

THE PEAK OF QUALITY

Self-Operated Control Valve ◀



TANA®



THE PEAK OF QUALITY

我们一直致力于控制阀的研发与制造
为您提供更好的服务和最佳的产品

We have always been devoted to research and development
of control valves, providing you with better
service and the best products.

www.tanamachine.com





Brief Introduction TANA

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► About us

located at China famous pump&valve TownOubei,Wenzhou. We're specialized in producing and marketing all kinds of industrial valves,pump & actuators. Our corporate Vision is to be a pipeline control specialist by supply products and help our valued customer solve their problems with excellent sales & after-sales service, and also reasonable price.

Over the years, we already have expanded our operations with team of well experienced design,manufacturing and marketing engineers. We have 100 –150 employees, around 50 sets advantaged producing equipments, which ensure our production ability. Our products have been widely application in the gas, oil, refining, chemical, marine, power generation and pipeline transmission industries. And 80% of products are supplied to Southeast Asia, the Middle East, North America, Europe and Africa, more than 30 oversea countries' we have accumulated good reputation from our clients.

Quality is at the heart of everything we do, through product development to manufacturing, supply and sale. We make products strictly according to International standards & clients' requirements, and have established quality control system to ensure us offer the high quality products.

"Keep the promise and offer the top-class products &service" is our principle, we believe that we can establish and maintain long term win-win cooperation through our mutual effort by reasonable price, good quality product and best service.

Welcome to contact us, thank you!



Advanced Manufacturing Technology **TANA**

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► Advanced equipment

The latest machining equipment, which is widely applied to manufacturing TANA valves, includes a large batch of CNC machining tools (such as machining centers, CNC horizontal lathes, vertical lathes and drilling lathes) and ERP manufacturing resources integration management systems. In addition, the data between all machining workshops in TANA are mutually shared in the Intranet through optical cables, which has facilitated us to effectively centralize manufacturing resources, enhance production efficiency and efficiently improve our machining quality and process control.

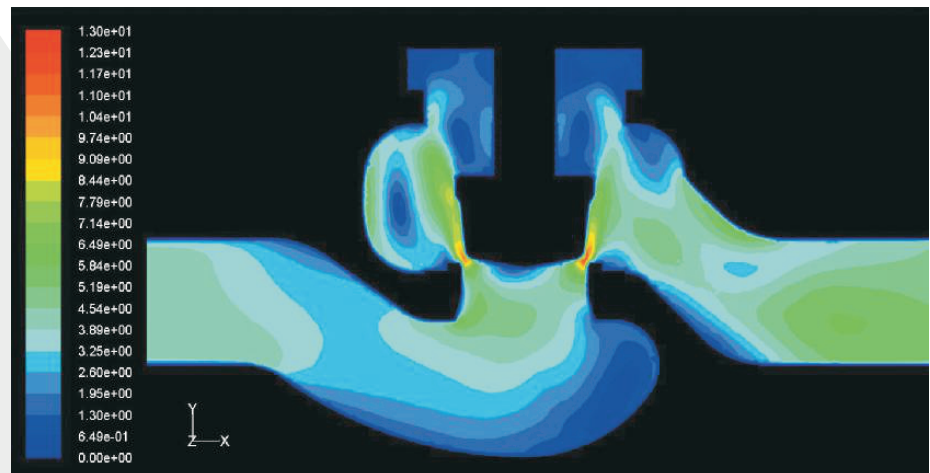


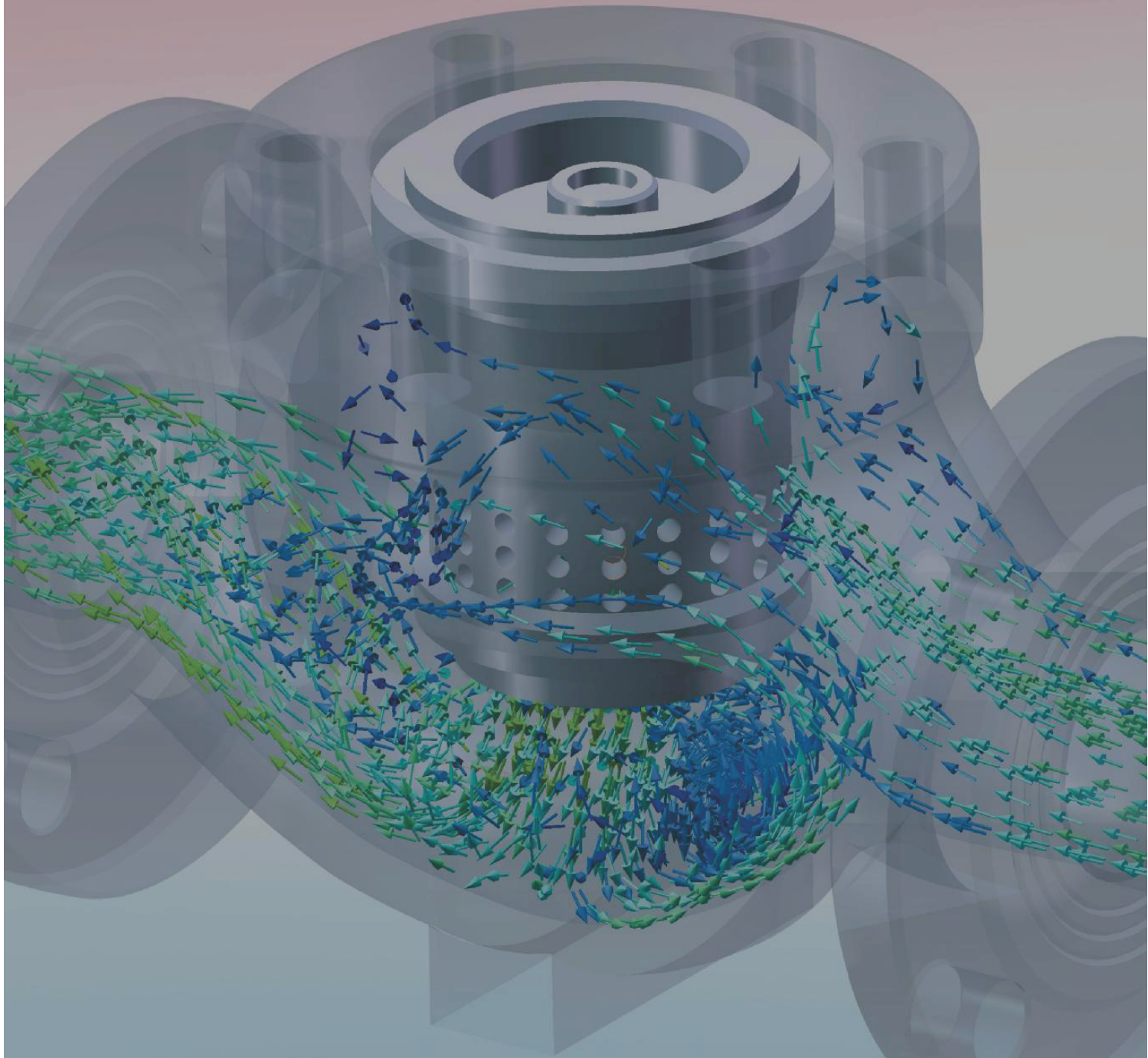
Strong Research And Development TANA

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► Desing and development

The technical R&D center of TANA makes use of the most advanced computer technology to enhance the quality of the existing products and develop new valve products. The design concept of TANA is to develop a kind of safe valves with cost advantage. During the new product design period, we introduce the latest engineering software such as AutoCAD and Solidworks and adopt the advanced FEA technology to verify if the design of new products is feasible before they are put into batch production, so that their design and development time is greatly shortened and the safety of final products and their optimal cost structure are ensured.





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► 30D01Y、30D01R self-operated (after-valve) pressure control valve



▲ Summary

The V230D01/V231D01 self-operated (after-valve) pressure control valve is composed of the control valve, actuator and a spring used for pressure setting. It is suitable for controlling after-valve pressure in the pipes of non-corrosive liquids, gases and steams. When the after-valve pressure rises, the control valve is closed.

The main features are as follows:

1. It has the pressure balancing function with high sensitivity.
2. Low noise, reliable performance, free of maintenance
3. The standard modular design is adopted.
4. Various combined controls can be carried out through the assemblies.

Technical parameters and performances

Body

| | | | | |
|---------------------------|--|--|--|--|
| DN | DN15、20、25、32、40、50、65、80、100、125、200、250mm | | | |
| PN | PN1.6、4.0MPa | | | |
| Flange standard | ANSI、JIS、DIN、GB、JB(special standards can be offered according to user requirements) | | | |
| Body material | Cast iron (HT200), cast steel (ZG230-450), cast stainless steel (ZG1Cr18Ni9Ti, ZG1Cr18Ni12Mo2Ti) | | | |
| Plug material | Hard seal | Stainless steel (1Cr18Ni9Ti, 1Cr18Ni12Mo2Ti) | | |
| | Soft seal | Stainless steel embedded with rubber ring | | |
| Pressure balancing | Stainless steel bellows (DN15~125), balanced diaphragm (DN150~250) | | | |

Actuator

| | | | | |
|---|--|---------------------|-------------------------|-------------|
| Effective area | 32※ | 80 | 250 | 630 |
| Pressure setting range | 0.8~1.6 0.3~1.2 | 0.1~0.6 0.05~0.3 | 0.015~0.15 0.01~0.07 | 0.005~0.035 |
| Minimum differential pressure that ensures normal work of the pressure valve | ≥0.05 | ≥0.04 | ≥0.01 | ≥0.005 |
| Allowable maximum differential pressure between the upper and lower diaphragm chambers | 2.0 | 1.25 | 0.4 | 0.15 |
| Material | Diaphragm cover: galvanized steel sheet; diaphragm: EPDM or FKM with fiber | | | |
| Control pipeline, connection | Copper pipe or steel pipe Φ10X1(mm); ferrule connection: R1/4" | | | |

Note: ※ The pressure setting range corresponding to the effective area does not apply to valves with DN150-250.

Performance

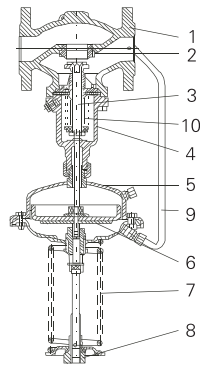
| | | | | | | | | | | | | | | | | |
|--|---|---|---|------------------------------|------------------------------|--|------------------|------------------|----------|-----------|----------------|----------------|----------------|----------------|--|--|
| Set value error | ± 8% | | | | | | | | | | | | | | | |
| Allowable leakage (under stipulated testing conditions) | <table border="0"> <tr> <td rowspan="2"> <table border="0"> <tr> <td>Hard seal</td> <td colspan="3">4x0.01% valve rated capacity</td> </tr> <tr> <td>Soft seal</td> <td>DN15-50</td> <td>DN65-125</td> <td>DN150-250</td> </tr> </table> </td> <td>10 bubbles/min</td> <td>20 bubbles/min</td> <td>40 bubbles/min</td> </tr> </table> | <table border="0"> <tr> <td>Hard seal</td> <td colspan="3">4x0.01% valve rated capacity</td> </tr> <tr> <td>Soft seal</td> <td>DN15-50</td> <td>DN65-125</td> <td>DN150-250</td> </tr> </table> | Hard seal | 4x0.01% valve rated capacity | | | Soft seal | DN15-50 | DN65-125 | DN150-250 | 10 bubbles/min | 20 bubbles/min | 40 bubbles/min | | | |
| | | | <table border="0"> <tr> <td>Hard seal</td> <td colspan="3">4x0.01% valve rated capacity</td> </tr> <tr> <td>Soft seal</td> <td>DN15-50</td> <td>DN65-125</td> <td>DN150-250</td> </tr> </table> | Hard seal | 4x0.01% valve rated capacity | | | Soft seal | DN15-50 | DN65-125 | DN150-250 | 10 bubbles/min | 20 bubbles/min | 40 bubbles/min | | |
| | | Hard seal | | 4x0.01% valve rated capacity | | | | | | | | | | | | |
| Soft seal | DN15-50 | DN65-125 | DN150-250 | | | | | | | | | | | | | |

TANA self-operated control valve

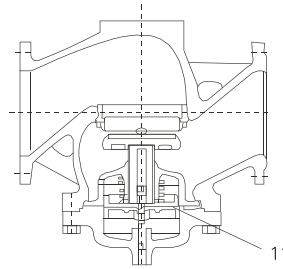
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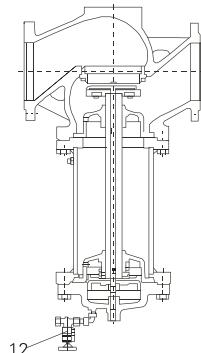
► 30D01Y、30D01R self-operated (after-valve) pressure control valve



DN15~125



DN150~250



DN150~250
(with body extension)

Structural figure

| | | | | | | | | | | | |
|---|--------|---|---------------|---|---------------|----|---------|----|--------------------|----|----------------|
| 1 | Body | 2 | Seat | 3 | Valve shaft | 4 | Bonnet | 5 | Diaphragm cover | 6 | Diaphragm |
| 7 | Spring | 8 | Adjusting nut | 9 | Pressure pipe | 10 | Bellows | 11 | Balanced diaphragm | 12 | Charging valve |

Allowable working temperature

| Seal type | DN | 15~125mm | | 150~250mm | |
|-----------|----|--------------------|-----------------------------------|----------------------------------|-----------------------------------|
| | | Hard seal | Soft seal | Hard seal | Soft seal |
| | | ≤150℃ | ≤150℃ | ≤140℃ | ≤140℃ |
| | | Cooling tank ≤200℃ | Cooling tank and heat sink ≤350℃※ | Cooling tank and extension ≤200℃ | Cooling tank and extension ≤300℃※ |
| | | | ≤150℃ | | |

Note: ※ It indicates the allowable working temperature is valid only when the medium is steam and the body with PN40 shall be adopted when the temperature resistance is 350℃.

Rated flow coefficient, noise measuring coefficient, allowable differential pressure

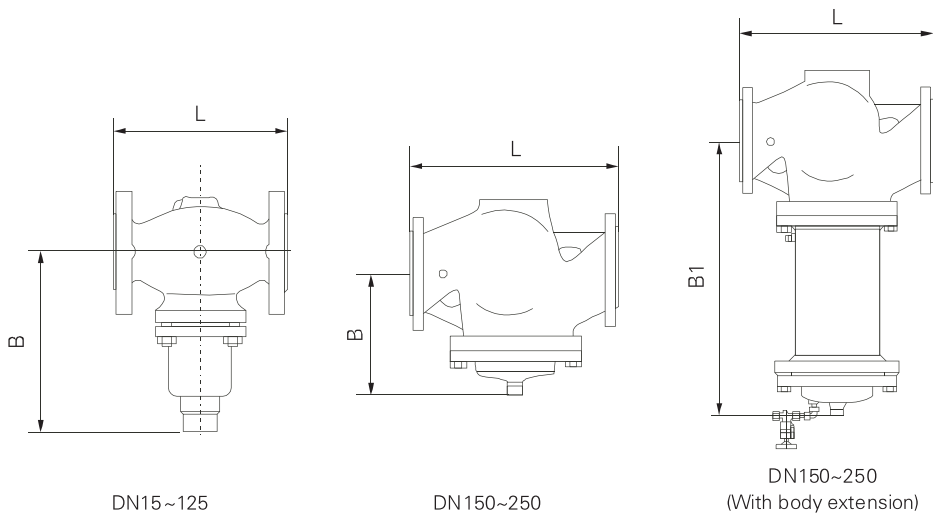
| DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | |
|--|------|-----|------|------|------|-----|-----|------|-----|------|-----|-----|-----|--|
| Rated flow coefficient | 4 | 6.3 | 8 | 16 | 20 | 32 | 50 | 80 | 125 | 160 | 280 | 320 | 450 | |
| Noise measuring coefficient Z value | 0.6 | 0.6 | 0.6 | 0.55 | 0.55 | 0.5 | 0.5 | 0.45 | 0.4 | 0.35 | 0.3 | 0.2 | 0.2 | |
| Allowable differential pressure (Mpa) | PN16 | | PN40 | | 1.6 | | 2.0 | | 1.5 | | 1.2 | | 1.0 | |

Working principle

After throttling by the plug and seat, the before-valve pressure P1 of the process medium is changed into the after-valve pressure P2. Through the control pipeline, P2 is input to the lower diaphragm chamber of the actuator and acts on the top disc. The acting force produced balances the reacting force of the spring, determining relative positions of the plug and seat and controlling the after-valve pressure. When the after-valve pressure P2 increases, the acting force of P2 that act on the top disc will increase accordingly. At the time, the acting force on the top disc is higher than the reacting force of the spring to make the plug close towards the seat, until the acting force on the top disc balances the reacting force of the spring. At the time, the flow area between the plug and seat is reduced, the flow resistance becomes higher and P2 is reduced to the set value. Likewise, when the after-valve pressure P2 decreases, the acting direction is reverse to the above. This is the working principle during the control of after-valve pressure.

When it is necessary to change the set value of after-valve pressure P2, please adjust the adjusting nut.

