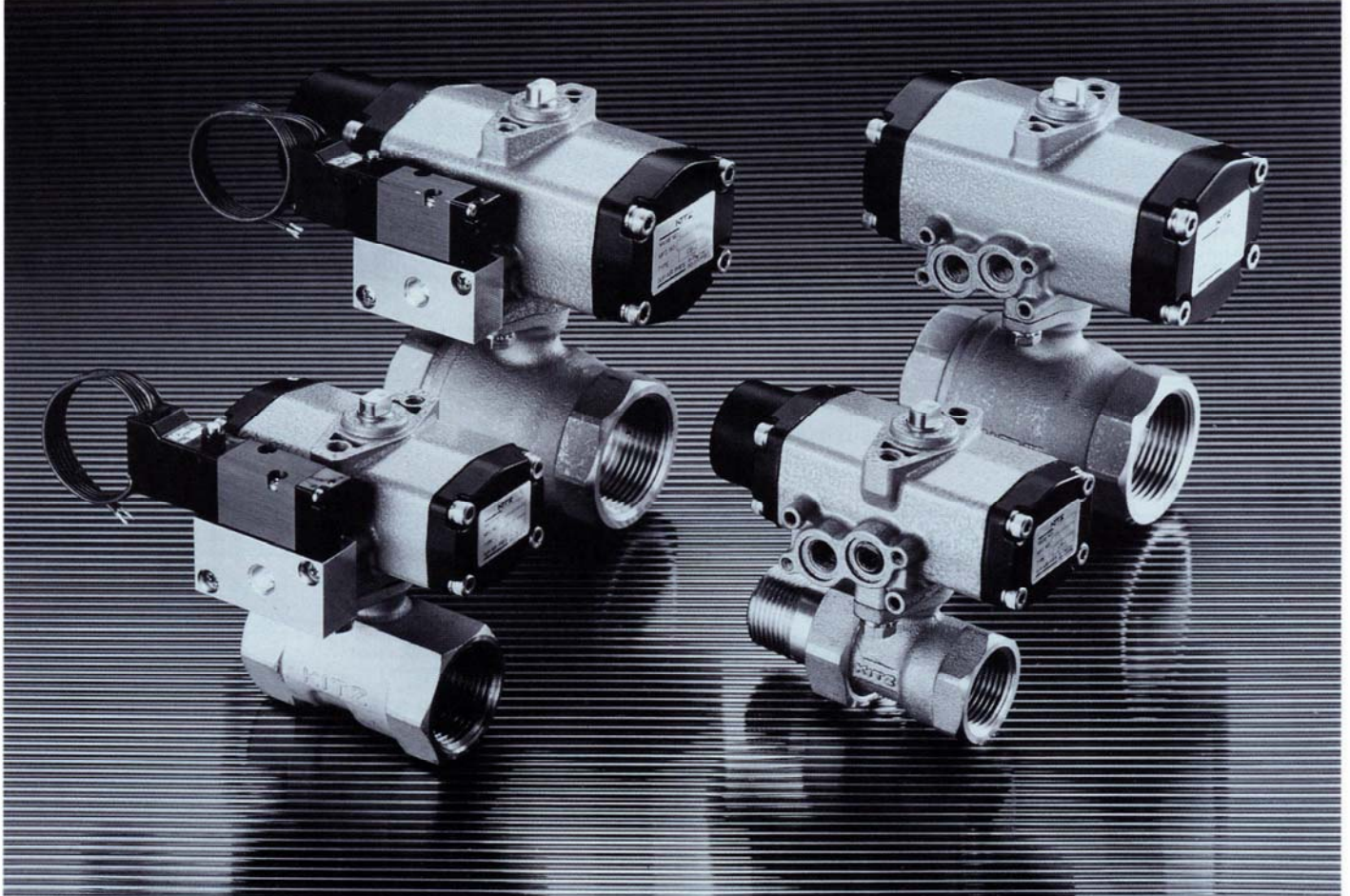


KITZ

C-Series Pneumatic Actuators with Compact Ball Valves



Excellent cost performance for pneumatic actuation of compact ball valves for HVAC and light load plant process service in pharmaceutical, fine-chemical, petrochemical, food, beverage, textile and other general light industries.

Design Features

- Compact and light actuators with die-cast aluminium housing and double piston drive mechanism for economy and handling ease.
- Simple mechanism with minimized number of component parts for high durability and maintenance ease.
- Direct mounting of standard solenoid valves requiring no external tubing work.
- Quarter-turn "Rack and Pinion" drivers with high efficiency.
- Direct actuator-to-valve assembly (requiring only 2 bolts) enabling easy maintenance or replacement of actuators and valves.
- Factory-made actuator-to-valve assembly for off-the-shelf supply.

