for field bending.

SOFT COPPER TUBE: This tube can be bent without special bending equipment and is recommended for use when bends must be made in the field, as in concealed replacement work. Soft copper tubing may become flattened or distorted when being handled or while in transit. The ends of this tube should therefore be sized to assure a tight soldered joint.

Type K (hard and soft) and Type L (hard and soft) in sizes $3/8$" to 12" and Type M (hard) in sizes $2\,1/2$" to 12" conform to ANSI Standard for Copper Water Tube, H23.1. Also conforms to Federal Specification WW-T-799.

DIMENSIONS OF SOLDER-JOINT ENDS

Standard Water Tube Size Inches	A Inside Diameter		B Depth
	Min. Inches	Max. Inches	Min. Inches
1/4	.377	.381	5/16
3/8	.502	.506	3/8
1/2	.627	.631	1/2
3/4	.877	.881	3/4
1	1.128	1.132	29/32
1 1/4	1.378	1.382	31/32
1 1/2	1.628	1.633	1 3/32
2	2.128	2.133	1 11/32
2 1/2	2.628	2.633	1 15/32
3	3.128	3.133	1 21/32
3 1/2	3.628	3.633	1 29/32
4	4.128	4.133	2 5/32
5	5.128	5.133	2 21/32
6	6.128	6.133	3 3/32
8	8.128	8.133	3 31/32

TUBE DIMENSIONS AND WEIGHTS

Nominal Size of Tube In.	Actual Outside Diam. of Tube In.	Type K Tube		Type L Tube		Type M Tube	
		Wall Thickness In.	Wgt. Per Foot Lbs.	Wall Thickness In.	Wgt. Per Foot Lbs.	Wall Thickness In.	Wgt. Per Foot Lbs.
1/4	3/8	—	—	.030	.126	—	—
3/8	1/2	.049	.269	.035	.198	—	—
1/2	5/8	.049	.344	.040	.285	—	—
3/4	7/8	.065	.641	.045	.455	—	—
1	1 1/8	.065	.839	.050	.655	—	—
1 1/4	1 3/8	.065	1.04	.055	.884	.042	.68
1 1/2	1 5/8	.072	1.36	.060	1.14	.049	.94
2	2 1/8	.083	2.06	.070	1.75	.058	1.46
2 1/2	2 5/8	.095	2.93	.080	2.48	.065	2.03
3	3 1/8	.109	4.00	.090	3.33	.072	2.68
3 1/2	3 5/8	.120	5.12	.100	4.29	.083	3.58
4	4 1/8	.130	6.51	.110	5.38	.095	4.66
5	5 1/8	.160	9.67	.125	7.61	.109	6.66
6	6 1/8	.192	13.90	.140	10.20	.122	8.92
8	8 1/8	.271	25.90	.200	19.30	.170	16.50
10	10 1/8	.338	40.30	.250	30.10	.212	25.60
12	12 1/8	.405	57.80	.280	40.40	.254	36.70

Data extracted from ASME/ANSI Standard 16.18–1984 (R1994) – Cast Copper Alloy Solder Joint Pressure Fittings.

VALVE INSTALLATION TIPS FOR A SOUND SOLDER JOINT

Kitz solder joint copper alloy ball, gate, globe and check valves are designed to be soft soldered into lines without disassembly, using a low temperature solder 420°F. Other solders, 95/5 tin antimony (460°F) or 96/4 tin silver (430°F) can be used, however, extreme caution must be used to prevent seat and packing damage. Carefully following the succeeding procedure will assure a durable solder connection with copper tubing for servicing distribution of water, oil and gas.

1. Solders

Recommended:

Soft solders having a maximum melting point of 420°F.

