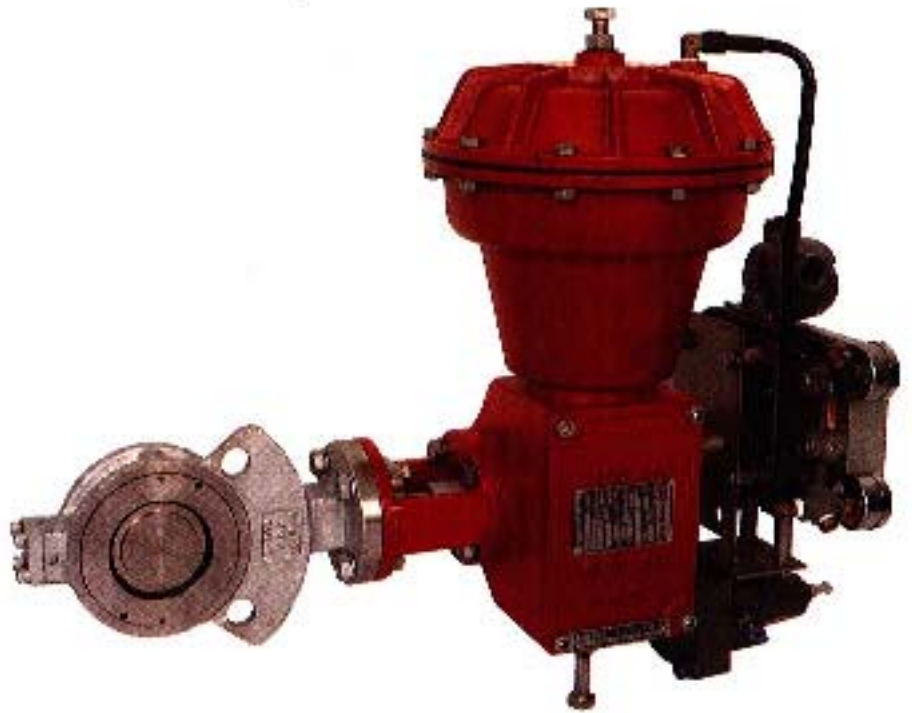




CONTROL VALVE STANDARD SPECIFICATION

**HIGH-PERFORMANCE  
BUTTERFLY VALVE**



YADB-122E1, YABB-122E1Series



<http://www.proval.co.kr>

**PROVAL** PROVAL Co., Ltd.

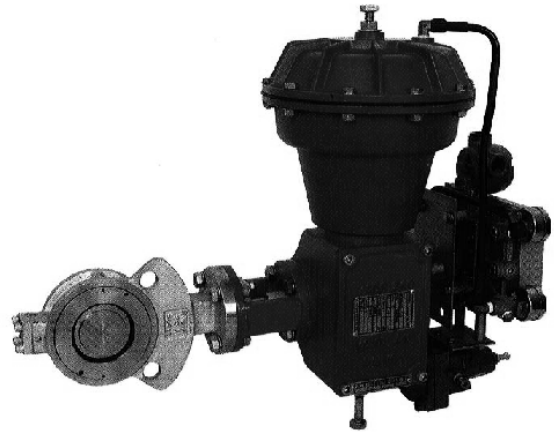
[D-1]

PROVAL

## HIGH-PERFORMANCE BUTTERFLY VALVES

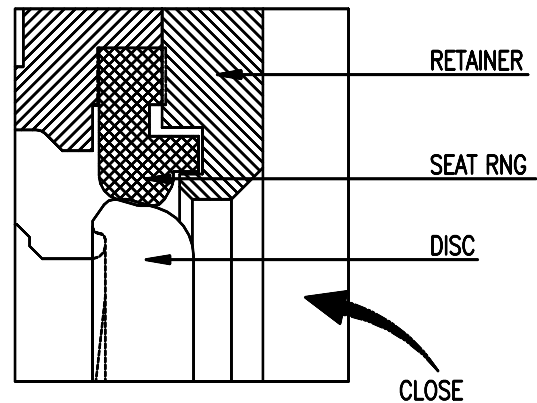
### GENERAL

The design of **PROVAL** YADB-122E1, YABB-122E1 Series is a high-performance butterfly valve designed to control for difficult-to-control fluids impossible with conventional universal type of butterfly valves. Featuring a self sealing seat ring, double eccentric disc, and a choice of three seat rings, the YADB-122E1 Series far surpasses ball valves and gate valves – even fluids such as corrosive slurry and high-pressure steam can be perfectly sealed off.

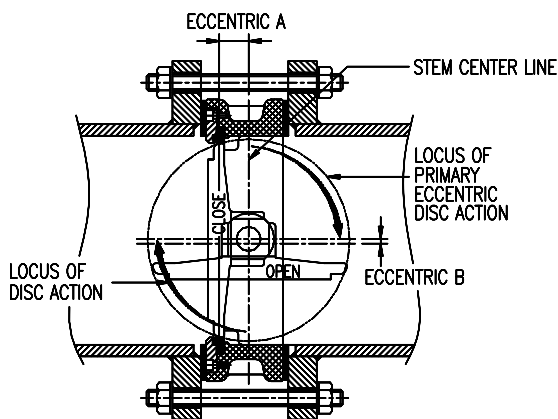


### FEATURES

- **Self-sealing mechanism ensures a tight shut-off**
  - As illustrated below, fluid pressure to the disc and seat ring ensures a secure seal. The higher the pressure, the better the sealing performance. The sealing performance remains unchanged even when the flow direction changes from one way to the other.

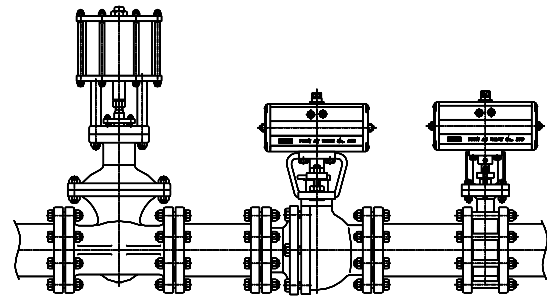


- **Double eccentric disc ensures longer service life, low seating torque and leak-tight shut-off.**
  - Since the stem is eccentric from the seat ring (as indicated by A and B), the disc has contact to the seat ring only when the valves is completely closed. Here are benefits from the double eccentric disc design:

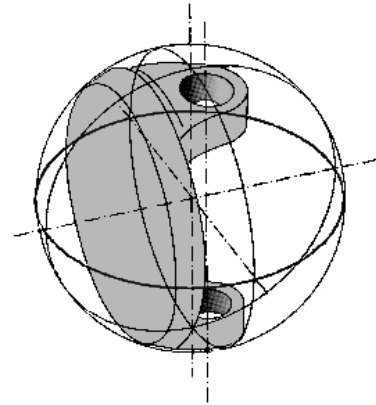


- Less wear of the seat ring offers longer service life of the seat ring.
- When the disc closes, the disc pushes the seat ring outward and ensures perfect sealing.
- Easy operation with less seating torque.
- Easy replacement of the seat ring without removing the stem, thanks to the design of the stem not penetrating through the seat ring.

- Compact, lightweight, and cost-effective
  - Employing the thin wafer body, the YADB-122E1 series is significantly smaller and lighter than gate valves or ball valves, and piping works can be greatly simplified.



- Eccentric disc
  - Extending seat service life
  - Improving sealing
  - Reducing operating torque
  - Providing smooth and even touch
  - Eliminating friction



**STANDARD SPECIFICATION**

|            |                       |  |  |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |
|------------|-----------------------|--|--|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| Model No.  |                       | YADB-122E1 Series, YABB-122E1 Series                                     |  |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |
| Valve Type |                       | Diaphragm & Cylinder actuator operated high-performance butterfly valve. |  |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |
| BODY       | Valve Size            | (mm)   | 50   | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 1000 | 1100 | 1200 |
|            |                       | (inch)   | 2  | 2½ | 3  | 4   | 5   | 6   | 8   | 10  | 12  | 14  | 16  | 18  | 20  | 22  | 24  | 26  | 28  | 30  | 32  | 34  | 36  | 40   | 44   | 48   |
|            | Pressure Rating       |  | ANSI 150# ~ 300# / JIS 10K ~ 20K / JPI 150# ~ 300# / PN 6bar ~ 25bar       |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |
|            | End Connections       |  | FLANGES , WAFER , B.W  |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |
|            | Body Materials        |  | A216-WCB, A351-CF8, CF8M, CF3M   |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |
|            | Operating Temperature | Soft Seat  | -45°C ~ +180°C (PTFE, RTFE) , # -196°C(PCTFE), +250°C(PEEK)                |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |
|            |                       | Metal Seat   | Max 450°C (SUS304, SUS316, SUS316L)  |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |
|            | Guide                 |  | Top & Bottom guide   |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |
|            | Gland Packing         |  | PTFE yarn, Graphite yarn   |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |
|            | Gland type            |  | Bolted gland   |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |
|            | Painting Color        |  | Standard is silver. In the case of stainless steel, flange is not painted. |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |
|            | Disc Characteristics  |  | Modify EQ %, Quick opening   |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |
|            | Flow Direction        |  | Direct   |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |

