

JIS correspondence

Process Industrial Pressure Gauges

B□1□

2015/11

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B_1_

Process Industrial Pressure Gauges (Type A / Lower connection)

Outline

The bourdon tube pressure gauge is offered and made in accordance with JIS B 7505-1: 2015. The gauge is easy to handle with its structured simplicity with elastic measuring element (bourdon tube) into a deflection caused by applied pressure change transmitted to a rotary geared movement carrying pointer. It is applicable to variety of applications offering wide varieties of pressure ranges.

Features

- Can be used under rain, frost, etc. conditions by adoption of sealed case. (JIS C 09220 IP43 equivalent)
- Verification standard inspection mark (Type Approval) can be attached (Depending on size, precision and pressure range).
- Available in many standard pressure ranges and can accommodate demand for use with corrosive media.

* To maximize performance, select full scale pressure range as normal operating pressure range which comes to conditions below:

For constant pressure

The maximum operating pressure should not exceed three-quarters of the full-scale range.

For fluctuating pressure

The maximum operating pressure should not exceed two-thirds of the full-scale range.

Select proper wetted parts compatible with process fluid (gas and liquid) which the gauge will be subjected.


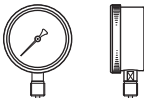
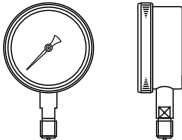
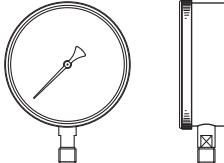
Please refer to JIS B 7505-1 for details.

* Please select "Use no oil" to use gauge on oxygen service.

Please select "Use no oil" and "Corrosion-proof" type to use gauge on acetylene service.



List of products

| Size | Mounting | Model number |
|-------|---|----------------------|
| φ 60 |  | BA10-1□□ |
| φ 75 |  | BC10-1□□ BC12-1□□ |
| φ 100 |  | BE10-1□□ BE12-1□□ |
| φ 150 |  | BG10-1□□ BG12-1□□ |

Specification 1

Fluid:

Gas, liquid

Case construction: Seal type

Sealed construction which is equivalent to JIS C 0920, IP43 but not sealed completely.

Wetted parts material:

Wetted parts generally consist of bourdon tube and socket. These parts are exposed to or in direct contact with the medium under pressure (Gas, liquid).

| Purpose | Connecting part | Bourdon tube |
|---------------------|------------------------|---|
| General use | C3604* or CAC203 | C6872 or SUS316 (Varies depending on required pressure range and additional specon performance.) |
| Ammonia use | SUS316* | SUS316 |
| Corrosion-proof use | or SCS14 | |

*BA10 (φ60) only

Connection: Refer to the document JIS pipe thread in technical sheet.

G1/4B, G3/8B, G1/2B, R1/4, R3/8, R1/2, others.
*For other connections, please contact us.

Pressure range:

0 to 40kPa → 0 to 100MPa

-0.1 to 0MPa → -0.1 to 2.5MPa

*For details, refer to the minimum scale value table in Specification 4

Accuracy:

JIS1.6 (JIS accuracy class)

Upon request, JIS1.0 product can be manufactured. (JIS1.0 is available for gauge requiring 1MPa or higher pressure range with nominal size of φ100, φ150.)

Case

Case finish: Black (Standard color)

Case material: Metal case.....Aluminium alloy

Plastic case.....Bakelite

Protection: IP43

Treatment of wetted parts (Option)

Use no oil, use no water gauge can be made upon request.

Use no oil

Oil used in manufacturing the gauges had been flushed out & no oil residue remained inside its wetted parts.

Use no water

Water used in manufacturing the gauges had been flushed out & no water residue remained inside its wetted parts.

Use no oil & water

Oil/Water used in manufacturing the gauges had been flushed out & no oil/water residue remained inside its wetted parts.



Caution

*Please select "Use no oil" to use gauge on oxygen service.

*Please select "Use no oil" and "Corrosion-proof" type to use gauge on acetylene service.

Unit: mm

Specification 2

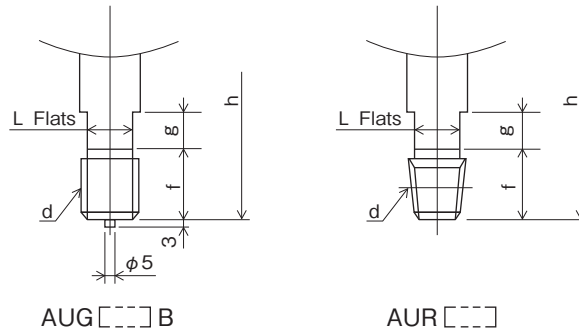
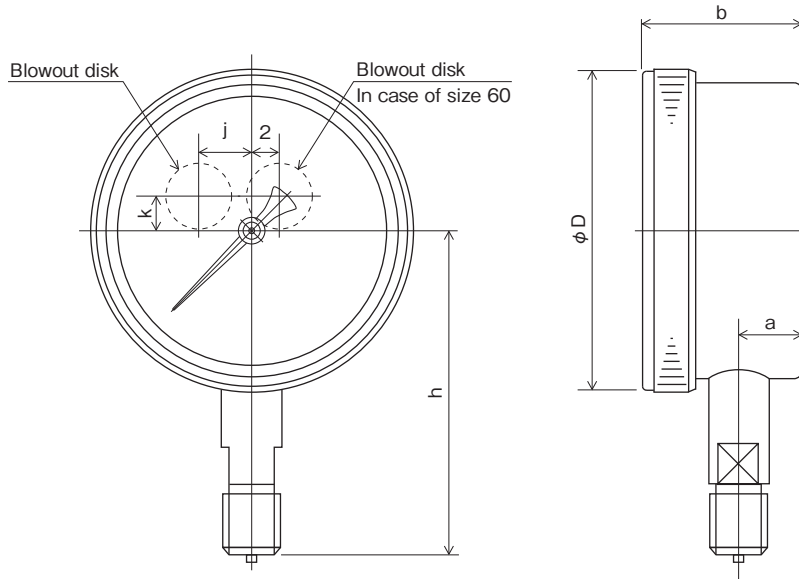
Shape / Dimensions:

Lower connection

Type A...Direct mount pressure gauge

Weight:

| Size | Weight (g) |
|------|--------------|
| 60 | Approx. 300 |
| 75 | Approx. 500 |
| 100 | Approx. 800 |
| 150 | Approx. 1600 |



| Size | Shape / Connection | | Case / Dimensions | | | | | | | | Model number | |
|------|--------------------|---------------------|-------------------|------------|--------------|----|----|----|----|----|--------------|----------------------|
| | | d | D | a | b | j | k | f | g | L | | h |
| 60 | U | G1/4B, R1/4 | 70 | 11.5 | 32 | — | 8 | 16 | 10 | 12 | 58 | BA10-1□□ |
| 75 | U | G1/4B, R1/4 | 84 | 16.5 | 41 (41.5) | 15 | 10 | 16 | 12 | 12 | 68 | BC10-1□□ |
| | | G3/8B, R3/8 | (86) | | | | | 18 | 12 | 14 | 70 | BC12-1□□ |
| 100 | U | 1/4NPT | 109 (110) | 22 (23) | 52.5 (54) | 20 | 10 | 16 | 15 | 14 | 106 | BE10-1□□ BE12-1□□ |
| | | G3/8B, R3/8, 3/8NPT | | | | | | 18 | 15 | 14 | 108 | |
| | | G1/2B, R1/2, 1/2NPT | | | | | | 20 | 15 | 17 | 110 | |
| 150 | U | G3/8B, R3/8 | 159 (162) | 25 | 59 (59.5) | 20 | 10 | 18 | 15 | 14 | 123 | BG10-1□□ |
| | | G1/2B, R1/2, 1/2NPT | | | | | | 20 | 15 | 17 | 125 | BG12-1□□ |

() Dimension of plastic case

Specification 3

Specifications & additional spec.:

Blow out protection:

Blow out protection is used to protect window being blown up in case of high pressure leak happen from the failure of bourdon tube. The disc breaks and releases inner over pressure.

Caution: To maintain appropriate performance, space wider than 10mm against wall behind installing gauge is needed. Modification toward disk and plug, blocking out the disk are prohibited.

Movement:

Optional SUS-made movement available.

Pointer:

Zero adjustable pointer is available other than standard pointer. Set pointer and max pointer will be available upon request when ordering.

Verification products can't be made with zero adjustable.

Max pointer specification

Available in: $\phi 60$ to $\phi 150$

Pressure Range: Equal to or higher than 0.25MPa

Compound range: -0.1 to 0.1MPa or higher

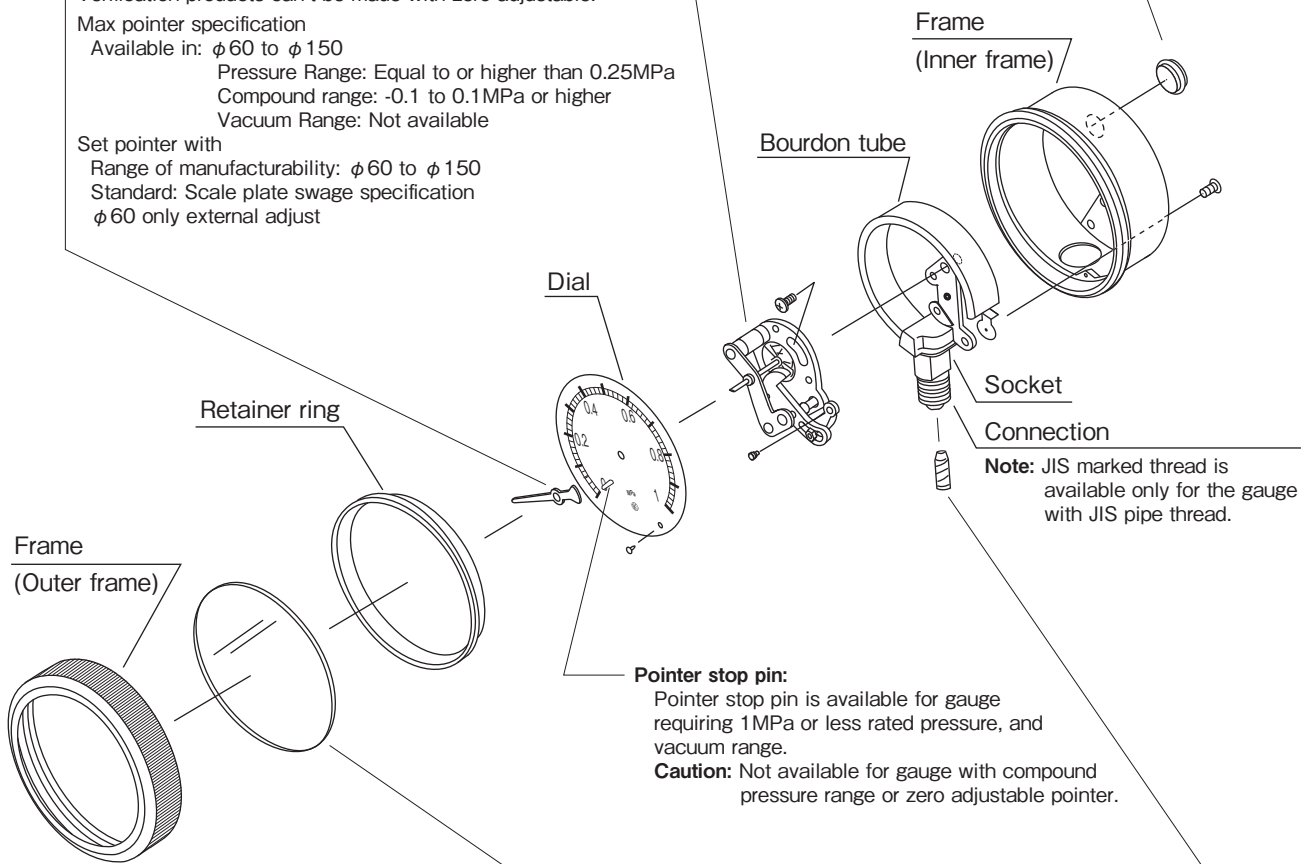
Vacuum Range: Not available

Set pointer with

Range of manufacturability: $\phi 60$ to $\phi 150$

Standard: Scale plate swage specification

$\phi 60$ only external adjust



Pointer stop pin:

Pointer stop pin is available for gauge requiring 1MPa or less rated pressure, and vacuum range.

