

Ningbo GC Bob Instrument Co., Ltd.

Diaphragm Seals



Administrator

2014/4/13



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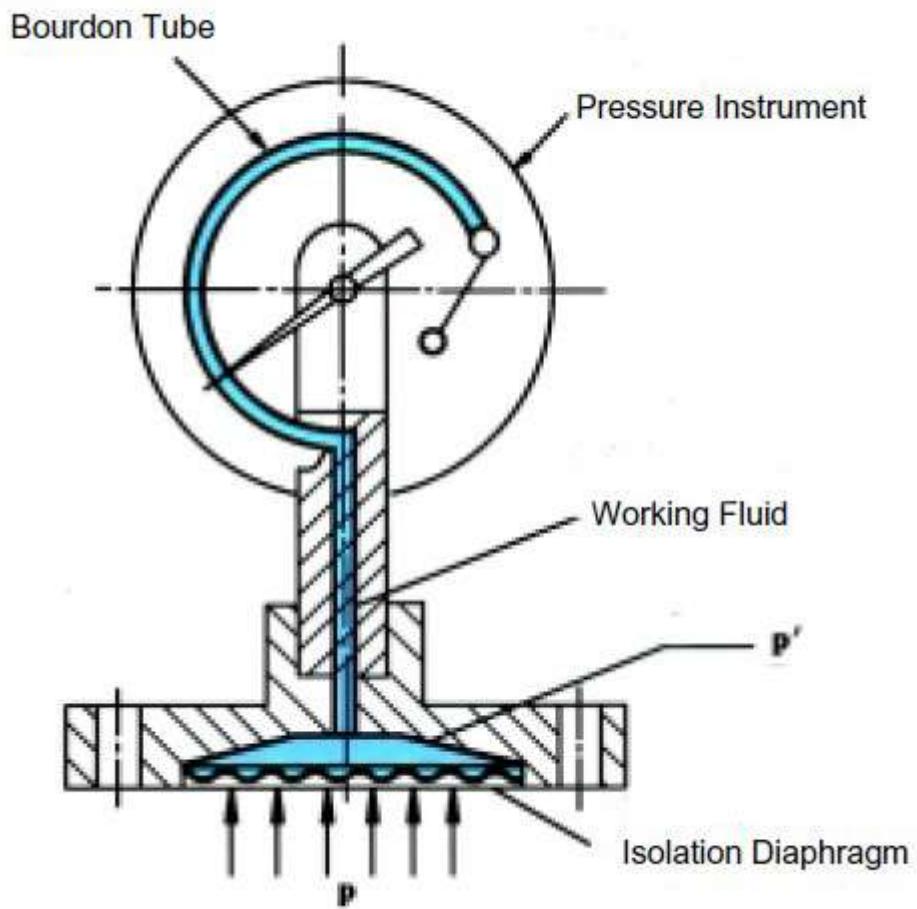
Brief:

Series YTP diaphragm pressure gauge (chemical seals) is composed of a conventional pressure measuring instrument, a connector and a diaphragm seal. This combination enables a general purpose pressure gauge to measure media of strong corrosion, high temperature, high viscosity, containing suspended matter or crystallizing. Diaphragm gauges are universally used in petrochemical, alkali, chemical fiber, pharmaceutical, metallurgical, and food industries.



Configuration Principle

This illustration shows the operating principle of the diaphragm pressure gauge. The diaphragm is deflected by the pressure of medium P , and an equivalent pressure P' is generated. With transmitting through working fluid, the pressure P' deflects the elastic element of a pressure measuring instrument which thereafter shows the pressure value.

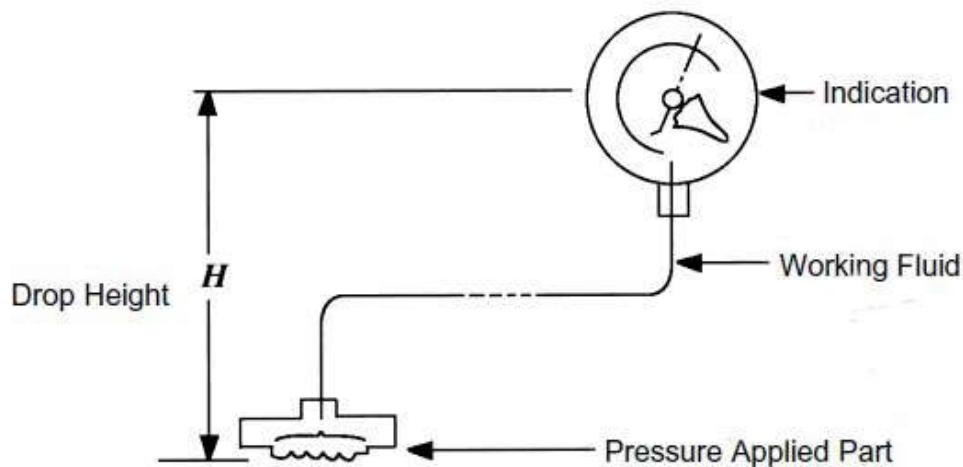




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Level Difference of diaphragm pressure gauge seals liquid

When a diaphragm pressure gauge is mounted with pressure gauge and diaphragm seal at different positions, the effect of level difference should be taken into consideration (especially for a diaphragm gauge with capillary). As the illustration shows, with a S.G. of the working fluid at approx. 1, and a level difference of 1m, the pressure difference is approx. 0.01MPa/cm².



$$\text{Level Difference} = d \cdot H$$

d — S.G. of Working Fluid
H — Drop Height



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The temperature influence of a diaphragm pressure gauge

The temperature influence of a diaphragm pressure gauge is relative to expansion coefficient of the seals working fluid, rigidity of the diaphragm, and temperature of pressed part.

When working temperature deviates from $20 \pm 5^\circ\text{C}$, the indication varies within $0.1\%/\text{C}$ for rigid system, and within $0.1+0.025L\%/\text{C}$ (L -length of capillary in m.) for flexible system(remote mounting). Diaphragm pressure gauges are filled with suitable working fluid according to different operating conditions.



| Name of Working Fluid | Temperature range for diaphragm equipment | g/cm ² Specific Gravity | 1/C Factor of Expansion | Purpose |
|---------------------------------|---|---------------------------------------|----------------------------|-------------------------------|
| Glycerin-Water Solution | -5-100 °C | 1.27 | 0.61×10^{-3} | Food |
| Silicon (low viscosity) | -40-130 °C | 0.94 | 1.08×10^{-3} | General |
| Silicon (high viscosity) | -30-240 °C | 1.07 | 0.95×10^{-3} | High Temperature |
| Fluorocarbon Oil | -30-160 °C | 1.93 | 0.75×10^{-3} | Hydrogen, Oxygen, Salts, Acid |
| Vegetable Oil | -5-100 °C | 0.93 | 1.03×10^{-3} | Food |
| or other special working fluid. | | | | |



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Products

Diaphragm Seals With Threaded Connection



Specifications

Range: FMH 0-10/0-40MPa

FMM 0-1/0-10MPa

FMS -1-0/0-0.6MPa

Accuracy: (add to instrument accuracy) \pm 0.5% for direct mounting;

\pm 1% for dampeners, over pressure protector, distance transmission and so on.

Working Temperature: -45-+150°C

Diaphragm material: Hastelloy B, Hastelloy C, Tantalum, Titanium, Monel 316L PTEE coated

Wetted material: 321, 304, 316L (or+PTFE)

Connection: Thread M20*1.5, 1/2" NPT other on request



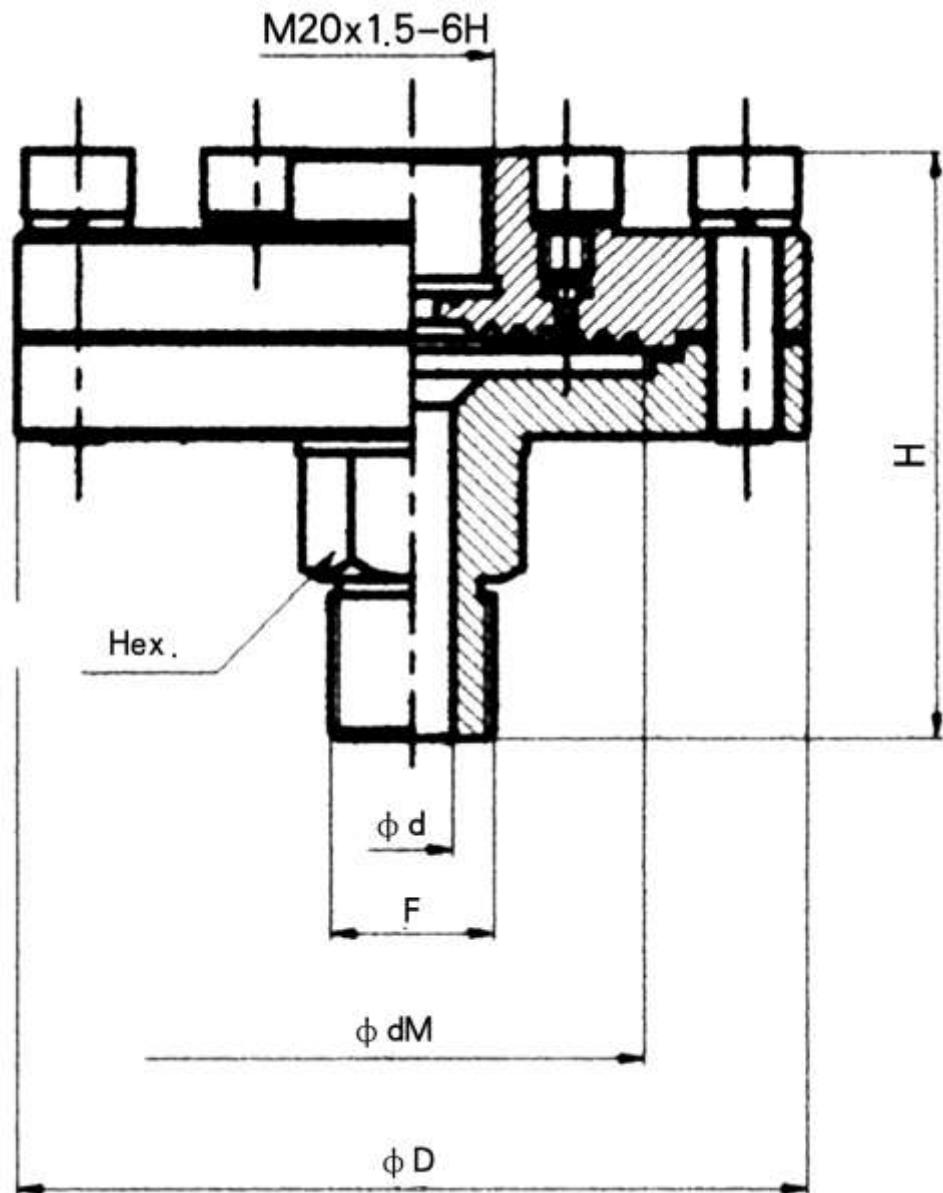
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Filling liquid: As different media, optional fluorocarbon oil, -60-+120°C, Food oil, -20-+200°C

DIMENSIONS (mm)

φ dM=56, range: -0.1 ~ 0 / 0 ~ 4MPa

φ dM=36, range: 0 ~ 1.6 / 0 ~ 40MPa





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| D | H | Φ dM | F | d | Hex. |
|------|----|------|-------------------|----|------|
| 97 | 75 | 56 | M20x1.5/.../G1/2" | 10 | 24 |
| 77 | 70 | 36 | M20x1.5/.../G1/2" | 10 | 17 |
| 61.5 | 60 | 36 | M14x1.5/.../G1/4" | 6 | 17 |



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I-Shape Flange



Specifications

Range: ϕ $d_m=56$ -0.1 ~ 0 / 0 ~ 40MPa

ϕ $d_m=36$ 0 ~ 1.6 / 10 ~ 40MPa

Accuracy: (add to instrument accuracy) \pm 0.5% for direct mounting;

\pm 1% for dampeners, over pressure protector, distance transmission and so on.

