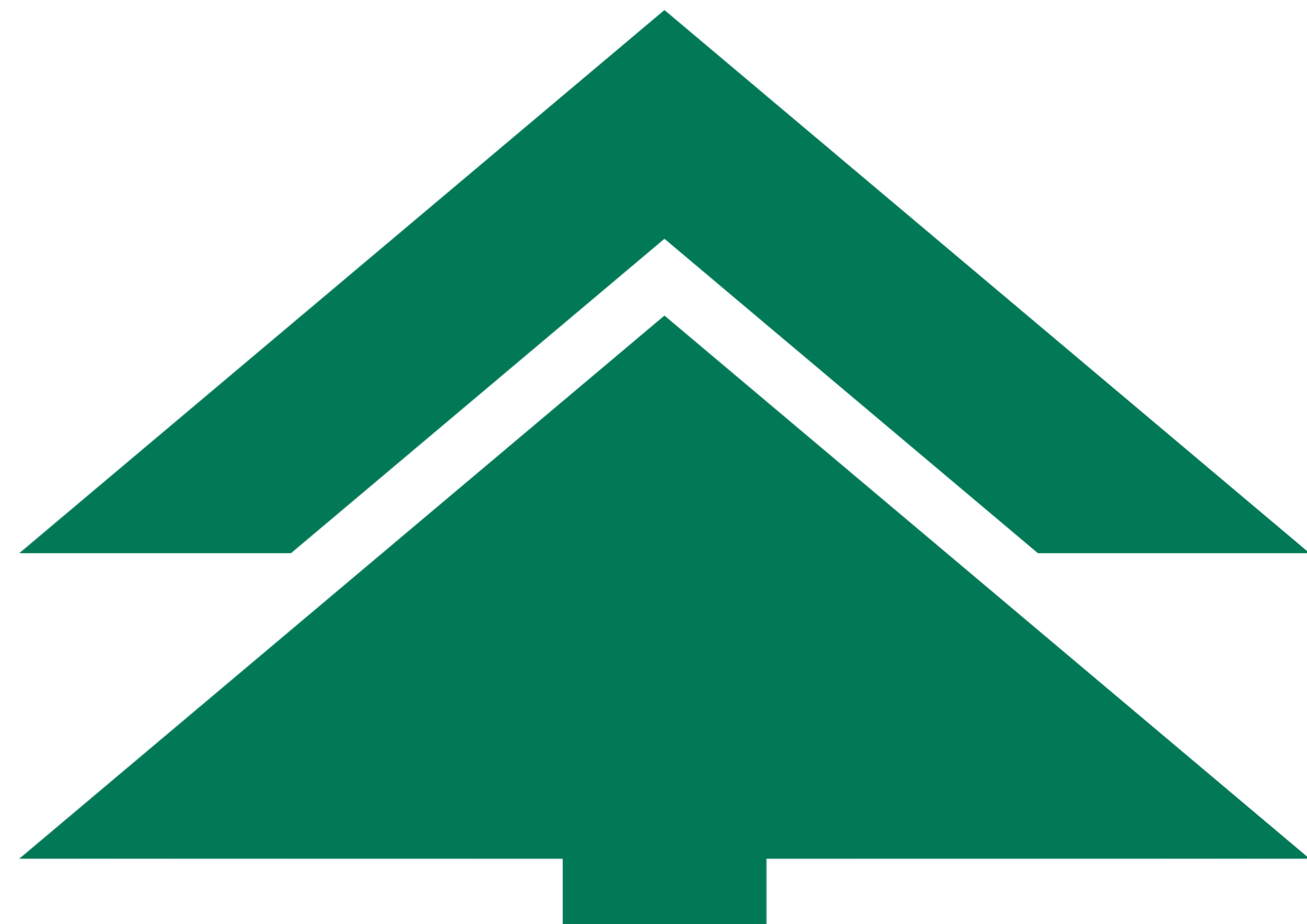




鸿森 · 为安全制冷护航

HONGSEN 鸿森



2025 制冷空调系统配件

REFRIGERATION A/C SYSTEM ACCESSORIES

2025

制冷空调系统配件 REFRIGERATION A/C SYSTEM ACCESSORIES

HONGSEN



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# HONGSEN

ESCORT FOR  
SAFE REFRIGERATION

为安全制冷护航

## 关于鸿森

# ABOUT HONGSEN

鸿森人有着对产品的匠人匠心精神,借助现代化高精尖设备和技术,做好每一款产品。

鸿森机械有限公司创建于1992年,一直潜心致力于制冷空调用各类阀门的开发、研究和制造。30年来,鸿森人“开拓进取,永不满足”的执着追求,坚持以高新技术为发展方向,坚持走规模效益、质量效益的可持续发展之路。

公司占地面积50000平方米,拥有员工400多人,以及一支30多人的专业技术团队,年生产能力2000万件。在西安交通大学等高校专家的指导下,聘请国内著名主机企业的技术行家为顾问,为企业培育了一批强有力的生产、技术和质量的精英,公司主要生产电子膨胀阀系列、电动调节阀系列、电磁阀系列、球阀系列、视镜系列、膨胀阀系列、截止阀系列、避震管系列、过滤器系列等多种产品,逐步发展为一体化生产企业。

Hongsen people have the spirit of craftsmanship, with the help of modern high-end equipment and technology, do every product well.

Zhejiang Hongsen Machinery Co., Ltd was founded in 1992, which devotes itself in the R&D and manufacture of various valves in refrigeration and air conditioning system. For 30 years, Hongsen Machinery staffs persistently adhere to open up, keep forging ahead and never rest content with their achievements. They insist on new and high-tech as the guidance in the development and pursue the sustainable development road with high productivity and quality efficiency.

Hongsen Machinery covers a land area of 50,000 square meters. There are over 400 staffs and workers including a specialty team of 30 technicians. Hongsen Machinery has a close cooperation with the professors and experts in Xian Jiao Tong University and several senior engineers of leading domestic OEMs are invited as the consultants of the company. A number of technical talents are trained in production, development and quality control and grow up in the company. At present, Hongsen Machinery is capable to manufacture multiple categories of refrigeration and A/C accessory parts such as electric expansion valve series, motorized regulating valve series, solenoid valve series, ball valve series, sight glass series, expansion valve series and shut off valve series. Hongsen Machinery becomes one company integrating R&D, production and marketing into one.



智能生产线  
ADVANCED PRODUCTION LINE

国内领先技术  
自动化生产

半自动红外线节能烘箱  
SEMI-AUTOMATIC  
INFRARED ENERGY-SAVING OVEN

高效节能  
操作便捷



精加工车间  
FINISHING CENTER

高精尖加工中心  
CNC数控



氦气检漏设备  
HELIUM TESTING  
MACHINE

高效精准  
环保安全



氦气检漏设备  
HELIUM TESTING  
MACHINE

自动检漏报警  
检测效率极高

每一款产品的背后  
是高精技术的匠心打造

# FOCUS ON REFRIGERATION FOR 30 YEARS

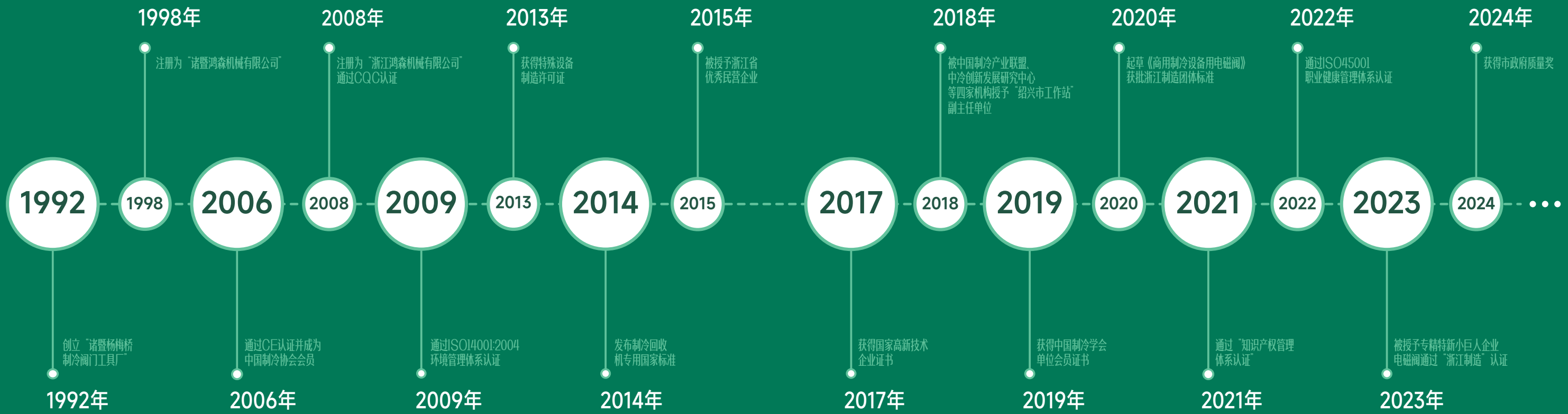
公司下设三个事业部：空调工具事业部、自控元件事业部和环境设备事业部，拥有国内先进的CNC加工设备及高端检测设备300余台（套）。

Hongsen has three production divisions: A/C tooling, Refrigeration Control parts and Environmental equipment, with the support more than 300 sets of inspecting equipments and advanced CNC equipments.

# 发展历程

## DEVELOPMENT HISTORY

REFRIGERATION & A/C SYSTEM ACCESSORIES



HONGSEN

## 全球品牌渠道

# GLOBAL BRAND CHANNELS



公司拥有自营进出口权，产品主要销往广州、上海、北京，并出口欧洲、美国、澳洲等地，并与国内知名空调制冷企业建立了长期业务合作关系，产品质量深受用户青睐。

Hongsen product is well sold in domestic market, like Guangzhou, Shanghai, Beijing, etc... exported mainly to Europe, USA, Australia. With its good quality, Hongsen has built long-term cooperation with famous companies in refrigeration or A/C.

# ELECTRONIC EXPANSION VALVE *Series*

电子膨胀阀系列

ESCORT FOR SAFE REFRIGERATION 为安全制冷护航

REFRIGERATION & A/C SYSTEM ACCESSORIES



DPF/DPFS/SPF系列电子膨胀阀适用于空调、商用冷柜、小型冷库、大型冷库和热泵等制冷系统中，精确控制系统中制冷剂流量，使系统始终在最佳状态下运行，达到快速制冷，实现精准控制和节能的目的。

DPF/DPFS electronic expansion valve is suitable for refrigeration systems such as air conditioners, commercial refrigerators, small refrigeration storage and heat pumps. It can accurately control the refrigerant flow in the system, so that the system can always run in the best state, achieve rapid cooling, and achieve the goal of precise control and energy saving.

HONGSEN

# DPF 系列电子膨胀阀

## DPF Series electronic expansion valve



### 产品概述 Product Description

DPF型电子膨胀阀适用于空调、商用冷柜、小型冷库和热泵等制冷系统中，精确控制系统中制冷剂流量，使系统始终在最佳状态下运行，达到快速制冷，实现精准控制和节能的目的。

DPF electronic expansion valve is suitable for refrigeration systems such as air conditioners, commercial refrigerators, small refrigeration storage and heat pumps. It can accurately control the refrigerant flow in the system, so that the system can always run in the best state, achieve rapid cooling, and achieve the goal of precise control and energy saving.

### 特点 Features

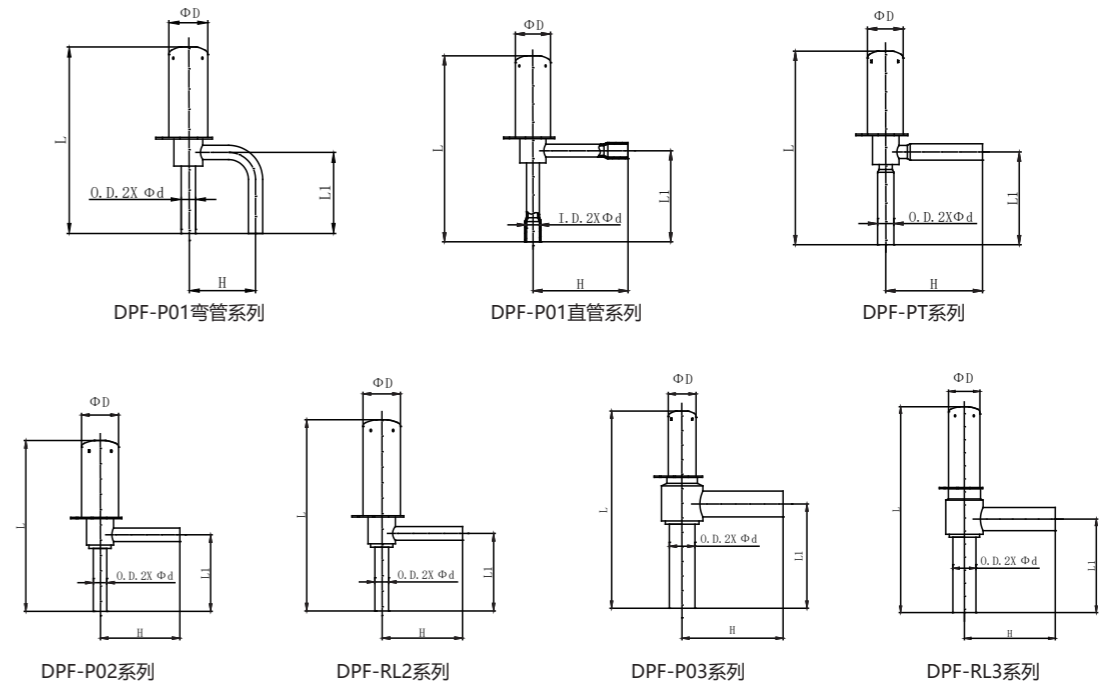
- 体积小、重量轻，性能稳定可靠；
- 反应和动作速度快；
- 膨胀阀结构可靠，噪音低，故障率低；
- DPF-RL3/DPF-P03系列产品采用平衡口设计，逆向开阀压力高；
- 适用于少油或无油系统

- Small size, light weight, stable and reliable performance;
- Fast response and action;
- New structure design of expansion valve, low noise and low failure rate;
- DPF-RL3/DPF-P03 series products apply design of balanced port, and the reverse valve opening pressure is high;
- Suitable for systems with little oil or no oil.

