Actuator Driven Compact Ball Valves

- KELMO® Electric Actuators: EA, EC, EAE, ED and ES Series
- Pneumatic Actuators: C, CS, FBS Series
- 1/4” to 2” Class 5K/10K Bronze and Stainless Steel Threaded Ball Valves
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Actuator Driven Compact Ball Valves
KITZ 10K Compact Ball Valves

Valve design features

- Convenient size range from 9/16" through 2".
- Integral actuator mounting pads enabling easy mounting or dismantling of actuators for speedy maintenance.
- Tight contact between PTFE ball seats and high precision machined balls for leakage-free service.
- Stems, made of high strength brass, are used for longer service life.
- Choice of materials: Stainless steel for corrosion resistant service, or brass and bronze for general W.O.G. service.

Valve design specifications

| Threaded ends: | JIS B 0203 |
| Union ends: | JIS B 2301 |
| Maximum service pressure: | 1.0 MPa |
| TKE and TKSE for Valves of 3/8" and larger, 5UTWE: 0.5 MPa |
| Seat P-T rating: | See Page 2 |

Applications

Automated on-off or 3-way flow control in HVAC service handling water, oil, gas and air (by brass and bronze valves) or in light load industrial processes for pharmaceutical, fine chemical, petro-chemical, food, beverage, textile and other general industries.

Precautions

- No application to fluids including powders, dirt or sands.
- Contact KITZ or its local distributors for technical advice on application to:
  - Fluid of high viscosity, steam or vacuum.
  - Velocity of 3 m/s or faster.
  - Service with concern of an extraordinary pressure rise of line fluid or a variation of fluid temperature higher than 60°C.
  - For voltages other than KITZ standard specification.
  - Use of equipment that put human lives at risk.
KITZ 10K Compact Ball Valves

PTFE seat pressure-temperature ratings

Valve: TE- TFE- TLE- TNE- TUE- UTFE- 5/10UTWE
- Fluid: water, oil, gas (unfrozen)
- Ball seat: PTFE (Standard)
- O-ring: FKM (Standard)

Valve: UTGE
- Fluid: water, oil or gas (unfrozen)
- Ball seat: reinforced PTFE
- Gland packing: Flexible graphite + PTFE braided packing

Valve: TASE- UTASE
- Fluid: water, oil, gas (unfrozen)
- Ball seat: PTFE (standard)
- O-ring: FKM (standard)

Valve: TKE- TKSE
- Fluid: water, oil or gas (unfrozen)
- Ball seat: PTFE
- O-ring: FKM

Size ½" and smaller

Size ¾"

For saturated steam

Valve: TE- TFE- TLE- TNE- TUE- UTFE- 5/10UTWE
- Fluid: water, oil, gas (unfrozen) or saturated steam
- Ball seat: reinforced PTFE (Option 1)
- O-ring: FKM (Option 2)

Specify these materials in your order for the P-T ratings covered by the graph shown above, except for 1½" and 2". Standard materials are only available for these sizes.

Note: Serviceable ambient temperature depends on the design of actuators. Refer to the information given for each of actuators introduced in this catalog.
- Do NOT install UTGE with gland packing into a position where maintenance is not possible.
KITZ 3-way Compact Ball Valves: Change of Flow Directional Form

KITZ horizontal 3-way ball valves are principally used for quick change of flow direction. Also 3-way ball valves can be used for the simplification of piping systems as shown in Fig. 1.

KITZ Fig. TNE, TNVE, UTNE and UTVE 3-way ball valves are provided with L-port and double face seating design for change of flow direction between Form 1 and 2. It should be noted that, if the line pressure of the closed bore is higher than that of the open bores, a small rate of fluid leakage may occur from the closed bore. (Fig. 2)

KITZ 3-way Compact Ball Valves: Flow Directional Form before Shipment

Shipment shall be made with the flow directional form fixed as illustrated here. (Fig. 3)

**Location of cord connectors (top view):**
The location of the cord connector for an actuator is also arranged as below:
- **Horizontal 3-way:** Size 1 & 1.5: Right hand side
- Size 2: Diagonally forward right
- **Vertical 3-way:** Size 1: Right hand side
- Size 2: Diagonally forward left
General design features

