STANDARD SPECIFICATION

CHUANHU

蒸汽减压阀

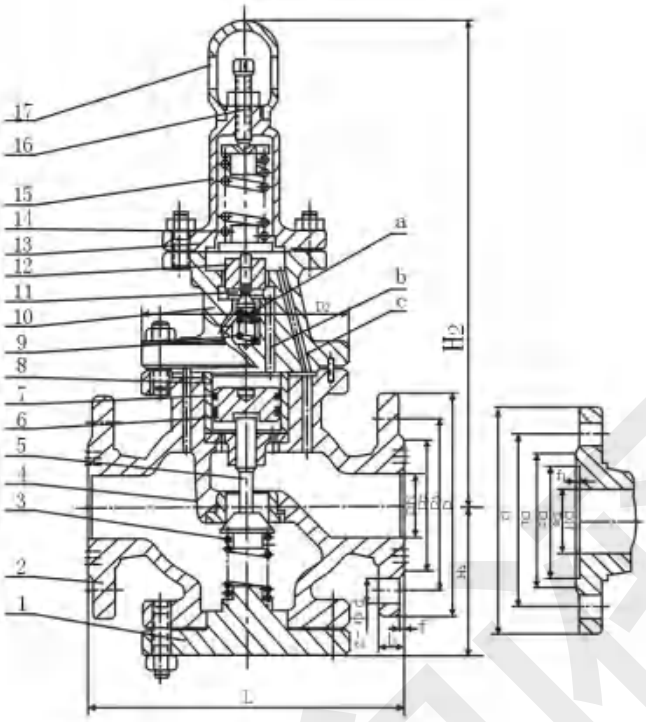
使用说明书

上海川沪阀门有限公司

ShangHai Chuanhu Valve CO.,LTD

Y43 H/F 16/25/40/64 活塞式减压阀
Piston Reducing Valve

结构图
Structural Diagram



1	下盖 Bottom cover	10	上盖 Top cover
2	阀体 Body	11	付阀 Auxiliary valve
3	主阀弹簧 Main valve spring	12	付阀座 Auxiliary valve seat
4	主阀座 Main valve seat	13	膜片 Diaphragm
5	主阀 Main valve	14	调节弹簧 Adjusting spring
6	活塞 Piston	15	帽盖 Cap
7	活塞环 Piston ring	16	调节螺钉 Adjusting screw
8	缸套 Cylinder liner	17	顶帽 Top cap
9	付阀弹簧 Auxiliary valve spring		

用途和主要性能
Purpose and Main Properties

本阀适用于蒸汽、空气介质管路上，Y43F适用于氧气、空气介质管路上，通过调节将使进口压力降低至某一需要的出口压力，当进口压力与流量有变化时，靠介质本身能量，可自动保持出口压力在一定范围内，但进口压力和出口压力之差必须≥0.2MPa/cm²。

Y43H is applicable for the steam medium pipeline while Y43F for the oxygen medium pipeline. Through the adjustment the inlet pressure can be reduced to a certain required value of outlet pressure. When the inlet pressure and the flow change, the outlet pressure can be maintained within a certain range automatically by right of the medium's own energy, but the difference between the inlet and outlet pressure must be >0.2MPa/cm².

Y43 H/F -16

公称压力 Nominal pressure	试验压力(MPa) Test pressure		压力调节范围 (MPa) Pressure regulation range			适用温度 ℃ Applicable temperature
	强度 Strength	密封 Seal	进口压力 Inlet pressure	出口压力 Outlet pressure	出口压力偏差值 Outlet pressure deviation	
1.6	2.4	1.76	0.25～1.6	0.05～1	≤±0.05	≤300

Y43$\frac{H}{F}$-25

公称压力 Nominal pressure	试验压力(MPa) Test pressure		压力调节范围 (MPa) Pressure regulation range			适用温度℃ Applicable temperature	
	强度 Strength	密封 Seal	进口压力 Inlet pressure	出口压力 Outlet pressure	出口压力偏差值 Outlet pressure deviation	Y43H	Y43F
2.5	3.75	2.75	2.5	0.1～1.6	≤±0.07	200	≤200
			2.3			250	
			1.8			350	

