

► **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**

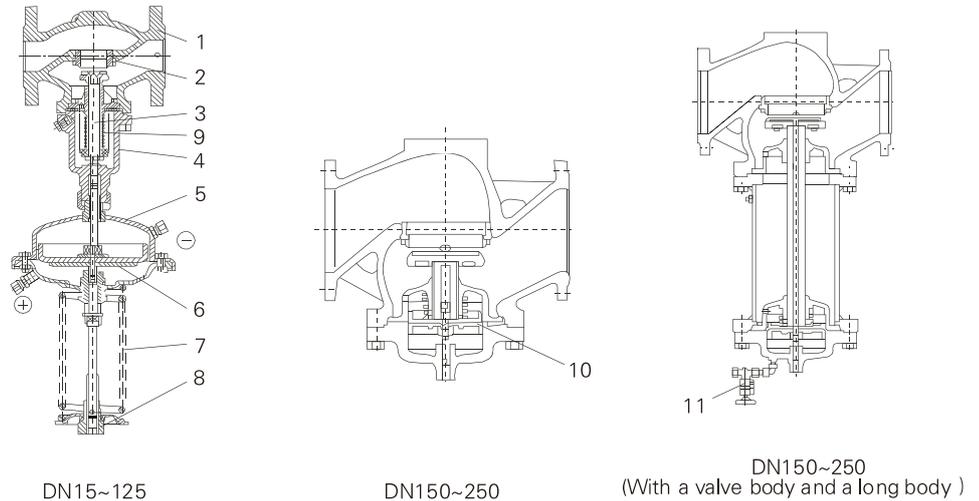
Body			
<b>DN</b>	DN15、20、25、32、40、50、65、80、100、125、200、250mm		
<b>PN</b>	PN1.6、4.0MPa		
<b>Flange standard</b>	ANSI、JIS、DIN、GB、JB(special standards can be offered according to user requirements)		
<b>Body material</b>	Cast iron (HT200), cast steel (ZG230-450), cast stainless steel (ZG1Cr18Ni9Ti, ZG1Cr18Ni12Mo2Ti)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

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

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



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	≤ 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.

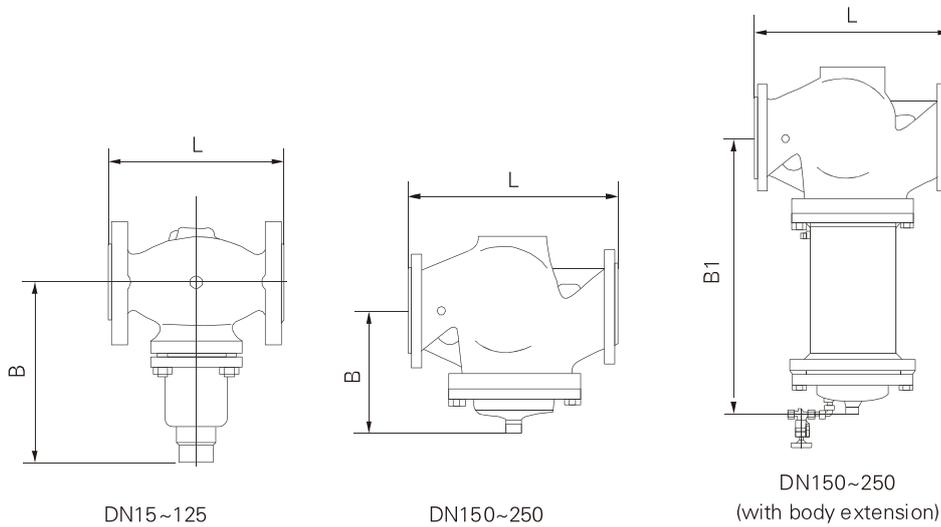
Rated flow coefficient, noise measuring coefficient, allowable differential pressure													
DN	15	20	25	32	40	50	65	80	100	125	150	200	250
Rated flow coefficient	4	6.3	8	16	20	32	50	80	125	160	280	320	450
Noise measuring coefficient Z value	0.6	0.6	0.6	0.55	0.55	0.5	0.5	0.45	0.4	0.35	0.3	0.2	0.2
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  $\Delta P$ . 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.

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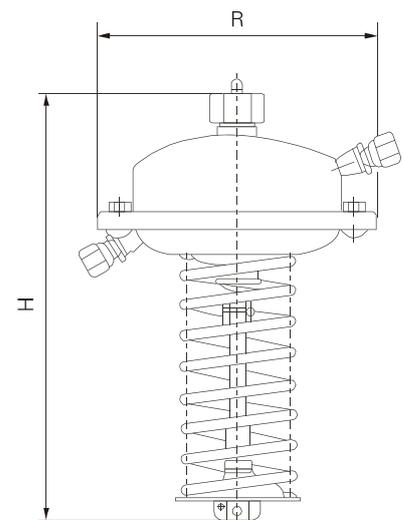


I. Dimensions and weight of control valve

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

II. Dimensions and weight of actuator

<b>Effective area(cm<sup>2</sup>)</b>	32	80	250	630
<b>R (mm)</b>	172	172	263	380
<b>H (mm)</b>	435	430	470	520
<b>Weight(Kg)</b>	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.