- Compact size and light weight with die-cast aluminum housing and powerful miniature motor for economy and handling ease.
- Simple mechanism with minimized number of component parts for high durability and trouble-free service.
- Free from concerns common with conventional solenoid valves such as water hammer, pressure loss, and restricted flow direction.
- All-weather-type design for outdoor service. (Avoid exposure to direct sunlight)
- Availability of manual operation in case of electric failure.
- Versatile applications by means of optional built-in relay circuit for parallel drive, terminal boxes and 180° rotary mechanism for 3-way flow direction.
- Safety provision to protect the motor from overheat damage caused by accidental overload.
- Factory-made actuator-to-valve assembly for off-the-shelf supply.

Compact KELMO® actuators: power sources and functional features

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Power Source</th>
<th>Functional Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>EA100/200 Size 1 &amp; 1.5</td>
<td>1 Different cam design for Type EAH100/200-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EA100/200 Size 2</td>
<td>2 Different cam design for Type EAH100/200-2</td>
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</tbody>
</table>
Type EA and EAB Electric Actuators/Class 10K Bronze or Stainless Steel Ball Valves

- 90° bidirectional rotation
- Factory assembled terminal box for easier installation of actuators (EAB)

<table>
<thead>
<tr>
<th>Type EAB100/200 Size 1 to 2</th>
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</table>

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Description</th>
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<tbody>
<tr>
<td>R</td>
<td>Red</td>
</tr>
<tr>
<td>W</td>
<td>White</td>
</tr>
<tr>
<td>B</td>
<td>Black</td>
</tr>
<tr>
<td>Y</td>
<td>Yellow</td>
</tr>
<tr>
<td>G</td>
<td>Green</td>
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</table>

- Actuator rotates:
  - R-W: counter-clockwise to fully open the valve
  - R-B: clockwise to fully close the valve
- Limit switches activate:
  - OLS: on fully opening the valve (R-W: off W-Y: on)
  - SLS: on fully closing the valve (R-B: off B-G: on)

Note: For all sizes of Type EAB100/200, the terminals are numbered 1, 2, 3, 4 and 5 in place of R, W, B, Y and G, respectively.

Note: When two or more actuators are operated by a single switch, ensure to prevent unintended current flow by using relay contacts.

Auxiliary devices, such as lamps or relays, where minute current is used, may cause failure in the contacts of limit switches. Consult KITZ for such applications.
Type EA Electric Actuators/Class 10K Bronze Ball Valves

Fig. EA100/200-TE

Actuator Driven Compact Ball Valves
Type EA Electric Actuators/Class 10K Bronze or Brass Ball Valves

Fig. EA100/200-TFE

Actuator Driven Compact Ball Valves
Type EA Electric Actuators/Class 10K Long Neck Bronze Ball Valves

Fig. EA100/200-TLE

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<td>V</td>
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Actuator Driven Compact Ball Valves
### Type EA Electric Actuators/Class 10K Horizontal 3-way Bronze Ball Valves

**Fig. EA100/200-TNE**

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<th>Flow Direction</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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* Stainless steel body available: Fig. EA100/200-UTNE

Note: Refer to Page 3 for the flow directional forms. Products are adequately identified with nameplates indicating Form 1 as Form B or Form 2 as Form C.
### Type EA Electric Actuators/Class 10K Union Nipple Bronze Ball Valves

**Fig. EA100/200-TUE**

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#### Table of Dimensions

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Actuator Driven Compact Ball Valves
Type EA Electric Actuators/Class 10K Stainless Steel Ball Valves

Fig. EA100/200-UTE

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### Table 1: Actuator Dimensions

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### Figure 1: Actuator Dimensions

- Actuator Type: Type EA Electric Actuators
- Class: 10K Stainless Steel Ball Valves
- Model: EA100/200-UTE
- Dimension: Various dimensions as per table above.

### Figure 2: Actuator Dimensions

- Actuator Type: Type EA Electric Actuators
- Class: 10K Stainless Steel Ball Valves
- Model: EA100/200-UTE
- Dimension: Various dimensions as per table above.