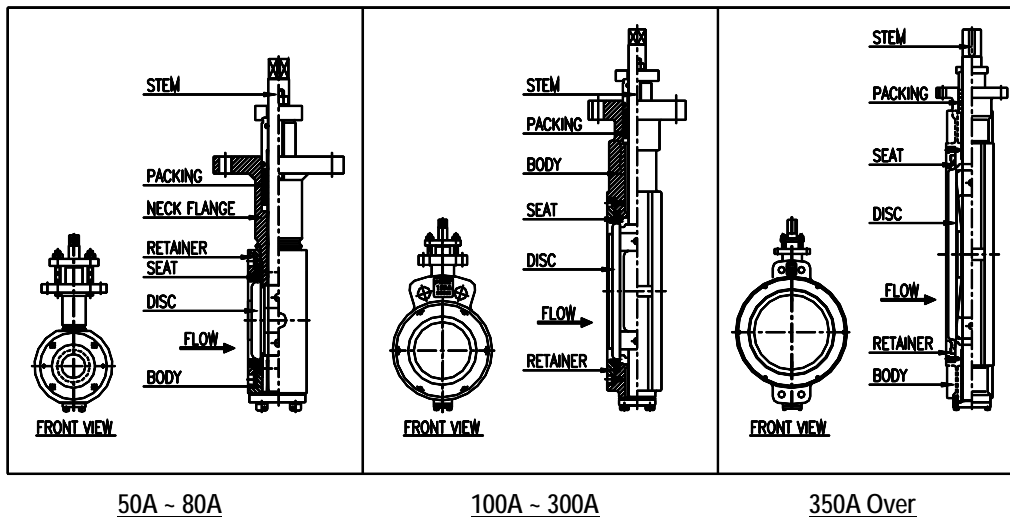
|                    |   |  |  |  |
|--------------------|---|--|--|--|
| <b>PERFORMANCE</b> | Valve Action                                    | Direct action, Reverse action.   |  |  |
|                    | Allowable Differential Press.                   | See "ALLOWABLE PRESSURE DROP" page 7                                     |  |  |
|                    | Rated Cv Value                                  | See "FLOW CHARACTERISTICS" page 6, 7                                     |  |  |
|                    | Flow Characteristics                            | See "FLOW CHARACTERISTICS" page 6  |  |  |
|                    | Rangeability                                    | 20:1   |  |  |
|                    | Allowable Seat Leakage Ratio                    | Soft Seat  | ANSI B16. 104 Class VI   |  |
|                    |   | Metal Seat   | ANSI B16. 104 Class III ( ※ ANSI B16.104 CLASS IV                |  |
|                    | Action Accuracy                                 | Hysteresis   | (Without positioner) max. 5% F.S. (With positioner) max. 2% F.S. |  |
| Linearity          |   | (Without positioner) max. ±6% F.S. (With positioner) max. ±2% F.S.       |  |  |
| <b>ACTUATOR</b>    | Model   | DB-240, DB-300, DB-400, DB-520   | B0S(R) ~ R12S  |  |
|                    | Actuator Type                                   | Single acting diaphragm operated.  | Rotary cylinder actuator (Double, Single)                        |  |
|                    | Actuator Size                                   | Ø240 ~ Ø520  | Ø50 ~ Ø400   |  |
|                    | Max. Stroke (mm)                                | 60°, 90°   | 90°  |  |
|                    | Supply Air Pressure kPa (kgf/cm <sup>2</sup> G) | 160 (1.6), 320 (3.2)   | 500~700 (5.0~7.0)  |  |
|                    | Spring Range kPa (kgf/cm <sup>2</sup> G)        | 60~100 (0.6~1.0), 120~200 (1.2~2.0)                                      | Single: 200~350 (2.0~3.5)<br>Double: 400~400 (4.0~4.0),          |  |
|                    | Materials                                       | Diaphragm: EPDM  | Piston O-ring: N.B.R or VITON                                    |  |
|                    | Air Connection                                  | Rc 1/4   | Rc 1/4 ~ Rc 1  |  |
|                    | Ambient Temperature                             | -20°C ~ +70°C (※ -20°C ~ +100°C)   | -10°C ~ +70°C (※ 0°C ~ +100°C)                                   |  |
|                    | Painting Color                                  | Standard is Cobalt Blue(Munsell No : 2.5 PB3/10) [ Request other color ] | Standard is red. [ Request other color ]                         |  |

[Notes] (1) Valve performance is represented under the condition of standard packing (PTFE yarn).

(2) ※ : Manufactured and attached as according to customer's order.

## MATERIAL DATA

### • Body section view



## MATERIAL DATA

### 1. Combining the valve body and trim material.

#### 1-1 Soft seat type

| Parts Name      |           | Materials  |          |           |                                |
|-----------------|-----------|--|----------|-----------|--------------------------------|
| Body            |           | A216-WCB   | A351-CF8 | A351-CF8M | A351-CF3                       |
| Trim            | Disc      | A351-CF8 + Buffing, A351-CF8 + Hard chrome plated<br>A351-CF3 + Buffing, A351-CF3 + Hard chrome plated |          |           | A351-CF3M + Hard chrome plated |
|                 | Seat ring | PTFE, RTFE (Reinforced Teflon), RTFE (Carbon fiber filled Teflon)                                      |          |           |                                |
|                 | Stem      | SUS304, SUS316, SUS420J2 + Hcr plated  |          |           | SUS316L + Hcr plated           |
| Gland Packing   |           | PTFE, Graphite   |          |           |                                |
| Gland           |           | SUS304   |          |           |                                |
| Stud Bolt & Nut |           | SNB7/S45C(H)   | SUS304   |           |                                |

#### 1-2 Metal seat type

| Parts Name      |           | Materials  |          |           |                                       |
|-----------------|-----------|--|----------|-----------|---------------------------------------|
| Body            |           | A216-WCB   | A351-CF8 | A351-CF8M | A351-CF3                              |
| Trim            | Disc      | A351-CF8 + Stellite face<br>A351-CF3 + Stellite face |          |           | A351-CF3M + Stellite face             |
|                 | Seat ring | SUS316 + Hard ion. N & Chrome plated                 |          |           | SUS316L + Hard ion. N & Chrome plated |
|                 | Stem      | SUS316 + Hard Chrome plated                          |          |           | SUS316L + Hard Chrome plated          |
| Gland Packing   |           | PTFE, Graphite                                       |          |           |                                       |
| Gland           |           | SUS304   |          |           |                                       |
| Stud Bolt & Nut |           | SNB7/S45C(H)   | SUS304   |           |                                       |

### 2. Body material & operating pressure-temperature rating.

#### 2-1 ANSI

[Unit: kgf/cm<sup>2</sup>G]

| Material<br>Temp.<br>(°C) | 150#         |              |                | 300#         |              |                |
|---------------------------|--------------|--------------|----------------|--------------|--------------|----------------|
|                           | SCPH2<br>WCB | SCS13<br>CF8 | SCS14A<br>CF8M | SCPH2<br>WCB | SCS13<br>CF8 | SCS14A<br>CF8M |
| -196 ~ 38                 | -            | 20.6         | 20.6           | -            | 51.8         | 52.0           |
| -5 ~ 38                   | 21.2         | 20.6         | 20.6           | 53.2         | 51.8         | 51.8           |
| 50                        | 20.8         | 20.0         | 20.0           | 52.3         | 49.9         | 50.2           |
| 100                       | 19.2         | 17.2         | 17.7           | 48.5         | 42.9         | 44.2           |
| 150                       | 17.3         | 15.4         | 16.3           | 47.3         | 38.2         | 40.5           |
| 200                       | 15.5         | 14.0         | 15.2           | 45.9         | 34.6         | 37.6           |
| 250                       | 13.5         | 13.1         | 13.5           | 43.7         | 32.3         | 35.3           |
| 300                       | 11.6         | 11.6         | 11.6           | 40.7         | 30.9         | 33.4           |
| 350                       | 9.8          | 9.8          | 9.8            | 38.9         | 29.9         | 32.2           |
| 375                       | 8.7          | 8.7          | 8.7            | 38.4         | 29.5         | 31.5           |
| 400                       | 7.8          | 7.8          | 7.8            | 36.4         | 29.2         | 30.9           |
| 425                       | -            | 6.9          | 6.9            | -            | 28.9         | 30.5           |
| 450                       | -            | 6.0          | 6.0            | -            | 28.6         | 29.9           |
| 475                       | -            | 5.0          | 5.0            | -            | 28.3         | 29.1           |
| 500                       | -            | 4.1          | 4.1            | -            | 27.8         | 28.5           |