Others: 95-5 tin-antimony (460°F)
96.5-3.5 tin-silver (430°F)

2. Soldering Procedure

(1) Cut tube end square; ream, burr and size.
(2) Polish tube and cup to a bright metal finish, using sand cloth, wire brush and clean with cloth.
(3) Apply flux sparingly and evenly to polished surface of tube. No flux need be applied to solder cup.
(4) Fully open valve before applying heat. Insert tube into valve socket until it contacts internal shoulder of valve socket. Rotate the tube a few times to evenly distribute flux.
(5) Soldering procedure:
  (a) Cover the bonnet or valve body with a wet cloth to prevent gland packing and seat damage.
  (b) Preheat the tube evenly, using an open-flame torch.
  (c) Heat the joint area to an adequate temperature and remove heat and feed solder around the joint.
  (d) Check to make sure melted solder is flowing into the jointed surfaces.
  (e) Visually check joint for continuous fillet.
  (f) Cool the jointed area with a wet cloth as soon as the solder becomes solid.
  (g) After cooling, remove solder and flux to prevent surface corrosion.
  (h) Flush the tube and valve interiors with water to remove internal residue, as soon as piping installation is complete.

CAUTION

(1) Do apply wet cloth to body of valve or bonnet, to prevent damage to seat and packing during soldering.
(2) Do not apply heat to the valve body, to prevent damage to seats and packing.
(3) Do, minimize heating time for solder work, to prevent damage to seats and packing
(4) Do not forget to retighten packing nut after valve cools down for leak-free performance.
(5) Do remember that Service Pressure and Temperature of valve are limited by the properties of the solder.
(6) Do not exceed a service velocity greater than 6 feet per second, to prevent erosion of copper tube.

CONVERSION TABLES

LENGTH

1 in.	=	25.4 mm
1 mm	=	.03937 in.
1 ft.	=	30.48 cm.
1 meter	=	3.28083 ft.
1 micron	=	.001 mm.

AREA

1 sq. in.	=	6.4516 sq. cm.
1 sq. ft.	=	929.03 sq. cm.
1 sq. cm.	=	0.155 sq. in.
1 sq. cm.	=	0.0010764 sq. ft.

VOLUME

1 cu. in.	=	16.387 cu. cm.
1 cu. ft.	=	1728 cu. in.
1 cu. lt.	=	7.4805 U.S. gal.
1 cu. lt.	=	6.229 British gal.
1 cu. lt.	=	28.317 liters
1 U.S. gal.	=	0.1337 cu. lt.
1 U.S. gal.	=	231 cu. in.
1 U.S. gal.	=	3.785 liters
1 British gal.	=	1.20094 U.S. gal.
1 British gal.	=	277.3 cu. in.
1 British gal.	=	4.546 liters
1 liter	=	61.023 cu. in.
1 liter	=	0.03531 cu. ft.
1 liter	=	0.2642 U.S. gal.

WEIGHT

1 ounce av.	=	28.35 g.
1 lb. av.	=	453.59 g.
1 gram	=	0.03527 oz. av.
1 kg.	=	2.205 lb. av.
1 cu. ft. of water	=	62.425 lb.
1 U.S. gal. of water	=	8.33 lb.
1 cu. in. of water	=	0.0361 lb.
1 British gal. of water	=	10.04 lb.
1 cu. ft. of air at 32°F & 1 atm	=	0.080728 lb.

VELOCITY

1 ft. per sec.	=	30.48 cm. per sec.
1 cm. per sec.	=	.032808 ft. per sec.

FLOW

1 cu. ft. per sec.	=	448.83 gal. per min.
1 cu. ft. per sec.	=	1699.3 liters per min.
1 U.S. gal. per min.	=	0.002228 cu. ft. per sec.
1 U.S. gal. per min.	=	0.06308 liters per sec.
1 cu. cm. per sec.	=	0.0021186 cu. ft. per min.

DENSITY

1 lb. per cu. ft.	=	16.018 kg. per cu. meter
1 lb. per cu. ft.	=	.0005787 lb. per cu. in.
1 kg. per cu. meter	=	0.06243 lb. per cu. ft.
1 g. per cu. cm.	=	0.03613 lb. per cu. in.

