

# PNEUMATIC BALL VALVE

2-Way Ball valve

3-Way Ball L Type, 3-Way Ball T type

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MODEL: KCV-201B, KCV-201L, KCV-201T Type



# Pneumatic 2-Way type (KCV-201B), 3-Way L-type (KCV-202L) 3-Way T-type (KCV-203T)

## On-Off Ball Valve

Model: KCV-201B, 202L, 203T

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### General

The model **KCV-201B** 2-Way ball valves with special inner valve which can be fully opened or closed by simply causing the stem to make 90° turn.

The off take from a ball valve, when totally opened, has same bore as the pipeline and its fluid resistant is negligible. For this reason, this automatic valve is best suited to ON-OFF service, Controlling various type of liquid, gas and slurry.

The model KCV-202L, KCV-203T 3-way ball valves are available in two types.

The diverting type(L) splits flow by switching between two directions of inlets while the converging type(T) mixes two fluids by switching between two outlets.

Both of those moves are made with a mere quarter turn of the stem.



**KCV-201B** 2-Way Ball



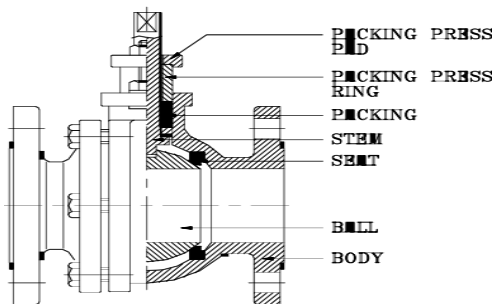
**KCV-202L / 203T** 3-way Ball valve

## Standard specifications

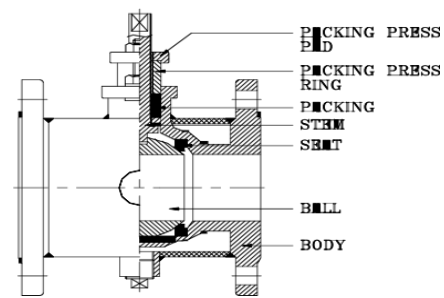
|             |                                 |  |  |
|-------------|---------------------------------|--|--|
| Valve Model |                                 | KCV-201B (2-Way ball valve)  |  |
|             |                                 | KCV-202L (L-type), KCV-203T(T-type) (3-Way ball valve)   |  |
| Valve Type  |                                 | Cylinder actuator operated 2-Way Ball Valve  |  |
| BODY        | Valve Size                      | 1/2" ~24" (15mm ~ 600mm)   |  |
|             | Pressure Rating                 | ANSI 150#~600# / JIS 10K~40K   |  |
|             | End Connection                  | Flange End: FF, RF, RTJ, etc. / Weld End: SW, BW   |  |
|             | Body Material                   | A216-WCB, A351-CF8, CF8M, CF3M   |  |
|             | Seat ring                       | Soft seat  | PTFE / RTFE / PEEK / GRAPHITE etc. (-20~ 230℃) |
|             |                                 | Metal seal   | -50 ~ 800 °C                                   |
|             | Guide                           | Top guide (Floating ball) / Top & Bottom guide (Trunnion ball)   |  |
|             | Bonnet                          | Standard(-20~250℃)<br>* casted together with body  |  |
|             | Gland Packing                   | Teflon carbon fiber, Grafoil (Graphite)  |  |
|             | Gasket                          | Grooved metal gasket (Spiral wound, Stainless or other alloy steel)  |  |
| PERFORMANCE | Valve Action                    | Nor. Close / Nor. Open   |  |
|             | Rated Cv Value                  | See page 4   |  |
|             | Allowable seat leak ratio       | Soft seat  | ANSI B16. 104 Class VI                         |
|             |                                 | Metal seal   | Tight shut off, ANSI B16. 104 Class IV         |
|             | Allowable Pressure For actuator | See page 5   |  |
| ACTUATOR    | Type                            | KAR Pneumatic rotary cylinder (Spring return, Double acting Type)  |  |
|             | Operating angel                 | 0 ~ 90°  |  |
|             | Supply air pressure             | Spring return : 4.0, 5.0 BarG  |  |
|             |                                 | Double acting : 4.0 ~ 5.0 BarG   |  |
|             | Ambient temp                    | -20 ~ +80 °C   |  |
|             | Painting color                  | Maker standard   |  |
|             | Accessory                       | Air set, Solenoid valve, Speed controller, Lock-Up valve, Limit switch & Box, Booster Relay, Proximity switch, Silencer, Manual handle, etc. |  |

## Structure

### 1. 2-Way Ball Valve

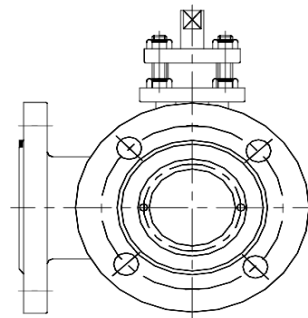
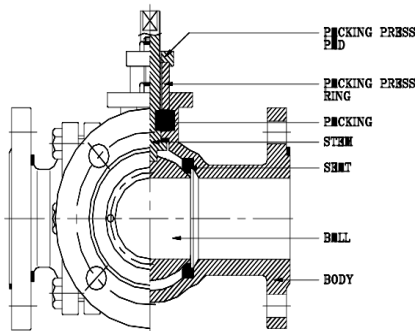