### 技术参数 Technical Parameters

适用制冷剂 Applicable refrigerant	R22、R134a、R404A、R407C、R410A
名义容量 Nominal capacity	2.5~126KW
介质温度 Medium temperature	-30~+70°C
环境温度 Environment temperature	-30~+60°C
环境湿度 Environment humidity	95%RH以下
全开脉冲 Full open pulse	500/1000PS
开阀脉冲 Valve opening pulse	32±20
额定电压 Rated voltage	12V DC (±10%)，矩形波 rectangular wave
励磁方式 Excitation mode	1-2相励磁，单极驱动 1-2 phase excitation, single pole drive
励磁速度 Excitation speed	30~90pps
结束励磁模式保持 Finishing excitation mode keeps	0.1~1.0s
全程耗时 Time cost for whole course	6s (83pps)
驱动电流 Drive current	260mA
线圈电阻 Coil resistance	46±3.7Ω/相
线圈绝缘等级 Coil insulation grade	E级
防护等级 Protect grade	IP65

### 结构 Structure



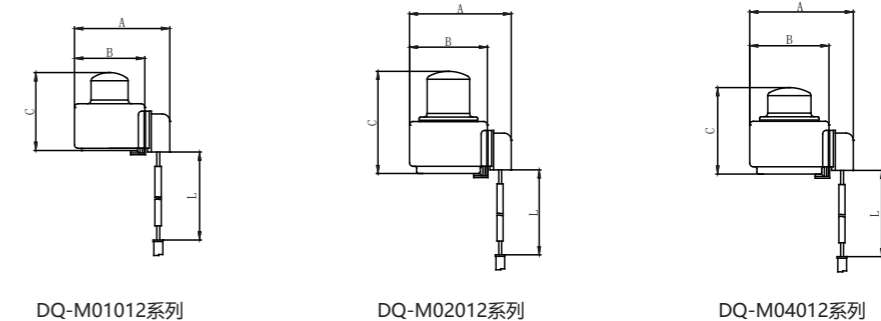
### 外型尺寸 Overall dimension

型号 Model	ΦD	L	L1	H	Φd
DPF-P01010~P01024弯管	17.36	83	36	30	6.35
DPF-P01010~P01024直管	17.36	92	45	47	6.5
DPF-PT028~PT032	17.36	94	45	47	7.94
DPF-P02028~P02032	21.76	100.5	45	47	7.94
DPF-RL2028~RL2032	21.76	106	42	42	7.94
DPF-P03040~P03065	17.36	122	64	63	16
DPF-RL3040~RL3065	21.76	142	64	63	16

注：接管尺寸可以根据要求定制。

Note: dimension of connecting pipe can be customized according to requirements

### 线圈 Coil



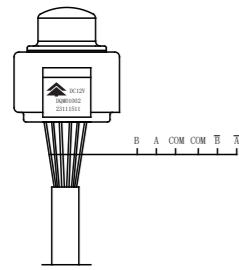
### 外型尺寸 Overall dimension

型号 Model	A	B	C	L	连接器型号 Connector model
DQ-M01012系列	51	38	42	/	XHP-5
DQ-M02012系列	57.5	44	57	/	XHP-6
DQ-M04012系列	57.5	44	46.5	/	XAP-5
					XAP-6

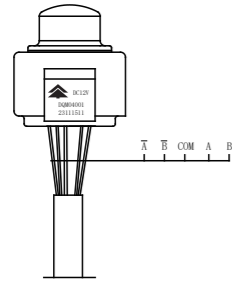
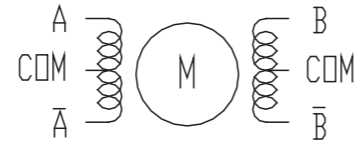
注：导线长度和连接器可根据客户要求定制。

Note: the lead wire length and connector can be customized according to customer's requirements.

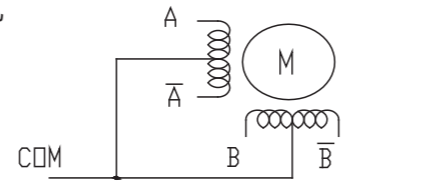
驱动时序 Driving schedule



四相八拍电机  
接线示意图



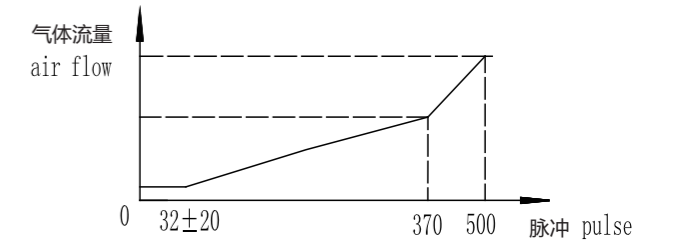
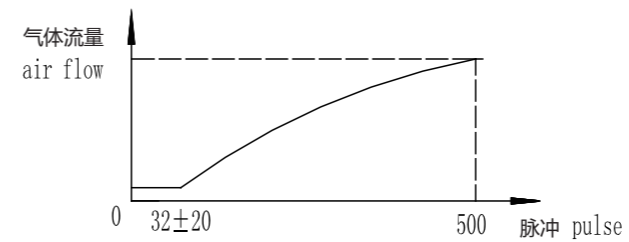
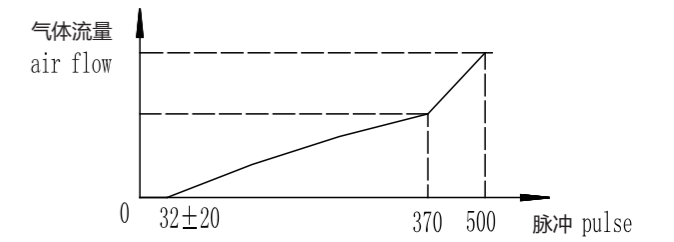
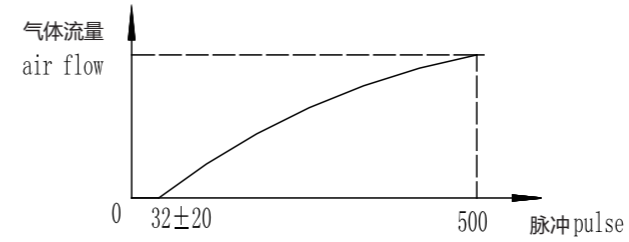
四相八拍电机  
接线示意图



励磁方式								
相号	1	2	3	4	5	6	7	8
A	///	///						///
B		///	///	///				
A-bar				///	///	///		
B-bar						///	///	

动作顺序: 1→2→3→4→5→6→7→8 关阀  
8→7→6→5→4→3→2→1 开阀

流量曲线示意图 Schematic pic. of flow curve



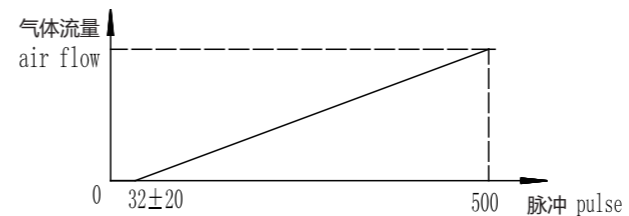
DPF-P01010~P01024 DPF-PT028~PT032

选型表 Model selection

产品系列 Product series	全开步数 Full open steps	通径 Diameter [mm]	Kv <sup>2</sup> [m <sup>3</sup> /h]	名义容量 [KW] <sup>1)</sup> Nominal capacity					最大工作压力 Max. working pressure [MPa]	最大工作压差 Max. working pressure difference [MPa]	逆向开阀压差 Reverse valve opening pressure difference [MPa]
				R22	R134a	R407C <sup>1)</sup>	R404A/R507	R410A <sup>1)</sup>			
DPF-P01013	500	1.30	0.06	4.36	3.40	4.46	3.08	5.12	4.2	3.2	≥1.47
DPF-P01016	500	1.65	0.08	8.01	6.26	8.22	5.65	9.42	4.2	3.2	≥1.47
DPF-P01018	500	1.80	0.10	9.11	7.10	9.32	6.44	10.70	4.2	3.2	≥1.47
DPF-P01020	500	2.00	0.16	11.25	8.77	11.51	7.95	13.21	4.2	2.8	≥1.47
DPF-P01022	500	2.20	0.20	13.61	10.61	13.92	9.61	15.98	4.2	2.8	≥1.47
DPF-P01024	500	2.40	0.23	16.20	12.63	16.57	11.44	19.02	4.2	2.8	≥1.47
DPF-PT030	500	3.00	0.39	20.20	15.78	20.76	14.24	23.77	4.2	2.8	≥1.47
DPF-PT032	500	3.20	0.43	27.85	21.76	28.62	19.63	32.78	4.2	2.8	≥1.47
DPF-P03040	500	6.50	0.50	40.37	31.54	41.49	28.45	47.52	4.2	4.2	≥3.5
DPF-P03045	500	6.50	0.70	50.48	39.44	51.88	35.58	59.42	4.2	4.2	≥3.5
DPF-P03055	500	6.50	0.80	67.30	52.58	69.16	47.44	79.21	4.2	4.2	≥3.5
DPF-P03065	500	6.50	1.10	100.96	78.88	103.75	71.16	118.83	4.2	4.2	≥3.5

名义工况:  
• 额定能力基于: R407C冷凝温度: +38°C; 蒸发温度: +5°C;  
过冷度: 0 K; 过热度: 0 K;  
• Kv值: 基于密度为1T/m<sup>3</sup>的水、阀门两端压差等于100KPa时的  
正向流动能力。

Nominal condition:  
• Rated capacity is based on: R407C condensing temperature: +38°C; evaporating  
temperature: +5°C; super cooling degree: 0 K; super heat degree: 0 K;  
• Kv value: the pressure difference based on the two sides between water with  
density 1T/m<sup>3</sup> and the valve is equal to the positive flow capacity at 100Kpa.



DPF-P03040~P03065

注: 流量曲线要求可以根据要求定制。  
Note: the flow curve can be customized according to requirement.

额定能力 (kW) Rated capacity															
	冷凝温度 [°C] Condensing temperature	DPF-P01013							DPF-P01016						
		蒸发温度 [°C] Evaporating temperature							蒸发温度 [°C] Evaporating temperature						
		10	5	0	-5	-10	-20	-30	10	5	0	-5	-10	-20	-30
R410A	30	4.38	4.73	5.02	5.24	5.41	5.63	5.71	8.06	8.72	9.25	9.65	9.96	10.36	10.51
	35	4.72	5.00	5.22	5.41	5.54	5.70	5.73	8.68	9.21	9.63	9.95	10.20	10.49	10.56
	38	4.87	5.12	5.31	5.46	5.58	5.70	5.73	8.95	9.42	9.78	10.06	10.26	10.50	10.54
	40	4.93	5.17	5.36	5.49	5.59	5.70	5.70	9.10	9.53	9.86	10.11	10.29	10.49	10.50
	45	5.07	5.26	5.39	5.49	5.58	5.63	5.61	9.33	9.68	9.93	10.13	10.26	10.38	10.32
	50	5.10	5.24	5.36	5.42	5.48	5.49	5.42	9.39	9.65	9.85	9.99	10.07	10.11	10.00
R407C	30	3.79	4.06	4.28	4.43	4.55	4.66	4.66	6.96	7.47	7.86	8.15	8.36	8.57	8.60
	35	4.12	4.65	4.50	4.61	4.70	4.77	4.75	7.58	7.99	8.28	8.50	8.64	8.76	8.74
	38	4.28	4.46	4.60	4.70	4.77	4.80	4.77	7.88	8.22	8.47	8.65	8.76	8.85	8.78
	40	4.38	4.55	4.66	4.75	4.80	4.83	4.77	8.06	8.36	8.58	8.74	8.83	8.89	8.79
	45	4.56	4.68	4.77	4.83	4.85	4.85	4.77	8.39	8.63	8.79	8.89	8.95	8.92	8.76
	50	4.68	4.77	4.82	4.85	4.87	4.82	4.70	8.46	8.78	8.88	8.93	8.95	8.86	8.65
R22	30	3.63	3.92	4.14	4.31	4.44	4.61	4.68	6.68	7.21	7.63	7.95	8.18	8.49	8.61
	35	3.97	4.21	4.39	4.53	4.63	4.75	4.78	7.32	7.75	8.08	8.33	8.53	8.75	8.81
	38	4.14	4.36	4.51	4.63	4.72	4.82	4.83	7.64	8.01	8.31	8.53	8.70	8.88	8.90
	40	4.26	4.44	4.58	4.70	4.77	4.85	4.87	7.82	8.17	8.43	8.64	8.78	8.93	8.95
	45	4.46	4.61	4.73	4.82	4.87	4.92	4.90	8.22	8.50	8.71	8.86	8.97	9.06	9.03
	50	4.63	4.75	4.83	4.90	4.93	4.95	4.90	8.53	8.74	8.90	9.01	9.08	9.11	9.04
R134a	30	2.89	3.08	3.23	3.33	3.40	3.45	3.41	5.31	5.67	5.93	6.11	6.24	6.33	6.29
	35	3.14	3.30	3.40	3.46	3.52	3.53	3.46	5.79	6.07	6.26	6.39	6.46	6.49	6.39
	38	3.28	3.40	3.48	3.53	3.57	3.57	3.50	6.04	6.26	6.42	6.51	6.57	6.56	6.43
	40	3.35	3.46	3.53	3.58	3.60	3.58	3.50	6.18	6.38	6.51	6.58	6.63	6.58	6.45
	45	3.52	3.58	3.63	3.65	3.65	3.60	3.50	6.46	6.60	6.68	6.72	6.72	6.63	6.43
	50	3.62	3.67	3.68	3.68	3.67	3.58	3.46	6.65	6.74	6.78	6.78	6.75	6.60	6.38
R404A	30	2.70	2.89	3.04	3.13	3.19	3.24	3.21	4.97	5.33	5.58	5.76	5.89	5.97	5.90
	35	2.89	3.03	3.13	3.19	3.23	3.23	3.18	5.32	5.57	5.76	5.88	5.95	5.96	5.83
	38	2.96	3.08	3.14	3.19	3.21	3.19	3.11	5.43	5.65	5.79	5.88	5.92	5.89	5.74
	40	2.97	3.08	3.14	3.18	3.19	3.16	3.06	5.47	5.67	5.78	5.85	5.88	5.82	5.64
	45	3.01	3.08	3.11	3.13	3.11	3.04	2.92	5.53	5.65	5.72	5.74	5.72	5.61	5.39
	50	2.96	2.99	3.01	2.99	2.97	2.87	2.72	5.45	5.51	5.53	5.51	5.46	5.29	5.01

额定能力 (kW) Rated capacity															
	冷凝温度 [°C] Condensing temperature	DPF-P01018							DPF-P01020						
		蒸发温度 [°C] Evaporating temperature							蒸发温度 [°C] Evaporating temperature						
		10	5	0	-5	-10	-20	-30	10	5	0	-5	-10	-20	-30
R410A	30	9.15	9.88	10.49	10.95	11.31	11.77	11.93	11.30	12.20	12.95	13.52	13.96	14.52	14.73
	35	9.86	10.45	10.91	11.31	11.58	11.91	11.97	12.18	12.90	13.47	13.96	14.29	14.71	14.78
	38	10.18	10.70	11.10	11.41	11.66	11.91	11.97	12.56	13.21	13.70	14.09	14.40	14.71	14.78
	40	10.30	10.80	11.20	11.47	11.68	11.91	11.91	12.72	13.34	13.83	14.16	14.42	14.71	14.71
	45	10.59	10.99	11.26	11.47	11.66	11.77	11.72	13.08	13.57	13.91	14.16	14.40	14.52	14.47
	50	10.66	10.95	11.20	11.33	11.45	11.47	11.33	13.16	13.52	13.83	13.98	14.14	14.16	13.98
R407C	30	7.92	8.48	8.94	9.26	9.51	9.74	9.74	9.78	10.47	11.04	11.43	11.74	12.02	12.02
	35	8.61	9.72	9.40	9.63	9.82	9.97	9.93	10.63	12.00	11.61	11.89	12.13	12.31	12.25
	38	8.94	9.32	9.61	9.82	9.97	10.03	9.97	11.04	11.51	11.87	12.13	12.31	12.38	12.31
	40	9.15	9.51	9.74	9.93	10.03	10.09	9.97	11.30	11.74	12.02	12.25	12.38	12.46	12.31
	45	9.53	9.78	9.97	10.09	10.14	10.14	9.97	11.76	12.07	12.31	12.46	12.51	12.51	12.31
	50	9.78	9.97	10.07	10.14	10.18	10.07	9.82	12.07	12.31	12.44	12.51	12.56	12.44	12.13
R22	30	7.59	8.19	8.65	9.01	9.28	9.63	9.78	9.36	10.11	10.68	11.12	11.45	11.89	12.07
	35	8.30	8.80	9.17	9.47	9.68	9.93	9.99	10.24	10.86	11.33	11.69	11.94	12.25	12.33
	38	8.65	9.11	9.42	9.68	9.86	10.07	10.09	10.68	11.25	11.64	11.94	12.18	12.44	12.46
	40	8.90	9.28	9.57	9.82	9.97	10.14	10.18	10.99	11.45	11.82	12.13	12.31	12.51	12.56
	45	9.32	9.63	9.88	10.07	10.18	10.28	10.24	11.51	11.89	12.20	12.44	12.56	12.69	12.64
	50	9.68	9.93	10.09	10.24	10.30	10.34	10.24	11.94	12.25	12.46	12.64	12.72	12.77	12.64
R134a	30	6.04	6.44	6.75	6.96	7.10	7.21	7.13	7.46	7.95	8.33	8.59	8.77	8.90	8.80
	35	6.56	6.90	7.10	7.23	7.36	7.38	7.23	8.10	8.51	8.77	8.93	9.08	9.11	8.93
	38	6.85	7.10	7.27	7.38	7.46	7.46	7.31	8.46	8.77	8.98	9.11	9.21	9.21	9.03
	40	7.00	7.23	7.38	7.48	7.52	7.48	7.31	8.64	8.93	9.11	9.24	9.29	9.24	9.03
	45	7.36	7.48	7.59	7.63	7.63	7.52	7.31	9.08	9.24	9.36	9.42	9.42	9.29	9.03
	50	7.56	7.67	7.69	7.69	7.67	7.48	7.23	9.34	9.47	9.49	9.49	9.47	9.24	8.93
R404A	30	5.64	6.04	6.35	6.54	6.67	6.77	6.71	6.97	7.46	7.84	8.08	8.23	8.36	8.28
	35	6.04	6.33	6.54	6.67	6.75	6.75	6.65	7.46	7.82	8.08	8.23	8.33	8.33	8.20
	38	6.19	6.44	6.56	6.67	6.71	6.67	6.50	7.64	7.95	8.10	8.23	8.28	8.23	8.02
	40	6.21	6.44	6.56	6.65	6.67	6.60	6.39	7.66	7.95	8.10	8.20	8.23	8.15	7.89
	45	6.29	6.44	6.50	6.54	6.50	6.35	6.10	7.77	7.95	8.02	8.08	8.02	7.84	7.53
	50	6.19	6.25	6.29	6.25	6.21	6.00	5.68	7.64	7.71	7.77	7.71	7.66	7.40	7.02