Working Temperature: -45~+150°C

Diaphragm material: Hastelloy B, Hastelloy C, Tantalum, Titanium, Monel 316L PTEE coated

Wetted material: 321, 304, 316L (or+PTFE)

Connection: Thread M20*1.5, 1/2" NPT other on request

Filling liquid: Silicone oil, fluorocarbon oil, Food oil

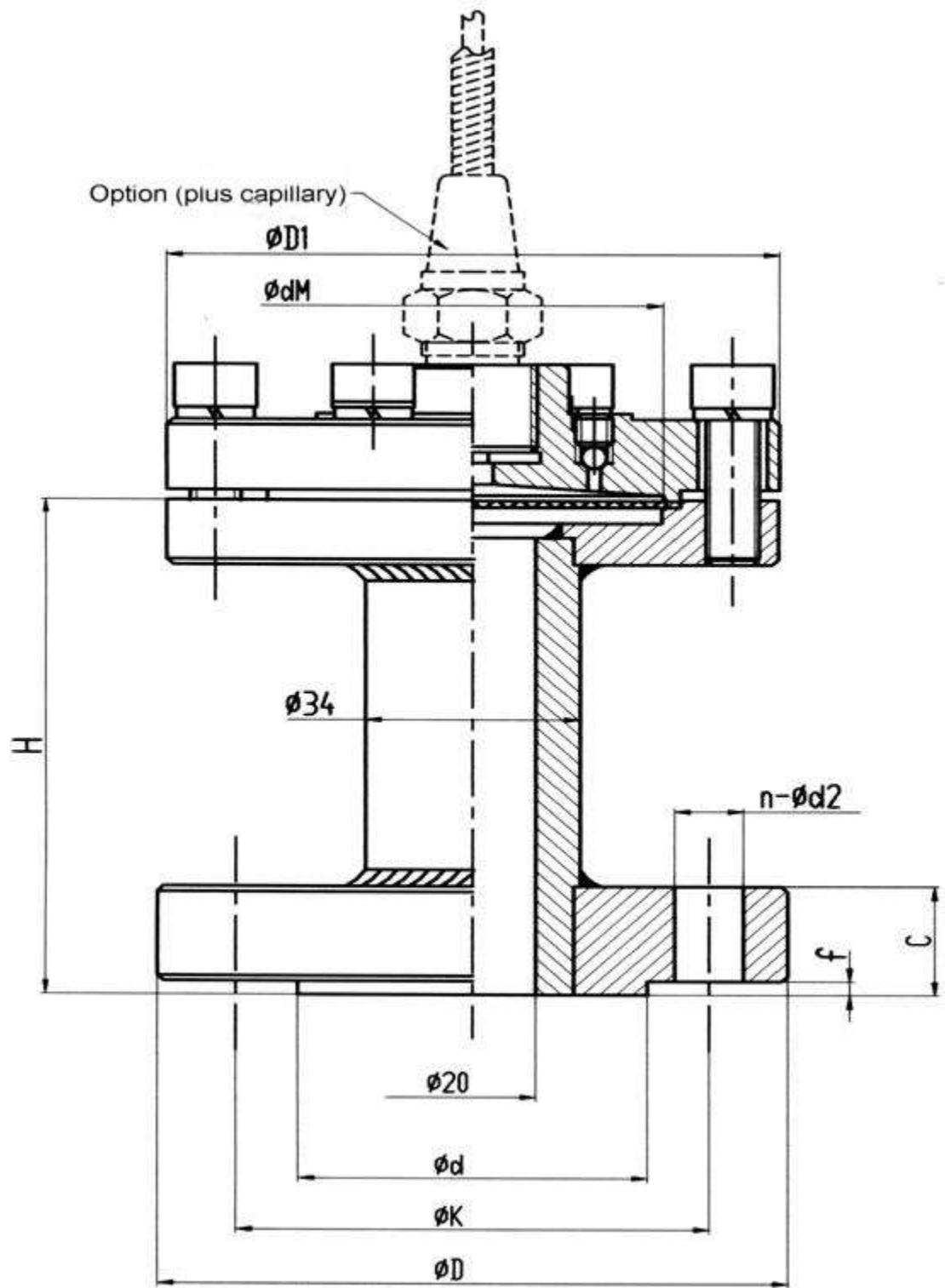


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DIMENSIONS (mm)

φ dM=56, range: -0.1 ~ 0 / 0 ~ 4MPa

φ dM=36, range: 0 ~ 1.6 / 0 ~ 40MPa

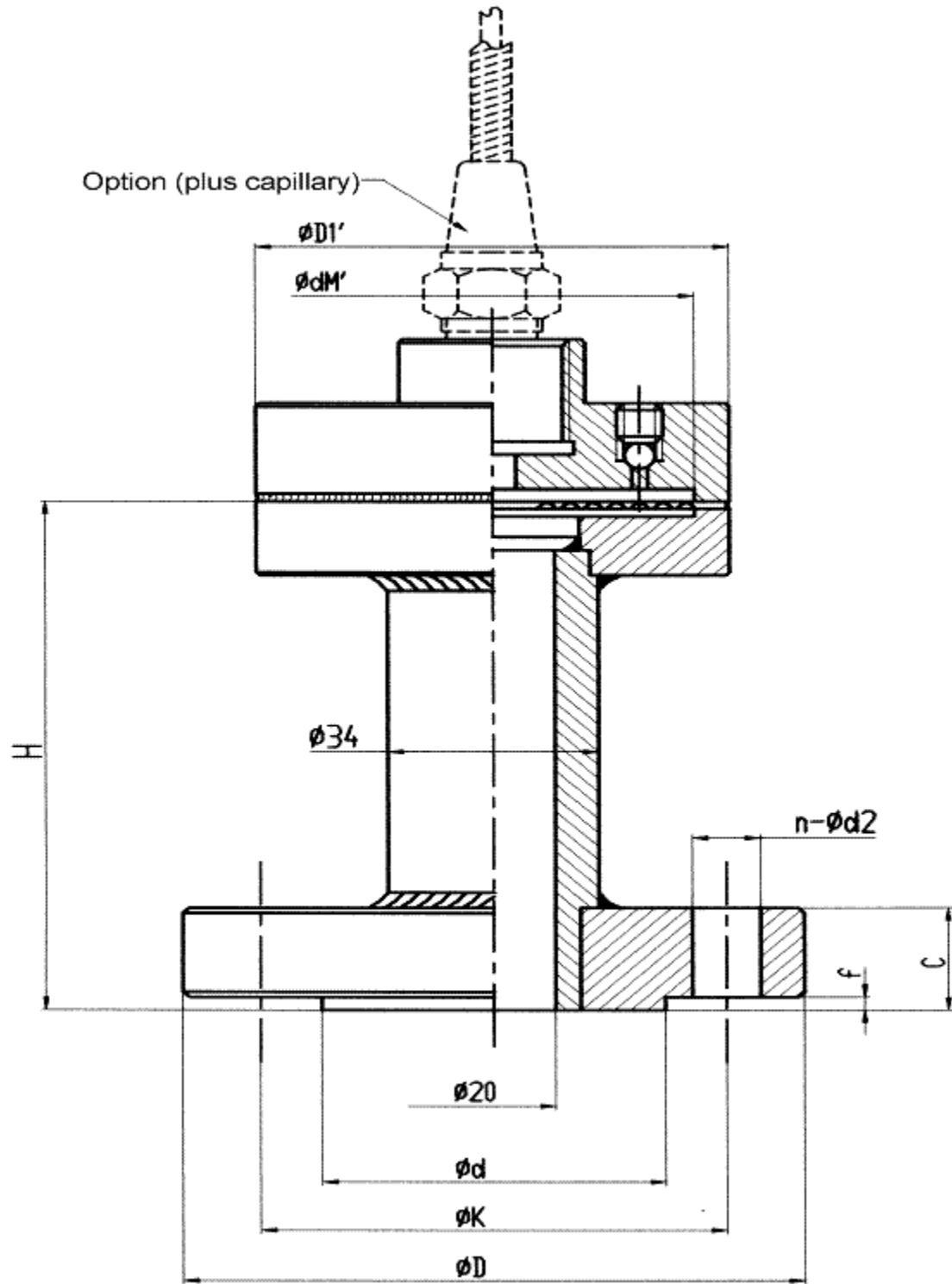




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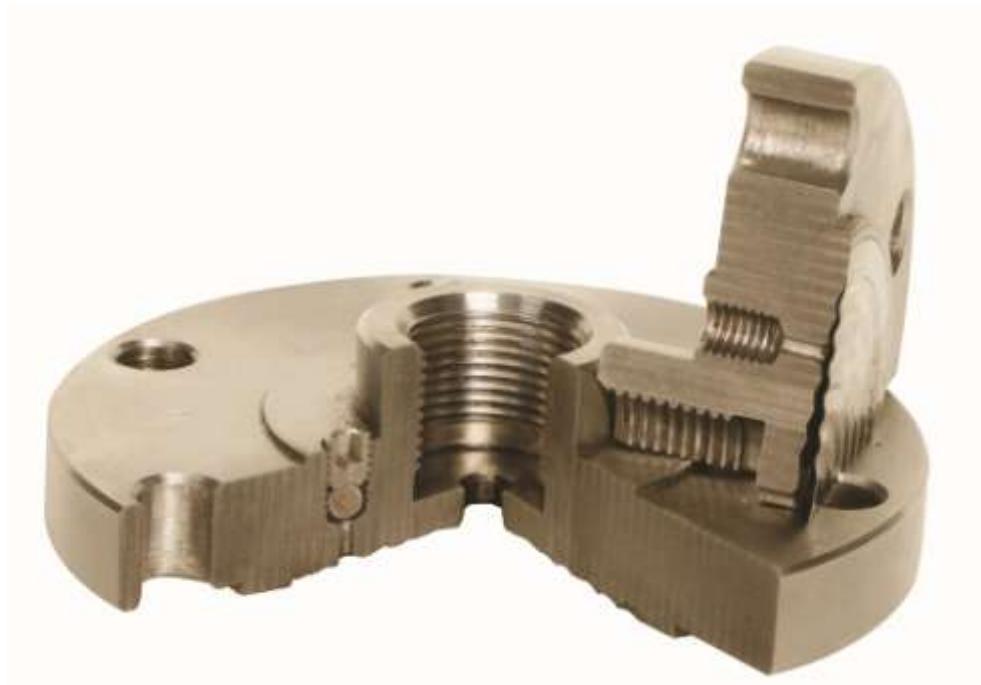
φ dM=49, range: -0.1 ~ 0 / 0 ~ 4MPa

φ dM=30, range: 0 ~ 1.6 / 0 ~ 40MPa





Open Flange



Specifications

Range: 0-0.03/0-40MPa

Accuracy: (add to instrument accuracy) \pm 0.5% for direct mounting; \pm 1% for dampeners over pressure protector, distance transmission and so on.

