

KITZ

Industrial Threaded Ball Valves (Includes socket weld & buttweld ends) **Carbon & Stainless Steel**



KITZ CORPORATION OF AMERICA

INDUSTRIAL THREADED BALL VALVES

Carbon and Stainless Steel

- CONTENTS -

- Figure Number Construction 1

UNIBODY/2-Piece and 2-Piece Seal Welded

- CODE NUMBERS 2
- TECHNICAL INFORMATION
 - Product Overview 3
 - Pressure – Temperature Rating 3
 - Basic Design Standards 3
 - Test Pressures 3
- TECHNICAL DATA
 - Operating Torque..... 4
 - Flow Coefficients..... 4
- DIMENSIONAL OUTLINES and MATERIALS OF CONSTRUCTION 5

3-Piece

- CODE NUMBERS 8
- TECHNICAL INFORMATION
 - Product Overview 9
 - Pressure – Temperature Rating 9
 - Basic Design Standards 9
 - Test Pressures 9
- TECHNICAL DATA
 - Operating Torque..... 10
 - Flow Coefficients..... 10
- DIMENSIONAL OUTLINES and MATERIALS OF CONSTRUCTION 11
- OPTIONS and ACCESSORIES 14
- ADDITIONAL THREADED ITEMS 15

FIGURE NUMBER CONSTRUCTION

AK SC I K Z M - FS Q
1 2 3 4 5 6 7 8

AK U I H W Z M
1 2 3 4 9 5 6

AW SC 3I F Z M - FS
1 2 3 4 5 6 7

1 - END CONNECTION

AK - Tapered NPT (ASME B1.20.1)
AW - Socket Weld (ASME B16.11)
BW - Buttweld (ASME B16.25)
AK/AW - Threaded x Socket Weld

2 - SHELL MATERIAL

SC - Carbon Steel
U - Stainless Steel

3 - VALVE TYPE

T - Floating Ball
3T - 3-PC

4 - PORT DESIGN

K - Reduced
H - Regular
F - Full

5 - MOUNTING PAD

Z - Integral
(ISO-5211 on 3-pc)

6 - TRIM (Ball and Stem)

M - 316SS

7 - OPTIONS

FS - Fire Tested per API 607

8 - OPERATOR

() - Locking Lever
O - Locking Oval

9 - SPECIAL FEATURES

W - Seal Welded

CODE NUMBERS

1-pc / 2-pc & 2-pc Seal Welded

FIRESAFE UNIBODY (Page 5)

AKSCTKZM-FS (CS/Locking Lever) - #119
AKUTKZM-FS (SS/Locking Lever) - #129

AKSCTKZM-FSO (CS/Locking Oval) - #119-LOH
AKUTKZM-FSO (SS/Locking Oval) - #129-LOH

2-Piece (Page 6)

AKSCTHZM (CS/Non-Firesafe/Locking Lever) - #217
AKUTHZM (SS/Non-Firesafe/Locking Lever) - #227

AKSCTHZM-FS (CS/Firesafe/Locking Lever) - #219
AKUTHZM-FS (SS/Firesafe/Locking Lever) - #229

AKSCTHZM-O (CS/Non-Firesafe/Locking Oval) - #217-LOH
AKUTHZM-O (SS/Non-Firesafe/Locking Oval) - #227-LOH

AKSCTHZM-FSO (CS/Firesafe/Locking Oval) - #219-LOH
AKUTHZM-FSO (SS/Firesafe/Locking Oval) - #229-LOH

2-Piece, Seal Welded (Page 7)

AKSCTHWZM (CS/Non-Firesafe/Locking Lever) - #237
AKUTHWZM (SS/Non-Firesafe/Locking Lever) - #247

AKSCTHWZM-FS (CS/Firesafe/Locking Lever) - #239
AKUTHWZM-FS (SS/Firesafe/Locking Lever) - #249

AKSCTHWZM-O (CS/Non-Firesafe/Locking Oval) - #237-LOH
AKUTHWZM-O (SS/Non-Firesafe/Locking Oval) - #247-LOH

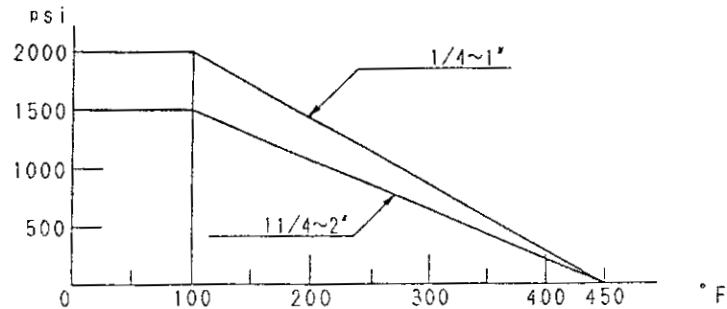
AKSCTHWZM-FSO (CS/Firesafe/Locking Oval) - #239-LOH
AKUTHWZM-FSO (SS/Firesafe/Locking Oval) - #249-LOH

TECHNICAL INFORMATION

PRODUCT OVERVIEW

PRODUCT TYPE	MATERIAL	BASIC FIGURE	STANDARD OPTIONS	SIZE RANGE
FIRESAFE UNIBODY, REDUCED PORT	WCB CF8M	AKSCTKZM-FS AKUTKZM-FS	FIRESAFE (API 607)	1/4", 3/8", 1/2", 3/4", 1", 1-1/4", 1-1/2", 2"
TWO-PIECE REGULAR PORT	WCB CF8M	AKSCTHZM (-FS) AKUTHZM (-FS)	LOCKING OVAL LOCKING LEVER	
TWO-PIECE REGULAR PORT, SEAL WELDED	WCB CF8M	AKSCTHWZM (-FS) AKUTHWZM (-FS)		

PRESSURE-TEMPERATURE RATING



BASIC DESIGN

FIRESAFE UNIBODY

Face-to Face Dimensions - KITZ Standard
 End Connections - ASME B1.20.1
 Wall Thickness - ASME B16.34 Class 600
 Port - Reduced port in accordance with API 608
 Mounting Pad - KITZ Standard
 Standard Handle - Locking Oval (1/4"~1")
 Locking Lever (1-1/4"~2")
 Optional Locking Oval and Lever for other sizes

Body Seat - Hypatite PTFE
 Body Seal - Flexible Graphite
 Pressure Rating - 2000 WOG (1/4"~1)
 240 WSP (1/4"~1)
 1500 WOG (1-1/4"~2")
 220 WSP (1-1/4"~2")
 NACE MR0103 (MR0175-2000)

2-Piece

Face-to Face Dimensions - KITZ Standard
 End Connections - ASME B1.20.1
 Wall Thickness - ASME B16.34 Class 600
 Port - Regular port in accordance with API 608
 Mounting Pad - KITZ Standard
 Standard Handle - Locking Oval (1/4"~1")
 Locking Lever (1-1/4"~2")
 Optional Locking Oval and Lever for other sizes
 Body Seat - Hypatite PTFE
 Body Seal - PTFE (Standard)/Flexible Graphite (FS)
 Pressure Rating - 2000 WOG (1/4"~1)
 240 WSP (1/4"~1)
 1500 WOG (1-1/4"~2")
 220 WSP (1-1/4"~2")
 NACE MR0103 (MR0175-2000)

2-Piece, Seal Welded

Face-to Face Dimensions - KITZ Standard
 End Connections - ASME B1.20.1
 Wall Thickness - ASME B16.34 Class 600
 Port - Regular port in accordance with API 608
 Mounting Pad - KITZ Standard
 Standard Handle - Locking Oval (1/4"~1")
 Locking Lever (1-1/4"~2")
 Optional Locking Oval and Lever for other sizes
 Body Seat - Hypatite PTFE
 Body Seal - None (Seal welded construction)
 Pressure Rating - 2000 WOG (1/4"~1)
 240 WSP (1/4"~1)
 1500 WOG (1-1/4"~2")
 220 WSP (1-1/4"~2")
 NACE MR0103 (MR0175-2000)