► 30D01Y、30D01R self-operated (after-valve) pressure control valve

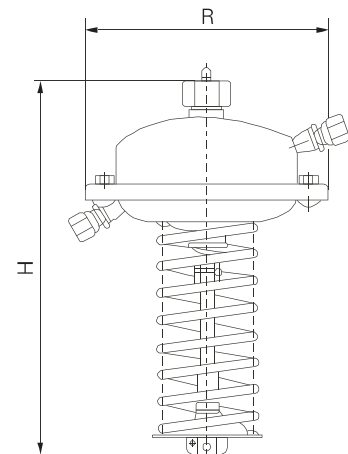


I. Dimensions and weight of control valve

| | | | | | | | | | | | | | |
|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| DN (mm) | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 |
| L (mm) | 130 | 150 | 160 | 180 | 200 | 230 | 290 | 310 | 350 | 400 | 480 | 600 | 730 |
| B (mm) | 212 | 212 | 238 | 238 | 240 | 240 | 275 | 275 | 380 | 380 | 326 | 354 | 404 |
| Weight (Kg) | 6.2 | 6.7 | 9.7 | 13 | 14 | 17 | 29 | 33 | 60 | 70 | 80 | 140 | 220 |
| B1 (mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 630 | 855 | 1205 |
| Weight (Kg) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 140 | 210 | 300 |

II. Dimensions and weight of actuator

| | | | | |
|--|-----|-----|-----|-----|
| Effective area (cm²) | 32 | 80 | 250 | 630 |
| R (mm) | 172 | 172 | 263 | 380 |
| H (mm) | 435 | 430 | 470 | 520 |
| Weight (Kg) | 7.5 | 7.5 | 13 | 28 |



► 30D02Y、30D02R self-operated (before-valve) pressure control valve

▲ Summary

The 30D02Y、30D02R self-operated (before-valve) pressure control valve is composed of the control valve, actuator and a spring used for pressure setting.

It is suitable for controlling before-valve pressure in the pipes of non-corrosive liquids, gases and steams. When the before-valve pressure rises, the control valve is opened.

The main features are as follows:

- 1.It has the pressure balancing function with high sensitivity.
- 2.Low noise, reliable performance, free of maintenance
- 3.The standard modular design is adopted.
- 4.Various combined controls can be carried out through the assemblies.



Technical parameters and performances

Body

| | | | | |
|---------------------------|--|--|--|--|
| DN | DN15、20、25、32、40、50、65、80、100、125、200、250mm | | | |
| PN | PN1.6、4.0MPa | | | |
| Flange standard | ANSI、JIS、DIN、GB、JB(special standards can be offered according to user requirements) | | | |
| Body material | Cast iron (HT200), cast steel (ZG230-450), cast stainless steel (ZG1Cr18Ni9Ti, ZG1Cr18Ni12Mo2Ti) | | | |
| Plug material | Hard seal | Stainless steel (1Cr18Ni9Ti, 1Cr18Ni12Mo2Ti) | | |
| | Soft seal | Stainless steel embedded with rubber ring | | |
| Pressure balancing | Stainless steel bellows (DN15~125), balanced diaphragm (DN150~250) | | | |

Actuator

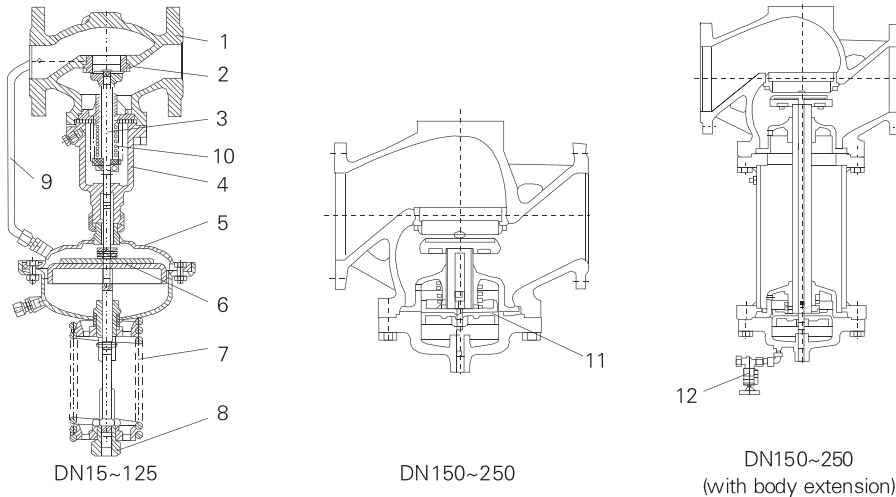
| | | | | |
|---|--|----------------------|-------------------------|-------------|
| Effective area | 32※ | 80 | 250 | 630 |
| Pressure setting range | 1.0~1.6 0.3~1.1 | 0.1~0.5 0.05~0.25 | 0.015~0.12 0.01~0.06 | 0.005~0.035 |
| Minimum differential pressure that ensures normal work of the pressure valve | ≥0.05 | ≥0.04 | ≥0.01 | ≥0.005 |
| Allowable maximum differential pressure between the upper and lower diaphragm chambers | 2.0 | 1.25 | 0.4 | 0.15 |
| Material | Diaphragm cover: galvanized steel sheet; diaphragm: EPDM or FKM with fiber | | | |
| Control pipeline, connection | Copper pipe or steel pipe Φ10X1(mm); ferrule connection: R1/4" | | | |

Note: ※ The pressure setting range corresponding to the effective area does not apply to valves with DN150-250.

Performance

| | | | | |
|--|--------------------------------------|---|-----------------|------------------|
| Set value error | ± 8% | | | |
| Allowable leakage (under stipulated testing conditions) | Hard seal Soft seal | 4x0.01% valve rated capacity | | |
| | | DN15-50 10 bubbles/min | DN65-125 | DN150-250 |
| | | | 20 bubbles/min | 40 bubbles/min |

► 30D02Y、30D02R self-operated (before-valve) pressure control valve



Structural figure

| | | | | | | | | | | | |
|---|--------|---|---------------|---|---------------|----|---------|----|--------------------|----|----------------|
| 1 | Body | 2 | Seat | 3 | Valve shaft | 4 | Bonnet | 5 | Diaphragm cover | 6 | Diaphragm |
| 7 | Spring | 8 | Adjusting nut | 9 | Pressure pipe | 10 | Bellows | 11 | Balanced diaphragm | 12 | Charging valve |

Allowable working temperature

| DN | 15~125mm | | 150~250mm | |
|----|---------------------|------------------------------------|-----------------------------------|------------------------------------|
| | Seal type | Hard seal | Soft seal | Hard seal |
| | ≤150°C | ≤150°C | ≤140°C | ≤140°C |
| | Cooling tank ≤200°C | Cooling tank and heat sink ≤350°C※ | Cooling tank and extension ≤200°C | Cooling tank and extension ≤300°C※ |
| | | ≤150°C | | |

Note: ※ It indicates the allowable working temperature is valid only when the medium is steam and the body with PN40 shall be adopted when the temperature resistance is 350°C.

Rated flow coefficient, noise measuring coefficient, allowable differential pressure

| DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 |
|-------------------------------------|------|-----|-----|------|------|-----|-----|------|-----|------|-----|-----|-----|
| Rated flow coefficient | 4 | 6.3 | 8 | 16 | 20 | 32 | 50 | 80 | 125 | 160 | 280 | 320 | 450 |
| Noise measuring coefficient Z value | 0.6 | 0.6 | 0.6 | 0.55 | 0.55 | 0.5 | 0.5 | 0.45 | 0.4 | 0.35 | 0.3 | 0.2 | 0.2 |
| Allowable differential pressure | PN16 | 1.6 | | 2.0 | | 1.5 | | 1.2 | | 1.0 | | | |
| | PN40 | 2.0 | | | | | | | | | | | |

Working principle

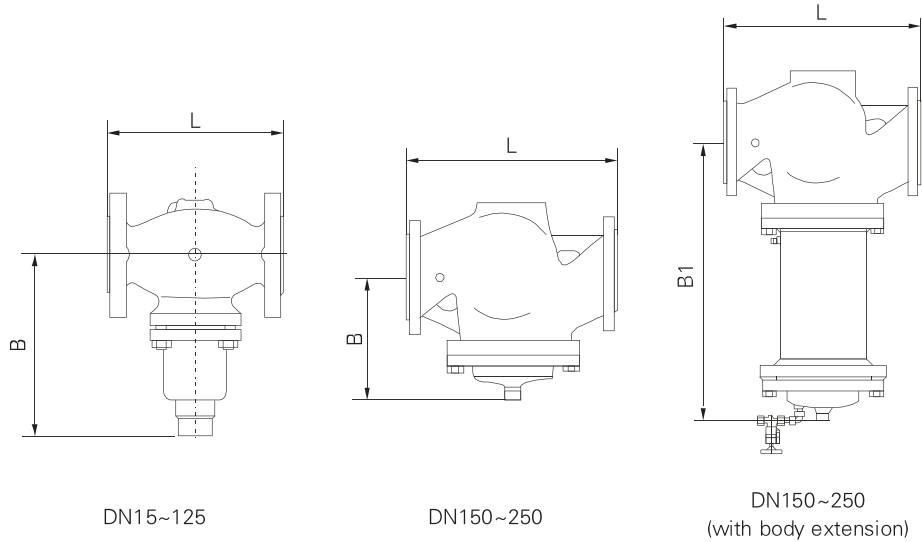
After throttling by the plug and seat, the before-valve pressure P1 of the process medium is changed into the after-valve pressure P2. Through the control pipeline, P1 is input to the upper diaphragm chamber of the actuator and acts on the top disc. The acting force produced balances the reacting force of the spring, determining relative positions of the plug and seat and controlling the before-valve pressure. When the before-valve pressure P1 increases, the acting force of P1 that acts on the top disc will increase accordingly. At the time, the acting force on the top disc is higher than the reacting force of the spring to make the plug move away from the seat, until the acting force on the top disc balances the reacting force of the spring. At the time, the flow area between the plug and seat is increased, the flow resistance becomes lower and P1 is reduced to the set value. Likewise, when the before-valve pressure P1 decreases, the acting direction is reverse to the above. This is the working principle during the control of before-valve pressure. When it is necessary to change the set value of before-valve pressure P1, please adjust the adjusting nut.

TANA self-operated control valve

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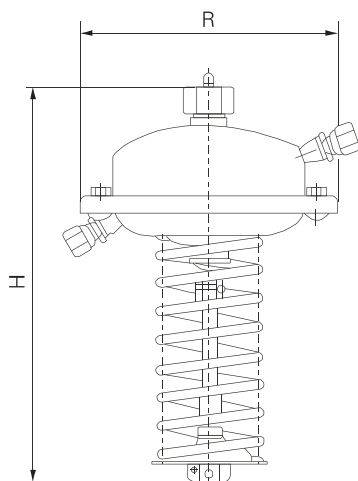
► 30D02Y、30D02R self-operated (before-valve) pressure control valve



I. Dimensions and weight of control valve

| | | | | | | | | | | | | | |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| DN (mm) | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 |
| L (mm) | 130 | 150 | 160 | 180 | 200 | 230 | 290 | 310 | 350 | 400 | 480 | 600 | 730 |
| B (mm) | 212 | 212 | 238 | 238 | 240 | 240 | 275 | 275 | 380 | 380 | 326 | 354 | 404 |
| B1(mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 630 | 855 | 1205 |
| Weight(Kg) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 140 | 210 | 300 |

II. Dimensions and weight of actuator



| | | | | |
|---------------------------------------|-----|-----|-----|-----|
| Effective area(cm²) | 32 | 80 | 250 | 630 |
| R (mm) | 172 | 172 | 263 | 380 |
| H (mm) | 435 | 430 | 470 | 520 |
| Weight(Kg) | 7.5 | 7.5 | 13 | 28 |

► **The 30D03Y/30D03R self-operated differential pressure control**



▲ **Summary**

The 30D03Y/30D03R self-operated differential pressure control valve is composed of the control valve, actuator and a spring used for pressure setting.

It is suitable for controlling differential pressure in the pipes of non-corrosive liquids, gases and steams. When the differential pressure rises, the control valve is closed.

The main features are as follows:

1. It has the pressure balancing function with high sensitivity.
2. Low noise, reliable performance, free of maintenance
3. The standard modular design is adopted.
4. Various combined controls can be carried out through the assemblies.

Technical parameters and performances

| Body | | | |
|---|--|--|-------------|
| DN | DN15、20、25、32、40、50、65、80、100、125、200、250mm | | |
| PN | PN1.6、4.0MPa | | |
| Flange standard | ANSI、JIS、DIN、GB、JB(special standards can be offered according to user requirements) | | |
| Body material | Cast iron (HT200), cast steel (ZG230-450), cast stainless steel (ZG1Cr18Ni9Ti, ZG1Cr18Ni12Mo2Ti) | | |
| Plug material | Hard seal | Stainless steel (1Cr18Ni9Ti, 1Cr18Ni12Mo2Ti) | |
| | Soft seal | Stainless steel embedded with rubber ring | |
| Pressure balancing | Stainless steel bellows (DN15-125), balanced diaphragm (DN150-250) | | |
| Actuator | | | |
| Effective area | 80 | 250 | 630 |
| Pressure setting range | 0.1-0.6 0.05-0.3 | 0.015-0.15 0.01-0.07 | 0.005-0.035 |
| Minimum differential pressure that ensures normal work of the pressure valve | ≥0.04 | ≥0.01 | ≥0.005 |
| Allowable maximum differential pressure between the upper and lower diaphragm chambers | 1.25 | 0.4 | 0.15 |
| Material | Diaphragm cover: galvanized steel sheet; diaphragm: EPDM or FKM with fiber | | |
| Control pipeline, connection | Copper pipe or steel pipe Φ 10X1(mm); ferrule connection: R1/4" | | |

Note: ※ The pressure setting range corresponding to the effective area does not apply to valves with DN150-250.

Performance

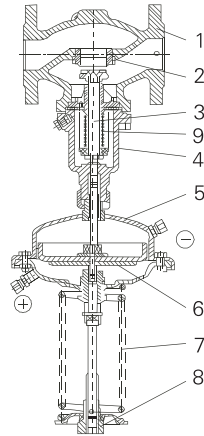
| | | | |
|--|------------------|------------------------------|----------------|
| Set value error | ± 8% | | |
| Allowable leakage (under stipulated testing conditions) | Hard seal | 4x0.01% valve rated capacity | |
| | | Soft seal | |
| | | DN15-50 | DN65-125 |
| | 10 bubbles/min | 20 bubbles/min | 40 bubbles/min |

TANA self-operated control valve

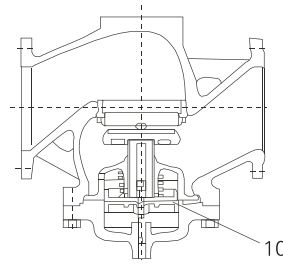
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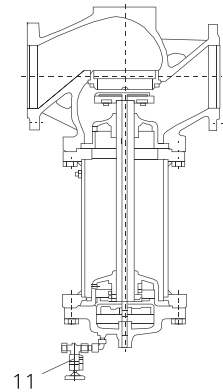
► The 30D03Y/30D03R self-operated differential pressure control



DN15~125



DN150~250



DN150~250
(With a valve body and a long body)

Structural figure

| | | | | | | | | | | | |
|---|--------|---|---------------|---|-------------|----|--------------------|----|-----------------|---|-----------|
| 1 | Body | 2 | Seat | 3 | Valve shaft | 4 | Bonnet | 5 | Diaphragm cover | 6 | Diaphragm |
| 7 | Spring | 8 | Adjusting nut | 9 | Bellows | 10 | Balanced diaphragm | 11 | Charging valve | | |

Allowable working temperature

| | | DN 15~125mm | DN 150~250mm |
|-----------|-----------|-------------------------------------|-------------------------------------|
| Seal type | Hard seal | ≤ 150°C | ≤ 140°C |
| | | Cooling tank ≤ 200°C | Cooling tank and extension ≤ 200°C |
| | Soft seal | Cooling tank and heat sink ≤ 350°C※ | Cooling tank and extension ≤ 300°C※ |
| | | ≤ 150°C | |

Note: ※ It indicates the allowable working temperature is valid only when the medium is steam and the body with PN40 shall be adopted when the temperature resistance is 350°C.