额定能力 (kW) Rated capacity															
	冷凝温度 [°C] Condensing temperature	DPF-P01022							DPF-P01024						
		蒸发温度 [°C] Evaporating temperature							蒸发温度 [°C] Evaporating temperature						
		10	5	0	-5	-10	-20	-30	10	5	0	-5	-10	-20	-30
R410A	30	13.67	14.77	15.67	16.36	16.89	17.57	17.82	16.27	17.57	18.65	19.47	20.10	20.92	21.21
	35	14.73	15.61	16.30	16.89	17.29	17.79	17.89	17.53	18.58	19.39	20.10	20.58	21.18	21.29
	38	15.20	15.98	16.58	17.04	17.42	17.79	17.89	18.09	19.02	19.73	20.28	20.73	21.18	21.29
	40	15.39	16.14	16.73	17.14	17.45	17.79	17.79	18.32	19.21	19.91	20.40	20.77	21.18	21.18
	45	15.83	16.42	16.83	17.14	17.42	17.57	17.51	18.84	19.54	20.02	20.40	20.73	20.92	20.84
	50	15.92	16.36	16.73	16.92	17.11	17.14	16.92	18.95	19.47	19.91	20.14	20.36	20.40	20.14
R407C	30	11.83	12.67	13.36	13.83	14.20	14.55	14.55	14.08	15.08	15.90	16.46	16.90	17.31	17.31
	35	12.86	14.52	14.05	14.39	14.67	14.89	14.83	15.31	17.27	16.72	17.13	17.46	17.72	17.65
	38	13.36	13.92	14.36	14.67	14.89	14.98	14.89	15.90	16.57	17.09	17.46	17.72	17.83	17.72
	40	13.67	14.20	14.55	14.83	14.98	15.08	14.89	16.27	16.90	17.31	17.65	17.83	17.94	17.72
	45	14.23	14.61	14.89	15.08	15.14	15.14	14.89	16.94	17.39	17.72	17.94	18.02	18.02	17.72
	50	14.61	14.89	15.05	15.14	15.20	15.05	14.67	17.39	17.72	17.91	18.02	18.09	17.91	17.46
R22	30	11.33	12.24	12.92	13.45	13.86	14.39	14.61	13.49	14.56	15.38	16.01	16.49	17.13	17.39
	35	12.39	13.14	13.70	14.14	14.45	14.83	14.92	14.75	15.64	16.31	16.83	17.20	17.65	17.76
	38	12.92	13.61	14.08	14.45	14.73	15.05	15.08	15.38	16.20	16.75	17.20	17.53	17.91	17.94
	40	13.30	13.86	14.30	14.67	14.89	15.14	15.20	15.83	16.49	17.01	17.46	17.72	18.02	18.09
	45	13.92	14.39	14.77	15.05	15.20	15.36	15.30	16.57	17.13	17.57	17.91	18.09	18.28	18.20
	50	14.45	14.83	15.08	15.30	15.39	15.45	15.30	17.20	17.65	17.94	18.20	18.32	18.39	18.20
R134a	30	9.02	9.61	10.08	10.40	10.61	10.77	10.64	10.74	11.44	12.00	12.37	12.63	12.82	12.67
	35	9.80	10.30	10.61	10.80	10.99	11.02	10.80	11.67	12.26	12.63	12.85	13.08	13.11	12.85
	38	10.24	10.61	10.86	11.02	11.14	11.14	10.93	12.19	12.63	12.93	13.11	13.26	13.26	13.00
	40	10.46	10.80	11.02	11.18	11.24	11.18	10.93	12.45	12.85	13.11	13.30	13.37	13.30	13.00
	45	10.99	11.18	11.33	11.39	11.39	11.24	10.93	13.08	13.30	13.49	13.56	13.56	13.37	13.00
	50	11.30	11.46	11.49	11.49	11.46	11.18	10.80	13.45	13.63	13.67	13.67	13.63	13.30	12.85
R404A	30	8.43	9.02	9.49	9.77	9.96	10.11	10.02	10.03	10.74	11.29	11.63	11.85	12.04	11.93
	35	9.02	9.46	9.77	9.96	10.08	10.08	9.93	10.74	11.26	11.63	11.85	12.00	12.00	11.81
	38	9.24	9.61	9.80	9.96	10.02	9.96	9.71	11.00	11.44	11.67	11.85	11.93	11.85	11.55
	40	9.27	9.61	9.80	9.93	9.96	9.86	9.55	11.03	11.44	11.67	11.81	11.85	11.74	11.37
	45	9.40	9.61	9.71	9.77	9.71	9.49	9.12	11.18	11.44	11.55	11.63	11.55	11.29	10.85
	50	9.24	9.33	9.40	9.33	9.27	8.96	8.49	11.00	11.11	11.18	11.11	11.03	10.66	10.10

额定能力 (kW) Rated capacity															
	冷凝温度 [°C] Condensing temperature	DPF-PT030							DPF-PT032						
		蒸发温度 [°C] Evaporating temperature							蒸发温度 [°C] Evaporating temperature						
		10	5	0	-5	-10	-20	-30	10	5	0	-5	-10	-20	-30
R410A	30	20.33	22.02	23.35	24.33	25.18	26.16	26.51	28.04	30.36	32.20	33.55	34.72	36.07	36.55
	35	21.88	23.21	24.33	25.11	25.74	26.44	26.65	30.17	32.01	33.55	34.62	35.49	36.46	36.75
	38	22.58	23.77	24.69	25.39	25.95	26.51	26.58	31.14	32.78	34.04	35.01	35.78	36.55	36.65
	40	23.00	24.06	24.90	25.53	26.02	26.51	26.51	31.72	33.17	34.33	35.20	35.88	36.55	36.55
	45	23.56	24.40	25.11	25.60	25.88	26.16	26.02	32.49	33.65	34.62	35.30	35.68	36.07	35.88
	50	23.70	24.33	24.90	25.18	25.45	25.53	25.24	32.68	33.55	34.33	34.72	35.10	35.20	34.81
R407C	30	17.54	18.86	19.85	20.55	21.04	21.60	21.67	24.18	26.01	27.37	28.33	29.01	29.78	29.88
	35	19.15	20.12	20.90	21.39	21.81	22.09	22.02	26.40	27.75	28.82	29.49	30.07	30.46	30.36
	38	19.85	20.76	21.39	21.81	22.09	22.30	22.09	27.37	28.62	29.49	30.07	30.46	30.75	30.46
	40	20.27	21.11	21.67	22.02	22.30	22.37	22.16	27.95	29.11	29.88	30.36	30.75	30.85	30.56
	45	21.18	21.74	22.16	22.44	22.51	22.51	22.09	29.20	29.98	30.56	30.94	31.04	31.04	30.46
	50	21.67	22.09	22.37	22.51	22.58	22.30	21.81	29.88	30.46	30.85	31.04	31.14	30.75	30.07
R22	30	16.83	18.23	19.28	20.06	20.69	21.46	21.74	23.21	25.14	26.59	27.66	28.53	29.59	29.98
	35	18.44	19.57	20.41	21.04	21.53	22.09	22.23	25.43	26.98	28.14	29.01	29.69	30.46	30.65
	38	19.28	20.20	20.97	21.53	21.95	22.37	22.44	26.59	27.85	28.91	29.69	30.27	30.85	30.94
	40	19.78	20.62	21.32	21.81	22.16	22.58	22.58	27.27	28.43	29.40	30.07	30.56	31.14	31.14
	45	20.76	21.46	22.02	22.37	22.65	22.86	22.79	28.62	29.59	30.36	30.85	31.23	31.52	31.43
	50	21.53	22.09	22.44	22.79	22.93	23.00	22.79	29.69	30.46	30.94	31.43	31.62	31.72	31.43
R134a	30	13.39	14.31	15.00	15.43	15.78	15.99	15.85	18.47	19.73	20.69	21.27	21.76	22.05	21.85
	35	14.66	15.36	15.78	16.13	16.34	16.41	16.13	20.21	21.18	21.76	22.24	22.53	22.63	22.24
	38	15.21	15.78	16.20	16.48	16.55	16.55	16.20	20.98	21.76	22.34	22.72	22.82	22.82	22.34
	40	15.57	16.06	16.41	16.62	16.69	16.55	16.27	21.47	22.14	22.63	22.92	23.01	22.82	22.43
	45	16.34	16.69	16.90	16.97	16.97	16.69	16.27	22.53	23.01	23.30	23.40	23.40	23.01	22.43
	50	16.83	17.04	17.11	17.11	17.04	16.69	16.06	23.21	23.50	23.59	23.59	23.50	23.01	22.14
R404A	30	12.55	13.47	14.10	14.58	14.87	15.08	14.94	17.31	18.57	19.44	20.11	20.50	20.79	20.60
	35	13.39	14.10	14.52	14.87	15.00	15.00	14.73	18.47	19.44	20.02	20.50	20.69	20.69	20.31
	38	13.74	14.24	14.66	14.87	14.94	14.87	14.52	18.95	19.63	20.21	20.50	20.60	20.50	20.02
	40	13.82	14.31	14.58	14.79	14.79	14.66	14.24	19.05	19.73	20.11	20.40	20.40	20.21	19.63
	45	13.95	14.16	14.45	14.52	14.45	14.16	13.60	19.24	19.53	19.92	20.02	19.92	19.53	18.76
	50	13.74	13.89	13.95	13.89	13.82	13.32	12.69	18.95	19.15	19.24	19.15	19.05	18.37	17.50

额定能力 (kW) Rated capacity															
	冷凝温度 [°C] Condensing temperature	DPF-P03040							DPF-P03045						
		蒸发温度 [°C] Evaporating temperature							蒸发温度 [°C] Evaporating temperature						
		10	5	0	-5	-10	-20	-30	10	5	0	-5	-10	-20	-30
R410A	30	40.64	44.01	46.67	48.63	50.33	52.28	52.98	50.83	55.03	58.37	60.81	62.93	65.38	66.25
	35	43.73	46.40	48.63	50.18	51.44	52.85	53.27	54.69	58.02	60.81	62.75	64.33	66.09	66.61
	38	45.14	47.52	49.34	50.75	51.86	52.98	53.13	56.45	59.42	61.70	63.46	64.86	66.25	66.43
	40	45.98	48.08	49.76	51.02	52.01	52.98	52.98	57.50	60.13	62.23	63.80	65.04	66.25	66.25
	45	47.09	48.78	50.18	51.17	51.72	52.28	52.01	58.89	61.00	62.75	63.99	64.67	65.38	65.04
	50	47.37	48.63	49.76	50.33	50.88	51.02	50.46	59.24	60.81	62.23	62.93	63.62	63.80	63.10
R407C	30	35.05	37.70	39.67	41.06	42.05	43.17	43.31	43.83	47.15	49.61	51.35	52.58	53.98	54.16
	35	38.27	40.22	41.78	42.75	43.59	44.15	44.01	47.85	50.30	52.24	53.45	54.51	55.21	55.03
	38	39.67	41.49	42.75	43.59	44.15	44.57	44.15	49.61	51.88	53.45	54.51	55.21	55.74	55.21
	40	40.51	42.20	43.31	44.01	44.57	44.72	44.30	50.66	52.77	54.16	55.03	55.74	55.92	55.39
	45	42.33	43.46	44.30	44.85	44.99	44.99	44.15	52.93	54.34	55.39	56.08	56.26	56.26	55.21
	50	43.31	44.15	44.72	44.99	45.14	44.57	43.59	54.16	55.21	55.92	56.26	56.45	55.74	54.51
R22	30	33.64	36.44	38.54	40.09	41.35	42.89	43.46	42.07	45.57	48.20	50.14	51.71	53.64	54.34
	35	36.86	39.11	40.79	42.05	43.04	44.15	44.43	46.10	48.90	51.01	52.58	53.82	55.21	55.56
	38	38.54	40.37	41.91	43.04	43.88	44.72	44.85	48.20	50.48	52.40	53.82	54.87	55.92	56.08
	40	39.53	41.21	42.62	43.59	44.30	45.14	45.14	49.43	51.53	53.29	54.51	55.39	56.45	56.45
	45	41.49	42.89	44.01	44.72	45.27	45.69	45.56	51.88	53.64	55.03	55.92	56.61	57.13	56.97
	50	43.04	44.15	44.85	45.56	45.83	45.98	45.56	53.82	55.21	56.08	56.97	57.32	57.50	56.97
R134a	30	26.77	28.60	29.99	30.83	31.54	31.96	31.67	33.48	35.76	37.50	38.55	39.44	39.97	39.61
	35	29.29	30.70	31.54	32.24	32.66	32.80	32.24	36.63	38.39	39.44	40.31	40.84	41.02	40.31
	38	30.41	31.54	32.38	32.93	33.08	33.08	32.38	38.03	39.44	40.49	41.18	41.36	41.36	40.49
	40	31.12	32.09	32.80	33.22	33.35	33.08	32.51	38.92	40.13	41.02	41.55	41.71	41.36	40.66
	45	32.66	33.35	33.77	33.92	33.92	33.35	32.51	40.84	41.71	42.23	42.42	42.42	41.71	40.66
	50	33.64	34.06	34.19	34.19	34.06	33.35	32.09	42.07	42.60	42.76	42.76	42.60	41.71	40.13
R404A	30	25.09	26.92	28.18	29.15	29.72	30.14	29.86	31.38	33.66	35.24	36.45	37.16	37.68	37.34
	35	26.77	28.18	29.02	29.72	29.99	29.99	29.44	33.48	35.24	36.29	37.16	37.50	37.50	36.81
	38	27.47	28.45	29.29	29.72	29.86	29.72	29.02	34.35	35.58	36.63	37.16	37.34	37.16	36.29
	40	27.61	28.60	29.15	29.57	29.57	29.29	28.45	34.53	35.76	36.45	36.98	36.98	36.63	35.58
	45	27.89	28.31	28.87	29.02	28.87	28.31	27.19	34.88	35.40	36.11	36.29	36.11	35.40	34.01
	50	27.47	27.76	27.89	27.76	27.61	26.63	25.37	34.35	34.71	34.88	34.71	34.53	33.30	31.72

