



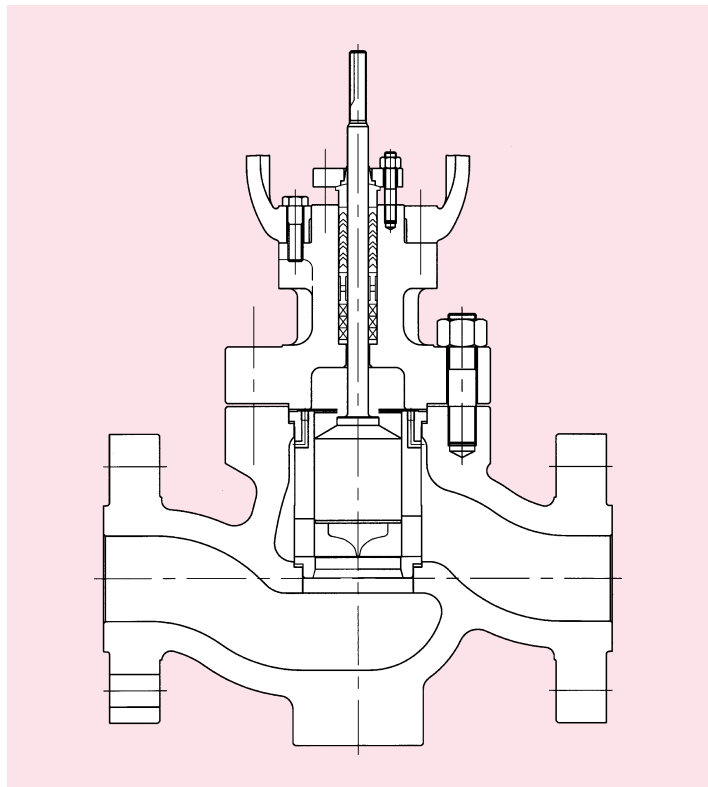
# General Specifications

## MODEL NO.83 900 - 1500LB CAGE GUIDE TYPE CONTROL VALVES

**Model 83** control valves have cage guided trim, so that these valves provide wide controllability, wide scope of production for reduced port, and comprehensive applicability for various countmeasures of valve.

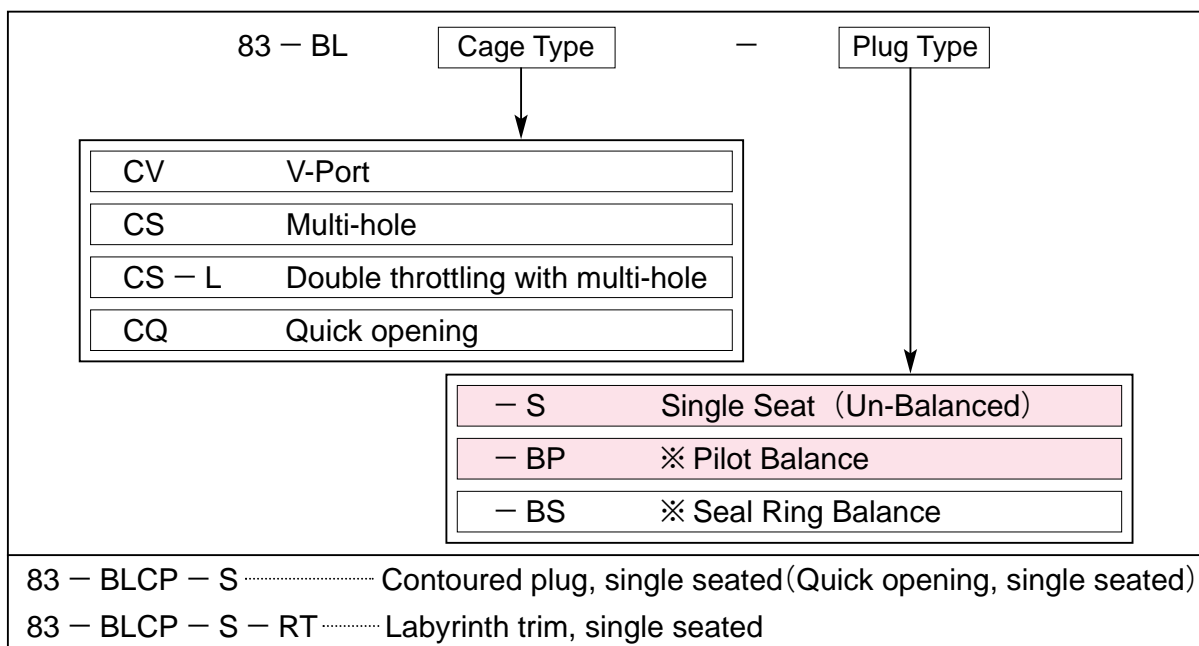
These valves permit stable control on valve closing and opening against the thrust of fluid, and are available for applications not only general use but also controlling high temperature and high pressure for power plants and chemical plants. Especially, these valves are suited for low noise application because of the superior noise reduction effect at high load.

Compact design multi-spring type diaphragm actuator is installed on this model and made it available to use for high thrust servies.



83  
900  
1500

### 1. VALVE TYPE



[Note] (1)   portion is described in this catalog.  
 (2) Full port is our standard type.  
 (3) See MCE-B4308 for Type 83-BS.

## 2. FEATURES

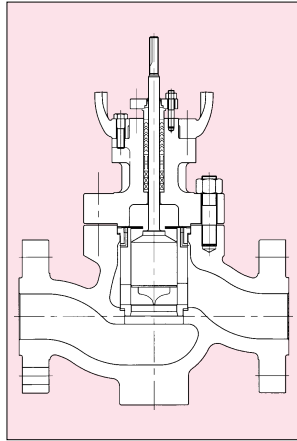
### Model BLCV-S V Port Type

Model BLCV are cage guide type control valves and used for most general purpose with V port of cage characterized.

These valves provide wide applicability, excellent characteristics at high load, and easy maintenance. Moreover, the trim permits soft seat.

■ **Typical Application**

- General service
- Power plant and chemical plant
- Medium or high pressure service



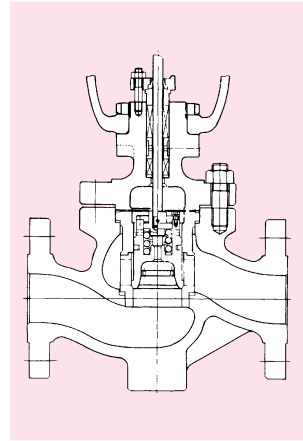
### Model BLCV-BP Pilot Balance Type

Model BLCV-BP are cage guide type control valves that valve plug have pilot balance type.

These valves permit low seat leakage ratio such as single seat, and high shut-off thrust in spite of small actuator size as of double seat.

■ **Typical Application**

- Turbine bypass valve
- Open valve
- Shut-off valve



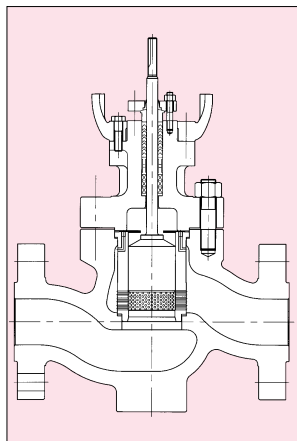
### Model BLCS-S Multi-hole Type

Model BLCS permit to reduce the noise for gas service, with Multi-holes in outer cage.

In liquid service which may occur cavitation, CS helps to prevent trim from cavitation damage.

■ **Typical Application**

- Low noise valve
- Anti-cavitation valve
- Anti-erosion valve



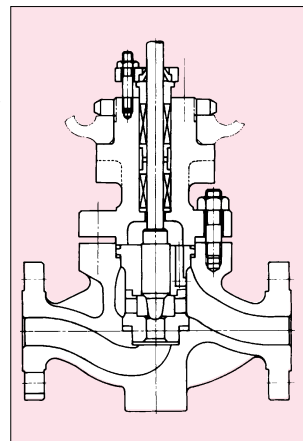
### Model BLCP-S Contoured Plug Type Single Seated

Model BLCP-S is cage guide type single seated control valves with contoured plug.

These valves are suited for high temperature and pressure, stand against side vibration, and are available to apply anti-erosion material for trim.

■ **Typical Application**

- General use (Small size)
- For high temperature and high differential pressure



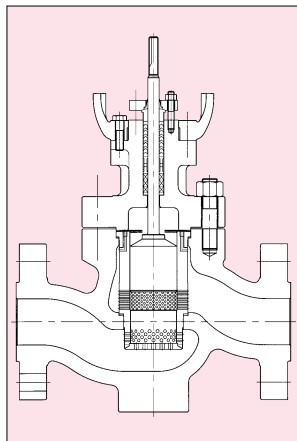
### Model BLCS-L-S Double Stage Type with Multi-hole

Model BLCS-L are double throttling type control valve providing additional fixed orifice at downstream side of the Model BLCS.

Because of double throttling mechanism, these valves permit large noise reduction effect.

