



# TIANJIN FREYA AUTOMATION TECHNOLOGY CO., LTD.

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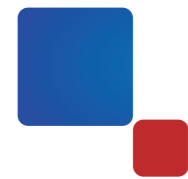
Add: Industrial Park, Zhongbei Town, Xiqing District, Tianjin

**FRY·弗瑞亚**  
Electric Actuator

Pressure reducing  
Valve

Balancing Valve

Product Catalog



TIANJIN FREYA AUTOMATION TECHNOLOGY CO., LTD.

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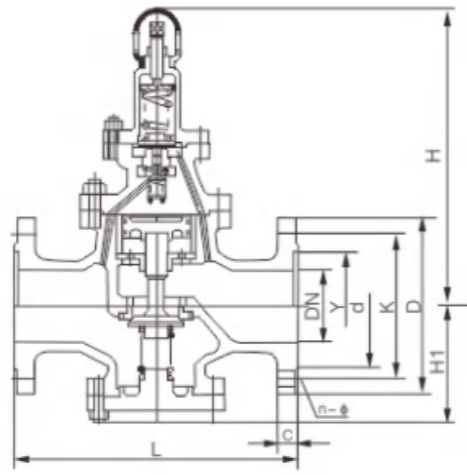
COMPANY PROFILE

Founded in 2014, Freya specializes in fluid control products and services such as valves, actuators, electric valve actuators, and electric valves. It focuses on the process industry and has long been committed to providing services to process industries such as power, steel, building materials, and water treatment to provide professional fluid control solutions. Based on the actual working conditions, through necessary on-site surveying and technical explanations, we provide customers with safe, economical and environmental-friendly selection and design, supply in strict accordance with contract requirements and guide installation and debugging, and hand over for use if standards are met. Thanks to the trust of the vast number of users, through long-term and large-scale on-site services, and the effective accumulation of technical experience, the company has an accurate understanding of the real needs and pain points of users and the market, as well as expectations for equipment manufacturers.

The company based on its own patent R & D and production of intelligent electric actuators, reliable, durable, easy to use, cost-effective and guaranteed service. Being close to users, providing full-process services, cover-all services, repair and maintenance value-added services, and escorting users' production are our differentiating advantages. Freya intelligent electric actuator and electric valve actuator provide a two-year warranty and lifetime free after-sales service after installation and commissioning. Technical quality and commercial credit are the two foundations on which the company relies to survive and drive the development of the company. Users feel reassured, worry-free and happy, which are the only criteria to evaluate the effectiveness of our work and demonstrate the value of our existence.



# Y43 STEAM PRESSURE REDUCING VALVE



## Structural features

This series of pressure reducing valves are pilot piston type pressure reducing valves. They are composed of two parts: the main valve and the pilot valve. The main valve is mainly composed of valve seat, main valve disc, piston, cylinder sleeve, spring and other parts. The pilot valve is mainly composed of valve seat, valve disc, diaphragm, spring, regulating spring and other parts. The outlet pressure is set by adjusting the pressure of the regulating spring, and the outlet pressure change is sensed by the diaphragm. The pilot valve is opened and closed to drive the piston to adjust the size of the flow area of the throttling part of the main valve to achieve the pressure reduction and stabilization function. This product is mainly used in steam pipelines to play a role in pressure reduction and stabilization.

## Main technical parameters

Nominal pressure (MPa)	1.6	2.5	4.0	6.4	10.0	16.0
Shell test pressure(MPa)	2.4	3.75	6.0	9.6	15.0	24.0
Sealing test pressure(MPa)	1.6	2.5	4.0	6.4	10.0	16.0
Max. inlet pressure(MPa)	1.6	2.5	4.0	6.4	10.0	16.0
Outlet pressure range(MPa)	0.1-1.0	0.1-1.6	0.1-2.5	0.5-3.5	0.5-3.5	0.5-4.5
Pressure characteristics derivation(MPa)	GB-12246-1989	GB-12246-1989	GB-12246-1989	GB-12246-1989	GB-12246-1989	GB-12246-1989
Flow characteristics derivation(MPa)	GB-12246-1989	GB-12246-1989	GB-12246-1989	GB-12246-1989	GB-12246-1989	GB-12246-1989
Max. pressure derivation(MPa)	0.15	0.15	0.2	0.4	0.8	1.0
Leakage	GB-12245-1989	GB-12245-1989	GB-12245-1989	GB-12245-1989	GB-12245-1989	GB-12245-1989

# Y43 STEAM PRESSURE REDUCING VALVE

## Main parts material

Name	Material
Valve body, bonnet	WCB
Valve seat, disc	2Cr13
Cylinder sleeve	2Cr13/25
Piston	2Cr13
Piston ring	Alloy cast iron
Pilot seat, stem	2Cr13
Diaphragm	1Cr18Ni9Ti
Main valve spring	50CrVA
Pilot valve main spring	50CrVA
Regulating spring	60Si2Mn