TEST PRESSURES

Test Method - API 598
 Body Test Pressure - 3000 psi, Hydrostatic (1/4"~1")
 2250 psi, Hydrostatic (1-1/4"~2")
 Seat Test Pressure - 80 psi, Air

TECHNICAL DATA

CARBON and STAINLESS STEEL
FIRESAFE UNIBODY
 FIGURE: AKSCTKZM-FS/AKUTKZM-FS

OPERATING TORQUE, in-lbs*

VALVE SIZE	DIFFERENTIAL PRESSURE, psi				
	up to 400	500	1,000	1,500	2,000
1/4"	14.5	15	18	21	24
3/8"	19	20	25	30	35
1/2"	29	30	35	40	45
3/4"	44	45	50	55	60
1"	68	70	80	90	100
1-1/4"	78	80	95	110	-
1-1/2"	108	110	130	150	-
2"	138	140	160	180	-

FLOW COEFFICIENT

VALVE SIZE	APPROX Cv
1/4"	2.2
3/8"	2.3
1/2"	4.3
3/4"	8.0
1"	12.0
1-1/4"	18.0
1-1/2"	32.0
2"	53.0

CARBON and STAINLESS STEEL
2-pc and 2-pc SEAL WELDED
 FIGURE: AKSCTHZM/AKUTHZM (-FS) and AKSCTHWZM/AKUTHWZM (-FS)

OPERATING TORQUE, in-lbs*

VALVE SIZE	DIFFERENTIAL PRESSURE, psi				
	up to 400	500	1,000	1,500	2,000
1/4"	14.5	20	25	30	35
3/8"	19	30	35	40	45
1/2"	29	45	50	55	60
3/4"	44	70	80	90	100
1"	68	80	95	110	125
1-1/4"	78	110	130	150	-
1-1/2"	108	140	160	180	-
2"	138	160	180	200	-

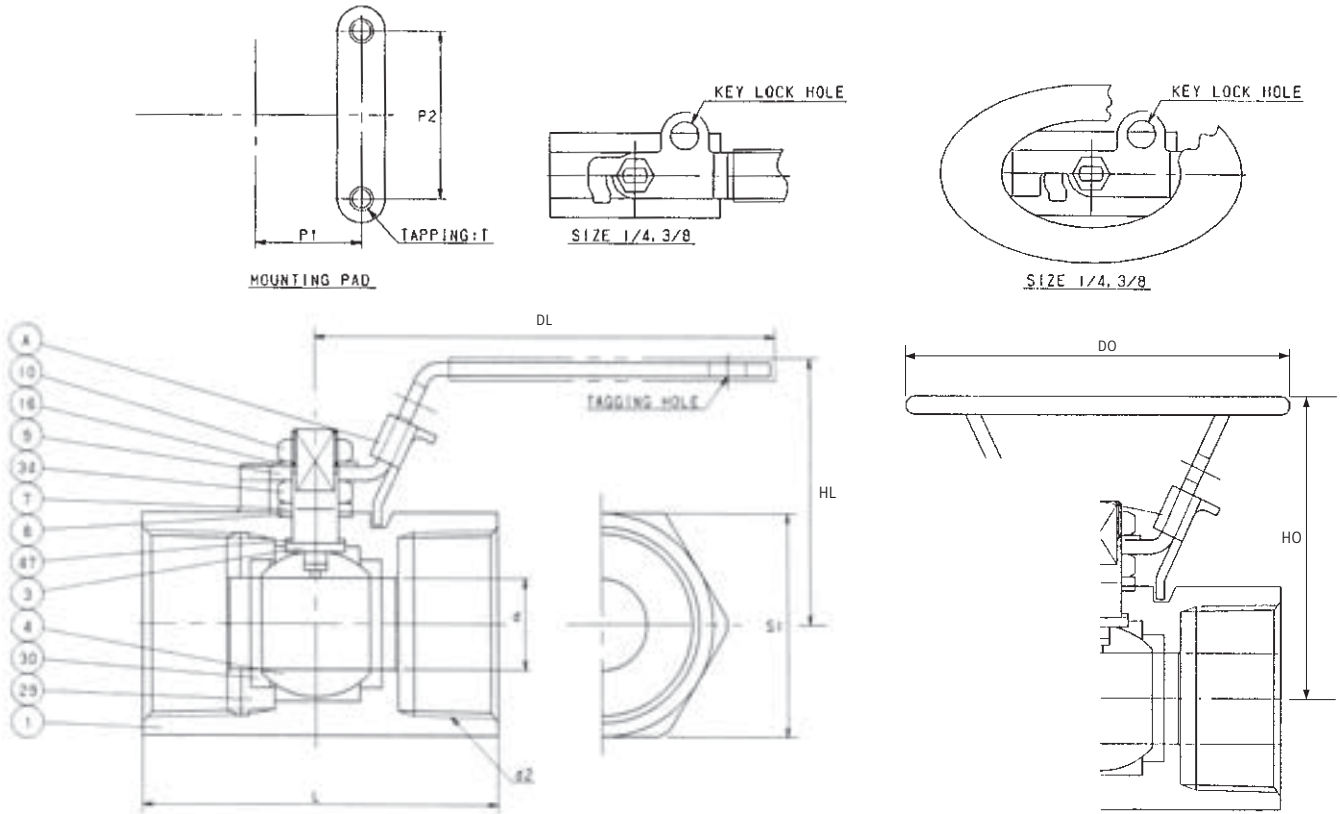
FLOW COEFFICIENT

VALVE SIZE	APPROX Cv
1/4"	4.0
3/8"	4.5
1/2"	5.0
3/4"	11.0
1"	24.0
1-1/4"	35.0
1-1/2"	74.0
2"	128.0

* Values are for clean water at ambient temperature.
 KITZ recommends applying a safety factor when selecting an actuator.