Caution: Not available for gauge with compound pressure range or zero adjustable pointer.

Window:

Standard: Inorganic glass

The gauge comes standard with organic glass for gauge with pressure ratings of 10MPa or higher (This standard shall not apply to H, HV type gauge)

Tempered glass, non-frost coat treatment glass are optionally available.

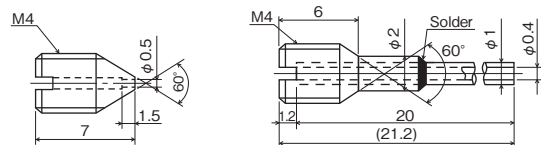
Throttle screw: (Optional)

Throttle screw that fits inside the orifice of the pressure gauge is available for reducing pressure impact if gauge is subjected to pulsation. Select from following models:

FS10-011,

FS10-081 (With pipe),

Corrosion-proof use FS10-013



| Model number | Material |
|-----------------------------------|----------|
| FS10-011 | C3604 |
| FS10-013 (Corrosion-proof use) | SUS316 |

| Model number | Material |
|-------------------------|------------------------|
| FS10-081 (With pipe) | C3604 (Pipe: C1100) |

Specification 4

Minimum scale value:

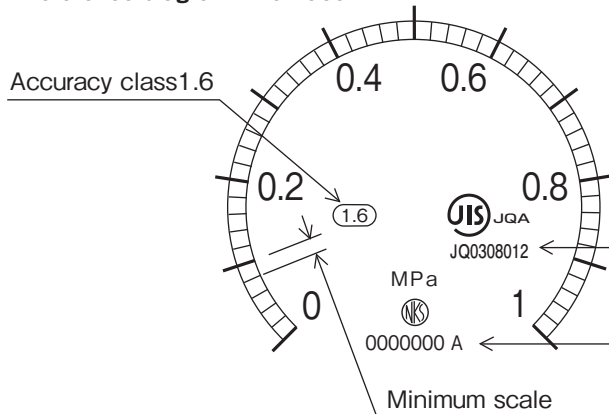
The minimum number of minor scale for each pressure range is shown in the following table.

| | Pressure range (MPa) | Size / Accuracy class | | | |
|----------------|----------------------|-----------------------|-------|--------------|-------|
| | | φ 60 | φ 75 | φ 100, φ 150 | |
| | | 1.6 | 1.6 | 1.6 | 1.0 |
| Pressure range | 0 to 40kPa | - | - | 1 | - |
| | to 0.06 | - | - | 0.001 | - |
| | to 0.1 | 0.002 | 0.002 | 0.002 | 0.002 |
| | to 0.16 | 0.005 | 0.005 | 0.005 | 0.002 |
| | to 0.25 | 0.005 | 0.005 | 0.005 | 0.005 |
| | to 0.4 | 0.01 | 0.01 | 0.01 | 0.005 |
| | to 0.6 | 0.01 | 0.01 | 0.01 | 0.01 |
| | to 1 | 0.02 | 0.02 | 0.02 | 0.02 |
| | to 1.6 | 0.05 | 0.05 | 0.05 | 0.02 |
| | to 2.5 | 0.05 | 0.05 | 0.05 | 0.05 |
| | to 4 | 0.1 | 0.1 | 0.1 | 0.05 |
| | to 6 | 0.1 | 0.1 | 0.1 | 0.1 |
| | to 10 | 0.2 | 0.2 | 0.2 | 0.2 |
| | to 16 | 0.5 | 0.5 | 0.5 | 0.2 |
| | to 25 | 0.5 | 0.5 | 0.5 | 0.5 |
| | to 40 | - | 1 | 1 | 0.5 |
| to 60 | - | - | 1 | 1 | |
| to 100 | - | - | 2 | 2 | |
| Vacuum range | -0.1 to 0 | 0.002 | 0.002 | 0.002 | 0.002 |
| Compound range | -0.1 to 0.1 | 0.005 | 0.005 | 0.005 | 0.002 |
| | to 0.16 | 0.005 | 0.005 | 0.005 | 0.005 |
| | to 0.25 | 0.01 | 0.01 | 0.01 | 0.005 |
| | to 0.4 | 0.01 | 0.01 | 0.01 | 0.01 |
| | to 0.6 | 0.02 | 0.02 | 0.02 | 0.01 |
| | to 1 | 0.02 | 0.02 | 0.02 | 0.02 |
| | to 1.6 | 0.05 | 0.05 | 0.05 | 0.02 |
| | to 2.5 | 0.05 | 0.05 | 0.05 | 0.05 |

* Gauge with 40MPa or higher range is made by corrosion-proof type.

* Blue colored cell implies the gauge obtained type approval.

Reference diagram: Dial face



Customized Dial:

Customized dial with capacity scale, double scale (Pressure and other than pressure), tag number, characters, and colored dial can be made upon request.

JIS plant authorized number JQ0308012 is printed under JIS trademark.

The month of manufacture is provided with alphabets printed next to serial number. (A: January to L: December)
Test report and related document show serial number only to tie to manufactured gauge.

Verification standard inspection mark

Requirement of verification standard inspection mark:

The pressure gauges with the pressure ranges and sizes in the blue frame in the specification 4 have obtained type approval, and the verification standard inspection mark printed for those approved products instead of the conventional verification mark is.

Type Approval Number:

Bourdon tube made of brass
(Pressure range 0 to 0.06MPa → 0 to 2.5MPa): X951
Bourdon tube made of SUS
(Pressure range 0 to 0.06MPa → 0 to 100MPa): X9618

Designated Manufacturing Business Operator Number:

272001

φ 75 Process Industrial Pressure Gauge

Model number configuration

Please specify the model number, each specs and the range for ordering.

Model

B C 1

1

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×
×
J

Process Industrial Pressure Gauges (φ75) ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮

| Model number | | Selective spec. | Additional spec. (Option) |
|--------------------------|---|-----------------|---------------------------|
| Model | 0 Lower connection Metal case 2 Lower connection Plastic case | | |
| ① Mounting | 1 Type A | | |
| ② Connection | 2 G1/4B | | |
| | 3 G3/8B | | |
| | 7 R1/4 | | |
| | 8 R3/8 | | |
| | Others*1 | | |
| ③ Wetted parts material | 1 General use 40MPa is cannot be manufactured | | |
| | 2 Ammonia use SUS | | |
| | 3 Corrosion-proof use SUS | | |
| ④ Pressure range (MPa) | 2 -0.1 to 0.1, 0.16, 0.25, 0.4, 0.6, 1, 1.6, 2.5 Compound | | |
| | 3 -0.1 to 0, 0 to 0.1, 0.16, 0.25, 0.4, 0.6, 1, 1.6, 2.5 | | |
| | 4 0 to 4, 6, 10 | | |
| | 5 0 to 16, 25 | | |
| | 6 0 to 40 Corrosion-proof use | | |
| | Others | | |
| ⑤ Performance | 0 Standard | | |
| | A M: Steam use | | |
| | C V: Vibration-proof type | | |
| | D MV: Steam use & Vibration-proof type | | |
| ⑥ Pointer | 0 Standard | | |
| | 1 Zero adjustable (Micro meter type) Verification standard inspection mark can't be supplied with this specification. | | |
| | 2 Zero adjustable (Spring type) Verification standard inspection mark can't be supplied with this specification. | | |
| | 5 Max pointer*2 Verification standard inspection mark can't be supplied with this specification. | | |
| | 6 Set pointer*2 Verification standard inspection mark can't be supplied with this specification. | | |
| | Others | | |
| ⑦ Glass | 0 Standard Inorganic glass*3 | | |
| | 1 Organic glass | | |
| | 2 Tempered glass | | |
| | 3 Non-glare treatment glass | | |
| | 6 Non-frost coat treatment glass | | |
| | Others | | |
| ⑧ Treatment | 0 Nil | | |
| | 1 Use no oil | | |
| | 2 Use no water | | |
| | 3 Use no oil & water | | |
| ⑨ Throttle screw | 0 Nil | | |
| | 1 FS10-011 or FS10-013 Corrosion-proof use | | |
| | 3 FS10-081 (With pipe) | | |
| ⑩ Other additional spec. | 0 Nil | | |
| | 1 Required (Please specify the desired documents separately.) Verification standard inspection mark, dial scale*4, case color, movement | | |
| ⑭ Class | J JIS specification | | |
| ⑮ Document | 0 Nil | | |
| | 1 Required (Please specify the desired documents separately.) Submission drawings, instruction manual, inspection procedure, mill sheet, test report (1 pc 1 copy), inspection / traceability certificate, attended inspection | | |

Please specify applicable range code as well as pressure range and engineering unit.

| Purpose | Connecting part | Bourdon tube | Connecting method |
|--|-----------------|--|--|
| 1 General use (Not available for gauge requiring over 25MPa.) | CAC203 | For the gauge with pressure ratings of 2.5MPa or lower: -General type, Vibration-proof type C6872 -Steam use, Steam use & Vibration-proof type SUS316 For the gauge with pressure ratings of 4MPa or higher: SUS316 | Soldered for brass parts combination Silver soldered for brass and SUS316 combination |
| 2 Ammonia use | SCS14 | SUS316 | Tig-welding |
| 3 Corrosion-proof use | | | |

*1 JIS marked thread is available only for the gauge with JIS pipe thread.

*2 Max pointer specification
Range of manufacturability: Pressure gauges; 0.25MPa or higher
Compound; -0.1 to 0.1MPa or higher
Vacuum; Cannot be manufactured

Set pointer with
Scale plate swage specification

*3 The gauge comes standard with organic glass for gauge with pressure ratings of 10MPa or higher

*4 Customized dial: Capacity scale, dual scale, tag number, characters, colored circle, colored wire

* Specify by code "X" if there is no applicable specification.