Floating type



Jacket type

### 2. 3-Way Ball Valve

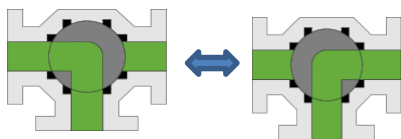


### 3. 3-Way Ball Valve flow direction

#### 3-Way L-type

A ↔ B

B ↔ C



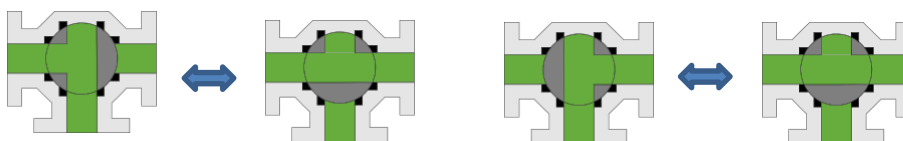
#### 3-Way T-type

A ↔ B

A ↔ C

B ↔ C

A ↔ C



## Combining the valve body, bonnet and trim material

| Parts Name      |           | Material                               |                   |                    |
|-----------------|-----------|--|-------------------|--------------------|
| Body, Bonnet    |           | A216-WCB / SCPH2                       | A351-CF8 / SCS13A | A351-CF8M / SCS14A |
| Trim            | Ball      | SUS304+Buffing                         | SUS304+Buffing    | SUS316+Buffing     |
|                 | Seat-Ring | PTFE, RTFE, PEEK, GRAPHITE, METAL Seat |                   |                    |
|                 | Stem      | 304SS                                  | 304SS             | 316SS              |
| Seat leakage    |           | Tight shut off, Leakage Class VI, IV   |                   |                    |
| Stud Bolt & Nut |           | SNB7 / S45(H)                          | SUS304            | SUS316             |

## 4. Rated Cv Value.

Cv value for 90 deg.

| Full bore ball valves |       |            |         |
|-----------------------|-------|------------|---------|
| Size(inch)            | Cv    | Size(inch) | Cv      |
| 15(1/2)               | 25    | 150(6)     | 2,600   |
| 20(3/4)               | 45    | 200(8)     | 4,200   |
| 25(1)                 | 85    | 250(10)    | 15,000  |
| 32(1-1/4)             | 185   | 300(12)    | 23,000  |
| 40(1-1/2)             | 200   | 350(14)    | 28000   |
| 50(2)                 | 300   | 400(16)    | 37,000  |
| 65(2-1/2)             | 450   | 450(18)    | 49,000  |
| 80(3)                 | 600   | 500(20)    | 59,000  |
| 100(4)                | 1,100 | 550(24)    | 92,000  |
| 125(5)                | 1,700 | 600(26)    | 110,000 |

## Double acting Pneumatic Cylinder Actuator (Model : KAR series)

### ● KCV-201B Full Bore Ball (JIS10K / ANSI150#)

- Air supply (4.0Bar / 5.0Bar)
- Seat Material: PTFE, RTFE
- Seat Leakage Class VI (Tight Shut Off)

| Actuator |        | Air Supply [Bar] | Allowable pressure(inch) – [Max-Bar] |      |    |        |        |    |        |    |    |    |    |    |     |     |
|----------|--------|------------------|--------------------------------------|------|----|--------|--------|----|--------|----|----|----|----|----|-----|-----|
| HKC      | A/T    |                  | 1/2B                                 | 3/4B | 1B | 1-1/4B | 1-1/2B | 2B | 2-1/2B | 3B | 4B | 5B | 6B | 8B | 10B | 12B |
| HP63     | AT101U | 4.0              | ○                                    | ○    | ○  |        |        |    |        |    |    |    |    |    |     |     |
|          |        | 5.0              | ○                                    | ○    | ○  |        |        |    |        |    |    |    |    |    |     |     |
| HP75     | AT201U | 4.0              |                                      |      |    | ○      | ○      |    |        |    |    |    |    |    |     |     |
|          |        | 5.0              |                                      |      |    | ○      | ○      | 5  |        |    |    |    |    |    |     |     |
| HP88     | AT251U | 4.0              |                                      |      |    |        |        | 10 |        |    |    |    |    |    |     |     |
|          |        | 5.0              |                                      |      |    |        |        | 10 | 5      |    |    |    |    |    |     |     |
| HP100    | AT301U | 4.0              |                                      |      |    |        |        |    | 10     |    |    |    |    |    |     |     |
|          |        | 5.0              |                                      |      |    |        |        |    | 10     | 5  |    |    |    |    |     |     |
| HP115    | AT351U | 4.0              |                                      |      |    |        |        |    |        | 10 |    |    |    |    |     |     |
|          |        | 5.0              |                                      |      |    |        |        |    |        | 10 | 5  |    |    |    |     |     |
| HP125    | AT401U | 4.0              |                                      |      |    |        |        |    |        |    | 10 |    |    |    |     |     |
|          |        | 5.0              |                                      |      |    |        |        |    |        |    | 10 |    |    |    |     |     |
| HP145    | AT451U | 4.0              |                                      |      |    |        |        |    |        |    |    |    |    |    |     |     |
|          |        | 5.0              |                                      |      |    |        |        |    |        |    |    | 5  |    |    |     |     |
| HP160    | AT501U | 4.0              |                                      |      |    |        |        |    |        |    |    | 10 |    |    |     |     |
|          |        | 5.0              |                                      |      |    |        |        |    |        |    |    | 10 | 5  |    |     |     |
| HP180    | AT551U | 4.0              |                                      |      |    |        |        |    |        |    |    |    | 10 |    |     |     |
|          |        | 5.0              |                                      |      |    |        |        |    |        |    |    |    | 10 |    |     |     |
| HP200    | AT601U | 4.0              |                                      |      |    |        |        |    |        |    |    |    |    | 5  |     |     |
|          |        | 5.0              |                                      |      |    |        |        |    |        |    |    |    |    | 5  |     |     |
| HP210    | AT651U | 4.0              |                                      |      |    |        |        |    |        |    |    |    |    | 10 | 5   |     |
|          |        | 5.0              |                                      |      |    |        |        |    |        |    |    |    |    | 10 | 5   |     |
| HP212    | AT701U | 4.0              |                                      |      |    |        |        |    |        |    |    |    |    |    | 10  |     |
|          |        | 5.0              |                                      |      |    |        |        |    |        |    |    |    |    |    |     | 5   |
|          | AT751U | 4.0              |                                      |      |    |        |        |    |        |    |    |    |    |    |     | 10  |
|          |        | 5.0              |                                      |      |    |        |        |    |        |    |    |    |    |    |     | 10  |