UNIBODY

AKSCTKZM-FS/AKUTKZM-FS



MATERIALS OF CONSTRUCTION

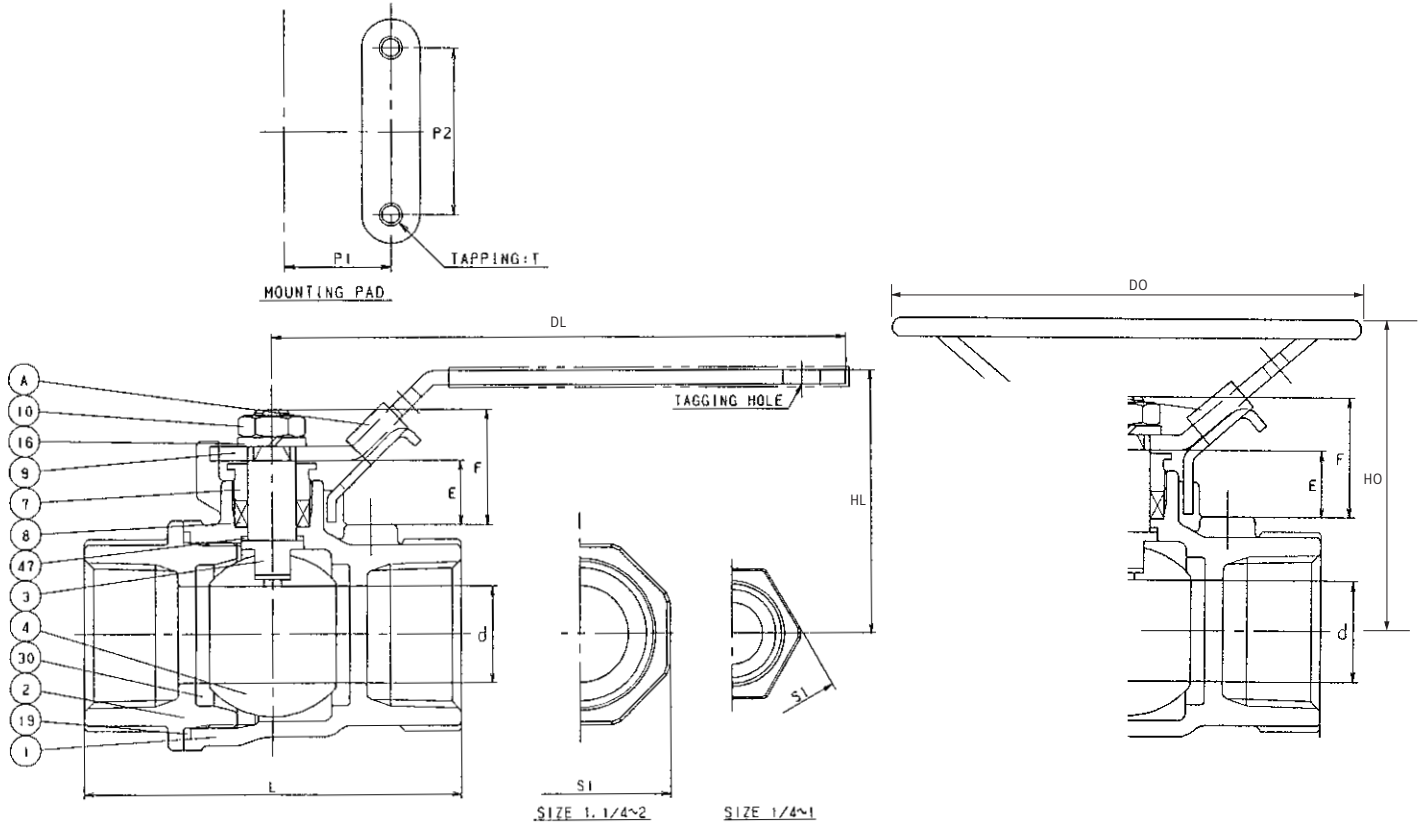
CARBON STEEL	STAINLESS STEEL
--------------	-----------------

No	PART	Qty.	MATERIALS	MATERIALS	ASTM SPECIFICATION
1	BODY	1	CAST STEEL		A216 Gr. WCB A351 Gr. CF8M
3	STEM	1	STAINLESS STEEL	STAINLESS STEEL	A276 Type 316
4	BALL	1	STAINLESS STEEL	STAINLESS STEEL	A276 Type 316
7	GLAND	1	STAINLESS STEEL	STAINLESS STEEL	A276 Type 304
8	GLAND PACKING	1	FLEXIBLE GRAPHITE	FLEXIBLE GRAPHITE	
9	HANDLE	1	CARBON STEEL (1)	STAINLESS STEEL (1)	
10	NUT	2	STAINLESS STEEL	STAINLESS STEEL	A194 Gr. 8
16	WASHER	1	STAINLESS STEEL	STAINLESS STEEL	A276 Type 304
29	INSERT	1	STAINLESS STEEL	STAINLESS STEEL	A276 Type 316 or A351 Gr. CF8M
30	BALL SEAT	2	HYPATITE PTFE	HYPATITE PTFE	
34	NUT	1	STAINLESS STEEL	STAINLESS STEEL	A194 Gr. 8 (1/2" and LARGER)
47	THRUST WASHER	1	G/F PTFE	G/F PTFE	
A	LATCH LOCK	1	STAINLESS STEEL	STAINLESS STEEL	A276 Type 430 (1/2" and LARGER)

NOTES: (1) PLASTIC COATED

VALVE SIZE	DIMENSIONS, Inches											APPROX WT. lbs.
	d	HL	HO	DL	DO	L	d2	S1	P1	P2	T	
1/4"	0.18	1.12	1.71	2.80	3.94	1.97	1/4 NPT	0.72	-	-	-	0.35
3/8"	0.27	1.16	1.87	3.23	3.94	2.05	3/8 NPT	0.87	-	-	-	0.37
1/2"	0.36	1.93	2.13	3.54	3.94	2.56	1/2 NPT	1.10	0.50	1.12	No. 10-24UNC	0.62
3/4"	0.49	2.05	2.24	3.54	3.94	2.76	3/4 NPT	1.34	0.57	1.37	No. 10-24UNC	0.86
1"	0.63	2.15	2.38	4.33	3.94	3.15	1 NPT	1.57	0.87	1.37	No. 10-24UNC	1.21
1-1/4"	0.79	2.34	2.58	4.33	3.94	3.74	1-1/4 NPT	1.97	1.00	1.50	1/4-20UNC	1.92
1-1/2"	0.96	2.68	3.07	5.51	5.12	3.94	1-1/2 NPT	2.24	1.00	1.50	1/4-20UNC	2.84
2"	1.26	2.89	3.29	5.51	5.12	4.49	2 NPT	2.72	1.00	1.50	1/4-20UNC	4.26

2-PIECE AKSCTHZM (-FS) / AKUTHZM (-FS)



MATERIALS OF CONSTRUCTION

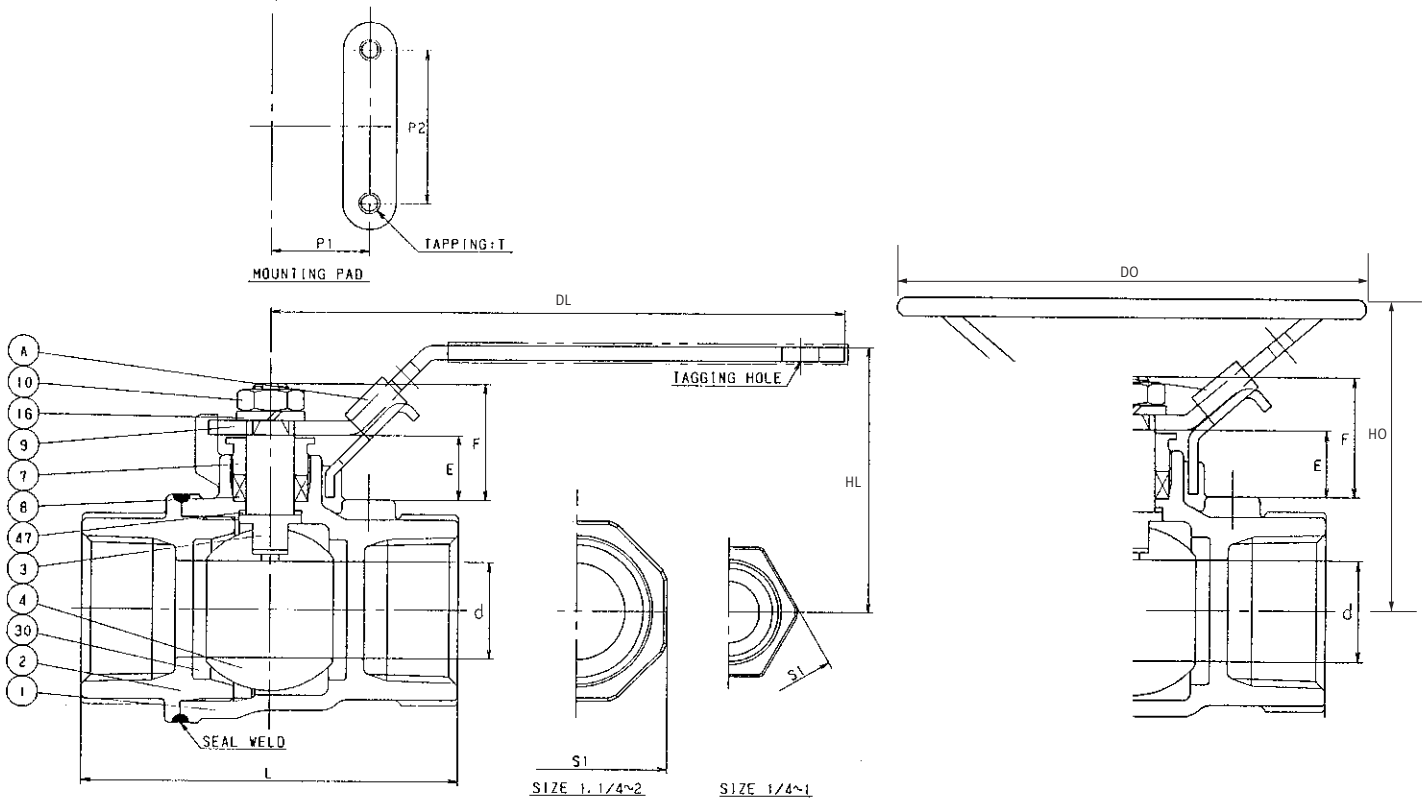
CARBON STEEL	STAINLESS STEEL
--------------	-----------------