■ **Typical Application**

- Medium and high pressure gas service
- Steam control valve
- Low noise valve



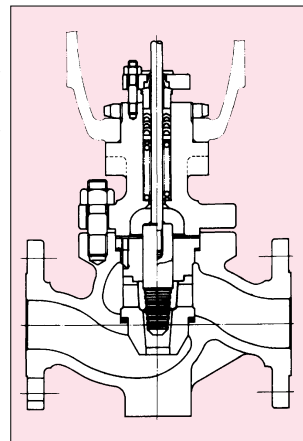
### Model BLCP-S-RT Labyrinth Trim Type

Model BLCP-S-RT provide multi-throttling with the trim having labyrinth slots on outer valve plug.

These valves hardly wear the seating surface in spite of low travel service, and are suited for high differential pressure of liquid.


■ **Typical Application**

- Boiler feed water small valve
- High differential pressure valve
- Anti-cavitation valve



83  
900  
1500

### 3. SPECIFICATIONS

|                            |  |   |   |                                     |  |   |                                      |                                  |                    |
|----------------------------|--|---|---|-------------------------------------|--|---|--------------------------------------|----------------------------------|--------------------|
| <b>Valve Type</b>          |  | <b>Diaphragm Operated Cage Guided Control Valve</b>   |   |                                     |  |   |                                      |                                  |                    |
| <b>Valve Model No.</b>     |  | <b>3883, 2883</b>   |   |                                     |  |   |                                      |                                  |                    |
| <b>VALVE BODY</b>          | <b>Body Type</b>   | <b>Model 83-BLCV-S</b>  | <b>Model 83-BLCQ-S</b>  | <b>Model 83-BLCS-S</b>              | <b>Model 83-BLCS-L-S</b>   | <b>Model 83-BLCV-BP, BLCQ-BP, BLCS-BP, BLCS-L-BP</b>  | <b>Model 83-BLCP-S</b>               | <b>Model 83-BLCP-S-RT</b>        |                    |
|                            | <b>Valve Sizes</b> mm (in.)  | 20 ~ 200 (3/4 ~ 8)  |   |                                     | 25 ~ 200 (1 ~ 8)   | 50 ~ 200 (2 ~ 8)  | 20 ~ 40 <sup>(4)</sup> (3/4 ~ 1 1/2) | 20 ~ 50 <sup>(4)</sup> (3/4 ~ 2) |                    |
|                            | <b>Pressure Rating</b>   | JIS 63K, ANSI Class 900, 1500, JPI 900, 1500 <sup>(3)</sup>   |   |                                     |  |   |                                      |                                  |                    |
|                            | <b>End Connections</b>   | Flanged end : FF, RF RJ, Male and female, Tongue and groove<br>(※ Welding end : SW, BW)   |   |                                     |  |   |                                      |                                  |                    |
|                            | <b>Body Materials</b>  | SCPH2, SCPH11, SCPH21, SCPH32, SCPH61, SCS13A, SCS14A   |   |                                     |  |   |                                      |                                  |                    |
|                            | <b>Bonnet Types</b>  | Plain (− 17 °C to + 230 °C), Fin (− 20 °C to under − 17 °C, over + 230 °C)<br>Extension (Light type : − 100 °C to under − 20 °C, Heavy type : − 196 °C to under − 100 °C) |   |                                     |  |   |                                      |                                  |                    |
|                            | <b>Glnad Type</b>  | Bolted gland  |   |                                     |  |   |                                      |                                  |                    |
|                            | <b>Packing</b> (Non Asbestos)  | GL · PTFE V-ring, Braided packing, Molded packing   |   |                                     |  |   |                                      |                                  |                    |
|                            | <b>Gaskets</b> (Non Asbestos)  | Serrated gasket, Spiral wound gasket  |   |                                     |  |   |                                      |                                  |                    |
|                            | <b>Guiding</b>   | Cage guide  |   |                                     |  |   |                                      |                                  |                    |
|                            | <b>Valve Plug Action</b>   | Push-down close   |   |                                     |  |   |                                      |                                  |                    |
|                            | <b>Seat Type</b>   | Single seated   |   |                                     |  |   |                                      |                                  |                    |
|                            | <b>Cage Shapes</b>   | V-Port  | Quick opening   | Multi-hole                          | Double stage with multi-hole   | Pilot balance   |                                      | Contoured                        | Labyrinth trim     |
|                            | <b>Cage Characteristics</b>  | Equal per-centage, Linear   | Quick opening   | Linear, Modified parabolic          |  | Equal percentage, Linear, Modified parabolic, Quick opening   |                                      | Equal per-centage, Linear        | Modified parabolic |
|                            | <b>Flow Direction</b><br><b>FTC</b>  <b>FTO</b> | Single Seated   | FTC : Liquid 25kgf/cm <sup>2</sup> and over in diff. press.<br>FTO : Except above | FTC : Liquid<br>FTO : Except liquid | FTO<br>Not available to liquid                                       | FTC   |                                      | FTO                              |                    |
|                            | <b>Trim Materials</b>  | SUS 316, SUS 440B   |   |                                     |  |   |                                      |                                  |                    |
| <b>Treatment of Trim</b>   | See page 5 "Main Materials"  |   |   |                                     |  |   |                                      |                                  |                    |
| <b>ACTUATOR</b>            | <b>Actuator Type</b>   | Model 3800<br>Multi-spring type single diaphragm operated   |   |                                     |  | Model 2800<br>Spring type single diaphragm operated   |                                      |                                  |                    |
|                            | <b>Actuator Sizes</b>  | N28   | N33S  | N40                                 | 500S   | 650S  | 650XS                                |                                  |                    |
|                            | <b>Max.Stroke (mm)</b>   | 38  | 38  | 65                                  | 65   | 65  | 65                                   |                                  |                    |
|                            | <b>Supply Air Press. kPa (kgf/cm<sup>2</sup>G)</b>   | 240 (2.4), 280 (2.8), 300 (3.0)<br>400 (4.0) ... N33S & N40 only  |   |                                     |  | 240 (2.4), 280 (2.8)  |                                      |                                  |                    |
|                            | <b>Spring Range kPa (kgf/cm<sup>2</sup>G)</b>  | 40 ~ 200 (0.4 ~ 2.0), 80 ~ 200 (0.8 ~ 2.0)<br>120 ~ 280 (1.2 ~ 2.8) ... N33S & N40 only   |   |                                     |  | 20 ~ 180 (0.2 ~ 1.8), 40 ~ 200 (0.4 ~ 2.0),<br>60 ~ 220 (0.6 ~ 2.2), 80 ~ 240 (0.8 ~ 2.4),<br>100 ~ 220 (1.0 ~ 2.2) |                                      |                                  |                    |
|                            | <b>Action</b>  | Direct action, Reverse action   |   |                                     |  |   |                                      |                                  |                    |
|                            | <b>Materials</b>   | (Diaphragm) Cloth reinforced chloroprene rubber, (Yoke) FC 200  |   |                                     |  |   |                                      |                                  |                    |
|                            | <b>Air Connection</b>  | RC 1/4 RC 3/8 (650S, 650XS)   |   |                                     |  |   |                                      |                                  |                    |
| <b>Ambient Temperature</b> | − 20 ~ + 70 °C<br>(※ − 50 ~ − 20 °C, + 70 ~ + 100 °C) <sup>(2)</sup>   |   |   |                                     | − 30 ~ + 70 °C<br>(※ − 50 ~ − 30 °C, + 70 ~ + 100 °C) <sup>(2)</sup> |   |                                      |                                  |                    |
| <b>Painting Color</b>      | Silver, No painting on stainless steel   |   |   |                                     |  |   |                                      |                                  |                    |