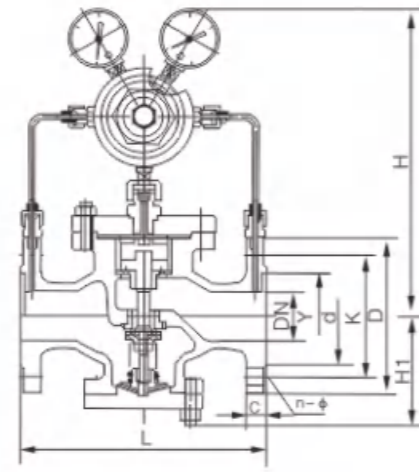
## Main dimensions

Unit: mm

DN	L		H	H1	DN	L		H	H1
	1.6/2.5MPa	4.0MPa				6.4MPa	10/16MPa		
15	160	180	295	90	15	180	180	305	100
20	160	180	330	98	20	180	200	340	105
25	180	200	330	110	25	200	220	340	120
32	200	220	330	110	32	220	230	340	120
40	220	240	345	125	40	240	240	355	135
50	250	270	345	125	50	270	300	355	135
65	280	300	350	130	65	300	340	360	140
80	310	330	385	160	80	330	360	395	170
100	350	380	385	170	100	380	380	400	185
125	400	450	400	200	125	450	450	415	215
150	450	500	415	210	150	500	500	430	225
200	500	550	475	240	200	550	550	495	260
250	650	650	525	290	250	650	650	545	310
300	800	800	580	335	300	800	800	600	355
350	850	850	620	375	350	850	850	640	395
400	900	900	660	405	400	900	900	690	435
450	900	900	730	455	500	950	950	780	495
500	950	950	750	465					

## Flow coefficient

DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450
CV	1	2.5	4	6.5	9	16	25	36	64	100	140	250	400	570	780	1020	1500



**Structural features**

This series of pressure reducing valves are pilot piston type pressure reducing valves. They are composed of two parts: the main valve and the pilot valve. The main valve is mainly composed of valve seat, main valve disc, piston, cylinder sleeve, spring and other parts. The pilot valve is mainly composed of valve seat, valve disc, diaphragm, spring, regulating spring and other parts. The outlet pressure is set by adjusting the pressure of the regulating spring, the outlet pressure change is sensed by the diaphragm, and the size of the flow area of the throttling part of the main valve is adjusted by the opening and closing of the pilot valve to drive the piston to achieve the pressure reduction and stabilization function. This product is mainly used in gas pipelines, such as air, nitrogen, oxygen, hydrogen, liquefied gas, natural gas and other gases.

**Main technical parameters**

Nominal pressure (MPa)	1.6	2.5	4.0	6.4	10.0	16.0
Shell test pressure(MPa)	2.4	3.75	6.0	9.6	15.0	24.0
Sealing test pressure(MPa)	1.6	2.5	4.0	6.4	10.0	16.0
Max. inlet pressure(MPa)	1.6	2.5	4.0	6.4	10.0	16.0
Outlet pressure range(MPa)	0.1-1.0	0.1-1.6	0.1-2.5	0.5-3.5	0.5-3.5	0.5-4.5
Pressure characteristics derivation(MPa)	GB-12246-1989	GB-12246-1989	GB-12246-1989	GB-12246-1989	GB-12246-1989	GB-12246-1989
Flow characteristics derivation(MPa)	GB-12246-1989	GB-12246-1989	GB-12246-1989	GB-12246-1989	GB-12246-1989	GB-12246-1989
Max. pressure derivation(MPa)	0.15	0.15	0.2	0.4	0.8	1.0
Leakage	GB-12245-1989	GB-12245-1989	GB-12245-1989	GB-12245-1989	GB-12245-1989	GB-12245-1989

**Main parts material**

Name	Material
Valve body, bonnet	WCB
Valve seat, disc	2Cr13/304
Cylinder sleeve	25/304
Piston	2Cr13
Piston ring	Alloy cast iron
Pilot seat, stem	2Cr13/304
Diaphragm	1Cr18Ni9Ti
Main valve spring	50CrVA
Pilot valve main spring	50CrVA
Regulating spring	60Si2Mn