VISCOSITY

1 Centipoise	=	.000672 lb. per ft. sec.
1 Centistoke	=	.00001076 sq. ft. per sec.

PRESSURE

1 in. of water	=	0.03613 lb. per sq. in.
1 in. of water	=	0.07355 in. of Hg.
1 ft. of water	=	0.4335 lb. per sq. in.
1 ft. of water	=	0.88265 in. of Hg.
1 in. of mercury	=	0.49116 lb. per sq. in.
1 in. of mercury	=	13.596 in. of water
1 in. of mercury	=	1.13299 ft. of water
1 atmosphere	=	14.696 lb. per sq. in. (PSIA)
1 atmosphere	=	760 mm. of Hg.
1 atmosphere	=	29.921 in. of Hg.
1 atmosphere	=	33.899 ft. of water
1 lb. per sq. in.	=	27.70 in. of water
1 lb. per sq. in.	=	2.036 in. of Hg.
1 lb. per sq. in.	=	.0703066 kg. per sq. cm.
1 kg. per sq. cm.	=	14.223 lb. per sq. in.
1 dyne per sq. cm.	=	.0000145 lb. per sq. in.
1 micron	=	.00001943 lb. per sq. in.
1kPa	=	0.150 lb. per sq. in.
PSI to Bar		PSI x 0.0689

ENERGY

1 B.T.U.	=	777.97 ft. lbs.
1 erg	=	9.4805×10^{11} B.T.U.
1 erg	=	7.3756×10^{8} ft. lbs.
1 kilowatt hour	=	2.655×10^{6} ft. lbs.
1 kilowatt hour	=	1.3410 h.p. hr.
1 kg. calorie	=	3.968 B.T.U.

POWER

1 horsepower	=	33,000 ft. lb. per min.
1 horsepower	=	550 ft. lb. per sec.
1 horsepower	=	2,546.5 B.T.U. per hr.
1 horsepower	=	745.7 watts
1 watt	=	0.00134 horsepower
1 watt	=	44.26 ft. lbs. per min.

TEMPERATURE

Temperature Fahrenheit	(F)	=	9/5 Centigrade (C) + 32 = 9/4 R + 32
Temperature Centigrade	(C)	=	5/9 Fahrenheit (F) – 32 = 5/4 R
Temperature Reaumur	(R)	=	4/9 Fahrenheit (F) – 32 = 4/5 C
Absolute Temperature Centigrade or Kelvin	(K)	=	Degrees C + 273.16
Absolute Temperature Fahrenheit or Rankine	(R)	=	Degrees F + 459.69
Fahrenheit to Centigrade		=	C = (F – 32) / 1.8

HEAT TRANSFER

1 B.T.U. per sq. ft.	=	.2712 g. cal. per sq. cm.
1 g. calorie per sq. cm.	=	3.687 B.T.U. per sq. ft.
1 B.T.U. per hr. per sq. ft. per °F	=	4.88 kg. cal. per hr. per sq. m. per °C
1 Kg. cal. per hr. per sq. m. per °C	=	.205 B.T.U. per hr. per sq. ft. per °F
1 Boiler Horsepower	=	33479 B.T.U. per hr.

CONVERSION CHART

FRACTION – DECIMAL – MILLIMETER

Fraction	Decimal	Millimeter
1/64 …	.015625	0.39688
1/32 … …	.03125	0.79375
3/64 …	.046875	1.19063
1/16 … … …	.0625	1.58750
5/64 …	.078125	1.98438
3/32 … …	.09375	2.38125
7/64 …	.109375	2.77813
1/8 … … … …	.125	3.17501
9/64 …	.140625	3.57188
5/32 … …	.15625	3.96876
11/64 …	.171875	4.36563
3/16 … … …	.1875	4.76251
13/64 …	.203125	5.15939
7/32 … …	.21875	5.55626
15/64 …	.234375	5.95314
1/4 … … … …	.25	6.35001
17/64 …	.265625	6.74689
9/32 … …	.28125	7.14376
19/64 …	.296875	7.54064
5/16 … … …	.3125	7.93752
21/64 …	.328125	8.33439
11/32 … …	.34375	8.73127
23/64 …	.359375	9.12814
3/8 … … … …	.375	9.52502
25/64 …	.390625	9.92189
13/32 … …	.40625	10.31877
27/64 …	.421875	10.71565
7/16 … … …	.4375	11.11252
29/64 …	.453125	11.50940
15/32 … …	.46875	11.90627
31/64 …	.484375	12.30315
1/2 … … … …	.5	12.70002
33/64 …	.515625	13.09690
17/32 … …	.53125	13.49378
35/64 …	.546875	13.89065
9/16 … … …	.5625	14.28753
37/64 …	.578125	14.68440
19/32 … …	.59375	15.08128
39/64 …	.609375	15.47816
5/8 … … … …	.625	15.87503
41/64 …	.640625	16.27191
21/32 … …	.65625	16.66878
43/64 …	.671875	17.06566
11/16 … … …	.6875	17.46253
45/64 …	.703125	17.85941
23/32 … …	.71875	18.25629
47/64 …	.734375	18.65316
3/4 … … … …	.75	19.05004
49/64 …	.765625	19.44691
25/32 … …	.78125	19.84379
51/64 …	.796875	20.24066
13/16 … … …	.8125	20.63754
53/64 …	.828125	21.03442
27/32 … …	.84375	21.43129
55/64 …	.859375	21.82817
7/8 … … … …	.875	22.22504
57/64 …	.890625	22.62192
29/32 … …	.90625	23.01880
59/64 …	.921875	23.41567
15/16 … … …	.9375	23.81255
61/64 …	.953125	24.20942
31/32 … …	.96875	24.60630
63/64 …	.984375	25.00317
1 … … … …	1.0	25.40005