Rated flow coefficient, noise measuring coefficient, allowable differential pressure

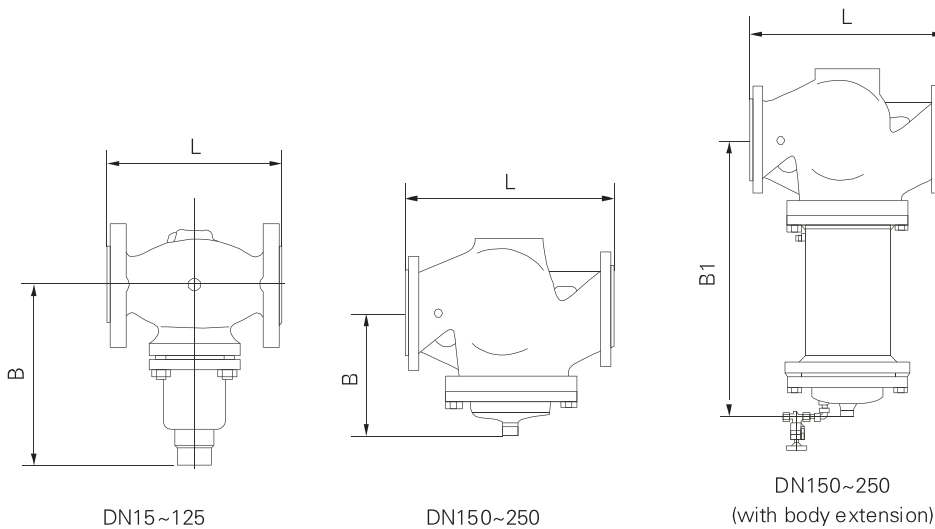
| DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 |
|-------------------------------------|------|-----|-----|------|------|-----|-----|------|-----|------|-----|-----|-----|
| Rated flow coefficient | 4 | 6.3 | 8 | 16 | 20 | 32 | 50 | 80 | 125 | 160 | 280 | 320 | 450 |
| Noise measuring coefficient Z value | 0.6 | 0.6 | 0.6 | 0.55 | 0.55 | 0.5 | 0.5 | 0.45 | 0.4 | 0.35 | 0.3 | 0.2 | 0.2 |
| Allowable differential pressure | PN16 | | | | 1.6 | | | | 1.5 | 1.2 | 1.0 | | |
| | PN40 | | | | 2.0 | | | | | | | | |

Working principle

After throttling by the valve, the process medium enters the controlled equipment. The differential pressure of the controlled equipment is introduced into the upper and lower diaphragm chambers and produces thrust in the upper and lower diaphragm chambers that balances the reacting force of the spring, so as to determine relative positions of the plug and seat, which determine the differential pressure value ΔP . When the differential pressure changes, the balance of forces is destroyed and the plug is driven to move, and the movement of the plug changes flow coefficient of the valve, i.e., the differential pressure is controlled to be the set value. This is the working principle of differential pressure control.

When it is necessary to change the set value of differential pressure, please adjust the adjusting nut.

► The 30D03Y/30D03R self-operated differential pressure control

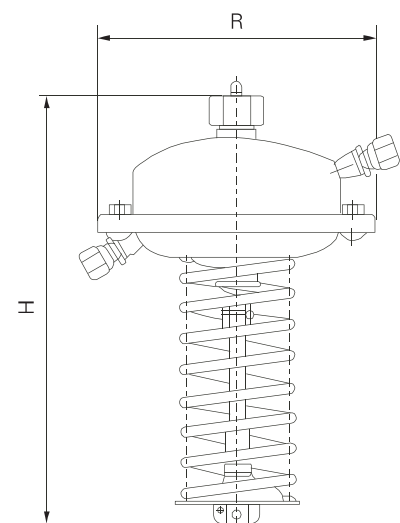


I. Dimensions and weight of control valve

| | | | | | | | | | | | | | |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| DN (mm) | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 |
| L (mm) | 130 | 150 | 160 | 180 | 200 | 230 | 290 | 310 | 350 | 400 | 480 | 600 | 730 |
| B (mm) | 212 | 212 | 238 | 238 | 240 | 240 | 275 | 275 | 380 | 380 | 326 | 354 | 404 |
| B1(mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 630 | 855 | 1205 |
| Weight(Kg) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 140 | 210 | 300 |

II. Dimensions and weight of actuator

| | | | | |
|---------------------------------------|-----|-----|-----|-----|
| Effective area(cm²) | 32 | 80 | 250 | 630 |
| R (mm) | 172 | 172 | 263 | 380 |
| H (mm) | 435 | 430 | 470 | 520 |
| Weight(Kg) | 7.5 | 7.5 | 13 | 28 |



► The 30D04Y、30D04R self-operated differential pressure control valve

▲ Summary

The 30D04Y/30D04R self-operated differential pressure control valve is composed of the control valve, actuator and a spring used for pressure setting.

It is suitable for controlling differential pressure in the pipes of non-corrosive liquids, gases and steams, when the differential pressure rises, the control valve is opened.

The main features are as follows:

1. It has the pressure balancing function with high sensitivity.
2. Low noise, reliable performance, free of maintenance.
3. The standard modular design is adopted.
4. Various combined controls can be carried out through the assemblies.



Technical parameters and performances

Body

| | | | |
|---------------------------|--|--|--|
| DN | DN15、20、25、32、40、50、65、80、100、125、200、250mm | | |
| PN | PN1.6、4.0MPa | | |
| Flange standard | ANSI、JIS、DIN、GB、JB(special standards can be offered according to user requirements) | | |
| Body material | Cast iron (HT200), cast steel (ZG230-450), cast stainless steel (ZG1Cr18Ni9Ti, ZG1Cr18Ni12Mo2Ti) | | |
| Plug material | Hard seal | Stainless steel (1Cr18Ni9Ti, 1Cr18Ni12Mo2Ti) | |
| | Soft seal | Stainless steel embedded with rubber ring | |
| Pressure balancing | Stainless steel bellows (DN15~125), balanced diaphragm (DN150~250) | | |

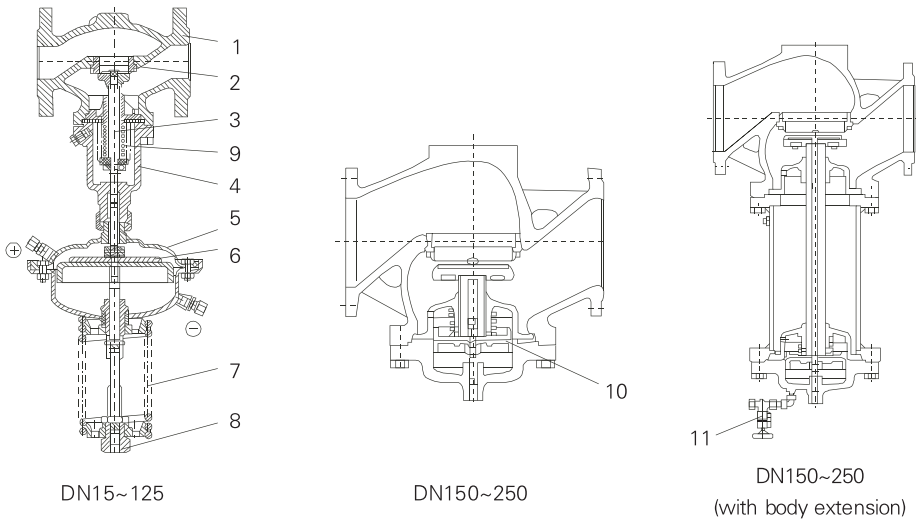
Actuator

| | | | |
|---|--|-------------------------|-------------|
| Effective area | 80 | 250 | 630 |
| Pressure setting range | 0.1~0.5 0.05~0.3 | 0.015~0.12 0.01~0.07 | 0.005~0.035 |
| Minimum differential pressure that ensures normal work of the pressure valve | ≥0.04 | ≥0.01 | ≥0.005 |
| Allowable maximum differential pressure between the upper and lower diaphragm chambers | 1.25 | 0.4 | 0.15 |
| Material | Diaphragm cover: galvanized steel sheet; diaphragm: EPDM or FKM with fiber | | |
| Control pipeline, connection | Copper pipe or steel pipe Φ10X1(mm); ferrule connection: R1/4" | | |

Performance

| | | | | | |
|--|------------------|------------------------------|----------------|----------------|----------------|
| Set value error | ± 8% | | | | |
| Allowable leakage (under stipulated testing conditions) | Hard seal | 4x0.01% valve rated capacity | | | |
| | | Soft seal | DN15~50 | DN65~125 | DN150~250 |
| | | | 10 bubbles/min | 20 bubbles/min | 40 bubbles/min |

► The 30D04Y、30D04R self-operated differential pressure control valve



| Structural figure | | | | | | | | | | | |
|-------------------|--------|---|---------------|---|-------------|----|--------------------|----|-----------------|---|-----------|
| 1 | Body | 2 | Seat | 3 | Valve shaft | 4 | Bonnet | 5 | Diaphragm cover | 6 | Diaphragm |
| 7 | Spring | 8 | Adjusting nut | 9 | Bellows | 10 | Balanced diaphragm | 11 | Charging valve | | |

| Allowable working temperature | | | |
|-------------------------------|-----------|---|---|
| DN | 15~125mm | 150~250mm | |
| Seal type | Hard seal | $\leq 150^{\circ}\text{C}$ Cooling tank $\leq 200^{\circ}\text{C}$ Cooling tank and heat sink $\leq 350^{\circ}\text{C}^{**}$ | $\leq 140^{\circ}\text{C}$ Cooling tank and extension $\leq 200^{\circ}\text{C}$ Cooling tank and extension $\leq 300^{\circ}\text{C}^{**}$ |
| | Soft seal | $\leq 150^{\circ}\text{C}$ | |

Note: ** It indicates the allowable working temperature is valid only when the medium is steam and the body with PN40 shall be adopted when the temperature resistance is 350°C.

| Rated flow coefficient, noise measuring coefficient, allowable differential pressure | | | | | | | | | | | | | |
|--|------|-----|-----|------|------|-----|-----|------|-----|------|-----|-----|-----|
| DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 |
| Rated flow coefficient | 4 | 6.3 | 8 | 16 | 20 | 32 | 50 | 80 | 125 | 160 | 280 | 320 | 450 |
| Noise measuring coefficient Z value | 0.6 | 0.6 | 0.6 | 0.55 | 0.55 | 0.5 | 0.5 | 0.45 | 0.4 | 0.35 | 0.3 | 0.2 | 0.2 |
| Allowable differential pressure | PN16 | | | 1.6 | | | | 1.5 | | 1.2 | | 1.0 | |
| | PN40 | | | 2.0 | | | | | | | | | |

Working principle

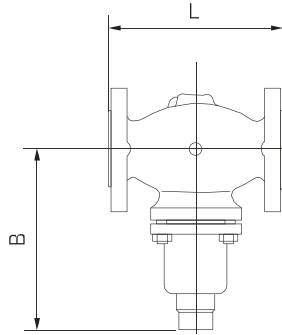
After throttling by the plug and seat, the before-valve pressure P1 of the process medium is changed into the after-valve pressure P2. Through the control pipeline, P1 is input to the upper diaphragm chamber of the actuator and acts on the top disc. The acting force produced balances the reacting force of the spring, determining relative positions of the plug and seat and controlling the before-valve pressure. When the before-valve pressure P1 increases, the acting force of P1 that acts on the top disc will increase accordingly. At the time, the acting force on the top disc is higher than the reacting force of the spring to make the plug move away from the seat, until the acting force on the top disc balances the reacting force of the spring. At the time, the flow area between the plug and seat is increased, the flow resistance becomes lower and P1 is reduced to the set value. Likewise, when the before-valve pressure P1 decreases, the acting direction is reverse to the above. This is the working principle during the control of before-valve pressure. When it is necessary to change the set value of before-valve pressure P1, please adjust the adjusting nut.

TANA self-operated control valve

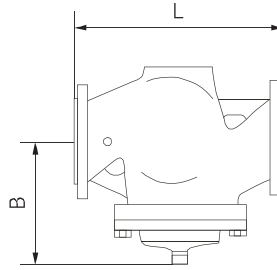
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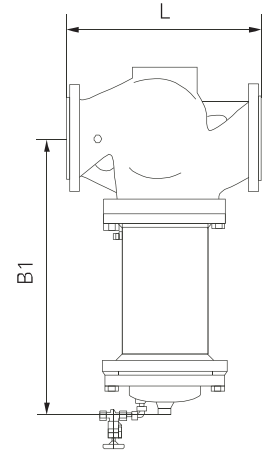
► The 30D04Y、30D04R self-operated differential pressure control valve



DN15~125



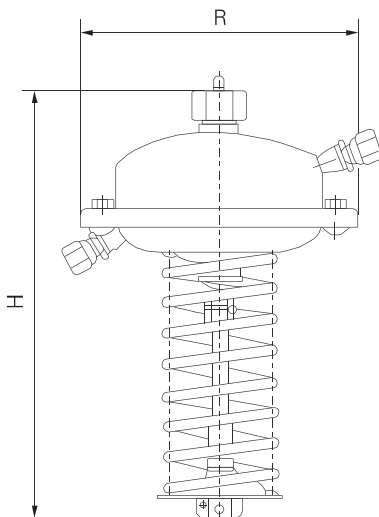
DN150~250



DN150~250
(with body extension)

I. Dimensions and weight of control valve

| | | | | | | | | | | | | | |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| DN (mm) | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 |
| L (mm) | 130 | 150 | 160 | 180 | 200 | 230 | 290 | 310 | 350 | 400 | 480 | 600 | 730 |
| B (mm) | 212 | 212 | 238 | 238 | 240 | 240 | 275 | 275 | 380 | 380 | 326 | 354 | 404 |
| B1(mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 630 | 855 | 1205 |
| Weight(Kg) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 140 | 210 | 300 |



II. Dimensions and weight of actuator

| | | | | |
|---------------------------------------|-----|-----|-----|-----|
| Effective area(cm²) | 32 | 80 | 250 | 630 |
| R (mm) | 172 | 172 | 263 | 380 |
| H (mm) | 435 | 430 | 470 | 520 |
| Weight(Kg) | 7.5 | 7.5 | 13 | 28 |

► The 30D12Y、30D12R pilot-operated (after valve) pressure control valve



▲ Summary

The 30D12Y/30D12R pilot-operated (after valve) pressure control valve is composed of the control valve, pilot and actuator.

It is suitable for controlling differential pressure in the pipes of non-corrosive liquids, gases and steams. when the differential pressure rises, the control valve is closed

The main features are as follows:

1. It has the pressure balancing function with high sensitivity.
2. Low noise, reliable performance, free of maintenance
3. The standard modular design is adopted.
4. High control precision

Technical parameters and performances

Body

| | |
|---------------------------|--|
| DN | DN15、20、25、32、40、50、65、80、100、125、200、250mm |
| PN | PN1.6、4.0MPa |
| Flange standard | ANSI、JIS、DIN、GB、JB (special standards can be offered according to user requirements) |
| Body material | Cast iron (HT200), cast steel (ZG230-450), cast stainless steel (ZG1Cr18Ni9Ti, ZG1Cr18Ni12Mo2Ti) |
| Plug material | Stainless steel (1Cr18Ni9Ti, 1Cr18Ni12Mo2Ti) |
| Hard seal | Stainless steel embedded with rubber ring |
| Soft seal | |
| Pressure balancing | Stainless steel bellows (DN15~125), balanced diaphragm (DN150~250) |

Actuator

| | |
|---|--|
| Effective area | 250 |
| Pressure setting range | 0.01~0.12 0.08~0.25 0.2~0.5 0.45~1 0.6~2.0 |
| Minimum differential pressure that ensures normal work of the pressure valve | DN15~125为0.08 DN150~250为0.1 |
| Allowable maximum differential pressure between the upper and lower diaphragm chambers | 0.4 |
| Material | Diaphragm cover: galvanized steel sheet; diaphragm: EPDM or FKM with fiber |
| Control pipeline, connection | Copper pipe or steel pipe Φ10X1(mm); ferrule connection: R1/4" |

Note: ※ The pressure setting range corresponding to the effective area does not apply to valves with DN150-250.