B_1_

Process Industrial Pressure Gauges (Type B / Lower connection)

Outline

The bourdon tube pressure gauge is offered and made in accordance with JIS B 7505-1: 2015. The gauge is easy to handle with its structured simplicity with elastic measuring element (bourdon tube) into a deflection caused by applied pressure change transmitted to a rotary geared movement carrying pointer. It is applicable to variety of applications offering wide varieties of pressure ranges.

Features

- Can be used under rain, frost, etc. conditions by adoption of sealed case. (JIS C 09220 IP43 equivalent)
- Verification standard inspection mark (Type Approval) can be attached (Depending on size, precision and pressure range).
- Available in many standard pressure ranges and can accommodate demand for use with corrosive media.

* To maximize performance, select full scale pressure range as normal operating pressure range which comes to conditions below:

For constant pressure

The maximum operating pressure should not exceed three-quarters of the full-scale range.

For fluctuating pressure

The maximum operating pressure should not exceed two-thirds of the full-scale range.

Select proper wetted parts compatible with process fluid (gas and liquid) which the gauge will be subjected.

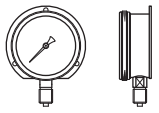
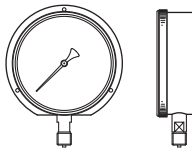
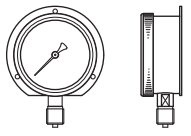
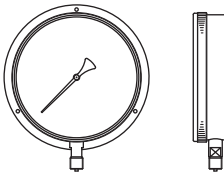
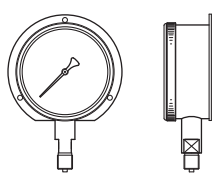
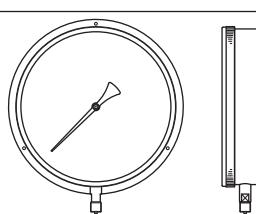
Please refer to JIS B 7505-1 for details.

* Please select "Use no oil" to use gauge on oxygen service.

Please select "Use no oil" and "Corrosion-proof" type to use gauge on acetylene service.



List of products

| Size | Mounting | Model number | Size | Mounting | Model number |
|-------|---|----------------------|-------|--|----------------------|
| φ 60 |  | BA10-2□□ | φ 150 |  | BG10-2□□ BG12-2□□ |
| φ 75 |  | BC10-2□□ BC12-2□□ | φ 200 |  | BJ10-2□□ |
| φ 100 |  | BE10-2□□ BE12-2□□ | φ 300 |  | BL10-2□□ |

* φ 300 is not available for JIS mark.

Specification 1

Fluid:

Gas, liquid

Case construction: Seal type

Sealed construction which is equivalent to JIS C 0920, IP43 but not sealed completely.

Wetted parts material:

Wetted parts generally consist of bourdon tube and socket. These parts are exposed to or in direct contact with the medium under pressure (Gas, liquid).

| Purpose | Connecting part | Bourdon tube |
|---------------------|-------------------------|---|
| General use | C3604*1 or CAC203 | C6872 or SUS316 (Varies depending on required pressure range and additional specon performance.) |
| Ammonia use | SUS316*2 or SCS14 | SUS316 |
| Corrosion-proof use | | |

*1 BA10 (φ60) only

*2 BA10 (φ60), BL10 (φ300): SUS316

Connection: Refer to the document JIS pipe thread in technical sheet.

G1/4B, G3/8B, G1/2B, R1/4, R3/8, R1/2, others.

*For other connections, please contact us.

Pressure range:

0 to 40kPa → 0 to 100MPa

-0.1 to 0MPa → -0.1 to 2.5MPa

*For details, refer to the minimum scale value table in Specification 4

Accuracy:

JIS1.6 (JIS accuracy class)

*φ300 is JIS1.6 equivalent.

Upon request, JIS1.0 product can be manufactured.

(JIS1.0 is available for gauge requiring 1MPa or higher pressure range with nominal size of φ100, φ150, φ200.)

Case

Case finish: Black (Standard color)

Case material: Metal case.....Aluminium alloy

Plastic case.....Bakelite

Protection: IP43

Treatment of wetted parts (Option)

Use no oil, use no water gauge can be made upon request.

Use no oil

Oil used in manufacturing the gauges had been flushed out & no oil residue remained inside its wetted parts.

Use no water

Water used in manufacturing the gauges had been flushed out & no water residue remained inside its wetted parts.

Use no oil & water

Oil/Water used in manufacturing the gauges had been flushed out & no oil/water residue remained inside its wetted parts.



Caution

*Please select "Use no oil" to use gauge on oxygen service.

*Please select "Use no oil" and "Corrosion-proof" type to use gauge on acetylene service.

Unit: mm

Specification 2

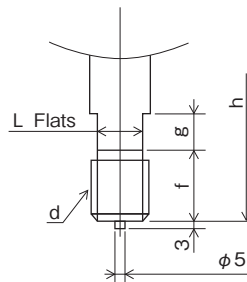
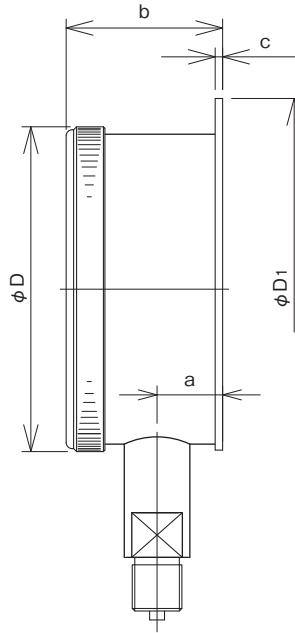
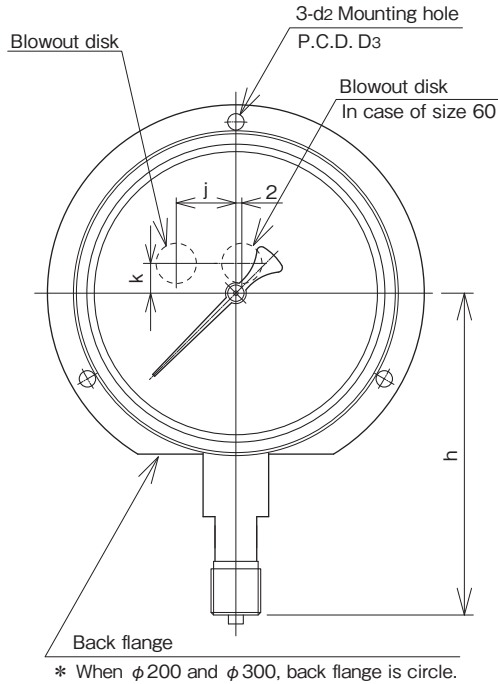
Shape / Dimensions:

Lower connection

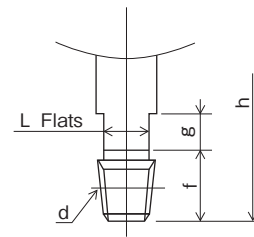
Type B···Back flange is fastened to panel by screw.

Weight:

| Size | Weight (g) |
|------|--------------|
| 60 | Approx. 300 |
| 75 | Approx. 500 |
| 100 | Approx. 800 |
| 150 | Approx. 1600 |
| 200 | Approx. 2400 |
| 300 | Approx. 4600 |



BUG[][]B



BUR[][]

| Size | Shape / Connection | | Case / Dimensions | | | | | | | | | | | Model number | | | | |
|------|--------------------|---------------------|-------------------|----------------|----------------|------|------|-----|----------------|----|----|-------|----|--------------|-----|--------------|--------------|--------------|
| | | d | D | D ₁ | D ₃ | a | b | c | d ₂ | j | k | f | g | | L | h | | |
| 60 | U | G1/4B, R1/4 | 70 | 80 | 72 | 11.5 | 32 | 2 | 4.5 | — | 8 | 16 | 10 | 12 | 58 | BA10-2[][] | | |
| 75 | U | G1/4B, R1/4 | 84 | 98 | 88 | 16.5 | 41 | 2 | 4.5 | 15 | 10 | 16 | 12 | 12 | 68 | BC10-2[][] | | |
| | | G3/8B, R3/8 | (86) | | | | | | | | | 18 | 12 | 14 | 70 | | BC12-2[][] | |
| 100 | U | 1/4NPT | 109 | 128 | 115 | 22 | 52.5 | 2.5 | 5.5 | 20 | 10 | 16 | 15 | 14 | 106 | BE10-2[][] | | |
| | | G3/8B, R3/8, 3/8NPT | | | | | | | | | | (110) | 18 | 15 | 14 | | 108 | BE12-2[][] |
| | | G1/2B, R1/2, 1/2NPT | | | | | | | | | | 20 | 15 | 17 | 110 | | | |
| 150 | U | G3/8B, R3/8 | 159 | 178 | 165 | 25 | 59 | 2.5 | 5.5 | 20 | 10 | 18 | 15 | 14 | 123 | BG10-2[][] | | |
| | | G1/2B, R1/2, 1/2NPT | (162) | | | | | | | | | 20 | 15 | 17 | 125 | | BG12-2[][] | |
| 200 | U | G1/2B, R1/2, 1/2NPT | 210 | 235 | 220 | 24 | 60 | 2.5 | 5.5 | 20 | 10 | 20 | 15 | 17 | 152 | BJ10-2[][] | | |
| 300 | U | G1/2B, R1/2 | 312 | 340 | 323 | 28 | 73 | 3.5 | 5.5 | 0 | 0 | 20 | 15 | 17 | 205 | BL10-2[][] | | |

() Dimension of plastic case

For surface mounting, please provide a 25mm dia. hole in the wall for blowout disk.

Specification 3

Specifications & additional spec.:

Blow out protection:

Blow out protection is used to protect window being blown up in case of high pressure leak happen from the failure of bourdon tube. The disc breaks and releases inner over pressure.

Caution: To maintain appropriate performance, space wider than 10mm against wall behind installing gauge is needed. Modification toward disk and plug, blocking out the disk are prohibited.

Movement:

Optional SUS-made movement available.

Pointer:

Zero adjustable pointer is available other than standard pointer. Set pointer and max pointer will be available upon request when ordering. Verification products can't be made with zero adjustable.