NOTE: To convert from inches to millimeters, multiply by 25.4
To convert from millimeters to inches, multiply by .03937.
Decimal conversion, 2.54 millimeters equals .10 of an inch.

TEMPERATURE CONVERSION

°C = 5/9 (°F-32) **°F =(9/5 x °C) + 32**

-459.4 to 12			13 to 72			73 to 260			265 to 620			630 to 2,400		
	°C	°F		°C	°F		°C	°F		°C	°F		°C	°F
°C	°F		°C	°F		°C	°F		°C	°F		°C	°F	
-273	-459.4		- 10.6	13	55.4	22.8	73	163.4	129	265	509	332	630	1,166
-268	-450		- 10.0	14	57.2	23.3	74	165.2	132	270	518	338	640	1,184
-262	-440		- 9.4	15	59.0	23.9	75	167.0	135	275	527	343	650	1,202
-257	-430		- 8.9	16	60.8	24.4	76	168.8	138	280	536	349	660	1,220
-251	-420		- 8.3	17	62.6	25.0	77	170.6	141	285	545	354	670	1,238
-246	-410		- 7.8	18	64.4	25.6	78	172.4	143	290	554	360	680	1,256
-240	-400		- 7.2	19	66.2	26.1	79	174.2	146	295	563	366	690	1,274
-234	-390		- 6.7	20	68.0	26.7	80	176.0	149	300	572	371	700	1,292
-229	-380		- 6.1	21	69.8	27.2	81	177.8	152	305	581	377	710	1,310
-223	-370		- 5.6	22	71.6	27.8	82	179.6	154	310	590	382	720	1,328
-218	-360		- 5.0	23	73.4	28.3	83	181.4	157	315	599	388	730	1,346
-212	-350		- 4.4	24	75.2	28.9	84	183.2	160	320	608	393	740	1,364
-207	-340		- 3.9	25	77.0	29.4	85	185.0	163	325	617	399	750	1,382
-201	-330		- 3.3	26	78.8	30.0	86	186.8	166	330	626	404	760	1,400
-196	-320		- 2.8	27	80.6	30.6	87	188.6	168	335	635	410	770	1,418
-190	-310		- 2.2	28	82.4	31.1	88	190.4	171	340	644	416	780	1,436
-184	-300		- 1.7	29	84.2	31.7	89	192.2	174	345	653	421	790	1,454
-179	-290		- 1.1	30	86.0	32.2	90	194.0	177	350	662	427	800	1,472
-173	-280		- 0.6	31	87.8	32.8	91	195.8	179	355	671	432	810	1,490
-169	-273	-459.4	0.0	32	89.6	33.3	92	197.6	182	360	680	438	820	1,508
-168	-270	-454	0.6	33	91.4	33.9	93	199.4	185	365	689	443	830	1,526
-162	-260	-436	1.1	34	93.2	34.4	94	201.2	188	370	698	449	840	1,544
-157	-250	-418	1.7	35	95.0	35.0	95	203.0	191	375	707	454	850	1,562
-151	-240	-400	2.2	36	96.8	35.6	96	204.8	193	380	716	460	860	1,580
-146	-230	-382	2.8	37	98.6	36.1	97	206.6	196	385	725	466	870	1,598
-140	-220	-364	3.3	38	100.4	36.7	98	208.4	199	390	734	471	880	1,616
-134	-210	-346	3.9	39	102.2	37.2	99	210.2	202	395	743	477	890	1,634
-129	-200	-328	4.4	40	104.0	37.8	100	212.0	214	400	752	482	900	1,652