Y43$\frac{H}{F}$-40

公称压力 Nominal pressure	试验压力(MPa) Test pressure		压力调节范围 (MPa) Pressure regulation range			适用温度℃ Applicable temperature	
	强度 Strength	密封 Seal	进口压力 Inlet pressure	出口压力 Outlet pressure	出口压力偏差值 Outlet pressure deviation	Y43H	Y43F
4	6	4.4	4	0.1～2.5	≤±0.07	200	≤200
			3.3			300	
			2.8			400	

Y43$\frac{H}{F}$-64

公称压力 Nominal pressure	试验压力(MPa) Test pressure		压力调节范围 (MPa) Pressure regulation range			适用温度℃ Applicable temperature	
	强度 Strength	密封 Seal	进口压力 Inlet pressure	出口压力 Outlet pressure	出口压力偏差值 Outlet pressure deviation	Y43H	Y43F
6.4	9.6	7.04	6.4	0.1～3	≤±0.07	200	≤200
			5.2			300	
			2.9			450	

注：工作温度>300℃要定做

Note: customization required for working temperature>300℃

工作原理及其结构 （参看结构图）

Working Principle and Structure (see Structural Diagram)

减压阀出厂时，调节弹簧处于未压缩状态，此时主阀瓣和付阀瓣处于关闭状态，使用时按顺时针方向转动调节螺钉，压缩调节弹簧，使膜片下移顶开付阀瓣，介质由a孔通过付阀座到b孔进入活塞上方，活塞在介质压力的作用下，向下移动推动主阀瓣离开主阀座，使介质流向阀后，同时由c孔进入膜片下方，当阀后压力超过调定压力时，推动膜片上移压缩调节弹簧。付阀瓣随之向关闭方向移动，使流入活塞上方的介质减小，压力也随之下降，此时主阀瓣在主阀瓣弹簧力的推动下上移，使主阀瓣与主阀座的间隙减小，介质流量随之减少，使阀后压力随之下降到新的平衡，反之当阀后压力低于调定压力时，主阀瓣和主阀座间隙增大，介质流量随之增加，使阀后压力随之增高达到新的平衡。

When the pressure reducing valve is released from the factory, its adjusting spring is in an uncompressed state while its main valve and auxiliary valve disc are in the closed state. To use it, rotate the adjusting screw clockwise to compress the adjusting spring and make the diaphragm move down to open the auxiliary valve disc. The medium flows from the orifice a to the orifice b through the auxiliary valve seat and then into the area above the piston. Acted by the medium pressure, the piston moves down to drive the main valve disc to leave the main valve seat and make the medium flow to the back of the valve and meanwhile through the orifice c and into the area below the diaphragm. When the after-valve pressure exceeds the set value, it will push the diaphragm upwards to compress the adjusting spring. Then the auxiliary valve disc will move in the closed direction to reduce the medium flowing to the area above the piston, and the pressure will drop as well; here the main valve disc will be pushed by the main valve disc's spring force to move upwards to reduce the clearance between the main valve's disc and seat while the medium flow will reduce as well and the after-valve pressure will also drop to strike a new balance. Contrarily, when the after-valve pressure is lower than the set value, the clearance between the main valve's disc and seat will increase and the medium flow will increase as well so that the after-valve pressure will increase to strike a new balance.

主要外形尺寸和连接尺寸
Main overall and connection dimensions

$Y43\frac{H}{F}-16$

公称通径 Nominal diameter	尺寸 Dimension (mm)										重量 Weight Kg
	L	D	D_1	D_2	D_3	b	f	H_1	H_2	Z-Φ	
20	160	105	75	55	100	16	2	89	312	4-14	11.5
25	180	115	85	65	115	16	2	101	315	4-14	15.5
32	200	135	100	78	130	18	2	107	320	4-18	18.7
40	220	145	110	85	145	18	3	113	325	4-18	22.7
50	250	160	125	100	155	20	3	120	335	4-18	26.5
65	260	180	145	120	170	20	3	125	340	4-18	30
80	310	195	160	135	200	22	3	140	360	8-18	40
100	350	215	180	155	200	24	3	150	390	8-18	48
125	400	245	210	185	245	26	3	190	415	8-18	80
150	450	280	240	210	245	28	3	205	440	8-23	95
200	500	335	295	265	335	30	3	220	475	12-23	125
250	600	405	355	320	420	34	4	270	545	12-25	270
300	800	460	410	375	425	36	4	335	575	12-25	445
350	850	520	470	435	510	40	4	390	650	16-25	680
400	900	580	525	485	580	44	4	430	705	16-30	850