No	PART	Qty.	MATERIALS	MATERIALS	ASTM SPECIFICATION
1	BODY	1	CAST STEEL		A216 Gr. WCB
2	BODY CAP	1	CAST STEEL	STAINLESS STEEL	A351 Gr. CF8M A216 Gr. WCB
3	STEM	1	STAINLESS STEEL	STAINLESS STEEL	A351 Gr. CF8M A276 Type 316
4	BALL	1	STAINLESS STEEL	STAINLESS STEEL	A276 Type 316
7	GLAND	1	STAINLESS STEEL	STAINLESS STEEL	A276 Type 304
8	GLAND PACKING	1	PTFE or FLEX GRAPH (FS)	PTFE or FLEX GRAPH (FS)	
9	HANDLE	1	CARBON STEEL (1)		
10	HANDLE NUT	1	STAINLESS STEEL	STAINLESS STEEL (1)	A276 Type 430
16	WASHER	1	STAINLESS STEEL	STAINLESS STEEL	A194 Gr. 8
19	GASKET	1	PTFE or FLEX GRAPH (FS)	PTFE or FLEX GRAPH (FS)	A276 Type 304
30	BALL SEAT	2	HYPATITE PTFE	HYPATITE PTFE	
47	THRUST WASHER	1	G/F PTFE	G/F PTFE	
A	LATCH LOCK	1	CARBON STEEL	STAINLESS STEEL	A276 Type 430

NOTES: (1) PLASTIC COATED

VALVE SIZE	DIMENSIONS, Inches												APPROX WT. lbs.	
	d	HL	HO	DL	DO	L	d2	S1	P1	P2	E	F		T
1/4"	0.37	1.99	2.42	3.94	3.94	2.09	1/4 NPT	0.827	0.50	1.12	0.571	0.925	No. 10-24UNC	0.44
3/8"	0.37	1.99	2.42	3.94	3.94	2.09	3/8 NPT	0.945	0.50	1.12	0.571	0.925	No. 10-24UNC	0.44
1/2"	0.39	2.29	2.46	4.53	3.94	2.44	1/2 NPT	1.102	0.50	1.12	0.531	0.925	No. 10-24UNC	0.66
3/4"	0.59	2.47	2.64	4.53	3.94	2.83	3/4 NPT	1.378	0.87	1.37	0.551	1.004	No. 10-24UNC	1.01
1"	0.79	2.50	2.70	5.31	3.94	3.35	1 NPT	1.614	0.87	1.37	0.571	1.063	No. 10-24UNC	1.94
1-1/4"	0.98	2.66	2.85	5.31	3.94	3.70	1-1/4 NPT	2.047	0.93	1.50	0.531	1.024	1/4-20UNC	2.21
1-1/2"	1.26	3.27	3.66	6.14	5.12	4.21	1-1/2-NPT	2.323	0.93	1.50	0.669	1.240	1/4-20UNC	3.62
2"	1.57	3.58	3.98	7.48	5.12	4.72	2 NPT	2.835	0.93	1.50	0.591	1.240	1/4-20UNC	5.64

2-PIECE SEAL WELDED AKSCTHWZM (-FS) / AKUTHWZM (-FS)



MATERIALS OF CONSTRUCTION

CARBON STEEL	STAINLESS STEEL
--------------	-----------------

No	PART	Qty.	MATERIALS	MATERIALS	ASTM SPECIFICATION
1	BODY	1	CAST STEEL	STAINLESS STEEL	A216 Gr. WCB A351 Gr. CF8M
2	BODY CAP	1	CAST STEEL	STAINLESS STEEL	A216 Gr. WCB A351 Gr. CF8M
3	STEM	1	STAINLESS STEEL	STAINLESS STEEL	A276 Type 316
4	BALL	1	STAINLESS STEEL	STAINLESS STEEL	A276 Type 316
7	GLAND	1	STAINLESS STEEL	STAINLESS STEEL	A276 Type 304
8	GLAND PACKING	1	PTFE or FLEX GRAPH (FS)	PTFE or FLEX GRAPH (FS)	
9	HANDLE	1	CARBON STEEL (1)	STAINLESS STEEL (1)	A276 Type 430
10	HANDLE NUT	1	STAINLESS STEEL	STAINLESS STEEL	A194 Gr. 8
16	WASHER	1	STAINLESS STEEL	STAINLESS STEEL	A276 Type 304
30	BALL SEAT	2	HYPATITE PTFE	HYPATITE PTFE	
47	THRUST WASHER	1	G/F PTFE	G/F PTFE	
A	LATCH LOCK	1	CARBON STEEL	STAINLESS STEEL	A276 Type 430

NOTES: (1) PLASTIC COATED

VALVE SIZE	DIMENSIONS, Inches													APPROX WT. lbs.
	d	HL	HO	DL	DO	L	d2	S1	P1	P2	E	F	T	
1/4"	0.37	1.99	2.42	3.94	3.94	2.09	1/4 NPT	0.827	0.50	1.12	0.571	0.925	No. 10-24UNC	0.44
3/8"	0.37	1.99	2.42	3.94	3.94	2.09	3/8 NPT	0.945	0.50	1.12	0.571	0.925	No. 10-24UNC	0.44
1/2"	0.39	2.29	2.46	4.53	3.94	2.44	1/2 NPT	1.102	0.50	1.12	0.531	0.925	No. 10-24UNC	0.66
3/4"	0.59	2.47	2.64	4.53	3.94	2.83	3/4 NPT	1.378	0.87	1.37	0.551	1.004	No. 10-24UNC	1.01
1"	0.79	2.50	2.70	5.31	3.94	3.35	1 NPT	1.614	0.87	1.37	0.571	1.063	No. 10-24UNC	1.94
1-1/4"	0.98	2.66	2.85	5.31	3.94	3.70	1-1/4 NPT	2.047	0.93	1.50	0.531	1.024	1/4-20UNC	2.21
1-1/2"	1.26	3.27	3.66	6.14	5.12	4.21	1-1/2-NPT	2.323	0.93	1.50	0.669	1.240	1/4-20UNC	3.62
2"	1.57	3.58	3.98	7.48	5.12	4.72	2 NPT	2.835	0.93	1.50	0.591	1.240	1/4-20UNC	5.64

CODE NUMBERS

3-Piece

Threaded (Pages 9 - 13)

AKSC3THZM (CS/Regular Port/Non-Firesafe/Locking Lever) - #317
AKU3THZM (SS/Regular Port/Non-Firesafe/Locking Lever) - #327

AKSC3THZM-FS (CS/Regular Port/Firesafe/Locking Lever) - #319
AKU3THZM-FS (SS/Regular Port/Firesafe/Locking Lever) - #329

AKSC3THZM-O (CS/Regular Port/Non-Firesafe/Locking Oval) - #317-LOH
AKU3THZM-O (SS/Regular Port/Non-Firesafe/Locking Oval) - #327-LOH