Performance

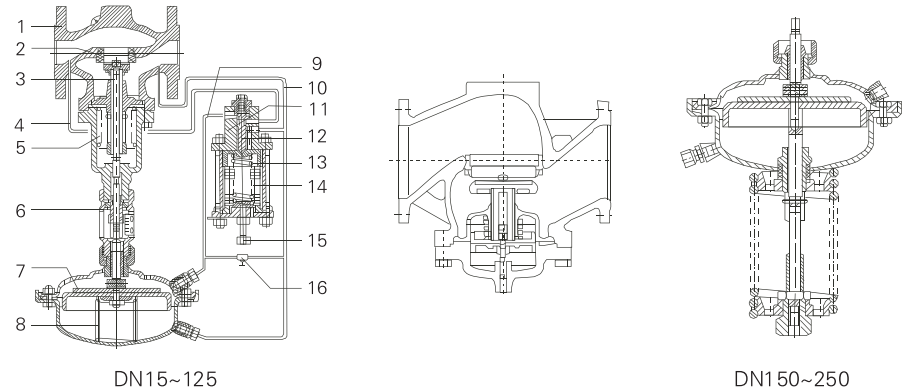
| | | | | |
|--|------------------|------------------------------|----------------|----------------|
| Set value error | ± 4% | | | |
| Allowable leakage (under stipulated testing conditions) | Hard seal | 4x0.01% valve rated capacity | | |
| | | Soft seal | DN15~50 | DN65~125 |
| | | 10 bubbles/min | 20 bubbles/min | 40 bubbles/min |

TANA self-operated control valve

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► The 30D12Y、30D12R pilot-operated (after valve) pressure control valve



Structural figure

| | | | | | | | |
|----|----------------------------|----|------------------------------|----|-----------------|----|-------------------------------|
| 1 | Body | 5 | Seat | 3 | Stem | 4 | Before-valve pressure P1 pipe |
| 5 | Balanced bellows | 6 | Travel indicator | 7 | Diaphragm | 8 | Spring |
| 9 | Operating pressure Ps pipe | 10 | After-valve pressure P2 pipe | 11 | Pilot | 12 | Pilot plug |
| 13 | Spring | 14 | Bellows | 15 | Adjusting screw | 16 | Adjustable needle valve |

Allowable working temperature

| | | | | | |
|-----------|-----------|-----------------|-----------------------------------|--------------|-----------------------------------|
| Seal type | Hard seal | DN 15~125mm | ≤150℃ | DN 150~250mm | ≤140℃ |
| | | | Cooling tank ≤200℃ | | Cooling tank and extension ≤200℃ |
| | Soft seal | | Cooling tank and heat sink ≤350℃※ | | Cooling tank and extension ≤300℃※ |
| | | Soft seal ≤150℃ | | | |

Note: ※ It indicates the allowable working temperature is valid only when the medium is steam

Rated flow coefficient, noise measuring coefficient, allowable differential pressure

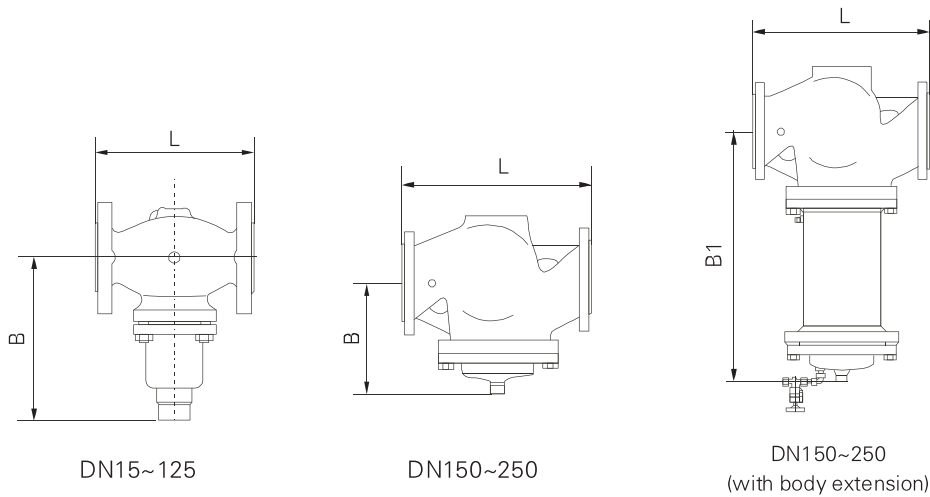
| | | | | | | | | | | | | | | |
|-------------------------------------|------|-----|-----|------|------|-----|-----|------|-----|------|-----|-----|-----|--|
| DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | |
| Rated flow coefficient | 4 | 6.3 | 8 | 16 | 20 | 32 | 50 | 80 | 125 | 160 | 280 | 320 | 450 | |
| Noise measuring coefficient Z value | 0.6 | 0.6 | 0.6 | 0.55 | 0.55 | 0.5 | 0.5 | 0.45 | 0.4 | 0.35 | 0.3 | 0.2 | 0.2 | |
| Allowable differential pressure | PN16 | | 1.6 | | PN40 | | 2.0 | | 1.5 | | 1.2 | | 1.0 | |

Working principle

The service medium passes through the pressure control valve along the direction indicated by the arrow, and transfers the before-valve pressure P1 to the pilot through the pressure pipe (4). Through adjustment by the adjusting screw (15) at the setting point, the corresponding operating Ps is generated in the pilot. The operating force Ps acts on the upper diaphragm chamber of the actuator, the set pressure (after-valve pressure) P2 acts on the lower diaphragm chamber and is connected with the feedback signal port of the pilot. When the set pressure P2 rises, the compression of the spring (13) in the pilot increases to make the pilot plug (12) move towards the dosing direction (downwards) and Ps decreases. Thus, P2 in the lower diaphragm chamber of the actuator increases and Ps in the upper diaphragm chamber decreases to make the plug of the control valve move towards the closing direction, so as to reduce P2 until it returns to the set value. When P2 decreases, the acting direction is reverse to the above. When setting the after-valve (or before-valve) pressure at the site, please set the pressure through the adjusting screw (15) and needle valve (16).

P014

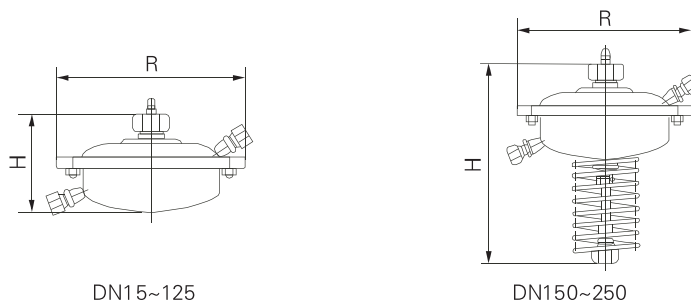
► The 30D12Y、30D12R pilot-operated (after valve) pressure control valve



I. Dimensions and weight of control valve

| | | | | | | | | | | | | | |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| DN (mm) | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 |
| L (mm) | 130 | 150 | 160 | 180 | 200 | 230 | 290 | 310 | 350 | 400 | 480 | 600 | 730 |
| B (mm) | 212 | 212 | 238 | 238 | 240 | 240 | 275 | 275 | 380 | 380 | 326 | 354 | 404 |
| Weight(Kg) | 6.2 | 6.7 | 9.7 | 13 | 14 | 17 | 29 | 33 | 60 | 70 | 80 | 140 | 220 |
| B1(mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 630 | 855 | 1205 |
| Weight(Kg) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 140 | 210 | 300 |

II. Dimensions and weight of actuator



| | | |
|---------------------------------------|-----------|-----|
| Effective area(cm²) | 250 | |
| R (mm) | 263 | |
| H (mm) | DN15~125 | 150 |
| Weight(Kg) | DN15~125 | 18 |
| | DN150~250 | 440 |
| | | 22 |

► The 30D13Y、30D13R pilot-operated (before valve) pressure control valve

▲ Summary

The 30D13Y/30D13R pilot-operated (before valve) pressure control valve is composed of the control valve, pilot and actuator. It is suitable for controlling differential pressure in the pipes of non-corrosive liquids, gases and steams. When the differential pressure rises, the control valve is opened.

The main features are as follows:

1. It has the pressure balancing function with high sensitivity.
2. Low noise, reliable performance, free of maintenance
3. The standard modular design is adopted.
4. High control precision



Technical parameters and performances

Body

| | |
|---------------------------|--|
| DN | DN15、20、25、32、40、50、65、80、100、125、200、250mm |
| PN | PN1.6、4.0MPa |
| Flange standard | ANSI、JIS、DIN、GB、JB (special standards can be offered according to user requirements) |
| Body material | Cast iron (HT200), cast steel (ZG230-450), cast stainless steel (ZG1Cr18Ni9Ti, ZG1Cr18Ni12Mo2Ti) |
| Plug material | Stainless steel (1Cr18Ni9Ti, 1Cr18Ni12Mo2Ti) |
| Hard seal | Stainless steel embedded with rubber ring |
| Soft seal | |
| Pressure balancing | Stainless steel bellows (DN15~125), balanced diaphragm (DN150~250) |

Actuator

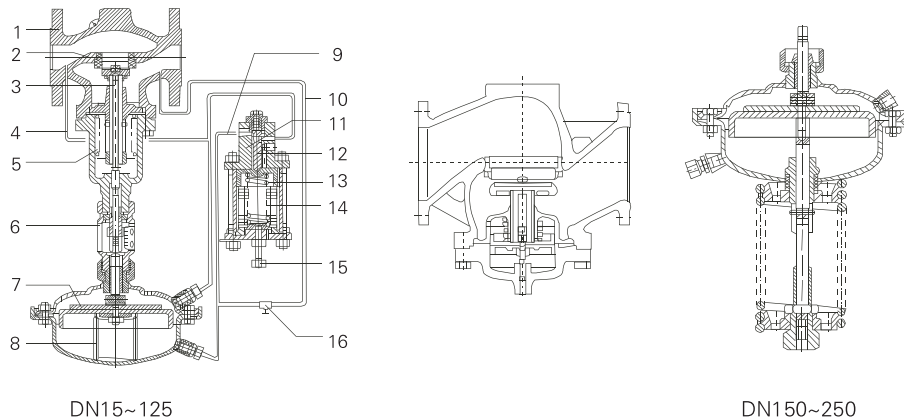
| | |
|---|--|
| Effective area | 250 |
| Pressure setting range | 0.01~0.12 0.08~0.25 0.2~0.5 0.45~1 0.6~2.0 |
| Minimum differential pressure that ensures normal work of the pressure valve | DN15~125为0.08 DN150~250为0.1 |
| Allowable maximum differential pressure between the upper and lower diaphragm chambers | 0.4 |
| Material | Diaphragm cover: galvanized steel sheet; diaphragm: EPDM or FKM with fiber |
| Control pipeline, connection | Copper pipe or steel pipe Φ10X1(mm); ferrule connection: R1/4" |

Note: ※ The pressure setting range corresponding to the effective area does not apply to valves with DN150-250.

Performance

| | | | | |
|--|--------------------------------------|------------------------------|----------------|----------------|
| Set value error | ± 4% | | | |
| Allowable leakage (under stipulated testing conditions) | Hard seal Soft seal | 4x0.01% valve rated capacity | | |
| | | DN15-50 | DN65-125 | DN150-250 |
| | | 10 bubbles/min | 20 bubbles/min | 40 bubbles/min |

► The 30D13Y、30D13R pilot-operated (befor valve) pressure control valve



Structural figure

| | | | | | | | |
|----|----------------------------|----|------------------------------|----|-----------------|----|-------------------------------|
| 1 | Body | 5 | Seat | 3 | Stem | 4 | Before-valve pressure P1 pipe |
| 5 | Balanced bellows | 6 | Travel indicator | 7 | Diaphragm | 8 | Spring |
| 9 | Operating pressure Ps pipe | 10 | After-valve pressure P2 pipe | 11 | Pilot | 12 | Pilot plug |
| 13 | Spring | 14 | Bellows | 15 | Adjusting screw | 16 | Adjustable needle valve |

Allowable working temperature

| Seal type | DN | 15~125mm | | 150~250mm | |
|-----------|----|-----------------------------------|-------|-----------------------------------|-------|
| | | Hard seal | ≤150℃ | Cooling tank ≤200℃ | ≤140℃ |
| Soft seal | | Cooling tank and heat sink ≤350℃※ | | Cooling tank and extension ≤300℃※ | |
| | | ≤150℃ | | | |

Note: ※ It indicates the allowable working temperature is valid only when the medium is steam

Rated flow coefficient, noise measuring coefficient, allowable differential pressure

| DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 |
|-------------------------------------|------|-----|-----|------|------|-----|-----|------|-----|------|-----|-----|-----|
| Rated flow coefficient | 4 | 6.3 | 8 | 16 | 20 | 32 | 50 | 80 | 125 | 160 | 280 | 320 | 450 |
| Noise measuring coefficient Z value | 0.6 | 0.6 | 0.6 | 0.55 | 0.55 | 0.5 | 0.5 | 0.45 | 0.4 | 0.35 | 0.3 | 0.2 | 0.2 |
| Allowable differential pressure | PN16 | | 1.6 | | 2.0 | | 1.5 | | 1.2 | | 1.0 | | |
| | PN40 | | 2.0 | | | | | | | | | | |

Working principle

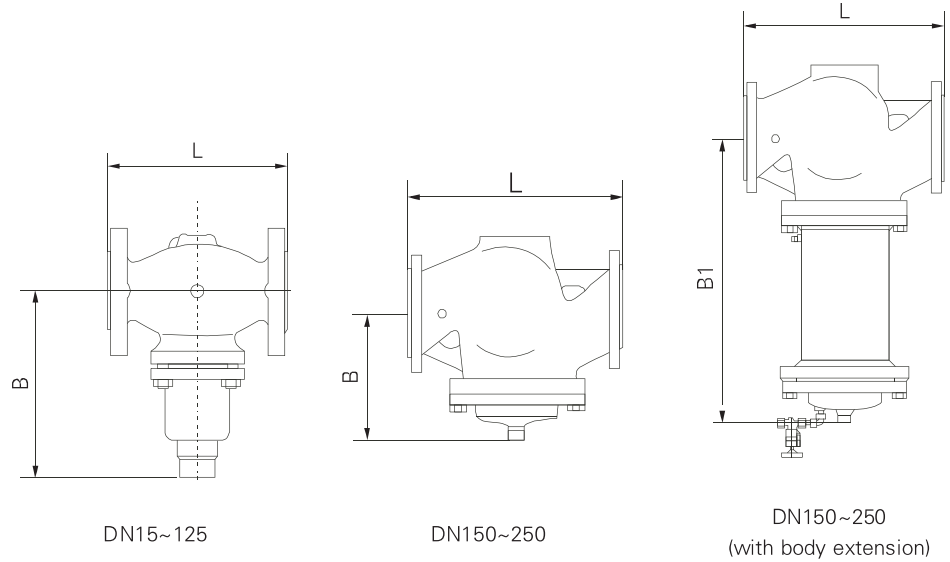
The service medium passes through the pressure control valve along the direction indicated by the arrow, and transfers the before-valve pressure P1 to the pilot through the pressure pipe (4). Through adjustment by the adjusting screw (15) at the setting point, the corresponding operating Ps is generated in the pilot. The operating force Ps acts on the upper diaphragm chamber of the actuator, the set pressure (after-valve pressure) P2 acts on the lower diaphragm chamber and is connected with the feedback signal port of the pilot. When the set pressure P2 rises, the compression of the spring (13) in the pilot increases to make the pilot plug (12) move towards the closing direction (downwards) and Ps decreases. Thus, P2 in the lower diaphragm chamber of the actuator increases and Ps in the upper diaphragm chamber decreases to make the plug of the control valve move towards the closing direction, so as to reduce P2 until it returns to the set value. When P2 decreases, the acting direction is reverse to the above. When setting the after-valve (or before-valve) pressure at the site, please set the pressure through the adjusting screw (15) and needle valve (16).

TANA self-operated control valve

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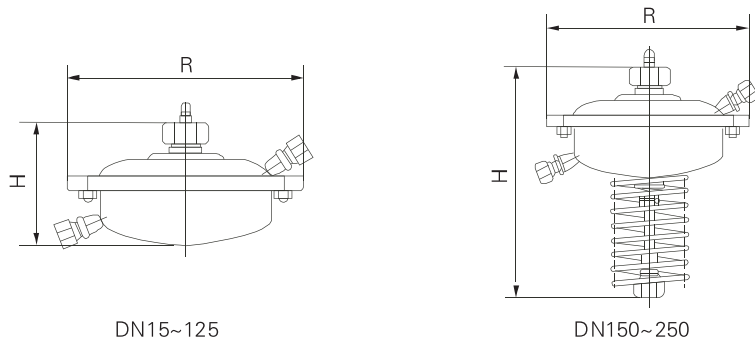
► The 30D13Y、30D13R pilot-operated (befor valve) pressure control valve



I. Dimensions and weight of control valve

| | | | | | | | | | | | | | |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| DN (mm) | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 |
| L (mm) | 130 | 150 | 160 | 180 | 200 | 230 | 290 | 310 | 350 | 400 | 480 | 600 | 730 |
| B (mm) | 212 | 212 | 238 | 238 | 240 | 240 | 275 | 275 | 380 | 380 | 326 | 354 | 404 |
| Weight(Kg) | 6.2 | 6.7 | 9.7 | 13 | 14 | 17 | 29 | 33 | 60 | 70 | 80 | 140 | 220 |
| B1(mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 630 | 855 | 1205 |
| Weight(Kg) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 140 | 210 | 300 |

II. Dimensions and weight of actuator



| | | |
|---------------------------------------|-----------|-----|
| Effective area(cm²) | 250 | |
| R (mm) | 263 | |
| H (mm) | DN15~125 | 150 |
| Weight(Kg) | DN15~125 | 18 |
| | DN150~250 | 22 |

► The 30T01Y、30T01R self-operated temperature (heating type) control valve



▲ Summary

The 30T01Y/30T01R self-operated temperature (heating type) control valve is composed of the control valve and a temperature controller provided with fixed point control.

It is suitable for controlling differential pressure in the pipes of non-corrosive liquids, gases and steams. When the temperature of the controlled mediums rises, the control valve is closed.

The main features are as follows:

1. It has the pressure balancing function with high sensitivity.
2. Low noise, reliable performance, free of maintenance.
3. The standard modular design is adopted.
4. It adopts the imported fixed point controller, which has the over temperature protection function with reliable quality.
5. Various combined controls can be carried out through the assemblies.