Working Temperature: -45-+150°C

Diaphragm material: Hastelloy B, Hastelloy C, Tantalum, Titanium, Monel 316L PTEE coated

Flange material: 321, 304, 316L

Instrument connection: Thread M20*1.5, 1/2" NPT other on request

Flange standard: GB/T9113.1-9121.3-2000

JB/T74-85-1994

HG20592-20621-1997

ANSI B 16.5

DIN 2501

Filling liquid: Silicone oil, fluorocarbon oil, Food oil

Capillary: max length 6m, material 321 covered with 321 armour, other on request



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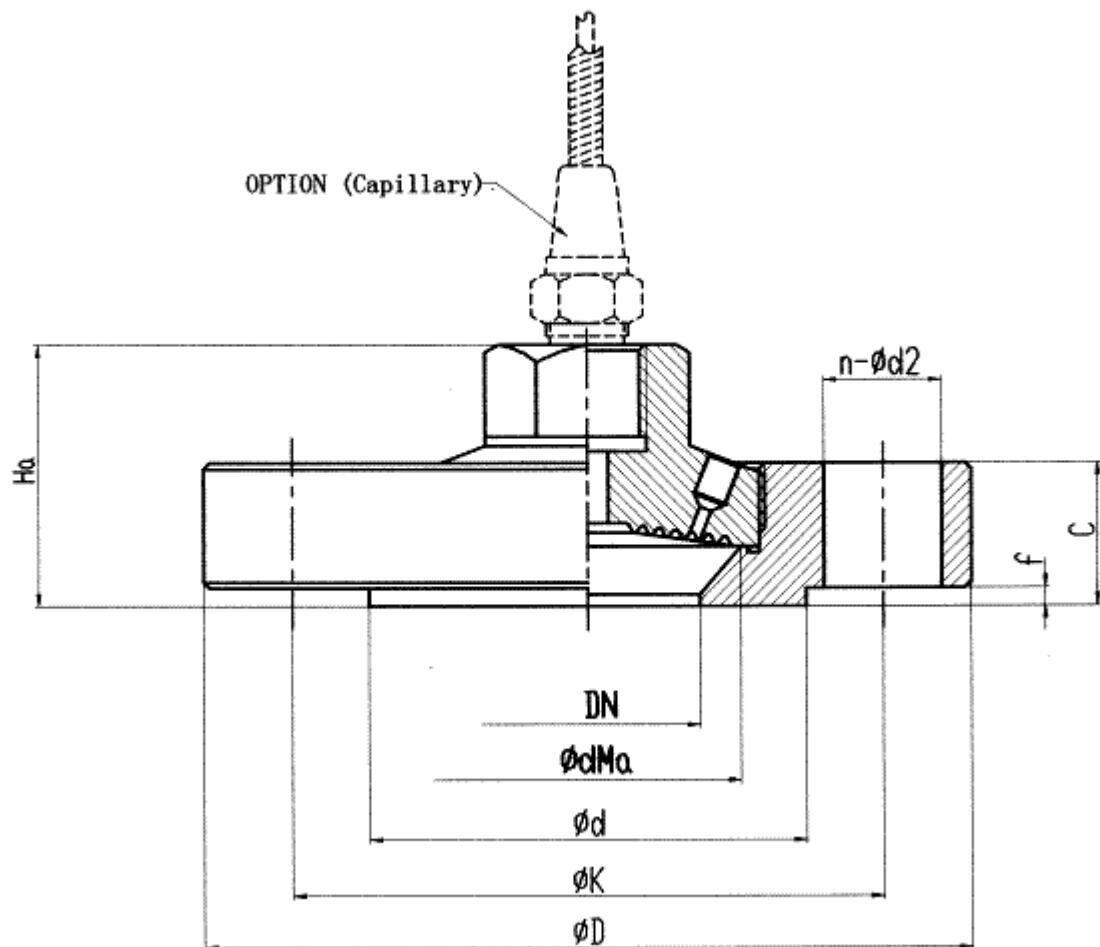




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DIMENSIONS (mm)

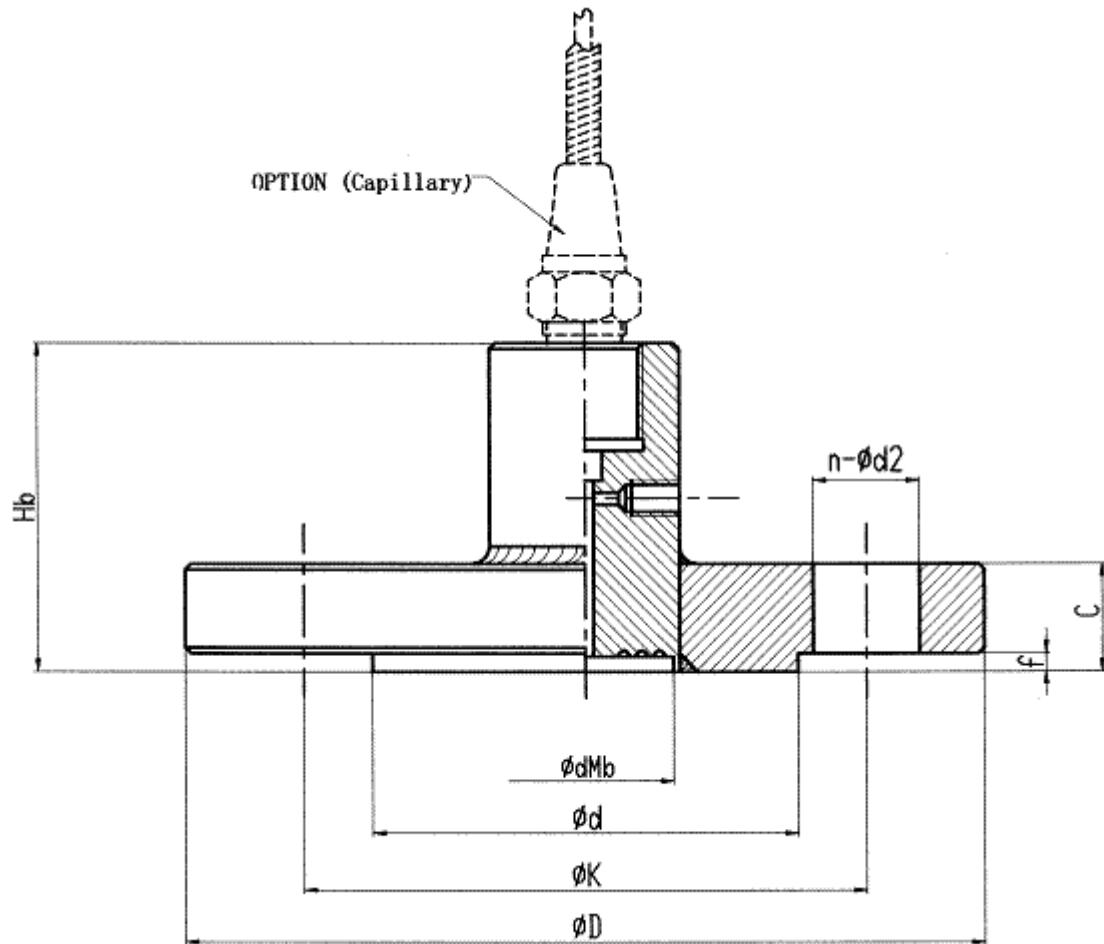
F2A DN \geq 25 或 DN \geq 1"





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F2B DN ≥ 15 或 DN $\geq 3/4"$



[GB/T 9123.1-2000]



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| DN [in.] | PN [class] | (DIMENSION) [mm] | | | | | | | A style | | B style | |
|-------------|---------------|---------------------|----|----|-------|---|-----|---|---------|----|---------|----|
| | | D | C | d2 | K | f | d | n | dMa | Ha | dMb | Hb |
| 15 | 10/40 | 95 | 14 | 14 | 65 | 2 | 46 | 4 | - | - | 30 | 40 |
| 20 | 10/40 | 105 | 16 | 14 | 75 | 2 | 56 | 4 | - | - | 30 | 40 |
| 25 | 10/40 | 115 | 16 | 14 | 85 | 2 | 65 | 4 | 49 | 40 | 49 | 40 |
| 40 | 10/40 | 150 | 18 | 18 | 110 | 2 | 84 | 4 | 49/75 | 40 | 49 | 40 |
| | 63/100 | 170 | 26 | 22 | 125 | 2 | 84 | 4 | 36 | 46 | 30 | 60 |
| | 160 | 170 | 36 | 22 | 125 | 2 | 84 | 4 | 36 | 56 | 30 | 75 |
| | 260 | 180 | 39 | 29 | 124 | 7 | 73 | 4 | 36 | 59 | 30 | 75 |
| 50 | 420 | 205 | 52 | 32 | 146 | 7 | 73 | 4 | 36 | 72 | 30 | 85 |
| | 10/40 | 165 | 20 | 18 | 125 | 2 | 99 | 4 | 49/75 | 40 | 49 | 40 |
| | 63 | 180 | 26 | 22 | 135 | 2 | 99 | 4 | 36 | 46 | 30 | 60 |
| | 100 | 195 | 28 | 26 | 145 | 2 | 99 | 4 | 36 | 48 | 30 | 60 |
| | 160 | 195 | 38 | 26 | 145 | 2 | 99 | 4 | 36 | 58 | 30 | 75 |
| 80 | 260 | 215 | 46 | 26 | 165 | 7 | 92 | 8 | 36 | 66 | 30 | 80 |
| | 420 | 235 | 58 | 29 | 171.5 | 7 | 92 | 8 | 36 | 78 | 30 | 85 |
| | 10/16 | 200 | 20 | 18 | 160 | 2 | 132 | 8 | 49/75 | 40 | 49 | 40 |
| | 25/40 | 200 | 24 | 18 | 160 | 2 | 132 | 8 | 49/75 | 44 | 49 | 40 |
| | 63 | 215 | 28 | 22 | 170 | 2 | 132 | 8 | 36 | 48 | 30 | 60 |
| | 100 | 230 | 32 | 26 | 180 | 2 | 132 | 8 | 36 | 52 | 30 | 60 |

[ANSI B16.5]

| DN [in.] | PN [class] | (DIMENSION) [mm] | | | | | | | A style | | B style | |
|-------------|---------------|---------------------|------|----|-------|-----|-----|---|---------|----|---------|----|
| | | D | C | d2 | K | f | d | n | dMa | Ha | dMb | Hb |
| 1/2 | 150 | 90 | 14 | 16 | 60.5 | 1.6 | 35 | 4 | - | - | - | - |
| | 300 | 95 | 16 | 16 | 66.5 | 1.6 | 35 | 4 | - | - | - | - |
| 3/4 | 150 | 100 | 16 | 16 | 70 | 1.6 | 43 | 4 | - | - | 30 | 55 |
| | 300 | 120 | 18 | 20 | 82.5 | 1.6 | 43 | 4 | - | - | 30 | 55 |
| 1 | 150 | 110 | 16 | 16 | 79.5 | 1.6 | 51 | 4 | 49 | 40 | 30 | 55 |
| | 300 | 125 | 18 | 20 | 89 | 1.6 | 51 | 4 | 49 | 40 | 30 | 55 |
| | 600 | 125 | 24 | 20 | 89 | 6.4 | 51 | 4 | 49 | 44 | 30 | 65 |
| | 900/1500 | 150 | 37 | 26 | 101.5 | 6.4 | 51 | 4 | 30 | 57 | 30 | 75 |
| 1 1/2 | 150 | 130 | 22 | 16 | 98.5 | 1.6 | 73 | 4 | 49/56 | 42 | 49 | 60 |
| | 300 | 155 | 22 | 22 | 114.5 | 1.6 | 73 | 4 | 49 | 42 | 49 | 60 |
| | 600 | 155 | 29.5 | 22 | 114.5 | 6.4 | 73 | 4 | 49 | 50 | 49 | 70 |
| | 900/1500 | 180 | 39 | 30 | 124 | 6.4 | 73 | 4 | 49 | 59 | 49 | 75 |
| 2 | 150 | 150 | 20 | 20 | 120.5 | 1.6 | 92 | 4 | 49/56 | 40 | 49 | 60 |
| | 300 | 165 | 22.5 | 20 | 127 | 1.6 | 92 | 8 | 49 | 43 | 49 | 60 |
| | 600 | 165 | 32 | 20 | 127 | 6.4 | 92 | 8 | 36 | 52 | 30 | 70 |
| | 900/1500 | 215 | 45 | 26 | 165 | 6.4 | 92 | 8 | 36 | 65 | 30 | 75 |
| 3 | 150 | 190 | 24 | 20 | 152.5 | 1.6 | 127 | 4 | 49/56 | 44 | 49 | 70 |
| | 300 | 210 | 29 | 22 | 168.5 | 1.6 | 127 | 8 | 49/56 | 49 | 49 | 75 |
| | 600 | 210 | 38.5 | 22 | 168.5 | 6.4 | 127 | 8 | 36 | 59 | 30 | 85 |
| | 900 | 240 | 45 | 26 | 190.5 | 6.4 | 127 | 8 | 36 | 65 | 30 | 90 |
| | 1500 | 270 | 54.5 | 33 | 203 | 6.4 | 127 | 8 | 36 | 75 | 30 | 95 |
| 4 | 150 | 230 | 24 | 20 | 190.5 | 1.6 | 158 | 8 | 49/56 | 44 | 49 | 70 |
| | 300 | 255 | 32 | 22 | 200 | 1.6 | 158 | 8 | 49/56 | 52 | 49 | 75 |
| | 600 | 275 | 45 | 26 | 200 | 6.4 | 158 | 8 | 36 | 65 | 30 | 85 |
| | 900 | 295 | 51 | 32 | 235 | 6.4 | 158 | 8 | 36 | 71 | 30 | 95 |
| | 1500 | 310 | 60.5 | 36 | 241.5 | 6.4 | 158 | 8 | 36 | 81 | 30 | 95 |



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Angle Adjustable



Specifications

Range: 0-0.03/0-40MPa

Accuracy: (add to instrument accuracy) \pm 0.5% for direct mounting; \pm 1% for dampeners over pressure protector, distance transmission and so on.