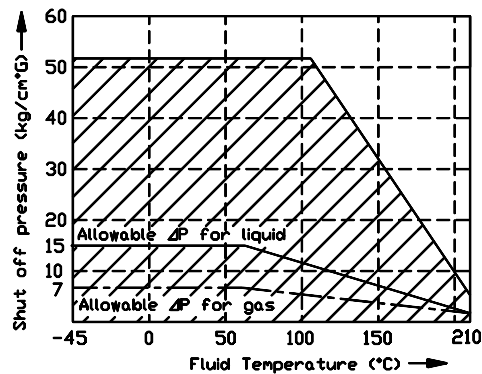
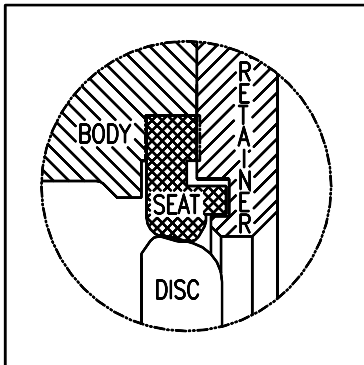
#### 2-2 JIS

[Unit: kgf/cm<sup>2</sup>G]

| Material<br>Temp.<br>(°C) | SCPH2 |      |      |
|---------------------------|-------|------|------|
|                           | 10K   | 20K  | 30K  |
| ~120                      | 15.2  | 15.2 | 35.2 |
| ~220                      | 11.2  | 13.2 | 32.2 |
| ~300                      | -     | 11.2 | 30.2 |
| ~350                      | -     | -    | 27.2 |
| ~400                      | -     | -    | 24.2 |

## 3. Trim treatment & material vs. operating pressure-temperature ratings.

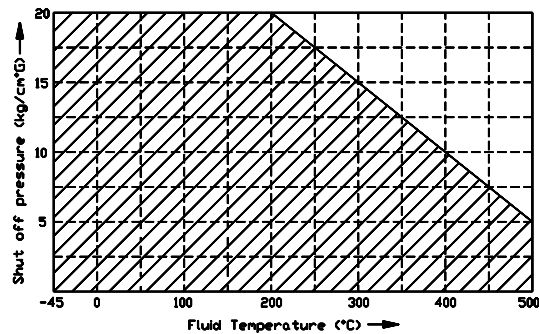
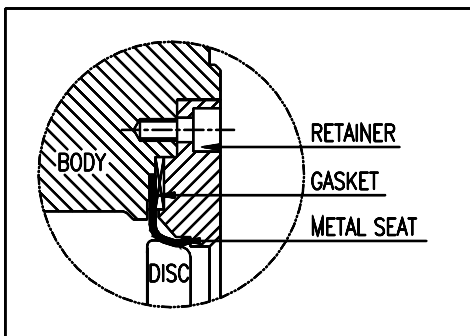
### 3-1 RTFE or PTFE Seat Ring (-45°C ~ +180°C)



- The RTFE seat ring is well-suited for extremely corrosive chemical solutions and high-temperature fluids of up to +210°C.

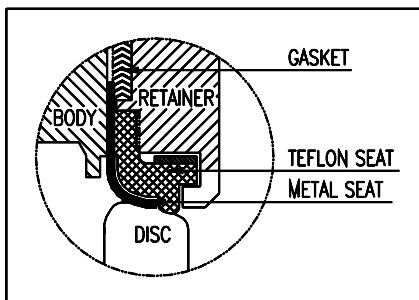
Examples: de-mineralized water, air-conditioning chilled / hot water, sea water, white liquor, formaldehyde solution, organic solvent, air, oxygen, exhaust gas, town gas, coke-oven gas.

### 3-2 Metal Seat Ring (SUS316 450°C)



- The metal seat ring allows control of extremely high-temperature fluids, thereby replacing conventional gate valves, and ball valves. Examples: steam, air, combustion gas, exhaust gas, sulfurous-acid gas, nitrogen gas.

### 3-2 RTFE + Metal Seat Ring (-45°C ~ +210°C)



- **PTFE-metal-seat system**

- Bidirectional sealing and fire safe design.

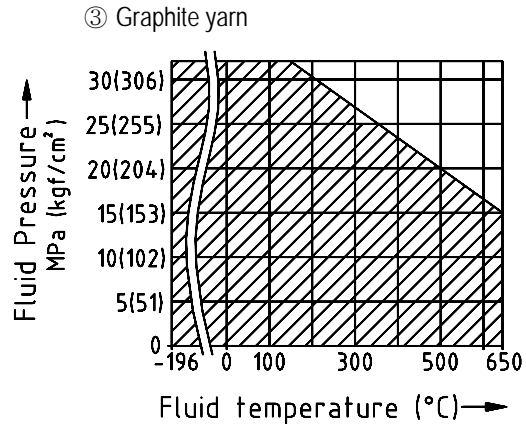
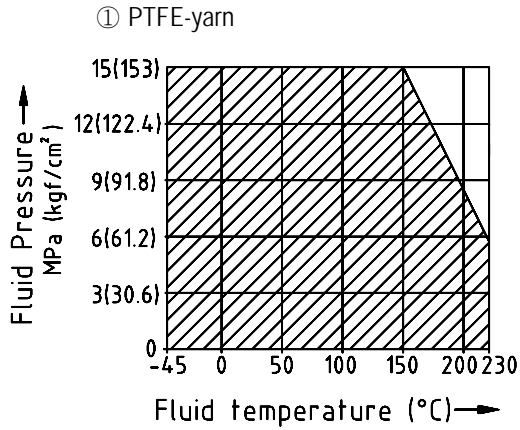
- **Bidirectional**

- The primary PTFE: seat ring will be replenished with a secondary metal back-up ring. This metal seat provides a mechanical load to energize the PTFE-seat. In combination with the line pressure a bidirectional sealing against the design pressure is obtained.

- **Fire safe design**

- After a fire, when the PTFE-seat ring has burned away, the secondary metal seat gives bidirectional sealing. This sealing systems meets the fire test requirements.

## 4. Gland packing operating pressure-temperature ratings.



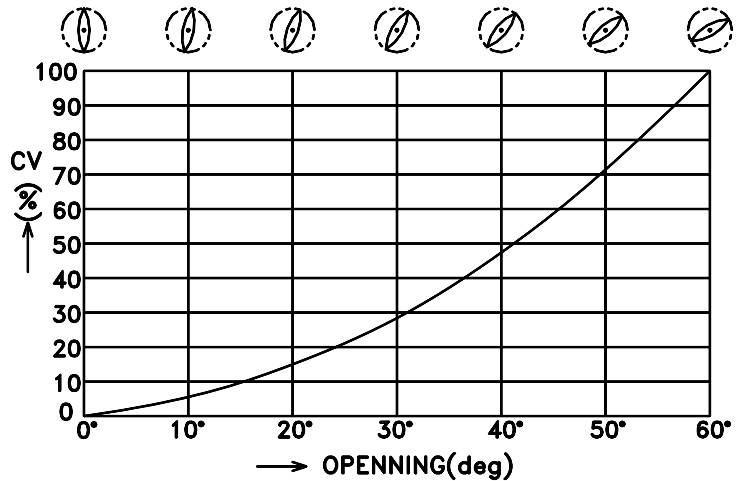
### FLOW CHARACTERISTICS

#### 1. 60° Opening type

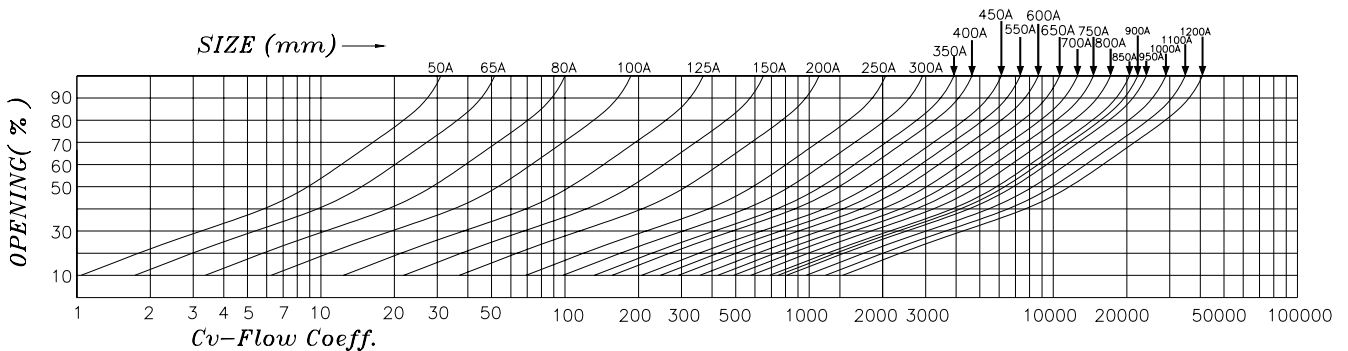
##### 1-1 Cv value

| Size (mm) | Cv   | Size (mm) | Cv    |
|-----------|------|-----------|-------|
| 50        | 31   | 500       | 7313  |
| 65        | 51   | 550       | 8755  |
| 80        | 98   | 600       | 11175 |
| 100       | 196  | 650       | 13000 |
| 125       | 376  | 700       | 15200 |
| 150       | 644  | 750       | 17100 |
| 200       | 1236 | 800       | 20500 |
| 250       | 2060 | 850       | 23500 |
| 300       | 2987 | 900       | 25500 |
| 350       | 3914 | 1000      | 29600 |
| 400       | 4738 | 1100      | 34700 |
| 450       | 6128 | 1200      | 41310 |