KITZ CORPORATION OF AMERICA

Product Range

(inch)

Actuator	Assembled Valve	Fig.	End Connection	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Type C	Bronze ball valves	C-AKTE	NPT female threads		●	●	●	●	●	●	●
Type CS		CS-AKTE			●	●	●	●			
Type C	Stainless steel ball valves	C-AKUTE	NPT female threads	●	●	●	●	●	●	●	●
Type CS		CS-AKUTE		●	●	●	●	●			

Standard Guide of Actuator Selection

Valve Fig.	Size (inch)	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	
AKTE		C-1					C-2			
		CS-1	CS-2							
AKUTE		C-1					C-2			
		CS-1	CS-2							

Standard operation: Air-to-open or air-less-close

General Purpose

Spec.	Type	C-1	CS-1	C-2	CS-2
Operating media		Air			
Standard operating pressure		60 psi			
Operating pressure range		60~100 psi			
Output torque (in-lb)		34.5	11.5	75.5	27.5
Cylinder pressure test		140 psi			
Operating degree		90° (+5°~0°)			
Cylinder volume (in ³)		4.45	2.01	9.76	4.33
Stroke time (close to open) *1		Less than 1 second			
Temperature range *2		-4°F ~ +140°F			
Application		In door use only*3			

*1 Subject to standard assembly of KITZ air set and solenoid valve, unloaded.

*2 Protect the air from freezing.

*3 Provide an appropriate protection for outdoor use.

Valve Materials

Parts	Fig.	AKTE	AKUTE
Body		B584 No.C84400	A351 Gr.CF8M
Body cap		B283 No.C37700	—
Stem		High tensile brass	A276 TYPE 316
Ball		B283 No.C37700 *1	A276 TYPE 316
Insert		—	A276 TYPE 316
Ball seat		PTFE	PTFE
O-ring		FPM	FPM
Connector		A576 Gr.1045 *2	A576 Gr.1045 *3

*1 Chrome plated

*2 For Size 1" and 1 1/4"

*3 For Size 1 1/4" and 1 1/2"

Materials of Actuators

Parts	Material
Housing	B85 alloy SC102A
Piston	B86 alloy AG40A
Shaft	A576 Gr.1045
Bearing	B505 No.C83600
Cap screw	A193 Gr.B8
Gasket	NBR
O-ring	NBR
Snap ring	A686 W1-8

Additional materials: Type CS

Spring	A228
Spring retainer	B85 alloy SC102A

Valve Specifications

● Maximum working pressure

Fluid	Pressure
Water-steam-oil	150 psi.
Air and gas	100 psi.

● Test pressure

Body	285 psi. (Hydrostatic)
Seat	85 psi. (Pneumatic)

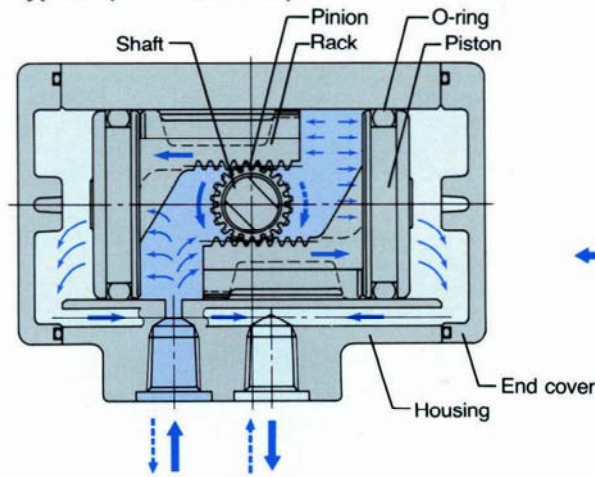
● Service temperature range

32°F to 248°F

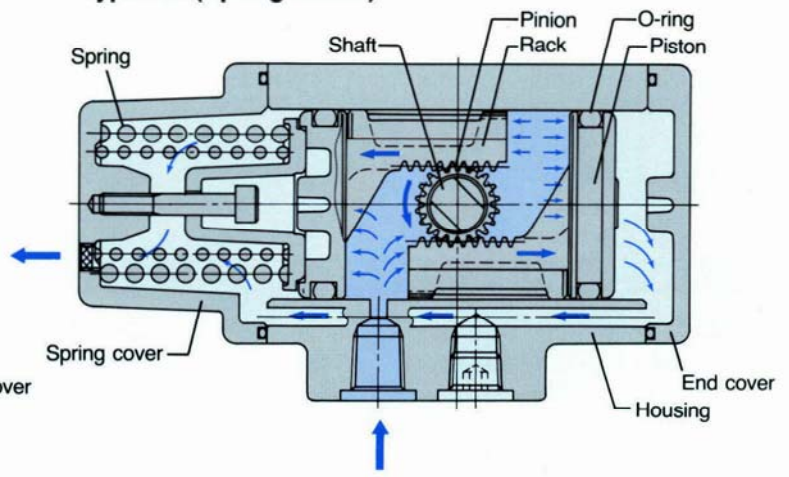
Special solenoid valves exclusively designed for tubeless, direct mounting on KITZ compact ball valves introduced in this catalog. Service condition: 41°F to 122°F. No weather-proof provision. An appropriate protective measure is required for outdoor use.