83  
900  
1500

|  |  |  |                           |   |   |  |              |                     |  |  |
|--|--|--|---------------------------|---|---|--|--------------|---------------------|--|--|
| <b>VALVE CHARACTERISTICS AND PERFORMANCE (1)</b> | <b>Body Type</b>                       | Model BLCV-S   | Model BLCQ-S              | Model BLCS-S  | Model BLCS-L-S  | Model BLCV-BP, BLCQ-BP, BLCS-BP, BLCS-L-BP | Model BLCP-S | Model BLCP-RT       |  |  |
|  | <b>Control Mode</b>                    | Throttling control, On-off control   |                           |   |   |  |              |                     |  |  |
|  | <b>Valve Action</b>                    | Direct action (Air-to close), Reverse action (Air-to open)   |                           |   |   |  |              |                     |  |  |
|  | <b>Applicable Press. Range</b>         | 25.3MPa(258kgf/cm <sup>2</sup> G) or less (Pressure limit conform to the standard of pressure rating)  |                           |   |   |  |              |                     |  |  |
|  | <b>Applicable Temp. Range</b>          | - 196 °C ~ + 550 °C(Temperature limit conform to the standard of pressure rating)  |                           |   |   |  |              |                     |  |  |
|  | <b>Allowable Differential Pressure</b> | See page 8, 9 "Allowabl Shutoff Pressure"  |                           |   |   |  |              |                     |  |  |
|  | <b>Rated Cv Value</b>                  | See page 6 "Rated Cv Value"  |                           |   |   |  |              |                     |  |  |
|  | <b>Flow Characteristics</b>            | See page 7 "Flow Characteristics"  |                           |   |   |  |              |                     |  |  |
|  | <b>Inhelrent Rangeability</b>          | 50 : 1 (※ 100 : 1) See page 6 "Rated Cv Value"   |                           |   |   |  |              |                     |  |  |
|  | <b>Allowables Seat Leakage Ratio</b>   | Single Seated Type   |                           |   |   | Single Seated Type                         |              |                     |  |  |
|  |  | <b>Metal Seat</b>  | <b>V-Port, Multi-hole</b> | 0.01 % of rated Cv (ANSI B16.104 Class IV)<br>※ Tight shut off (TSO)<br>(Valve size) (% of rated Cv)<br>25mm or less ..... 0.0001 %<br>100mm or less ..... 0.001 %<br>125mm or less ..... 0.002 % |   |  |              | 0.001 % of rated Cv |  | 0.01 % of rated Cv (ANSI B16.104 Class IV) |
|  |  |  |                           | <b>Quick Opening</b>  | (Valve size) (% of rated Cv)<br>25mm or less ..... 0.0001 %<br>100mm or less ..... 0.001 %<br>125mm or less ..... 0.002 % |  | —            |                     |  |  |
|  | <b>Action</b>                          | <b>Hysteresis Error (With positioner)</b>  |                           | max. 2 % F.S.   |   |  |              |                     |  |  |
|  | <b>Accuracy</b>                        | <b>Linearity (With positioner)</b>   |                           | max. ± 2 % F.S.   |   |  |              |                     |  |  |
| <b>ADDITIONAL OPTION ※</b>                       | <b>Valve Body</b>                      | Drain plug, Special treatment for trim   |                           |   |   |  |              |                     |  |  |
|  | <b>Actuator</b>                        | Handwheel (Top-mounted handwheel, Side-mounted handwheel), Travel stop, Oil dash pot (only for Model 2800), Diaphragm material : Ethylene propylene rubber, Yoke material : SCPH2  |                           |   |   |  |              |                     |  |  |
|  | <b>Accessories</b>                     | Electro-pneumatic positioner (EA91A, EA90A), Pneumatic positioner (PA92A)<br>Air filter regulator (MR 2000), Limit switch, Solenoid valve, Booster relay, Speed controller, Lock up valve, Pneumatic operated valve                |                           |   |   |  |              |                     |  |  |
|  | <b>Others</b>                          | The High pressure gas safety low Certification, Oil free, Water free, Sandproof, Dustproof, Anti-salt damage. Vacuum service, Cold district spec. Tropical district spec. External exposure bolts & nuts. Specified painting color |                           |   |   |  |              |                     |  |  |

- [Note]** (1) Valve performance is represented under the condition of standard packing (PTFE V-ring).  
 (2) ※ Manufactured and attached as option according to customer's order.  
 (3) As to valves that the pressure rating is ANSI/JPI Class 600LB or less, please see the catalog, Bulletin No. MCE-B4301.  
 (4) On BLCP-S and BLCP-S-RT, Body size 15mm (1/2 inch) is applicable.  
 Specitication is the same as 20mm (3/4 inch).

## 4. MAIN MATERIALS

### 1 Typical Combination of Materials

| Parts Name               | Materials            |                         |         |
|--------------------------|----------------------|-------------------------|---------|
| <b>Body, Bonnet</b>      | SCPH2,11, 21, 32, 61 | SUS 13A                 | SUS 14A |
| <b>Trim</b>              | SUS 316<br>SUS 440B  |                         | SUS 316 |
| <b>Stud Bolt and Nut</b> | SCPH2,11, 21, 32, 61 | A 194 GrB8 CL2 / SUS304 |         |

- [Note]** (1) This table shows typical combination of materials. Combination may be changed by service condition such like pressure, tempaure and fluid.  
 (2) Casting materials may be used for trim instead of bar materials.

## 2 Combination of Hard Facing for Trim

|                                 |  |                                      |
|---------------------------------|--|--------------------------------------|
| Trim Material                   | SUS316   |                                      |
| Cage Type                       | BLCV-S、BLCQ-S<br>BLCV-BP、BLCQ-BP<br>BLCP-S、BLCP-S-RT | BLCS-S、BLCS-L-S<br>BLCS-BP、BLCS-L-BP |
| Guide <sup>(1)</sup>            | Stellite face  | Stellite face                        |
| Cage                            |  | Stellite seat + Atomloy              |
| Valve Plug                      |  | Stellite face                        |
| Applicable Press. Rang          | - 196 °C ~ + 550 °C                                  |                                      |
| Allowable Differential Pressure | 25.3MPa (258kgf/cm <sup>2</sup> )                    |                                      |

|                                 |  |   |
|---------------------------------|--|---|
| Trim Material                   | SUS440B                                  |   |
| Cage Type                       | BLCV-S、BLCQ-S、BLCS-S<br>BLCP-S、BLCP-S-RT | BLCV-BP、BLCQ-BP<br>BLCS-BP <sup>(2)</sup> |
| Guide <sup>(1)</sup>            | SUS440B (Heat treatment)                 | SUS440B (Heat treatment)                  |
| Cage                            |  | Stellite face                             |
| Valve Plug                      |  | Stellite face                             |
| Applicable Press. Rang          | - 20 °C ~ + 400 °C                       |   |
| Allowable Differential Pressure | 25.3MPa (258kgf/cm <sup>2</sup> )        |   |

- [Note]** (1) Guide is used for type BP, CP-S and CP-S-RT.  
 (2) Valve plug material of SUS440B is not available for model BLCS-L and BLCS-L-BP.  
 (3) For flushing, cavitation and saturated steam services, SUS440B trim is suitable in the temperature range - 20 to 400 °C.  
 (4) When anti-corrosion body material is required higher than SUS316L, Cage required Stellite facing.

## 5. SCOPE OF PRODUCTION

### 1 Combination of Valve Body and Actuator

| Valve Size |       | 3883 |      |     | 2883 |      |       |
|------------|-------|------|------|-----|------|------|-------|
| mm         | inch  | N28  | N33S | N40 | 500S | 650S | 650XS |
| 20         | 3/4   | ●    | ●    | ●   | ●    |      |       |
| 25         | 1     | ●    | ●    | ●   | ●    |      |       |
| 40         | 1 1/2 |      | ●    | ●   | ●    |      |       |
| 50         | 2     |      | ●    | ●   | ●    | ●    |       |
| 65         | 2 1/2 |      | ●    | ●   | ●    | ●    |       |
| 80         | 3     |      |      | ●   | ●    | ●    |       |
| 100        | 4     |      |      | ●   | ●    | ●    |       |
| 125        | 5     |      |      |     | ●    | ●    | ●     |
| 150        | 6     |      |      |     | ●    | ●    | ●     |
| 200        | 8     |      |      |     |      | ●    | ●     |

- [Note]** The body type suffix “- BP” is applied to body size 2 in. and larger.  
 The scope of production for body type “BLCP-S” and “BLCP-S-RT” is body size 3/4 to 1 1/2 inch. and 3/4 to 2 inch. respectively.

## 2 Scope of Port (without BLCP-RT type)

| Valve Size |       | Port Size (mm) |   |   |   |    |    |    |    |    |    |    |    |    |     |     |     |     |  |
|------------|-------|----------------|---|---|---|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|--|
| mm         | inch  | φ 4            | 6 | 7 | 8 | 10 | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 |  |
| 20         | 3/4   | ◆              | ◆ | ◆ | ◆ | ◆  | ◆  | ●  |    |    |    |    |    |    |     |     |     |     |  |
| 25         | 1     |                | ◆ | ◆ | ◆ | ◆  | ◆  | ◆  | ●  |    |    |    |    |    |     |     |     |     |  |
| 40         | 1 1/2 |                |   |   |   |    |    | ◆  | ◆  | ◆  | ●  |    |    |    |     |     |     |     |  |
| 50         | 2     |                |   |   |   |    |    |    | ◆  | ◆  | ◆  | ●  |    |    |     |     |     |     |  |
| 65         | 2 1/2 |                |   |   |   |    |    |    |    | ◆  | ◆  | ◆  | ●  |    |     |     |     |     |  |
| 80         | 3     |                |   |   |   |    |    |    |    |    | ◆  | ◆  | ◆  | ●  |     |     |     |     |  |
| 100        | 4     |                |   |   |   |    |    |    |    |    |    | ◆  | ◆  | ◆  | ●   |     |     |     |  |
| 125        | 5     |                |   |   |   |    |    |    |    |    |    |    | ◆  | ◆  | ◆   | ●   |     |     |  |
| 150        | 6     |                |   |   |   |    |    |    |    |    |    |    |    | ◆  | ◆   | ◆   | ●   |     |  |
| 200        | 8     |                |   |   |   |    |    |    |    |    |    |    |    |    | ◆   | ◆   | ◆   | ●   |  |

[Note] (1) The body type "BLCP-S" is applied to port size 1/2 inch or smaller.  
 (2) The body type suffix "- BP" is applied to port size 1 1/4 inch and larger.