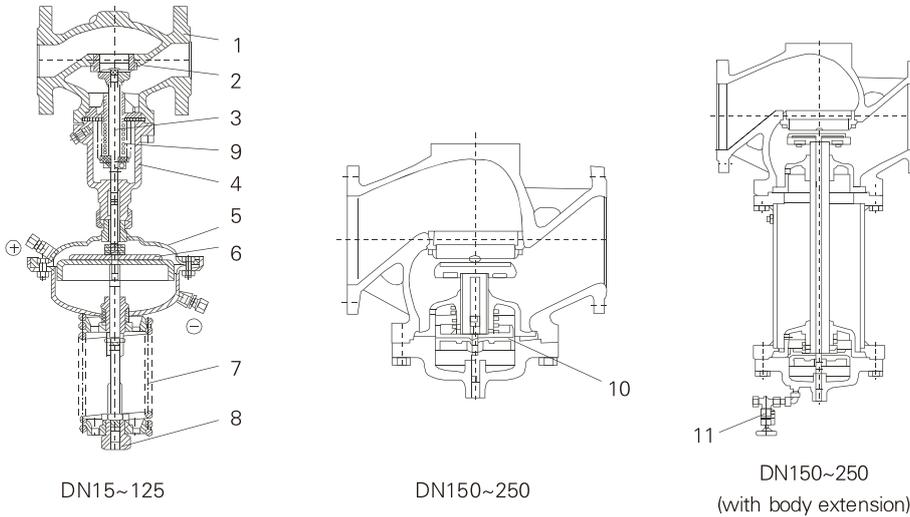
**Technical parameters and performances**

Body			
<b>DN</b>	DN15、20、25、32、40、50、65、80、100、125、200、250mm		
<b>PN</b>	PN1.6、4.0MPa		
<b>Flange standard</b>	ANSI、JIS、DIN、GB、JB(special standards can be offered according to user requirements)		
<b>Body material</b>	Cast iron (HT200), cast steel (ZG230-450), cast stainless steel (ZG1Cr18Ni9Ti, ZG1Cr18Ni12Mo2Ti)		
<b>Plug material</b>	<b>Hard seal</b>	Stainless steel (1Cr18Ni9Ti, 1Cr18Ni12Mo2Ti)	
	<b>Soft seal</b>	Stainless steel embedded with rubber ring	
<b>Pressure balancing</b>	Stainless steel bellows (DN15~125), balanced diaphragm (DN150~250)		
Actuator			
<b>Effective area</b>	80	250	630
<b>Pressure setting range</b>	0.1~0.5 0.05~0.3	0.015~0.12 0.01~0.07	0.005~0.035
<b>Minimum differential pressure that ensures normal work of the pressure valve</b>	≥0.04	≥0.01	≥0.005
<b>Allowable maximum differential pressure between the upper and lower diaphragm chambers</b>	1.25	0.4	0.15
<b>Material</b>	Diaphragm cover: galvanized steel sheet; diaphragm: EPDM or FKM with fiber		
<b>Control pipeline, connection</b>	Copper pipe or steel pipe Φ10X1(mm); ferrule connection: R1/4"		

**Performance**

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

Seal type	DN	15~125mm		150~250mm	
		Hard seal	Soft seal	Hard seal	Soft 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.

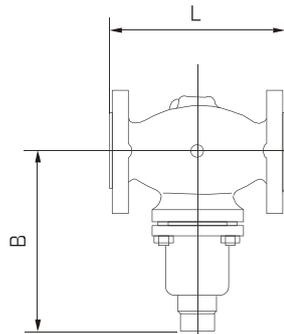
**Rated flow coefficient, noise measuring coefficient, allowable differential pressure**

DN	15	20	25	32	40	50	65	80	100	125	150	200	250
<b>Rated flow coefficient</b>	4	6.3	8	16	20	32	50	80	125	160	280	320	450
<b>Noise measuring coefficient Z value</b>	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
<b>Allowable differential pressure</b>	PN16		PN40		1.6		1.5		1.2		1.0		
					2.0								

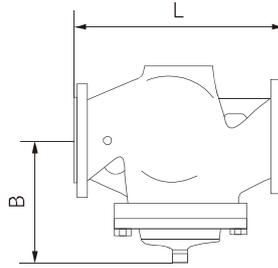
**Working principle**

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.

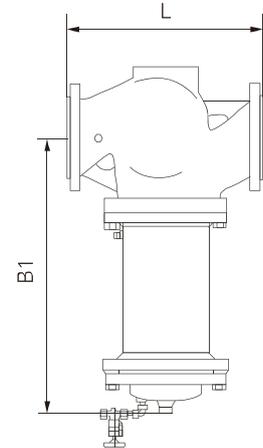
► The 30D04Y、30D04R self-operated differential pressure control valve



DN15~125



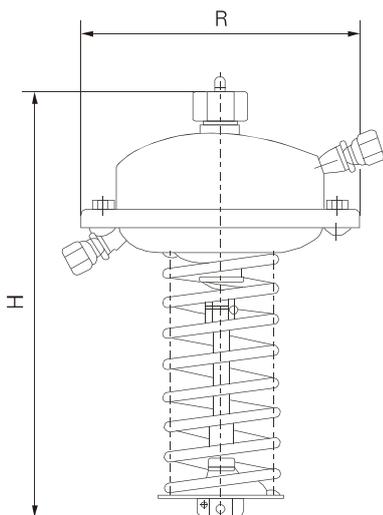
DN150~250



DN150~250  
(with body extension)

I. Dimensions and weight of control valve

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



II. Dimensions and weight of actuator

<b>Effective area(cm<sup>2</sup>)</b>	32	80	250	630
<b>R (mm)</b>	172	172	263	380
<b>H (mm)</b>	435	430	470	520
<b>Weight(Kg)</b>	7.5	7.5	13	28