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Actuator Driven Compact Ball Valves

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Type EA Electric Actuators/Class 10K Stainless Steel Ball Valves

Fig. EA100/200-UTFE

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Type EA Electric Actuators/Class 10K Stainless Steel Ball Valves

Fig. EA100/200-UTFE

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**Type EA Electric Actuators / Class 10K Glanded Stainless Steel Ball Valves**

**Fig. EA100/200-UTGE**

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[Image of a ball valve with technical specifications and diagrams]
### Type EA Electric Actuators/Class 5K/10K Wafer Stainless Steel Ball Valves

**Fig. EA100/200-5UTWE**
**EA100/200-10UTWE**

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*Actuator Driven Compact Ball Valves*
Type EAB Electric Actuators/Class 10K Bronze or Stainless Steel Ball Valves

The circuit diagram is the same as the one for Type EA actuators.
Refer to Page 5.
Note: Terminal box (M3) is equipped for electric connection with the power source.

Fig. of actuator-to-valve assemblies

EAB100/200-TE  EAB100/200-UTE
EAB100/200-TFE  EAB100/200-UTFE
EAB100/200-TLE  EAB100/200-UTGE
EAB100/200-TNE  EAB100/200-5 / 10UTWE
EAB100/200-TUE
Type EAL and EALB Electric Actuators/Class 10K Bronze or Stainless Steel Ball Valves

- Built-in relay circuit for parallel drive of two or more actuators
- Factory-assembled terminal box for easier installation of actuators (EALB)

Fig. of actuator-to-valve assemblies

**Type EAL actuator circuit diagrams**

(with the valve fully closed)

**EAL100/200 Size 1, 2**

- **Wire color:** B black, R red, W white, Y yellow, G green
- **Actuator rotates:**
  - Switch ON: Counter-clockwise to fully open the valve
  - Switch OFF: Clockwise to fully close the valve
- **Limit switches activate:**
  - OLS: on fully opening the valve (B-W: off W-Y: on)
  - SLS: on fully closing the valve (B-W: off W-G: on)

Note: For all sizes of Type EALB100/200, the terminals are numbered 1, 2, 3, 4 and 5 in place of B, R, W, Y and G respectively.

**Type EAL and EALB Electric Actuators/Class 10K Bronze or Stainless Steel Ball Valves**

- **Actuator Driven Compact Ball Valves**

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**Table:**

<table>
<thead>
<tr>
<th>Actuator Type</th>
<th>Terminal Box Configuration</th>
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<tbody>
<tr>
<td>EAL100/200-TE</td>
<td>B, R, W, Y, G</td>
</tr>
<tr>
<td>EAL100/200-UTE</td>
<td>B, R, W, Y, G</td>
</tr>
<tr>
<td>EAL100/200-TFE</td>
<td>B, R, W, Y, G</td>
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<td>EAL100/200-UTFE</td>
<td>B, R, W, Y, G</td>
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<tr>
<td>EAL100/200-TLE</td>
<td>B, R, W, Y, G</td>
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<td>EAL100/200-UTFE</td>
<td>B, R, W, Y, G</td>
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<tr>
<td>EAL100/200-TNE</td>
<td>B, R, W, Y, G</td>
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<tr>
<td>EAL100/200-5/10UTWE</td>
<td>B, R, W, Y, G</td>
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<tr>
<td>EAL100/200-TUE</td>
<td>B, R, W, Y, G</td>
</tr>
<tr>
<td>EAL100/200-UTNE</td>
<td>B, R, W, Y, G</td>
</tr>
</tbody>
</table>
The circuit diagram is the same as the one for Type EAL actuators.
Refer to Page 16
Note: Terminal box (M3) is equipped for electric connection with the power source.