## 3 Scope of Port (BLCP-S-RT type)

| Port Size (mm)<br>Valve Size |          | 0.2 | 0.4 | 0.6 | 1.0 | 1.5 | 2.0 | 3.0 | 5.2 | 9.0 |
|------------------------------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 20mm                         | 3/4 inch | ●   | ●   | ●   | ●   | ●   | ●   |     |     |     |
| 25                           | 1        | ●   | ●   | ●   | ●   | ●   | ●   |     |     |     |
| 40                           | 1 1/2    |     |     |     | ●   | ●   | ●   | ●   | ●   |     |
| 50                           | 2        |     |     |     | ●   | ●   | ●   | ●   | ●   | ●   |

# 6. FLOW CHARACTERISTICS

## 1 Rated Cv Value

Inherent Rangeability 50 : 1

| Port Size(Cv)    |                      | mm   | 20  | 25 | 32    | 40    | 50 | 65    | 80 | 100 | 125 | 150 | 200 |
|------------------|----------------------|------|-----|----|-------|-------|----|-------|----|-----|-----|-----|-----|
|                  |                      | inch | 3/4 | 1  | 1 1/4 | 1 1/2 | 2  | 2 1/2 | 3  | 4   | 5   | 6   | 8   |
| Rated Teavel(mm) |                      |      | 15  |    | 20    |       | 25 |       | 38 |     | 50  |     | 65  |
| Rated Cv         | BLCV-S (- BP)        |      | 7.5 | 11 | 16*   | 24    | 40 | 63    | 93 | 145 | 200 | 320 | 500 |
|                  | BLCS-S (- BP)        |      |     |    |       |       |    |       |    |     |     |     |     |
|                  | BLCQ-S (- BP)        |      |     |    |       |       |    |       |    |     |     |     |     |
|                  | BLCS-L-S (BLCS-L-BP) |      | -   | -  | 13*   | 19    | 32 | 50    | 74 | 116 | 160 | 256 | 400 |

| Port Size             |        | mm   | φ 4    | 6      | 7    | 8      | 10     | 15  |
|-----------------------|--------|------|--------|--------|------|--------|--------|-----|
|                       |        | inch |        | 1/8    | 3/16 | 1/4    | 3/8    | 1/2 |
| Rated Teavel(mm)      |        |      | 15     |        |      |        |        |     |
| Rated Cv              | BLCP-S |      | 0.15   | 0.4    | 0.8  | 1.5    | 3.0    | 5.2 |
| Inherent Rangeability |        |      | 10 : 1 | 15 : 1 |      | 25 : 1 | 30 : 1 |     |

| Rated Cv              | BLCP-S-RT | 0.2    | 0.4 | 0.6 | 1.0 | 1.5 | 2.0 | 3.0 | 5.2 | 9.0 |
|-----------------------|-----------|--------|-----|-----|-----|-----|-----|-----|-----|-----|
| Rated Teavel(mm)      |           | 15     |     |     |     |     |     |     | 20  | 25  |
| Inherent Rangeability |           | 30 : 1 |     |     |     |     |     |     |     |     |

[Note] (1) Rated Cv value is the identical value in spite of single seat or doubled seat.  
 (2) \* Port size for pilot balance type (Model -BP) is more than 32mm (1 1/4 inch).  
 (3) Please contact MOTOYAMA's sales office as to over Cv value listed above (wide rang Cv value) on Model BLCP-S.  
 (4) Port size for Model BLCP-S-RT represent rated Cv value.

## 2 Flow Characteristics

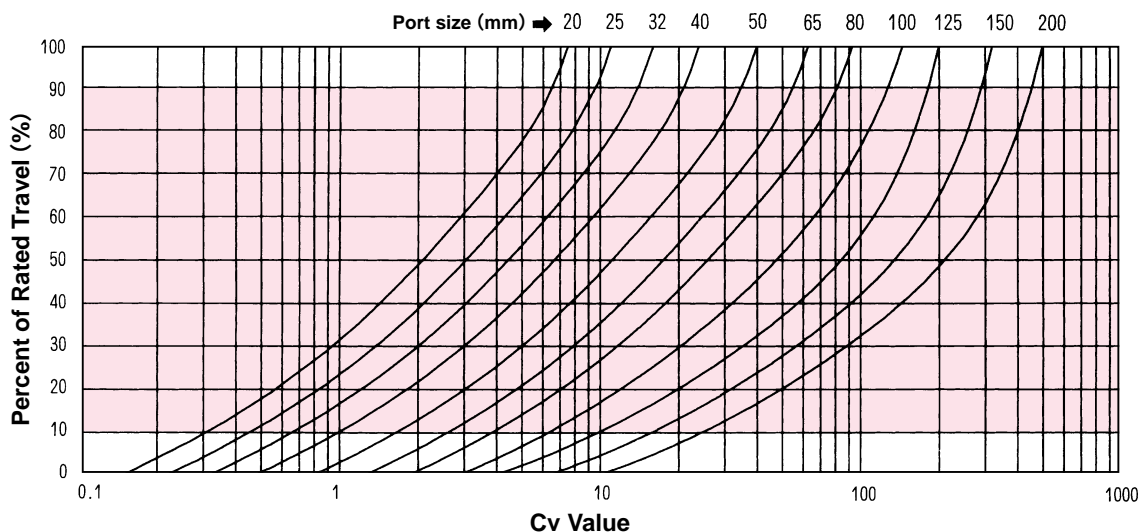
■ The flow characteristics of each body type

|  | Equal % | Linear | Modified Parabolic | On Off |
|--|---------|--------|--------------------|--------|
| BLCV-S<br>BLCV-BP                          | ●       | ●      |                    |        |
| BLCS-S<br>BLCS-L-S<br>BLCS-BP<br>BLCS-L-BP |         | ●      | ● ①                |        |
| BLCP-S                                     | ●       | ●      |                    |        |
| BLCP-S-RT                                  |         |        | ● ②                |        |
| BLCQ-S<br>BLCQ-BP                          |         |        |                    | ●      |

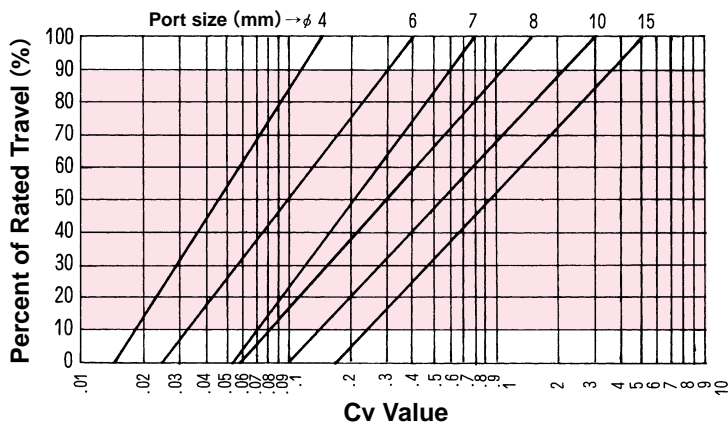
[Note] The meanings of ① and ② are stated on the following [Note].

### ■ V-Port Type

Equal percentage (Model BLCV, BLCV-BP)

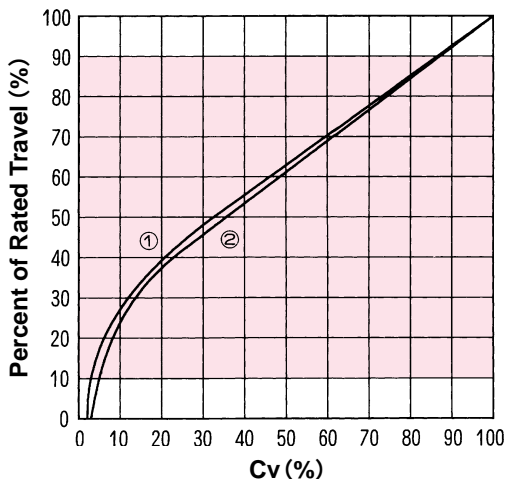


### ■ Contoured type plug Equal percentage (Model BLCP-S)



[Note] Shaded zone represents proper throttling control range.

### ■ Modified Parabolic



[Note] Curve ① shows for BLCS, BLCS-L and BLCS-BP.  
Curve ② shows for BLCP-S-RT.