-123	-190	-310	5.0	41	105.8	41	105	221	207	405	761	488	910	1,670
-118	-180	-292	5.6	42	107.6	43	110	230	210	410	770	493	920	1,688
-112	-170	-274	6.1	43	109.4	46	115	239	213	415	779	499	930	1,706
-107	-160	-256	6.7	44	111.2	49	120	248	216	420	788	504	940	1,724
-101	-150	-238	7.2	45	113.0	52	125	257	218	425	797	510	950	1,742
- 96	-140	-220	7.8	46	114.8	54	130	266	221	430	806	516	960	1,760
- 90	-130	-202	8.3	47	116.6	57	135	275	224	435	815	521	970	1,778
- 84	-120	-184	8.9	48	118.4	60	140	284	227	440	824	527	980	1,796
- 79	-110	-166	9.4	49	120.2	63	145	293	229	445	833	532	990	1,814
- 73	-100	-148	10.0	50	122.0	66	150	302	232	450	842	538	1,000	1,832
- 68	- 90	-130	10.6	51	123.8	68	155	311	235	455	851	549	1,020	1,868
- 62	- 80	-112	11.1	52	125.6	71	160	320	238	460	860	560	1,040	1,904
- 57	- 70	- 94	11.7	53	127.4	74	165	329	241	465	869	571	1,060	1,940
- 51	- 60	- 76	12.2	54	129.2	77	170	338	243	470	878	582	1,080	1,976
- 46	- 50	- 58	12.8	55	131.0	79	175	347	246	475	887	593	1,100	2,012
- 40	- 40	- 40	13.3	56	132.8	82	180	356	249	480	896	604	1,120	2,048
- 34	- 30	- 22	13.9	57	134.6	85	185	365	252	485	905	616	1,140	2,084
- 29	- 20	- 4	14.4	58	136.4	88	190	374	254	490	914	627	1,160	2,120
- 23	- 10	14	15.0	59	138.2	91	195	383	257	495	923	638	1,180	2,156
- 17.8	0	32	15.6	60	140.0	93	200	392	260	500	932	649	1,200	2,192
- 17.2	1	33.8	16.1	61	141.8	96	205	401	266	510	950	704	1,300	2,372
- 16.7	2	35.6	16.7	62	143.6	99	210	410	271	520	968	760	1,400	2,552
- 16.1	3	37.4	17.2	63	145.4	102	215	419	277	530	986	816	1,500	2,732
- 15.6	4	39.2	17.8	64	147.2	104	220	428	282	540	1,004	871	1,600	2,912
- 15.0	5	41.0	18.3	65	149.0	107	225	437	288	550	1,022	927	1,700	3,092
- 14.4	6	42.8	18.9	66	150.8	110	230	446	293	560	1,040	982	1,800	3,272
- 13.9	7	44.6	19.4	67	152.6	113	235	455	299	570	1,058	1,038	1,900	3,452
- 13.3	8	46.4	20.0	68	154.4	116	240	464	304	580	1,076	1,093	2,000	3,632
- 12.8	9	48.2	20.6	69	156.2	118	245	473	310	590	1,094	1,149	2,100	3,812
- 12.2	10	50.0	21.1	70	158.0	121	250	482	316	600	1,112	1,204	2,200	3,992
- 11.7	11	51.8	21.7	71	159.8	124	255	491	321	610	1,130	1,260	2,300	4,172
- 11.1	12	53.6	22.2	72	161.6	127	260	500	327	620	1,148	1,316	2,400	4,352