### Spring return Pneumatic Cylinder Actuator (Model : KAR series)

#### ● KCV-201B Full Bore Ball (JIS10K / ANSI150#)

- Air supply / Spring Range (0~4.0Bar / 0~5.0Bar)
- Seat Material: PTFE, RTFE
- Seat Leakage Class VI (Tight Shut Off)

| Actuator |         | Air Supply [Bar] | Allowable pressure(inch) – [Max-Bar] |      |    |        |        |    |        |    |    |    |    |    |     |     |
|----------|---------|------------------|--------------------------------------|------|----|--------|--------|----|--------|----|----|----|----|----|-----|-----|
| HKC      | A/T     |                  | 1/2B                                 | 3/4B | 1B | 1-1/4B | 1-1/2B | 2B | 2-1/2B | 3B | 4B | 5B | 6B | 8B | 10B | 12B |
| HP63     | AT101U  | 4.0              | ○                                    |      |    |        |        |    |        |    |    |    |    |    |     |     |
|          |         | 5.0              | ○                                    |      |    |        |        |    |        |    |    |    |    |    |     |     |
| HP75     | AT201U  | 4.0              |                                      | ○    | ○  |        |        |    |        |    |    |    |    |    |     |     |
|          |         | 5.0              |                                      | ○    | ○  |        |        |    |        |    |    |    |    |    |     |     |
| HP88     | AT251U  | 4.0              |                                      |      |    | 5      |        |    |        |    |    |    |    |    |     |     |
|          |         | 5.0              |                                      |      |    | 10     |        |    |        |    |    |    |    |    |     |     |
| HP100    | AT301U  | 4.0              |                                      |      |    |        | 5      |    |        |    |    |    |    |    |     |     |
|          |         | 5.0              |                                      |      |    |        | 10     | 5  |        |    |    |    |    |    |     |     |
| HP115    | AT351U  | 4.0              |                                      |      |    |        |        | 10 | 5      |    |    |    |    |    |     |     |
|          |         | 5.0              |                                      |      |    |        |        | 10 | 10     |    |    |    |    |    |     |     |
| HP125    | AT401U  | 4.0              |                                      |      |    |        |        |    | 10     |    |    |    |    |    |     |     |
|          |         | 5.0              |                                      |      |    |        |        |    |        | 5  |    |    |    |    |     |     |
| HP145    | AT451U  | 4.0              |                                      |      |    |        |        |    |        | 10 |    |    |    |    |     |     |
|          |         | 5.0              |                                      |      |    |        |        |    |        | 10 | 5  |    |    |    |     |     |
| HP160    | AT501U  | 4.0              |                                      |      |    |        |        |    |        |    | 10 |    |    |    |     |     |
|          |         | 5.0              |                                      |      |    |        |        |    |        |    | 10 |    |    |    |     |     |
| HP180    | AT551U  | 4.0              |                                      |      |    |        |        |    |        |    |    | 10 |    |    |     |     |
|          |         | 5.0              |                                      |      |    |        |        |    |        |    |    | 10 |    |    |     |     |
| HP200    | AT601U  | 4.0              |                                      |      |    |        |        |    |        |    |    |    | 5  |    |     |     |
|          |         | 5.0              |                                      |      |    |        |        |    |        |    |    |    | 10 |    |     |     |
| HP210    | AT651U  | 4.0              |                                      |      |    |        |        |    |        |    |    |    | 10 |    |     |     |
|          |         | 5.0              |                                      |      |    |        |        |    |        |    |    |    |    |    |     |     |
| HP212    | AT701U  | 4.0              |                                      |      |    |        |        |    |        |    |    |    |    | 5  |     |     |
|          |         | 5.0              |                                      |      |    |        |        |    |        |    |    |    |    | 10 |     |     |
|          | AT751U  | 4.0              |                                      |      |    |        |        |    |        |    |    |    |    | 10 |     |     |
|          |         | 5.0              |                                      |      |    |        |        |    |        |    |    |    |    | 10 |     |     |
|          | AT801U  | 4.0              |                                      |      |    |        |        |    |        |    |    |    |    |    | 10  |     |
|          |         | 5.0              |                                      |      |    |        |        |    |        |    |    |    |    |    | 10  |     |
|          | AT1001U | 4.0              |                                      |      |    |        |        |    |        |    |    |    |    |    |     | 10  |
|          |         | 5.0              |                                      |      |    |        |        |    |        |    |    |    |    |    |     | 10  |

### Double acting Pneumatic Cylinder Actuator (Model : KAR series)

● **KCV-201B Full Bore Ball (JIS20K / ANSI300#)**

- Air supply (4.0Bar / 5.0Bar)
- Seat Material: PTFE, RTFE
- Seat Leakage Class VI (Tight Shut Off)