**Main dimensions**

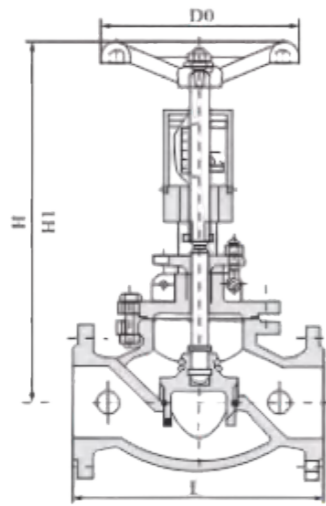
Unit: mm

DN	L		H	H1	DN	L		H	H1
	1.6/2.5MPa	4.0MPa				6.4MPa	10/16MPa		
15	160	180	290	90	15	180	180	300	100
20	160	180	300	98	20	180	200	310	105
25	180	200	300	110	25	200	220	310	120
32	200	220	300	110	32	220	230	310	120
40	220	240	320	125	40	240	240	335	135
50	250	270	320	125	50	270	300	335	135
65	280	300	325	130	65	300	340	340	140
80	310	330	365	160	80	330	360	380	170
100	350	380	365	170	100	380	380	380	185
125	400	450	475	200	125	450	450	490	215
150	450	500	475	210	150	500	500	490	225
200	500	550	515	240	200	550	550	535	260
250	650	650	560	290	250	650	650	580	310
300	800	800	705	335	300	800	800	725	355
350	850	850	745	375	350	850	850	765	395
400	900	900	780	405	400	900	900	800	435
450	900	900	830	455	500	950	950	855	495
500	950	950	835	465					

**Flow coefficient**

DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450
CV	1	2.5	4	6.5	9	16	25	36	64	100	140	250	400	570	780	1020	1500

## KPF-16 BALANCING VALVE



### Structural features

KPF-16 balancing valve is a valve with special functions. It has good flow characteristics, can reasonably distribute flow, realize flow quantification, and can effectively solve the problem of uneven room temperature in the heating system. Since the valve is equipped with an opening degree indicator, an opening locking device and a small pressure measuring valve for flow measurement, as long as a balancing valve of appropriate specifications is installed on each branch and user entrance, and a special intelligent instrument is used for one-time debugging and locking, the total water volume of the system can be controlled within a reasonable range, thus overcoming the irrational phenomenon of "large flow, small temperature difference".

### Main technical parameters

Nominal pressure MPa	Test pressure MPa		Working pressure MPa		Working medium	Temperature
	Shell	Sealing	P20	P21		
1.6	2.4	1.76	1.5	1.6	Water	100°C

### Main parts material

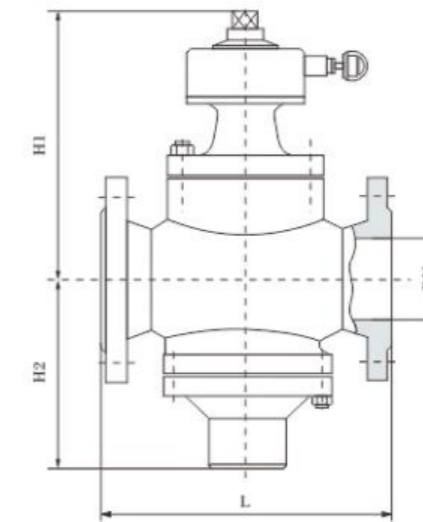
Name	Body, bonnet, disc sleeve	Stem, seat	Stem nut	Gasket	Packing
Material	Gray cast iron	Stainless steel	Copper casting	Rubber asbestos	Expanded Graphite

### Main dimensions

Unit: mm

DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	500	600
L	130	150	160	180	200	230	290	310	350	400	480	495	622	698	787	914	968	1037
H	150	160	182	192	250	264	380	413	446	540	623	687	782	914	968	1037	978	1298
H1	160	170	197	207	270	284	410	448	506	595	688	762	867	1009	1073	1152	1440	1790
D0	80	80	80	90	100	120	200	200	240	240	360	400	500	500	680	680	1440	1790

## ZL47F-16 SELF-OPERATED BALANCING VALVE



### Structural features

The ZL47F-16 self-operated balancing valve is mainly composed of an automatic regulating valve disc and a manual regulating valve disc. It uses the pressure change of the medium itself as the power to automatically adjust the balance of the flow of each branch pipeline, accurately stabilize the flow, and has the functions of opening indication, locking, closing, etc. It is suitable for flow control of non-corrosive media such as heating and air conditioning. A one-time adjustment before operation can automatically keep the system flow constant at the required set value.

### Main technical parameters

Model	Nominal pressure	Shell test pressure	Medium	Temperature
ZL47F-16	1.6MPa	2.4MPa	Water, oil, etc.	0-100°C

### Main dimensions

Unit: mm

DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350
L	110	110	115	160	200	215	230	275	290	315	350	430	520	635	670
H1	122	122	137	182	191	197	205	259	268	334	357	407	452	486	555
H2	70	70	74	91	147	147	154	181	211	227	260	303	367	430	495