Actuator Driving Mechanism

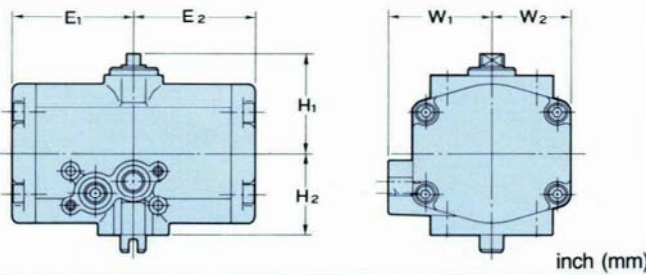
Type C (Double action)



Type CS (Spring return)

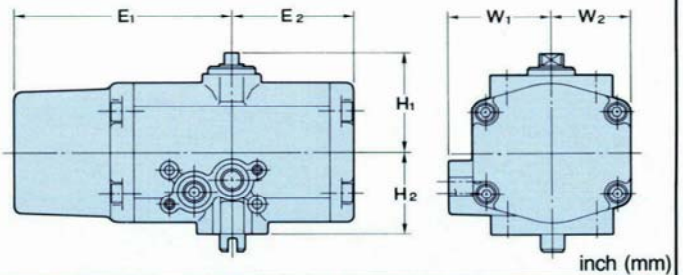


**Double-action actuator
Type C**



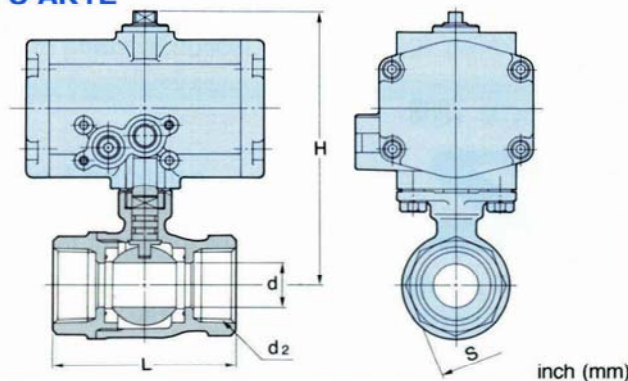
Size	E1	E2	W1	W2	H1	H2
C-1	1.69 (43)	1.69 (43)	1.36 (34.5)	1.02 (26)	1.24 (31.5)	1.34 (34)
C-2	2.02 (51.4)	2.02 (51.4)	1.73 (44)	1.32 (33.5)	1.67 (42.5)	1.65 (42)

**Spring-return actuator
Type CS**



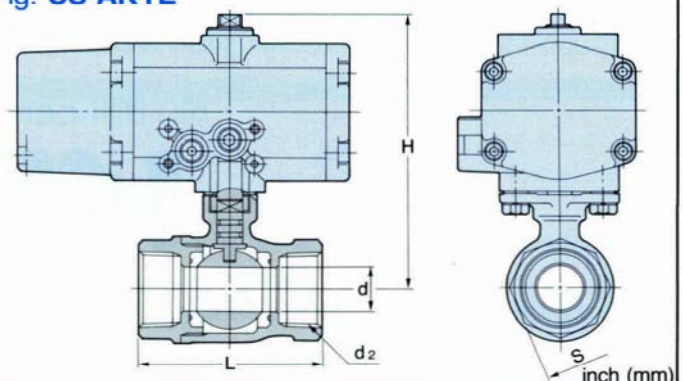
Size	E1	E2	W1	W2	H1	H2
CS-1	2.74 (69.5)	1.69 (43)	1.36 (34.5)	1.02 (26)	1.24 (31.5)	1.34 (34)
CS-2	3.62 (92)	2.02 (51.4)	1.73 (44)	1.32 (33.5)	1.67 (42.5)	1.65 (42)