Fig. of actuator-to-valve assemblies

EALB100/200-TE  EALB100/200-UTE  EALB100/200-VTS
EALB100/200-TFE  EALB100/200-UTFE  EALB100/200-10VT
EALB100/200-TLE  EALB100/200-UTGE  EALB100/200-UTNE
EALB100/200-TNE  EALB100/200-5/10UTWE
EALB100/200-TUE  EALB100/200-VT
Type EAH and EAHB Electric Actuators/Class 10K Vertical 3-way Bronze or Stainless Steel Ball Valves

- Automated change of flow direction
- Choice of three-way operation: two different flow passages and flow block without leakage
- Exclusive mounting with KITZ TNVE & UTVE ball valves
- Factory-assembled terminal box for easier installation of actuators (EAHB)

<table>
<thead>
<tr>
<th>Layout</th>
<th>1</th>
<th>2</th>
<th>3</th>
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</tbody>
</table>

Type EAH actuator circuit diagrams
(with the valve positioned at Form 2)

EAH100/200

- Wire color: R red  W white  B black  Y yellow  G green
- Actuator rotates:  R-W: clockwise to Form 1  
  R-B: counter-clockwise to Form 2
- Limit switches activate:  BLS: at Form 1 (R-W: off  W-Y: on)  
  CLS: at Form 2 (R-B: off  B-G: on)

Note: For all sizes of Type EAH100/200, the terminals are numbered 1, 2, 3, 4 and 5 in place of R, W, B, Y and G respectively.
Type EAH Electric Actuators/Class 10K Vertical 3-way Bronze Steel Ball Valves

Fig. EAH100/200-TNVE

Type EAH Electric Actuators/Class 10K Vertical 3-way Stainless Steel Ball Valves

Fig. EAH100/200-UTVE
The circuit diagram is the same as the one for Type EAL actuators.

Refer to Page 18.

Note: Terminal box (M3) is equipped for electric connection with the power source.

Fig. of actuator-to-valve assemblies

**EAHB100/200-TNVE**
**EAHB100/200-UTVE**
**Type EC and ECS Electric Actuators/Class 10K Brass Ball Valves**

- **Economy version of KITZ EA series-driven ball valves**
- **Exclusive mounting KITZ TKE ball valves**
- **90° or 180° unidirectional drive**
- **Automated change of flow direction**
- **Choice of three-way operations: two different flow passages and flow block without leakage**

---

### Valve design specifications

- **Economy version of KITZ EA series-driven ball valves**
- **Exclusive mounting KITZ TKE ball valves**
- **90° or 180° unidirectional drive**
- **Automated change of flow direction**
- **Choice of three-way operations: two different flow passages and flow block without leakage**

---

### Actuator circuit diagrams

**Type EC** (with the valve fully closed)

- **Wire color:**
  - **R** red
  - **W** white
  - **B** black
  - **Y** yellow
  - **G** green

- **Actuator rotates:**
  - **R-W:** clockwise to fully open the valve
  - **R-B:** clockwise to fully close the valve

- **Limit switches activate:**
  - **OLS:** on fully opening the valve (R-W: off W-Y: on)
  - **SLS:** on fully closing the valve (R-B: off B-G: on)

**Note:**
1. When two or more actuators are operated by a single switch, ensure to prevent unintended current flows using relay contacts.
2. Please note that when the switch is changed from "open" to "shut" or "shut" to "open" in the middle of operation, the actuator will reverse its movement after the completion of original direction. For example, the actuator will start to open the valve after completely shutting it or vice versa.

---

**CAUTION**

- **Prevent unintended current flows** using relay contacts.
- **Reverse movement** after the completion of original direction when changing the switch from "open" to "shut" or vice versa.
Type EC Electric Actuators/Class 10K Brass Ball Valves

Fig. EC100/200-TKE

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<thead>
<tr>
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<td>( \varphi_5 )</td>
<td>( \varphi_6 )</td>
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**KELMO® EAE Series Spring Electric Actuator**

- Two-wire power supply system for easy replacement of conventional solenoid valves as a valve actuating device.
- Modest operating speed with no concern of water hammer, which is a problem for conventional solenoid valves.
- Availability of manual operation.
- Auto-lock provision to hold valve opening position when the actuator is turned off.