##### 1-2 Flow curve



##### 1-3 Flow characteristics

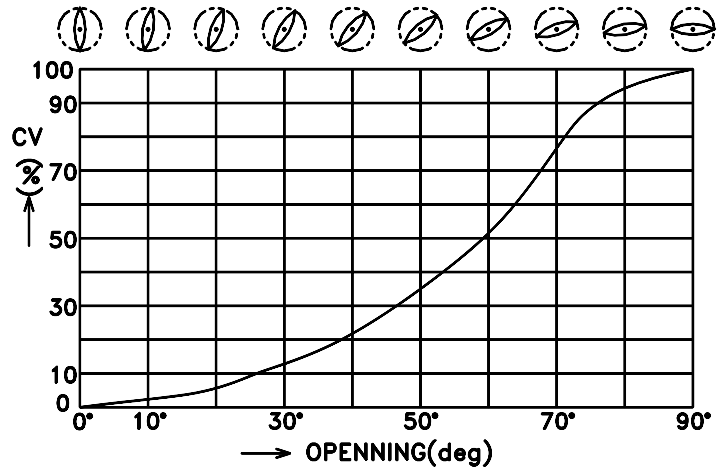


## 2. 90° Opening type

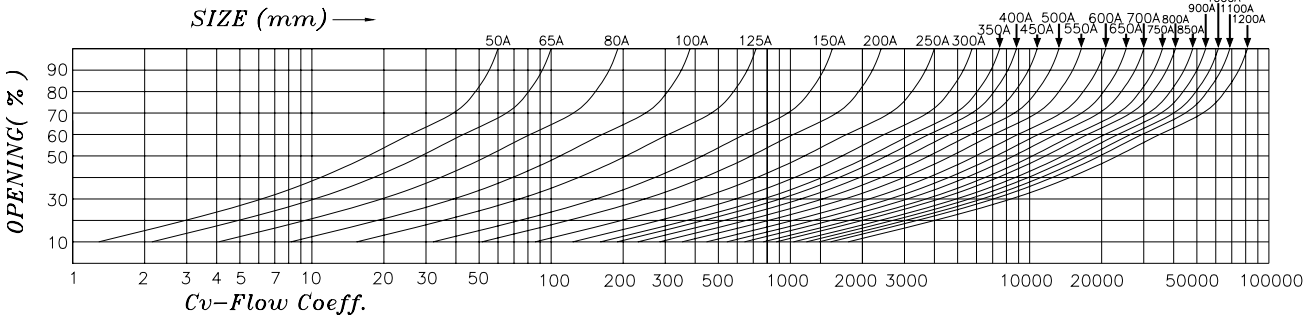
2-1 Cv value

| Size (mm) | Cv    | Size (mm) | Cv    |
|-----------|-------|-----------|-------|
| 50        | 60    | 500       | 14200 |
| 65        | 100   | 550       | 17000 |
| 80        | 190   | 600       | 21700 |
| 100       | 380   | 650       | 25400 |
| 125       | 730   | 700       | 29800 |
| 150       | 1250  | 750       | 33500 |
| 200       | 2400  | 800       | 40100 |
| 250       | 4000  | 850       | 46100 |
| 300       | 5800  | 900       | 50100 |
| 350       | 7600  | 1000      | 58000 |
| 400       | 9200  | 1100      | 68000 |
| 450       | 11900 | 1200      | 81000 |

2-2 Flow curve



## 2-3 Flow characteristics



**MAX. ALLOWABLE PRESSURE DROP**

## 1. Diaphragm Actuator: DB240 ~ DB520 (RA, DA)

Shaded zone represents standard application.

[Unit: Kg/cm<sup>2</sup>G]

| Actuator Model | Air Supply (Kg/cm <sup>2</sup> G) | Spring Range (Kg/cm <sup>2</sup> G) | Valve Size |           |          |           |           |           |           |            |            |            |            |            |            |            |            |  |
|----------------|-----------------------------------|-------------------------------------|------------|-----------|----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|--|
|                |                                   |                                     | 50A (2")   | 65A (2½") | 80A (3") | 100A (4") | 125A (5") | 150A (6") | 200A (8") | 250A (10") | 300A (12") | 350A (14") | 400A (16") | 450A (18") | 500A (20") | 550A (22") | 600A (24") |  |
| DB240          | 1.6                               | 0.6 ~ 1.0                           | 15         | 10        | 8        | 6         |           |           |           |            |            |            |            |            |            |            |            |  |
|                | 3.2                               | 1.2 ~ 2.0                           | 29 (20)    | 19 (13)   | 15 (10)  | 12 (8)    |           |           |           |            |            |            |            |            |            |            |            |  |
| DB300          | 1.6                               | 0.6 ~ 1.0                           |            |           |          | 10        | 7         | 4         |           |            |            |            |            |            |            |            |            |  |
|                | 3.2                               | 1.2 ~ 2.0                           |            |           |          | 21 (15)   | 14 (9)    | 9 (6)     | 5 (3)     | 2          |            |            |            |            |            |            |            |  |
| DB400          | 1.6                               | 0.6 ~ 1.0                           |            |           |          |           |           |           |           | 16         | 11         | 9          | 6          | 3          |            |            |            |  |
|                | 3.2                               | 1.2 ~ 2.0                           |            |           |          |           |           |           |           | 33 (23)    | 23 (17)    | 19 (13)    | 13 (9)     | 7 (5)      | 3 (2)      |            |            |  |
| DB520          | 1.6                               | 0.6 ~ 1.0                           |            |           |          |           |           |           |           |            |            | 11         | 9          | 6          | 5          | 3          |            |  |
|                | 3.2                               | 1.2 ~ 2.0                           |            |           |          |           |           |           |           |            |            | 22 (15)    | 18 (12)    | 13 (9)     | 10 (7)     | 7 (5)      | 5 (3)      |  |

[Notes] : 1. Only for Soft Trim  
 2. ( ) → 90° Action Type





## HIGH-PERFORMANCE BUTTERFLY VALVES

### 2. Rotary cylinder actuator: B0S(R) ~ R12S

■ Shaded zone represents standard application.

[ Unit: Kgf/cm<sup>2</sup>G ]