Max pointer specification

Available in: $\phi 60$ to $\phi 200$

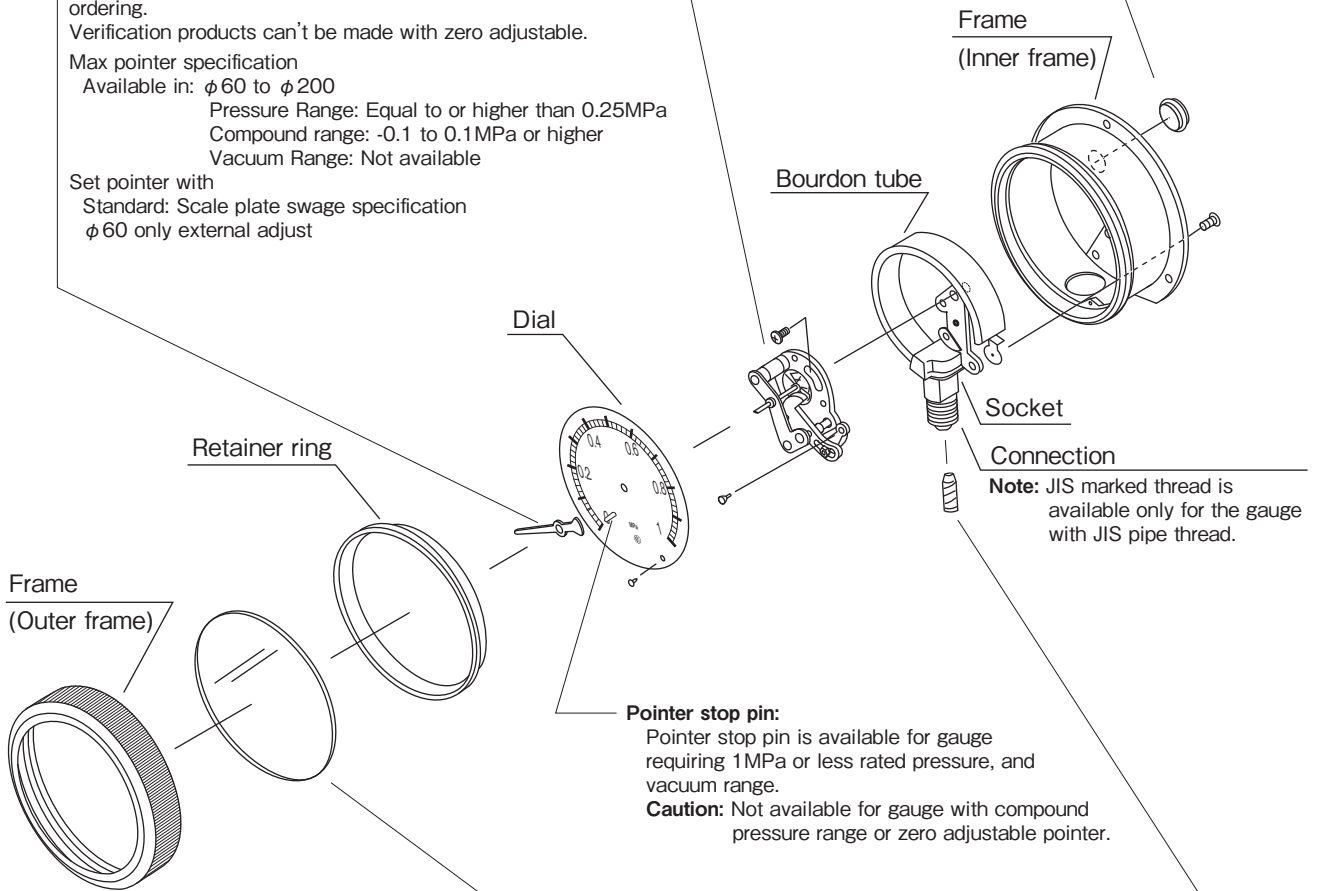
Pressure Range: Equal to or higher than 0.25MPa

Compound range: -0.1 to 0.1MPa or higher

Vacuum Range: Not available

Set pointer with

Standard: Scale plate swage specification
 $\phi 60$ only external adjust



Pointer stop pin:

Pointer stop pin is available for gauge requiring 1MPa or less rated pressure, and vacuum range.

Caution: Not available for gauge with compound pressure range or zero adjustable pointer.

Window:

Standard: Inorganic glass

The gauge comes standard with organic glass for gauge with pressure ratings of 10MPa or higher (This standard shall not apply to H, HV type gauge)

Tempered glass, non-frost coat treatment glass are optionally available.

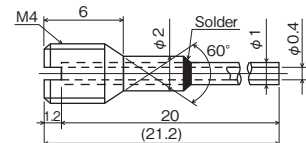
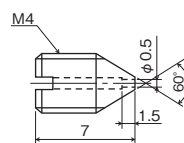
Throttle screw: (Optional)

Throttle screw that fits inside the orifice of the pressure gauge is available for reducing pressure impact if gauge is subjected to pulsation. Select from following models:

FS10-011,

FS10-081 (With pipe),

Corrosion-proof use FS10-013



| Model number | Material |
|-----------------------------------|----------|
| FS10-011 | C3604 |
| FS10-013 (Corrosion-proof use) | SUS316 |

| Model number | Material |
|-------------------------|------------------------|
| FS10-081 (With pipe) | C3604 (Pipe: C1100) |

Specification 4

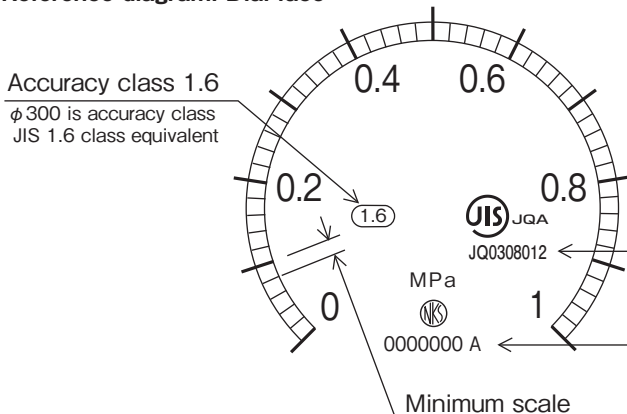
Minimum scale value:

The minimum number of minor scale for each pressure range is shown in the following table.

| | Pressure range (MPa) | Size / Accuracy class | | | | | | |
|----------------|----------------------|-----------------------|-------|--------------|-------|-------|-------|-------------------|
| | | φ 60 | φ 75 | φ 100, φ 150 | | φ 200 | | φ 300 |
| | | 1.6 | 1.6 | 1.6 | 1.0 | 1.6 | 1.0 | JIS1.6 equivalent |
| Pressure range | 0 to 40kPa | — | — | 1 | — | 1 | — | — |
| | to 0.06 | — | — | 0.001 | — | 0.001 | — | — |
| | to 0.1 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | to 0.16 | 0.005 | 0.005 | 0.005 | 0.002 | 0.005 | 0.002 | 0.005 |
| | to 0.25 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 |
| | to 0.4 | 0.01 | 0.01 | 0.01 | 0.005 | 0.01 | 0.005 | 0.01 |
| | to 0.6 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| | to 1 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| | to 1.6 | 0.05 | 0.05 | 0.05 | 0.02 | 0.05 | 0.02 | 0.05 |
| | to 2.5 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| | to 4 | 0.1 | 0.1 | 0.1 | 0.05 | 0.1 | 0.05 | 0.1 |
| | to 6 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| | to 10 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | to 16 | 0.5 | 0.5 | 0.5 | 0.2 | 0.5 | 0.2 | 0.5 |
| | to 25 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| to 40 | — | 1 | 1 | 0.5 | 1 | 0.5 | — | |
| to 60 | — | — | 1 | 1 | 1 | 1 | — | |
| to 100 | — | — | 2 | 2 | 2 | 2 | — | |
| Vacuum range | -0.1 to 0 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| Compound range | -0.1 to 0.1 | 0.005 | 0.005 | 0.005 | 0.002 | 0.005 | 0.002 | 0.005 |
| | to 0.16 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 |
| | to 0.25 | 0.01 | 0.01 | 0.01 | 0.005 | 0.01 | 0.005 | 0.01 |
| | to 0.4 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| | to 0.6 | 0.02 | 0.02 | 0.02 | 0.01 | 0.02 | 0.01 | 0.02 |
| | to 1 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| | to 1.6 | 0.05 | 0.05 | 0.05 | 0.02 | 0.05 | 0.02 | 0.05 |
| | to 2.5 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |

* Gauge with 40MPa or higher range is made by corrosion-proof type.
 * Blue colored cell implies the gauge obtained type approval.

Reference diagram: Dial face



Customized Dial:

Customized dial with capacity scale, double scale (Pressure and other than pressure), tag number, characters, and colored dial can be made upon request.

JIS plant authorized number JQ0308012 is printed under JIS trademark.
 *φ300 is not available for JIS mark.
 The month of manufacture is provided with alphabets printed next to serial number. (A: January to L: December)
 *Excluding φ 300.
 Test report and related document show serial number only to tie to manufactured gauge.

Verification standard inspection mark

Requirement of verification standard inspection mark:
 The pressure gauges with the pressure ranges and sizes in the blue frame in the specification 4 have obtained type approval, and the verification standard inspection mark printed for those approved products instead of the conventional verification mark is. (Not possible to support because that φ200, φ300 product has not received the type approval.)

Type Approval Number:

Bourdon tube made of brass
 (Pressure range 0 to 0.06MPa → 0 to 2.5MPa): X951
 Bourdon tube made of SUS
 (Pressure range 0 to 0.06MPa → 0 to 100MPa): X9618

Designated Manufacturing Business Operator Number:
 272001

φ60 Process Industrial Pressure Gauge

Model number configuration

Please specify the model number, each specs and the range for ordering.

Model

B A 1 0 — 2 — — — — — — — — — — × × × J —

Process Industrial Pressure Gauges (φ60) ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮

| Model number | Selective spec. | Additional spec. (Option) |
|--------------------------|--|---------------------------|
| ① Mounting | 2 Lower connection Type B (Mounting hole) Metal case | |
| ② Connection | 2 G1/4B | |
| | 7 R1/4 | |
| | Others*1 | |
| ③ Wetted parts material | 1 General use | |
| | 2 Ammonia use SUS | |
| | 3 Corrosion-proof use SUS | |
| ④ Pressure range (MPa) | 2 -0.1 to 0.1, 0.16, 0.25, 0.4, 0.6, 1, 1.6, 2.5 Compound | |
| | 3 -0.1 to 0, 0 to 0.1, 0.16, 0.25, 0.4, 0.6, 1, 1.6, 2.5 | |
| | 4 0 to 4, 6, 10 | |
| | 5 0 to 16, 25 | |
| | Others | |
| ⑤ Performance | 0 Standard | |
| | A M: Steam use | |
| | C V: Vibration-proof type | |
| | D MV: Steam use & Vibration-proof type | |
| ⑥ Pointer | 0 Standard | |
| | 2 Zero adjustable (Spring type) Verification standard inspection mark can't be supplied with this specification. | |
| | 5 Max pointer*2 Verification standard inspection mark can't be supplied with this specification. | |
| | 6 Set pointer (External adjust)*2 Verification standard inspection mark can't be supplied with this specification. | |
| ⑦ Glass | 0 Standard Inorganic glass*3 | |
| | 1 Organic glass | |
| | 2 Tempered glass | |
| | 3 Non-glare treatment glass | |
| | 6 Non-frost coat treatment glass | |
| | Others | |
| ⑧ Treatment | 0 Nil | |
| | 1 Use no oil | |
| | 2 Use no water | |
| | 3 Use no oil & water | |
| ⑨ Throttle screw | 0 Nil | |
| | 1 FS10-011 or FS10-013 Corrosion-proof use | |
| | 3 FS10-081 (With pipe) | |
| ⑩ Other additional spec. | 0 Nil | |
| | 1 Required (Please specify the desired documents separately.) Verification standard inspection mark, dial scale*4, case color, movement | |
| ⑭ Class | J JIS specification | |
| ⑮ Document | 0 Nil | |
| | 1 Required (Please specify the desired documents separately.) Submission drawings, instruction manual, inspection procedure, mill sheet, test report (1 pc 1 copy), inspection / traceability certificate, attended inspection | |

Please specify applicable range code as well as pressure range and engineering unit.

| Purpose | Connecting part | Bourdon tube | Connecting method |
|-----------------------|-----------------|---|--|
| 1 General use | C3604 | For the gauge with pressure ratings of 2.5MPa or lower: •General type, Vibration-proof type C6872 •Steam use, Steam use & Vibration-proof type SUS316 For the gauge with pressure ratings of 4MPa or higher: SUS316 | Soldered for brass parts combination Silver soldered for brass and SUS316 combination |
| 2 Ammonia use | | | |
| 3 Corrosion-proof use | SUS316 | SUS316 | Tig-welding |

*1 JIS marked thread is available only for the gauge with JIS pipe thread.