CONVERSION CHART

PRESSURE

1 kgs./cm² = 14.223 lbs./in.² **1 lbs./In.² = 0.0703 kgs./cm²**

1 to 60			61 to 200			205 to 700			710 to 1,600			1,620 to 2,800		
	kgs./cm²	lbs./in.²		kgs./cm²	lbs./in.²		kgs./cm²	lbs./in.²		kgs./cm²	lbs./in.²		kgs./cm²	lbs./in.²
kgs./cm.²	lbs./in.²		kgs./cm.²	lbs./in.²		kgs./cm.²	lbs./in.²		kgs./cm.²	lbs./in.²		kgs./cm.²	lbs./in.²	
0.07	1	14.22	4.29	61	868	14.41	205	2,916	49.92	710	10,098	113.90	1,620	23,041
0.14	2	28.45	4.36	62	882	14.76	210	2,987	50.62	720	10,241	115.30	1,640	23,326
0.21	3	42.67	4.43	63	896	15.12	215	3,058	51.32	730	10,383	116.71	1,660	23,610
0.28	4	56.89	4.50	64	910	15.47	220	3,129	52.03	740	10,525	118.12	1,680	23,895
0.35	5	71.12	4.57	65	925	15.82	225	3,200	52.73	750	10,667	119.52	1,700	24,179
0.42	6	85.34	4.64	66	939	16.17	230	3,271	53.43	760	10,809	120.93	1,720	24,464
0.49	7	99.56	4.71	67	953	16.52	235	3,342	54.14	770	10,952	122.33	1,740	24,748
0.56	8	113.78	4.78	68	967	16.87	240	3,414	54.84	780	11,094	123.74	1,760	25,032
0.63	9	128.01	4.85	69	981	17.23	245	3,485	55.54	790	11,236	125.15	1,780	25,317
0.70	10	142.23	4.92	70	996	17.58	250	3,556	56.25	800	11,378	126.56	1,800	25,601
0.77	11	156.45	4.99	71	1,010	17.93	255	3,627	56.95	810	11,521	127.96	1,820	25,886
0.84	12	170.68	5.06	72	1,024	18.28	260	3,698	57.65	820	11,663	129.36	1,840	26,170
0.91	13	184.90	5.13	73	1,038	18.63	265	3,769	58.35	830	11,805	130.76	1,860	26,455
0.98	14	199.12	5.20	74	1,053	18.98	270	3,840	59.06	840	11,947	132.18	1,880	26,739
1.05	15	213.35	5.27	75	1,067	19.33	275	3,911	59.76	850	12,090	133.58	1,900	27,024
1.12	16	227.57	5.34	76	1,081	19.69	280	3,982	60.46	860	12,232	134.99	1,920	27,308
1.20	17	241.79	5.41	77	1,095	20.04	285	4,054	61.17	870	12,374	136.39	1,940	27,593
1.27	18	256.01	5.48	78	1,109	20.39	290	4,125	61.87	880	12,516	137.80	1,950	27,877
1.34	19	270.24	5.55	79	1,124	20.74	295	4,196	62.57	890	12,658	139.21	1,980	28,162
1.41	20	284.46	5.62	80	1,138	21.09	300	4,267	63.28	900	12,801	140.61	2,000	28,446
1.48	21	298.68	5.69	81	1,152	21.80	310	4,409	63.98	910	12,943	142.02	2,020	28,730
1.55	22	312.91	5.77	82	1,166	22.50	320	4,551	64.68	920	13,085	143.43	2,040	29,015
1.62	23	327.13	5.84	83	1,181	23.20	330	4,694	65.39	930	13,227	144.83	2,060	29,299
1.69	24	341.35	5.91	84	1,195	23.90	340	4,836	66.09	940	13,370	146.24	2,080	29,584
1.76	25	355.58	5.98	85	1,209	24.61	350	4,978	66.79	950	13,512	147.64	2,100	29,868
1.83	26	369.80	6.05	86	1,223	25.31	360	5,120	67.49	960	13,654	149.05	2,120	30,153
1.90	27	384.02	6.12	87	1,237	26.01	370	5,263	68.20	970	13,796	150.46	2,140	30,437
1.97	28	398.24	6.19	88	1,252	26.72	380	5,405	68.90	980	13,939	151.86	2,160	30,722
2.04	29	412.47	6.26	89	1,266	27.42	390	5,547	69.60	990	14,081	153.27	2,180	31,006