| Actuator Model | Air Supply (Kgf/cm <sup>2</sup> G) | Spring Range (Kgf/cm <sup>2</sup> G) | Valve Size |           |          |           |           |           |           |            |            |            |            |            |            |            |            |
|----------------|------------------------------------|--------------------------------------|------------|-----------|----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|
|                |                                    |                                      | 50A (2")   | 65A (2½") | 80A (3") | 100A (4") | 125A (5") | 150A (6") | 200A (8") | 250A (10") | 300A (12") | 350A (14") | 400A (16") | 450A (18") | 500A (20") | 550A (22") | 600A (24") |
| B0S            | 4.0 ~ 7.0                          | 4.0 ~ 7.0                            | 7          | 4         | 2.4      |           |           |           |           |            |            |            |            |            |            |            |            |
| B0SR           | 5.0 ~ 7.0                          | 2.0 ~ 3.5                            | 3.5        | 2         | 1.2      |           |           |           |           |            |            |            |            |            |            |            |            |
| B1S            | 4.0 ~ 7.0                          | 4.0 ~ 7.0                            | 20         | 13        | 9        | 6         |           |           |           |            |            |            |            |            |            |            |            |
| B1SR           | 5.0 ~ 7.0                          | 2.0 ~ 3.5                            | 10         | 7.5       | 4.5      | 3         |           |           |           |            |            |            |            |            |            |            |            |
| B2S            | 4.0 ~ 7.0                          | 4.0 ~ 7.0                            |            | 25        | 20       | 16        | 11        |           |           |            |            |            |            |            |            |            |            |
| B2SR           | 5.0 ~ 7.0                          | 2.0 ~ 3.5                            |            | 13        | 10       | 8         | 5.2       |           |           |            |            |            |            |            |            |            |            |
| B3S            | 4.0 ~ 7.0                          | 4.0 ~ 7.0                            |            |           |          | 30        | 21        | 15        | 12        | 7          | 3          |            |            |            |            |            |            |
| B3SR           | 5.0 ~ 7.0                          | 2.0 ~ 3.5                            |            |           |          | 15        | 10.5      | 8         | 6         | 3.5        | 1.5        |            |            |            |            |            |            |
| B4S            | 4.0 ~ 7.0                          | 4.0 ~ 7.0                            |            |           |          |           |           |           | 16        | 11         | 8          | 3          |            |            |            |            |            |
| B4SR           | 5.0 ~ 7.0                          | 2.0 ~ 3.5                            |            |           |          |           |           |           | 8         | 5.5        | 4          | 1.5        |            |            |            |            |            |
| B6S            | 4.0 ~ 7.0                          | 4.0 ~ 7.0                            |            |           |          |           |           |           |           |            | 17         | 12         | 8.5        | 6          |            |            |            |
| B6SR           | 5.0 ~ 7.0                          | 2.0 ~ 3.5                            |            |           |          |           |           |           |           |            | 8.5        | 6          | 4.2        | 3          |            |            |            |
| R6S            | 4.0 ~ 7.0                          | 4.0 ~ 7.0                            |            |           |          |           |           |           |           |            |            |            | 15         | 11         | 6.5        |            |            |
| R6SR           | 5.0 ~ 7.0                          | 2.0 ~ 3.5                            |            |           |          |           |           |           |           |            |            |            | 7.5        | 5.5        | 3.2        |            |            |
| R7S            | 4.0 ~ 7.0                          | 4.0 ~ 7.0                            |            |           |          |           |           |           |           |            |            |            |            |            | 16         | 10.5       | 7          |
| R7SR           | 5.0 ~ 7.0                          | 2.0 ~ 3.5                            |            |           |          |           |           |           |           |            |            |            |            |            | 8          | 5.2        | 3.5        |

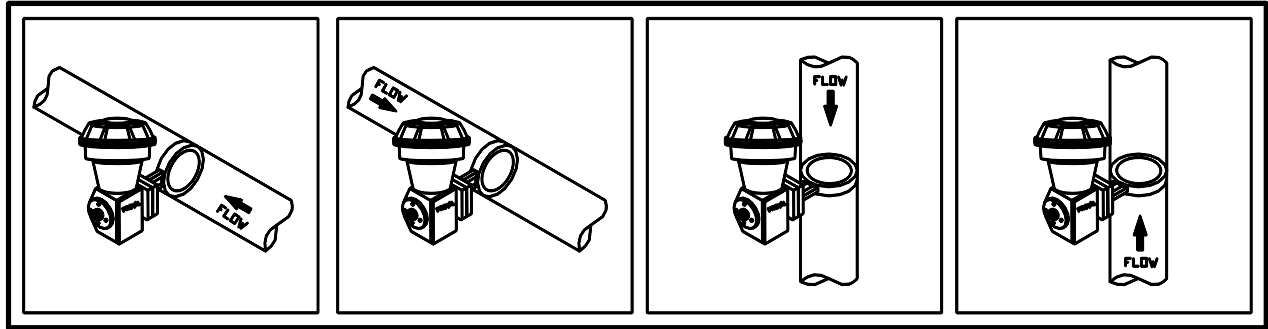
[Notes] Only for "Soft Trim"

■ Shaded zone represents standard application.

| Actuator Model | Air Supply (Kgf/cm <sup>2</sup> G) | Spring Range (Kgf/cm <sup>2</sup> G) | Valve Size |            |            |            |            |            |            |             |             |             |   |
|----------------|------------------------------------|--------------------------------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|---|
|                |                                    |                                      | 600A (24") | 650A (26") | 700A (28") | 750A (30") | 800A (32") | 850A (34") | 900A (36") | 1000A (40") | 1100A (44") | 1200A (48") |   |
| R8S            | 4.0 ~ 7.0                          | 4.0 ~ 7.0                            | 17         | 13         | 10         | 7          | 5          |            |            |             |             |             |   |
| R8SR           | 5.0 ~ 7.0                          | 2.0 ~ 3.5                            |            |            |            | 11         | 8          | 5          |            |             |             |             |   |
| R9S            | 4.0 ~ 7.0                          | 4.0 ~ 7.0                            |            |            |            |            | 13         | 9          | 6          |             |             |             |   |
| R10S           | 5.0 ~ 7.0                          | 2.0 ~ 3.5                            |            |            |            |            |            | 11         | 7.1        | 4.5         |             |             |   |
| R11S           | 4.0 ~ 7.0                          | 4.0 ~ 7.0                            |            |            |            |            |            |            | 9          | 6.5         | 4           |             |   |
| R12S           | 5.0 ~ 7.0                          | 2.0 ~ 3.5                            |            |            |            |            |            |            |            |             | 11          | 7           | 5 |

[Notes] Only for "Soft Trim"

MOUNTING FORMS



STANDARD

TYPE 1

TYPE 2

TYPE 3

WEIGHT

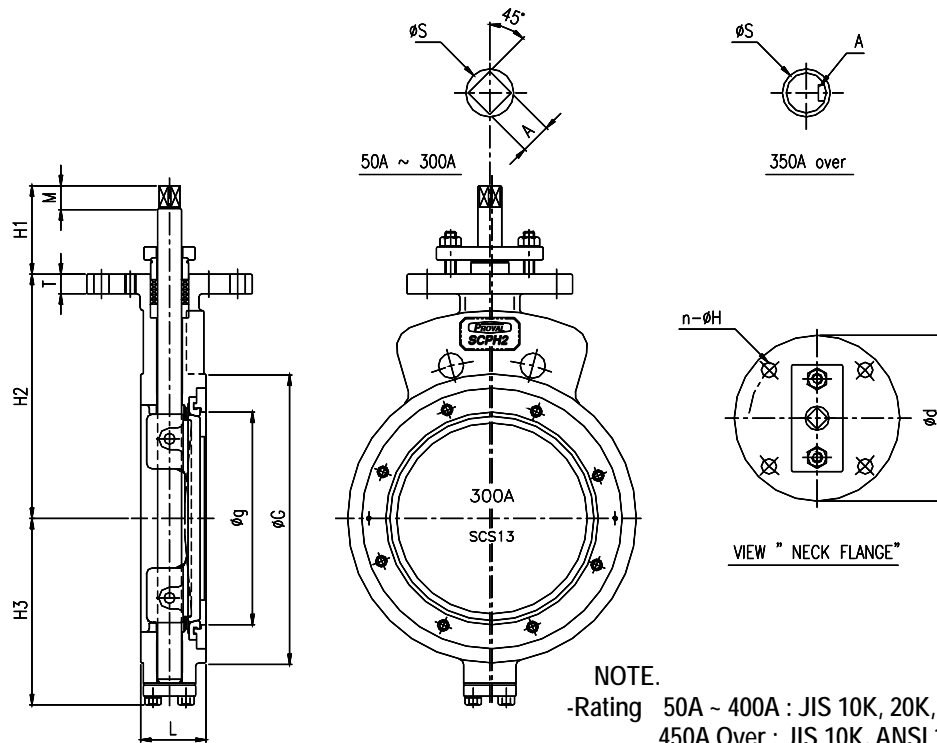
※ Only standard types are represented. Weight of accessories, a hand wheel and the like are not included.

[ Unit: kg ]

| Size (mm)      | 50                              | 65                              | 80                              | 100                             | 125                             | 150                             | 200                             | 250                             | 300                             | 350                             | 400                             | 450                             | 500                             | 550                             | 600                             | 650                             | 700                             | 750                             | 800                             | 850                             | 900                             | 1000                            | 1100                            | 1200                            |
|----------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Actuator Model | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# | JIS 10K, 20K<br>ANSI 150#, 300# |
| Rating         |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |
| DB240          | 45                              | 50                              | 58                              | 68                              | 88                              | 108                             |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |
| DB300          |                                 |                                 |                                 |                                 | 120                             | 148                             | 168                             | 195                             | 195                             |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |
| DB400          |                                 |                                 |                                 |                                 |                                 |                                 |                                 | 212                             | 240                             | 288                             | 335                             | 395                             | 450                             | 575                             | 750                             |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |
| B0S(R)         | 6<br>(7.5)                      | 8<br>(10.5)                     |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |
| B1S(R)         |                                 | 11<br>(13)                      | 14<br>(16)                      | 18<br>(20)                      | 22<br>(24)                      |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |
| B2S(R)         |                                 |                                 |                                 |                                 | 27<br>(30)                      | 34<br>(38)                      |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |
| B3S(R)         |                                 |                                 |                                 |                                 |                                 | 45<br>(52)                      | 60<br>(67)                      | 74<br>(30)                      | 83<br>(90)                      | 92<br>(99)                      |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |
| B4S(R)         |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 | 91<br>(98)                      | 106<br>(109)                    | 112<br>(120)                    |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |
| B6S(R)         |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 | 124<br>(139)                    | 140<br>(155)                    | 165<br>(180)                    |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |
| R6S(R)         |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 | 170<br>(190)                    | 195<br>(215)                    | 220<br>(235)                    | 280<br>(300)                    |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |
| R7S(R)         |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 | 350<br>(380)                    | 400<br>(440)                    |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |
| R8S(R)         |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 | 600<br>(650)                    | 740<br>(810)                    | 950<br>(1000)                   | 1200<br>(1300)                  | 1700<br>(2100)                  | 1900<br>(2400)                  | 2140<br>(2780)                  |                                 |                                 |
| R9S            |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 | 1800                            | 2000                            | 2500                            |                                 |                                 |
| R10S           |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 | 2700                            | 3100                            |                                 |
| R11S           |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 | 3250                            |                                 |
| R12S           |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 |                                 | 3800                            |