Technical parameters and performances

Body

| | |
|---------------------------|--|
| DN | DN15、20、25、32、40、50、65、80、100、125、150mm |
| PN | PN1.6、4.0MPa |
| Flange standard | ANSI、JIS、DIN、GB、JB (special standards can be offered according to user requirements) |
| Body material | Cast iron (HT200), cast steel (ZG230-450), cast stainless steel (ZG1Cr18Ni9Ti, ZG1Cr18Ni12Mo2Ti) |
| Plug material | Hard seal Stainless steel (1Cr18Ni9Ti, 1Cr18Ni12Mo2Ti) |
| | Soft seal Stainless steel embedded with rubber ring |
| Pressure balancing | Stainless steel bellows (DN15-125), balanced diaphragm (Dn150) |

Actuator

| | | | | |
|--|-------------------------------|---------|--------|--------|
| Actuator mode | T06 | T17 | | |
| Temperature setting range(°C) | -20~50 | 20~90 | 40~110 | 60~120 |
| Special temperature setting(°C) | 110~180 | 180~250 | | |
| Temperature protection | Exceeding the set value 100°C | | | |
| Time constant(S) | 120 | 20 | | |
| Temperature sensor material | Nickel-coated copper | | | |
| Capillary tube length | 5, 10, 15m | | | |

Performance

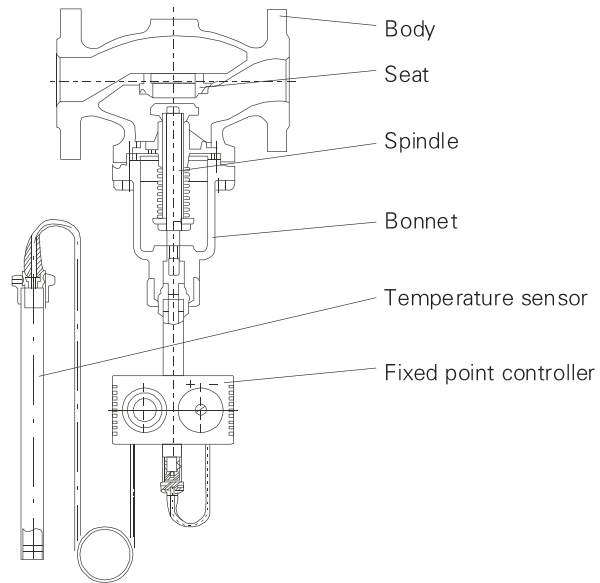
| | | | | |
|--|------------------|------------------------------|----------------|----------------|
| Set value error | ± 1.5°C | | | |
| Allowable leakage (under stipulated testing conditions) | Hard seal | 4x0.01% valve rated capacity | | |
| | | Soft seal | DN15~50 | DN65~125 |
| | | 10 bubbles/min | 20 bubbles/min | 40 bubbles/min |

TANA self-operated control valve

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► The 30T01Y、30T01R self-operated temperature (heating type) control valve



Allowable working temperature

| | | |
|------------------|------------------|---|
| DN | 15~125mm | |
| Seal type | Hard seal | $\leq 150^{\circ}\text{C}$ Cooling tank $\leq 200^{\circ}\text{C}$ |
| | Soft seal | Cooling tank and heat sink $\leq 350^{\circ}\text{C}$ ※ $\leq 150^{\circ}\text{C}$ |

Rated flow coefficient, noise measuring coefficient, allowable differential pressure

| | | | | | | | | | | | | |
|---|-------------|-----|-----|------|------|-----|-----|------|-----|------|-----|-----|
| DN | 15 | 20 | 25 | 32 | 40 | 40 | 65 | 80 | 100 | 125 | 150 | |
| Rated flow coefficient | 4 | 6.3 | 8 | 16 | 20 | 32 | 50 | 80 | 125 | 160 | 280 | |
| Noise measuring coefficient Z value | 0.6 | 0.6 | 0.6 | 0.55 | 0.55 | 0.5 | 0.5 | 0.45 | 0.4 | 0.35 | 0.3 | |
| Allowable differential pressure I pressure | PN16 | 1.6 | | | | | 1.5 | | | | | 1.2 |
| | PN40 | 2.0 | | | | | | | | | | |

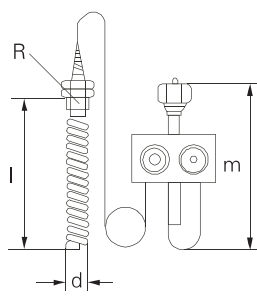
Working principle

When the temperature of the controlled object is lower than the set temperature, the liquid in the temperature sensor will contract, the force acted on the push rod of the actuator decreases, and the plug makes the valve open under the action of the spring force. The flow of steam, hot oil and other heating media is enhanced, so that the temperature of the controlled object rises. The valve will be closed when the temperature of the controlled object rises to the set value. After the valve is closed, the temperature of the controlled object falls and the valve is opened again. The heating media enter the heat exchanger and the temperature rises again, so as to make the temperature of the controlled object be a constant. The opening of the valve is related to the difference between the actual temperature of the controlled object and the set temperature.

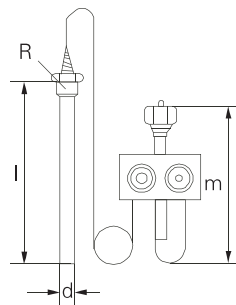
► The 30T01Y、30T01R self-operated temperature (heating type) control valve

I. Dimensions and weight of control valve

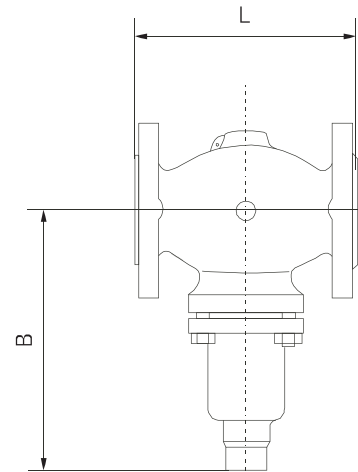
| | | | | | | | | | | | |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 |
| L(mm) | 130 | 150 | 16 | 180 | 200 | 230 | 290 | 310 | 350 | 400 | 480 |
| B(mm) | 212 | 212 | 238 | 238 | 240 | 240 | 275 | 275 | 380 | 380 | 295 |
| Weight(kg) | 6.2 | 6.7 | 9.7 | 13 | 14 | 17 | 29 | 33 | 60 | 70 | 80 |



T06



T17



II. Dimensions and weight of actuator

| Model | l(mm) | d(mm) | R(mm) | m | Weight(kg) |
|-------|-------|-------|-------|-----|------------|
| T06 | 380 | 24 | 1" | 280 | 3.0 |
| T17 | 500 | 30 | 1" | 280 | 3.5 |

Difference between actuator T06 and T17:

The T06 model temperature sensor is isolated from the controlled medium through the temperature sensor sleeve, i.e., it does not contact the medium and it is easy to maintain. But the response is slow. It is suitable for controlling liquid media.

The T17 model temperature sensor directly contacts the controlled medium, and the temperature sensing area is large. Therefore the response is fast. But it is not easy to maintain. It is suitable for controlling gas temperature and liquid temperature.

► The 30T02Y、30T02R self-operated temperature (cooling type) control valve

▲ Summary

The 30T02Y/30T02R self-operated temperature (cooling type) control valve is composed of the control valve and a temperature controller provided with fixed point control.

It is suitable for controlling differential pressure in the pipes of non-corrosive liquids, gases and steams. When the temperature of the controlled medium rises, the control valve is opened.

The main features are as follows:

1. It has the pressure balancing function with high sensitivity.
2. Low noise, reliable performance, free of maintenance.
3. The standard modular design is adopted.
4. It adopts the imported fixed point controller, which has the over temperature protection function with reliable quality.
5. Various combined controls can be carried out through the assemblies.



Technical parameters and performances

Body

| | |
|---------------------------|--|
| DN | DN15、20、25、32、40、50、65、80、100、125、200、250mm |
| PN | PN1.6、4.0MPa |
| Flange standard | ANSI、JIS、DIN、GB、JB (special standards can be offered according to user requirements) |
| Body material | Cast iron (HT200), cast steel (ZG230-450), cast stainless steel (ZG1Cr18Ni9Ti, ZG1Cr18Ni12Mo2Ti) |
| Plug material | Stainless steel (1Cr18Ni9Ti, 1Cr18Ni12Mo2Ti) |
| Hard seal | Stainless steel embedded with rubber ring |
| Soft seal | |
| Pressure balancing | Stainless steel bellows (DN15-125), balanced diaphragm (Dn150) |

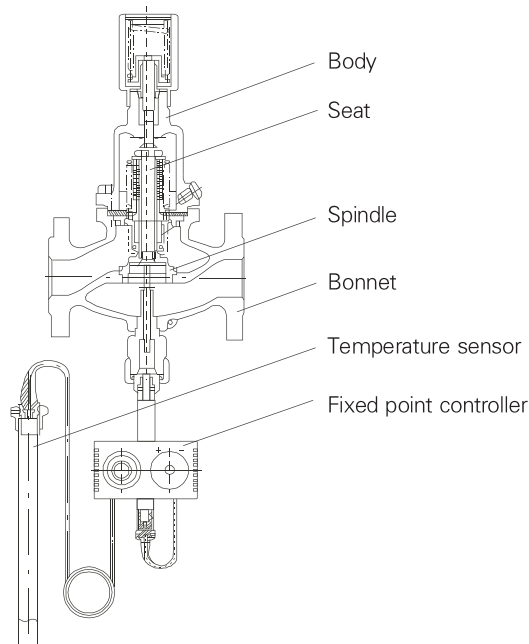
Actuator

| | | | | |
|--|-------------------------------|---------|--------|--------|
| Actuator mode | T06 | T17 | | |
| Temperature setting range(°C) | -20~50 | 20~90 | 40~110 | 60~120 |
| Special temperature setting(°C) | 110~180 | 180~250 | | |
| Temperature protection | Exceeding the set value 100°C | | | |
| Time constant(S) | 120 | 20 | | |
| Temperature sensor material | Nickel-coated copper | | | |
| Capillary tube length | 5, 10, 15m | | | |

Performance

| | | | |
|--|------------------|------------------------------|----------------|
| Set value error | ± 1.5% | | |
| Allowable leakage (under stipulated testing conditions) | Hard seal | 4x0.01% valve rated capacity | |
| | | Soft seal | |
| | | DN15-50 | DN65-125 |
| | 10 bubbles/min | 20 bubbles/min | 40 bubbles/min |

► The 30T02Y、30T02R self-operated temperature (cooling type) control valve



Allowable working temperature

| | |
|------------------|-------------------------|
| DN | 15~150mm |
| Seal type | Hard seal ≤200°C |
| | Soft seal ≤150°C |

Rated flow coefficient, noise measuring coefficient, allowable differential pressure

| | | | | | | | | | | | |
|--|-------------|-----|-----|------|------|-----|-----|------|-----|------|-----|
| DN | 15 | 20 | 25 | 32 | 40 | 40 | 65 | 80 | 100 | 125 | 150 |
| Rated flow coefficient | 4 | 6.3 | 8 | 16 | 20 | 32 | 50 | 80 | 125 | 160 | 280 |
| Noise measuring coefficient Z value | 0.6 | 0.6 | 0.6 | 0.55 | 0.55 | 0.5 | 0.5 | 0.45 | 0.4 | 0.35 | 0.3 |
| Allowable differential pressure | PN16 | 1.6 | | | 1.5 | | | 1.2 | | | |
| | PN40 | 2.0 | | | | | | | | | |

Working principle

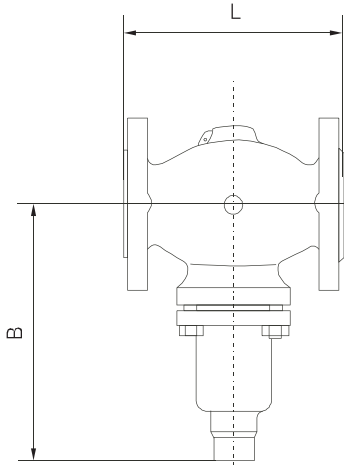
when the temperature of the controlled object is higher than the set temperature, the liquid in the temperature controller will swell, the force on the push of the actuator increases, and the plug makes the valve open under the action of the temperature controller, the flow of water, or other cooling media is enhanced, so that the temperature of the controlled object decreases, the valve will be closed when the temperature of the controlled object decrease to the set value. after the valve is closed, the temperature of the controlled object rises and the valve is opened again. the cooling media enter the heat exchanger and the temperature decreased again, so as to make the temperature of the controlled object be a constant. the opening of the valve is related to the difference between the actual temperature of the controlled object and the set temperature.

TANA self-operated control valve

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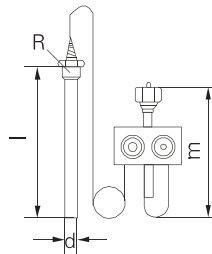
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► The 30T02Y、30T02R self-operated temperature (cooling type) control valve

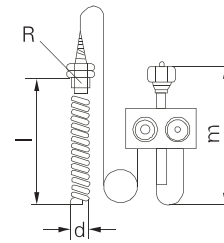


I. Dimensions and weight of control valve

| | | | | | | | | | | | |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 |
| L(mm) | 130 | 150 | 16 | 180 | 200 | 230 | 290 | 310 | 350 | 400 | 480 |
| B(mm) | 212 | 212 | 238 | 238 | 240 | 240 | 275 | 275 | 380 | 380 | 295 |
| Weight(kg) | 6.2 | 6.7 | 9.7 | 13 | 14 | 17 | 29 | 33 | 60 | 70 | 80 |



T06



T17

II. Dimensions and weight of actuator

| Model | I(mm) | D(mm) | R(mm) | M | Weight(kg) |
|--------------|--------------|--------------|--------------|----------|-------------------|
| T06 | 380 | 24 | 1" | 280 | 3.0 |
| T17 | 500 | 30 | 1" | 280 | 3.5 |

Difference between actuator T06 and T17:

The T06 model temperature sensor is isolated from the controlled medium through the temperature sensor sleeve, i.e., it does not contact the medium and it is easy to maintain. But the response is slow. It is suitable for controlling liquid media.

The T17 model temperature sensor directly contacts the controlled medium, and the temperature sensing area is large. Therefore the response is fast. But it is not easy to maintain. It is suitable for controlling gas temperature and liquid temperature.

► The 30L01Y、30L01R self-operated flow control valve



▲ Summary

The 30L01Y、30L01R self-operated flow control valve is composed of the control valve provided with flow setting and actuator.

The main features are as follows:

- 1.It has the pressure balancing function with high sensitivity.
- 2.Low noise, reliable performance, free of maintenance
- 3.The standard modular design is adopted.
- 4.The flow is adjusted according to the standard figure by the throttle valve, which is convenient and fast.
- 5.Various combined controls can be carried out through the assemblies.

Technical parameters and performances

Body

| | | |
|---------------------------|--|--|
| DN | DN15、20、25、32、40、50、65、80、100、125、200、250mm | |
| PN | PN1.6、4.0MPa | |
| Flange standard | ANSI、JIS、DIN、GB、JB(special standards can be offered according to user requirements) | |
| Body material | Cast iron (HT200), cast steel (ZG230-450), cast stainless steel (ZG1Cr18Ni9Ti, ZG1Cr18Ni12Mo2Ti) | |
| Plug material | Hard seal | Stainless steel (1Cr18Ni9Ti, 1Cr18Ni12Mo2Ti) |
| | Soft seal | Stainless steel embedded with rubber ring |
| Pressure balancing | Stainless steel bellows (DN15~125), balanced diaphragm (DN150~250) | |

Actuator

| | | |
|---|--|------|
| Effective area | 250 | 630 |
| Differential pressure of throttle | 0.02;0.05 | |
| Allowable maximum differential pressure between the upper and lower diaphragm chambers | 0.4 | 0.15 |
| Material | Diaphragm cover: galvanized steel sheet; diaphragm: EPDM or FKM with fiber | |
| Control pipeline, connection | Copper pipe or steel pipe Φ 10X1(mm); ferrule connection: R1/4" | |

Performance

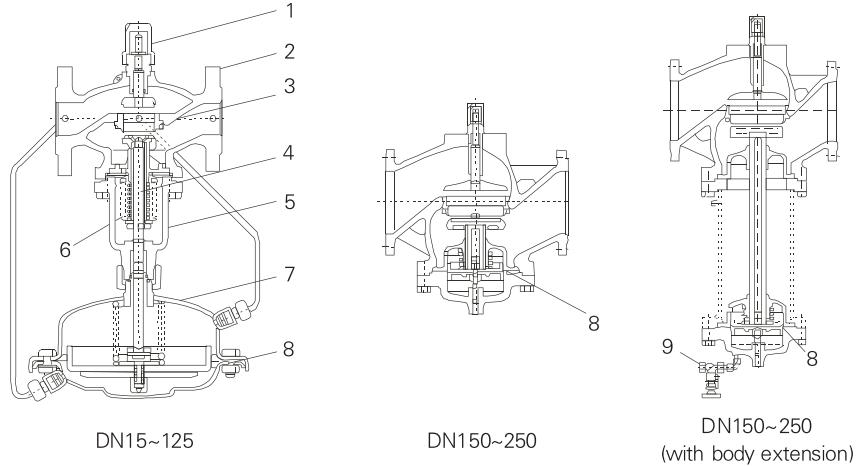
| | | | | | |
|--|------------------|------------------------------|----------------|----------------|----------------|
| Set value error | ± 8% | | | | |
| Allowable leakage (under stipulated testing conditions) | Hard seal | 4x0.01% valve rated capacity | | | |
| | | Soft seal | DN15~50 | DN65~125 | DN150~250 |
| | | | 10 bubbles/min | 20 bubbles/min | 40 bubbles/min |

TANA self-operated control valve

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► The 30L01Y、30L01R self-operated flow control valve



Structural figure

| | | | | | | | | | |
|---|-----------------|---|-----------------|---|-----------|---|----------------|---|--------|
| 1 | Flow restrictor | 2 | Body | 3 | Seat | 4 | Valve shaft | 5 | Bonnet |
| 6 | Bellows | 7 | Diaphragm Cover | 8 | Diaphragm | 9 | Charging valve | | |

Allowable working temperature

| Seal type | DN | 15~125mm | | 150~250mm | |
|-----------|----|-----------|-------|-------------------------|-------|
| | | Hard seal | ≤150℃ | Two cooling tanks ≤200℃ | ≤140℃ |
| Soft seal | | ≤150℃ | | | |

Note: The differential pressure of throttle in the flow valve includes two types such as 0.02MPa and 0.05MPa, which shall be selected according to the actual situations. The differential pressure before and after the valve shall be higher than that of the throttle.