| Actuator |        | Air Supply [Bar] | Allowable pressure(inch) – [Max-Bar] |      |    |        |        |    |        |    |    |    |    |    |     |     |
|----------|--------|------------------|--------------------------------------|------|----|--------|--------|----|--------|----|----|----|----|----|-----|-----|
| HKC      | A/T    |                  | 1/2B                                 | 3/4B | 1B | 1-1/4B | 1-1/2B | 2B | 2-1/2B | 3B | 4B | 5B | 6B | 8B | 10B | 12B |
| HP63     | AT101U | 4.0              | ○                                    | ○    | ○  |        |        |    |        |    |    |    |    |    |     |     |
|          |        | 5.0              | ○                                    | ○    | ○  |        |        |    |        |    |    |    |    |    |     |     |
| HP75     | AT201U | 4.0              |                                      |      |    | ○      |        |    |        |    |    |    |    |    |     |     |
|          |        | 5.0              |                                      |      |    | ○      | 15     |    |        |    |    |    |    |    |     |     |
| HP88     | AT251U | 4.0              |                                      |      |    |        | 20     |    |        |    |    |    |    |    |     |     |
|          |        | 5.0              |                                      |      |    |        | 20     | 15 |        |    |    |    |    |    |     |     |
| HP100    | AT301U | 4.0              |                                      |      |    |        |        | 20 |        |    |    |    |    |    |     |     |
|          |        | 5.0              |                                      |      |    |        |        | 20 | 15     |    |    |    |    |    |     |     |
| HP115    | AT351U | 4.0              |                                      |      |    |        |        |    | 20     |    |    |    |    |    |     |     |
|          |        | 5.0              |                                      |      |    |        |        |    | 20     | 15 |    |    |    |    |     |     |
| HP125    | AT401U | 4.0              |                                      |      |    |        |        |    |        | 20 |    |    |    |    |     |     |
|          |        | 5.0              |                                      |      |    |        |        |    |        | 20 | 15 |    |    |    |     |     |
| HP145    | AT451U | 4.0              |                                      |      |    |        |        |    |        |    | 20 |    |    |    |     |     |
|          |        | 5.0              |                                      |      |    |        |        |    |        |    | 20 | 15 |    |    |     |     |
| HP160    | AT501U | 4.0              |                                      |      |    |        |        |    |        |    |    | 15 |    |    |     |     |
|          |        | 5.0              |                                      |      |    |        |        |    |        |    |    | 20 | 15 |    |     |     |
| HP180    | AT551U | 4.0              |                                      |      |    |        |        |    |        |    |    | 20 | 15 |    |     |     |
|          |        | 5.0              |                                      |      |    |        |        |    |        |    |    |    | 20 |    |     |     |
| HP200    | AT601U | 4.0              |                                      |      |    |        |        |    |        |    |    |    | 20 |    |     |     |
|          |        | 5.0              |                                      |      |    |        |        |    |        |    |    |    |    |    |     |     |
| HP210    | AT651U | 4.0              |                                      |      |    |        |        |    |        |    |    |    |    |    |     |     |
|          |        | 5.0              |                                      |      |    |        |        |    |        |    |    |    |    | 15 |     |     |
| HP212    | AT701U | 4.0              |                                      |      |    |        |        |    |        |    |    |    |    | 20 |     |     |
|          |        | 5.0              |                                      |      |    |        |        |    |        |    |    |    |    | 20 | 15  |     |
|          | AT751U | 4.0              |                                      |      |    |        |        |    |        |    |    |    |    |    | 20  |     |
|          |        | 5.0              |                                      |      |    |        |        |    |        |    |    |    |    |    | 20  |     |
|          |        |                  |                                      |      |    |        |        |    |        |    |    |    |    |    |     | 20  |
|          |        |                  |                                      |      |    |        |        |    |        |    |    |    |    |    |     | 20  |



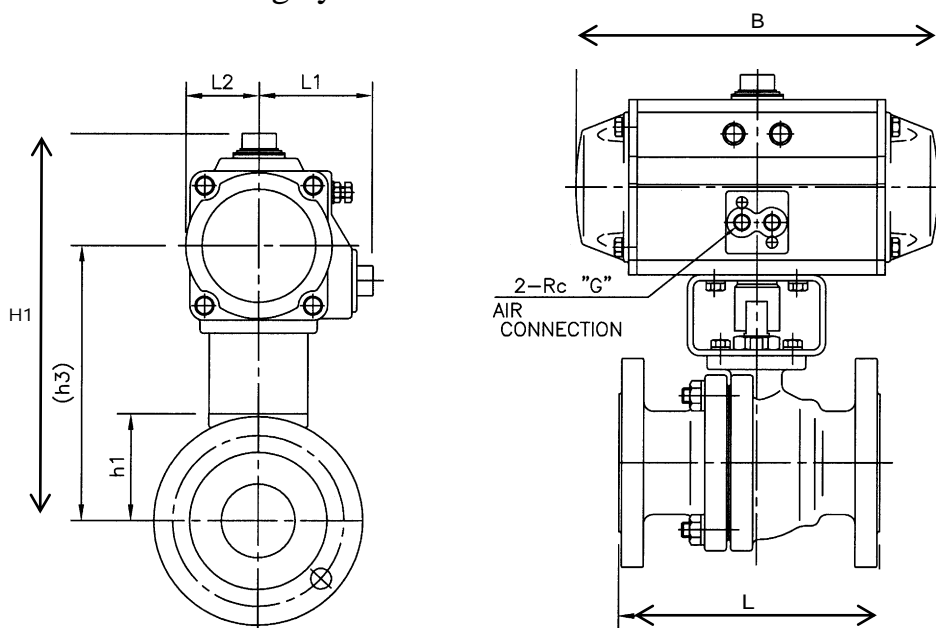
## Spring return Pneumatic Cylinder Actuator (Model : KAR series)

### ● KCV-201B Full Bore Ball (JIS 20K / ANSI300#)

- Air supply / Spring Range (0~4.0Bar / 0~5.0Bar)
- Seat Material: PTFE, RTFE
- Seat Leakage Class VI (Tight Shut Off)