Working Temperature: -45-+150°C

Diaphragm material: Hastelloy B, Hastelloy C, Tantalum, Titanium, Monel 316L PTEE coated

Flange material: 321, 304, 316L

Instrument connection: Thread M20*1.5, 1/2" NPT other on request

Flange standard: GB/T9113.1-9121.3-2000

JB/T74-85-1994

HG20592-20621-1997

ANSI B 16.5

DIN 2501

Filling liquid: Silicone oil, fluorocarbon oil, Food oil

Capillary: max length 6m, material 321 covered with 321 armour, other on request



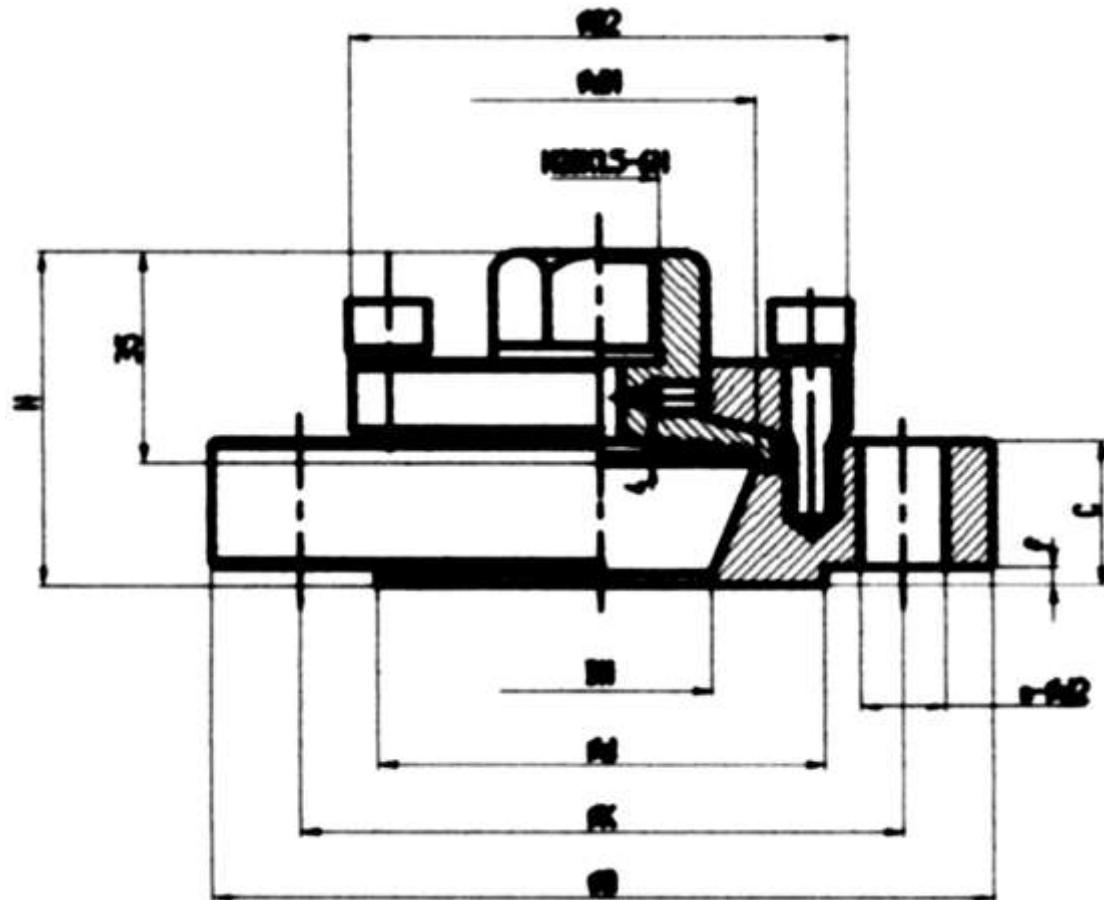
Ningbo GC Bob Instrument Co., Ltd.

DIMENSIONS (mm)

Open flange

A style DN ≥ 25 or DN $\geq 1"$
ϕ dM=56/49, range: -0.1 ~ 0 / 0 ~ 4MPa
ϕ dM=36/30, range: 0 ~ 1.6 / 0 ~ 40MPa

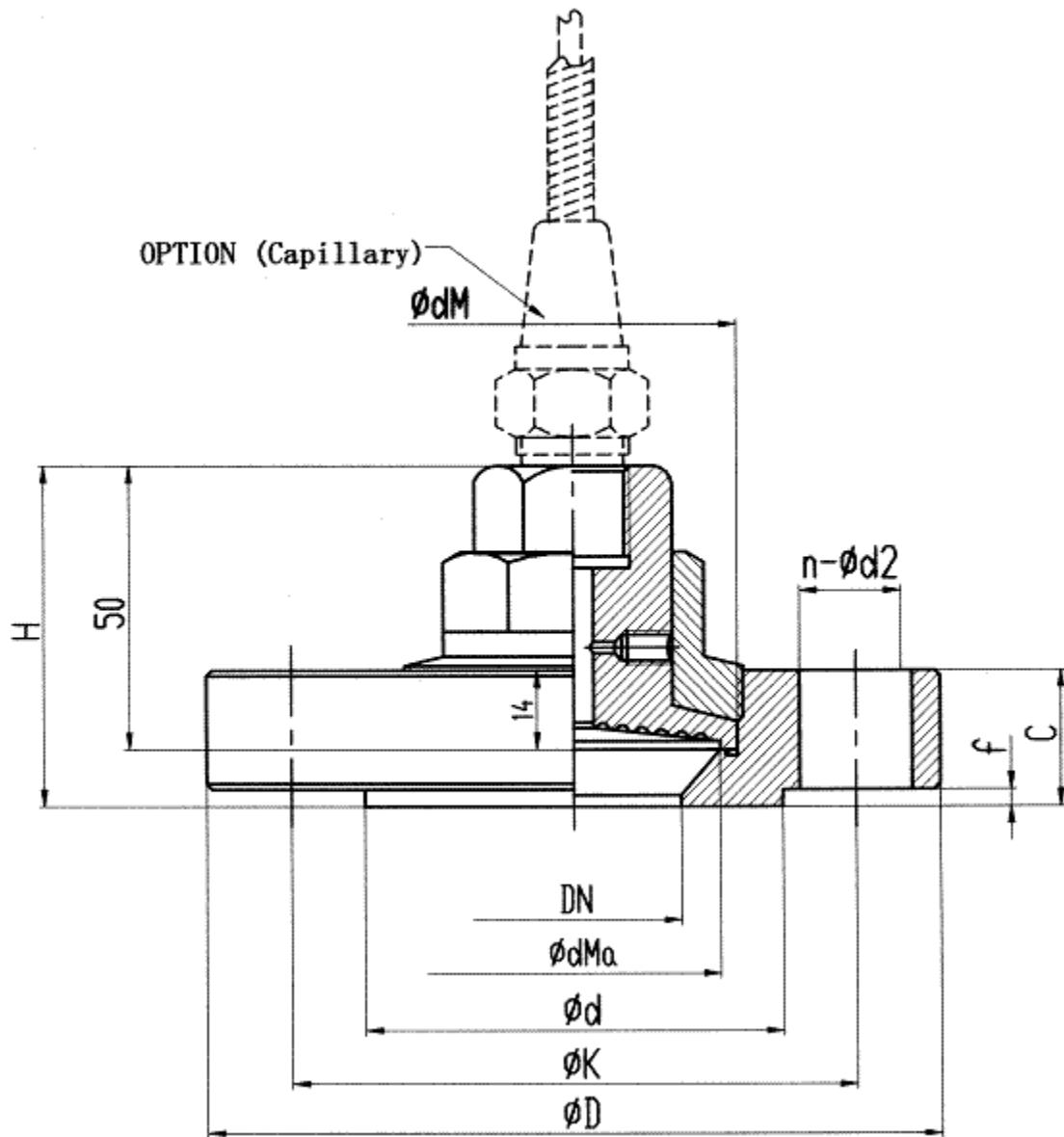
A style DN ≥ 40 or DN $\geq 2"$





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A style DN \geq 25 or DN \geq 1"





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Flange [GB/T 9123.1-2000]

| DN [mm] | PN [bar] | (DIMENSION) [mm] | | | | | | | dM | H |
|------------|-------------|---------------------|----|----|-------|---|-----|---|-------|----|
| | | D | C | d2 | K | f | d | n | | |
| 40 | 10/40 | 150 | 18 | 18 | 110 | 2 | 84 | 4 | 49/75 | 49 |
| | 63/100 | 170 | 26 | 22 | 125 | 2 | 84 | 4 | 36 | 57 |
| | 160 | 170 | 36 | 22 | 125 | 2 | 84 | 4 | 36 | 67 |
| | 260 | 180 | 39 | 29 | 124 | 7 | 73 | 4 | 36 | 70 |
| | 420 | 205 | 52 | 32 | 146 | 7 | 73 | 4 | 36 | 83 |
| 50 | 10/40 | 165 | 20 | 18 | 125 | 2 | 99 | 4 | 49/75 | 51 |
| | 63 | 180 | 26 | 22 | 135 | 2 | 99 | 4 | 36 | 57 |
| | 100 | 195 | 28 | 26 | 145 | 2 | 99 | 4 | 36 | 59 |
| | 160 | 195 | 38 | 26 | 145 | 2 | 99 | 4 | 36 | 69 |
| | 260 | 215 | 46 | 26 | 165 | 7 | 92 | 8 | 36 | 77 |
| | 420 | 235 | 58 | 29 | 171.5 | 7 | 92 | 8 | 36 | 89 |
| 80 | 10/16 | 200 | 20 | 18 | 160 | 2 | 132 | 8 | 49/75 | 51 |
| | 25/40 | 200 | 24 | 18 | 160 | 2 | 132 | 8 | 36 | 55 |
| | 63 | 215 | 28 | 22 | 170 | 2 | 132 | 8 | 36 | 59 |
| | 100 | 230 | 32 | 26 | 180 | 2 | 132 | 8 | 36 | 63 |

Flange [ANSI B16.5]

| DN [mm] | PN [bar] | (DIMENSION) [mm] | | | | | | | dM | H |
|------------|-------------|---------------------|------|----|-------|-----|-----|---|-------|-----|
| | | D | C | d2 | K | f | d | n | | |
| 1 1/2 | 300 | 155 | 22 | 22 | 114.5 | 1.6 | 73 | 4 | 49 | 53 |
| | 600 | 155 | 29.5 | 22 | 114.5 | 6.4 | 73 | 4 | 49 | 61 |
| | 900/1500 | 180 | 39 | 30 | 124 | 6.4 | 73 | 4 | 49 | 70 |
| 2 | 150 | 150 | 20 | 20 | 120.5 | 1.6 | 92 | 4 | 49/56 | 51 |
| | 300 | 165 | 22.5 | 20 | 127 | 1.6 | 92 | 8 | 49 | 54 |
| | 600 | 165 | 32 | 20 | 127 | 6.4 | 92 | 8 | 36 | 63 |
| | 900/1500 | 215 | 45 | 26 | 165 | 6.4 | 92 | 8 | 36 | 76 |
| 3 | 150 | 190 | 24 | 20 | 152.5 | 1.6 | 127 | 4 | 49/56 | 55 |
| | 300 | 210 | 29 | 22 | 168.5 | 1.6 | 127 | 8 | 36 | 60 |
| | 600 | 210 | 38.5 | 22 | 168.5 | 6.4 | 127 | 8 | 36 | 70 |
| | 900 | 240 | 45 | 26 | 190.5 | 6.4 | 127 | 8 | 36 | 76 |
| | 1500 | 270 | 54.5 | 33 | 203 | 6.4 | 127 | 8 | 30 | 86 |
| | 2500 | 305 | 72.5 | 36 | 228.5 | 6.4 | 127 | 8 | 30 | 104 |



Ningbo GC Bob Instrument Co., Ltd.