## DIMENSION DRAWING

### HI-PERFORMANCE BUTTERFLY VALVES



#### DIMENSIONS

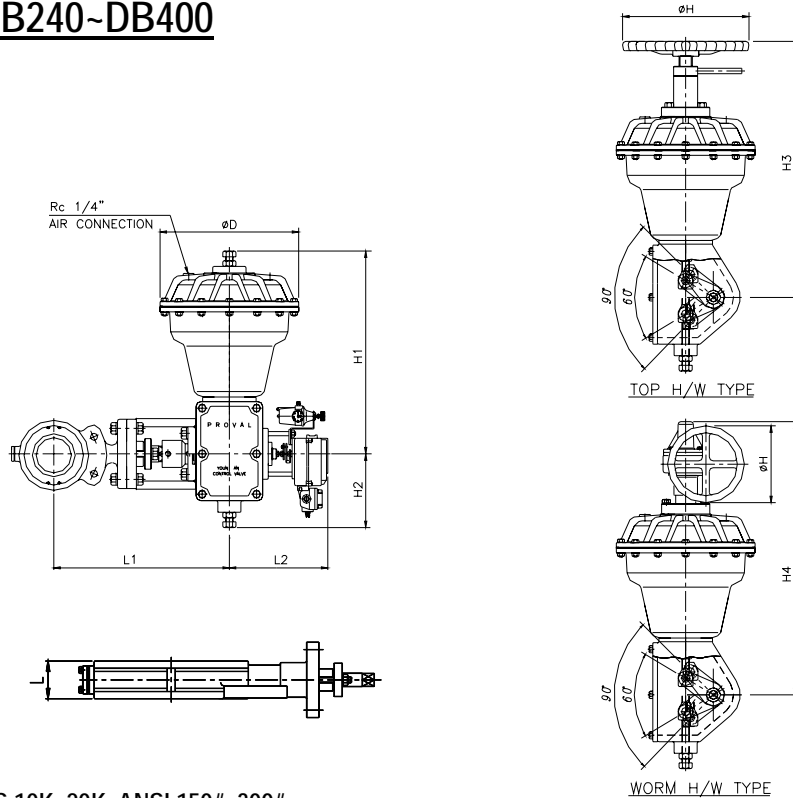
[ Unit: mm ]

| Valve Size |      | L   | ØG  | Øg  | Ød  | H1  | H2  | H3  | ØS   | A         | M   | T  | n-ØH   |
|------------|------|-----|-----|-----|-----|-----|-----|-----|------|-----------|-----|----|--------|
| mm         | inch |     |     |     |     |     |     |     |      |           |     |    |        |
| 50         | 2    | 43  | 100 | 46  | 100 | 75  | 120 | 60  | 15   | 12x12     | 15  | 13 | 4-9.5  |
| 65         | 2½   | 46  | 120 | 60  | 100 | 75  | 126 | 70  | 15   | 12x12     | 15  | 13 | 4-9.5  |
| 80         | 3    | 46  | 130 | 70  | 100 | 75  | 130 | 75  | 15   | 12x12     | 15  | 13 | 4-9.5  |
| 100        | 4    | 52  | 155 | 93  | 102 | 75  | 155 | 95  | 15   | 12x12     | 15  | 14 | 4-11.5 |
| 125        | 5    | 56  | 181 | 119 | 102 | 75  | 170 | 120 | 18   | 14x14     | 16  | 14 | 4-11.5 |
| 150        | 6    | 56  | 209 | 144 | 102 | 75  | 200 | 125 | 17.5 | 14x14     | 16  | 20 | 4-11.5 |
| 200        | 8    | 60  | 265 | 190 | 152 | 95  | 224 | 155 | 23   | 18x18     | 22  | 18 | 4-14   |
| 250        | 10   | 68  | 319 | 240 | 152 | 95  | 270 | 230 | 29   | 22x22     | 24  | 20 | 4-14   |
| 300        | 12   | 78  | 367 | 289 | 152 | 95  | 305 | 250 | 31   | 24x24     | 25  | 23 | 4-14   |
| 350        | 14   | 78  | 413 | 326 | 170 | 120 | 350 | 290 | 33   | 10x8key   | 45  | 22 | 4-16   |
| 400        | 16   | 102 | 470 | 395 | 170 | 129 | 380 | 335 | 40   | 12x10 key | 65  | 22 | 4-16   |
| 450        | 18   | 114 | 534 | 434 | 170 | 130 | 400 | 374 | 45   | 14x9 key  | 64  | 22 | 4-16   |
| 500        | 20   | 127 | 585 | 465 | 203 | 192 | 550 | 405 | 45   | 14x9key   | 55  | 25 | 4-19   |
| 600        | 24   | 154 | 695 | 570 | 203 | 202 | 580 | 465 | 50   | 14x9key   | 80  | 25 | 4-19   |
| 700        | 28   | 165 | 792 | 658 | 280 | 130 | 690 | 560 | 68   | 20x12key  | 130 | 35 | 4-23   |
| 800        | 32   | 190 | 890 | 743 | 280 | 130 | 760 | 615 | 78   | 22x14key  | 130 | 35 | 4-23   |
| 850        | 34   | 203 | 942 | 795 | 280 | 130 | 794 | 615 | 88   | 25x14key  | 130 | 35 | 4-23   |

|                  |            |      |            |
|------------------|------------|------|------------|
| MODEL            | YA - 122E1 | SIZE | 50A - 850A |
| PROVAL Co., Ltd. |            |      |            |

## DIMENSION DRAWING

### ACTUATOR : DB240~DB400



**NOTE.**

-Rating 50A ~ 400A : JIS 10K, 20K, ANSI 150#, 300#  
 450A Over : JIS 10K, ANSI 150#

**DIMENSIONS**

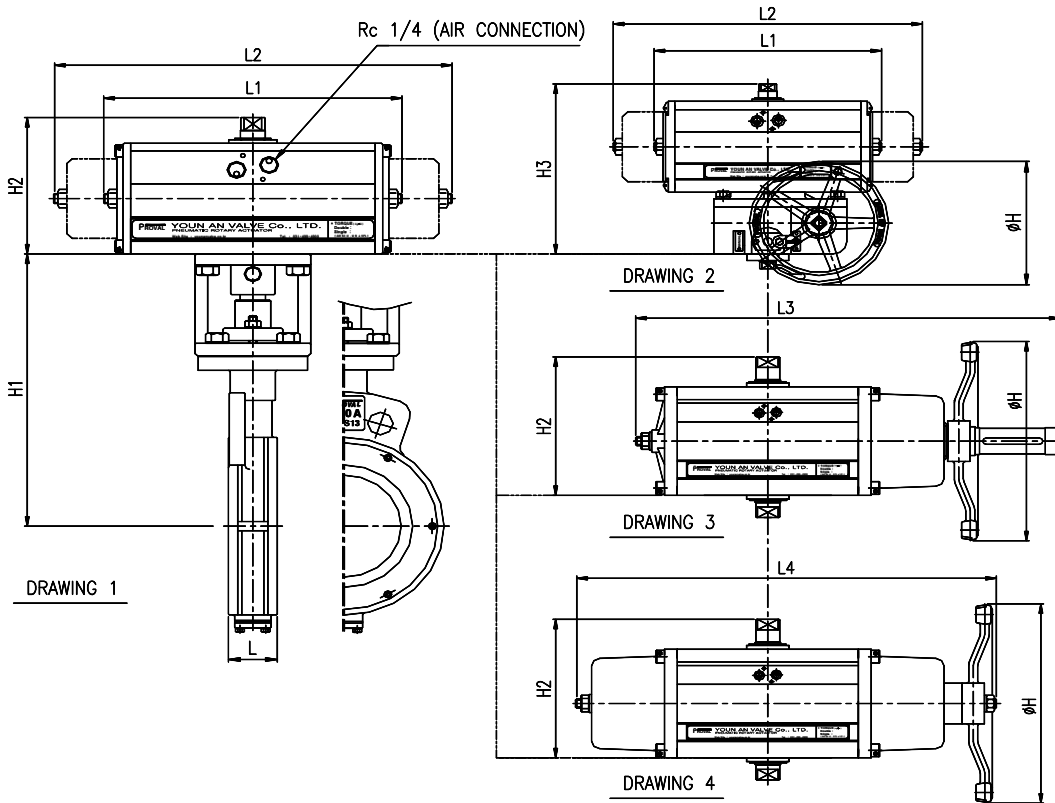
[ Unit: mm ]