| Actuator |         | Air Supply [Bar] | Allowable pressure(inch) – [Max-Bar] |      |    |        |        |    |        |    |    |    |    |    |     |     |
|----------|---------|------------------|--------------------------------------|------|----|--------|--------|----|--------|----|----|----|----|----|-----|-----|
| HKC      | A/T     |                  | 1/2B                                 | 3/4B | 1B | 1-1/4B | 1-1/2B | 2B | 2-1/2B | 3B | 4B | 5B | 6B | 8B | 10B | 12B |
| HP63     | AT101U  | 4.0              |                                      |      |    |        |        |    |        |    |    |    |    |    |     |     |
|          |         | 5.0              |                                      |      |    |        |        |    |        |    |    |    |    |    |     |     |
| HP75     | AT201U  | 4.0              | ○                                    | ○    |    |        |        |    |        |    |    |    |    |    |     |     |
|          |         | 5.0              | ○                                    | ○    |    |        |        |    |        |    |    |    |    |    |     |     |
| HP88     | AT251U  | 4.0              |                                      |      | 20 |        |        |    |        |    |    |    |    |    |     |     |
|          |         | 5.0              |                                      |      | 20 |        |        |    |        |    |    |    |    |    |     |     |
| HP100    | AT301U  | 4.0              |                                      |      |    | 20     |        |    |        |    |    |    |    |    |     |     |
|          |         | 5.0              |                                      |      |    | 20     |        |    |        |    |    |    |    |    |     |     |
| HP115    | AT351U  | 4.0              |                                      |      |    |        | 20     |    |        |    |    |    |    |    |     |     |
|          |         | 5.0              |                                      |      |    |        | 20     |    |        |    |    |    |    |    |     |     |
| HP125    | AT401U  | 4.0              |                                      |      |    |        |        | 20 |        |    |    |    |    |    |     |     |
|          |         | 5.0              |                                      |      |    |        |        | 20 |        |    |    |    |    |    |     |     |
| HP145    | AT451U  | 4.0              |                                      |      |    |        |        |    | 20     |    |    |    |    |    |     |     |
|          |         | 5.0              |                                      |      |    |        |        |    | 20     | 15 |    |    |    |    |     |     |
| HP160    | AT501U  | 4.0              |                                      |      |    |        |        |    |        | 15 |    |    |    |    |     |     |
|          |         | 5.0              |                                      |      |    |        |        |    |        | 20 |    |    |    |    |     |     |
| HP180    | AT551U  | 4.0              |                                      |      |    |        |        |    |        | 20 |    |    |    |    |     |     |
|          |         | 5.0              |                                      |      |    |        |        |    |        |    |    |    |    |    |     |     |
| HP200    | AT601U  | 4.0              |                                      |      |    |        |        |    |        |    | 20 |    |    |    |     |     |
|          |         | 5.0              |                                      |      |    |        |        |    |        |    | 20 |    |    |    |     |     |
| HP211    | AT651U  | 4.0              |                                      |      |    |        |        |    |        |    |    |    |    |    |     |     |
|          |         | 5.0              |                                      |      |    |        |        |    |        |    |    | 15 |    |    |     |     |
| HP212    | AT701U  | 4.0              |                                      |      |    |        |        |    |        |    |    | 20 | 15 |    |     |     |
|          |         | 5.0              |                                      |      |    |        |        |    |        |    |    | 20 | 20 |    |     |     |
|          | AT751U  | 4.0              |                                      |      |    |        |        |    |        |    |    |    | 20 |    |     |     |
|          |         | 5.0              |                                      |      |    |        |        |    |        |    |    |    |    |    |     |     |
|          | AT801U  | 4.0              |                                      |      |    |        |        |    |        |    |    |    |    | 20 |     |     |
|          |         | 5.0              |                                      |      |    |        |        |    |        |    |    |    |    | 20 |     |     |
|          | AT1001U | 4.0              |                                      |      |    |        |        |    |        |    |    |    |    |    | 20  |     |
|          |         | 5.0              |                                      |      |    |        |        |    |        |    |    |    |    |    | 20  |     |

# KCV-201B Double acting cylinder



## DIMENSIONS

Unit : mm

| Valve Size    | Face to Face L             |                            | h1  | h3  | H1  | Actuator      |         |     |     |     |     |
|---------------|----------------------------|----------------------------|-----|-----|-----|---------------|---------|-----|-----|-----|-----|
|               | □ JIS10k RF<br>□ A.150# RF | □ JIS20k RF<br>□ A.300# RF |     |     |     | Cylinder size |         | B   | L1  | L2  | G   |
|               |                            |                            |     |     |     | A/T           | HP      |     |     |     |     |
| □ 1/2”(15A)   | 108                        | 140                        | 39  | 120 | 185 | □ AT101U      | □ HP63  | 160 | 65  | 36  | 1/4 |
| □ 3/4”(20A)   | 117                        | 152                        | 42  | 125 | 185 | □ AT101U      | □ HP63  | 160 | 65  | 36  | 1/4 |
| □ 1”(25A)     | 127                        | 165                        | 52  | 135 | 195 | □ AT101U      | □ HP63  | 160 | 65  | 36  | 1/4 |
|               |                            |                            |     | 145 | 215 | □ AT201U      | □ HP75  | 215 | 70  | 43  | 1/4 |
| □ 1-1/2”(40A) | 165                        | 190                        | 66  | 160 | 230 | □ AT201U      | □ HP75  | 215 | 70  | 43  | 1/4 |
|               |                            |                            |     | 165 | 245 | □ AT251U      | □ HP88  | 250 | 75  | 50  | 1/4 |
| □ 2”(50A)     | 178                        | 216                        | 75  | 170 | 240 | □ AT201U      | □ HP75  | 215 | 70  | 43  | 1/4 |
|               |                            |                            |     | 175 | 250 | □ AT251U      | □ HP88  | 250 | 75  | 50  | 1/4 |
| □ 2-1/2”(65A) | 190                        | 241                        | 90  | 220 | 395 | □ AT251U      | □ HP88  | 250 | 75  | 50  | 1/4 |
|               |                            |                            |     | 225 | 305 | □ AT301U      | □ HP100 | 270 | 85  | 56  | 1/4 |
| □ 3”(80A)     | 203                        | 283                        | 101 | 235 | 320 | □ AT301U      | □ HP100 | 270 | 85  | 56  | 1/4 |
|               |                            |                            |     | 245 | 345 | □ AT351U      | □ HP115 | 315 | 95  | 64  | 1/4 |
|               |                            |                            |     | 250 | 360 | □ AT401U      | □ HP125 | 345 | 100 | 70  | 1/4 |
| □ 4”(100A)    | 229                        | 305                        | 122 | 265 | 365 | □ AT351U      | □ HP115 | 315 | 95  | 64  | 1/4 |
|               |                            |                            |     | 270 | 380 | □ AT401U      | □ HP125 | 345 | 100 | 70  | 1/4 |
|               |                            |                            |     | 280 | 400 | □ AT451U      | □ HP145 | 410 | 110 | 80  | 1/4 |
| □ 5”(125A)    | 356                        | 381                        | 140 | 300 | 415 | □ AT451U      | □ HP145 | 410 | 110 | 80  | 1/4 |
|               |                            |                            |     | 310 | 435 | □ AT501U      | □ HP160 | 440 | 120 | 88  | 1/4 |
| □ 6”(150A)    | 394                        | 403                        | 167 | 355 | 485 | □ AT501U      | □ HP160 | 440 | 120 | 88  | 1/4 |
|               |                            |                            |     | 370 | 530 | □ AT551U      | □ HP180 | 490 | 125 | 99  | 1/4 |
|               |                            |                            |     | 380 | 555 | □ AT601U      | □ HP200 | 545 | 130 | 110 | 1/4 |
| □ 8”(200A)    | 457                        | -                          | 203 | 405 | 565 | □ AT551U      | □ HP180 | 490 | 125 | 99  | 1/4 |
|               |                            |                            |     | 415 | 590 | □ AT601U      | □ HP200 | 545 | 130 | 110 | 1/4 |
|               | -                          | 502                        | 252 | 465 | 640 | □ AT601U      | □ HP200 | 545 | 130 | 110 | 1/4 |
|               |                            |                            |     | 495 | 695 | □ AT651U      | □ HP210 | 625 | 150 | 131 | 3/8 |

Flange is according to the standard which is described on specification sheet

Note :

DRAWING No.