2.11	30	426.69	6.33	90	1,280	28.12	400	5,689	70.31	1,000	14,223	154.67	2,200	31,291
2.18	31	440.91	6.40	91	1,294	28.83	410	5,831	71.71	1,020	14,507	156.08	2,220	31,575
2.25	32	455.14	6.47	92	1,309	29.53	420	5,974	73.12	1,040	14,792	157.49	2,240	31,860
2.32	33	469.36	6.54	93	1,323	30.23	430	6,116	74.52	1,060	15,076	158.89	2,260	32,144
2.39	34	483.58	6.61	94	1,337	30.93	440	6,258	75.93	1,080	15,361	160.30	2,280	32,428
2.46	35	497.81	6.68	95	1,351	31.64	450	6,400	77.34	1,100	15,645	161.71	2,300	32,713
2.53	36	512.03	6.75	96	1,365	32.34	460	6,543	78.74	1,120	15,930	163.11	2,320	32,997
2.60	37	526.25	6.82	97	1,380	33.04	470	6,685	80.15	1,140	16,214	164.52	2,340	33,282
2.67	38	540.47	6.89	98	1,394	33.75	480	6,827	81.56	1,160	16,499	165.92	2,360	33,566
2.74	39	554.70	6.96	99	1,408	34.45	490	6,969	82.96	1,180	16,783	167.33	2,380	33,851
2.81	40	568.92	7.03	100	1,422	35.15	500	7,112	84.37	1,200	17,068	168.74	2,400	34,135
2.88	41	583.14	7.38	105	1,493	35.86	510	7,254	85.77	1,220	17,352	170.14	2,420	34,420
2.95	42	597.40	7.73	110	1,565	36.56	520	7,396	87.18	1,240	17,637	171.55	2,440	34,704
3.02	43	611.59	8.09	115	1,636	37.26	530	7,538	88.59	1,260	17,921	172.95	2,460	34,989
3.09	44	625.81	8.44	120	1,707	37.97	540	7,680	89.99	1,280	18,205	174.36	2,480	35,273
3.16	45	640.04	8.79	125	1,778	38.67	550	7,823	91.40	1,300	18,490	175.77	2,500	35,558
3.23	46	654.26	9.14	130	1,849	39.37	560	7,965	92.80	1,320	18,774	177.16	2,520	35,842
3.30	47	668.48	9.49	135	1,920	40.07	570	8,107	94.21	1,340	19,059	178.56	2,540	36,126
3.37	48	682.70	9.84	140	1,991	40.78	580	8,249	95.62	1,360	19,343	180.00	2,560	36,411
3.45	49	696.93	10.19	145	2,062	41.48	590	8,392	97.02	1,380	19,628	181.37	2,580	36,695
3.52	50	711.15	10.55	150	2,133	42.18	600	8,534	98.43	1,400	19,912	182.78	2,600	36,980
3.59	51	725.37	10.90	155	2,205	42.89	610	8,676	99.84	1,420	20,197	184.19	2,620	37,264
3.66	52	739.60	11.25	160	2,276	43.59	620	8,818	101.24	1,440	20,481	185.59	2,640	37,549
3.73	53	753.82	11.60	165	2,347	44.29	630	8,960	102.65	1,460	20,766	187.00	2,660	37,833
3.80	54	768.04	11.95	170	2,418	45.00	640	9,103	104.05	1,480	21,050	188.40	2,680	37,118
3.87	55	782.27	12.30	175	2,489	45.70	650	9,245	105.46	1,500	21,335	189.81	2,700	38,402
3.94	56	796.49	12.66	180	2,560	46.40	660	9,387	106.87	1,520	21,619	191.22	2,720	38,687
4.01	57	810.71	13.01	185	2,631	47.11	670	9,529	108.27	1,540	21,903	192.62	2,740	38,971
4.08	58	824.93	13.36	190	2,702	47.81	680	9,672	109.68	1,560	22,188	194.03	2,760	39,255
4.15	59	839.16	13.71	195	2,773	48.51	690	9,814	111.08	1,580	22,472	195.43	2,780	39,540
4.22	60	853.38	14.06	200	2,845	49.21	700	9,956	112.49	1,600	22,757	196.84	2,800	39,824