**Bronze ball valve with Type C actuator
Fig. C-AKTE**



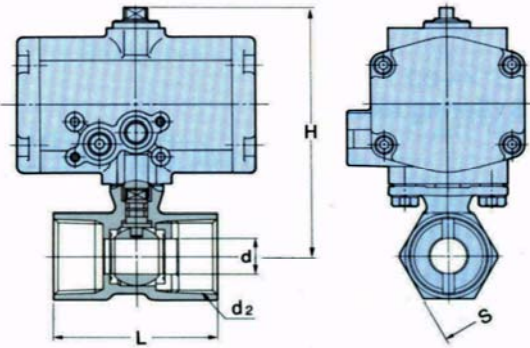
Size (inch)	d	H	L	S	d2	Cv
3/8	0.30 (7.5)	3.44 (87.5)	1.81 (46)	0.87 (22)	NPT 3/8	2.1
1/2	0.39 (10)	3.68 (93.5)	2.56 (65)	1.10 (28)	NPT 1/2	5.6
3/4	0.59 (15)	3.84 (97.5)	2.68 (68)	1.34 (34)	NPT 3/4	15
1	0.79 (20)	4.00 (101.5)	3.11 (79)	1.61 (41)	NPT 1	27
1 1/4	0.98 (25)	4.90 (124.5)	3.39 (86)	1.97 (50)	NPT 1 1/4	45
1 1/2	1.26 (32)	5.41 (137.5)	3.78 (96)	2.20 (56)	NPT 1 1/2	85
2	1.57 (40)	5.69 (144.5)	4.29 (109)	2.68 (68)	NPT 2	120

**Bronze ball valve with Type CS actuator
Fig. CS-AKTE**



Size (inch)	d	H	L	S	d2	Cv
3/8	0.30 (7.5)	3.44 (87.5)	1.81 (46)	0.87 (22)	NPT 3/8	2.1
1/2	0.39 (10)	4.43 (112.5)	2.56 (65)	1.10 (28)	NPT 1/2	5.6
3/4	0.59 (15)	4.59 (116.5)	2.68 (68)	1.34 (34)	NPT 3/4	15
1	0.79 (20)	4.74 (120.5)	3.11 (79)	1.61 (41)	NPT 1	27

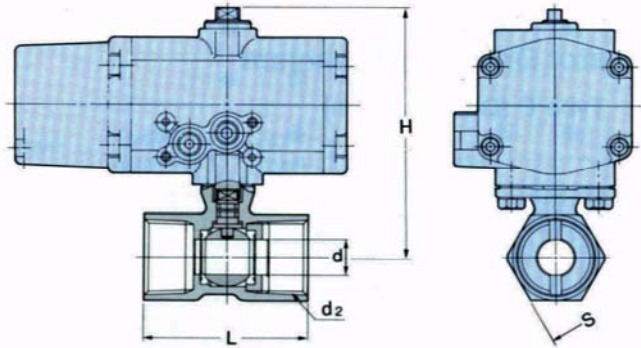
Stainless steel ball valve with Type C actuator
Fig. C-AKUTE



inch (mm)

Size (inch)	d	H	L	S	d ₂	Cv
1/4	0.21 (5.3)	3.37 (85.5)	1.73 (44)	0.83 (21)	NPT1/4	1
3/8	0.30 (7.7)	3.37 (85.5)	1.73 (44)	0.83 (21)	NPT3/8	2
1/2	0.36 (9.2)	3.37 (85.5)	2.22 (56.5)	0.98 (25)	NPT1/2	5
3/4	0.49 (12.5)	3.48 (88.5)	2.32 (59)	1.26 (32)	NPT3/4	10
1	0.63 (16)	3.60 (91.5)	2.80 (71)	1.50 (38)	NPT1	15
1 1/4	0.79 (20)	5.06 (128.5)	3.07 (78)	1.93 (49)	NPT1 1/4	20
1 1/2	0.96 (24.5)	5.18 (131.5)	3.27 (83)	2.09 (53)	NPT1 1/2	37
2	1.26 (32)	5.41 (137.5)	3.94 (100)	2.56 (65)	NPT2	60

Stainless steel ball valve with Type CS actuator
Fig. CS-AKUTE



inch (mm)

Size (inch)	d	H	L	S	d ₂	Cv
1/4	0.21 (5.3)	3.37 (85.5)	1.73 (44)	0.83 (21)	NPT1/4	1
3/8	0.30 (7.7)	3.37 (85.5)	1.73 (44)	0.83 (21)	NPT3/8	2
1/2	0.36 (9.2)	4.11 (104.5)	2.22 (56.5)	0.98 (25)	NPT1/2	5
3/4	0.49 (12.5)	4.23 (107.5)	2.32 (59)	1.26 (32)	NPT3/4	10
1	0.63 (16)	4.35 (110.5)	2.80 (71)	1.50 (38)	NPT1	15

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.

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KITZ

KITZ CORPORATION OF AMERICA

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

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

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