| Valve Size |      | L<br>(JIS 10K, 20K<br>/ANSI 150#, 300#) | ØD  | Actuator Operating Angle(°) |     |     |     |             |     |     |     | L1  | L2  | ØH<br>Top/ Worm |
|------------|------|---|-----|-----------------------------|-----|-----|-----|-------------|-----|-----|-----|-----|-----|-----------------|
| mm         | inch |   |     | 60° Control                 |     |     |     | 90° Control |     |     |     |     |     |                 |
|            |      |   |     | H1                          | H2  | H3  | H4  | H1          | H2  | H3  | H4  |     |     |                 |
| 50         | 2    | 43                                      | 240 | 360                         | 130 | 518 | 668 | 400         | 170 | 518 | 668 | 300 | 250 | 200/200         |
| 65         | 2½   | 46                                      | 240 | 360                         | 130 | 518 | 668 | 400         | 170 | 518 | 668 | 302 | 250 | 200/200         |
| 80         | 3    | 46                                      | 240 | 360                         | 130 | 518 | 668 | 400         | 170 | 518 | 668 | 306 | 250 | 200/200         |
| 100        | 4    | 52                                      | 240 | 360                         | 130 | 518 | 668 | 400         | 170 | 518 | 668 | 331 | 250 | 200/200         |
| 125        | 5    | 56                                      | 240 | 360                         | 130 | 518 | 668 | 400         | 170 | 518 | 668 | 385 | 250 | 200/200         |
| 150        | 6    | 56                                      | 300 | 451                         | 164 | 667 | 746 | 511         | 224 | 667 | 746 | 423 | 273 | 315/200         |
| 200        | 8    | 60                                      | 300 | 451                         | 164 | 667 | 746 | 511         | 224 | 667 | 746 | 447 | 273 | 315/200         |
| 250        | 10   | 68                                      | 300 | 451                         | 164 | 667 | 746 | 511         | 224 | 667 | 746 | 513 | 273 | 315/200         |
| 300        | 12   | 78                                      | 400 | 556                         | 195 | 812 | 845 | 636         | 275 | 812 | 845 | 575 | 300 | 430/315         |
| 350        | 14   | 78                                      | 400 | 556                         | 195 | 812 | 845 | 636         | 275 | 812 | 845 | 620 | 300 | 430/315         |
| 400        | 16   | 102                                     | 400 | 556                         | 195 | 812 | 845 | 636         | 275 | 812 | 845 | 560 | 300 | 430/315         |
| 450        | 18   | 114                                     | 400 | 556                         | 195 | 812 | 845 | 636         | 275 | 812 | 845 | 580 | 300 | 430/315         |
| 500        | 20   | 127                                     | 400 | 556                         | 195 | 812 | 845 | 636         | 275 | 812 | 845 | 600 | 300 | 430/315         |
| 600        | 24   | 154                                     | 400 | 556                         | 195 | 812 | 845 | 636         | 275 | 812 | 845 | 620 | 300 | 430/315         |

|                  |              |      |            |
|------------------|--------------|------|------------|
| MODEL            | YADB - 122E1 | SIZE | 50A ~ 600A |
| PROVAL Co., Ltd. |              |      |            |

## DIMENSION DRAWING

### ACTUATOR : B0S(R)(H)~B6S(R)(H)



**NOTE.**

- \* DRAWING 1 : STANDARD B0S(R)~B6S(R)
- \* DRAWING 2 : H/W Type B0S(R)H~B2S(R)H
- \* DRAWING 3 : H/W Type B3~6 SH
- \* DRAWING 4 : H/W Type B3~6SRH

**DIMENSIONS**

[ Unit: mm ]

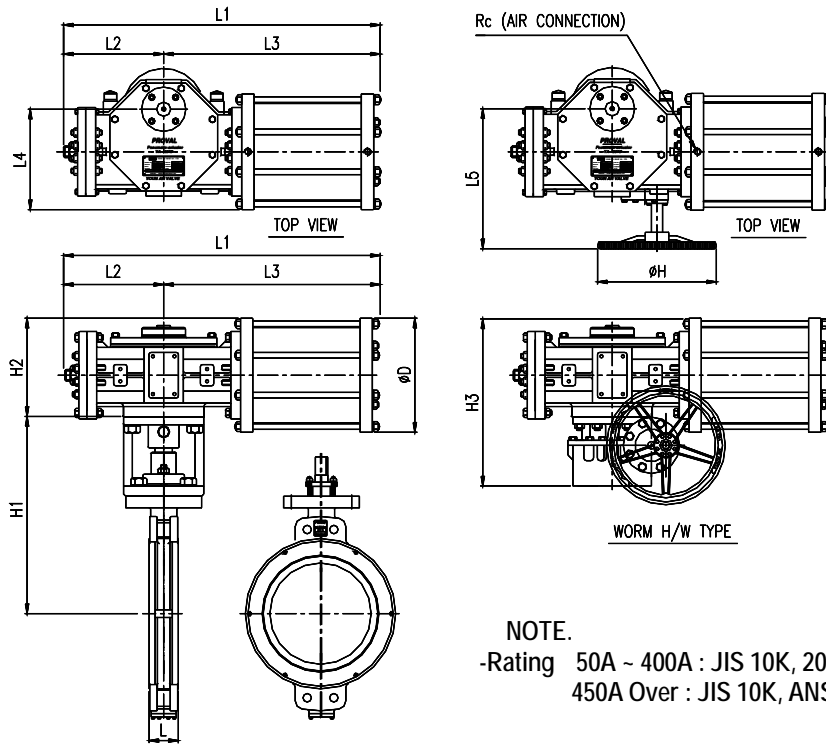
| Valve Size |      | L<br>(JIS 10K, 20K<br>/ANSI 150#, 300#) | ACTUATOR      |     |               |     | L3  | L4  | H1  | H2  |     | H3  |     | ØH  |     |
|------------|------|---|---------------|-----|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| mm         | Inch |   | Double Action |     | Single Action |     |     |     |     | D   | S   | D   | S   | D   | S   |
|            |      |   | Model No.     | L1  | Model No.     | L2  |     |     |     |     |     |     |     |     |     |
| 50         | 2    | 43                                      | B0S           | 170 | B0SR          | 270 | -   | -   | 237 | 79  | 79  | 155 | 155 | 200 | 200 |
| 65         | 2½   | 46                                      | B0S           | 170 | B1SR          | 340 | -   | 385 | 240 | 79  | 111 | 155 | 186 | 200 | 200 |
| 80         | 3    | 46                                      | B1S           | 215 | B2SR          | 405 | 355 | 510 | 245 | 111 | 131 | 186 | 206 | 200 | 200 |
| 100        | 4    | 52                                      | B2S           | 250 | B2SR          | 405 | 475 | 510 | 270 | 131 | 131 | 206 | 206 | 200 | 200 |
| 125        | 5    | 56                                      | B2S           | 250 | B3SR          | 560 | 475 | 640 | 280 | 131 | 184 | 206 | 335 | 200 | 315 |
| 150        | 6    | 56                                      | B3S           | 310 | B3SR          | 560 | 600 | 640 | 320 | 184 | 184 | 335 | 335 | 315 | 315 |
| 200        | 8    | 60                                      | B3S           | 310 | B4SR          | 610 | 600 | 725 | 370 | 184 | 184 | 335 | 335 | 315 | 315 |
| 250        | 10   | 68                                      | B4S           | 400 | B6SR          | 700 | 700 | 955 | 420 | 184 | 256 | 335 | 440 | 315 | 315 |
| 300        | 12   | 78                                      | B4S           | 400 | B6SR          | 700 | 700 | 955 | 440 | 184 | 256 | 335 | 440 | 315 | 315 |
| 350        | 14   | 78                                      | B6S           | 475 | R6SR          | 850 | 830 | -   | 500 | 256 | -   | 440 | -   | 315 | 430 |
| 400        | 16   | 102                                     | B6S           | 475 | R6SR          | 850 | 830 | -   | 580 | 256 | -   | 440 | -   | 315 | 430 |

|                  |   |      |            |
|------------------|---|------|------------|
| MODEL            | YABB(YABHB)-122E1,121E1,123E1,222E1,221E1,223E1<br>YABB(YABHB)-322E1,321E1, 323E1,<br>YABB(YABHB)-112E1,212E1,111E1,211E1,312E1,312E3 | SIZE | 50A ~ 400A |
| PROVAL Co., Ltd. |   |      |            |