*2 Max pointer specification
Range of manufacturability: Pressure gauges; 0.25MPa or higher
Compound; -0.1 to 0.1MPa or higher
Vacuum; Cannot be manufactured

Set pointer with
External adjust

*3 The gauge comes standard with organic glass for gauge with pressure ratings of 10MPa or higher

*4 Customized dial: Capacity scale, dual scale, tag number, characters, colored circle, colored wire

* Specify by code "X" if there is no applicable specification.

φ 100 Process Industrial Pressure Gauge

Model number configuration

Please specify the model number, each specs and the range for ordering.

Model

B E 1 — 2 — X X X J

Process Industrial Pressure Gauges (φ 100) ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮

| Model number | | Selective spec. | Additional spec. (Option) |
|--------------------------|---|---|---------------------------|
| Model | 0 Lower connection Metal case 2 Lower connection Plastic case | | |
| ① Mounting | 2 Type B (Mounting hole) | | |
| ② Connection | 3 G3/8B | 9 R1/2 | |
| | 4 G1/2B | K 1/4NPT*1 | |
| | 6 1/2NPT*1 | L 3/8NPT*1 | |
| | 8 R3/8 | Others*1 | |
| ③ Wetted parts material | 1 General use 40MPa or higher is cannot be manufactured | | |
| | 2 Ammonia use SUS | | |
| | 3 Corrosion-proof use SUS | | |
| | 4 Anti-corrosion use SUS316L*2 (100MPa is cannot be manufactured) | | |
| ④ Pressure range (MPa) | 1 0 to 40kPa, 0 to 0.06 | | |
| | 2 -0.1 to 0.1, 0.16, 0.25, 0.4, 0.6, 1, 1.6, 2.5 Compound | | |
| | 3 -0.1 to 0, 0 to 0.1, 0.16, 0.25, 0.4, 0.6, 1, 1.6, 2.5 | | |
| | 4 0 to 4, 6, 10 | | |
| | 5 0 to 16, 25 | | |
| | 6 0 to 40, 60 Corrosion-proof use | | |
| | 7 0 to 100 Corrosion-proof use | | |
| ⑤ Performance | 0 Standard | D MV: Steam use & Vibration-proof type | |
| | A M: Steam use | E HV: Heat-proof & Vibration-proof type | |
| | B H:Heat-proof type | 3 Accuracy: JIS1.0 (0.1MPa or higher)*3 | |
| | C V: Vibration-proof type | | |
| ⑥ Pointer | 0 Standard | | |
| | 1 Zero adjustable (Micro meter type) Verification standard inspection mark can't be supplied with this specification. | | |
| | 2 Zero adjustable (Spring type) Verification standard inspection mark can't be supplied with this specification. | | |
| | 5 Max pointer*4 Verification standard inspection mark can't be supplied with this specification. | | |
| | 6 Set pointer*4 Verification standard inspection mark can't be supplied with this specification. | | |
| ⑦ Glass | 0 Standard Inorganic glass*5 | | |
| | 1 Organic glass Not available in H, HV specification. | | |
| | 2 Tempered glass | | |
| | 3 Non-glare treatment glass | | |
| | 6 Non-frost coat treatment glass | | |
| | Others | | |
| ⑧ Treatment | 0 Nil | | |
| | 1 Use no oil | | |
| | 2 Use no water | | |
| | 3 Use no oil & water | | |
| ⑨ Throttle screw | 0 Nil | | |
| | 1 FS10-011 or FS10-013 Corrosion-proof use*6 | | |
| | 3 FS10-081 (With pipe) | | |
| ⑩ Other additional spec. | 0 Nil | | |
| | 1 Required (Please specify the desired documents separately.) Verification standard inspection mark, dial scale*7, case color, movement | | |
| ⑭ Class | J JIS specification | | |
| ⑮ Document | 0 Nil | | |
| | 1 Required (Please specify the desired documents separately.) Submission drawings, instruction manual, inspection procedure, mill sheet, test report (1 pc 1 copy), inspection / traceability certificate, attended inspection | | |

Please specify applicable range code as well as pressure range and engineering unit.

| Purpose | Connecting part | Bourdon tube | Connecting method |
|--|-----------------|---|--|
| 1 General use (Not available for gauge requiring over 25MPa.) | CAC203 | For the gauge with pressure ratings of 2.5MPa or lower: •General type, Vibration-proof type C6872 •Steam use, Heat-proof type, Steam use & Vibration-proof type, Heat-proof & Vibration-proof type SUS316 For the gauge with pressure ratings of 4MPa or higher: SUS316 | Soldered for brass parts combination Silver soldered for brass and SUS316 combination |
| 2 Ammonia use | | | |
| 3 Corrosion-proof use | SCS14 | SUS316 | Tig-welding |
| 4 Anti-corrosion use | SCS16 | SUS316L | |

*1 JIS marked thread is available only for the gauge with JIS pipe thread.

*2 Connecting part: SCS16

***3 Verification standard inspection mark cannot be attached to JIS1.0 product.**

*4 Max pointer specification
Range of manufacturability: Pressure gauges; 0.25MPa or higher
Compound; -0.1 to 0.1MPa or higher
Vacuum; Cannot be manufactured

Set pointer with
Scale plate swage specification

*5 The gauge comes standard with organic glass for gauge with pressure ratings of 10MPa or higher (This standard shall not apply to H&HV type gauge).

*6 When wetted parts material is SUS316L, the material is SUS316L (With FS10-014).

*7 Customized dial: Capacity scale, dual scale, tag number, characters, colored circle, colored wire

* Specify by code "X" if there is no applicable specification.

φ200 Process Industrial Pressure Gauge

Model number configuration

Please specify the model number, each specs and the range for ordering.

Model
B J 1 0 — 2 — X X X J

Process Industrial Pressure Gauges (φ200) ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮

| Model number | Selective spec. | Additional spec. (Option) |
|--------------------------|--|---------------------------|
| ① Mounting | 2 Lower connection Type B (Mounting hole) | |
| ② Connection | 4 G1/2B | |
| | 6 1/2NPT*1 | |
| | 9 R1/2 | |
| | Others*1 | |
| ③ Wetted parts material | 1 General use 40MPa or higher is cannot be manufactured | |
| | 2 Ammonia use SUS | |
| | 3 Corrosion-proof use SUS | |
| ④ Pressure range (MPa) | 1 0 to 40kPa, 0 to 0.06 | |
| | 2 -0.1 to 0.1, 0.16, 0.25, 0.4, 0.6, 1, 1.6, 2.5 Compound | |
| | 3 -0.1 to 0, 0 to 0.1, 0.16, 0.25, 0.4, 0.6, 1, 1.6, 2.5 | |
| | 4 0 to 4, 6, 10 | |
| | 5 0 to 16, 25 | |
| | 6 0 to 40, 60 Corrosion-proof use | |
| | 7 0 to 100 Corrosion-proof use | |
| ⑤ Performance | 0 Standard | |
| | A M: Steam use | |
| | 3 Accuracy: JIS1.0 (0.1MPa or higher) | |
| ⑥ Pointer | 0 Standard | |
| | 1 Zero adjustable (Micro meter type) | |
| | 2 Zero adjustable (Spring type) | |
| ⑦ Glass | 0 Standard Inorganic glass*2 | |
| | 1 Organic glass | |
| | 2 Tempered glass | |
| | 3 Non-glare treatment glass | |
| | Others | |
| ⑧ Treatment | 0 Nil | |
| | 1 Use no oil | |
| | 2 Use no water | |
| | 3 Use no oil & water | |
| ⑨ Throttle screw | 0 Nil | |
| | 1 FS10-011 or FS10-013 Corrosion-proof use | |
| | 3 FS10-081 (With pipe) | |
| ⑩ Other additional spec. | 0 Nil | |
| | 1 Required (Please specify the desired documents separately.) Dial scale*3, case color, movement | |
| ⑭ Class | J | JIS specification |
| ⑮ Document | 0 Nil | |
| | 1 Required (Please specify the desired documents separately.) Submission drawings, instruction manual, inspection procedure, mill sheet, test report (1 pc 1 copy), inspection / traceability certificate, attended inspection | |

③ Wetted parts material

| Purpose | Connecting part | Bourdon tube | Connecting method |
|---|-----------------|---|--|
| 1 General use <small>(Not available for gauge requiring over 25MPa.)</small> | CAC203 | For the gauge with pressure ratings of 2.5MPa or lower: •General type C6872 •Steam use SUS316 For the gauge with pressure ratings of 4MPa or higher: SUS316 | Soldered for brass parts combination Silver soldered for brass and SUS316 combination |
| 2 Ammonia use | SCS14 | SUS316 | Tig-welding |
| 3 Corrosion-proof use | | | |

Verification standard inspection mark cannot be attached.

*1 JIS marked thread is available only for the gauge with JIS pipe thread.

*2 The gauge comes standard with organic glass for gauge with pressure ratings of 10MPa or higher

*3 Customized dial: Capacity scale, dual scale, tag number, characters, colored circle, colored wire

* Specify by code "X" if there is no applicable specification.

Please specify applicable range code as well as pressure range and engineering unit.

Model number configuration

Please specify the model number, each specs and the range for ordering.