额定能力 (kW) Rated capacity															
	冷凝温度 [°C] Condensing temperature	DPF-P03055							DPF-P03065						
		蒸发温度 [°C] Evaporating temperature							蒸发温度 [°C] Evaporating temperature						
		10	5	0	-5	-10	-20	-30	10	5	0	-5	-10	-20	-30
R410A	30	67.76	73.37	77.81	81.07	83.90	87.16	88.32	101.65	110.06	116.73	121.62	125.86	130.76	132.50
	35	72.91	77.35	81.07	83.66	85.76	88.11	88.81	109.37	116.04	121.62	125.50	128.65	132.17	133.22
	38	75.25	79.21	82.26	84.60	86.46	88.32	88.57	112.88	118.83	123.40	126.91	129.71	132.50	132.86
	40	76.65	80.16	82.96	85.06	86.71	88.32	88.32	114.99	120.24	124.45	127.60	130.07	132.50	132.50
	45	78.51	81.32	83.66	85.30	86.22	87.16	86.71	117.78	121.98	125.50	127.97	129.34	130.76	130.07
	50	78.97	81.07	82.96	83.90	84.82	85.06	84.12	118.47	121.62	124.45	125.86	127.24	127.60	126.19
R407C	30	58.43	62.85	66.14	68.46	70.10	71.96	72.21	87.65	94.29	99.22	102.70	105.16	107.95	108.32
	35	63.80	67.06	69.64	71.26	72.67	73.61	73.37	95.70	100.60	104.47	106.90	109.01	110.42	110.06
	38	66.14	69.16	71.26	72.67	73.61	74.31	73.61	99.22	103.75	106.90	109.01	110.42	111.47	110.42
	40	67.54	70.35	72.21	73.37	74.31	74.55	73.85	101.32	105.53	108.32	110.06	111.47	111.83	110.78
	45	70.56	72.45	73.85	74.77	75.01	75.01	73.61	105.85	108.68	110.78	112.16	112.52	112.52	110.42
	50	72.21	73.61	74.55	75.01	75.25	74.31	72.67	108.32	110.42	111.83	112.52	112.88	111.47	109.01
R22	30	56.09	60.75	64.26	66.84	68.94	71.51	72.45	84.14	91.13	96.39	100.27	103.42	107.27	108.68
	35	61.45	65.20	68.00	70.10	71.75	73.61	74.07	92.19	97.80	102.01	105.16	107.63	110.42	111.11
	38	64.26	67.30	69.86	71.75	73.15	74.55	74.77	96.39	100.96	104.80	107.63	109.73	111.83	112.16
	40	65.90	68.70	71.05	72.67	73.85	75.25	75.25	98.86	103.06	106.58	109.01	110.78	112.88	112.88
	45	69.16	71.51	73.37	74.55	75.47	76.17	75.95	103.75	107.27	110.06	111.83	113.21	114.26	113.94
	50	71.75	73.61	74.77	75.95	76.41	76.65	75.95	107.63	110.42	112.16	113.94	114.62	114.99	113.94
R134a	30	44.63	47.68	50.00	51.40	52.58	53.28	52.80	66.96	71.52	75.00	77.11	78.88	79.93	79.21
	35	48.84	51.18	52.58	53.74	54.44	54.69	53.74	73.26	76.78	78.88	80.62	81.67	82.04	80.62
	38	50.70	52.58	53.99	54.90	55.15	55.15	53.99	76.05	78.88	80.98	82.36	82.72	82.72	80.98
	40	51.88	53.50	54.69	55.39	55.60	55.15	54.20	77.83	80.26	82.04	83.09	83.41	82.72	81.31
	45	54.44	55.60	56.31	56.55	56.55	55.60	54.20	81.67	83.41	84.46	84.83	84.83	83.41	81.31
	50	56.09	56.79	57.01	57.01	56.79	55.60	53.50	84.14	85.19	85.52	85.52	85.19	83.41	80.26
R404A	30	41.83	44.88	46.98	48.60	49.54	50.24	49.78	62.75	67.32	70.47	72.90	74.31	75.37	74.68
	35	44.63	46.98	48.38	49.54	50.00	50.00	49.08	66.96	70.47	72.57	74.31	75.00	75.00	73.63
	38	45.79	47.44	48.84	49.54	49.78	49.54	48.38	68.70	71.16	73.26	74.31	74.68	74.31	72.57
	40	46.04	47.68	48.60	49.30	49.30	48.84	47.44	69.06	71.52	72.90	73.95	73.95	73.26	71.16
	45	46.49	47.19	48.14	48.38	48.14	47.19	45.33	69.75	70.80	72.21	72.57	72.21	70.80	68.01
	50	45.79	46.28	46.49	46.28	46.04	44.39	42.29	68.70	69.42	69.75	69.42	69.06	66.59	63.44

# SPF 系列电子膨胀阀

## SPF Series electronic expansion valve



SPF12.5/25

SPF50/100

SPF250/400

### 产品概述 Product Description

SPF系列电子膨胀阀适用于商用冷柜、大型冷库和热泵等制冷系统中，精确控制系统中制冷剂流量，使系统始终在最佳状态下运行，达到快速制冷，实现精准控制和节能的目的。

SPF series electronic expansion valve is suitable for refrigeration systems such as commercial refrigerators, large refrigeration storages and heat pumps. It can accurately control the refrigerant flow in the system, so that the system can always run in the best state, achieve rapid cooling, and achieve the goal of precise control and energy saving.

### 特点 Features

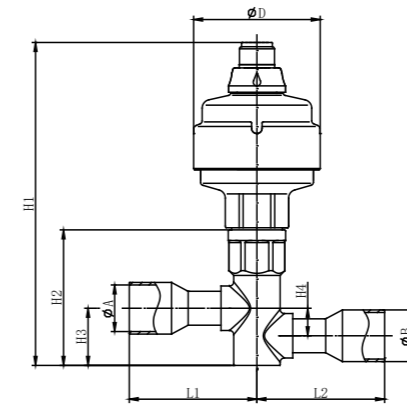
- 集电磁阀、膨胀阀、视镜功能于一体，性能稳定可靠；
- 反应和动作速度快，调节精准；
- 膨胀阀新结构设计，易拆卸清理，噪音低；
- SPF系列产品采用平衡口设计，逆向开阀压力高，具有双向截止功能；
- 适用于少油或无油系统。

- Integrated with the function of solenoid valve, expansion valve and sight glass, stable and reliable performance;
- Fast response and action, precise adjustment;
- New structure design of expansion valve, easy to dismantle and clean, low noise;
- SPF series products apply a balanced port design with high reverse valve opening pressure, and have bidirectional cut-off function;
- Suitable for systems with little oil or no oil.

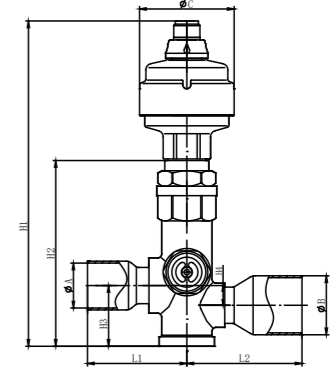
### 技术参数 Technical Parameters

适用制冷剂 Applicable refrigerant	HCFC或HFC
名义容量 Nominal capacity	43~1936KW
介质温度 Medium temperature	-40~+65°C
环境温度 Environment temperature	-40°C ~ +60°C
环境湿度 Environment humidity	95%RH以下
全开脉冲 Full open pulse	2620~3800 (详见选型表) see model select table for detail
额定电压 Rated voltage	12V DC (±10%)，矩形波 rectangular wave
励磁方式 Excitation mode	2-2相励磁，双极驱动 2-2 phase excitation, double pole drive
励磁速度 Excitation speed	250pps/300pps, 电压/电流 voltage/ current
结束励磁模式保持 Finishing excitation mode keeps	0.1~1.0s
驱动电流 Drive current	230mA
线圈电阻 Coil resistance	52Ω/相
线圈绝缘等级 Coil insulation grade	E级
防护等级 Protect grade	IP65

### 外型尺寸 Overall dimension

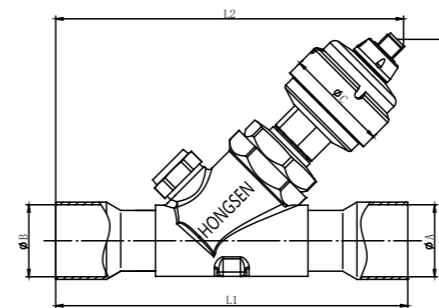


SPF12.5/25

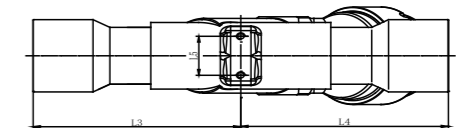


SPF50/100

Model	H1	H2	H3	H4	L1	L2	A	B	C
SPF12.5-5-5	152.5	64	27	13	60.5	60.5	16.1	16.1	60
SPF12.5-7-7	152.5	64	27	13	60.5	60.5	22.3	22.3	60
SPF25-5-5	152.5	64	27	13	60.5	60.5	16.1	16.1	60
SPF25-7-7	152.5	64	27	13	60.5	60.5	22.3	22.3	60
SPF50-7-7	206.3	118	38.5	12.5	56	56	22.3	22.3	60
SPF50-9-9	206.3	118	38.5	12.5	63	63	28.7	28.7	60
SPF50-7-9	206.3	118	38.5	12.5	56	63	22.3	28.7	60
SPF50-9-11	206.3	118	38.5	12.5	63	73	28.7	35.2	60
SPF100-9-9	206.3	118	38.5	12.5	63	63	28.7	28.7	60
SPF100-9-11	206.3	118	38.5	12.5	63	73	28.7	35.2	60



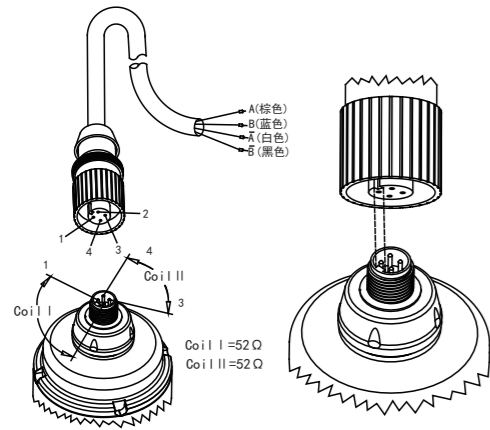
SPF250/400



型号 Model	H1	L1	L2	L3	L4	L5	A	B	C
SPF250-9-9	206.3	168.5	184.3	84.3	84.3	24	28.7	28.7	60
SPF250-11-11	206.3	203	189.3	89.3	89.3	24	35.2	35.2	60
SPF400-13-13	206.3	203	201.5	101.5	101.5	24	41.5	41.5	60
SPF400-17-17	206.3	242	221	121	121	24	54.2	54.2	60

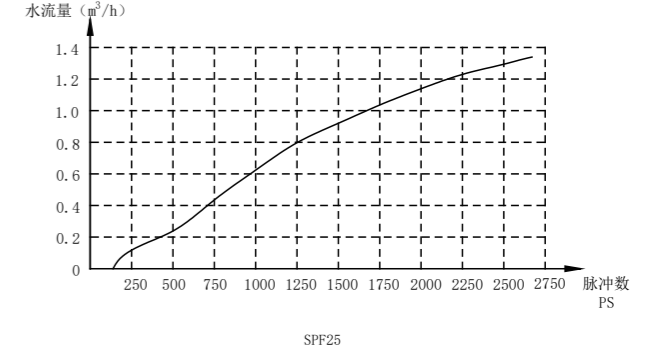
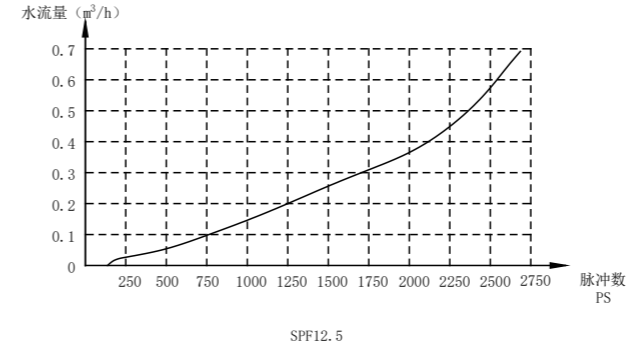
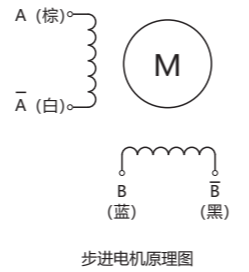
注：接管尺寸可以根据要求定制。

Note: dimension of connecting pipe can be customized according to requirements

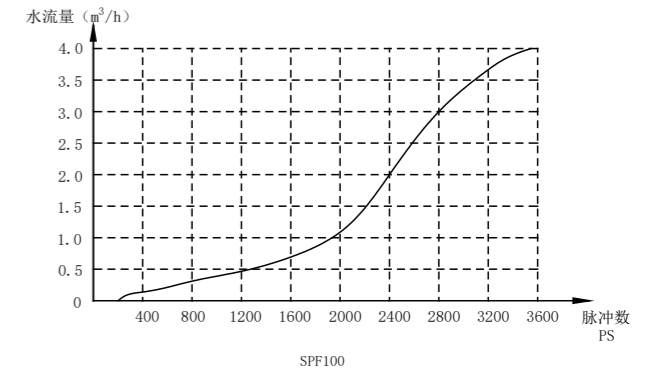
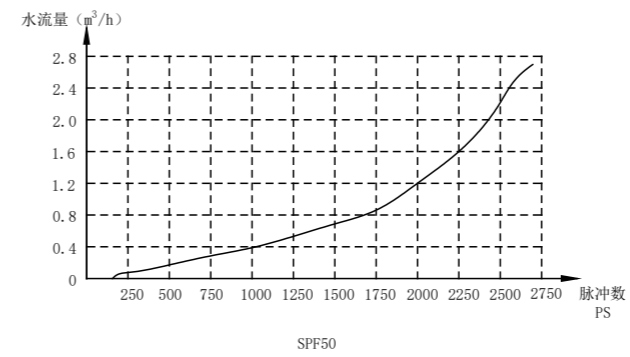


相序	1	2	3	4
A (棕)	no	no	off	off
B (蓝)	no	off	off	no
$\bar{A}$ (白)	off	off	no	no
$\bar{B}$ (黑)	off	no	no	off

关阀: 1 → 2 → 3 → 4  
开阀: 1 ← 2 ← 3 ← 4



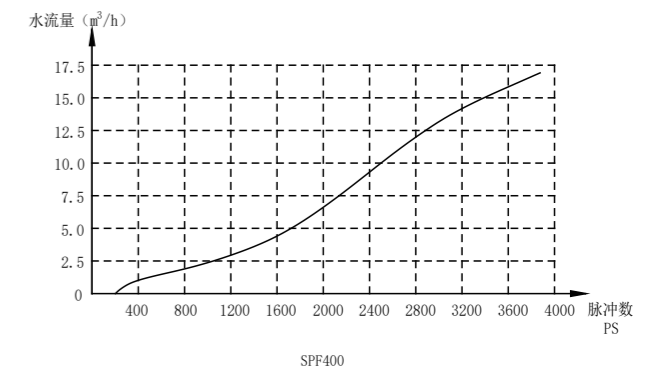
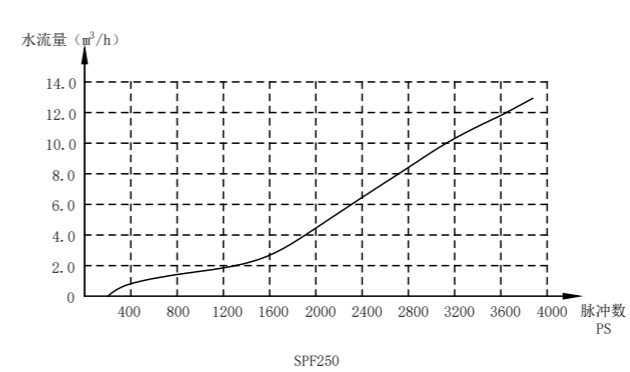
连接线缆总成 Connecting cable assembly					
型号 Model	温度范围 Temperature range	长度 Length	接头规格 Connector specification	与控制连接方式 Connecting mode with control	示图 Schematic pic.
M124×Z1MD	-40°C~+80°C	1米	M12×1 (防水)	引出线4×0.18mm <sup>2</sup>	



选型表 Model selection											
产品系列 Product series	全开步数 Full open steps	通径 Diameter [mm]	Kv <sup>2)</sup> [m <sup>3</sup> /h]	名义容量 [KW] <sup>1)</sup> Nominal capacity					最大工作压力 Max. working pressure [MPa]	最大工作压差 Max. working pressure difference [MPa]	逆向开阀压差 Reverse valve opening pressure difference [MPa]
				R22	R134a	R407C <sup>3)</sup>	R404A/R507	R410A <sup>4)</sup>			
SPF12.5	2620	4.50	0.70	57	45	63	43	70	4.5	3.5	≥3.5
SPF25	2620	8.00	1.30	112	89	124	84	139	4.5	3.5	≥3.5
SPF50	2620	11.5	2.30	226	182	265	173.5	274	4.5	3.5	≥3.5
SPF100	3500	16.0	3.90	408	325	455	308	496	4.5	3.5	≥3.5
SPF250	3800	24.0	12.2	1092	862	1203	817	/	3.5	3.0	≥3.0
SPF400	3800	30.0	17.0	1768	1397	1936	1324	/	3.5	3.0	≥3.0

名义工况: 额定能力基于: R407C 冷凝温度Tc: +32°C; 蒸发温度Te: +5°C; 阀前液体温度Ti: +28°C; Kv值: 基于密度为1T/m<sup>3</sup>的水、阀门两端压差等于100KPa时的正向流动能力。

Nominal condition: Rated capacity is based on: R407C condensing temperature Tc: +32°C; evaporating temperature Te: +5°C; liquid temperature before valve Ti: +28°C; Kv value: the pressure difference based on the two sides between water with density 1T/m<sup>3</sup> and the valve is equal to the positive flow capacity at 100Kpa.