$Y43\frac{H}{F}-25$

公称通径 Nominal diameter	尺寸 Dimension (mm)										重量 Weight Kg
	L	D	D_1	D_2	D_3	b	f	H_1	H_2	Z-Φ	
25	200	115	85	65	115	16	2	101	315	4-14	17
32	200	135	100	78	125	18	2	107	320	4-18	20
40	220	145	110	85	140	18	3	113	325	4-18	22.8
50	250	160	125	100	140	20	3	120	335	4-18	26
65	260	180	145	120	160	22	3	125	340	8-18	27.5
80	310	195	160	135	180	22	3	140	360	8-18	42.5
100	350	230	190	160	200	24	3	150	390	8-23	52
125	400	270	220	188	260	28	3	190	425	8-25	90
150	450	300	250	218	275	30	3	210	445	8-25	103
200	500	360	310	278	340	34	3	245	485	12-25	144
250	600	425	370	332	420	36	3	270	545	12-30	305
300	800	485	430	390	425	40	4	335	575	16-30	498
350	850	550	490	448	510	44	4	390	660	16-34	720
400	900	610	550	505	580	48	4	430	710	16-34	890

主要外形尺寸和连接尺寸
Main overall and connection dimensions

Y43$\frac{H}{F}$-40

公称通径 Nominal diameter	尺寸 Dimension (mm)												重量 Weight Kg
	L	D	D_1	D_2	D_3	D_6	b	f	f_1	H_1	H_2	Z-Φ	
25	200	115	85	65	115	58	16	2	4	101	315	4-14	19
32	220	135	100	78	130	66	18	2	4	107	320	4-18	22
40	240	145	110	85	140	76	18	3	4	113	325	4-18	26
50	270	160	125	100	140	88	20	3	4	120	335	4-18	31
65	280	180	145	120	160	110	22	3	4	140	365	8-18	40
80	330	195	160	135	200	121	22	3	4	150	385	8-18	58
100	380	230	190	160	200	150	24	3	4.5	150	385	8-23	64
125	440	270	220	188	260	176	28	3	4.5	190	425	8-25	100
150	500	300	250	218	275	204	30	3	4.5	210	445	8-25	122
200	560	375	320	282	340	260	38	3	4.5	245	485	12-30	190

Y43$\frac{H}{F}$-64

公称通径 Nominal diameter	尺寸 Dimension (mm)												重量 Weight Kg
	L	D	D_1	D_2	D_3	D_6	b	f	f_1	H_1	H_2	Z-Φ	
25	200	135	100	78	130	58	22	2	4	110	370	4-18	16
32	220	150	110	82	135	66	24	2	4	125	380	4-23	26
40	240	165	125	95	150	76	24	3	4	130	395	4-23	32
50	270	175	135	105	160	88	26	3	4	135	405	4-23	42
65	280	200	160	130	180	110	28	3	4	145	410	8-23	56
80	330	210	170	140	208	121	30	3	4	170	445	8-23	71
100	380	250	200	168	208	150	32	3	4.5	175	455	8-25	80
125	440	295	240	202	295	176	36	3	4.5	245	504	8-30	130
150	500	340	280	240	350	204	38	3	4.5	280	555	8-34	165
200	560	405	345	300	408	260	44	3	4.5	310	581	12-34	220