Model: **B L 1 0** — **2** — **0** × × × **J**

Process Industrial Pressure Gauges (φ300) ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮

| Model number | | Selective spec. | | Additional spec. (Option) | |
|--------------------------|---------------|---|----------|---------------------------|--|
| ① Mounting | 2 | Lower connection Type B (Mounting hole) | | | |
| ② Connection | 4 | G1/2B | | | |
| | 9 | R1/2 | | | |
| ③ Wetted parts material | 1 | General use | | | |
| | 2 | Ammonia use SUS | | | |
| | 3 | Corrosion-proof use SUS | | | |
| ④ Pressure range (MPa) | 2 | -0.1 to 0.1, 0.16, 0.25, 0.4, 0.6, 1, 1.6, 2.5 Compound | | | |
| | 3 | -0.1 to 0, 0 to 0.1, 0.16, 0.25, 0.4, 0.6, 1, 1.6, 2.5 | | | |
| | 4 | 0 to 4, 6, 10 | | | |
| | 5 | 0 to 16, 25 | | | |
| | ⑤ Performance | 0 | Standard | | |
| ⑥ Pointer | 0 | Standard | | | |
| | 2 | Zero adjustable (Spring type) | | | |
| ⑦ Glass | 0 | Standard Inorganic glass*1 | | | |
| | 1 | Organic glass | | | |
| ⑧ Treatment | 0 | Nil | | | |
| | 1 | Use no oil | | | |
| | 2 | Use no water | | | |
| | 3 | Use no oil & water | | | |
| ⑨ Throttle screw | 0 | Nil | | | |
| | 1 | FS10-011 or FS10-013 Corrosion-proof use | | | |
| | 3 | FS10-081 (With pipe) | | | |
| ⑩ Other additional spec. | 0 | Nil | | | |
| | 1 | Required (Please specify the desired documents separately.) Dial scale*2, case color, movement | | | |
| ⑭ Class | J | JIS1.6 equivalent*3 | | | |
| ⑮ Document | 0 | Nil | | | |
| | 1 | Required (Please specify the desired documents separately.) Submission drawings, instruction manual, inspection procedure, mill sheet, test report (1 pc 1 copy), inspection / traceability certificate, attended inspection | | | |

Please specify applicable range code as well as pressure range and engineering unit.

| Purpose | Connecting part | Bourdon tube | Connecting method |
|-----------------------|-----------------|--------------|-------------------|
| 1 General use | CAC203 | SUS316 | Silver soldering |
| 2 Ammonia use | SUS316 | | Tig-welding |
| 3 Corrosion-proof use | | | |

Verification standard inspection mark cannot be attached.

* Specify by code "X" if there is no applicable specification.

*1 The gauge comes standard with organic glass for gauge with pressure ratings of 10MPa or higher

*2 Customized dial: Capacity scale, dual scale, tag number, characters, colored circle, colored wire

*3 φ300 is not available for JIS mark.

B_1_

Process Industrial Pressure Gauges (Type D / Back connection)

Outline

The bourdon tube pressure gauge is offered and made in accordance with JIS B 7505-1: 2015. The gauge is easy to handle with its structured simplicity with elastic measuring element (bourdon tube) into a deflection caused by applied pressure change transmitted to a rotary geared movement carrying pointer. It is applicable to variety of applications offering wide varieties of pressure ranges.

Features

- Can be used under rain, frost, etc. conditions by adoption of sealed case. (JIS C 09220 IP43 equivalent)
- Verification standard inspection mark (Type Approval) can be attached (Depending on size, precision and pressure range).
- Available in many standard pressure ranges and can accommodate demand for use with corrosive media.

* To maximize performance, select full scale pressure range as normal operating pressure range which comes to conditions below:

For constant pressure

The maximum operating pressure should not exceed three-quarters of the full-scale range.

For fluctuating pressure

The maximum operating pressure should not exceed two-thirds of the full-scale range.

Select proper wetted parts compatible with process fluid (gas and liquid) which the gauge will be subjected.

Please refer to JIS B 7505-1 for details.

* Please select "Use no oil" to use gauge on oxygen service.

Please select "Use no oil" and "Corrosion-proof" type to use gauge on acetylene service.


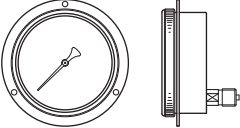
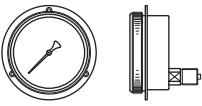
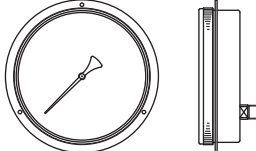
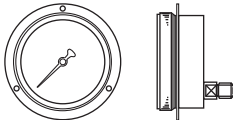
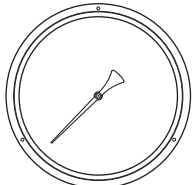


Mounting hole



Mounting clamp

List of products

| Size | Mounting | Model number | Size | Mounting | Model number |
|-------|---|----------------------|-------|--|--------------|
| φ 60 |  | BA15-□□□ | φ 150 |  | BG15-□□□ |
| φ 75 |  | BC15-□□□ | φ 200 |  | BJ15-□□□ |
| φ 100 |  | BE15-□□□ BE17-□□□ | φ 300 |  | BL15-□□□ |

* φ 300 is not available for JIS mark.

Specification 1

Fluid:

Gas, liquid

Case construction: Seal type

Sealed construction which is equivalent to JIS C 0920, IP43 but not sealed completely.

Wetted parts material:

Wetted parts generally consist of bourdon tube and socket. These parts are exposed to or in direct contact with the medium under pressure (Gas, liquid).

| Purpose | Connecting part | Bourdon tube |
|---------------------|-----------------|---|
| General use | CAC203 | C6872 or SUS316 (Varies depending on required pressure range and additional specon performance.) |
| Ammonia use | SCS14 | SUS316 |
| Corrosion-proof use | | |

Connection: Refer to the document JIS pipe thread in technical sheet.

G1/4B, G3/8B, G1/2B, R1/4, R3/8, R1/2, others.
*For other connections, please contact us.

Pressure range:

0 to 40kPa → 0 to 100MPa
-0.1 to 0MPa → -0.1 to 2.5MPa
*For details, refer to the minimum scale value table in Specification 4

Accuracy:

JIS1.6 (JIS accuracy class)
*φ300 is JIS1.6 equivalent.

Upon request, JIS1.0 product can be manufactured. (JIS1.0 is available for gauge requiring 1MPa or higher pressure range with nominal size of φ100, φ150, φ200.)

Case

Case finish: Black (Standard color)

Case material: Metal case.....Aluminium alloy

Plastic case.....Bakelite

Protection: IP43

Treatment of wetted parts (Option)

Use no oil, use no water gauge can be made upon request.

Use no oil

Oil used in manufacturing the gauges had been flushed out & no oil residue remained inside its wetted parts.

Use no water

Water used in manufacturing the gauges had been flushed out & no water residue remained inside its wetted parts.

Use no oil & water

Oil/Water used in manufacturing the gauges had been flushed out & no oil/water residue remained inside its wetted parts.



Caution

- *Please select "Use no oil" to use gauge on oxygen service.
- *Please select "Use no oil" and "Corrosion-proof" type to use gauge on acetylene service.

Unit: mm

Specification 2

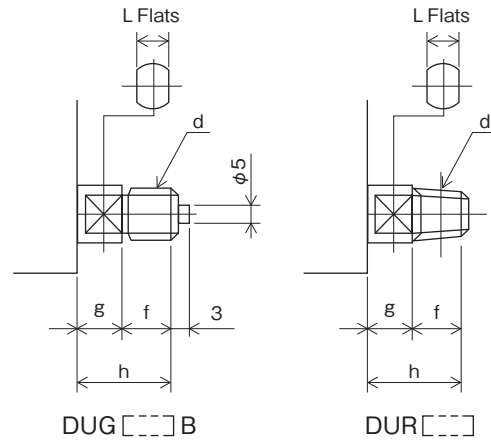
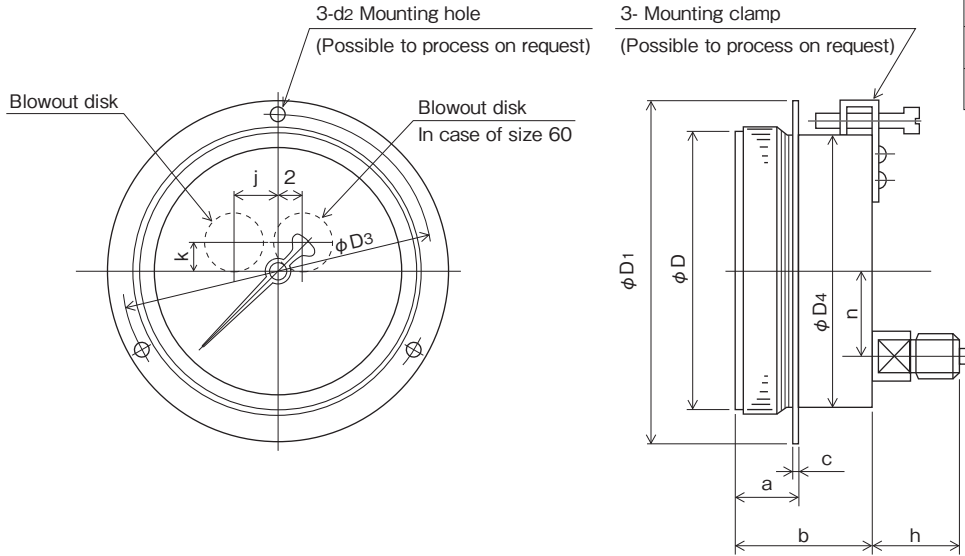
Shape / Dimensions:

Back connection

Type D...Panel mounting by screw or clamp.

Weight:

| Size | Weight (g) |
|------|--------------|
| 60 | Approx. 300 |
| 75 | Approx. 500 |
| 100 | Approx. 800 |
| 150 | Approx. 1600 |
| 200 | Approx. 2400 |
| 300 | Approx. 4600 |



| Size | Panel cut size | Shape | Case / Dimensions | | | | | | | | | | | | | | | Model number | |
|------|----------------|-------|---------------------|--------------|----------------|----------------|----------------|----------------|--------------|------------|------------------|----|----|----|----|----|----|--------------|----------------------|
| | | | d | D | D ₁ | D ₃ | D ₄ | a | b | c | d ₂ * | n | j | k | f | g | L | | h |
| 60 | 65 | U | G1/4B, R1/4 | 70 | 80 | 72 | 64 | 14 | 32 | 2 | 3.3* | 20 | — | 8 | 16 | 10 | 12 | 28 | BA15-□□□ |
| 75 | 78 | U | G1/4B, R1/4 | 84 | 98 | 88 | 77 | 18 | 40.5 | 2 | 3.3* | 25 | 15 | 10 | 16 | 12 | 12 | 28 | BC15-□□□ |
| | | | G3/8B, R3/8 | | | | | | | | | | | | 18 | 12 | 14 | 30 | |
| 100 | 103 (105) | U | 1/4NPT | 109 (110) | 128 | 119 | 102 (104) | 17.5 (20.5) | 45 (46.5) | 2.5 (4) | 5.5 | 35 | 20 | 10 | 16 | 10 | 12 | 28 | BE15-□□□ BE17-□□□ |
| | | | G3/8B, R3/8, 3/8NPT | | | | | | | | | | | | 18 | 12 | 14 | 30 | |
| | | | G1/2B, R1/2, 1/2NPT | | | | | | | | | | | | 20 | 12 | 17 | 32 (29) | |
| 150 | 154 | U | G3/8B, R3/8 | 159 | 178 | 169 | 152 | 21.5 | 61 | 2.5 | 5.5 | 55 | 20 | 10 | 18 | 12 | 14 | 30 | BG15-□□□ |
| | | | G1/2B, R1/2, 1/2NPT | | | | | | | | | | | | 20 | 12 | 17 | 32 (31) | |
| 200 | 205 | U | G1/2B, R1/2, 1/2NPT | 210 | 235 | 220 | 203 | 28 | 63 | 3 | 5.5 | 55 | 20 | 10 | 20 | 12 | 17 | 32 | BJ15-□□□ |
| 300 | 306 | U | G1/2B, R1/2 | 312 | 340 | 323 | 304 | 30.5 | 64 | 3.5 | 5.5 | 55 | 0 | 35 | 20 | 12 | 17 | 32 | BL15-□□□ |

() Dimension of plastic case

* For M3 flat head screw

For surface mounting, please provide a 25mm dia. hole in the wall for blowout disk.