# 7. ALLOWABLE DIFFERENTIAL PRESSURE

## 1 Off-balance Classification

Unit : kPa(kgf/cm<sup>2</sup>G)

| Action                  |                        |                     | Spring Range         |                     | Off-balance | Supply Air Pressure | Positioner |
|-------------------------|------------------------|---------------------|----------------------|---------------------|-------------|---------------------|------------|
|                         |                        |                     | Actuator Size        |                     |             |                     |            |
|                         |                        |                     | N28 ~ N40            | 500, 650            |             |                     |            |
| Excepting Quick Opening | Direct Action          |                     | 40 ~ 200(0.4 ~ 2.0)  |                     | 240(2.4)    | 40(0.4)             | With       |
|                         |                        |                     | —                    | 60 ~ 220(0.6 ~ 2.2) | 280(2.8)    | 60(0.6)             |            |
|                         |                        |                     | 40 ~ 200(0.4 ~ 2.0)  | 40 ~ 200(0.4 ~ 2.0) |             | 80(0.8)             |            |
|                         |                        |                     | —                    | —                   | 300(3.0)    | 100(1.0)            |            |
|                         | —                      | 20 ~ 180(0.2 ~ 1.8) | 280(2.8)             | 100(1.0)            |             |                     |            |
|                         | ※ 120 ~ 280(1.2 ~ 2.8) | —                   | 400(4.0)             | 120(1.2)            |             |                     |            |
|                         | Reverse Action         |                     | 40 ~ 200(0.4 ~ 2.0)  |                     | 240(2.4)    | 40(0.4)             |            |
|                         |                        |                     | —                    | 60 ~ 220(0.6 ~ 2.2) | 280(2.8)    | 60(0.6)             |            |
| 80 ~ 200(0.8 ~ 2.0)     |                        |                     | 80 ~ 240(0.8 ~ 2.4)  | 80(0.8)             |             |                     |            |
| —                       |                        |                     | 100 ~ 220(1.0 ~ 2.2) | 100(1.0)            | 100(1.0)    |                     |            |
| —                       | —                      | 400(4.0)            | 120(1.2)             |                     |             |                     |            |
| Quick Opening           | Direct Action          |                     | 40 ~ 200(0.4 ~ 2.0)  |                     | 240(2.4)    | 40(0.4)             | Without    |
|                         |                        |                     | —                    | 60 ~ 220(0.6 ~ 2.2) | 280(2.8)    | 60(0.6)             |            |
|                         |                        |                     | 40 ~ 200(0.4 ~ 2.0)  | 40 ~ 200(0.4 ~ 2.0) |             | 80(0.8)             |            |
|                         |                        |                     | —                    | —                   | 300(3.0)    | 100(1.0)            |            |
|                         | —                      | 20 ~ 180(0.2 ~ 1.8) | 280(2.8)             | 100(1.0)            |             |                     |            |
|                         | ※ 120 ~ 280(1.2 ~ 2.8) | —                   | 400(4.0)             | 120(1.2)            |             |                     |            |
|                         | Reverse Action         |                     | 40 ~ 200(0.4 ~ 2.0)  |                     | 240(2.4)    | 40(0.4)             |            |
|                         |                        |                     | —                    | 60 ~ 220(0.6 ~ 2.2) | 280(2.8)    | 60(0.6)             |            |
| 80 ~ 200(0.8 ~ 2.0)     |                        |                     | 80 ~ 240(0.8 ~ 2.4)  | 80(0.8)             |             |                     |            |
| —                       |                        |                     | 100 ~ 220(1.0 ~ 2.2) | 100(1.0)            | 100(1.0)    |                     |            |
| —                       | —                      | 400(4.0)            | 120(1.2)             |                     |             |                     |            |

[Note] ※ Spring range 120 ~ 280kPa is only applicable for Actuator size N33S and N40.

## 2 Allowable Shut-off Pressure

■ Model BLCV-S, BLCQ-S, BLCS-S, BLCS-L-S

V-Port, Quick Opening, Multi-hole, Double Stage with Multi-hole

Unit : MPa(kgf/cm<sup>2</sup>)

| Port Size     |             | Single Seated Type |           |          |           |           |           |           |           |           |           |
|---------------|-------------|--------------------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|               |             | 20mm               | 25        | 40       | 50        | 65        | 80        | 100       | 125       | 150       | 200       |
| Actuator Size | Off-balance | ¾ inch             | 1         | 1 ½      | 2         | 2 ½       | 3         | 4         | 5         | 6         | 8         |
| N28           | 40(0.4)     | 3.13(32)           | 2.25(23)  |          |           |           |           |           |           |           |           |
|               | 80(0.8)     | 6.27(64)           | 4.51(46)  |          |           |           |           |           |           |           |           |
|               | 100(1.0)    | 7.84(80)           | 5.68(58)  |          |           |           |           |           |           |           |           |
| N33S          | 40(0.4)     | 4.60(47)           | 3.33(34)  | 1.47(15) | 0.86(8.8) | 0.62(6.4) |           |           |           |           |           |
|               | 80(0.8)     | 9.21(94)           | 6.66(68)  | 3.04(31) | 1.66(17)  | 1.17(12)  |           |           |           |           |           |
|               | 100(1.0)    | 11.5(118)          | 8.33(85)  | 3.82(39) | 2.15(22)  | 1.56(16)  |           |           |           |           |           |
|               | 120(1.2)    | 13.8(141)          | 10.1(103) | 4.60(47) | 2.54(26)  | 1.86(19)  |           |           |           |           |           |
| N40           | 40(0.4)     | 6.47(66)           | 4.70(48)  | 2.15(22) | 1.17(12)  | 0.89(9.1) | 0.59(6.1) | 0.36(3.7) |           |           |           |
|               | 80(0.8)     | 13.0(133)          | 9.41(96)  | 4.31(44) | 2.35(24)  | 1.76(18)  | 1.17(12)  | 0.72(7.4) |           |           |           |
|               | 100(1.0)    | 16.2(166)          | 11.8(121) | 5.39(55) | 3.04(31)  | 2.15(22)  | 1.47(15)  | 0.91(9.3) |           |           |           |
|               | 120(1.2)    | 19.5(199)          | 14.2(145) | 6.47(66) | 3.62(37)  | 2.64(27)  | 1.76(18)  | 1.07(11)  |           |           |           |
| 500S          | 40(0.4)     | 10.8(111)          | 7.84(80)  | 3.62(37) | 1.96(20)  | 1.47(15)  | 0.98(10)  | 0.60(6.2) | 0.42(4.3) | 0.28(2.9) |           |
|               | 60(0.6)     | 16.2(166)          | 11.8(121) | 5.39(55) | 3.04(31)  | 2.15(22)  | 1.47(15)  | 0.91(9.3) | 0.63(6.5) | 0.43(4.4) |           |
|               | 80(0.8)     | 21.7(222)          | 15.7(161) | 7.25(74) | 4.02(41)  | 2.94(30)  | 1.96(20)  | 1.17(12)  | 0.84(8.6) | 0.57(5.9) |           |
|               | 100(1.0)    | 25.3(258)          | 19.7(201) | 9.02(92) | 5.00(51)  | 3.72(38)  | 2.45(25)  | 1.47(15)  | 0.98(10)  | 0.72(7.4) |           |
| 650S          | 40(0.4)     |                    |           |          | 3.43(35)  | 2.54(26)  | 1.66(17)  | 0.98(10)  | 0.73(7.5) | 0.50(5.1) | 0.29(3.0) |
|               | 60(0.6)     |                    |           |          | 5.19(53)  | 3.82(39)  | 2.54(26)  | 1.56(16)  | 1.07(11)  | 0.75(7.7) | 0.44(4.5) |
|               | 80(0.8)     |                    |           |          | 6.96(71)  | 5.09(52)  | 3.43(35)  | 2.05(21)  | 1.47(15)  | 0.98(10)  | 0.59(6.1) |
|               | 100(1.0)    |                    |           |          | 8.72(89)  | 6.47(66)  | 4.31(44)  | 2.64(27)  | 1.76(18)  | 1.17(12)  | 0.74(7.6) |
| 650XS         | 60(0.6)     |                    |           |          |           |           |           |           | 2.15(22)  | 1.47(15)  | 0.89(9.1) |
|               | 80(0.8)     |                    |           |          |           |           |           |           | 2.94(30)  | 1.96(20)  | 1.17(12)  |
|               | 100(1.0)    |                    |           |          |           |           |           |           | 3.62(37)  | 2.45(25)  | 1.47(15)  |



## Model BLCP-S Contoured Type

Unit : MPa(kgf/cm<sup>2</sup>)

| Port Size     |             | φ4        | 6mm      | 7    | 8         | 10        | 15        |
|---------------|-------------|-----------|----------|------|-----------|-----------|-----------|
| Actuator Size | Off-balance | —         | 1/8 inch | 3/16 | 1/4       | 3/8       | 1/2       |
| N28           | 40(0.4)     | 12.1(124) |          |      | 10.7(110) | 8.04(82)  | 5.29(54)  |
|               | 80(0.8)     | 24.3(248) |          |      | 21.5(220) | 16.0(164) | 10.6(109) |
|               | 100(1.0)    | 25.3(258) |          |      | 25.3(258) | 20.2(206) | 13.3(136) |
| N33S          | 40(0.4)     | 11.9(122) |          |      | 11.0(113) | 10.1(103) | 7.8 (80)  |
|               | 80(0.8)     | 24.0(245) |          |      | 22.1(226) | 20.2(206) | 15.6(160) |
|               | 100(1.0)    | 25.3(258) |          |      |           | 25.2(257) | 19.6(200) |
|               | 120(1.2)    |           |          |      |           | 25.3(258) | 23.5(240) |

## Model BLCV-BP, BLCQ-BP, BLCS-BP, BLCS-L-BP Pilot Balance Type

The upper row : Allowable shut-off press.  
The lower row : Allowable intermediate off.press.