额定能力 (kW) Rated capacity																	
	te[°C]	正向流额定能力[KW] Positive flow rated capacity															
		SPF12.5								SPF25							
		压降 $\Delta P$ [bar] Pressure drop															
		2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
R22	-40	39.6	50.6	57.1	61.2	64.1	65.9	67.0	67.6	82.0	105.4	118.5	126.6	133.6	137.0	139.3	140.9
	-30	39.2	50.6	57.3	61.7	64.7	66.7	68.1	68.8	81.8	104.5	119.3	128.7	134.0	139.2	141.5	143.4
	-20	38.5	50.1	57.1	61.7	64.9	67.1	68.6	69.4	80.3	104.3	118.9	128.7	134.8	140.0	143.0	144.7
	-10	37.5	49.2	56.3	61.2	64.5	66.9	68.5	69.5	78.1	102.5	117.0	127.5	134.6	138.5	142.8	144.6
	-5	36.9	48.6	55.8	60.7	64.1	66.5	68.2	69.2	76.9	101.1	116.3	126.2	133.3	138.8	142.2	144.4
	10	34.7	40.3	53.3	58.3	62.0	64.4	66.2	67.4	72.3	96.2	111.3	121.7	129.2	134.4	138.2	140.6
R134a	-40	35.1	42.6	46.1	47.8	48.3	47.9	47.0	45.6	73.1	88.8	95.8	99.7	100.6	99.9	98.0	94.9
	-30	35.3	43.4	47.3	49.3	50.0	49.9	49.2	47.9	73.5	90.4	98.5	102.6	104.2	104.0	102.4	99.9
	-20	35.1	43.7	48.1	50.4	51.3	51.4	50.9	49.9	73.3	91.1	100.2	104.8	107.0	107.2	106.2	104.0
	-10	34.7	43.7	48.4	50.9	52.2	52.5	52.2	51.3	72.3	91.0	100.8	106.2	108.7	109.5	108.9	107.0
	-5	34.3	43.5	48.3	51.0	52.4	52.9	52.6	51.8	71.6	90.6	100.7	106.4	109.3	110.3	109.8	108.2
	10	32.8	42.2	47.4	50.5	52.2	52.9	53.0	52.4	68.3	87.6	98.9	105.1	108.9	110.4	110.5	109.3
R404A	-40	31.4	39.0	42.8	44.5	45.2	45.1	44.4	43.2	65.7	81.4	89.2	93.0	94.3	94.0	92.5	90.0
	-30	31.1	38.9	43.0	45.1	46.0	46.0	45.5	44.4	64.7	81.2	89.7	94.0	95.9	96.1	94.9	92.8
	-20	30.3	38.4	42.7	45.0	46.2	46.4	46.1	45.2	63.0	80.1	89.1	94.0	96.3	96.9	96.1	94.3
	-10	29.1	37.4	41.9	44.4	45.7	46.2	46.0	45.2	60.7	78.0	87.4	92.7	95.4	96.3	95.9	94.4
	-5	28.5	36.8	41.3	44.0	45.3	45.8	45.6	44.9	59.4	76.6	86.1	91.6	94.5	95.5	95.2	93.8
	10	26.1	34.1	38.6	41.3	42.9	43.5	43.5	43.9	54.3	71.0	80.3	86.0	89.2	90.5	90.4	89.3
R407C	-40	41.5	52.0	57.7	61.1	63.0	64.0	64.1	63.7	86.0	108.0	120.2	127.0	131.4	132.8	133.2	132.5
	-30	41.3	52.2	58.3	62.1	64.2	65.3	65.7	65.4	85.5	108.5	121.0	128.9	133.3	135.8	137.1	136.1
	-20	40.6	52.0	58.4	62.5	64.8	66.2	66.8	66.8	84.2	108.0	121.4	129.7	134.8	137.7	138.9	138.8
	-10	39.6	51.2	57.9	62.2	64.9	66.5	67.3	67.4	82.0	106.4	119.9	129.2	134.9	138.7	139.8	140.6
	-5	39.0	50.7	57.5	61.9	64.6	66.3	67.2	67.4	81.3	105.2	120.0	128.4	134.9	138.4	139.7	140.6
	10	36.6	48.2	55.2	59.7	62.8	64.5	65.7	66.1	76.3	100.5	114.5	124.6	130.9	134.2	137.1	137.9
R410A	-40	45.7	59.1	67.1	72.4	76.2	78.7	80.4	81.4	94.9	122.7	139.0	150.6	157.8	163.1	166.6	168.3
	-30	44.5	58.1	66.3	71.9	75.8	78.5	80.4	81.5	91.9	120.7	137.9	149.0	157.1	162.8	165.2	169.3
	-20	43.0	56.6	64.9	70.6	74.7	77.5	79.5	80.8	89.6	117.1	135.4	146.4	154.8	161.0	165.4	167.6
	-10	41.0	54.4	62.8	68.6	72.7	75.7	77.7	79.1	85.5	113.5	131.0	143.1	151.7	157.9	162.2	165.0
	-5	39.9	53.1	61.5	67.3	71.4	74.4	76.5	77.8	83.3	109.7	127.2	139.1	147.9	154.6	158.5	162.5
	10	36.2	48.5	56.5	62.1	66.1	69.1	71.1	72.4	74.9	101.2	116.8	128.5	136.9	143.0	147.3	151.2

额定能力 (kW) Rated capacity																	
	te[°C]	正向流额定能力[KW] Positive flow rated capacity															
		SPF50								SPF100							
		压降 $\Delta P$ [bar] Pressure drop															
		2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
R22	-40	151.8	194.3	218.1	234.1	245.6	252.1	256.8	258.9	282.1	360.6	406.6	436.7	456.6	469.7	478.0	482.4
	-30	150.0	193.1	218.0	236.0	247.8	255.7	260.2	263.6	279.1	359.8	407.6	439.4	461.2	475.5	485.2	490.4
	-20	147.1	191.7	218.0	236.0	248.6	256.8	262.6	266.3	274.0	356.5	406.4	439.5	462.5	478.4	488.7	494.7
	-10	143.1	187.9	215.1	233.9	246.9	255.9	262.4	265.8	266.8	349.7	401.0	435.3	459.4	477.2	487.9	495.1
	-5	140.9	185.8	213.6	232.0	245.1	254.2	260.9	264.8	262.9	345.9	397.2	432.2	456.4	473.7	485.8	493.4
	10	132.7	176.6	204.0	223.0	236.9	246.8	253.6	257.8	246.6	328.3	379.7	415.5	441.3	458.9	472.0	480.3
R134a	-40	133.1	162.4	175.7	181.8	183.2	182.1	178.8	173.7	247.9	301.7	326.8	338.6	342.0	339.5	332.7	322.9
	-30	135.0	164.9	179.9	187.6	190.0	189.8	187.9	183.6	249.5	306.7	334.7	348.7	353.7	352.9	347.9	339.4
	-20	134.2	167.1	183.8	191.6	195.0	196.2	194.2	190.3	248.5	309.4	340.4	356.5	363.4	364.2	360.7	353.3
	-10	131.9	166.0	184.9	194.8	198.7	199.8	198.7	195.6	245.5	309.2	342.7	360.9	369.2	371.6	369.3	363.3
	-5	130.7	166.1	184.8	194.5	199.6	201.5	201.0	197.6	242.6	307.4	341.9	361.1	370.8	374.1	372.4	367.0
	10	124.8	160.7	181.1	192.5	198.7	201.6	202.2	199.7	231.8	298.5	335.5	357.2	369.3	374.6	374.8	371.1
R404A	-40	119.9	149.3	163.4	169.9	173.2	172.5	169.6	164.9	223.4	276.7	303.3	316.2	320.9	320.4	315.4	306.8
	-30	118.0	148.1	163.9	172.4	175.1	176.3	173.8	169.9	219.7	276.0	304.7	319.7	326.2	326.9	323.2	316.1
	-20	115.5	146.1	162.8	171.9	176.0	177.1	175.9	173.3	214.3	272.4	302.8	319.7	327.6	329.7	328.0	322.0
	-10	110.9	142.2	159.8	169.2	174.7	176.1	175.2	173.4	206.4	265.4	297.5	315.4	324.6	328.2	326.6	322.6
	-5	108.7	139.9	157.1	167.7	173.3	174.8	174.1	172.4	201.8	260.3	292.7	311.4	321.4	325.1	324.2	319.7
	10	99.7	129.9	147.1	157.8	163.2	165.9	165.9	164.9	185.4	241.6	273.9	294.4	304.4	309.1	308.6	305.3
R407C	-40	158.8	199.7	222.5	236.4	243.9	248.6	249.9	249.6	295.6	371.7	413.3	438.7	454.2	462.1	464.9	464.0
	-30	157.8	200.7	224.2	239.2	249.3	253.9	257.1	256.6	293.5	373.4	417.8	445.9	462.7	472.5	477.1	477.5
	-20	155.2	199.8	225.0	241.5	251.1	257.7	260.8	261.2	289.4	371.7	419.0	448.8	468.1	479.5	485.5	486.9
	-10	151.9	196.9	223.2	240.2	251.8	258.8	263.3	264.0	282.6	366.6	416.4	447.8	468.4	481.8	488.8	491.8
	-5	149.2	194.9	222.4	239.1	250.9	258.1	262.7	264.6	278.5	363.0	413.1	445.4	466.9	480.9	488.6	492.4
	10	140.4	186.4	214.1	231.8	244.5	253.2	257.7	255.5	261.9	345.8	397.3	431.3	454.6	469.8	479.2	484.5
R410A	-40	174.4	224.8	254.6	275.8	288.8	299.6	306.4	310.3	324.1	418.7	475.4	513.3	539.1	557.2	569.5	576.8
	-30	169.2	221.9	252.7	273.8	288.2	298.8	305.9	310.6	315.4	411.8	469.8	509.2	536.9	556.1	569.5	577.6
	-20	163.2	215.0	247.9	268.8	284.1	295.5	302.8	308.2	304.4	400.8	459.4	500.8	529.3	549.2	565.8	572.8
	-10	156.0	206.9	239.4	265.8	276.8	289.0	295.9	301.5	290.8	385.4	444.6	485.7	515.7	536.1	555.7	561.0
	-5	151.9	202.0	234.4	259.0	271.8	283.5	291.5	296.7	282.9	373.4	435.6	461.8	505.8	527.0	542.2	552.2
	10	137.3	184.8	214.0	236.1	252.3	262.9	271.8	276.0	256.1	343.5	399.9	439.9	464.3	489.7	503.8	513.9



# DPF系列电子膨胀阀控制器

## DPF Series Electronic Expansion Valve Controller



### 产品概述 Product Description

用于DPF系列电子膨胀阀的过热度控制和机组控制，适用于4相步进电机驱动的电子膨胀阀，以4相8拍1-2相励磁驱动方式控制。保障系统处于安全范围内运转，提高压缩机和系统的可靠性。

Used for super heat degree control and unit control of DPF series electronic expansion valve, and suitable for the electronic expansion valve driven by 4 phase stepper motors and controlled by 4 phase 8 beat 1-2 phase excitation driving mode. Ensure the system to be operated within a safe range, improve the reliability of compressor and system.

### 特点 Features

- 通过采集系统各路温度信息，分析系统当前运行状态，运用模糊算法，使用自适应控制；
- 反应和动作速度快，调节精准；
- 电子膨胀阀控制器可根据系统参数设定，以适应不同的设备和工况需求；
- 电子膨胀阀修复功能：电子膨胀阀开度将在0~110%之间来回动作，配合持续合适力度敲击可解决部分膨胀阀卡死问题。

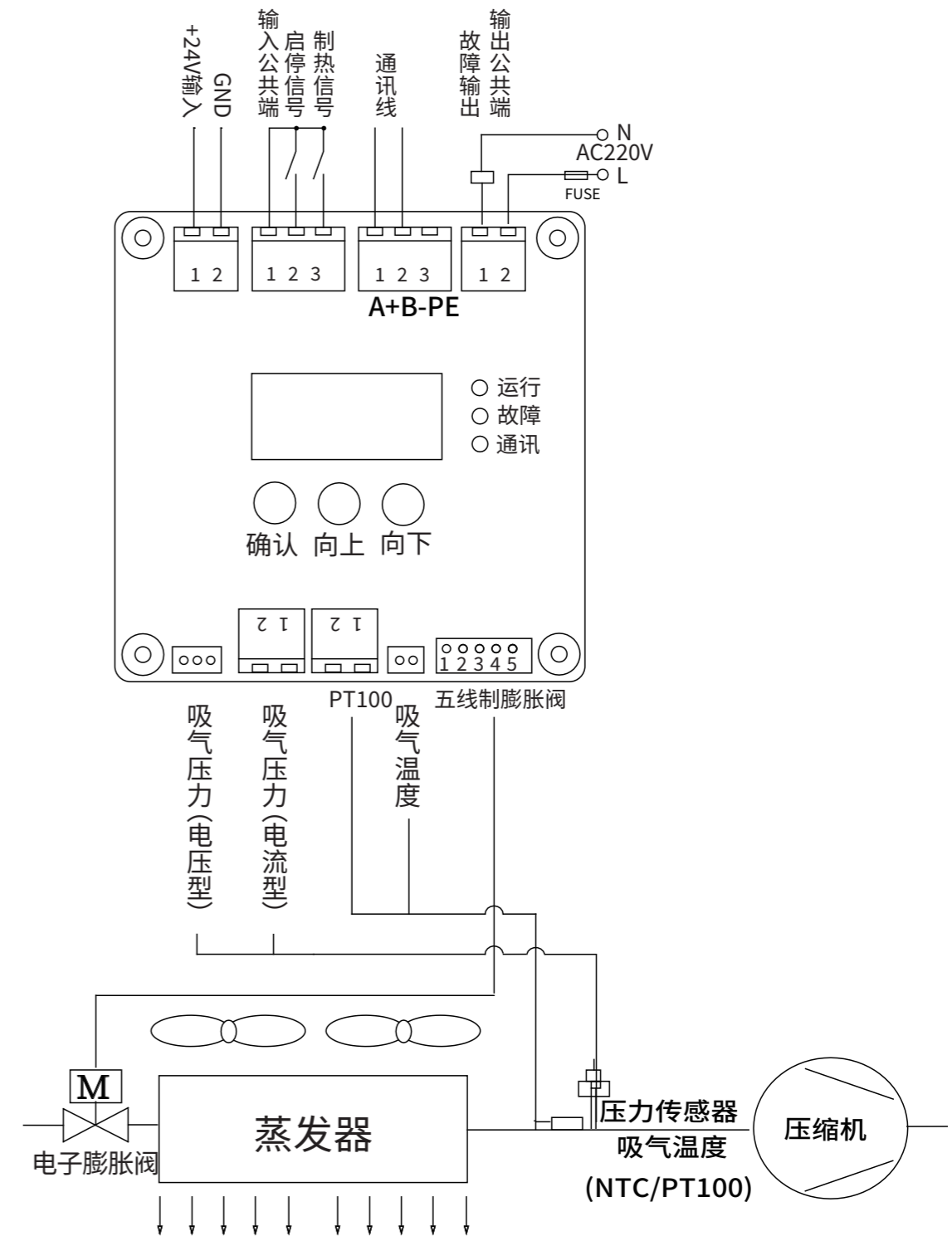
- Analyzes the system current running state by collecting temperature information of each part of the system, and uses fuzzy algorithms, and adopts self-adaptive control;
- Fast response and action, precise adjustment;
- The electronic expansion valve controller can be set according to the system parameters to adapt demands of different equipments and conditions;
- Electronic expansion valve repair function: The electronic expansion valve opening will move back and forth between 0~110%, and with continuous appropriate force tapping, it can solve some valve sticking problems.