Rated flow coefficient, noise measuring coefficient, allowable differential pressure

| DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | |
|---|---------|---------|-------|---------|-------|--------|--------|--------|------|------|------|--------|--------|--------|
| Rated flow coefficient Kvs | 4 | 6.3 | 8 | 16 | 20 | 32 | 50 | 80 | 125 | 160 | 280 | 320 | 400 | |
| Throttle pressure difference Flow range(m ³ /h) | 0.02MPa | 0.1~2 | 0.2~3 | 0.2~4 | 0.4~7 | 0.6~11 | 0.8~16 | 3~28 | 4~40 | 6~63 | 8~80 | 12~125 | 15~150 | 18~180 |
| | | 0.05MPa | 0.2~3 | 0.3~4.5 | 0.3~6 | 0.5~10 | 0.8~16 | 1.1~24 | 4~40 | 6~58 | 9~90 | 12~120 | 18~180 | 22~220 |
| Noise measuring coefficient Z value | 0.6 | 0.6 | 0.6 | 0.55 | 0.55 | 0.5 | 0.5 | 0.45 | 0.4 | 0.35 | 0.3 | 0.2 | 0.2 | |
| Allowable differential pressure(Mpa) | PN16 | 1.6 | | | | | | | | | | | | |
| | | PN40 | 2.0 | | | | | | 1.5 | | | 1.2 | | 1.0 |

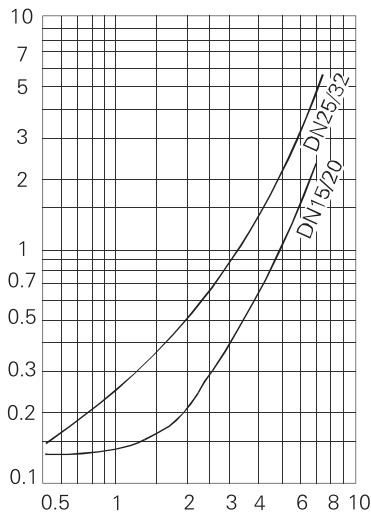
Note: The differential pressure of throttle in the flow valve includes two types such as 0.02MPa and 0.05MPa, which shall be selected according to the actual situations. The differential pressure before and after the valve shall be higher than that of the throttle.

Working principle

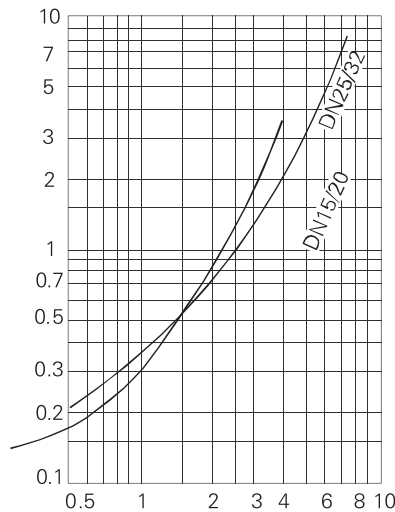
After the controlled medium enters the valve, the before-valve pressure P1 is input into the lower diaphragm chamber through the control pipeline, and the pressure Ps after throttling by the throttle valve is input into the upper diaphragm chamber. The difference between P1 and Ps $\Delta P_s = P_1 - P_s$ is called effective pressure. The difference between the thrust produced on the diaphragm by P1 and the thrust produced on the diaphragm by Ps determines relative positions of the plug and seat and determines the flow that passes through the valve. When the flow that passes through the valve increases, i.e. ΔP_s increases, P1 and Ps respectively acts on the lower diaphragm chamber and upper diaphragm chamber to make the plug move towards the seat, so that the flow area between the plug and seat is changed and Ps is increased. The thrust acted on the diaphragm by the increased Ps, the reacting force of the spring and the thrust acted on the diaphragm by P1 reaches balance at the new position to realize the purpose of controlling flow, and vice versa. The flow of the controlled medium is determined through adjusting relative positions of the throttle valve and seat.

► The 30L01Y、30L01R self-operated flow control valve

Effective pressure 0.02MPa

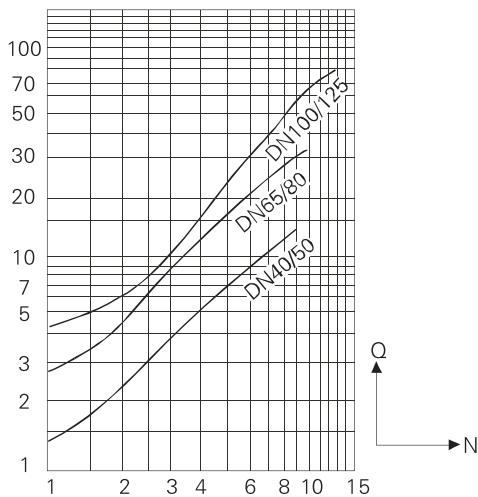


Effective pressure 0.05MPa

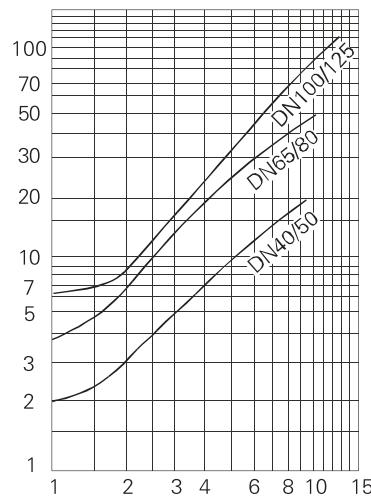


Calibration chart: To set the flow more accurately and quickly, the following calibration charts are offered for you reference (please measure the flow with a flowmeter if you need to set the flow more precisely or set the flow for valves with DN150–250). The calibration chart is only applicable to water, and serves as a reference for other media, whose flow shall be properly adjusted in the actual process.

Effective pressure 0.02MPa



Effective pressure 0.05MPa

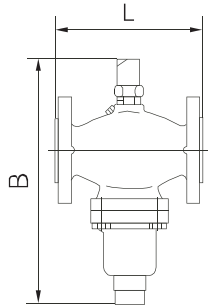


TANA self-operated control valve

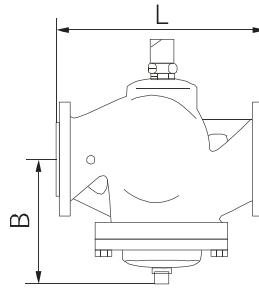
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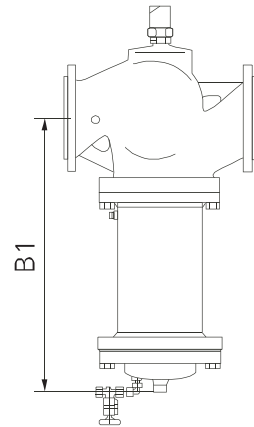
► The 30L01Y、30L01R self-operated flow control valve



DN15~125



DN150~250

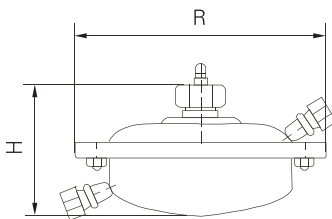


DN150~250
(with body extension)

I. Dimensions and weight of control valve

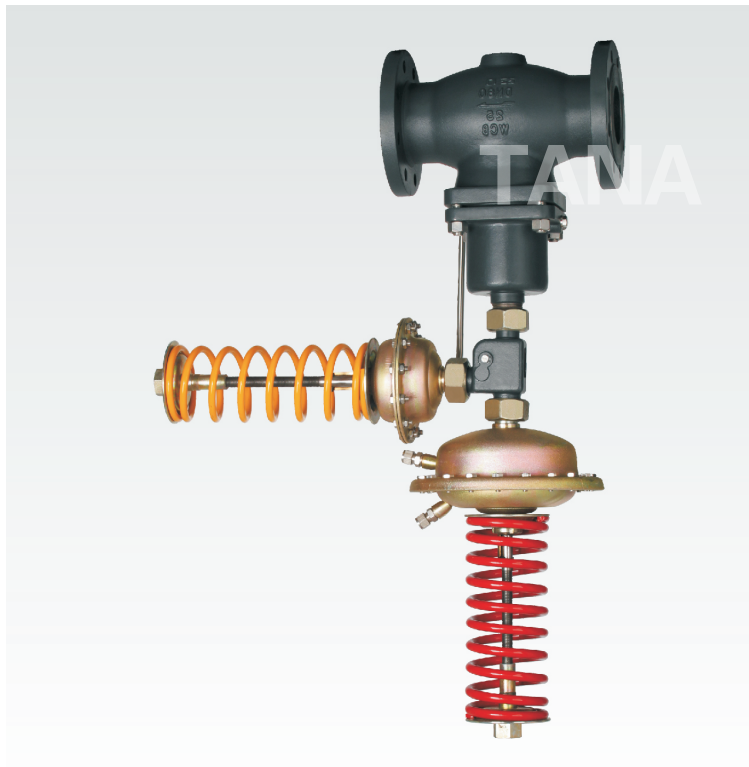
| | | | | | | | | | | | | | |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| DN (mm) | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 |
| L (mm) | 130 | 150 | 160 | 180 | 200 | 230 | 290 | 310 | 350 | 400 | 480 | 600 | 730 |
| B (mm) | 212 | 212 | 238 | 238 | 240 | 240 | 275 | 275 | 380 | 380 | 326 | 354 | 404 |
| Weight(Kg) | 6.2 | 6.7 | 9.7 | 13 | 14 | 17 | 29 | 33 | 60 | 70 | 80 | 140 | 220 |
| B1(mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 630 | 855 | 1205 |
| Weight(Kg) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 140 | 210 | 300 |

II. Dimensions and weight of actuator



| | |
|---------------------------------------|-----|
| Effective area(cm²) | 250 |
| R (mm) | 263 |
| H (mm) | 150 |
| Weight(Kg) | 9 |

► 30D01D03Y、30D01D03R self-operated pressure and differential pressure control valve



▲ Summary

The 30D01D03Y/30D01D03R self-operated pressure and differential pressure control valve is composed of the control valve, two actuators and two springs for pressure setting. It is suitable for controlling differential pressure in the pipes of non-corrosive liquids, gases and steams. It works according to the priority action principle and two parameters can not be simultaneously controlled.

The main features are as follows:

1. It has the pressure balancing function with high sensitivity.
2. Low noise, reliable performance, free of maintenance
3. The standard modular design is adopted.
4. Various combined controls can be carried out through the assemblies.

Technical parameters and performances

Body

| | | | |
|---------------------------|--|--|--|
| DN | DN15、20、25、32、40、50、65、80、100、125、150mm | | |
| PN | PN1.6、4.0MPa | | |
| Flange standard | ANSI、JIS、DIN、GB、JB(special standards can be offered according to user requirements) | | |
| Body material | Cast iron (HT200), cast steel (ZG230-450), cast stainless steel (ZG1Cr18Ni9Ti, ZG1Cr18Ni12Mo2Ti) | | |
| Plug material | Hard seal | Stainless steel (1Cr18Ni9Ti, 1Cr18Ni12Mo2Ti) | |
| | Soft seal | Stainless steel embedded with rubber ring | |
| Pressure balancing | Stainless steel bellows (DN15~125), balanced diaphragm (DN150~250) | | |

Actuator

| | | | | |
|---|--|-------------------|--------------------|-------------|
| Effective area (cm²) | 32※ | 80 | 250 | 630 |
| Pressure setting range(MPa) | 0.8~1.6 | 0.1~0.6 | 0.015~0.15 | 0.005~0.035 |
| Minimum differential pressure that ensures normal work of the pressure valve | 0.3~1.2 ≥0.05 | 0.05~0.3 ≥0.04 | 0.01~0.07 ≥0.01 | ≥0.005 |
| Allowable maximum differential pressure between the upper and lower diaphragm chambers | 2.0 | 1.25 | 0.4 | 0.15 |
| Material | Diaphragm cover: galvanized steel sheet; diaphragm: EPDM or FKM with fiber | | | |
| Control pipeline, connection | Copper pipe or steel pipe Φ10X1(mm); ferrule connection: R1/4" | | | |

Note: ※ The pressure setting range corresponding to the effective area does not apply to valves with Dn150

Performance

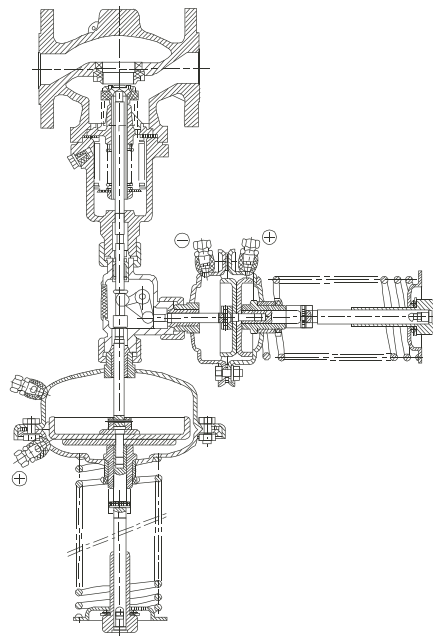
| | | | | |
|--|--------------------------------------|------------------------------|----------------------------|-----------------------------|
| Set value error | ± 8% | | | |
| Allowable leakage (under stipulated testing conditions) | Hard seal Soft seal | 4x0.01% valve rated capacity | | |
| | | DN15~50 ≥10 bubbles/min | DN65~125 20 bubbles/min | DN150~250 40 bubbles/min |

TANA self-operated control valve

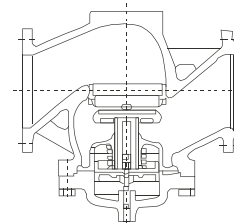
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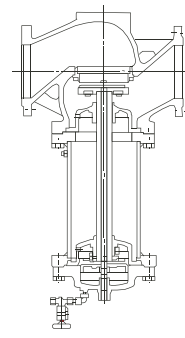
▶ 30D01D03Y、30D01D03R self-operated pressure and differential pressure control valve



DN15~125



DN150



DN150
(WITH BODY EXTENSION)

Allowable working temperature

| DN | 15~125mm | 150~250mm |
|-----------|--|--|
| | ≤ 150°C Cooling tank ≤ 200°C Cooling tank and heat sink ≤ 350°C※ | ≤ 140°C Cooling tank and extension ≤ 200°C Cooling tank and extension ≤ 300°C※ |
| Seal type | Hard seal | Soft seal |
| | | ≤ 150°C |

Note: ※ It indicates the allowable working temperature is valid only when the medium is steam.