主要零件材料
Materials of Main Parts

零件名称 Part Name	材料 Material	零件名称 Part Name	材料 Material
阀体、阀盖、下阀盖 Body/bonnet/bottom bonnet	灰铸铁、铸钢 Grey cast iron/ stainless steel/ cast steel	付阀瓣弹簧、主阀瓣弹簧 Auxiliary/main valve disc spring	铬钒钢 Chrome-vanadium steel
付阀瓣、付阀座、主阀瓣主阀座、膜片、活塞 Auxiliary valve disc/seat, main valve disc/seat, diaphragm/piston	不锈钢 Stainless steel	调节弹簧 Adjusting spring	硅锰钢 Silicon-manganese steel
		活塞环 Piston ring	合金铸铁 Alloy cast iron

注：Y43H-16阀体、阀盖、下阀盖材料为灰铸铁；Y43H-$\frac{25}{40}{64}$阀体、阀盖、下阀盖材料为铸钢。

Note: Grey cast iron for the material of body, bonnet and bottom bonnet of Y43H-16; cast steel for the material of body, bonnet and bottom bonnet of Y43H-25/40/64.

安装与使用
Installation and use

1、减压阀Y43$\frac{H}{F}$-16备有0.05~0.4MPa；Y43$\frac{H}{F}$-25备有1~1.6MPa；Y43$\frac{H}{F}$-40备有1~1.6MPa，1.6~2.5MPa调节弹簧，Y43$\frac{H}{F}$-64备有1~3MPa调节弹簧，出厂时阀内装有0.1~1MPa弹簧，其余随阀附带，用户可根据所需的出口压力值选装。

2、安装减压阀之前必须对管路系统进行冲洗清理，以防焊渣、氧化皮等脏物流入阀内，影响阀门正常工作。

1. Before installing the pressure reducing valve, it's necessary to rinse and clean the pipeline system to prevent dirt like welding slag and oxide skin from flowing into the valve and affecting the valve's normal work.

2. The pressure reducing valve shall be installed in a place easy for operation and maintenance and must be installed vertically on a horizontal pipeline (see Installation Diagram). It shall be noted that the flow direction of the medium inside the pipeline shall be the same as but not opposite to that indicated by the arrow head on the valve body.

3、减压阀应安装在便于操作和维修的地方，并且必须直立安装在水平管路上(见安装示意图)，应注意使管路中介质的流向与阀体上箭头所示方向一致，切勿装反。

4、减压阀在安装使用时，应先把旁通管路上的截止阀打开，排除管路中的冷凝水和汽水混合物，以防减压阀开启时产生水击现象损坏减压阀，当无异常现象后，按顺时针方向缓慢旋转调节螺钉，将出口压力调至所需要的压力(以阀后表压为准)，调整好后，将锁紧螺母背紧，拧上防护罩。

5、减压阀前应安装过滤器，以防止介质中的杂质进入减压阀，影响其性能。

6、安装的减压阀前后有一段直管，阀前直管长度约为600毫米，阀后直管长度约为1,000毫米。

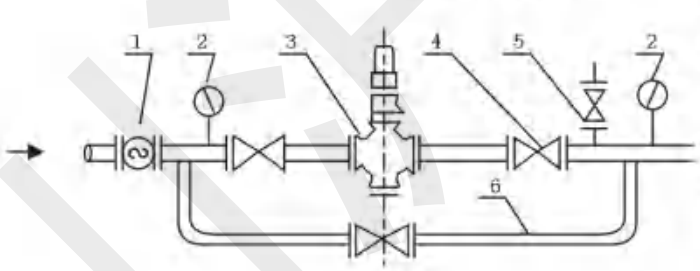
3. Before installing and using the pressure reducing valve, it's necessary to open the globe valve on the bypass pipeline first to discharge the condensed water and the steam-water mixture in the pipeline to prevent the water hammer, caused by the valve's opening, from damaging the valve. When all is normal, rotate the adjusting screw clockwise slowly to adjust the outlet pressure to the required value (subject to the after-valve gauge pressure). After the adjustment, fasten the lock nut and screw on the protective hood.

4. A filter shall be installed before the pressure reducing valve to prevent impurities in the medium from going into the valve and affecting its performance.

5. There shall be a straight pipe respectively before and after the installed pressure reducing valve. The straight pipe before the valve shall be about 600mm long and that after the valve about 1,000mm long.