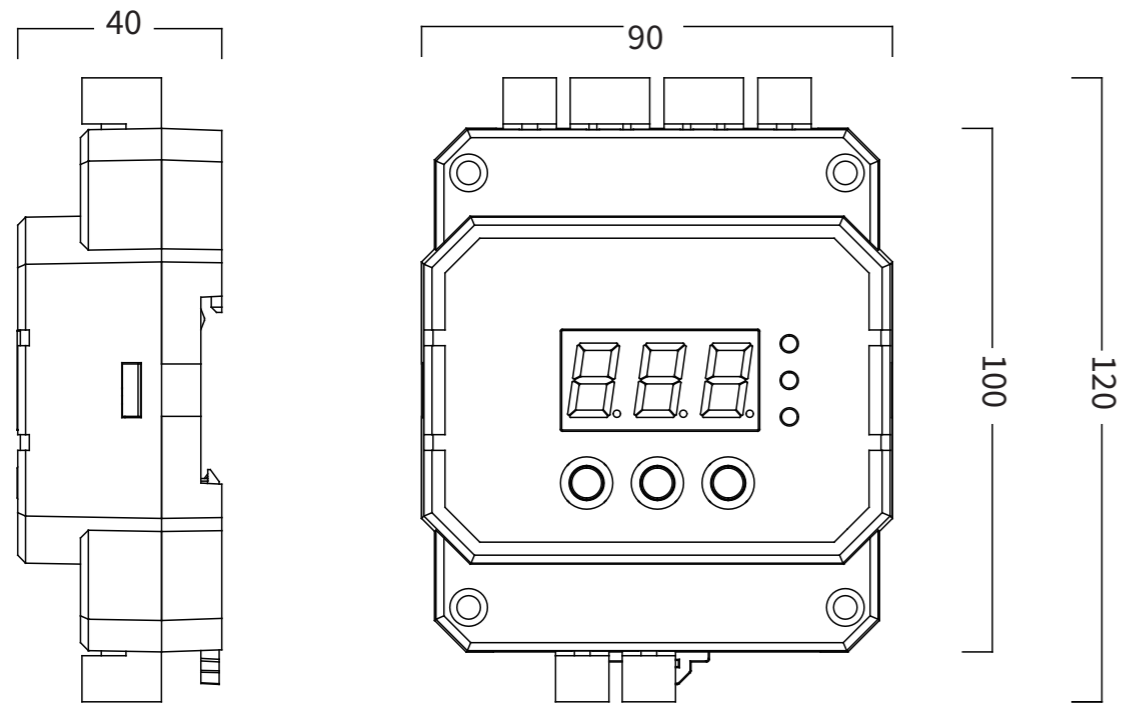
### 技术参数 Technical Parameters

工作环境 Working environment:	-10°C~55°C, ≤85%RH非凝露≤95%RH -10°C~55°C, ≤85%RH non-condensation ≤95%RH
输入电源 Input power:	直流24V DC 24V
电子膨胀阀输入 Electronic expansion valve input:	1路, 5线制/6线制, 12V供电, 负载线圈电流≤0.4A 1 way, 5 wires/6 wires, 12V power supply, load coil current ≤0.4A
温度传感器输入 Temperature sensor input:	1路NTC温度探头, 1路PT100温度探头 Temperature sensor input: 1 way NTC temperature probe, 1 way PT100 temperature probe
压力传感器输入 Pressure sensor input:	2路, 4~20mA电流型或0~5V电压型 2 ways, 4~20mA current type or 0~5V voltage type
开关量输入 Switch input:	2个无源信号输入, 切勿接入电源, 外接负载电阻≤2KΩ 2 passive signal inputs, do not connect to power supply, external load resistance ≤2KΩ
继电器输出 Relay output:	1路继电器, 负载能力:5A/220V 1 way relay, load capacity: 5A/220V
通讯接口 Communication interface:	1路, 标准Modbus-RTU协议接口 1 way, standard Modbus-RTU protocol interface

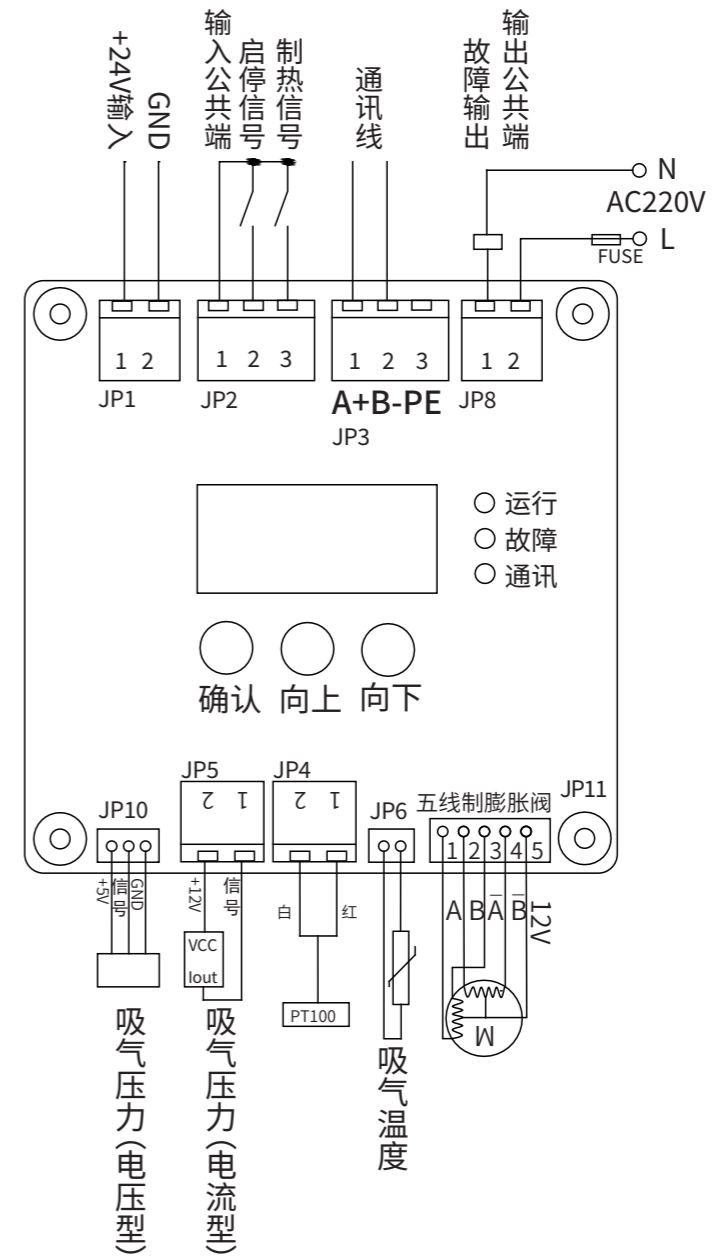
### 系统连接示意图 System Connection Diagram

## HS-DPF-K01系统连接示意图





### HS-DPF-K01单电膨驱动.五线制



注:

1. 此电气图连接示意图仅供参考。
2. 参数P21【是否使用低温】设置“使用”时吸气温度由PT100探头检测。
3. 三线制PT100两根红线接一起。
4. JP6可自定义排气温度。
5. JP8可自定义喷嘴阀。

Note:

1. This electrical connection diagram is for reference only.
2. For parameter P21 [whether to use low temperature], when set to "use", the suction temperature should be tested by PT100 probe.
3. For 3-wire PT100, connect the two red wires together.
4. JP6 can be customized: exhaust temperature.
5. JP8 can be customized: nozzle valve.

# SPF系列电子膨胀阀控制器 Controller for SPF Series electric expansion valve



HS-1702

## 产品概述 Product Description

适用于SPF系列电子膨胀阀的过热度控制，以2相4拍双极励磁方式控制，提高系统的制冷能力。

It is suitable for super heat control of SPF series electronic expansion valves. It is controlled by 2 phase 4 beat bipolar excitation mode to improve the refrigerating capacity of the system.

## 特点 Features

- 多种制冷剂可选: R22、R134a、R404a、R410a、R507c;
- 多种类电子膨胀阀: 采用PID算法适用多种双极电子膨胀阀, 也可以自定义膨胀阀参数;
- MOP保护: 蒸发压力超压保护;
- LOP保护: 蒸发压力低压保护;
- 告警输出: 一路无源继电器触点输出;
- 集中监控: 可通过RS485通信方式进行开、关机, 参数设置, 数据查看。

- More refrigerants available: R22、R134a、R404a、R410a、R507c;
- more kinds of electronic expansion valve: the PID algorithm is applicable to various bipolar electronic expansion valve, and the parameters of the expansion valve can also be customized;
- MOP protection: evaporative pressure overpressure protection;
- LOP protection: evaporative pressure low-pressure protection;
- Alarm output: one way passive relay contact output;
- Centralized monitoring: ON-OFF, parameter setting, data check can be performed through RS485 communication.

## 技术参数 Technical Parameters

控制电源 control power	DC24V/650mA
使用环境 using environment	海拔低于2000米; 温度-10°C ~ 60°C, 湿度: 20% ~ 85%, 无凝露。(禁止在含酸、含碱等有腐蚀性的场合和易燃易爆的场合使用!) altitude below 2000meters; temperature -10°C ~ 60°C, humidity: 20% ~ 85%, no condensation . (No use in corrosive places with acid, alkali or inflammable and explosive places!)
配置 dispose	控制器 (HS-1702) 1件, 常温温度传感器 (NTC-NT05) 2件, 压力传感器(77CP055) 1件, 变压器 (KBE4825) 1件, 备用电源 (GFB300) 1件 Accessories: Controller (GEC1702) *1, Normal temp. sensor (NTC-NT05) *2, Pressure sensor (77CP055)*1, transformer (KBE4825) *1, backup power (GFB300) *1

## 接线图 Wiring Layout



配置一：常温温度传感器

Accessory I :Normal temperature sensor



NTC-NT05

技术参数 Technical Parameters	
测量温度Test range	-50~60°C
NTC热敏电阻( thermistor )	B25/85=3435K±1%, R25=10Ω±1%
线长(cable length )	5m
不锈钢管(sensor size)	φ6 X 50
防护等级(protection level)	IP68

配置二：压力传感器

Accessory II:pressure sensor



77CP055

技术参数 Technical Parameters	
量程范围 test range	-1~12bar
精度 Accuracy	0.5% FS(-20~85°C)
工作温度 working temp.	-40~125°C
螺纹接口 Connection thread	7/16-20UNF (内螺纹 Female)、带1/4喇叭口针阀顶开装置with depressor
接线方式input power	4~20Ma (红/黑, 两线制, 电流型 red/black, current mode)
连接线wire	AWG20 , L=3m

配置三：变压器 Accessory III:Transformer



KBE4825

技术参数 Technical Parameters	
输入 input	230VAC, 50/60HZ
输出 output	24V, MAX 10W
耐压 withstand voltage	3.5KW

配置四：备用电源 Accessory IV:Backup power



GFB300

产品概述 Product Description	
备用电源为超级电容模块，串联在供电电路中，可确保电源故障时保证控制器临时供电，立刻关闭链接的电子膨胀阀	The backup power supply is a super capacitor module, which is connected in series in the power supply circuit, which can ensure the temporary power supply of the controller in case of power failure, and immediately close the linked electronic expansion valve

技术参数 Technical Parameters	
输入 input	24V/400mA
输出 output	12V/400mA
容量 capacity	50mA.h

# EC391 电子膨胀阀控制器

## EC391 electronic expansion valve controller



### 产品概述 Product Description

适用于中/低温强制风冷制冷系统微型温度控制器及机组控制器，以4相8拍1-2相励磁驱动方式精确控制冷媒流量，提高系统COP达到快速制冷和节能的目的。

Suitable for medium/low temperature forced air cooling refrigeration system micro temperature controllers and unit controllers, using 4-phase 8-step 1-2 phase excitation drive method to precisely control refrigerant flow, improve system COP, and achieve rapid cooling and energy saving.

### 特点 Features

- 集成有风机控制、除霜控制、供液阀控制、膨胀阀开度调节等，兼顾冷柜/冷库温控器功能；
- 通过压力对应温度控制过热度，过热度波动小、库温保持更平稳；
- 多种内置程序保证电子膨胀阀控制精准，确保制冷系统安全、可靠运行；
- 采用变过热度算法控制，使制冷系统效率更高；
- 可多个温控共用一个压力值控制，适合一个主机拖多冷风机或冷柜场合，安装调试简便；
- 带RS485通信口，可接外部网络

- Integrated with fan control, defrost control, liquid supply valve control, expansion valve opening adjustment, etc., combining the functions of a refrigerator/freezer temperature controller;
- Controls superheat through pressure corresponding to temperature, with small superheat fluctuation and more stable storage temperature;
- Multiple built-in programs ensure precise electronic expansion valve control, ensuring safe and reliable operation of the refrigeration system;
- Uses variable superheat algorithm control to make the refrigeration system more efficient;
- Multiple temperature controllers can share one pressure value control, suitable for one host driving multiple cold fans or refrigerators, easy installation and commissioning;
- Equipped with RS485 communication port, can be connected to an external network.