AKSC3THZM-FSO (CS/Regular Port/Firesafe/Locking Oval) - #319-LOH
AKU3THZM-FSO (SS/Regular Port/Firesafe/Locking Oval) - #329-LOH

AKSC3TFZM (CS/Full Port/Non-Firesafe/Locking Lever) - #317F
AKU3TFZM (SS/Full Port/Non-Firesafe/Locking Lever) - #327F

AKSC3TFZM-FS (CS/Full Port/Firesafe/Locking Lever) - #319F
AKU3TFZM-FS (SS/Full Port/Firesafe/Locking Lever) - #329F

AKSC3TFZM-O (CS/Full Port/Non-Firesafe/Locking Oval) - #317F-LOH
AKU3TFZM-O (SS/Full Port/Non-Firesafe/Locking Oval) - #327F-LOH

AKSC3TFZM-FSO (CS/Full Port/Firesafe/Locking Oval) - #319F-LOH
AKU3TFZM-FSO (SS/Full Port/Firesafe/Locking Oval) - #329F-LOH

Socket Weld (Pages 9 - 13)

AWSC3THZM (CS/Regular Port/Non-Firesafe/Locking Lever) - #317S
AWU3THZM (SS/Regular Port/Non-Firesafe/Locking Lever) - #327S

AWSC3THZM-FS (CS/Regular Port/Firesafe/Locking Lever) - #319S
AWU3THZM-FS (SS/Regular Port/Firesafe/Locking Lever) - #329S

AWSC3THZM-O (CS/Regular Port/Non-Firesafe/Locking Oval) - #317S-LOH
AWU3THZM-O (SS/Regular Port/Non-Firesafe/Locking Oval) - #327S-LOH

AWSC3THZM-FSO (CS/Regular Port/Firesafe/Locking Oval) - #319S-LOH
AWU3THZM-FSO (SS/Regular Port/Firesafe/Locking Oval) - #329S-LOH

AWSC3TFZM (CS/Full Port/Non-Firesafe/Locking Lever) - #317FS
AWU3TFZM (SS/Full Port/Non-Firesafe/Locking Lever) - #327FS

AWSC3TFZM-FS (CS/Full Port/Firesafe/Locking Lever) - #319FS
AWU3TFZM-FS (SS/Full Port/Firesafe/Locking Lever) - #329FS

AWSC3TFZM-O (CS/Full Port/Non-Firesafe/Locking Oval) - #317FS-LOH
AWU3TFZM-O (SS/Full Port/Non-Firesafe/Locking Oval) - #327FS-LOH

AWSC3TFZM-FSO (CS/Full Port/Firesafe/Locking Oval) - #319FS-LOH
AWU3TFZM-FSO (SS/Full Port/Firesafe/Locking Oval) - #329FS-LOH

Buttweld (Pages 9 - 13)

BWSC3THZM (CS/Regular Port/Non-Firesafe/Locking Lever) - #317B
BWU3THZM (SS/Regular Port/Non-Firesafe/Locking Lever) - #327B

BWSC3THZM-FS (CS/Regular Port/Firesafe/Locking Lever) - #319B
BWU3THZM-FS (SS/Regular Port/Firesafe/Locking Lever) - #329B

BWSC3THZM-O (CS/Regular Port/Non-Firesafe/Locking Oval) - #317B-LOH
BWU3THZM-O (SS/Regular Port/Non-Firesafe/Locking Oval) - #327B-LOH

BWSC3THZM-FSO (CS/Regular Port/Firesafe/Locking Oval) - #319B-LOH
BWU3THZM-FSO (SS/Regular Port/Firesafe/Locking Oval) - #329B-LOH

BWSC3TFZM (CS/Full Port/Non-Firesafe/Locking Lever) - #317FB
BWU3TFZM (SS/Full Port/Non-Firesafe/Locking Lever) - #327FB

BWSC3TFZM-FS (CS/Full Port/Firesafe/Locking Lever) - #319FB
BWU3TFZM-FS (SS/Full Port/Firesafe/Locking Lever) - #329FB

BWSC3TFZM-O (CS/Full Port/Non-Firesafe/Locking Oval) - #317FB-LOH
BWU3TFZM-O (SS/Full Port/Non-Firesafe/Locking Oval) - #327FB-LOH

BWSC3TFZM-FSO (CS/Full Port/Firesafe/Locking Oval) - #319FB-LOH
BWU3TFZM-FSO (SS/Full Port/Firesafe/Locking Oval) - #329FB-LOH

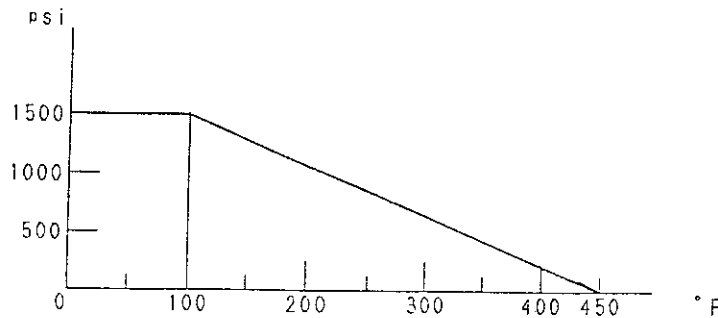
TECHNICAL INFORMATION

PRODUCT OVERVIEW*

PRODUCT TYPE	MATERIAL	BASIC FIGURE	STANDARD OPTIONS	SIZE RANGE
THREADED, REGULAR PORT	WCB CF8M	AKSC3TKZM (-FS) AKU3TKZM (-FS)	FIRESAFE (API 607)	1/2", 3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2"
SOCKET WELD, REGULAR PORT	WCB CF8M	AWSC3THZM (-FS) AWU3THZM (-FS)		
BUTTWELD, REGULAR PORT	WCB CF8M	BWSC3THZM (-FS) BWU3THZM (-FS)	LOCKING OVAL	1/4", 3/8", 1/2", 3/4", 1", 1-1/4", 1-1/2", 2"
THREADED, FULL PORT	WCB CF8M	AKSC3TFZM (-FS) AKU3TFZM (-FS)	LOCKING LEVER	
SOCKET WELD, FULL PORT	WCB CF8M	AWSC3TFZM (-FS) AWU3TFZM (-FS)		
BUTTWELD, FULL PORT	WCB CF8M	BWSC3TFZM (-FS) BWU3TFZM (-FS)		

*Contact KITZ for special configurations such as threaded x socket weld

PRESSURE-TEMPERATURE RATING



BASIC DESIGN

- Face-to Face Dimensions - KITZ Standard
- End Connections - NPT (ASME B1.20.1)
 - Socket Weld (ASME B16.11)
 - Buttweld (ASME B16.25)
- Wall Thickness - ASME B16.34 Class 900
- Port - Regular and Full port in accordance with API 608
- Mounting Pad - In accordance with ISO 5211 except 1/2" regular port and 1/4" ~ 3/8" full port
- Standard Handle - Locking Oval (1/2"~1") - Regular Port
 - Locking Oval (1/4" ~ 1") - Full Port
 - Locking Lever (1-1/4"~2-1/2") - Regular Port
 - Locking Lever (1-1/4"~2") - Full Port
 - Optional Locking Oval and Lever for other sizes
- Body Seat - Hypatite PTFE
- Body Seal - PTFE (Standard)/Flexible Graphite (FS)
- Pressure Rating - 1500 WOG (1/2"~2" regular port and 1/4"~1-1/2" full port)
 - 240 WSP (1/2"~2" regular port and 1/4"~1-1/2" full port)
 - 1000 WOG (2-1/2" regular port and 2" full port)
 - 186 WSP (2-1/2" regular port and 2" full port)
- NACE MR0103 (MR0175-2000)

TEST PRESSURE

- Test Method - API 598
- Body Test Pressure - 2250 ps i, Hydrostatic (1/2"~2" regular port and 1/4"~1-1/2" full port)
 - 1500 psi, Hydrostatic (2-1/2" regular port and 2" full port)
- Seat Test Pressure - 80 psi, Air