Unit : MPa(kgf/cm<sup>2</sup>)

| Port Size     |             | 50 mm      | 65         | 80         | 100        | 125        | 150        | 200        |
|---------------|-------------|------------|------------|------------|------------|------------|------------|------------|
| Actuator Size | Off-balance | 2 inch     | 2 1/2      | 3          | 4          | 5          | 6          | 8          |
| N33S          | 40(0.4)     | 3.23 (33)  | 2.94 (30)  | 1.96 (20)  | 1.17 (12)  |            |            |            |
|               |             | 2.54 (26)  |            | 1.86 (19)  |            |            |            |            |
|               | 80(0.8)     | 7.94 (81)  | 6.96 (71)  | 5.00 (51)  | 3.72 (38)  |            |            |            |
|               |             | 2.54 (26)  |            | 1.86 (19)  | 1.37 (14)  |            |            |            |
|               | 100(1.0)    | 10.2 (105) | 9.02 (92)  | 6.57 (67)  | 4.90 (50)  |            |            |            |
|               |             | 2.54 (26)  |            | 1.86 (19)  | 1.37 (14)  |            |            |            |
|               | 120(1.2)    | 12.6 (129) | 10.9 (112) | 8.13 (83)  | 6.17 (63)  |            |            |            |
|               |             | 2.54 (26)  |            | 1.86 (19)  | 1.37 (14)  |            |            |            |
| N40           | 40(0.4)     | 3.13 (32)  | 2.74 (28)  | 2.25 (23)  | 1.66 (17)  | 1.07 (11)  | 0.94(9.6)  |            |
|               |             | 7.25 (74)  | 6.37 (65)  | 5.39 (55)  | 4.31 (44)  | 3.33 (34)  | 2.94 (30)  |            |
|               | 80(0.8)     | 3.53 (36)  |            | 2.64 (27)  | 1.96 (20)  | 1.76 (18)  | 1.37 (14)  |            |
|               |             | 9.31 (95)  | 8.23 (84)  | 6.96 (71)  | 5.58 (57)  | 4.51 (46)  | 3.92 (40)  |            |
|               | 100(1.0)    | 3.53 (36)  |            | 2.64 (27)  | 1.96 (20)  | 1.76 (18)  | 1.37 (14)  |            |
|               |             | 11.3 (116) | 10.1 (103) | 8.53 (87)  | 6.96 (71)  | 5.58 (57)  | 4.90 (50)  |            |
|               | 120(1.2)    | 3.53 (36)  |            | 2.64 (27)  | 1.96 (20)  | 1.76 (18)  | 1.37 (14)  |            |
|               |             |            |            |            |            |            |            |            |
| 500S          | 40(0.4)     | 5.88 (60)  | 5.19 (53)  | 4.11 (42)  | 3.23 (33)  | 2.35 (24)  | 2.05 (21)  | 1.27 (13)  |
|               |             | 9.31 (95)  | 8.23 (84)  | 6.66 (68)  | 5.39 (55)  | 4.31 (44)  | 3.72 (38)  | 2.35 (24)  |
|               | 60(0.6)     | 5.98 (61)  |            | 4.41 (45)  | 3.33 (34)  | 3.04 (31)  | 2.35 (24)  | 1.76 (18)  |
|               |             | 12.7 (130) | 11.3 (116) | 9.31 (95)  | 7.55 (77)  | 6.17 (63)  | 5.39 (55)  | 3.53 (36)  |
|               | 80(0.8)     | 5.98 (61)  |            | 4.41 (45)  | 3.33 (34)  | 3.04 (31)  | 2.35 (24)  | 1.76 (18)  |
|               |             | 16.1 (165) | 14.5 (148) | 11.8 (121) | 9.80 (100) | 8.04 (82)  | 7.06 (72)  | 4.60 (47)  |
|               | 100(1.0)    | 5.98 (61)  |            | 4.41 (45)  | 3.33 (34)  | 3.04 (31)  | 2.35 (24)  | 1.76 (18)  |
|               |             |            |            |            |            |            |            |            |
| 650S          | 40(0.4)     | 8.82 (90)  | 7.84 (80)  | 6.96 (71)  | 5.78 (59)  | 4.70 (48)  | 4.21 (43)  | 1.96 (20)  |
|               |             | 13.9 (142) | 12.5 (128) | 10.9 (112) | 9.21 (94)  | 7.74 (79)  | 6.86 (70)  | 3.43 (35)  |
|               | 60(0.6)     | 10.3 (106) |            | 7.64 (78)  | 5.88 (60)  | 5.29 (54)  | 4.21 (43)  | 3.04 (31)  |
|               |             | 19.0 (194) | 17.1 (175) | 15.0 (153) | 12.6 (129) | 10.7 (110) | 9.51 (97)  | 4.80 (49)  |
|               | 80(0.8)     | 10.3 (106) |            | 7.64 (78)  | 5.88 (60)  | 5.29 (54)  | 4.21 (43)  | 3.04 (31)  |
|               |             | 24.1 (246) | 21.8 (223) | 19.0 (194) | 16.1 (165) | 13.7 (140) | 12.2 (125) | 6.27 (64)  |
|               | 100(1.0)    | 10.3 (106) |            | 7.64 (78)  | 5.88 (60)  | 5.29 (54)  | 4.21 (43)  | 3.04 (31)  |
|               |             |            |            |            |            |            |            |            |
| 650XS         | 40(0.4)     |            |            | 10.3 (106) | 9.21 (94)  | 8.04 (82)  | 7.35 (75)  | 4.80 (49)  |
|               |             |            |            | 15.9 (106) | 14.1 (144) | 12.5 (128) | 11.4 (117) | 7.64 (78)  |
|               | 60(0.6)     |            |            | 15.3 (157) | 11.7 (120) | 10.5 (108) | 8.43 (86)  | 6.17 (63)  |
|               |             |            |            | 21.4 (219) | 19.1 (195) | 17.0 (174) | 15.5 (159) | 10.5 (108) |
|               | 80(0.8)     |            |            | 15.3 (157) | 11.7 (120) | 10.5 (108) | 8.43 (86)  | 6.17 (63)  |
|               |             |            |            | 27.0 (276) | 24.1 (246) | 21.5 (220) | 19.8 (202) | 13.4 (137) |
|               | 100(1.0)    |            |            | 15.3 (157) | 11.7 (120) | 10.5 (108) | 8.43 (86)  | 6.17 (63)  |
|               |             |            |            |            |            |            |            |            |

## Model BLCV-S-RT Labyrinth Type

Unit : MPa(kgf/cm<sup>2</sup>)

| Actuator Size | Off-balance | Port Size (Rated Cv) |     |            |     |            |           |            |            |     |
|---------------|-------------|----------------------|-----|------------|-----|------------|-----------|------------|------------|-----|
|               |             | 0.2                  | 0.4 | 0.6        | 1.0 | 1.5        | 2.0       | 3.0        | 5.2        | 9.0 |
| N28           | 40(0.4)     | 10.1 (103)           |     | 7.84 (80)  |     | 5.19 (53)  |           |            |            |     |
|               | 80(0.8)     | 20.2 (207)           |     | 15.6 (160) |     | 10.3 (106) |           |            |            |     |
|               | 100(1.0)    | 25.3 (258)           |     | 19.6 (200) |     | 13.0 (133) |           |            |            |     |
| N33S          | 40(0.4)     | 14.9 (152)           |     | 11.5 (118) |     | 7.64 (78)  |           | 3.62 (37)  | 0.98 (10)  |     |
|               | 80(0.8)     | 25.3 (258)           |     | 23.1 (236) |     | 15.3 (157) |           | 7.25 (74)  | 2.05 (21)  |     |
|               | 100(1.0)    |                      |     | 19.2 (196) |     | 9.12 (93)  | 2.54 (26) |            |            |     |
|               | 120(1.2)    | –                    |     | 25.3 (258) |     | 23.0 (235) |           | 10.9 (112) | 3.13 (32)  |     |
| N40           | 40(0.4)     |                      |     |            |     | 7.45 (76)  |           | 5.09 (52)  | 1.47 (15)  |     |
|               | 80(0.8)     |                      |     |            |     | 14.9 (152) |           | 10.2 (105) | 2.94 (30)  |     |
|               | 100(1.0)    |                      |     |            |     | 18.6 (190) |           | 12.8 (131) | 3.62 (37)  |     |
|               | 120(1.2)    |                      |     |            |     | 22.3 (228) |           | 15.4 (158) | 4.41 (45)  |     |
| 500S          | 40(0.4)     |                      |     |            |     | 12.4 (127) |           | 8.62 (88)  | 2.54 (25)  |     |
|               | 60(0.6)     |                      |     |            |     | 18.6 (190) |           | 12.9 (132) | 3.62 (37)  |     |
|               | 80(0.8)     |                      |     |            |     | 24.9 (254) |           | 17.2 (176) | 4.90 (50)  |     |
|               | 100(1.0)    |                      |     |            |     | 25.3 (258) |           | 21.5 (220) | 6.08 (62)  |     |
| 650S          | 40(0.4)     |                      |     |            |     | 16.1 (165) |           | 14.9 (152) | 4.21 (43)  |     |
|               | 60(0.6)     |                      |     |            |     | 24.3 (248) |           | 22.4 (229) | 6.37 (65)  |     |
|               | 80(0.8)     |                      |     |            |     |            |           |            | 8.53 (87)  |     |
|               | 100(1.0)    |                      |     |            |     | 25.3 (258) |           |            | 10.5 (108) |     |