### 技术参数 Technical Parameters

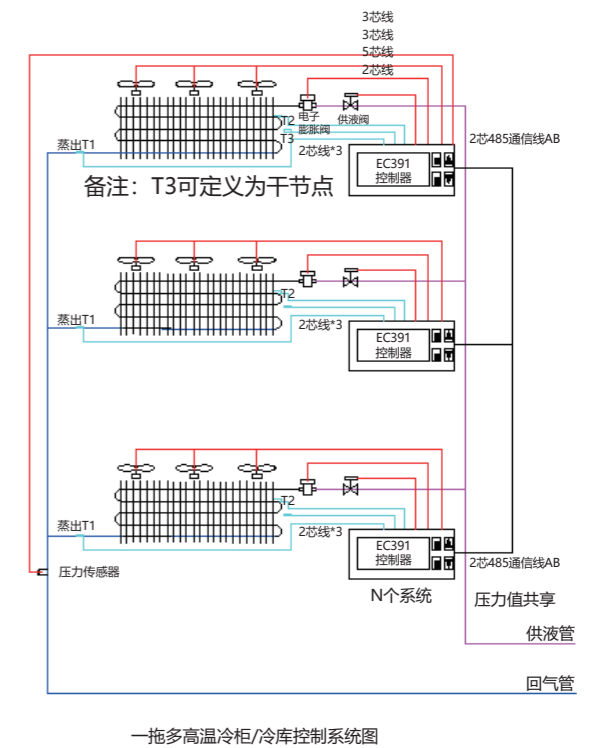
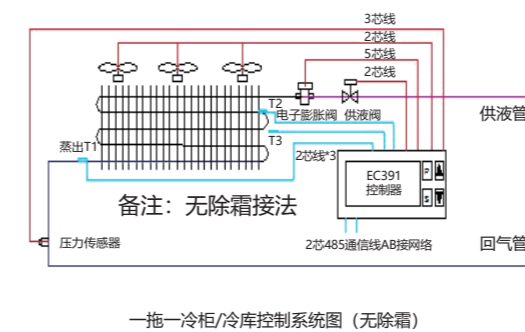
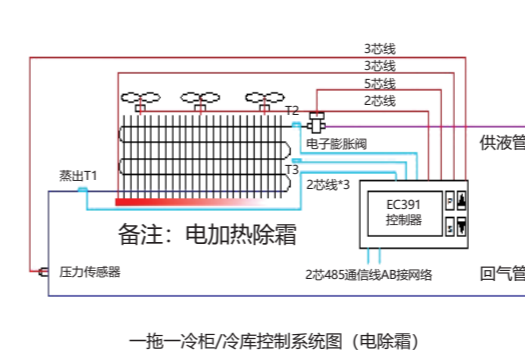
传感器长 Length of sensor	2米(含探头) 2 meters (including probe)
感温元件 Temperature sensing element	NTC, NTC(R25°C=10K, B=3435)
环境温度 Environment temperature	-10~45°C
工作湿度 Working humidity	5~85%RH (不结露) 5~85%RH(no condensation)
设定范围 Setting range	-45.0~50.0°C
显示范围 Display range	-50.0~+150°C
电源电压 Power voltage	12VDC, 50/60Hz
端子接线 Terminal wiring	导线不超过 2*1.5mm <sup>2</sup> , 或1*2.5mm <sup>2</sup> lead wire no more than 2*1.5mm <sup>2</sup> , or 1*2.5mm <sup>2</sup>
整机尺寸 Dimension of whole machine	长 78 x 宽 34.5 x 深 82(毫米) length 78 * width 34.5 * depth 82(mm)
负载电流 Load current	5A, 250Vac (阻性负载) 5A, 250Vac (resistive load)
安装开孔 Installing hole	长 71 x 宽 29(毫米) length 71 * width 29(mm)
防护等级 Protection grade	IP65(前面板) IP65 (front panel)
外壳 Enclosure	PC+ABS 阻燃 PC+ABS Flame Retardant

### 结构 Structure

公共端 Public port	辅助输出 Auxiliary output	风机 Fan	除霜 De-frosting	压缩机 Compressor
1	2	3	4	5
COM	RO4	RO3	RO4	RO1

12VDC +	485_1A	485_1B	P1	P2	P3	+5VDC--P4	DI1	DI2
1	3	5	7	9	11	13	15	17
2	4	6	8	10	12	14	16	18
12VDC -	485_2A	485_2B	GND	GND	GND	P4(Vout)	GND	GND

### 运用 Application



长 78(毫米) x 宽 34.5(毫米) x 深 82(毫米) length 78 \* width 34.5 \* depth 82(mm)

# 压力传感器 Pressure sensor



电流型 (P224A)  
Current type (P224A)



电压型 (P321)  
Voltage type (P321)

## 产品概述 Product Description

用于检测制冷系统工况的压力值

Used to check the pressure value of refrigerating system condition

## 特点 Features

- EMC/EMI适应变频环境应用;
- 瞬间保护电压: DC16V;
- 多种冷媒兼容, 应用范围广;
- 电源反接保护;
- 电流型压力传感器防结露设计;

- EMC/EMI adapts frequency conversion environment application;
- Instantaneous protective voltage: DC16V;
- Compatible with multiple refrigerants, wide application range;
- Power supply reverse connection protection;
- Anti-condensation design for current type pressure sensor

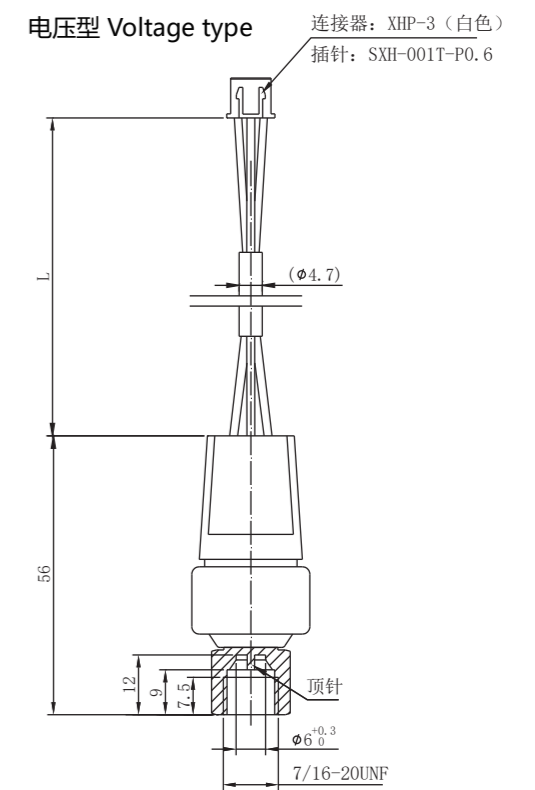
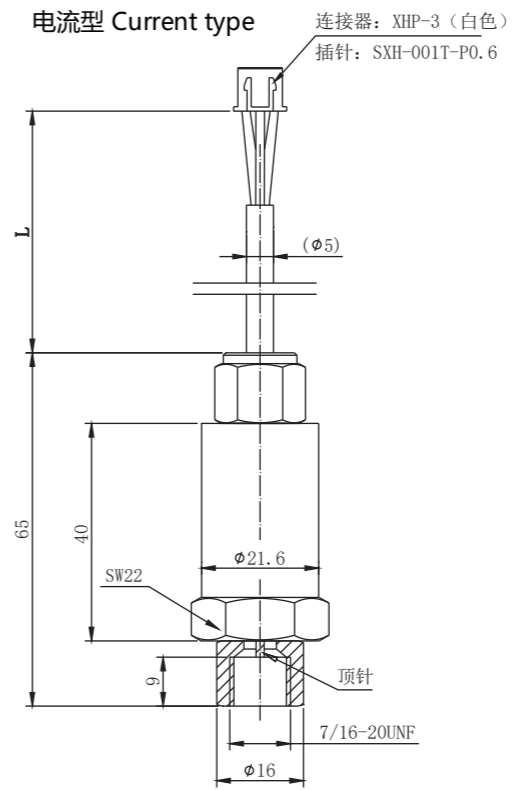
## 技术参数 Technical Parameters

型号 Model	P224A	P321
工作电压 Working Voltage	24VDC (15~32VDC)	5±0.25VDC
输出信号 Output Signal	4~20mA	0.5~4.5VDC
介质温度 Media Temperature	-40°C~125°C	
使用寿命 Service Life	大于1000万次 more than 10,000,000 times	
长期稳定性 Long-term stability	±0.5%FS/年 ±0.5%FS/Year	
防护等级 Protection level	IP66	

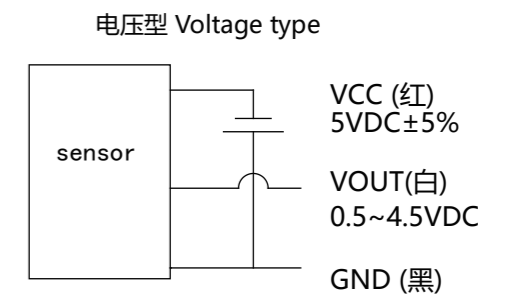
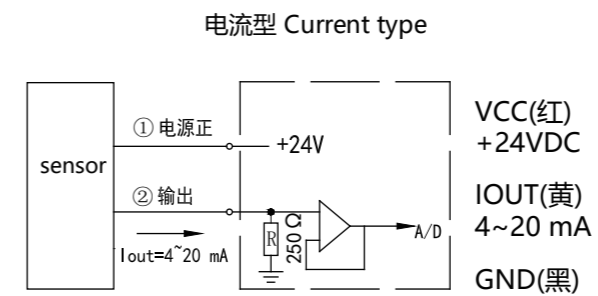
## 选型表 Model selection

型号 Model	压力范围 Pressure range	安全过载 Safety overload	破坏压力 Breaking pressure	工作电源 Working voltage	输出信号 Output signal	综合精度 Comprehensive Precision
HS-P321-30-10barG	0-10bar	30bar	160bar	5VDC	0.5~4.5VDC	±2.5%FS
HS-P321-30-20barG	0-20bar	60bar	160bar	5VDC	0.5~4.5VDC	±2.5%FS
HS-P321-30-30barG	0-30bar	90bar	250bar	5VDC	0.5~4.5VDC	±2.5%FS
HS-P321-30-45barG	0-45bar	90bar	250bar	5VDC	0.5~4.5VDC	±2.5%FS
HS-P321-30-(-1~12)barG	-1~12bar	36bar	160bar	5VDC	0.5~4.5VDC	±2.5%FS
HS-P224A-30-11barG	-1-11bar	60bar	160bar	24VDC(12~23VDC)	4~20mA	±1%FS
HS-P224A-30-18barG	0-18bar	60bar	160bar	24VDC(12~23VDC)	4~20mA	±1%FS
HS-P224A-30-30barG	0-30bar	90bar	250bar	24VDC(12~23VDC)	4~20mA	±1%FS
HS-P224A-30-50barG	0-50bar	90bar	250bar	24VDC(12~23VDC)	4~20mA	±1%FS

## 外形尺寸 Overall dimension



## 接线图 Wiring drawing



红: Red 白: White 黑: Black 黄: Yellow

## 温度传感器 Temperature sensor



5K3470

### 产品概述 Product Description

用于检测制冷系统工况的温度值

Used to check the temperature value of refrigerating system condition

### 特点 Features

- 体积小, 重量轻, 防护性能好;
- 温度偏差小, 精度高
- 测量范围 test range: -50~150°C

- Small size, light weight, good protective performance
- Small temperature deviation, high precision

### 型号 Model

NTC, R25II = 5K, B25/50II = 3470K

We need to accept that we won't always make the right decisions, that we'll screw up royally sometimes – understanding that failure is not the opposite of success, it's part of success.

— Arianna Huffington, News Editor-in-Chief

我们必须接受, 我们无法总是做正确的决定, 有时候大错特错 – 了解失败不是成功的相反, 而是成功的一部分。

— 阿里安娜·赫芬顿 (新闻主编)

电动调节阀系列

ESCORT FOR SAFE REFRIGERATION 为安全制冷护航

# MOTORIZED REGULATING VALVE *Series*

独特设计, 实现零压差开启;  
双稳态低功率设计, 能耗低;  
大口径阀门, 紧凑设计, 重量轻。

Unique design to achieve zero pressure differential opening.  
Bistable low power design with low energy consumption.  
Large diameter valves, compact design and light weight.



REFRIGERATION & A/C SYSTEM ACCESSORIES

HONGSEN

# DHV型 电动调节阀

## Model DHV Motorized Regulating Valve



DHV(D)



DHV(S)

### 产品概述 Product Description

- DHV(S/D) 型电动调节阀适用于系统低压差或0压差状态，不会出现不开阀或卡死现象。
- DHV(S/D) 型电动调节阀一体式阀体结构，漏点少，更可靠。
- DHV(S/D) 型电动调节阀开度可调，驱动器控制阀芯位置，实现阀门流量可调节。
- DHV(S/D) 型电动调节阀大口径双稳态阀，既是常开阀，又是常闭阀。
- DHV(S/D) 型电动调节阀可提供控制器，也可阀门单独供货。

- DHV (S / D) Motorized Regulating Valve is suitable for low pressure difference or zero pressure difference of the system.
- DHV(S/D) Motorized Regulating Valve body structure, less leaking point, more reliable.
- DHV (S / D) Motorized Regulating Valve adjustable opening, driver Control spool position, Valve flow adjustable.
- DHV (S / D) Motorized Regulating Valve large caliber bistable valve, both normally open valve and normally closed valve.
- DHV (S / D) Motorized Regulating Valve can be supplied either as a controller or as an individual valve.

### 产品特点 Product characteristics

- 专为工业应用场合设计，最大工作压力5.2MPa；
- 应用新材料，直接焊接接口，焊接性能好，耐高低温性能好；
- 大口径阀门，设计紧凑，重量轻；
- 阀盖可以任意方向安装而不影响阀门功能；
- 步进电机驱动，稳定性好 (IP65) ；
- 双稳态设计，能耗低。
- 大开阀力，垃圾不易卡死。
- 活塞行程大，工作流量大。
- 控制器备电设计，接入备电电源，断电自动关阀。
- 焊接连接可达4.5in。

- Designed for industrial applications, maximum working pressure 5.2 MPa;
- Application of new materials, direct welding interface, welding performance is good, good resistance to high and low temperature;
- Large caliber valve, compact design, light weight;
- Bonnet can be installed in any direction without affecting valve function;
- Stepper motor drive, good stability (IP65);
- Bistable design, low energy consumption.
- Large opening valve force, garbage is not easy to jam.
- The piston stroke is large and the working flow is large.
- The controller is equipped with power supply, connected to the standby power supply, and the valve is automatically shut off when the power is cut off.
- Welding connection up to 4.5in.

### 技术参数 Technical Parameters

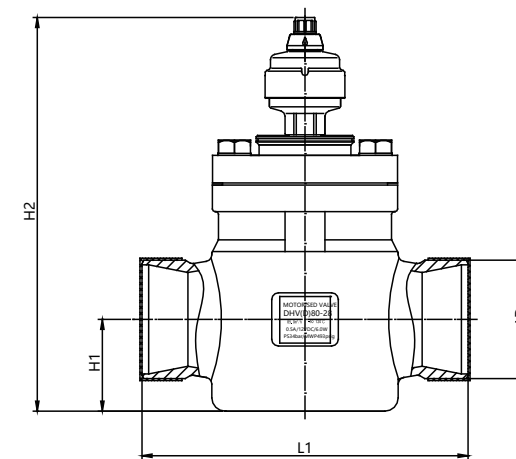
适用制冷剂 Applicable Refrigerants	HCFC/HFC(客户指定 Customer specified)
适用介质温度 Applicable Medium Temperature	-35°C ~ +105°C
适用环境温度 Application Ambient Temperature of	-35°C ~ +65°C
额定功率/电压 Rated power/voltage	6W/DC12V

### 选型表 Model Selection

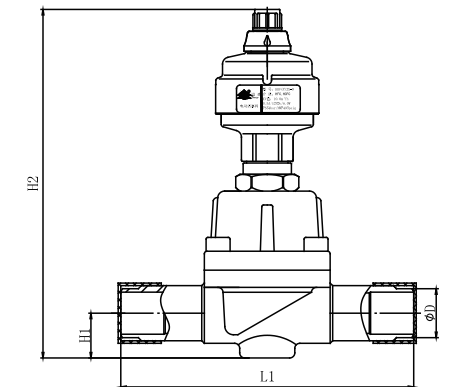
型号Model	规格Spec 接口 Connection	开启压差 ΔP(bar) ΔP(bar)		最大工作压力(bar) Max Working Pressure(bar)	Kv值(m³/h)
		最小Minimum	最大工作压力差MOPD 液体 LiquidMOP		
DHV(S)25-9	28	0	40	52	10
DHV(S)32-11	35				16
DHV(S)40-13	42				25
DHV(S)50-18	57				44
DHV(D)50-18	57				44
DHV(D)65-24	76				70
DHV(D)80-28	89				85
DHV(D)100-34	108				160
DHV(D)100-36	114.3				160
DHV(D)125-44	140.7				223
DHV(D)150-53	168.3	370			

- 1) Kv值：密度为1吨/m³的水在通过阀的压差等于100KPa时的流量，单位为m³/h；
  - 2) 气态介质的MOPD约高1bar.
- 1) Kv value: The flow rate (m³/h) of water of density 1t/m³ passing through the valve with the pressure differential of 100 KPa.
- 2) The MOPD of gaseous medium is about 1 bar higher than that of liquid.