TECHNICAL DATA

OPERATING TORQUE, in-lbs*

VALVE SIZE		DIFFERENTIAL PRESSURE, psi									
FB	RB	up to 145	290	435	580	725	870	1,015	1,160	1,305	1,500
1/4" & 3/8"	1/2"	40	43	45	48	51	53	58	59	61	65
1/2"	3/4"	62	66	71	75	80	84	89	93	97	104
3/4"	1"	89	98	108	118	128	137	147	157	166	179
1"	1-1/4"	124	149	174	198	223	248	273	297	322	355
1-1/4"	1-1/2"	195	216	237	259	280	301	322	343	365	392
1-1/2"	2"	221	255	289	322	356	389	423	457	490	534
2"	2-1/2"	310	354	434	513	593	673	752	832	912	1,015

FLOW COEFFICIENT

FULL PORT

VALVE SIZE	APPROX Cv
1/4"	5
3/8"	7
1/2"	22
3/4"	43
1"	72
1-1/4"	126
1-1/2"	215
2"	346

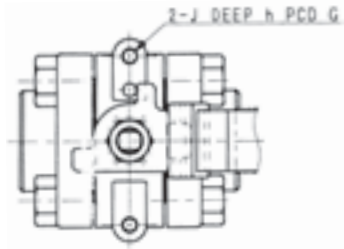
REGULAR PORT

VALVE SIZE	APPROX Cv
1/2"	5
3/4"	11
1"	24
1-1/4"	35
1-1/2"	74
2"	128
2-1/2"	276

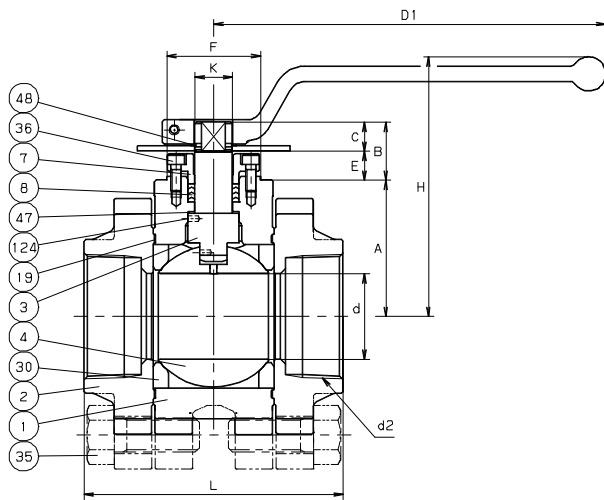
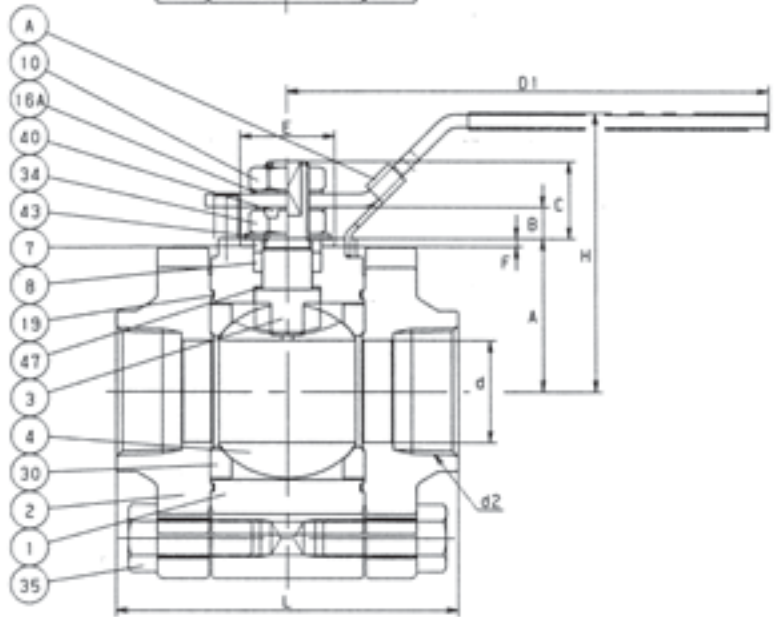
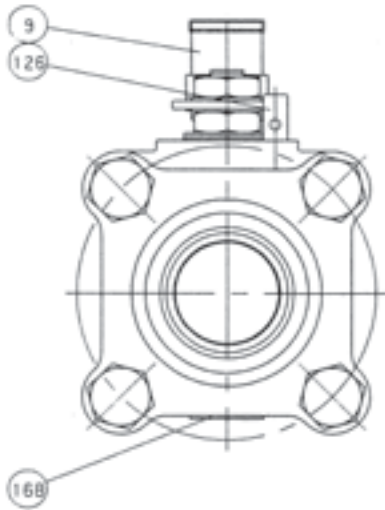
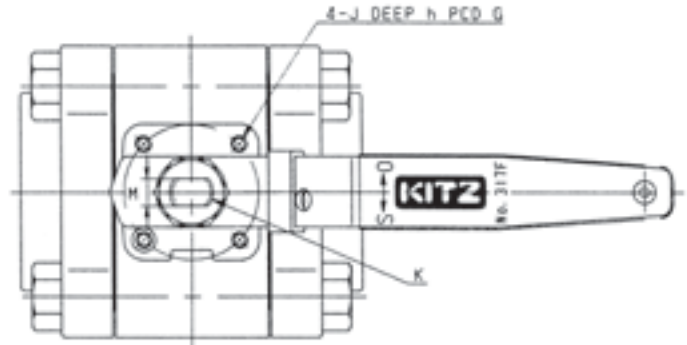
* Values are for clean water at ambient temperature.
KITZ recommends applying a safety factor when selecting an actuator.

3-PIECE

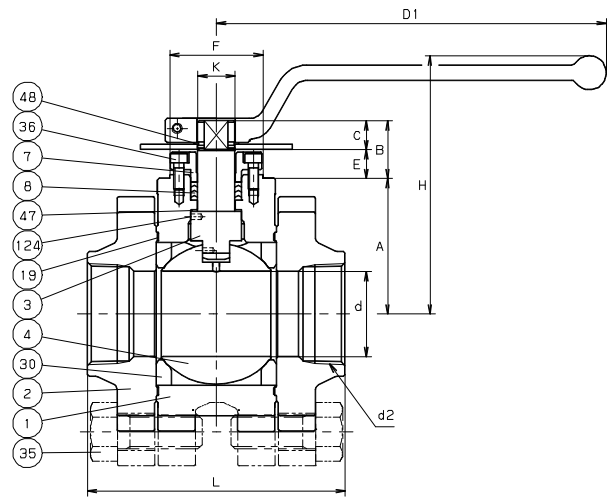
AKSC3THZM (-FS)/AKU3THZM (-FS) (Regular Port)
 AKSC3TFZM (-FS)/AKU3TFZM (-FS) (Full Port)