Extended Diaphragm Seals With Flanged Connection



Specifications

Range: 0-0.06/0-40MPa

Accuracy: (add to instrument accuracy) \pm 0.5% for direct mounting; \pm 1% for dampeners, over pressure protector, distance transmission and so on.

Working Temperature: -45-+150°C

Diaphragm material: Hastelloy B, Hastelloy C, Tantalum, Titanium, Monel 316L PTEE coated

Flange material: 321, 304, 316L

Instrument connection: Thread M20*1.5, 1/2" NPT other on request

Flange standard: GB/T9113.1-9121.3-2000

JB/T74-85-1994

HG20592-20621-1997

ANSI B 16.5

DIN 2501

Extension: 0-300mm

Filling liquid: Silicone oil, fluorocarbon oil, Food oil

Capillary: max length 6m, material 321 covered with 321armour, other on request



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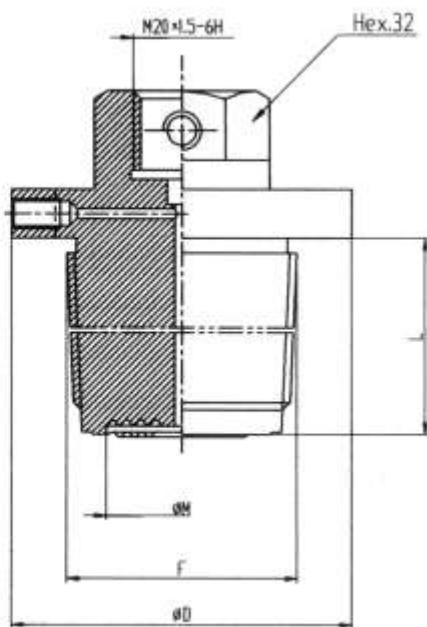
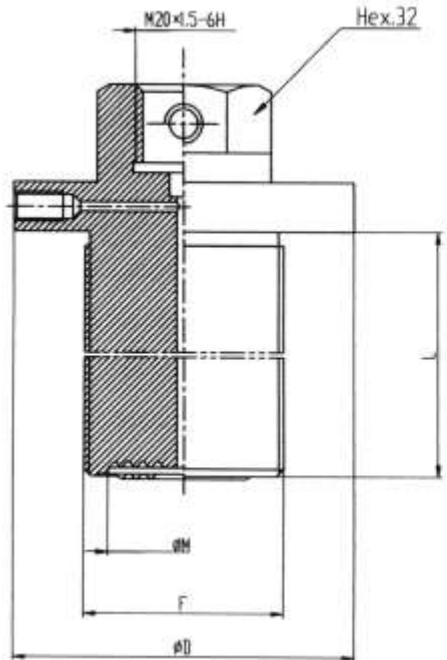




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DIMENSIONS (mm)

F5 A style DN \geq 40 or DN \geq 2"



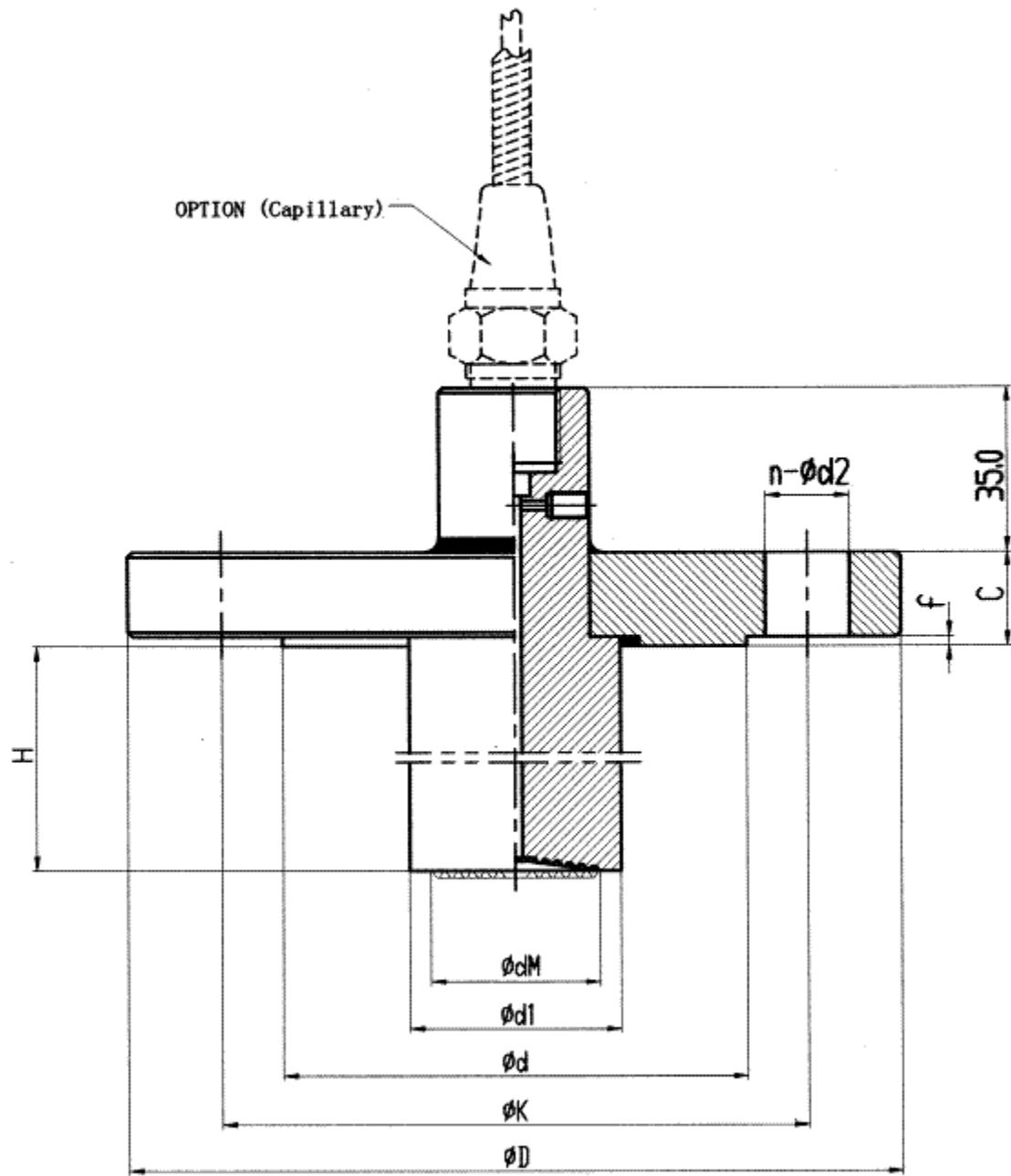
| F | L | D | M |
|---------------------|-------|----|----|
| G1" | 10~50 | 50 | 19 |
| G1, $\frac{1}{4}$ " | 10~50 | 70 | 31 |
| G1, $\frac{1}{2}$ " | 10~50 | 70 | 31 |
| G2" | 10~50 | 70 | 31 |

| F | L | D | M |
|-----------------------|-------|----|----|
| NPT1" | 10~40 | 50 | 19 |
| NPT1, $\frac{1}{4}$ " | 10~40 | 52 | 31 |
| NPT1, $\frac{1}{2}$ " | 10~40 | 70 | 31 |
| NPT2" | 10~40 | 70 | 31 |



Ningbo GC Bob Instrument Co., Ltd.

F5 B style





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Flange [GB/T 9123.1-2000]

| DN [mm] | PN [bar] | (DIMENSION) [mm] | | | | | | | dM | H |
|------------|-------------|---------------------|----|----|-----|---|-----|---|-------|--------|
| | | D | C | d2 | K | f | d | n | | |
| 40 | 10/40 | 150 | 18 | 18 | 110 | 2 | 84 | 4 | 30 | 10~150 |
| | 63/100 | 170 | 26 | 22 | 125 | 2 | 84 | 4 | 30/19 | 10~150 |
| 50 | 10/40 | 165 | 20 | 18 | 125 | 2 | 99 | 4 | 36/30 | 10~150 |
| | 63 | 180 | 26 | 22 | 135 | 2 | 99 | 4 | 19 | 10~150 |
| | 100 | 195 | 28 | 26 | 145 | 2 | 99 | 4 | 19 | 10~150 |
| 80 | 10/16 | 200 | 20 | 18 | 160 | 2 | 132 | 8 | 49 | 10~150 |
| | 25/40 | 200 | 24 | 18 | 160 | 2 | 132 | 8 | 36/30 | 10~150 |
| | 63 | 215 | 28 | 22 | 170 | 2 | 132 | 8 | 19 | 10~150 |
| | 100 | 230 | 32 | 26 | 180 | 2 | 132 | 8 | 19 | 10~150 |

Flange [ANSI B16.5]

| DN [mm] | PN [bar] | (DIMENSION) [mm] | | | | | | | dM | H |
|------------|-------------|---------------------|------|----|-------|-----|-----|---|----|--------|
| | | D | C | d2 | K | f | d | n | | |
| 1 1/2 | 150 | 130 | 22 | 16 | 98.5 | 2 | 73 | 4 | 30 | 10~150 |
| | 300 | 155 | 22 | 22 | 114.5 | 1.6 | 73 | 4 | 30 | 10~150 |
| | 600 | 155 | 29.5 | 22 | 114.5 | 6.4 | 73 | 4 | 30 | 10~150 |
| | 900/1500 | 180 | 39 | 30 | 124 | 6.4 | 73 | 4 | 19 | 10~150 |
| 2 | 150 | 150 | 20 | 20 | 120.5 | 1.6 | 92 | 4 | 36 | 10~150 |
| | 300 | 165 | 22.5 | 20 | 127 | 1.6 | 92 | 8 | 36 | 10~150 |
| | 600 | 165 | 32 | 20 | 127 | 6.4 | 92 | 8 | 30 | 10~150 |
| | 900/1500 | 215 | 45 | 26 | 165 | 6.4 | 92 | 8 | 19 | 10~150 |
| 3 | 150 | 190 | 24 | 20 | 152.5 | 1.6 | 127 | 4 | 49 | 10~150 |
| | 300 | 210 | 29 | 22 | 168.5 | 1.6 | 127 | 8 | 36 | 10~150 |
| | 600 | 210 | 38.5 | 22 | 168.5 | 6.4 | 127 | 8 | 30 | 10~150 |
| | 900 | 240 | 45 | 26 | 190.5 | 6.4 | 127 | 8 | 19 | 10~150 |
| | 1500 | 270 | 54.5 | 33 | 203 | 6.4 | 127 | 8 | 19 | 10~150 |
| | 2500 | 305 | 72.5 | 36 | 228.5 | 6.4 | 127 | 8 | 19 | 10~150 |



Ningbo GC Bob Instrument Co., Ltd.