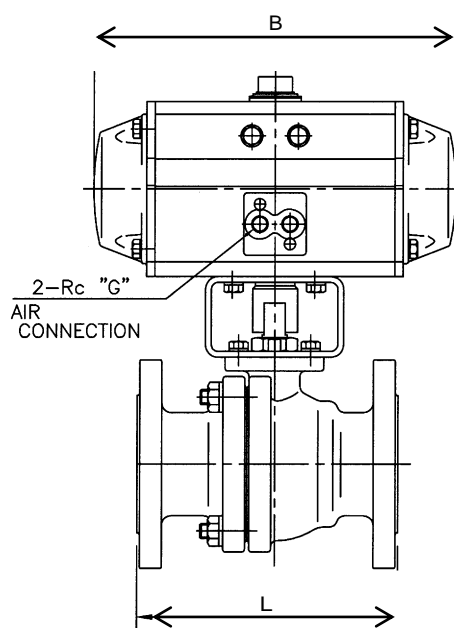
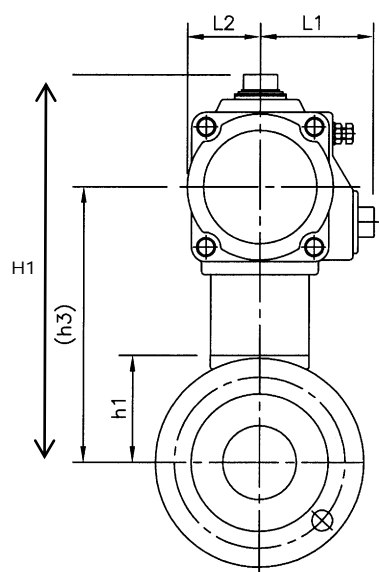
KCV201B-DA-N-01

REV.

A

**KOCON**

# KCV-201B Spring return cylinder



DIMENSIONS

Unit : mm

| Valve Size    | Face to Face L             |                            | h1  | h3  | H1  | Actuator      |         |     |     |     |     |
|---------------|----------------------------|----------------------------|-----|-----|-----|---------------|---------|-----|-----|-----|-----|
|               | □ JIS10k RF<br>□ A.150# RF | □ JIS20k RF<br>□ A.300# RF |     |     |     | Cylinder size |         | B   | L1  | L2  | G   |
|               |                            |                            |     |     |     | A/T           | HP      |     |     |     |     |
| □ 1/2”(15A)   | 108                        | 140                        | 39  | 120 | 185 | □ AT101U      | □ HP63  | 160 | 65  | 36  | 1/4 |
| □ 3/4”(20A)   | 117                        | 152                        | 42  | 135 | 205 | □ AT201U      | □ HP75  | 215 | 70  | 43  | 1/4 |
| □ 1”(25A)     | 127                        | 165                        | 52  | 145 | 215 | □ AT201U      | □ HP75  | 215 | 70  | 43  | 1/4 |
|               |                            |                            |     | 150 | 230 | □ AT251U      | □ HP88  | 250 | 75  | 50  | 1/4 |
| □ 1-1/2”(40A) | 165                        | 190                        | 66  | 165 | 245 | □ AT251U      | □ HP88  | 250 | 75  | 50  | 1/4 |
|               |                            |                            |     | 170 | 255 | □ AT301U      | □ HP100 | 270 | 85  | 56  | 1/4 |
|               |                            |                            |     | 180 | 285 | □ AT351U      | □ HP115 | 315 | 85  | 64  | 1/4 |
| □ 2”(50A)     | 178                        | 216                        | 75  | 180 | 265 | □ AT301U      | □ HP100 | 270 | 85  | 56  | 1/4 |
|               |                            |                            |     | 190 | 290 | □ AT351U      | □ HP115 | 315 | 95  | 64  | 1/4 |
|               |                            |                            |     | 230 | 340 | □ AT401U      | □ HP125 | 345 | 100 | 70  | 1/4 |
| □ 2-1/2”(65A) | 190                        | 241                        | 90  | 240 | 345 | □ AT401U      | □ HP125 | 410 | 100 | 70  | 1/4 |
|               |                            |                            |     | 250 | 365 | □ AT451U      | □ HP145 | 440 | 110 | 80  | 1/4 |
| □ 3”(80A)     | 203                        | 283                        | 101 | 260 | 380 | □ AT451U      | □ HP145 | 410 | 110 | 80  | 1/4 |
|               |                            |                            |     | 270 | 395 | □ AT501U      | □ HP160 | 440 | 120 | 88  | 1/4 |
| □ 4”(100A)    | 229                        | 305                        | 122 | 290 | 420 | □ AT501U      | □ HP160 | 440 | 120 | 88  | 1/4 |
|               |                            |                            |     | 325 | 485 | □ AT551U      | □ HP180 | 490 | 125 | 99  | 1/4 |
|               |                            |                            |     | 335 | 510 | □ AT601U      | □ HP160 | 545 | 130 | 110 | 1/4 |
| □ 5”(125A)    | 356                        | 381                        | 140 | 345 | 505 | □ AT551U      | □ HP180 | 490 | 125 | 99  | 1/4 |
|               |                            |                            |     | 355 | 525 | □ AT601U      | □ HP200 | 545 | 130 | 110 | 1/4 |
|               |                            |                            |     | 385 | 580 | □ AT651U      | □ HP211 | 625 | 150 | 131 | 3/8 |
| □ 6”(150A)    | 394                        | 403                        | 167 | 410 | 610 | □ AT651U      | □ HP211 | 625 | 150 | 131 | 3/8 |
|               |                            |                            |     | 425 | 640 | □ AT701U      | □ HP212 | 730 | 185 | 165 | 1/2 |
| □ 8”(200A)    | 457                        | -                          | 203 | 445 | 645 | □ AT651U      | □ HP211 | 625 | 150 | 131 | 3/8 |
|               |                            |                            |     | 460 | 675 | □ AT701U      | □       | 730 | 185 | 165 | 1/2 |
|               | -                          | 502                        | 252 | 510 | 725 | □             | □       | 730 | 185 | 165 | 1/2 |

Flange is according to the standard which is described on specification sheet

Note :

DRAWING No.