### Operating mechanism

- The basic mechanical structure is given in the illustration below.
- Energizing an actuator rotates a motor and transfers the torque to a one-way clutch via reducing gears. The torque will then be transferred to the shaft and will open the valve, while winding up the core spring simultaneously.
- 90° rotation of the shaft activates an automatic lever to contact a stopper and stay in thus fixed position, while the actuator remains energized.
- De-energizing an actuator activates the ball to rotate clockwise to its closed position, by means of repulsing force of the coil spring.

### Actuator circuit diagrams
These actuators have no provision of explosion-proof and should not be used in an explosive atmosphere. They have no provision of airtight enclosure and are not recommended for use in corrosive gaseous or excessively humid atmosphere, or where the actuators may get splashed.

These actuators are designed only for on-off fluid control by means of full opening or closing of valves. Do NOT use them for partial opening or closing for intermediate valve positioning.

Excessively high frequency of operation such as 20 cycles per hour may shorten service life of actuators. Application to air-conditioning or ventilation service may cause this problem.

Do NOT use them for handling highly viscous fluids containing particles, dirt or sands.

Actuator housings are made of PBT resin. To avoid damage, do NOT place any other heavy objects on actuators, or do NOT step on actuators.
**Type ED Electric Actuators/Class 10K Bronze or Stainless Steel Ball Valves**

- DC 12V or 24V for handy, on-the-spot automated valve operation

### Type ED actuator circuit diagrams
(with the valve fully closed)

#### ED 12/24 Size 1

#### ED 12/24 Size 2

- Wire color: R red  W white  B black  Y yellow  G green
- Actuator rotates:
  - R-B : Counter-clockwise to fully open the valve
  - R-B : Clockwise to fully close the valve
- Limit switches activate:
  - OLS: on fully opening the valve (R-B: off  R-Y(W): on)
  - SLS: on fully closing the valve (R-B: off  B-G: on)

### Actuator Driven Compact Ball Valves
Fig. of actuator-to-valve assemblies
ED12/24-TE
ED12/24-TNE
ED12/24-UTE
ED12/24-UTFE
ED12/24-UTGE
ED12/24-5/10UTWE
Shock-resistant and tough polycarbonate (PC) is adopted to the actuator cover and the gear case to improve durability.

Dust-prevention and drip-proof construction compliant with IP65 ensure the installation in a severe environment. (Contact KITZ for submergence resistance.)

Easy separation of valve-actuator assemblies for replacement by hand even in a confined space.

Semi-translucent actuator cover allows easy viewing of the valve position indicator.

Downsizing of the product has been achieved by modifications to the layout of the actuator internal parts and the valve connecting structure.

This product can be installed to the arbitrary location of the intended device using the tapped holes for fixing at the bottom of the valve. Efficiency of piping work is significantly improved, and connection to nylon tubing is easily done.

Type ES actuator circuit diagrams
(with the valve fully closed)

---

**Scope of supply**

- Motor
- Condenser
- Power supply
- Brown
- Green
- Yellow
- Black
- (Open)
- White
- (Closed)
- Red
- Selector switch
- Lamp
- (Open)
- Lamp
- (Closed)

**Actuator Driven Compact Ball Valves**
Type ES Electric Actuators/Class 10K Brass or Stainless Steel Ball Valves

Fig. of actuator-to-valve assemblies

ES100/200-TASE
ES100/200-UTASE

The photo shows ESA100/200-TASE
Precautions for Trouble-free Operation of Electric Actuator Driven Ball Valves

Storage and Handling
Electrically operated KITZ compact ball valves are individually packed in styrofoam boxes. Do NOT unpack until you are ready to mount on the pipeline; store in dry, corrosion-free environment to keep rust-free, although they are adequately coated for primary protection. Handle units carefully when actuators are equipped with solenoid valves and other accessories. Do NOT place any other objects on actuators, and do NOT step on actuators. Overloading actuators must always be prevented.

Mounting and Piping
Before mounting electrically operated KITZ compact ball valves, make visual inspection of all valves, actuators and accessories to assure trouble-free condition. Tighten any loosened bolts securely. Clean valve and pipe bores to remove welding spatters, scales or any other foreign objects that may have been left inside. After mounting has been completed, blow the inside of all connected pipes and valves prior to the pilot operation of the system.