WEIGHT CONVERSION

POUNDS TO KILOGRAMS

(1 pound = 0.4536 kilogram)

Pounds	0	1	2	3	4	5	6	7	8	9
0	0.00	0.45	0.91	1.36	1.81	2.27	2.72	3.18	3.63	4.08
10	4.54	4.99	5.44	5.90	6.35	6.80	7.26	7.71	8.16	8.62
20	9.07	9.53	9.98	10.43	10.89	11.34	11.79	12.25	12.70	13.15
30	13.61	14.06	14.52	14.97	15.42	15.88	16.33	16.78	17.24	17.69
40	18.14	18.60	19.05	19.50	19.96	20.41	20.87	21.32	21.77	22.23
50	22.68	23.13	23.59	24.04	24.49	24.95	25.40	25.86	26.31	26.76
60	27.22	27.67	28.12	28.58	29.03	29.48	29.94	30.39	30.84	31.30
70	31.75	32.21	32.66	33.11	33.57	34.02	34.47	34.93	35.38	35.83
80	36.29	36.74	37.20	37.65	38.10	38.56	39.01	39.46	39.92	40.37
90	40.82	41.28	41.73	42.18	42.64	43.09	43.55	44.00	44.45	44.91

KILOGRAMS TO POUNDS

(1 kilogram = 2.2046 pounds)

Kilograms	0	1	2	3	4	5	6	7	8	9
0	0.00	2.20	4.41	6.61	8.82	11.02	13.23	15.43	17.64	19.84
10	22.05	24.25	26.46	28.66	30.86	33.07	35.27	37.48	39.68	41.89
20	44.09	46.30	48.50	50.71	52.91	55.12	57.32	59.52	61.73	63.93
30	66.14	68.34	70.55	72.75	74.96	77.16	79.37	81.57	83.77	85.98
40	88.18	90.39	92.59	94.80	97.00	99.21	101.41	103.62	105.82	108.03
50	110.23	112.43	114.64	116.84	119.05	121.25	123.46	125.66	127.87	130.07
60	132 28	134.48	136.69	138.89	141.09	143.30	145.50	147.71	149.91	152.12
70	154.32	156.53	158.73	160.94	163.14	165.35	167.55	169.75	171.96	174.16
80	176.37	178.57	180.78	182.98	185.19	187.39	189.60	191.80	194.00	196.21
90	198.41	200.62	202.82	205.03	207.23	209.44	211.64	213.85	216.05	218.26

CROSS REFERENCE CHART

GATE - GLOBE - CHECK						
KITZ	CRANE	HAMMOND	MILWAUKEE	NIBCO	RED-WHITE	STOCKHAM
09	7TF	IB413T	590T	T235-Y	221	B22T
10	1310	IB423	1590T	S-235-Y	-	B24T
11	1	IB-440	502	T-211-B	211	B-16
12	-	IB-418	1502	-	212	B-17
17	362e	IB412	572	T-275-B	-	B-66
17S	382P	IB444	593A	T-276-AP	-	B-74
18	229C	-	-	T-275-Y	-	B-32
19	76E	IB949	507	T-473-B	-	B-375
22	37	IB904	509	T-413-B	236	B-319
22T	41	IB940	-	T-413-Y	236T	B-320-T
23	1342	IB912	1509	S-413-T	237	B-309
23T	-	-	-	S-413-Y	237-T	B-310-T
24	428	IB640	148	T-111	208	B-100
25	431	IB641	1150	T-131	209	B-122
27	-	-	-	-	206F	-
28	-	-	-	-	207F	-
29	137	-	-	T-433-B	239	B-321
30	-	-	-	S-433-B	-	-
37	-	IB652	1182	T174-A	-	B-144
40	438	IB645	105	T-113	280	B-103
41	1324	IB647	115	S-113	281	B-104
42	431UB	IB629	1151	T-134	298	B-120
43	-	IB648	1169	S-134	299	B-124
44	-	IB635	149	S-111	208-C	B-108
45	1334	IB646	-	-	-	-
46	437	IB646	1140	T-133	204	B-128
64	1324	IB638	-	-	-	-
72	465-1/2	IR1140	F-2885	F-617-O	421	G-623
73	475-1/2	IR1146	F-2890	F-617-ON	422	G-613
75	461	IR1138	F-2882	F-619	415	G-612
76	351	IR116	F-2981	F-718-B	400	G-512
78	373	IR1124	F-2974	F918-B	435	G-931

Chart indicates 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.

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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.

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⚠ WARNING

This product contains a chemical known to the State of California to cause cancer, or birth defects or other reproductive harm.

KITZ CORPORATION OF AMERICA

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

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