Sanitary diaphragm seals



Specifications

Range: FNH (0-10/0-40MPa)

FNM (0-1/0-10MPa)

FNS (-1-0/0-0.6MPa)

Accuracy: (add to instrument accuracy) \pm 0.5% for direct mounting;

\pm 1% for dampeners over pressure protector, distance transmission and so on.

Working Temperature: -45-+150°C

Diaphragm material: Hastelloy B, Hastelloy C, Tantalum, Titanium, Monel 316L PTEE coated

Wetted material: 321, 304, 316L (or+PTFE)

Connection: Thread M20*1.5, 1/2" NPT, other on request

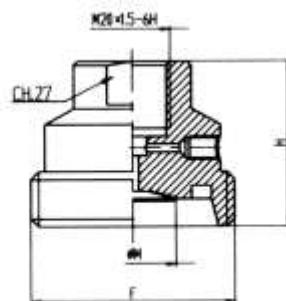
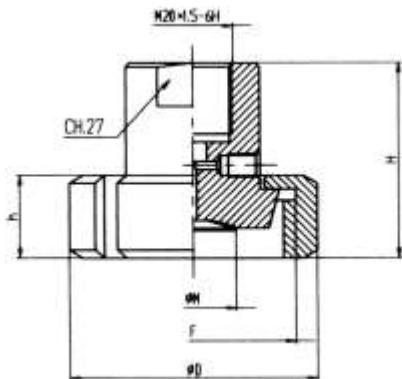
Filling liquid: Silicone oil, fluorocarbon oil, Food oil.





Ningbo GC Bob Instrument Co., Ltd.

DIMENSIONS (mm)



DIN 11851

| DN | H | h | D | M | F(DIN405) |
|----|------|----|-----|----|-----------|
| 25 | 49.5 | 21 | 63 | 22 | Rd52x1/6 |
| 32 | 48 | 21 | 71 | 32 | Rd58x1/6 |
| 40 | 50 | 21 | 78 | 36 | Rd65x1/6 |
| 50 | 50 | 22 | 92 | 47 | Rd78x1/6 |
| 80 | 55 | 29 | 127 | 71 | Rd110x1/4 |

DIN 11851

| DN | H | M | F(DIN405) |
|----|----|----|-----------|
| 25 | 42 | 22 | Rd52x1/6 |
| 32 | 42 | 32 | Rd58x1/6 |
| 40 | 42 | 36 | Rd65x1/6 |
| 50 | 42 | 47 | Rd78x1/6 |
| 80 | 42 | 71 | Rd110x1/4 |

SMS

| DN | H | h | D | M | F(DIN405) |
|------|----|----|----|------|-----------|
| 1.5" | 55 | 25 | 74 | 30 | Rd60x1/6 |
| 2" | 53 | 26 | 84 | 44.5 | Rd70x1/6 |

SMS

| DN | H | M | F(DIN405) |
|------|----|------|-----------|
| 1.5" | 43 | 30 | Rd60x1/6 |
| 2" | 43 | 44.5 | Rd70x1/6 |

RJT/APV

| DN | H | h | D | M | F(Withworth) |
|------|----|----|--------|------|--------------|
| 1.5" | 49 | 22 | Hex.65 | 30 | 1.5" RJT-F |
| 2" | 49 | 22 | Hex.79 | 44.5 | 2" RJT-F |

RJT/APV

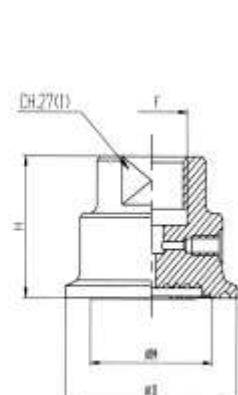
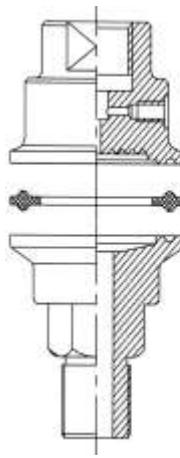
| DN | H | M | F(Withworth) |
|------|------|------|--------------|
| 1.5" | 47.8 | 30 | 1.5" RJT-M |
| 2" | 47.8 | 44.5 | 2" RJT-M |

IDF/ISS

| DN | H | h | D | M | F(ACME) |
|------|------|----|--------|------|------------|
| 1.5" | 54.5 | 30 | Hex.64 | 30 | 1.5" IDF-F |
| 2" | 54.5 | 30 | Hex.77 | 44.5 | 2" IDF-F |

IDF/ISS

| DN | H | M | F(ACME) |
|------|----|------|------------|
| 1.5" | 45 | 30 | 1.5" IDF-M |
| 2" | 45 | 44.5 | 2" IDF-M |



| Size \ Parameter | H | D | M | F |
|------------------|----|------|----|------------|
| 1" | 42 | 42 | 19 | M8x1-6H |
| 1.5" | 35 | 50.5 | 30 | M20x1.5-6H |
| 2" | 35 | 64 | 36 | M20x1.5-6H |
| 2.5" | 35 | 77.5 | 47 | M20x1.5-6H |
| 3" | 35 | 91 | 72 | M20x1.5-6H |



Ningbo GC Bob Instrument Co., Ltd.

Welded One-piece Diaphragm Seals



Specifications

Range: FMH 0-10/0-40MPa

FMM 0-1/0-10MPa

FMS: -1-0/0-0.6MPa

Accuracy: (add to instrument accuracy)

± 0.5% for

direct mounting; ± 1% for dampeners

over pressure protector, distance transmission and so on.

Working Temperature: -45+150°C

Diaphragm material: Hastelloy B, Hastelloy C, Tantalum, Titanium, Monel 316L

Body material: 321, 304, 316L, PTEE coated

Connection: Thread M20*1.5, 1/2" NPT, other on request

Filling liquid: Silicone oil, fluorocarbon oil, food oil.





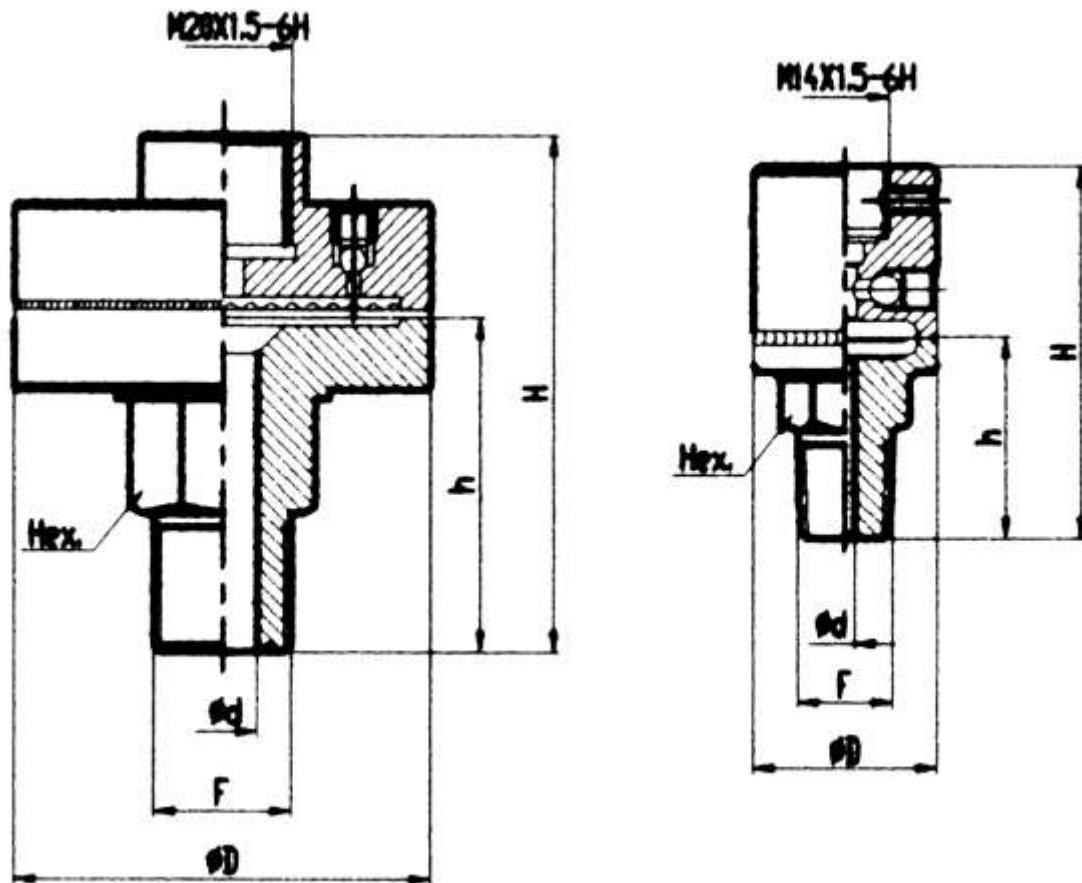
Ningbo GC Bob Instrument Co., Ltd.





Ningbo GC Bob Instrument Co., Ltd.

DIMENSIONS (mm)



| D | Φ dM | F | d | Hex. | h | H |
|------|-----------|-------------------|----|------|----|----|
| 67.5 | 56 | M20x1.5/.../G1/2" | 10 | 24 | 50 | 75 |
| 60 | 49 | M20x1.5/.../G1/2" | 6 | 24 | 50 | 75 |
| 44 | 36 | M14x1.5/.../G1/4" | 6 | 24 | 50 | 75 |

| D | Φ dM | F | Hex. | h | H |
|----|-----------|---------|------|----|----|
| 27 | 19 | M20x1.5 | 27 | 27 | 52 |
| 27 | 19 | NPT1/2" | 27 | 29 | 54 |
| 27 | 19 | G1/4" | 19 | 31 | 56 |



Ningbo GC Bob Instrument Co., Ltd.

In-Line-Type Diaphragm Seals To Fit Standard Flanges



Specifications:

Range: 0-0.06/0-40MPa

Accuracy: (add to instrument accuracy)

± 0.5% for direct mounting; ± 1% for dampeners over pressure protector, distance transmission and so on.

Working Temperature: -45-+150°C

Diaphragm Material: 316L

Body material: 316

Process connection: Thread M20*1.5, 1/2" NPT

Flange standard: GB/T9113.1-9121.3-2000

JB/T74-85-1994

HG20592-20621-1997

ANSI B 16.5

DIN 2501

Filling liquid: Silicone oil

Application:

Direct, permanent installation in pipelines, for flowing media, especially for dead space measuring points



Ningbo GC Bob Instrument Co., Ltd.

In Line Diaphragm Seals



Specifications

Range: 0-0.06/0-25MPa(see the table)

Accuracy: (add to instrument accuracy)

± 0.5% for direct mounting; ± 1% for dampeners over pressure protector, distance transmission and so on.