Specification 3

Specifications & additional spec.:

Blow out protection:

Blow out protection is used to protect window being blown up in case of high pressure leak happen from the failure of bourdon tube. The disc breaks and releases inner over pressure.

Caution: To maintain appropriate performance, space wider than 10mm against wall behind installing gauge is needed. Modification toward disk and plug, blocking out the disk are prohibited.

Movement:

Optional SUS-made movement available.

Pointer:

Zero adjustable pointer is available other than standard pointer. Set pointer and max pointer will be available upon request when ordering. Verification products can't be made with zero adjustable.

Max pointer specification

Available in: $\phi 60$ to $\phi 200$

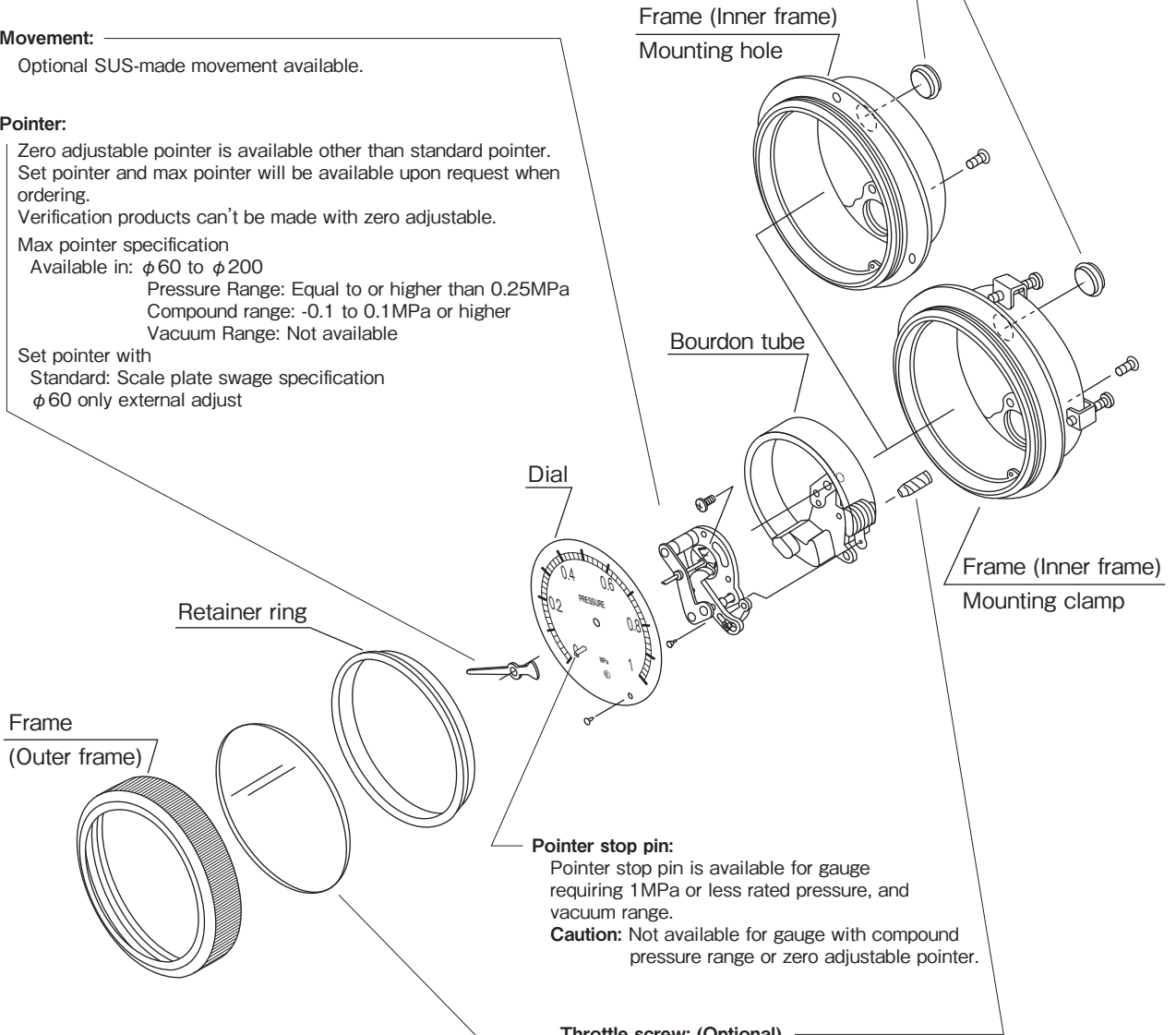
Pressure Range: Equal to or higher than 0.25MPa

Compound range: -0.1 to 0.1MPa or higher

Vacuum Range: Not available

Set pointer with

Standard: Scale plate swage specification
 $\phi 60$ only external adjust



Pointer stop pin:

Pointer stop pin is available for gauge requiring 1MPa or less rated pressure, and vacuum range.

Caution: Not available for gauge with compound pressure range or zero adjustable pointer.

Throttle screw: (Optional)

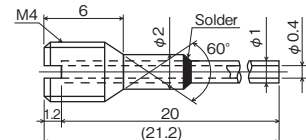
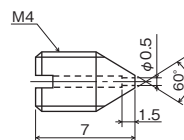
Throttle screw that fits inside the orifice of the pressure gauge is available for reducing pressure impact if gauge is subjected to pulsation.

Select from following models:

FS10-011,

FS10-081 (With pipe),

Corrosion-proof use FS10-013



Window:

Standard: Inorganic glass

The gauge comes standard with organic glass for gauge with pressure ratings of 10MPa or higher (This standard shall not apply to H, HV type gauge)

Tempered glass, non-frost coat treatment glass are optionally available.

| Model number | Material |
|-----------------------------------|----------|
| FS10-011 | C3604 |
| FS10-013 (Corrosion-proof use) | SUS316 |

| Model number | Material |
|-------------------------|------------------------|
| FS10-081 (With pipe) | C3604 (Pipe: C1100) |

Specification 4

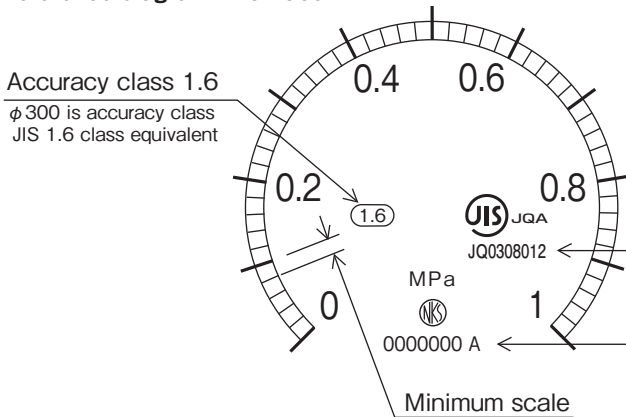
Minimum scale value:

The minimum number of minor scale for each pressure range is shown in the following table.

| | Pressure range (MPa) | Size / Accuracy class | | | | | | |
|----------------|----------------------|-----------------------|-------|--------------|-------|-------|-------|-------------------|
| | | φ 60 | φ 75 | φ 100, φ 150 | | φ 200 | | φ 300 |
| | | 1.6 | 1.6 | 1.6 | 1.0 | 1.6 | 1.0 | JIS1.6 equivalent |
| Pressure range | 0 to 40kPa | — | — | 1 | — | 1 | — | — |
| | to 0.06 | — | — | 0.001 | — | 0.001 | — | — |
| | to 0.1 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | to 0.16 | 0.005 | 0.005 | 0.005 | 0.002 | 0.005 | 0.002 | 0.005 |
| | to 0.25 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 |
| | to 0.4 | 0.01 | 0.01 | 0.01 | 0.005 | 0.01 | 0.005 | 0.01 |
| | to 0.6 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| | to 1 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| | to 1.6 | 0.05 | 0.05 | 0.05 | 0.02 | 0.05 | 0.02 | 0.05 |
| | to 2.5 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| | to 4 | 0.1 | 0.1 | 0.1 | 0.05 | 0.1 | 0.05 | 0.1 |
| | to 6 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| | to 10 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | to 16 | 0.5 | 0.5 | 0.5 | 0.2 | 0.5 | 0.2 | 0.5 |
| | to 25 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| to 40 | — | 1 | 1 | 0.5 | 1 | 0.5 | — | |
| to 60 | — | — | 1 | 1 | 1 | 1 | — | |
| to 100 | — | — | 2 | 2 | 2 | 2 | — | |
| Vacuum range | -0.1 to 0 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| Compound range | -0.1 to 0.1 | 0.005 | 0.005 | 0.005 | 0.002 | 0.005 | 0.002 | 0.005 |
| | to 0.16 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 |
| | to 0.25 | 0.01 | 0.01 | 0.01 | 0.005 | 0.01 | 0.005 | 0.01 |
| | to 0.4 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| | to 0.6 | 0.02 | 0.02 | 0.02 | 0.01 | 0.02 | 0.01 | 0.02 |
| | to 1 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| | to 1.6 | 0.05 | 0.05 | 0.05 | 0.02 | 0.05 | 0.02 | 0.05 |
| | to 2.5 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |

* Gauge with 40MPa or higher range is made by corrosion-proof type.
 * Blue colored cell implies the gauge obtained type approval.

Reference diagram: Dial face



Customized Dial:

Customized dial with capacity scale, double scale (Pressure and other than pressure), tag number, characters, and colored dial can be made upon request.

JIS plant authorized number JQ0308012 is printed under JIS trademark.

*φ300 is not available for JIS mark.

The month of manufacture is provided with alphabets printed next to serial number. (A: January to L: December)
 * Excluding φ 300.

Test report and related document show serial number only to tie to manufactured gauge.

Verification standard inspection mark

Requirement of verification standard inspection mark:

The pressure gauges with the pressure ranges and sizes in the blue frame in the specification 4 have obtained type approval, and the verification standard inspection mark printed for those approved products instead of the conventional verification mark is.
 (Not possible to support because that φ200, φ300 product has not received the type approval.)

Type Approval Number:

Bourdon tube made of brass
 (Pressure range 0 to 0.06MPa → 0 to 2.5MPa): X951
 Bourdon tube made of SUS
 (Pressure range 0 to 0.06MPa → 0 to 100MPa): X9618

Designated Manufacturing Business Operator Number:
 272001

φ60 Process Industrial Pressure Gauge

Model number configuration

Please specify the model number, each specs and the range for ordering.