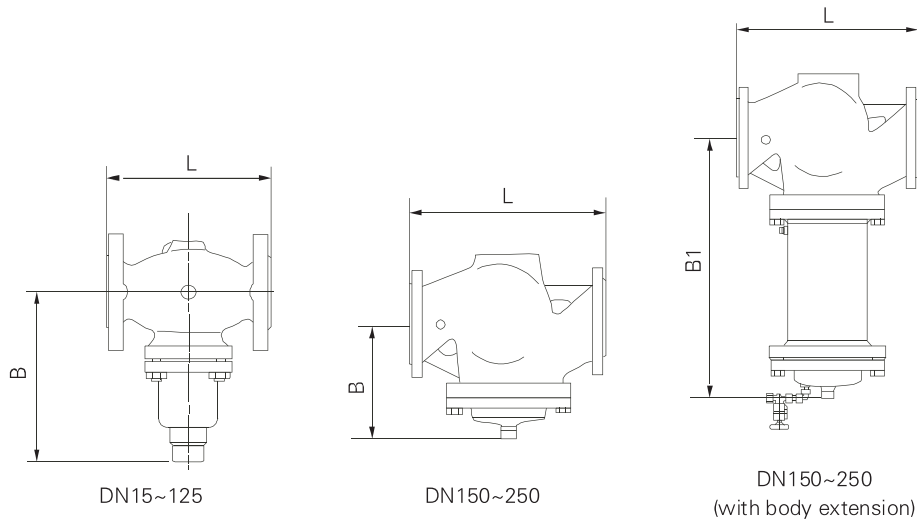
Rated flow coefficient, noise measuring coefficient, allowable differential pressure

| DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 |
|-------------------------------------|------|-----|-----|------|------|-----|-----|----------|-----|----------|-----|----------|-----|
| Rated flow coefficient | 4 | 6.3 | 8 | 16 | 20 | 32 | 50 | 80 | 125 | 160 | 280 | 320 | 450 |
| Noise measuring coefficient Z value | 0.6 | 0.6 | 0.6 | 0.55 | 0.55 | 0.5 | 0.5 | 0.45 | 0.4 | 0.35 | 0.3 | 0.2 | 0.2 |
| Allowable differential pressure | PN16 | | | 1.6 | | | | ┌ 1.5 ─┐ | | ┌ 1.2 ─┐ | | ┌ 1.0 ─┐ | |
| | PN40 | | | 2.0 | | | | | | | | | |

Working principle

According to different combinations, refer to the working principle of the self-operated (before/after-valve) pressure control valve and self-operated differential pressure control valve (valve closed/opened when pressure rises). (working according to the priority action principle)

► 30D01D03Y、30D01D03R self-operated pressure and differential pressure control valve

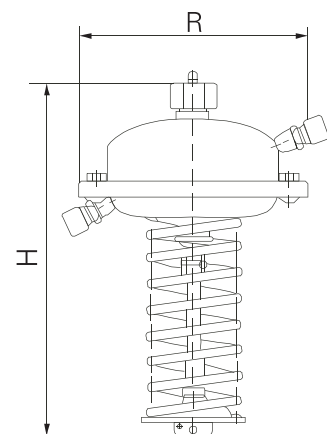


I. Dimensions and weight of control valve

| | | | | | | | | | | | |
|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| DN (mm) | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 |
| L (mm) | 130 | 150 | 160 | 180 | 200 | 230 | 290 | 310 | 350 | 400 | 480 |
| B (mm) | 212 | 212 | 238 | 238 | 240 | 240 | 275 | 275 | 380 | 380 | 326 |
| B1(mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 630 |
| Weight (Kg) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 140 |

II. Dimensions and weight of actuator

| | | | | |
|--|-----|-----|-----|-----|
| Effective area (cm²) | 32 | 80 | 250 | 630 |
| R (mm) | 172 | 172 | 263 | 380 |
| H (mm) | 435 | 430 | 470 | 520 |
| Weight(Kg) | 7.5 | 7.5 | 13 | 28 |



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► 30L01T01Y/30L01T01R、30L01T02Y/30L01T02R self-operated flow and temperature control valve

▲ Summary

The 30L01T01Y/30L01T01R、30L01T02Y/30L01T02R self-operated temperature control valve (cooling type) is composed of the control valve and a temperature controller provided with fixed point control. It is suitable for controlling temperature of non-corrosive liquids, gases and steams in various cooling systems. When the temperature of the controlled medium rises, the control valve is opened.

The main features are as follows:

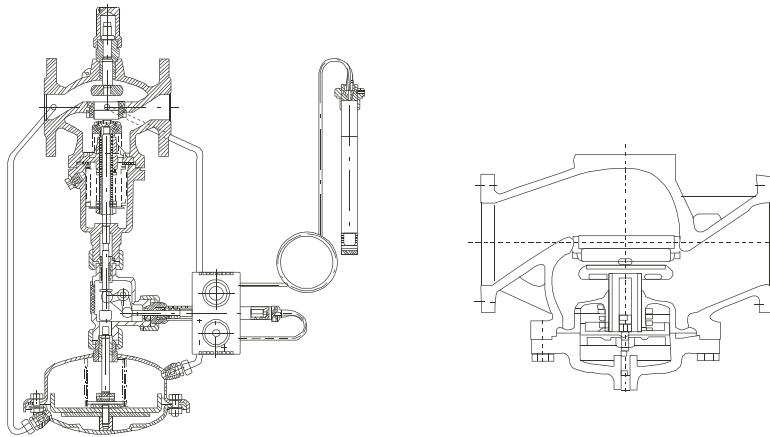
- 1.It has the pressure balancing function with high sensitivity.
- 2.Low noise, reliable performance, free of maintenance
- 3.The standard modular design is adopted.
- 4.The flow is adjusted according to the standard figure by the throttle valve, which is convenient and fast.
- 5.It adopts the imported fixed point controller, which has the over temperature protection function with reliable quality.
- 6.Various combined controls can be carried out through the assemblies.



Technical parameters and performances

| Body | | | |
|---|--|--|--------------------------|
| DN | DN15、20、25、32、40、50、65、80、100、125、150mm | | |
| PN | PN1.6、4.0MPa | | |
| Flange standard | ANSI、JIS、DIN、GB、JB(special standards can be offered according to user requirements) | | |
| Body material | Cast iron (HT200), cast steel (ZG230-450), cast stainless steel (ZG1Cr18Ni9Ti, ZG1Cr18Ni12Mo2Ti) | | |
| Plug material | Hard seal | Stainless steel (1Cr18Ni9Ti, 1Cr18Ni12Mo2Ti) | |
| | Soft seal | Stainless steel embedded with rubber ring | |
| Pressure balancing | Stainless steel bellows (DN15~125), balanced diaphragm (DN150~250) | | |
| D05 actuator | | | |
| Effective area | 250 | | 630 |
| Differential pressure of throttle | | 0.02;0.05 | |
| Allowable maximum differential pressure between the upper and lower diaphragm chambers | 0.4 | | 0.15 |
| Material | Diaphragm cover: galvanized steel sheet; diaphragm: EPDM or FKM with fiber | | |
| Control pipeline, connection | Copper pipe or steel pipe Φ10X1(mm); ferrule connection: R1/4" | | |
| Actuator | | | |
| Effective area | 250 | | |
| Pressure setting range | 0.01~0.12 | 0.08~0.25 | 0.2~0.5 0.45~0.1 0.6~2.0 |
| Minimum differential pressure that ensures normal work of the pressure valve | DN15~125为0.08 DN150~250为0.1 | | |
| Allowable maximum differential pressure between the upper and lower diaphragm chambers | 0.4 | | |
| Material | Diaphragm cover: galvanized steel sheet; diaphragm: EPDM or FKM with fiber | | |
| Control pipeline, connection | Copper pipe or steel pipe Φ10X1(mm); ferrule connection: R1/4" | | |

► 30L01T01Y/30L01T01R、30L01T02Y/30L01T02R self-operated flow and temperature control valve



Performance

| | | | | |
|--|------------------|------------------------------|----------------|----------------|
| Set value error | | 30L01Y | 30T01Y 30T01R | |
| | | ± 5°C | ± 1.5°C | |
| Allowable leakage (under stipulated testing conditions) | Soft seal | 4x0.01% valve rated capacity | | |
| | | DN15 ~ 50 | DN65 ~ 125 | DN150 ~ 250 |
| | Hard seal | 10 bubbles/min | 20 bubbles/min | 40 bubbles/min |

Allowable working temperature

| | | | |
|------------------|------------------|----------------------|------------------------------------|
| Seal type | Hard seal | DN 15 ~ 125mm | 150~250mm |
| | | ≤ 150°C | ≤ 140°C |
| | Soft seal | Cooling tank ≤ 200°C | Cooling tank and extension ≤ 200°C |

Rated flow coefficient, noise measuring coefficient, allowable differential pressure

| DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | |
|---|----------------|-------|---------|-------|--------|--------|--------|------|------|------|--------|--------|
| Rated flow coefficient | 4 | 6.3 | 8 | 16 | 20 | 32 | 50 | 80 | 125 | 160 | 280 | |
| Differential pressure flow range of throttle | 0.02MPa | 0.1-2 | 0.2-3 | 0.2-4 | 0.4-7 | 0.6-11 | 0.8-16 | 3-28 | 4-40 | 6-63 | 8-80 | 12-125 |
| | 0.05MPa | 0.2-3 | 0.3-4.5 | 0.3-6 | 0.5-10 | 0.8-16 | 1.1-24 | 4-40 | 6-58 | 9-90 | 12-120 | 18-180 |
| Noise measuring coefficient Z value | 0.6 | 0.6 | 0.6 | 0.55 | 0.55 | 0.5 | 0.5 | 0.45 | 0.4 | 0.35 | 0.3 | |
| Allowable differential pressure | PN16 | 1.6 | | | | | 1.5 | | | | | 1.2 |
| | PN40 | 2.0 | | | | | | | | | | |

Working principle

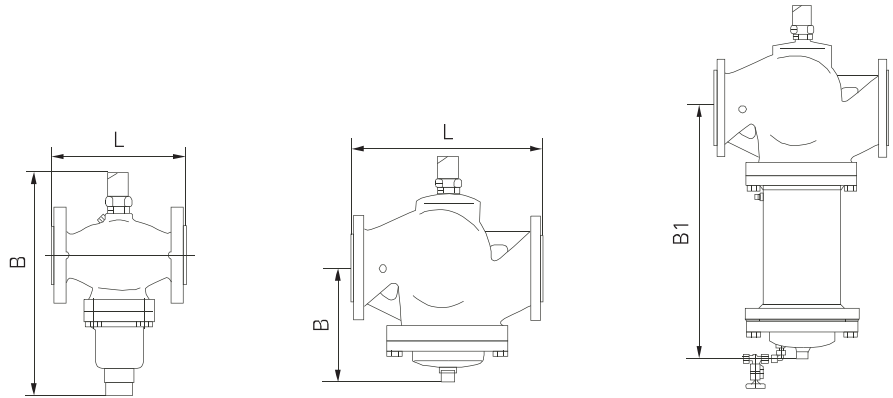
According to different combinations, refer to the working principle of the self-operated flow control valve and self-operated temperature control valve (cooling type/heating type). (Working according to the priority action principle)

TANA self-operated control valve

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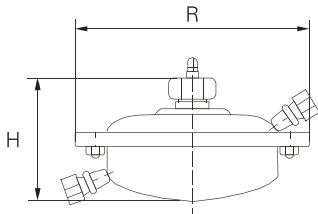
► 30L01T01Y/30L01T01R、30L01T02Y/30L01T02R self-operated flow and temperature control valve



I. Dimensions and weight of control valve

| | | | | | | | | | | | |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| DN (mm) | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 |
| L (mm) | 130 | 150 | 160 | 180 | 200 | 230 | 290 | 310 | 350 | 400 | 480 |
| B (mm) | 212 | 212 | 238 | 238 | 240 | 240 | 275 | 275 | 380 | 380 | 326 |
| B1(mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 630 |
| Weight(Kg) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 140 |

II. Dimensions and weight of actuator

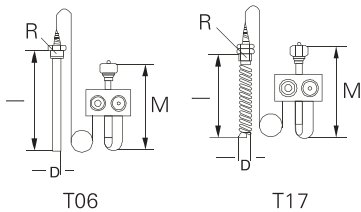


Effective area(cm²) 250

R (mm) 263

H (mm) 150

Weight (Kg) 9



| Model | l(mm) | D(mm) | R(mm) | M | Weight (Kg) |
|--------------|--------------|--------------|--------------|----------|--------------------|
| T06 | 380 | 24 | 1" | 280 | 3.0 |
| T17 | 500 | 30 | 1" | 280 | 3.5 |

► 30P/N/M self-operated pressure control valve



▲ Summary

The 30P/N/M self-operated pressure control valve is composed of the control valve, actuator and a spring used for pressure setting. It is suitable for controlling before-valve pressure (when the before-valve pressure rises, the control valve is opened) or after-valve pressure (when the after-valve pressure rises, the control valve is closed) in the pipes of non-corrosive liquids, gases and steams. It is widely used in such industries as petroleum, chemical industry, electric power, metallurgy, medicine, food, textile, machinery, heating & ventilating, etc.

Technical parameters and performances

Body

| | |
|----------------------------|---|
| DN | DN20、25、32、40、50、65、80、100、125、150、200、250、300mm |
| PN | PN1.6、4.0、6.4MPa |
| Flange standard | JB/T79.1-94、79.2-94等 |
| Body material | Cast iron (HT200), cast steel (ZG230-450), cast stainless steel (ZG1Cr18Ni9Ti, ZG1Cr18Ni12Mo2Ti) |
| Plug type | Single-seat (P), double-seat (N), sleeve (M) |
| Plug material | Hard seal Stainless steel (1Cr18Ni9Ti, 1Cr18Ni12Mo2Ti) Soft seal Stainless steel embedded with rubber ring |
| Stem material | Stainless steel (1Cr18Ni9Ti, 1Cr18Ni12Mo2Ti) |
| Pressure balancing | Stainless steel bellows |
| Flow characteristic | Quick open |
| Working temperature | -20-80℃ -20 ~ 350℃ |

Actuator

| | |
|---------------------------------|--|
| Pressure setting range | 15 ~ 50; 40 ~ 80; 60 ~ 100; 80 ~ 140; 120 ~ 180; 160 ~ 220; 200 ~ 260; 240 ~ 300; 280 ~ 350; 300 ~ 400; 380 ~ 450; 430 ~ 500; 480 ~ 560; 540 ~ 620; 600 ~ 700; 680 ~ 800; 780 ~ 900; 880 ~ 1000; 950 ~ 1500; 1000 ~ 2500 |
| Diaphragm cover material | Teflon coated A3, A4 steel sheet |
| Diaphragm material | NBR, EPR, fluorine rubber, oil resistant rubber |

Performance

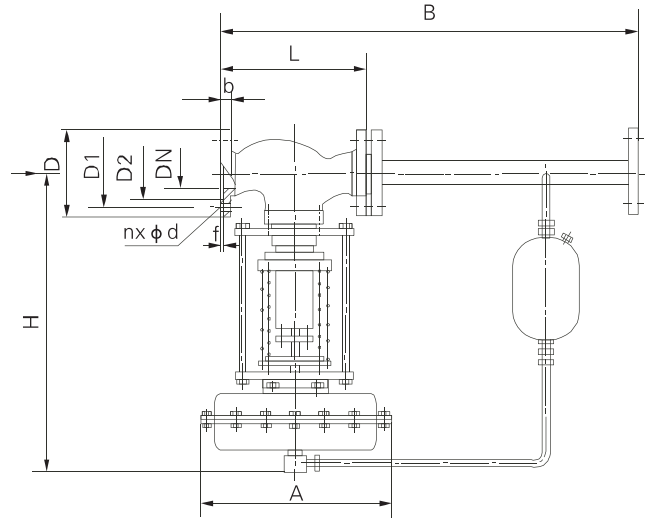
| | | | | | |
|--|------------------|---|----------------|----------------|----------------|
| Set value error | ± 5% | | | | |
| Allowable leakage (under stipulated testing conditions) | Hard seal | Single-seat: ≤10 ⁻⁴ valve rated capacity; double-seat, sleeve: 5×10 ⁻³ valve rated capacity | | | |
| | Soft seal | DN15 ~ 50 | DN65 ~ 125 | DN150 ~ 250 | DN300 |
| | | 10 bubbles/min | 20 bubbles/min | 40 bubbles/min | 60 bubbles/min |

TANA self-operated control valve

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► 30P/N/M self-operated pressure control valve

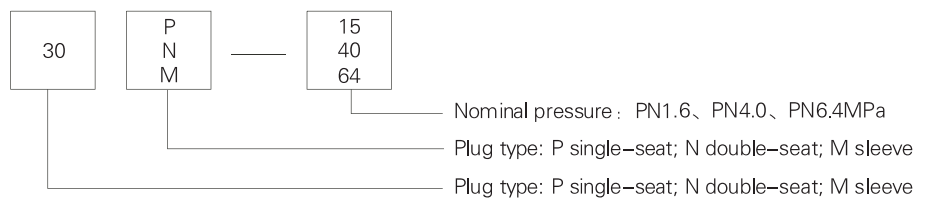


Rated flow coefficient, rated travel, pressure reducing ratio

| DN | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 |
|-------------------------|----|----|----|----|----|----|-----------|-----|-----|-----|-----|------|------|
| Rated flow coefficient | 7 | 11 | 20 | 30 | 48 | 75 | 120 | 190 | 300 | 480 | 760 | 1100 | 1750 |
| Rated travel(mm) | 8 | | 10 | | 14 | 20 | | 25 | 40 | | 50 | 60 | 70 |
| Pressure reducing ratio | | | | | | | Max. 10:1 | | | | | | |
| | | | | | | | Min. 10:8 | | | | | | |

| DN | 20 | 20 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | | | |
|------------------------------------|----------|-----|-----|-----|-----|-----|-----|------|------|-----|------|------|-----------|------|------|------|
| Pressure pipe connection thread | 383 | | 512 | | 603 | 862 | | 1023 | 1380 | | 1800 | 2000 | 2200 | | | |
| Flange pipe size | 150 | 160 | 180 | 200 | 230 | 290 | 310 | 350 | 400 | 480 | 600 | 730 | 850 | | | |
| Flange face-to-face dimensions Kpa | 15-140 | H | 475 | | 520 | | 540 | | 710 | | 780 | 840 | 880 | 915 | 940 | 1000 |
| | | A | 580 | | 308 | | | | | | | | | | | |
| | 130-300 | H | 455 | | 500 | | 520 | | 690 | | 760 | 800 | 870 | 880 | 900 | 950 |
| | | A | 230 | | | | | | | | | | | | | |
| | 280-500 | H | 450 | | 490 | | 510 | | 680 | | 750 | 790 | 860 | 870 | 890 | 940 |
| | | A | 176 | | | | 194 | | | | 280 | | | | | |
| | 480-1000 | H | 445 | | 480 | | 670 | | 740 | 780 | 850 | 860 | 880 | 930 | | |
| | | A | 176 | | | | 194 | | | | 280 | | | | | |
| | 600-1500 | H | 445 | | 570 | | 600 | | 820 | | 890 | 950 | | 1000 | 1100 | 1200 |
| | | A | 85 | | 96 | | | | | | | | | | | |
| 1000-2500 | H | 445 | | 570 | | 600 | | 820 | | 890 | 950 | | 100 | 1100 | 1200 | |
| | A | 85 | | 96 | | | | | | | | | | | | |
| Pressure control range(kg) | 26 | | 37 | | 42 | 72 | 90 | 114 | 130 | 144 | 180 | 200 | 250 | | | |
| Mass | | | | | | | | | | | | | M16 × 1.5 | | | |

Model description



► 30W02 nitrogen sealing device



▲ Summary

The 30W02 nitrogen sealing device is composed of the control valve, actuator, pressure spring, pilot, pulse pipe and other parts.