Working Temperature: -45-+150°C

Diaphragm material: Hastelloy B, Hastelloy C, Tantalum, Titanium, Monel 316L PTEE coated

Wetted material: 316+PTEE

Process connection: welded other on request

Standard: ANSI B36.1

Filling liquid: Silicone oil, fluorocarbon oil, Food oil

Capillary: max length 6m, material 321 covered with 321armour, other on request

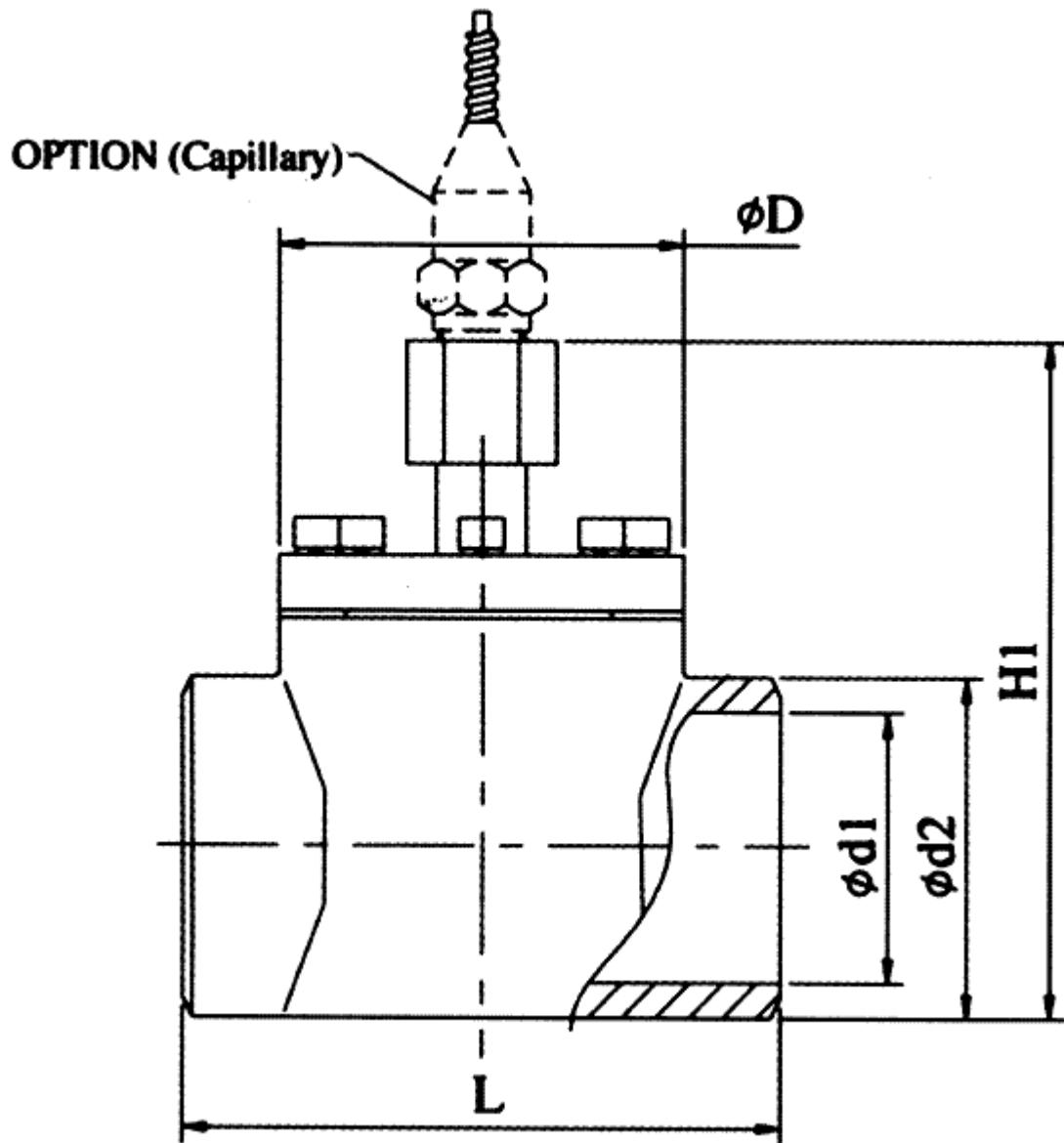
Hold temperature: Threaded connection, Thread can be made request

DIMENSIONS (mm)

Standard Welded Type



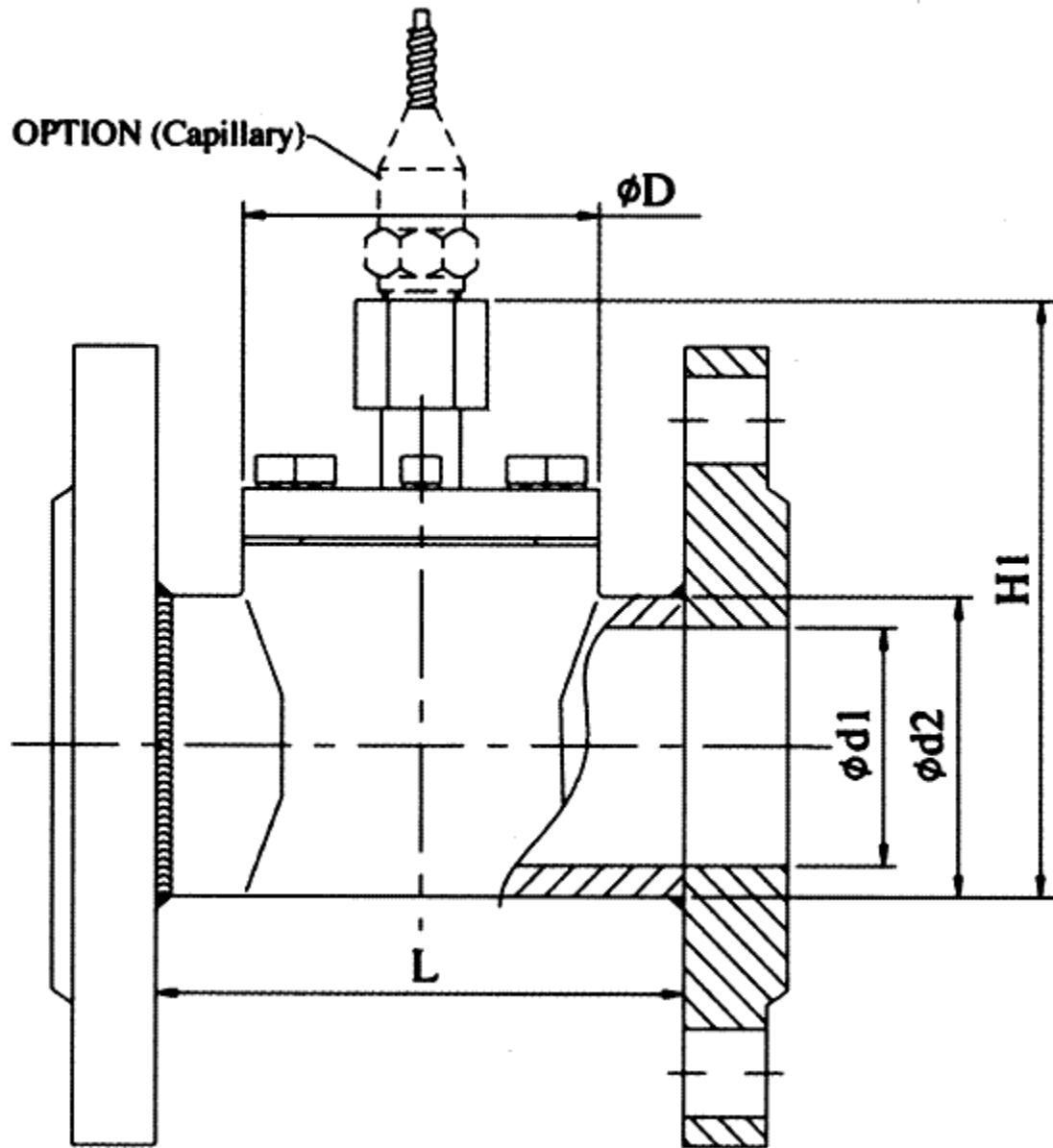
Ningbo GC Bob Instrument Co., Ltd.



Standard Flanged Type



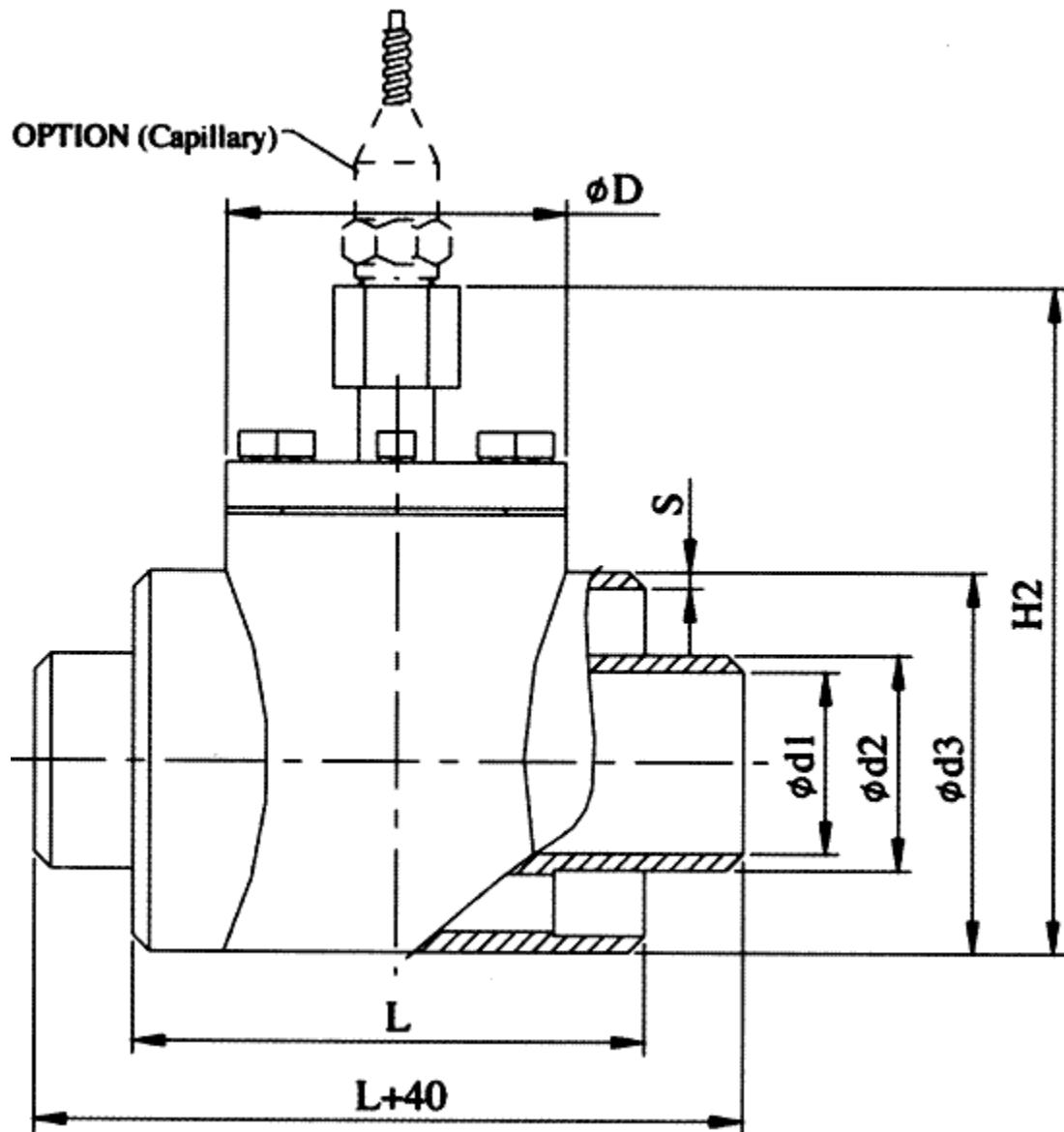
Ningbo GC Bob Instrument Co., Ltd.



Hold Temperature Welded Type



Ningbo GC Bob Instrument Co., Ltd.