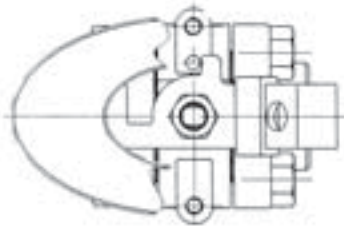
1/2" Regular Port
 1/4"-3/8" Full Port



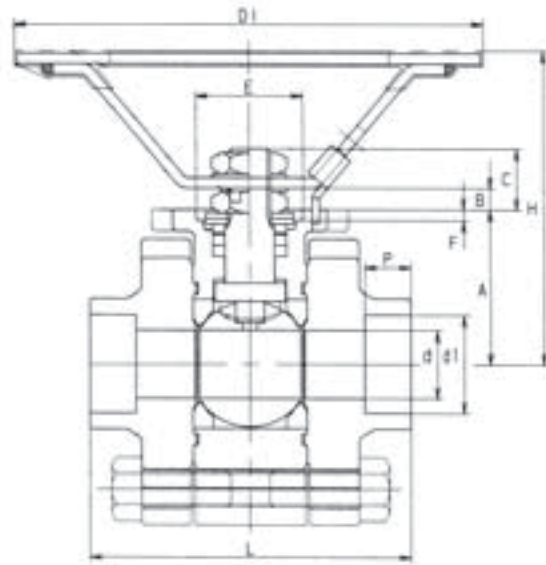
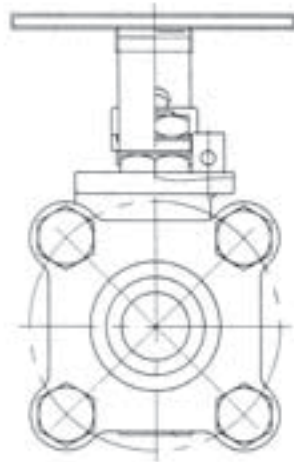
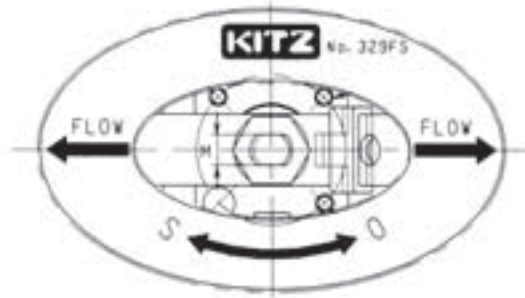
2-1/2" Regular Port



2" Full Port



1/2" Regular Port
1/4"-3/8" Full Port



SOCKET WELD ENDS

AWSC3THZM (-FS)/AWU3THZM (-FS) (Regular Port)
AWSC3TFZM (-FS)/AWU3TFZM (-FS) (Full Port)

BUTTWELD ENDS

BWSC3THZM (-FS)/BWU3THZM (-FS) (Regular Port)
BWSC3TFZM (-FS)/BWU3TFZM (-FS) (Full Port)



MATERIALS OF CONSTRUCTION

CARBON STEEL	STAINLESS STEEL
--------------	-----------------

No	PART	Qty.	MATERIALS	MATERIALS	ASTM SPECIFICATION
1	BODY	1	CARBON STEEL	STAINLESS STEEL	A216 Gr. WCB A351 Gr. CF8M
2	CAP	2	CARBON STEEL	STAINLESS STEEL	A216 Gr. WCB A351 Gr. CF3M
3	STEM	1	STAINLESS STEEL	STAINLESS STEEL	A276 Type 316
4	BALL	1	STAINLESS STEEL	STAINLESS STEEL	A276 Type 316 or A351 Gr. CF8M
7	GLAND	1	STAINLESS STEEL	STAINLESS STEEL	A276 Type 316
8A	GLAND PACKING	1S	PTFE or FLEX GRAPH (FS)	PTFE or FLEX GRAPH (FS)	
8B	SPACER PACKING	1	G/F PFFE (FS ONLY)	G/F PTFE (FS ONLY)	
9	HANDLE	1	STAINLESS STEEL	STAINLESS STEEL	A276 Type 430 (1)
10	HANDLE NUT	1	STAINLESS STEEL	STAINLESS STEEL	A194 Gr. 8
16A	WASHER	1	STAINLESS STEEL	STAINLESS STEEL	
16B	NAME PLATE	1	STAINLESS STEEL	STAINLESS STEEL	
19	GASKET	2	PTFE or FLEX GRAPH (FS)	PTFE or FLEX GRAPH (FS)	
30	BALL SEAT	2	HYPATITE PTFE	HYPATITE PTFE	
34	GLAND NUT	1	STAINLESS STEEL	STAINLESS STEEL	A194 Gr. 8
35	CAP BOLT	8	STAINLESS STEEL	STAINLESS STEEL	A193 Gr. B8
36	GLAND BOLT	4	STAINLESS STEEL	STAINLESS STEEL	A193 Gr. B8
40	LOCK PLATE	1	STAINLESS STEEL	STAINLESS STEEL	
43	BELLEVILLE SPRING	2	STAINLESS STEEL	STAINLESS STEEL	
47	THRUST WASHER	1	C/F PTFE (2)	C/F PTFE (2)	
48	SNAP RING	1	STAINLESS STEEL	STAINLESS STEEL	
49	STOPPER	1	STAINLESS STEEL	STAINLESS STEEL	
123	HANDLE BOLT	1	STAINLESS STEEL	STAINLESS STEEL	
124	SPRING & PIN	1S	STAINLESS STEEL	STAINLESS STEEL	A313 & A276 TYPE316
126	STOPPER PIN	1	STAINLESS STEEL	STAINLESS STEEL	A276 Type 304
A	LATCH LOCK	1	STAINLESS STEEL	STAINLESS STEEL	

NOTES: (1) PLASTIC COATED (2) ANTI-STATIC THRUST WASHER

	VALVE SIZE	VALVE DIMENSIONS, Inches											
		d	HL	HO	DL	DO	L	d2	SOCKET WELD		BUTT WELD (SCH 40)		
									d1	P	d1	P	D
REGULAR PORT	1/2"	0.39	1.87	2.48	4.72	3.49	2.48	1/2 NPT	0.86	0.38	0.620	0.236	0.839
	3/4"	0.55	2.33	3.07	5.12	5.12	2.80	3/4 NPT	1.07	0.50	0.825	0.276	1.051
	1"	0.75	2.64	3.43	5.12	5.12	3.54	1 NPT	1.33	0.50	1.049	0.394	1.315
	1-1/4"	0.94	3.23	3.31	5.91	7.09	4.06	1-1/4 NPT	1.68	0.50	1.381	0.236	1.661
	1-1/2"	1.18	2.46	3.54	5.91	7.09	4.33	1-1/2 NPT	1.92	0.50	1.616	0.315	1.902
	2"	1.50	4.06	3.93	7.09	7.09	5.00	2 NPT	2.41	0.63	2.066	0.335	2.374
	2-1/2"	1.97	5.98	6.66	9.06	9.84	5.98	2-1/2 NPT	2.91	0.63	2.469	0.512	2.874
FULL PORT	1/4"	0.39	1.87	2.48	4.72	3.94	2.48	1/4 NPT	0.56	0.38	0.363	0.197	0.539
	3/8"	0.39	1.87	2.48	4.72	3.49	2.48	3/8 NPT	0.69	0.38	0.491	0.197	0.673
	1/2"	0.55	2.33	3.07	5.12	5.12	2.80	1/2 NPT	0.86	0.38	0.620	0.177	0.839
	3/4"	0.75	2.64	3.43	5.12	5.12	3.54	3/4 NPT	1.07	0.50	0.825	0.177	1.051
	1"	0.94	3.23	3.31	5.91	7.09	4.06	1 NPT	1.33	0.50	1.049	0.217	1.315
	1-1/4"	1.18	2.46	3.54	5.91	7.09	4.33	1-1/4 NPT	1.68	0.50	1.381	0.315	1.661
	1-1/2"	1.50	4.06	3.93	7.09	7.09	5.00	1-1/2 NPT	1.82	0.50	1.616	0.217	1.902
	2"	1.97	5.98	6.66	9.06	9.84	5.98	2 NPT	2.41	0.63	2.027	0.335	2.374