安 装 示 意 图

Installation Diagram



1、过滤器 1. Filter
2、压力表 2. Pressure gauge
3、减压阀 3. Pressure reducing valve
4、截止阀 4. Globe valve
5、安全阀 5. Safety valve
6、旁通道 6. Bypass valve

维 护 与 检 修

Maintenance and Overhaul

1、减压阀应存放在干燥的室内，通路两端必须用盲板堵塞，不准堆置存放。

2、长期存放的减压阀应定期检查，清洗污垢，在各运动部位及加工面上应涂以防锈剂，防止生锈。

1. The pressure reducing valve should be stored in a dry indoor place with both ends of the passage plugged with blind plates and not allowed to be piled up.

2. The pressure reducing valve stored for long should be checked regularly. Clean the filth and apply the antirust on all moving parts and finish surfaces to avoid the rust.

故障与消除方法

故障现象	产生原因	消除方法
减压阀不减压或减压失灵及直通	1、主阀或付阀密封面有污物 2、主阀或付阀密封面损坏 3、主、付阀瓣弹簧疲劳或折断 4、反馈通道C孔被堵塞 5、膜片疲劳或损坏 6、活塞汽缸磨损或腐蚀 7、活塞环槽与活塞环卡住 8、阀体腔内充满冷凝液	1、将污物清除干净 2、密封付研磨修复或更换 3、更换新弹簧 4、清除通道中的污物 5、更换膜片 6、加工修正或更换活塞环 7、拆下活塞清洗 8、松开螺塞排出冷凝液
不通汽	1、清洗过程中阀盖装错位 2、上垫片移位堵住进出孔 3、进入付阀通道孔堵塞	1、拆下阀盖定位后装好 2、使垫片孔对准进出孔 3、拆下阀盖清除通道污物

Faults and Removal Methods

Symptom	Reasons	Removal Methods
Pressure reducing valve reduce no pressure or failing to reduce pressure and straight-through	1、There is filth on the main of auxiliary valve's sealing surface 2、The main or auxiliary valve's sealing surface is damaged 3、The main or auxiliary valve's disc spring is fatigued or broken 4、The feedback channel orifice C is jammed 5、The diaphragm is fatigued or damaged 6、The piston cylinder is worn out or corroded 7、The piston ring is stuck in the piston ring groove 8、The valve body chamber is full of the condensed fluid	1、Clean the filth 2、Grind to restore or replace the seal pair 3、Replace the spring 4、Clean the filth at the channel orifice 5、Replace the diaphragm 6、Process to correct or replace the piston ring 7、Unload the piston to clean it 8、Release the screw plug to discharge the condensed fluid
Steam failing to go through	1、The bonnet is misplaced in cleaning 2、The upper gasket is displaced to plug the inlet and outlet orifices 3、The channel orifice accessible to the auxiliary valve is jammed	1、Unload the bonnet to position and install it in place 2、Align the gasket hole to the inlet and outlet orifices 3、Unload the bonnet to remove the filth in the channel

订货须知

1．订货时请注明阀前压力P1和阀后压力P2。无要求时出厂公称压力1.6MPa，按P1=0.6MPa，P2=0.2MPa，公称压力2.5MPa按P1=1.0MPa、P2=0.4MPa。

2．Y型过滤器必须注明工作压力和滤网目数。

3．与减压阀和Y型过滤器连接的法兰盘的螺栓、螺母、垫圈可以配套供应。

4．同时承接美标、日标特种用途等非标阀门。

5．代办托运、实行三包。

Order Information

1. In the order, please note the before-valve pressure P1 and the after-valve pressure P2. If not required, the default nominal pressure is 1.6MPa as per P1=0.6MPa; and nominal pressure 2.5MPa as per P1=1.0 and P2=0.4MPa.

2. It's necessary to provide the Y-filter's working pressure and sieve mesh number.

3. Supportive bolts, nuts and gaskets of flanges connecting the pressure reducing valve and the Y-filter can be supplied.

4. Also we can customize API and JIS special valves and other nonstandard valves.

5. Besides, we consign goods on commission and provide "3-R guarantees" (guaranteed repair, replacement and refund).

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