KCV201B-SR-N-01

REV.

A

**KOCON**

## KOCON Ball Valve Code Number

### Ball Valve Basic Model

|          |                         |
|----------|-------------------------|
| KCV-201B | 2-Way Ball Type         |
| KCV-202L | 3-Way Ball Type(L-Type) |
| KCV-203T | 3-Way Ball Type(T-Type) |

|             |   |     |     |     |     |     |     |   |     |     |     |      |      |   |      |       |      |      |
|-------------|---|-----|-----|-----|-----|-----|-----|---|-----|-----|-----|------|------|---|------|-------|------|------|
| Basic Model | - | (1) | (2) | (3) | (4) | (5) | (6) | - | (7) | (8) | (9) | (10) | (11) | - | (12) | (13)  | (14) | (15) |
| KCV201B     |   | 01  | 1   | R   | C2  | S   | P   | - | 0   | S   | S4  | P    | 0    | - | S    | KARHB | R    | 0    |

Ex) KCV201B - 011RC2SP - 0SS4P0 - SBR0

| (1) Body Size      |                      |
|--------------------|----------------------|
| 91                 | 1/2(15A)             |
| 92                 | 3/4(20A)             |
| 01                 | 1(25A)               |
| 93                 | 1-1/4(32A)           |
| 94                 | 1-1/2(40A)           |
| 02                 | 2(50A)               |
| 03                 | 3(80A)               |
| 04                 | 4(100A)              |
| 05                 | 5(125A)              |
| 06                 | 6(150A)              |
| 08                 | 8(200A)              |
| 10                 | 10(250A)             |
| 12                 | 12(300A)             |
| 14                 | 14(350A)             |
| 16                 | 16(400A)             |
| 18                 | 18(450)              |
| 20                 | 20(500)              |
| Z                  | Other                |
| (1) Rating         |                      |
| 1                  | JIS 10K / ANSI150#   |
| 2                  | JIS20K / ANSI300#    |
| 3                  | JIS40K / ANSI600#    |
| 4                  | JIS63K / ANSI900#    |
| Z                  | Other                |
| (2) End Connection |                      |
| F                  | FF                   |
| R                  | RF                   |
| T                  | T&G                  |
| M                  | M&F                  |
| J                  | RTJ                  |
| S                  | Special (Other)      |
| (3) Body Material  |                      |
| C2                 | Carbon steel (SCPH2) |
| S3                 | 304SS (SCS13A)       |
| S4                 | 316SS (SCS14A)       |
| S6                 | 316LSS (SCS16A)      |
| Z0                 | Other (Special)      |
|                    |                      |
|                    |                      |
|                    |                      |
|                    |                      |
|                    |                      |
|                    |                      |
|                    |                      |

| (5) Ball Valve type       |                      |
|---------------------------|----------------------|
| S                         | Standard             |
| J                         | Jacket               |
| B                         | Block                |
| T                         | Tank valve           |
|                           |                      |
| (6) Bonnet                |                      |
| P                         | Plain                |
| E                         | Extension            |
|                           |                      |
| (7) Ball Size (Bore size) |                      |
| 0                         | Same as Body size    |
| Z                         | 1 size Reduced Bore  |
|                           |                      |
| (8) Bore type             |                      |
| S                         | Standard (Floating)  |
| T                         | Trunnion             |
| F                         | Fire safe            |
|                           |                      |
| (9) DISC Material         |                      |
| C2                        | Carbon steel (SCPH2) |
| S3                        | 304SS (SCS13A)       |
| S4                        | 316SS (SCS14A)       |
| S6                        | 316LSS (SCS16A)      |
| Z0                        | Other (Special)      |
| (10) Seat Material        |                      |
| P                         | P-TFE                |
| R                         | R-TFE                |
| C                         | C-TFE                |
| K                         | PEEK                 |
| M                         | METAL                |
| Z                         | Special (Other)      |
| (11) Trim Treatment       |                      |
| 0                         | No treatment         |
| C                         | Hard-chrome plated   |
| S                         | Stellite             |
|                           |                      |
|                           |                      |
|                           |                      |
|                           |                      |
|                           |                      |
|                           |                      |
|                           |                      |

| (12) Actuator Type |                             |        |
|--------------------|-----------------------------|--------|
| S                  | Spring Return type cylinder |        |
| D                  | Double Acting Type Cylinder |        |
| M                  | Motor operated              |        |
|                    |                             |        |
| (13) Size          |                             |        |
| **                 | KAR-H                       | KAR-A  |
| A                  | HP63                        | AT101U |
| B                  | HP75                        | AT201U |
| C                  | HP88                        | AT250U |
| D                  | HP100                       | AT301U |
| E                  | HP115                       | AT350U |
| F                  | HP125                       | AT401U |
| G                  | HP145                       | AT451U |
| H                  | HP160                       | AT501U |
| I                  | HP180                       | AT551U |
| J                  | HP200                       | AT601U |
| K                  | HP210                       | AT651U |
| L                  | HP212                       | AT701U |
| M                  |                             | AT751U |
| N                  |                             | AT801U |
| MO                 | MOV code                    |        |
| Z                  | Other                       |        |
|                    |                             |        |
|                    |                             |        |
| (14) Valve Action  |                             |        |
| R                  | Reverse (Fail Close)        |        |
| D                  | Direct (Fail Open)          |        |
| L                  | Lock                        |        |
| F                  | Free                        |        |
|                    |                             |        |
|                    |                             |        |
| (15) Manual handle |                             |        |
| 0                  | Non                         |        |
| T                  | Top                         |        |
| S                  | Side                        |        |
|                    |                             |        |
|                    |                             |        |
|                    |                             |        |
|                    |                             |        |
|                    |                             |        |
|                    |                             |        |
|                    |                             |        |