It is mainly used for maintaining the pressure of gas (generally nitrogen) at the top of the vessel constant so as to prevent the materials in the vessel from contacting the air, volatilizing and being oxidized and ensure vessel safety.

It is especially suitable for gas sealing protection systems of various large-sized storage tanks. The product has such features as energy saving, agile action, reliable running, convenient operation and maintenance, etc. It is widely used in petroleum, chemical industry, etc.

Technical parameters and performances

Body

| | |
|----------------------------|--|
| DN | DN20、25、32、40、50、65、80、100mm |
| PN | PN1.6、4.0、6.4MPa |
| Flange standard | JB/T79.1-94、79.2-94等 |
| Body material | Cast iron (HT200), cast steel (ZG230-450), cast stainless steel (ZG1Cr18Ni9Ti, ZG1Cr18Ni12Mo2Ti) |
| Plug type | Single-seat (P), double-seat (N), sleeve (M) |
| Plug material | Stainless steel (1Cr18Ni9Ti, 1Cr18Ni12Mo2Ti) |
| Hard seal | |
| | Stainless steel embedded with rubber ring |
| Soft seal | |
| Stem material | Stainless steel (1Cr18Ni9Ti, 1Cr18Ni12Mo2Ti) |
| Pressure balancing | Stainless steel bellows |
| Flow characteristic | Quick open |
| Working temperature | ≤80℃ |

Actuator

| | |
|---------------------------------|---|
| Pressure setting range | 0.4~0.5 5~10 9~14 13~19 18~24 22~28 27~33 36~44 42~51 49~58 56~66 |
| Diaphragm cover material | Teflon coated A3, A4 steel sheet |
| Diaphragm material | NBR, EPR, fluorine rubber, oil resistant rubber |

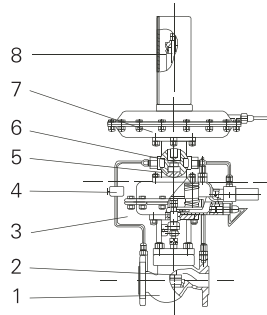
TANA self-operated control valve

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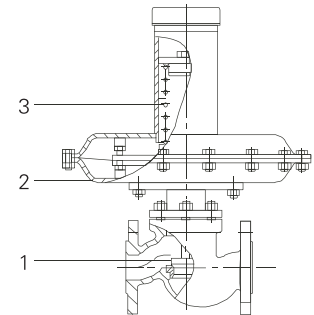
Automation Instrument

► 30W02 nitrogen sealing device

- 1. Main valve
- 2. Detection mechanism
- 3. Spring



30W02-01 nitrogen supply device



30W02-02 nitrogen discharge device

- | | | |
|----------------------------|--------------------|------------------------|
| 1. Main valve | 2. Main valve plug | 3. Main valve actuator |
| 4. Pressure reducing valve | 5. Throttle valve | 6. Pilot plug |
| 7. Detection mechanism | 8. Preset spring | |

Performance

Set value error

± 5%

Allowable leakage

Standard type

Class IV (conforming to GB/T4312-92)

Tight type

Class VI (conforming to GB/T4312-92)

Rated flow coefficient, rated travel, performance

30W02-01 nitrogen supply device

| | | | | | | | | | | | | | | | | |
|------------------------|-----|------|-----|-----|-----|-----|-----|-----|----|----|----|----|----|-----|-----|-----|
| DN | 25 | | | | | | | | | | 32 | 40 | 50 | 65 | 80 | 100 |
| Seat size | 5 | 6 | 7 | 8 | 10 | 12 | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | |
| Flowcoefficient | 0.2 | 0.32 | 0.5 | 0.8 | 1.8 | 2.8 | 4.4 | 6.9 | 11 | 20 | 30 | 48 | 75 | 120 | 190 | |
| Rated travel | 8 | | | | | 10 | | | | | 14 | 20 | | 25 | | |

30W02-02 nitrogen discharge device

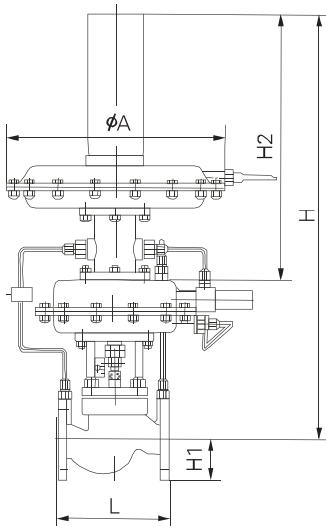
| | | | | | | | | |
|------------------------|-----|----|----|----|----|----|-----|-----|
| DN | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 |
| Seat size | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 |
| Flowcoefficient | 6.9 | 11 | 20 | 30 | 48 | 75 | 120 | 190 |
| Rated travel | 8 | | 10 | | 14 | 20 | | 25 |

Working principle

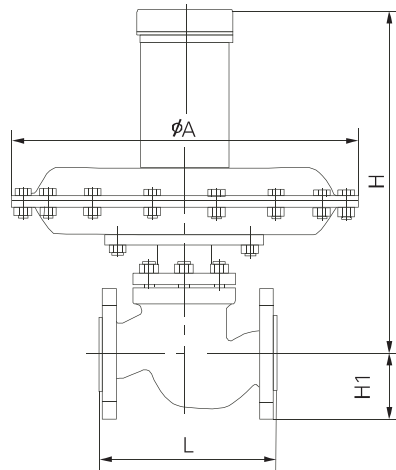
In the nitrogen supply device (see figure 1), the medium at the pressure point at the top of the tank is introduced to the detection mechanism (7) through the pressure pipe. The medium produces an acting force on the detection element, which balances the pre-tightening force of the preset spring (8). When the pressure in the tank drops to be lower than the pressure set point of the nitrogen supply device, the balance is destroyed, so that the pilot plug (6) is opened, and the before-valve gas enters the upper and lower diaphragm chambers of the main valve actuator (3) after passing through the pressure reducing valve (4) and throttle valve (5). The main valve plug (2) is opened and nitrogen is filled into the tank. When the pressure in the tank rises to the pressure set point of the nitrogen supply device, the pilot plug (6) is closed by the preset spring force. Due to the spring action in the main valve actuator, the main valve is closed and nitrogen supply is stopped.

The nitrogen discharge device (see figure 2) is an internal feedback mechanism. The medium enters the detection mechanism (2) after passing through the bonnet. The medium produces an acting force on the detection element, which balances the pre-tightening force of the spring (3). When the pressure in the tank rises to be higher than the pressure set point of the nitrogen discharge device, the balance is destroyed, so that the plug (1) moves upward to open the valve and discharge nitrogen to the outside. When the pressure in the tank falls to the pressure set point of the nitrogen discharge device, the valve is closed by the preset spring force.

► 30W02 nitrogen sealing device



Outline dimensions figure of nitrogen supply device



Outline dimensions figure of nitrogen discharge device

1. Outline dimensions and weight of nitrogen supply device

| | | | | | | | |
|--------------------|-----|-----|-----|-----|-----|-----|-----|
| DN(mm) | 25 | 32 | 40 | 50 | 65 | 80 | 100 |
| L | 160 | 180 | 200 | 230 | 290 | 310 | 350 |
| A | 308 | 308 | 308 | 308 | 394 | 394 | 394 |
| H2 | 415 | 415 | 415 | 115 | 415 | 415 | 415 |
| H1 | 60 | 75 | 80 | 85 | 95 | 105 | 120 |
| H | 720 | 730 | 730 | 750 | 790 | 840 | 890 |
| Weight (kg) | 32 | 35 | 40 | 50 | 90 | 115 | 280 |

1. Outline dimensions and weight of nitrogen supply device

| | | | | | | | |
|-------------------|-----|-----|-----|-----|-----|-----|-----|
| DN(mm) | 25 | 32 | 40 | 50 | 65 | 80 | 100 |
| L | 160 | 180 | 200 | 230 | 290 | 310 | 350 |
| A | 308 | 308 | 308 | 308 | 394 | 394 | 394 |
| H1 | 60 | 75 | 80 | 85 | 95 | 105 | 120 |
| H | 380 | 400 | 420 | 430 | 550 | 560 | 570 |
| Weight(kg) | 12 | 13 | 15 | 17 | 20 | 28 | 38 |

► The 30W01 self-operated micro-pressure control valve

▲ Summary

The 30W01 self-operated micro-pressure control valve is widely used for controlling after-valve pressure (mmH₂O) of noncorrosive gas or air with pressure no higher than 1.4MPa, working temperature no higher than 120°C (or 150°C) and pressure control range of 0.14 – 7.2KPa. It is widely applied in gas sealing pressure control devices of various oil products, chemicals and liquid storage tanks.



Pressure balancing part

▲ Body

DN15~100mm
PN1.6 4.0Mpa
Material: WCB Cf8 CF8M

▲ Bonnet

Material: WCB Cf8 CF8M
Pressure balancing part: diaphragm + spring
Material: spring 304

▲ Diaphragm

NBR: -40 – 120°C
Fluorine rubber: -20 – 150°C
EPR: -50 – 150°C

▲ ZA7 Actuator (pilot)

Diaphragm box: Punch forming with A3 steel sheet
Diaphragm: NBR, fluorine rubber, EPR
Spring: 304
Plug: 304
Seat: 304t
Stem: 304

*The actuator with five kinds of pressure control ranges and one model

*Easy assembly and disassembly, convenient control

► The 30W01 self-operated micro-pressure control valve

The 30W01 micro-pressure control valve

| | | | | | | | | | | |
|---|----------------------------|--------------|---------------|---------------|-----------------|---------------|----------------|-----------|----|-----|
| DN | DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 |
| Rated flow coefficient | Kv | 4 | 6.3 | 8 | 16 | 20 | 32 | 50 | 80 | 25 |
| Flow characteristic | | | | | | | Quick open | | | |
| PN | PN | 1.6Mpa | | | | | | | | |
| Pressure balancing part | Spring | 1Cr18Ni9 | | | | | | | | |
| | Bellows diaphragm | NBR | | | Fluorine rubber | | | EPR | | |
| | Working temperature | -40~120°C | | | -20~150°C | | | -50~150°C | | |
| Allowable leakage (input 0.1MPa pressure before the valve) | | 1 bubble/min | 2 bubbles/min | 3 bubbles/min | 4 bubbles/min | 6 bubbles/min | 11 bubbles/min | | | |

Main technical parameters of ZA7 actuator (pilot)

| | | | |
|---|---|-----------------|-----------|
| Effective area(cm²) | 430 | | |
| After-valve pressure control range (Kpa) | 0.14~0.36 | 0.32~1.00 | 0.90~2.50 |
| Maximum output force Mpa | ≤ 1.4 | | |
| Minimum output force Mpa | ≥ 0.2 | | |
| Diaphragm material | NBR | Fluorine rubber | EPR |
| Working temperature °C | -40~120°C | -20~150°C | -50~150°C |
| Adjusting precision | ± 15% | | |
| Control pipeline, connection | Copper pipe or steel pipe Φ 10X1(mm); ferrule connection: R1/4" | | |

Product features:

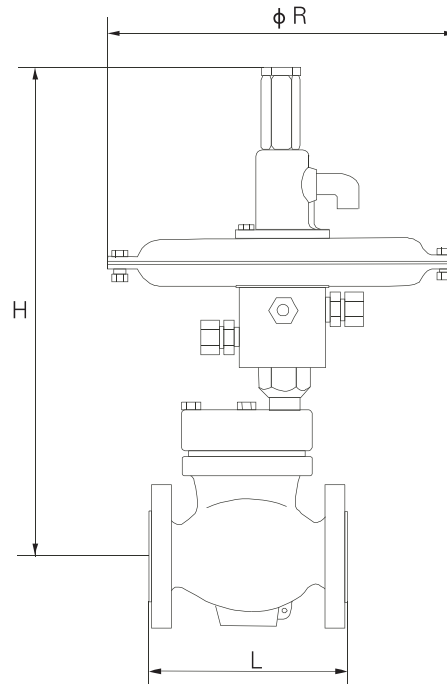
- * Simple structure, convenient installation and commissioning, low maintenance cost
- * Wide adjusting range: Adjustment of five levels can be carried out within the range of 14~720mmH₂O.
- * Fast response and high adjusting precision
- * Playing the safety protection function when being used in the storage tank nitrogen sealing system.

TANA self-operated control valve

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► 30W01 Main outline dimensions and weight of self-operated micro pressure controller

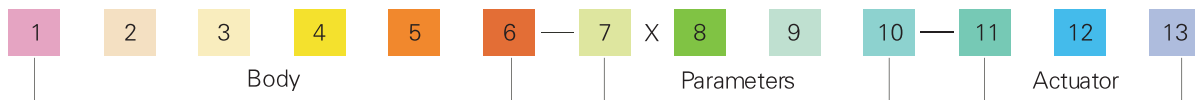


I. Normal temperature type

| A | φ R | DN | | | | | | | | |
|----------------|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 |
| ZA7 | Hmm | 320 | 370 | 390 | 400 | 410 | 438 | 460 | 500 | 520 |
| φ 280mm | Kg | 18 | 21 | 26 | 32 | 40 | 47 | 60 | 65 | 71 |
| L | | 160 | 160 | 160 | 230 | 230 | 230 | 290 | 310 | 350 |

► Model establishment descriptions

Model establishment descriptions



Body descriptions

| 1Code | Control valve | 3Code | Control type |
|-------|-----------------------------|-------|---|
| 3 | Self-operated control valve | D01 | After-valve pressure control in pressure reducing valve |
| | | D02 | Before-valve pressure control in bypass valve |
| | | D03 | Valve closed if differential pressure rises |
| | | D04 | Valve opened if differential pressure rises |
| | | D12 | After-valve pressure in pilot-operated valve |
| | | D13 | Before-valve pressure in pilot-operated valve |
| | | L01 | Flow |
| | | T01 | Temperature (heating type) |
| | | T02 | Temperature (cooling type) |
| 2Code | Body type | | |
| 0 | Straight-through | | |
| 1 | Angle type | | |
| 4Code | Seal type | | |
| Y | Hard seal | W01 | Micro pressure (pressure reducing) |
| R | Soft seal | W02 | Double-diaphragm micro pressure (pressure reducing) |
| | | X01 | Pilot-operated (pressure reducing) |

Parameters

| 5Code | Accessories | 6Code | Connection type | 9Code | 10Code | 7Code | 8Code |
|-----------------------|-------------------------------|-------|-----------------|--------|------------------------|---|---|
| 0 | No | 1 | Flange | PN | Flow characteristic | DN | Plug size |
| 1 | With pilot | 2 | Socket welding | | D Equal percentage | Filled according to the actual parameters | |
| 2 | With cooling tank | 3 | Butt welding | | Z Linear | | |
| 3 | With heat sink | 4 | Thread | | K Quick open | | |
| 4 | With cooling tank + heat sink | | | | | | |
| 5 | With extension | | | | | | |
| 6 | Assemblies | | | | | | |
| 7 | With travel indicator | | | | | | |
| Actuator descriptions | | | | 12Code | Actuator specification | 13Code | Action type |
| 11Code | Actuator type | | | 32 | 32 | ZA3 | After-valve pressure control in pressure reducing valve |
| Z | Self-operated pressure | 80 | 80 | 80 | 80 | ZA4 | Before-valve pressure control in bypass valve |
| AF | Self-operated temperature | 250 | 250 | 250 | 250 | ZA3 | Valve closed if differential pressure rises |
| | | 630 | 630 | 630 | 630 | ZA4 | Valve opened if differential pressure rises |
| | | T06 | T06 | T06 | T06 | ZA5 | Flow |
| | | T17 | T17 | T17 | T17 | ZA6 | Pilot-operated |
| | | | | | | ZA7 | Micro pressure |

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