Do NOT use them in explosive or corrosive gaseous conditions, to avoid explosions, or damage to terminal contacts.

If there are materials containing silicon in the surrounding environment, a contact failure may occur due to the generation of siloxane gas. Do NOT use the product in a siloxane gas atmosphere.

Wiring and Operation
Color-coded wires should be connected to each correct terminal according to the actuator circuit diagram shown on each page of this catalog. Incorrect wiring may damage electrical components and accessories.

The following actuator is not provided with built-in relays. For parallel operation with other actuators, be sure to deploy a separate relay for each valve to drive.

<table>
<thead>
<tr>
<th>EA</th>
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<tr>
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When valve opening or closing indicator lamp is not required, cut the exposed part of the wire end and isolate it from the electric current. Before manual operation, be sure to turn off the switch.

Do NOT use silicon-containing materials (electric wire, filler, adhesive) when wiring. It may result in a contact failure due to the generation of siloxane gas.

Maintenance
Disassembly of actuators is not recommended. Electrically operated KITZ compact ball valves can be mounted vertically, horizontally or with any intermediate angle as illustrated here. However, do NOT mount any lower than the horizontal level, as intrusion of rainwater may affect the quality of electric components and accessories.
Design Features of KITZ C·CS/FBS Series Actuators

- Lightweight and compact size
  Die-casted aluminum body and double piston mechanism make the actuator lightweight and compact.
- Simple mechanism and less malfunction
  This actuator consists of minimum number of parts. That makes the actuator longer service life and less possibility of malfunction.
- Special solenoid valve
  Direct mount type special solenoid valve exclusively used for KITZ C-type actuator is available.
- Highly efficient quarter turn actuator
  Double piston type rack and pinion mechanism provides highly efficient quarter turn rotation.
- Direct mount type
  The actuator is directly mounted on a valve with only two bolts.

FBS-type actuator should be chosen for bigger size valves.

KITZ C·CS Series Pneumatic Actuators
KITZ Standard Accessories

C-type actuator has a direct mount-type special solenoid valve. It makes piping-less and compact mounting. This special solenoid valve is not waterproof type. Prevent water if you use them outdoor.
Type C Pneumatic Actuators/Class 10K Bronze Ball Valves

Fig. C-TE

Type CS/FBS Pneumatic Actuators/Class 10K Bronze Ball Valves

Fig. CS-TE

FBS-TE
Type C Pneumatic Actuators/Class 10K Copper Alloy Ball Valves, Full Bore

Fig. C-TFE

Type CS/FBS Pneumatic Actuators/Class 10K Copper Alloy Ball Valves, Full Bore

Fig. CS-TFE
**Type C Pneumatic Actuators/Class 10K Long Neck Bronze Ball Valves**

Fig. C-TLE

**Type CS / FBS Pneumatic Actuators/Class 10K Long Neck Bronze Ball Valves**

Fig. CS-TLE

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<table>
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<th>Actuator Driven Compact Ball Valves</th>
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Type C Pneumatic Actuators/Class 10K Horizontal 3-way Bronze Ball Valves

* Stainless steel body available Fig. C-UTNE

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Type CS/FBS Pneumatic Actuators/Class 10K Horizontal 3-way Bronze Ball Valves

* Stainless steel body available Fig. CS-UTNE/FBS-UTNE
Type C Pneumatic Actuators/Class 10K Union-Nipple Bronze Ball Valves

Fig. C-TUE

Type CS Pneumatic Actuators/Class 10K Union-Nipple Bronze Ball Valves

Fig. CS-TUE
Type C Pneumatic Actuators/Class 10K Stainless Steel Ball Valves

Fig. C-UTE

Type CS/FBS Pneumatic Actuators/Class 10K Stainless Steel Ball Valves

Fig. CS-UTE

FBS-UTE
Type C Pneumatic Actuators/Class 10K Stainless Steel Ball Valves, Full Bore

![Diagram of Type C Pneumatic Actuators/Class 10K Stainless Steel Ball Valves, Full Bore](image)