	VALVE SIZE	ACTUATOR MOUNTING PAD DIMENSIONS, Inches										
		A	B	C	E	F	G	K	h	J	M	ISO FLANGE
REGULAR PORT	1/2"	1.043	0.079	0.413	-	-	1.969	M8	0.275	1/4-20UNC	0.197	-
	3/4"	1.378	0.169	0.559	0.984	0.118	1.417	M10	0.197	1/4-20UNC	0.236	F03
	1"	1.693	0.197	0.669	1.181	0.118	1.654	M12	0.315	1/4-20UNC	0.335	F04
	1-1/4"	1.732	0.531	1.083	1.181	0.118	1.654	M14	0.315	1/4-20UNC	0.394	F04
	1-1/2"	1.949	0.531	1.071	1.181	0.118	1.654	M14	0.315	1/4-20UNC	0.394	F04
	2"	2.244	0.461	1.142	1.378	0.118	1.969	M16	0.394	1/4-20UNC	0.394	F05
	2-1/2"	3.150	1.339	0.669	0.669	2.165	2.756	0.866	0.591	5/16-18UNC	0.669	F07
FULL PORT	1/4"	1.043	0.079	0.413	-	-	1.969	M8	0.275	1/4-20UNC	0.197	-
	3/8"	1.043	0.079	0.413	-	-	1.969	M8	0.275	1/4-20UNC	0.197	-
	1/2"	1.378	0.169	0.559	0.984	0.118	1.417	M10	0.197	1/4-20UNC	0.236	F03
	3/4"	1.693	0.197	0.669	1.181	0.118	1.654	M12	0.315	1/4-20UNC	0.335	F04
	1"	1.732	0.531	1.083	1.181	0.118	1.654	M14	0.315	1/4-20UNC	0.394	F04
	1-1/4"	1.949	0.351	1.071	1.181	0.118	1.654	M14	0.315	1/4-20UNC	0.394	F04
	1-1/2"	2.244	0.461	1.142	1.378	0.118	1.969	M16	0.394	1/4-20UNC	0.394	F05
	2"	3.150	1.339	0.669	0.669	2.165	2.756	0.866	0.591	5/16-18UNC	0.669	F07

OPTIONS and ACCESSORIES

LOCKING LEVER HANDLES

FIGURE NUMBER	VALVE SIZE	MODEL NUMBER
AKSCTKZM-FS AKUTKZM-FS	1/4"	LL-10
	3/8"	LL-11
	1/2" & 3/4"	LL-12
	1" & 1-1/4"	LL-13
	1-1/2" & 2"	LL-14
AKSCTHZM (FS) AKUTHZM (FS) and AKSCTWZM (FS) AKUTHWZM (FS)	1/4" & 3/8" 1/2" & 3/4" 1" & 1-1/4" 1-1/2"	LL-15 LL-16 LL-17 LL-18 LL-19
AKSC3THZM (FS) AWSC3THZM (FS) BWS3THZM (FS) AKU3THZM (FS) AWU3THZM (FS) BWU3THZM (FS)	1/2" 3/4" & 1" 1-1/4" & 1-1/2" 2" 2-1/2"	LL-20 LL-21 LL-22 LL-23 LL-24
AKSC3TFZM (FS) AWSC3TFZM (FS) BWSC3TFZM (FS) AKU3TFZM (FS) AWU3TFZM (FS)	1/4" & 3/8" 1/2" & 3/4" 1" & 1-1/4" 1-1/2" 2"	LL-20 LL-21 LL-22 LL-23 LL-24

LOCKING OVAL HANDLES

FIGURE NUMBER	VALVE SIZE	MODEL NUMBER
AKSCTKZM-FS AKUTKZM-FS	1/4"	OH-10L
	3/8"	OH-11L
	1/2" & 3/4"	OH-12L
	1" & 1-1/4"	OH-13L
	1-1/2" & 2"	OH-14L
AKSCTHZM (FS) AKUTHZM (FS) and AKSCTWZM (FS) AKUTHWZM (FS)	1/4" & 3/8" 1/2" & 3/4" 1" & 1-1/4" 1-1/2" & 2"	OH-15L OH-16L OH-17L OH-18L
AKSC3THZM (FS) AWSC3THZM (FS) BWS3THZM (FS) AKU3THZM (FS) AWU3THZM (FS) BWU3THZM (FS)	1/2" 3/4" & 1" 1-1/4" & 1-1/2" 2" 2-1/2"	OH-20L OH-21L OH-22L OH-23L OH-24L
AKSC3TFZM (FS) AWSC3TFZM (FS) BWSC3TFZM (FS) AKU3TFZM (FS) AWU3TFZM (FS)	1/4" & 3/8" 1/2" & 3/4" 1" & 1-1/4" 1-1/2" 2"	OH-20L OH-21L OH-22L OH-23L OH-24L

ADDITIONAL THREADED ITEMS

For more detailed information please consult KITZ product brochure BV-100-0701

- BRASS - AGA/CGA/UL/FM approval. 150 WSP/600 WOG. Full Port.**
Chrome plated ball and stem (316 SS ball and stem optional), PTFE seat and seals, blow-out proof stem, lever handle (locking lever and oval and locking oval handles optional).
Figure Number: AKTAF (#68) - standard trim/AKTAFM (#68M) - stainless trim
- BRASS - UL approval. 150 WSP/600 WOG. Full Port.**
Chrome plated ball and stem, PTFE seats and seals, blow-out proof stem, KITZ standard actuator mounting pad, lever handle (locking lever and oval and locking oval handles optional).
Figure Number: AKTAFP (#68P)
- BRASS - UL approval. 250 WSP/600 WOG. Full Port.**
316 SS ball and stem, R-PTFE 250# seats and seals, blow-out proof stem, KITZ standard actuator mounting pad, locking lever handle (oval and locking oval handles optional).
Figure Number: AKTAFPM (#68PM)
- BRASS - SAFETY EXHAUST. 200 WOG. Full Port. 1/4" EXHAUST PORT (1" and 2")**
Chrome plated ball and stem, PTFE seat and seals, blow-out proof stem, locking lever handle (oval and locking oval handles optional), integral exhaust tap on sizes 1" and 2".
Figure Number: AKTAFS (#68S)
- CARBON STEEL - 150 WSP/600 WOG. Reduced Port.**
316 SS ball and stem, R-PTFE seats and seals, blow-out proof stem, lever handle
Figure Number: AKSCTK (#50)
- CARBON STEEL - 125 WSP/2000 WOG (1500WOG 1-1/4"-2"). Regular Port.**
316 SS ball and stem, PTFE seats and seals, blow-out proof stem, KITZ standard actuator mounting pad, locking lever handle (oval handle optional).
Figure Number: AKSCTAHM (#49M)
- STAINLESS STEEL - 150 WSP/600 WOG. Reduced Port.**
316 SS body, ball and stem, R-PTFE seats and seals, blow-out proof stem, lever handle.
Figure Number: AKUTKM (#52)
- STAINLESS STEEL - 125 WSP/800 WOG. Full Port.**
316 body, ball and stem, PTFE seats and seals, blow-out proof stem, KITZ standard actuator mounting pad, lever handle (oval handle optional).
Figure Number: AKUTFM (#53F)
- STAINLESS STEEL - 125 WSP/2000 WOG (1500WOG 1-1/4"-2"). Regular Port.**
316 SS body, ball and stem, PTFE seats and seals, blow-out proof stem, KITZ standard actuator mounting pad, locking lever handle (oval handle optional).
Figure Number: AKUTAHM (#39)
- STAINLESS STEEL - 125 WSP/1000 WOG. Three Piece. Regular Port.**
316 SS body, ball and stem, PTFE seats and seals, blow-out proof stem, lever handle (oval handle option).
Figure Number: AKU3TM (#35)/AWU3TM (#65) - Socketweld

NOTES

A large rectangular box with a solid black border. Inside the box, there are 25 horizontal dashed lines, evenly spaced, providing a guide for writing notes. The lines are parallel to each other and extend across the width of the box.

 **CAUTION**

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

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

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

ISO 9001 certified since 1989

KITZ

KITZ CORPORATION OF AMERICA

10750 Corporate Drive, Stafford, Texas 77477, U.S.A.

Phone: 281-491-7333 Fax: 281-491-9402

www.kitz.com

— Distributed by —



ITBV0060208