Model: **B A 1 5** — [] [] [] — [] [] [] [] [] [] [] [] [] [] [] [] [] [] []

Process Industrial Pressure Gauges (φ60) ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮

| Model number | | Selective spec. | | Additional spec. (Option) | |
|--------------|------------------------|-----------------|---|---------------------------|--|
| ① | Mounting | 1 | Back connection Type D (Mounting clamp) Metal case | 2 | Back connection Type D (Mounting hole) Metal case |
| ② | Connection | 2 | G1/4B | 7 | R1/4 |
| | | | Others*1 | | |
| ③ | Wetted parts material | 1 | General use | 2 | Ammonia use SUS |
| | | 3 | Corrosion-proof use SUS | | |
| ④ | Pressure range (MPa) | 2 | -0.1 to 0.1, 0.16, 0.25, 0.4, 0.6, 1, 1.6, 2.5 Compound | 3 | -0.1 to 0, 0 to 0.1, 0.16, 0.25, 0.4, 0.6, 1, 1.6, 2.5 |
| | | 4 | 0 to 4, 6, 10 | 5 | 0 to 16, 25 |
| ⑤ | Performance | 0 | Standard | A | M: Steam use |
| | | | | C | V: Vibration-proof type |
| | | | | D | MV: Steam use & Vibration-proof type |
| ⑥ | Pointer | 0 | Standard | 2 | Zero adjustable (Spring type) Verification standard inspection mark can't be supplied with this specification. |
| | | 5 | Max pointer*2 Verification standard inspection mark can't be supplied with this specification. | 6 | Set pointer (External adjust)*2 Verification standard inspection mark can't be supplied with this specification. |
| ⑦ | Glass | 0 | Standard Inorganic glass*3 | 1 | Organic glass |
| | | 2 | Tempered glass | 3 | Non-glare treatment glass |
| | | 6 | Non-frost coat treatment glass | | Others |
| ⑧ | Treatment | 0 | Nil | 1 | Use no oil |
| | | 2 | Use no water | 3 | Use no oil & water |
| ⑨ | Throttle screw | 0 | Nil | 1 | FS10-011 or FS10-013 Corrosion-proof use |
| | | 3 | FS10-081 (With pipe) | | |
| ⑩ | Other additional spec. | 0 | Nil | 1 | Required (Please specify the desired documents separately.) Verification standard inspection mark, dial scale*4, case color, movement |
| ⑭ | Class | J | JIS specification | | |
| ⑮ | Document | 0 | Nil | 1 | Required (Please specify the desired documents separately.) Submission drawings, instruction manual, inspection procedure, mill sheet, test report (1 pc 1 copy), inspection / traceability certificate, attended inspection |

③Wetted parts material

| Purpose | Connecting part | Bourdon tube | Connecting method |
|-----------------------|-----------------|---|--|
| 1 General use | CAC203 | For the gauge with pressure ratings of 2.5MPa or lower: •General type, Vibration-proof type C6872 •Steam use, Steam use & Vibration-proof type SUS316 For the gauge with pressure ratings of 4MPa or higher: SUS316 | Soldered for brass parts combination Silver soldered for brass and SUS316 combination |
| 2 Ammonia use | | | |
| 3 Corrosion-proof use | SCS14 | SUS316 | Tig-welding |

Please specify applicable range code as well as pressure range and engineering unit.

*1 JIS marked thread is available only for the gauge with JIS pipe thread.

*2 Max pointer specification
Range of manufacturability: Pressure gauges; 0.25MPa or higher
Compound; -0.1 to 0.1MPa or higher
Vacuum; Cannot be manufactured

Set pointer with
External adjust

*3 The gauge comes standard with organic glass for gauge with pressure ratings of 10MPa or higher

*4 Customized dial: Capacity scale, dual scale, tag number, characters, colored circle, colored wire

* Specify by code "X" if there is no applicable specification.

φ 150 Process Industrial Pressure Gauge

Model number configuration

Please specify the model number, each specs and the range for ordering.

Model

B G 1 5

———

×

—

×

—

×

—

J

Process Industrial Pressure Gauges (φ 150)

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮

Model number

Selective spec.

Additional spec. (Option)

| | | | | |
|-----------------------------|---|--|---|----------|
| ① Mounting | 1 | Back connection Type D (Mounting clamp) Metal case | | |
| | 2 | Back connection Type D (Mounting hole) Metal case | | |
| ② Connection | 3 | G3/8B | 8 | R3/8 |
| | 4 | G1/2B | 9 | R1/2 |
| | 6 | 1/2NPT*1 | | Others*1 |
| ③ Wetted parts material | 1 | General use | 40MPa or higher is cannot be manufactured | |
| | 2 | Ammonia use | SUS | |
| | 3 | Corrosion-proof use | SUS | |
| ④ Pressure range (MPa) | 1 | 0 to 40kPa, 0 to 0.06 | | |
| | 2 | -0.1 to 0.1, 0.16, 0.25, 0.4, 0.6, 1, 1.6, 2.5 Compound | | |
| | 3 | -0.1 to 0, 0 to 0.1, 0.16, 0.25, 0.4, 0.6, 1, 1.6, 2.5 | | |
| | 4 | 0 to 4, 6, 10 | | |
| | 5 | 0 to 16, 25 | | |
| | 6 | 0 to 40, 60 | Corrosion-proof use | |
| | 7 | 0 to 100 | Corrosion-proof use | |
| ⑤ Performance | 0 | Standard | | |
| | A | M: Steam use | | |
| | B | H: Heat-proof type | | |
| | C | V: Vibration-proof type | | |
| | D | MV: Steam use & Vibration-proof type | | |
| | E | HV: Heat-proof & Vibration-proof type | | |
| | 3 | Accuracy: JIS1.0 (0.1MPa or higher)*2 | | |
| ⑥ Pointer | 0 | Standard | | |
| | 1 | Zero adjustable (Micro meter type) Verification standard inspection mark can't be supplied with this specification. | | |
| | 2 | Zero adjustable (Spring type) Verification standard inspection mark can't be supplied with this specification. | | |
| | 5 | Max pointer*3 | | |
| | 6 | Set pointer*3 | | |
| | | Verification standard inspection mark can't be supplied with this specification. | | |
| ⑦ Glass | 0 | Standard Inorganic glass*4 | | |
| | 1 | Organic glass Not available in H, HV specification. | | |
| | 2 | Tempered glass | | |
| | 3 | Non-glare treatment glass | | |
| | 6 | Non-frost coat treatment glass | | |
| | | Others | | |
| ⑧ Treatment | 0 | Nil | | |
| | 1 | Use no oil | | |
| | 2 | Use no water | | |
| | 3 | Use no oil & water | | |
| ⑨ Throttle screw | 0 | Nil | | |
| | 1 | FS10-011 or FS10-013 Corrosion-proof use | | |
| | 3 | FS10-081 (With pipe) | | |
| ⑩ Other additional spec. | 0 | Nil | | |
| | 1 | Required (Please specify the desired documents separately.) Verification standard inspection mark, dial scale*5, case color, movement | | |
| ⑭ Class | J | JIS specification | | |
| ⑮ Document | 0 | Nil | | |
| | 1 | Required (Please specify the desired documents separately.) Submission drawings, instruction manual, inspection procedure, mill sheet, test report (1 pc 1 copy), inspection / traceability certificate, attended inspection | | |

③ Wetted parts material

| Purpose | Connecting part | Bourdon tube | Connecting method |
|---|-----------------|---|--|
| 1 General use (Not available for gauge requiring over 25MPa.) | CAC203 | For the gauge with pressure ratings of 2.5MPa or lower: •General type, Vibration-proof type C6872 •Steam use, Heat-proof type, Steam use & Vibration-proof type, Heat-proof & Vibration-proof type SUS316 For the gauge with pressure ratings of 4MPa or higher: SUS316 | Soldered for brass parts combination Silver soldered for brass and SUS316 combination |
| 2 Ammonia use | SCS14 | SUS316 | Tig-welding |
| 3 Corrosion-proof use | SCS14 | SUS316 | Tig-welding |

*1 JIS marked thread is available only for the gauge with JIS pipe thread.

***2 Verification standard inspection mark cannot be attached to JIS1.0 product.**

*3 Max pointer specification
Range of manufacturability: Pressure gauges; 0.25MPa or higher
Compound; -0.1 to 0.1MPa or higher
Vacuum; Cannot be manufactured

Set pointer with
Scale plate swage specification

*4 The gauge comes standard with organic glass for gauge with pressure ratings of 10MPa or higher
(This standard shall not apply to H&HV type gauge).

*5 Customized dial: Capacity scale, dual scale, tag number, characters, colored circle, colored wire

* Specify by code "X" if there is no applicable specification.

Model number configuration

Please specify the model number, each specs and the range for ordering.

Model: **B L 1 5** — [] [] [] — **0** [] [] [] [] [] [] [] [] [] [] [] [] [] [] []

Process Industrial Pressure Gauges (φ300) ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮

| Model number | | Selective spec. | | Additional spec. (Option) | |
|--------------------------|---------------|--|----------|---------------------------|--|
| ① Mounting | 1 | Back connection Type D (Mounting clamp) | | | |
| | 2 | Back connection Type D (Mounting hole) | | | |
| ② Connection | 4 | G1/2B | | | |
| | 9 | R1/2 | | | |
| ③ Wetted parts material | 1 | General use | | | |
| | 2 | Ammonia use | | SUS | |
| | 3 | Corrosion-proof use | | SUS | |
| ④ Pressure range (MPa) | 2 | -0.1 to 0.1, 0.16, 0.25, 0.4, 0.6, 1, 1.6, 2.5 Compound | | | |
| | 3 | -0.1 to 0, 0 to 0.1, 0.16, 0.25, 0.4, 0.6, 1, 1.6, 2.5 | | | |
| | 4 | 0 to 4, 6, 10 | | | |
| | 5 | 0 to 16, 25 | | | |
| | ⑤ Performance | 0 | Standard | | |
| ⑥ Pointer | 0 | Standard | | | |
| | 2 | Zero adjustable (Spring type) | | | |
| ⑦ Glass | 0 | Standard Inorganic glass*1 | | | |
| | 1 | Organic glass | | | |
| ⑧ Treatment | 0 | Nil | | | |
| | 1 | Use no oil | | | |
| | 2 | Use no water | | | |
| | 3 | Use no oil & water | | | |
| ⑨ Throttle screw | 0 | Nil | | | |
| | 1 | FS10-011 or FS10-013 Corrosion-proof use | | | |
| | 3 | FS10-081 (With pipe) | | | |
| ⑩ Other additional spec. | 0 | Nil | | | |
| | 1 | Required (Please specify the desired documents separately.) Dial scale*2, case color, movement | | | |
| ⑭ Class | J | JIS1.6 equivalent*3 | | | |
| ⑮ Document | 0 | Nil | | | |
| | 1 | Required (Please specify the desired documents separately.) Submission drawings, instruction manual, inspection procedure, mill sheet, test report (1 pc 1 copy), inspection / traceability certificate, attended inspection | | | |

Please specify applicable range code as well as pressure range and engineering unit.

| Purpose | Connecting part | Bourdon tube | Connecting method |
|-----------------------|-----------------|--------------|-------------------|
| 1 General use | CAC203 | SUS316 | Silver soldering |
| 2 Ammonia use | SCS14 | | Tig-welding |
| 3 Corrosion-proof use | | | |

Verification standard inspection mark cannot be attached.

* Specify by code "X" if there is no applicable specification.

*1 The gauge comes standard with organic glass for gauge with pressure ratings of 10MPa or higher

*2 Customized dial: Capacity scale, dual scale, tag number, characters, colored circle, colored wire

*3 φ300 is not available for JIS mark.