Type CS/FBS Pneumatic Actuators/Class 10K Stainless Steel Ball Valves, Full Bore

![Diagram of Type CS/FBS Pneumatic Actuators/Class 10K Stainless Steel Ball Valves, Full Bore](image)
### Type C Pneumatic Actuators/Class 10K Stainless Steel Ball Valves, with Gland

**Fig. C-UTGE**

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<tr>
<th>Type C Pneumatic Actuators/Class 10K Stainless Steel Ball Valves, with Gland</th>
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### Type CS/FBS Pneumatic Actuators/Class 10K Stainless Steel Ball Valves, with Gland

**Fig. CS-UTGE**

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<th>Type CS/FBS Pneumatic Actuators/Class 10K Stainless Steel Ball Valves, with Gland</th>
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</table>
Type C Pneumatic Actuators/Class 5K/10K Wafer Stainless Steel Ball Valves

Fig. C-5/10UTWE

Type CS/FBS Pneumatic Actuators/Class 5K/10K Wafer Stainless Steel Ball Valves

Fig. CS-5/10UTWE

FBS-5/10UTWE
Precautions for Trouble-free Operation of Pneumatic Actuator Driven Ball Valves

Storage and Handling
Pneumatically operated KITZ compact ball valves are individually packed in Styrofoam boxes. Do NOT unpack until you are ready to mount on the pipeline. Store in dry, corrosion-free environment to keep rust-free, although they are adequately coated for primary protection. Handle units carefully when actuators are equipped with solenoid valves and other accessories. Do NOT place any other objects on actuators, and do NOT step on actuators. Overloading actuators must always be prevented.

Mounting and Piping
Before mounting pneumatically operated KITZ compact ball valves, make visual inspection of all valves, actuators and accessories to assure trouble-free condition. Tighten any loosened bolts securely. Clean valve and pipe bores to remove welding spatters, scales or any other foreign objects which may have been left inside. After mounting has been completed, air blow the inside of all connected pipes and valves prior to the pilot operation of the system.

Do NOT use where corrosive gas, chemical liquids, sea water cause contamination. Exposed rotating parts, such as the actuator shaft, must be protected from water or rainfall. They are not designed weather-proof.

Threading pipes or nipples on actuators must be maximized to five rotations, so that over-tightening threads may not develop cracks in die-cast aluminum housing, and cause air leakage and operational difficulty to actuators (Recommended tightening torque: 10 N-m for Rc 1/8" 15 N-m Rc 1/4"). Type CS spring return actuators should be mounted so that the exhaust hole on the cylinder, faces downwards at times (See the below) or, when unavoidable, the hole must be protected by adequate water-prevention measures.

KITZ compact ball valves can be mounted on KITZ Type C or CS actuators either horizontally, vertically or at any angle depending on your piping or operational convenience. However, filter-regulators must be mounted always horizontally, using amounting bracket.

Operation
Pneumatically operated KITZ compact ball valves are designed to be driven by air pressure ranging from 0.4 MPa to 0.7 MPa (60 to 100 psi). Smaller or larger air pressure will result in malfunction. We recommend to employ 0.4 MPa (60 psi), our standard operating pressure.
Be sure to dry and filter the air supply for trouble-free operation. This is particularly important in cold and humid climates.

Maintenance
Pneumatically operated KITZ compact ball valves are lubrication-free. When a leakage is detected on the actuator after a few years of operation, we recommended the actuator be disassembled to detect wear or deformation of sealers such as O-rings and gaskets for possible replacement.
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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Read instruction manual carefully before use.

NOTICE

If any products designated as strategic material in the Foreign Exchange and Foreign Trade Law, Cabinet Order Concerning Control of Export Trade, Cabinet Order Concerning Control of Foreign Exchange and other related laws and ordinances (“Foreign Exchange Laws”) are exported to any foreign country or countries, an export license issued by the Japanese Government will be required under the Foreign Exchange Laws.

Further, there may be cases where an export license issued by the government of the United States or other country will be required under the applicable export-related laws and ordinances in such relevant countries.

The contract shall become effective subject to that a relevant export license is obtained from the Japanese Government.

A chrysanthemum-handle is a symbol of KITZ, the brand of valve reliability

ISO 9001 certified since 1989

KITZ

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