(GB/T9123.1-2000)

| DN [mm] | PN [MPa] | | | DIMENSION [mm] | | | | | | | |
|------------|--------------|--------------|--------------|-------------------|-----|-----|----|-----|-----|-------|-----|
| | Max 150°C | Max 300°C | Max 400°C | L | H1 | H2 | D | d1 | d2 | d3 | S |
| 15 | 25 | 22 | 20 | 122 | 85 | 100 | 82 | 16 | 28 | 42.4 | 2.6 |
| 25 | 20 | 17 | 16 | 122 | 95 | 118 | 82 | 26 | 38 | 60.3 | 2.6 |
| 40 | 20 | 17 | 16 | 122 | 112 | 146 | 82 | 42 | 54 | 88.9 | 3.2 |
| 50 | 16 | 13 | 12 | 122 | 122 | 146 | 82 | 52 | 64 | 88.9 | 3.2 |
| 80 | 14 | 11 | 10 | 122 | 153 | 172 | 82 | 82 | 96 | 114.3 | 4.0 |
| 100 | 12 | 9 | 8 | 122 | 174 | 226 | 82 | 102 | 118 | 168.3 | 4.5 |



Cell-Type Diaphragm Seals



Specifications

Range: 0-0.06/0-40MPa

Accuracy: (add to instrument accuracy) \pm 0.5% for direct mounting; \pm 1% for dampeners over pressure protector, distance transmission and so on.

Working Temperature: -45-+150°C

Diaphragm material: Hastelloy B, Hastelloy C, Tantalum, Titanium, Monel 316L

Body material: 321, 304, 316L, PTEE coated

Instrument connection: Thread M20*1.5, 1/2" NPT, other on request

Flange standard: GB/T9113.1-9121.3-2000

JB/T74-85-1994

HG20592-20621-1997

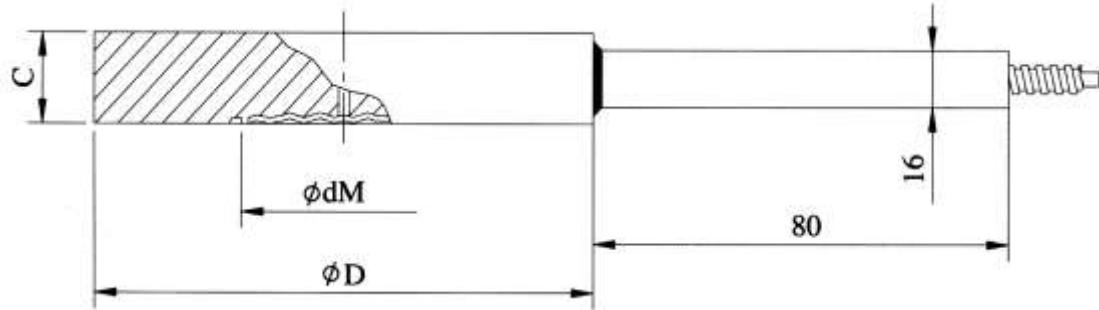
ANSI B 16.5

DIN 2501

Filling liquid: Silicone oil, fluorocarbon oil, Food oil.

Capillary: max length 6m, material 321 covered with 321armour, other on request

DIMENSIONS (mm)





Ningbo GC Bob Instrument Co., Ltd.

Flange (GB/T9123.1-2000)

| DN [mm] | PN [bar] | DIMENSION [mm] | | |
|------------|-------------|-------------------|-----|----|
| | | dM | D | C |
| 50 | 6...420 | 60 | 102 | 20 |
| 80 | 6...420 | 78 | 138 | 20 |
| 100 | 6...420 | 78 | 162 | 20 |

Flange (ANDI B 16.5)

| DN [in.] | PN [class] | DIMENSION [mm] | | |
|-------------|---------------|-------------------|-----|------|
| | | dM | D | C |
| 2 | 150...2500 | 60 | 92 | 2000 |
| 3 | 150...2500 | 78 | 127 | 20 |
| 4 | 150...2500 | 78 | 158 | 20 |



Ningbo GC Bob Instrument Co., Ltd.

Threaded design, Mini seal



Specifications

Pressure rating Maximum (bar): PN 400

Process connection: 1/4", 1/2", Female

Diaphragm material: Hastelloy B, Hastelloy C, Tantalum, Titanium, Monel 316L

Body material: 321, 304, 316L, PTEE coated

Wetted material: Stainless steel

Diaphragm construction: Inside body

Process connection: 1/4", 1/2", Female

Filling liquid: Silicone oil, fluorocarbon oil, food oil.

Options/notes:

Special diaphragm or wetted parts on request

Model DCS110 without flushing port



Ningbo GC Bob Instrument Co., Ltd.

Plastic body, threaded design



Specifications

Process connection: 1/2" Male/Female

Pressure rating Maximum (bar): PN 10

Body material: Plastic

Wetted material: Viton

Diaphragm construction: Inside body

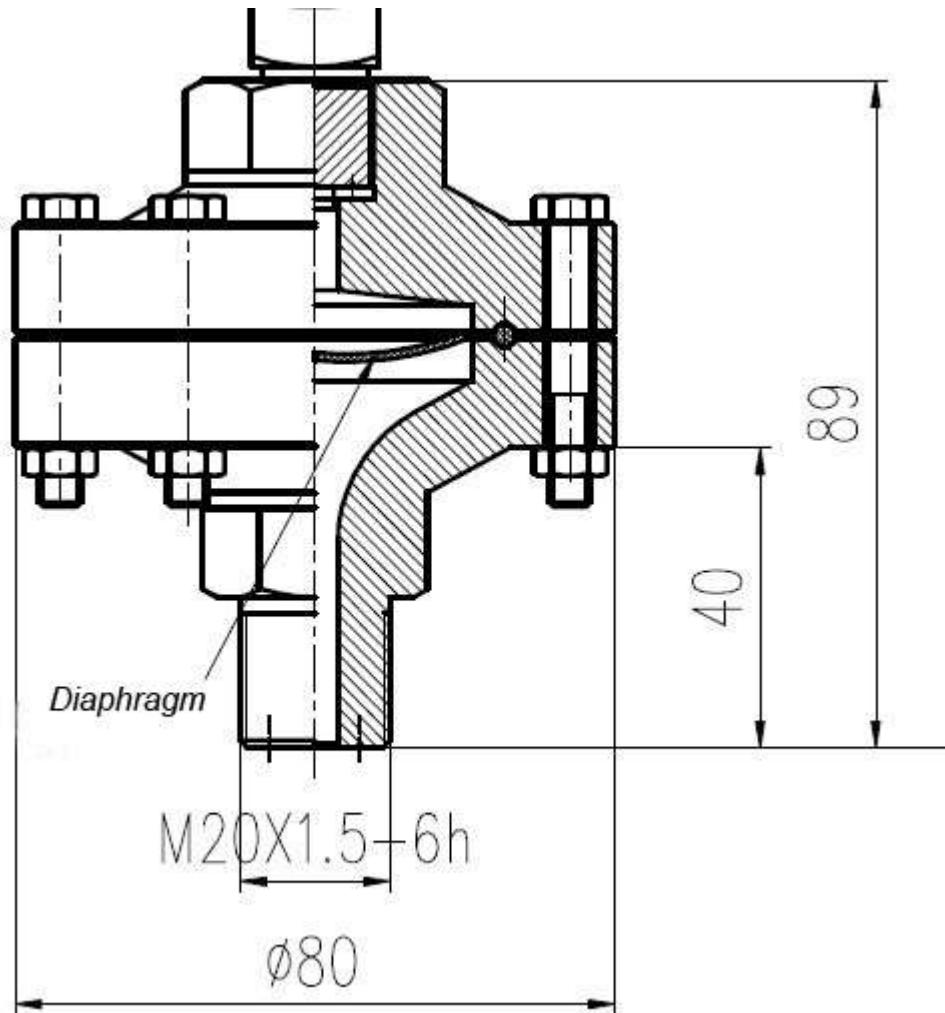
Options/notes:

Model DCS121 with stainless steel upper body, PVC lower body, stainless steel diaphragm

with PTFE foil



Ningbo GC Bob Instrument Co., Ltd.





Ningbo GC Bob Instrument Co., Ltd.

Plastic body, threaded design



Specifications

- Process connection: 1/4" female
- Pressure rating Maximum (bar): PN 10
- Body material: Plastic
- Wetted material: Viton
- Diaphragm construction: Inside body



Ningbo GC Bob Instrument Co., Ltd.

Pulp and paper industry design



Specifications

Process connection: Special flange, dia 85mm

Pressure rating Maximum (bar): PN 40

Body material: Stainless steel

Wetted material: Stainless steel

Diaphragm construction: Flush with body

Options/notes:

Pressure gauge mounting straight or with elbow



Ningbo GC Bob Instrument Co., Ltd.

Pulp and paper industry design



Specifications

Process connection: Special flange and diaphragm design

Pressure rating Maximum (bar): PN 40

Body material: Stainless steel

Wetted material: Stainless steel

Diaphragm construction: Flush with body

Options/notes:

Combine with 63mm pressure gauge



Ningbo GC Bob Instrument Co., Ltd.

Homogenizing industry design



Specifications

- Process connection: Block flange
- Pressure rating Maximum (bar): PN 600
- Body material: Stainless steel
- Wetted material: Stainless steel
- Diaphragm construction: Flush with body

Application:

Combine with bourdon tube pressure gauges for homogenizing industry



Ningbo GC Bob Instrument Co., Ltd.

Liquid level gauge

Specifications:

Process connection:

93mm OD flange

Pressure rating Maximum (bar): PN 2

Body material: Stainless steel

Wetted material: Stainless steel

Diaphragm construction: Flush with body

Options/notes:

Application:

Measure the pressure of liquid tank





Corrosion-Proof Properties of diaphragm pressure gauge

Bright Instruments Diaphragm Pressure Gauge satisfies customers' requirements of both environmental conditions and flow conditions (corrosive media) based on its significant corrosion-proof properties. Choose various pressure gauges combined with appropriate separator according to environmental conditions. Choose material of diaphragm and housing compatible with corrosive media.

Options for diaphragm material

| Corrosive media | Anti-corrosion materials | | | | | |
|-------------------------------|----------------------------|---------|------------------|---------------------|-------------------|---------------------------------|
| | Tin bronze (QSn6.5—0.4) | SUS316 | Tantalum (Ta) | Monel (Ni70Cu30) | Hastelloy (HC) | Polytetrafluoroethylene (F4) |
| Vitriol (H_2SO_4) | ✓ | △ | ○ | ✓ | ✓ | ✓ |
| Nitric acid (HNO_3) | ✗ | ✓ | ○ | ✗ | ✓ | ✓ |
| Muriatic acid (HCl) | △ | ✗ | ○ | ✗ | ✓ | ✓ |
| Phosphoric acid (H_3PO_4) | ✓ | ✓ | ○ | ✓ | ✓ | ✓ |
| Acetate (CH_3COOH) | ✓ | ✓ | ○ | ✓ | ○ | ✓ |
| Caustic soda($NaOH$) | △ | ○ | △ | ○ | ○ | ✓ |
| Pure alkali (Na_2CO_3) | ○ | ○ | ○ | ○ | ✓ | ✓ |
| Saleratus ($NaHCO_3$) | ✓ | ○ | ○ | ○ | ○ | ✓ |
| Chlorine (Cl) | D:V L:x | D:V L:x | ○ | D:V L:x | ✓ | ✓ |
| Bromine (Br_2) | D:△ L:x | D:x L:△ | ○ | D:○ L:x | ○ | ✓ |
| Ammonia (NH_3) | ✗ | ✓ | ✗ | ✗ | ○ | ✓ |
| Sea water (30% NaCl) | ✓ | ✓ | ○ | ○ | ○ | ✓ |

Remark: ○ best; △ conditional; ✓ use; ✗ no using D:Without liquid L:Fill liquid