## DIMENSION DRAWING

### ACTUATOR : R6S(H)-R12S(H)

### BODY : JIS 10K,ANSI 150# SOFT SEAT 2-WAY BALL



NOTE.  
 -Rating 50A ~ 400A : JIS 10K, 20K, ANSI 150#, 300#  
 450A Over : JIS 10K, ANSI 150#

## DIMENSIONS

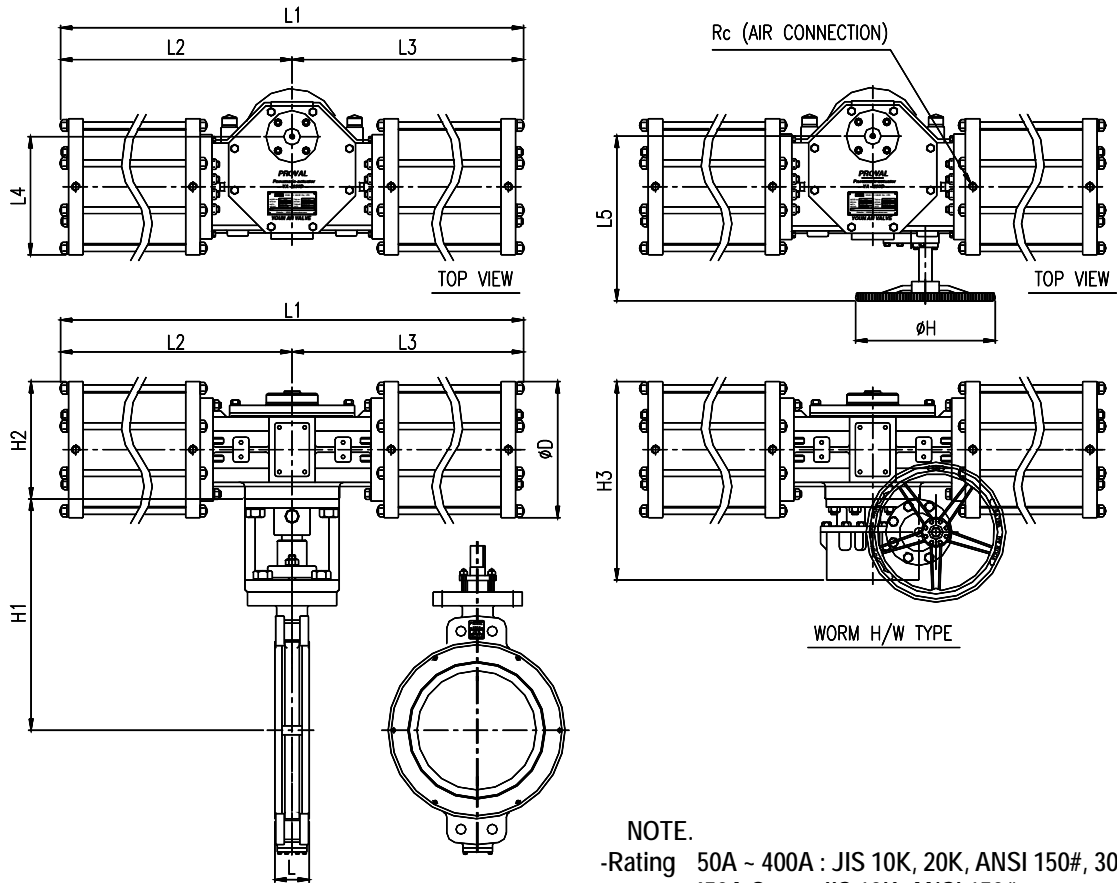
[ Unit: mm ]

| Valve Size |      | L<br>(JIS 10K, 20K<br>/ANSI 150#, 300#) | ACTUATOR  |      |     | L2  | L3  | L4  | L5  | H1  | H2  | H3  | ØH  | Rc  |
|------------|------|---|-----------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| mm         | inch |   | Model No. | L1   | ØD  |     |     |     |     |     |     |     |     |     |
| 350        | 14   | 78                                      | R6S       | 750  | 210 | 235 | 515 | 240 | 623 | 500 | 240 | 490 | 430 | 3/8 |
| 400        | 16   | 102                                     | R6S       | 750  | 270 | 235 | 515 | 240 | 623 | 580 | 240 | 490 | 430 | 3/8 |
| 450        | 18   | 114                                     | R6S       | 750  | 270 | 235 | 515 | 240 | 623 | 600 | 240 | 490 | 430 | 3/8 |
| 500        | 20   | 127                                     | R7S       | 940  | 270 | 291 | 649 | 255 | 638 | 750 | 255 | 505 | 430 | 3/8 |
| 600        | 24   | 154                                     | R8S       | 940  | 325 | 291 | 649 | 283 | 638 | 780 | 283 | 533 | 430 | 3/8 |
| 700        | 28   | 165                                     | R8S       | 940  | 325 | 291 | 649 | 283 | 638 | 890 | 283 | 533 | 430 | 3/8 |
| 800        | 32   | 190                                     | R9S       | 940  | 390 | 291 | 649 | 315 | 638 | 960 | 315 | 565 | 430 | 1/2 |
| 850        | 34   | 203                                     | R9S       | 940  | 390 | 291 | 649 | 315 | 638 | 995 | 315 | 565 | 430 | 1/2 |
| 900        | 36   | -                                       | R10S      | 940  | 420 | 291 | 649 | 330 | 638 | -   | 330 | 580 | 430 | 1/2 |
| 1000       | 40   | -                                       | R11S      | 1165 | 420 | 379 | 786 | 360 | 668 | -   | 360 | 610 | 430 | 1/2 |
| 1100       | 44   | -                                       | R12S      | 1165 | 490 | 379 | 786 | 395 | 668 | -   | 395 | 645 | 430 | 1/2 |
| 1200       | 48   | -                                       | R12S      | 1165 | 490 | 379 | 786 | 395 | 668 | -   | 395 | 645 | 430 | 1/2 |

|                  |  |      |              |
|------------------|--|------|--------------|
| MODEL            | YAB - 3T / 3M, YAB - 3TSR / 3MSR<br>YABB - 312E1 / 322E1 | SIZE | 350A ~ 1200A |
| PROVAL Co., Ltd. |  |      |              |

## DIMENSION DRAWING

### ACTUATOR : R6SR(H)~R8SR(H)



NOTE.  
 -Rating 50A ~ 400A : JIS 10K, 20K, ANSI 150#, 300#  
 450A Over : JIS 10K, ANSI 150#

### DIMENSIONS

[ Unit: mm ]

| Valve Size |      | L<br>(JIS 5K, 20K<br>/ANSI 125#, 300#) | ACTUATOR  |      |     | L2  | L3  | L4  | L5  | H1  | H2  | H3  | ØH  | Rc  |
|------------|------|--|-----------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| mm         | inch |  | Model No. | L1   | ØD  |     |     |     |     |     |     |     |     |     |
| 250        | 10   | 68                                     | R6SR      | 1450 | 270 | 725 | 725 | 240 | 623 | 420 | 190 | 440 | 430 | 3/8 |
| 300        | 12   | 78                                     | R6SR      | 1450 | 270 | 725 | 725 | 240 | 623 | 455 | 190 | 440 | 430 | 3/8 |
| 350        | 14   | 78                                     | R6SR      | 1450 | 270 | 725 | 725 | 240 | 623 | 500 | 240 | 490 | 430 | 3/8 |
| 400        | 16   | 102                                    | R6SR      | 1450 | 270 | 725 | 725 | 240 | 623 | -   | 240 | 490 | 430 | 3/8 |
| 450        | 18   | 114                                    | R6SR      | 1450 | 270 | 725 | 725 | 240 | 623 | -   | 240 | 490 | 430 | 3/8 |
| 500        | 20   | 127                                    | R7SR      | 1950 | 270 | 975 | 975 | 255 | 638 | -   | 255 | 505 | 430 | 3/8 |
| 600        | 24   | 154                                    | R8SR      | 1950 | 270 | 975 | 975 | 255 | 638 | -   | 255 | 505 | 430 | 3/8 |
| 700        | 28   | 165                                    | R8SR      | 1950 | 325 | 975 | 975 | 283 | 638 | -   | 283 | 533 | 430 | 3/8 |
| 800        | 32   | 190                                    | R9SR      | 1950 | 325 | 975 | 975 | 283 | 638 | -   | 283 | 533 | 430 | 3/8 |

|                  |  |      |             |
|------------------|--|------|-------------|
| MODEL            | YAB - 3T / 3M, YAB - 3TSR / 3MSR<br>YABB - 112E1 / 122E1 | SIZE | 250A - 800A |
| PROVAL Co., Ltd. |  |      |             |