- [Note]** (1)  portion shows standard combination of valve Body and Actuator.  
 (2) Shut-off pressure of this table shows the value only with standard gland packing. (PTFE V-ring)  
 (3) When tight shut off (TSO) is required on type BLCV-S, BLCS-S, BLCS-L-S and BLCQ-S, allowable Shut-off pressure shall be multiplied by 1/1.2 from the table above.  
 (4) On type BLCV-S, BLCS-S and BLCS-L-S, when the valve is used for flow-to-close (FTC) action, it is required to check the intermediate differential pressure.  
 (5) Allowable shut-off pressure for each pilot-balance type valves is selected from the valve size.  
 (6) Off-balance 100kPa (1.0kgf/cm<sup>2</sup>G) is not applicable for reverse action, actuator size 500S rated travel 65mm. Actuator size 500L should be selected.  
 (7) Off-balance 120kPa (1.2kgf/cm<sup>2</sup>G) on actuator size N33S and N40 is only applicable for type BLCQ-S. It is not applicable for type BLCV-S, BLCS-S and BLCS-L-S.  
 (8) Actuator size N28 is not applicable for "Oil free" services. Minimum actuator size is N33S.

## 8. MAIN DIMENSIONS AND WEIGHTS

### 1 Face-to-face Dimensions of Valve

Unit : mm

| Valve Size |        | JIS 63K RF | ANSI · JPI<br>900RF | ANSI · JPI<br>1500RF | ANSI · JPI<br>900RJ | ANSI · JPI<br>1500RJ | (900,1500LB)<br>SW, BW |
|------------|--------|------------|---------------------|----------------------|---------------------|----------------------|------------------------|
| (mm)       | (inch) |            |                     |                      |                     |                      |                        |
| 20         | 3/4    | 250        | 260                 |                      |                     |                      | 350                    |
| 25         | 1      |            | 265                 |                      |                     |                      |                        |
| 40         | 1 1/2  | 295        | 305                 |                      |                     |                      | 390                    |
| 50         | 2      | 345        | 367                 | 370                  |                     |                      |                        |
| 65         | 2 1/2  | 400        | 417                 | 420                  |                     | 460                  |                        |
| 80         | 3      | 445        | 457                 | 472                  | 460                 | 475                  | 530                    |
| 100        | 4      | 515        | 532                 | 547                  | 535                 | 550                  | 600                    |
| 125        | 5      | 575        | 587                 | 632                  | 590                 | 635                  | 730                    |
| 150        | 6      | 635        | 652                 | 704                  | 655                 | 710                  | 900                    |
| 200        | 8      | 700        | 717                 | 835                  | 720                 | 845                  | 1100                   |

### 2 Masses

Following table shows standard mass for valve body assembly completed with actuator except accessories. As to the weights not represented in this table, please contact your nearest MOTOYAMA's sales office.

Unit : kg

| Valve Size<br>Act. Size | (mm)   | 20  | 25  | 40    | 50  | 65    | 80  | 100 | 125 | 150 | 200  |
|-------------------------|--------|-----|-----|-------|-----|-------|-----|-----|-----|-----|------|
|                         | (inch) | 3/4 | 1   | 1 1/2 | 2   | 2 1/2 | 3   | 4   | 5   | 6   | 8    |
| N28                     |        | 53  | 57  | 74    | 107 | 138   | –   | –   | –   | –   | –    |
| N33S                    |        | 62  | 66  | 83    | 116 | 147   | 210 | 290 | –   | –   | –    |
| N40                     |        | 93  | 97  | 110   | 150 | 180   | 235 | 315 | 460 | 540 | –    |
| 500SD                   |        | 130 | 135 | 150   | 185 | 220   | 270 | 350 | 495 | 575 | 850  |
| 500SR                   |        | 145 | 150 | 165   | 200 | 235   | 285 | 365 | 510 | 590 | 865  |
| 650SD                   |        | –   | –   | –     | 370 | 405   | 455 | 535 | 675 | 760 | 970  |
| 650SR                   |        | –   | –   | –     | 395 | 430   | 480 | 560 | 700 | 785 | 995  |
| 650XSD                  |        | –   | –   | –     | –   | –     | –   | –   | 775 | 855 | 1065 |
| 650XSR                  |        | –   | –   | –     | –   | –     | –   | –   | 805 | 885 | 1095 |

- [Note]** (1) This table is applicable for the valves with standard plain bonnet.  
 (2) For actuator size N28 to N40, the mass either direct and reverse action are the same.

### 3 Standard Dimensions

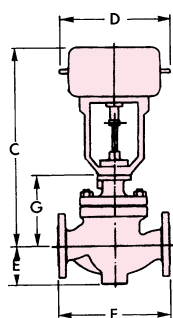
Unit : mm

| Valve Size |       | Actuator Size | D   | E   | Plain Bonnet |      | Fin Bonnet |      | Extension-L |      | C <sub>R</sub> | S    | Remarks |     |     |
|------------|-------|---------------|-----|-----|--------------|------|------------|------|-------------|------|----------------|------|---------|-----|-----|
| mm         | inch  |               |     |     | G            | C    | G          | C    | G           | C    |                |      |         |     |     |
| 20         | 3/4   | N28           | 280 | 75  | 200          | 536  | 277        | 613  | 438         | 774  | -              | 220  |         |     |     |
|            |       | N33S          | 330 |     |              | 591  |            | 668  |             | 829  |                | 240  |         |     |     |
|            |       | N40           | 400 |     | 752          | 805  | 1073       | 350  |             |      |                |      |         |     |     |
|            |       | 500S          | 500 |     | 971          | 1024 | 558        | 1292 | 160         | 370  |                |      |         |     |     |
| 25         | 1     | N28           | 280 | 75  | 200          | 536  | 277        | 613  | 438         | 774  | -              | 220  |         |     |     |
|            |       | N33S          | 330 |     |              | 591  |            | 668  |             | 829  |                | 240  |         |     |     |
|            |       | N40           | 400 |     | 752          | 805  | 1073       | 350  |             |      |                |      |         |     |     |
|            |       | 500S          | 500 |     | 971          | 1024 | 558        | 1292 | 160         | 370  |                |      |         |     |     |
| 40         | 1 1/2 | N33S          | 330 | 95  | 198          | 589  | 276        | 667  | 444         | 835  | -              | 240  |         |     |     |
|            |       | N40           | 400 |     | 750          | 299  | 814        | 568  | 1083        | 350  |                |      |         |     |     |
|            |       | 500S          | 500 |     | 969          | 1033 | 568        | 1302 | 160         | 370  |                |      |         |     |     |
| 50         | 2     | N33S          | 330 | 120 | 234          | 625  | 312        | 703  | 573         | 964  | -              | 240  |         |     |     |
|            |       | N40           | 400 |     |              | 786  |            | 335  |             | 850  |                | 1244 |         | 350 |     |
|            |       | 500S          | 500 |     | 1005         | 729  | 1069       | 1463 | 160         | 370  |                |      |         |     |     |
|            |       | 650S          | 650 |     | 1301         | 339  | 1369       | 1759 | 250         | 380  |                |      |         |     |     |
| 65         | 2 1/2 | N33S          | 330 | 140 | 243          | 634  | 321        | 712  | 584         | 975  | -              | 240  |         |     |     |
|            |       | N40           | 400 |     |              | 795  |            | 344  |             | 859  |                | 1255 |         | 350 |     |
|            |       | 500S          | 500 |     | 1014         | 740  | 1078       | 1474 | 160         | 370  |                |      |         |     |     |
|            |       | 650S          | 650 |     | 1310         | 348  | 1378       | 1770 | 250         | 380  |                |      |         |     |     |
| 80         | 3     | N33S          | 330 | 144 | 284          | 675  | 354        | 745  | 610         | 1001 | -              | 240  |         |     |     |
|            |       | N40           | 400 |     |              | 826  |            | 381  |             | 896  |                | 1328 |         | 350 |     |
|            |       | 500S          | 500 |     | 1045         | 381  | 1115       | 1547 | 160         | 370  |                |      |         |     |     |
|            |       | 650S          | 650 |     | 1341         | 385  | 1415       | 1843 | 250         | 380  |                |      |         |     |     |
| 100        | 4     | N33S          | 330 | 180 | 334          | 725  | 404        | 795  | 660         | 1051 | -              | 240  |         |     |     |
|            |       | N40           | 400 |     |              | 876  |            | 431  |             | 946  |                | 1378 |         | 350 |     |
|            |       | 500S          | 500 |     | 1095         | 431  | 1165       | 1597 | 160         | 370  |                |      |         |     |     |
|            |       | 650S          | 650 |     | 1391         | 435  | 1465       | 1893 | 250         | 380  |                |      |         |     |     |
| 125        | 5     | N40           | 400 | 195 | 379          | 894  | 470        | 985  | 893         | 1408 | -              | 350  |         |     |     |
|            |       | 500S          | 500 |     |              |      |            | 1113 |             | 1204 |                | 1627 |         | 160 | 370 |
|            |       | 650S          | 650 |     |              |      |            | 1409 |             | 1500 |                | 1923 |         | 250 | 380 |
|            |       | 650XS         | 650 |     |              |      |            | 1888 |             | 1979 |                | 2402 |         | 300 | 410 |
| 150        | 6     | N40           | 400 | 220 | 414          | 929  | 505        | 1020 | 930         | 1445 | -              | 350  |         |     |     |
|            |       | 500S          | 500 |     |              |      |            | 1148 |             | 1239 |                | 1664 |         | 160 | 370 |
|            |       | 650S          | 650 |     |              |      |            | 1444 |             | 1535 |                | 1960 |         | 250 | 380 |
|            |       | 650XS         | 650 |     |              |      |            | 1923 |             | 2014 |                | 2439 |         | 300 | 410 |
| 200        | 8     | 500S          | 500 | 260 | 469          | 1203 | 577        | 1311 | 1006        | 1740 | -              | 370  |         |     |     |
|            |       | 650S          | 650 |     |              |      |            | 1499 |             | 1607 |                | 2036 |         | 250 | 380 |
|            |       | 650XS         | 650 |     |              |      |            | 1978 |             | 2086 |                | 2515 |         | 300 | 410 |