## ● APPENDIX

**Pressure temperature Rating Table**

| Temp<br>(°C) | ANSI 150# |          |           | ANSI 300# |          |           | ANSI 600# |          |           |
|--------------|-----------|----------|-----------|-----------|----------|-----------|-----------|----------|-----------|
|              | A216-WCB  | A351-CF8 | A351-CF8M | A216-WCB  | A351-CF8 | A351-CF8M | A216-WCB  | A351-CF8 | A351-CF8M |
| -5~38        | 20        | 19       | 19        | 52        | 51       | 51        | 104       | 101      | 101       |
| 93           | 18        | 16       | 17        | 48        | 42       | 44        | 96        | 84       | 87        |
| 149          | 16        | 14       | 15        | 46        | 38       | 39        | 92        | 76       | 79        |
| 204          | 14        | 13       | 14        | 45        | 35       | 36        | 89        | 70       | 72        |
| 260          | 12        | 12       | 12        | 43        | 33       | 34        | 85        | 65       | 67        |
| 316          | 10        | 10       | 10        | 40        | 31       | 32        | 80        | 62       | 63        |
| 343          | 9         | 9        | 9         | 39        | 30       | 31        | 77        | 61       | 62        |
| 371          | 8         | 8        | 8         | 37        | 30       | 31        | 75        | 59       | 61        |
| 399          | 7         | 7        | 7         | 36        | 29       | 30        | 71        | 58       | 60        |
| 427          | 6         | 6        | 6         | 29        | 28       | 30        | 58        | 57       | 59        |
| 454          | 5         | 5        | 5         | 22        | 28       | 30        | 45        | 56       | 59        |
| 482          | 4         | 4        | 4         | 16        | 27       | 29        | 32        | 55       | 58        |
| 510          | 2         | 2        | 2         | 9         | 27       | 27        | 19        | 54       | 54        |
| 538          | 1         | 1        | 1         | 6         | 25       | 26        | 12        | 50       | 51        |
| 566          |           | 1        | 1         |           | 23       | 26        | 17        | 46       | 51        |
| 593          |           | 1        | 1         |           | 18       | 21        |           | 36       | 43        |
| 621          |           | 1        | 1         |           | 14       | 17        |           | 29       | 33        |
| 649          |           | 1        | 1         |           | 12       | 13        |           | 23       | 26        |
| 677          |           | 1        | 1         |           | 9        | 10        |           | 19       | 21        |
| 704          |           | 1        | 1         |           | 8        | 8         |           | 16       | 17        |
| 732          |           | 1        | 1         |           | 7        | 7         |           | 13       | 13        |
| 760          |           | 1        | 1         |           | 5        | 5         |           | 11       | 11        |
| 788          |           | 1        | 1         |           | 4        | 4         |           | 8        | 8         |
| 816          |           | 1        | 1         |           | 3        | 3         |           | 6        | 6         |

**Allowable temperature range of Body material**

| Body material<br><br>Trim<br>Material | JIS  | SCPL1    | SCPH2    | SCS13A    | SCS14A    | SCS16A    |
|---------------------------------------|------|----------|----------|-----------|-----------|-----------|
|                                       | ASTM | A352-LCB | A216-WCB | A351-CF8  | A351-CF8M | A351-CF3M |
| SUS316                                |      | -45~300℃ | -5~300℃  | -196~300℃ | -196~300℃ | -         |
| SUS316L                               |      | -45~300℃ | -5~300℃  | -196~300℃ | -196~300℃ | -196~300℃ |
| 410SS                                 |      | -        | -5~425℃  | -         | -         | -         |
| SUS316 stellite                       |      | -45~350℃ | -5~425℃  | -196~550℃ | -196~550℃ | -         |
| SUS316L stellite                      |      | -45~350℃ | -5~425℃  | -196~550℃ | -196~450℃ | -196~450℃ |
| SUS316+Soft seat                      |      | -45~230℃ | -5~230℃  | -80~230℃  | -80~230℃  | -         |
| SUS316+Soft seat                      |      | -45~230℃ | -        | -80~230℃  | -80~230℃  | -80~230℃  |

## Allowable Seat Leakage Class

Applicable Code: ANSI B 104-1976 / ANSI/FCI 70-2-2006

| Leakage Class Designation | Allowable max. Leakage   | Test fluid      | Test pressure  |
|---------------------------|--|-----------------|--|
| Class I                   | -  | -               | Not Specified  |
| Class II                  | 0.5% of rated capacity   | Air or water    | 45-60 Psig or max. operating differential whichever is lower                     |
| Class III                 | 0.1% of rated capacity   | Air or water    | 45-60 Psig or max. operating differential whichever is lower                     |
| Class IV                  | 0.01% of rated capacity  | Air or water    | 45-60 Psig or max. operating differential whichever is lower                     |
| Class V                   | 0.0005 ml per minute of water per inch of port diameter per psi differential | Water           | Max service pressure drop across valve plug, not to exceed ANSI body rating.     |
|                           | 4.7 standard ml per minute of air per inch of orifice diameter               | Air or N2       | 3.5BarG (50psi)  |
| Class VI                  | Not to exceed amounts shown in following table based on port diameter.       | Air or nitrogen | 50 Psig or max rated differential pressure across valve plug whichever is lower. |

### Allowable Seat Leakage (Class VI)

| Port Size (mm) | cc / min | Bubbles pre minute |
|----------------|----------|--------------------|
| 1              | 0.15     | 1                  |
| 1-1/2          | 0.30     | 2                  |
| 2              | 0.45     | 3                  |
| 1-1/2          | 0.60     | 4                  |
| 3              | 0.90     | 6                  |
| 4              | 1.70     | 11                 |
| 6              | 4.00     | 27                 |
| 8              | 6.75     | 45                 |

### Allowable Seat Leakage (Class IV)

| Port Size(mm) | liter / min) | Port Size(mm) | liter / min) |
|---------------|--------------|---------------|--------------|
| 1/2           | 0.61         | 2-1/2         | 9.22         |
| 3/4           | 1.10         | 3             | 12.90        |
| 1             | 1.84         | 4             | 22.13        |
| 1-1/4         | 2.70         | 5             | 34.42        |
| 1-1/2         | 3.44         | 6             | 50.40        |
| 2             | 5.53         | 8             | 79.91        |

- Test fluid: Air (Pressure 4kgf/cm2G)

**MEMO :**

**KOCON**

Specifications are subject to change without notice.

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