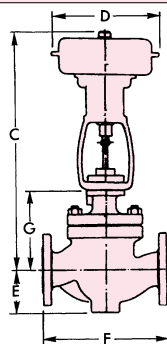
[Note] (1) Dimension C represents in case of direct action. The dimension C of actuator size N24-N40 for reverse action is to be added 25mm to the numerical value of above table.  
 (2) The total valve height with reverse acting actuator size 500S and 650S and 650XS is to be added dimension C and C<sub>R</sub>.  
 (3) Dimension S shows required space for dismantling Actuator.

#### Plain Bonnet, Fin Bonnet

Actuator Size **N24 ~ N40**

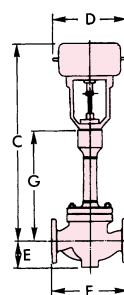


Actuator Size **500 ~ 650XS**

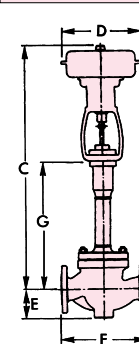


#### Extension Bonnet ( - L )

Actuator Size **N24 ~ N40**

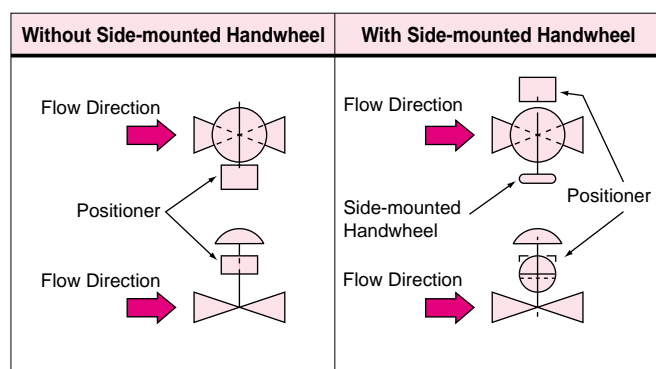


Actuator Size **500 ~ 650XS**



## 9. MOUNTING ORIENTATIONS

Standard mounting orientations are as follows.





株式会社 **本山製作所**

# MOTOYAMA ENG. WORKS, LTD.

http://www.motoyama-cp.co.jp

本 社 工 場 〒981-3697 宮城県黒川郡大衡村大衡字亀岡5-2 TEL(022)344-4511(代表) / FAX(022)344-4522  
E-mail : info@motoyama-cp.co.jp

Main Office & Factory 5-2, Ohira Aza Kameoka, Ohira-mura, Kurokawa-gun, Miyagi, 981-3697, Japan  
TEL +81-22-344-4511 / FAX +81-22-344-4522  
E-mail : info-overseas@motoyama-cp.co.jp

## ●販売・サービスネットワーク

|                             |   |                         |                    |
|-----------------------------|---|-------------------------|--------------------|
| 東 京 支 店                     | 〒210-0007 神奈川県川崎市川崎区駅前本町 10-5 クリエ川崎 11F             | TEL (044) 381-8770 (代表) | FAX (044) 381-8772 |
| 大 阪 支 店                     | 〒550-0014 大阪市西区北堀江 1 丁目 12-19 クリモビル 3F              | TEL (06) 6535-8111 (代表) | FAX (06) 6535-8655 |
| 国 際 営 業 部                   | 〒210-0007 神奈川県川崎市川崎区駅前本町 10-5 クリエ川崎 11F             | TEL (044) 381-8771      | FAX (044) 381-8773 |
| 札 幌 営 業 所                   | 〒001-0912 札幌市北区新琴似 12 条 7 丁目 1-47<br>リパティタウンP棟 101号 | TEL (011) 766-1520      | FAX (011) 766-1521 |
| 東 北 営 業 所<br>大 衡 サービスセンター   | 〒981-3697 宮城県黒川郡大衡村大衡字亀岡 5-2                        | TEL (022) 344-1761      | FAX (022) 344-1762 |
| 上 越 営 業 所<br>上 越 サービスセンター   | 〒942-0036 新潟県上越市大字東中島 2393 番地                       | TEL (025) 542-5151      | FAX (025) 542-5152 |
| 関 東 営 業 所<br>千 葉 サービスセンター   | 〒290-0046 千葉県市原市岩崎西 1 丁目 5-19                       | TEL (0436) 21-4400      | FAX (0436) 21-3540 |
| 静 岡 営 業 所                   | 〒422-8033 静岡県駿河区登呂 4 丁目 28-5                        | TEL (054) 269-5377      | FAX (054) 237-5855 |
| 名 古 屋 営 業 所<br>中 部 サービスセンター | 〒481-0012 愛知県北名古屋市久地野安田 36 番地                       | TEL (0568) 26-6681      | FAX (0568) 26-6631 |
| 水 島 営 業 所                   | 〒710-0042 岡山県倉敷市二日市 358                             | TEL (086) 486-3381      | FAX (086) 486-3382 |
| 阪 神 サービスセンター                | 〒560-0894 大阪府豊中市勝部 2 丁目 18-3                        | TEL (06) 6854-7511      | FAX (06) 6854-7512 |
| 姫 路 出 張 所                   | 〒672-8014 兵庫県姫路市東山 276 番地 1                         | TEL (079) 263-8640      | FAX (079) 246-2130 |
| 徳 山 営 業 所<br>周 南 サービスセンター   | 〒745-0861 山口県周南市新地 1 丁目 6-11                        | TEL (0834) 21-5012      | FAX (0834) 31-0450 |
| 四 国 営 業 所<br>新 居 浜 サービスセンター | 〒792-0896 愛媛県新居浜市阿島 1 丁目 6-26                       | TEL (0897) 47-8993      | FAX (0897) 47-8995 |
| 大 分 営 業 所<br>大 分 サービスセンター   | 〒870-0108 大分市大字三佐字山ノ神 980-1                         | TEL (097) 527-3704      | FAX (097) 522-2352 |

## ●海外関連会社

本山 閩門 (大連) 有限公司 〒116601 中国 遼寧省大連市金州新区港興大街 39 号 14-7 TEL +86-411-6589-1277 FAX +86-411-6589-1278

## ●海外販売代理店

中国、韓国、台湾、シンガポール、インドネシア、マレーシア、サウジアラビア

## ●SALES AND SUPPORT NETWORK

Overseas Marketing & Sales Dept. : 11th Floor, Clie Kawasaki, 10-5, Ekimae-honcho, Kawasaki-ku, Kawasaki-city, Kanagawa, 210-0007 Japan

TEL: +81-44-381-8771 FAX : +81-44-381-8773

Domestic Sales Branches : Tokyo, Osaka, Sapporo, Tohoku, Joetsu, Kanto, Shizuoka, Nagoya, Hanshin, Tokuyama, Shikoku, Oita

## ●OVERSEAS AFFILIATED COMPANY

MOTOYAMA VALVE (DALIAN) CO., LTD

Gangxing Street 39-14-7, Jinzhou New District, Dalian-city, 116601 China

TEL: +86-411-6589-1277

FAX: +86-411-6589-1278

## ●OVERSEAS NETWORK

China, Korea, Taiwan, Singapore, Indonesia, Malaysia, Saudi Arabia

◆当社は保証期間を原則として製品納入後 1 年としています。

◆The product will be warranted for one year after delivering this product in principle.

■本カタログの記載内容は、商品の改良等のため予告なく変更することがありますので予めご了承下さい。

■MOTOYAMA is continuously improving and upgrading its product design, specifications and/or dimensions. Information included herein is subject to change without notice.

■本カタログは正しい情報の提供を目的としたものであり、本製品の市場性または適合性の保証を証明するものではありません。

■This catalog is supplied for information purpose only and should not be considered certified marketability and conformability of this product.