### 外形尺寸 Overall Dimension



DHV(D)



DHV(S)

型号Model	外形尺寸 External dimension				重量(Kg) Weight (Kg)
	D	L1	H1	H2	
DHV(S)25-9	28	170	26	203.5	2.8
DHV(S)32-11	35	193	29	209.5	3.5
DHV(S)40-13	42	207	32	218	4.9
DHV(S)50-18	57	207	39	236.8	7.3
DHV(D)50-18	57	200	52.5	251.5	10
DHV(D)65-24	76	230	69	294	15.5
DHV(D)80-28	89	245	69	294	16
DHV(D)100-34	108	300	94	365	34.38
DHV(D)100-36	114.3	300	94	365	34.54
DHV(D)125-44	140.7	348	146	495	65
DHV(D)150-53	168.3	445	160	550	118

# DSV (F/D)系列电动三通调节阀

## Model DSV (F/D) Motorized 3-way Regulating Valve



DSV (D)



DSV (F)

### 产品概述 Product Description

- DSV(F/D)系列电动三通调节阀用于冷冻、冷藏和空气调节装置的液体、吸气和热气管路上，热氟化霜管路上。
- DSV(F/D)系列电动三通调节阀可根据应用场合选择一进二出和二进一出两种连接方式。
- DSV(F/D)系列电动三通调节阀适用于系统低压差或零压差状态，不会出现不开阀或卡死现象。
- DSV(F/D)系列电动三通调节阀开度可调，驱动器控制阀芯位置，实现阀门流量可调节。
- DSV(F/D)系列电动三通调节阀可提供控制器，也可阀门单独供货

- Model DSV (F/D) Motorized 3-way Regulating Valve can be applied in the liquid, suction and hot gas pipelines of freezing, refrigeration, air conditioning equipment and hot gas defrosting.
- Model DSV (F/D) Motorized 3-way Regulating Valve allows two connection methods: 1 inlet/2 outlets; 2 inlets /1 outlet
- Model DSV (F/D) Motorized 3-way Regulating Valve can be applied in systems at low pressure differential or even at "0" pressure differential with out, non-open or stuck will be avoided.
- Model DSV (F/D) Motorized 3-way Regulating Valve can be used to control by adjust the open degree through the drive controller.
- Model DSV (F/D) Motorized 3-way Regulating Valve comes with drive controller, single valve is also available.

### 特点 Features

- 专为工业应用场合设计；
- 大口径阀门，设计紧凑，重量轻；
- 阀盖可以任意方向安装而不影响阀门功能；
- 步进电机驱动，稳定性好 (IP65) ；
- 大开阀力，垃圾不易卡死；
- 活塞行程大，工作流量大。

- Specially designed for industrial application;
- Large diameter , compact design, light weight
- The bonnet can be installed in any direction without affecting the valve function
- Stepper motor drive, high stability (IP65)
- Large opening force, effectively prevent stuck
- Large piston stroke enlarges the working flow.

### 技术参数 Technical Parameters

适用制冷剂 Applicable refrigerant	HCFC、HFC (客户指定 customization available)
适用介质温度 Applicable medium working temperature	-35°C ~ +105°C
适用环境温度 Environment temperature	-35°C ~ +65°C
额定功率/电压 Rated Power/Voltage	12W/DC24V (6W/DC12V)

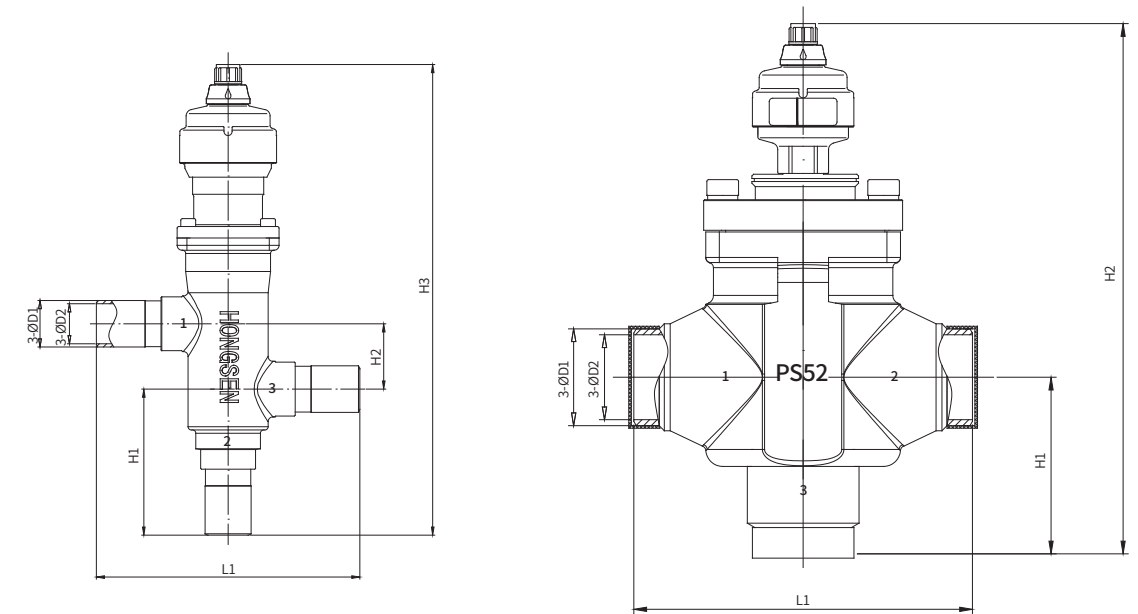
### 选型表 Model Selection

型号 Model	规格 Size		开启压差 ΔP(bar) ΔP(bar)		最大工作压力(bar) Max Working Pressure(bar)	Kv值(m³/h)
	焊接口 Weld Connection	最小Min	最大工作压力差MOPD 液体 Liquid MOPD			
DSV(F)16-6T	19	0	21	42	4	
DSV (F) 25-9	28.5				10	
DSV (F) 32-11	35				16	
DSV (F) 40-13	42				25	
DSV (D) 50-17	57				40	
DSV (D) 65-24	76				70	
DSV (D) 80-28	89				85	

• Kv值: 密度为1吨/m³的水在通过电动阀的压差等于100KPa时的流量, 单位为m³/h;  
• 气态介质的MOPD约高1bar.

• Kv value: The positive flow capacity of water with density of 1Ton/m³ at the pressure differential of 100Kpa; unit: m³/h  
• The MOPD of gaseous media is about 1 bar higher

### 外形尺寸 Dimensions



型号 Model	外形尺寸 Size						重量(Kg) Weight(Kg)
	D1	D2	L1	H1	H2	H3	
DSV(F)16-6T	23	19	125	68	24	221	1.4
DSV(F)25-9	28.5	25	163	89	40	288	3.5
DSV(F)32-11	35	30	200	118	47	334	4.1
DSV(F)40-13	42	37	200	118	47	334	4.5
DSV(D)50-17	57	50	200	104	/	312	10.2
DSV(D)65-24	76	70	230	69	/	340	18.8
DSV(D)80-28	89	82	245	69	/	341	19.2

# HC-10 PID 控制器 HC-10 PID Controller



## 产品概述 Product Description

<p>HC-10通用型控制器采用PID控制规律，适用于驱动单级4相步进电机和双极2相步进电机式阀门，对制冷系统的液位、压力或温度等工况的调节。</p>	<p>HC-10 general type controller adopts PID controlling rules, which is suitable to drive single stage 4 phase stepping motor and bipolar 2 phase stepping motor valve, and adjust the working conditions of the liquid level, pressure and temperature of the refrigerating system.</p>
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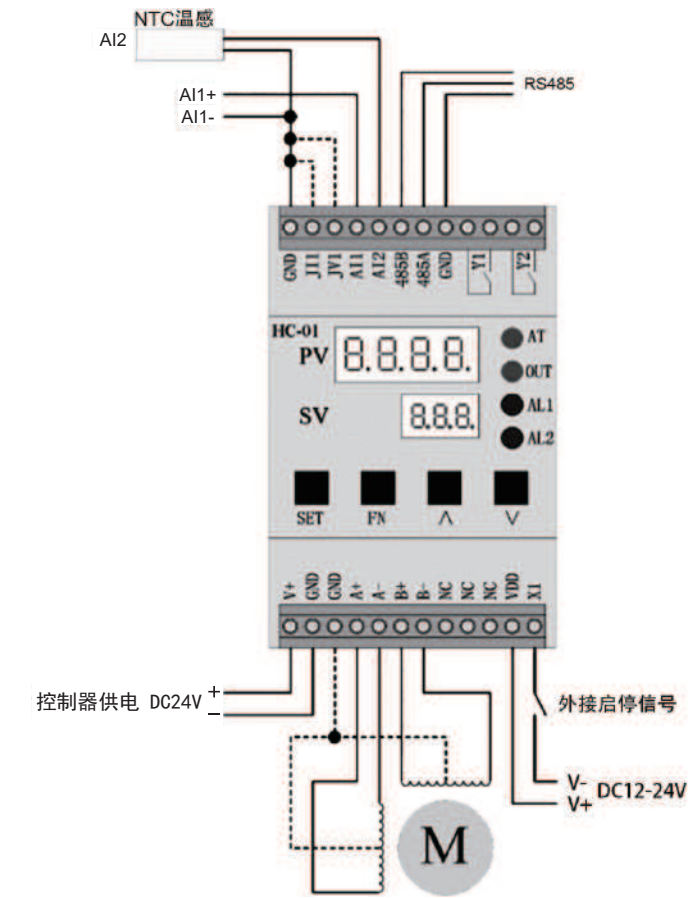
## 特点 Features

<ul style="list-style-type: none"> <li>• 0-5V、0-10V或4-20mA标准输入信号;</li> <li>• 采用PID控制算法，适用范围广控制精准;</li> <li>• 具有手动、模拟量控制、PID自动控制多种控制方式;</li> <li>• 带RS485标准通信口，可接主机通讯。</li> </ul>	<ul style="list-style-type: none"> <li>• 0-5V、0-10V or 4-20mA standard input signal;</li> <li>• Adopt PID control algorithm with wide application range and precise control;</li> <li>• Multiple controlling method like manual, analog quantity control and PID automatic control;</li> <li>• Equipped with RS485 standard communication port, which can be connected with main machine.</li> </ul>
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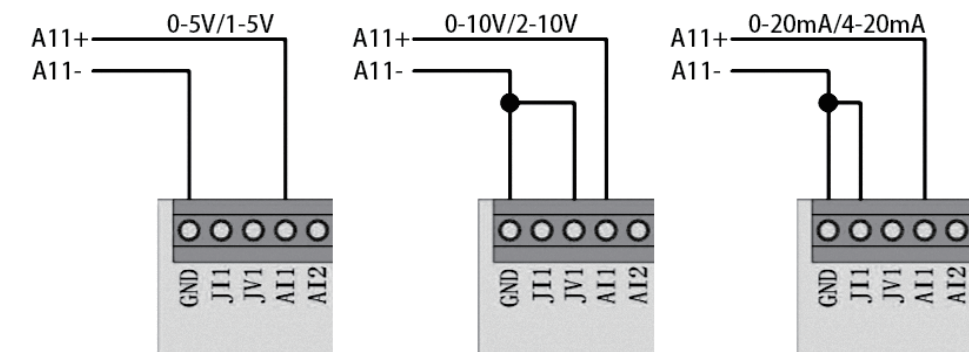
## 技术参数 Technical Parameters

电源电压 Power voltage	24VDC
输入信号 Input signal	单路0-5V (含1-5V) , 0-20mA (含4- 20mA) , 0-10V (含2-10V) 三种信号 single way 0-5V (including 1-5V), 0-20mA (including 4- 20mA) , 0-10V (including 2-10V)
输出电压 Output voltage	12VDC, (支持4线、5线、6线制步进电机式电子膨胀阀) 12VDC, (support 4 wire, 5 wire, 6 wire system stepping motor electronic expansion valve)
RS485 通讯协议 RS485 communication protocol (ModbusRTU format)	二路报警输出触点信号 Two way alarm output contact signal

## 接线图 Wiring drawing



signal



三种输入信号的接线方式  
Wiring method for three types of input

# HS888 控制器 HS888 Controller



HS888-T-2  
(不带电源开关)



HS888-T

## 产品概述 Product Description

电源电压	AC220V	Supply Voltage	AC220V
备用电源 (选配)	DC12V/2F	Backup power (optional)	DC12V/2F
使用环境温度	-20°C~+45°C	Applicable environmental temp.	-20°C~+45°C
使用环境湿度	≤85%无凝露	Applicable environmental humidity	≤85% No condensation
双极驱动能力	最大输出电流1A	Bioplasm driver capacity	Maximum output current 1A
控制器驱动方式	无源驱动	Controller drive method	Passive driver

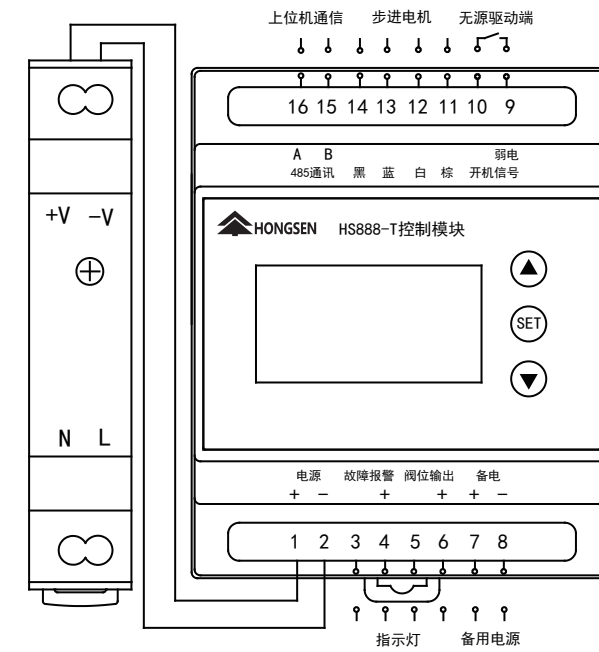
## 特点 Features

<ul style="list-style-type: none"> <li>• 专用模块：鸿森电动调节阀开关控制模块，确保系统控制精确无误；</li> <li>• 开/关阀信号输入：无源开关量信号，用于控制器接收开阀或关阀信号。</li> </ul>	<ul style="list-style-type: none"> <li>• Dedicated module: Special switch Control Module for Hongsen valve, ensure the accurate system control.</li> <li>• On/off valve signal input: Passive switch signal to receive the On/Off signal.</li> </ul>
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## 产品功能 Product function

<b>HS888控制器</b> <b>HS888-DC24V控制器</b>	<b>HS888-2/HS888-3控制器</b> <b>HS888-2-DC24V/HS888-3-DC24V控制器</b>	<b>HS888 controller</b> <b>HS888-DC24V controller</b>	<b>HS888-2/HS888-3 controller</b> <b>HS888-2-DC24V/HS888-3-DC24V controller</b>
<ul style="list-style-type: none"> <li>• 开度可调</li> <li>• 脉冲数可调</li> <li>• 断电关阀 (选配)</li> <li>• 开机断线检测</li> <li>• 故障报警</li> </ul>	<ul style="list-style-type: none"> <li>• 开度可调</li> <li>• 脉冲数可调</li> <li>• 断电关阀 (选配)</li> <li>• 开机断线检测</li> <li>• 故障报警</li> <li>• 开机断线检测</li> <li>• 二次开启延时可调</li> </ul>	<ul style="list-style-type: none"> <li>• Openness adjustable</li> <li>• Pulses adjustable</li> <li>• Automative close when power</li> <li>• Power disconnection detection</li> <li>• Error alarm</li> </ul>	<ul style="list-style-type: none"> <li>• Openness adjustable</li> <li>• Pulses adjustable</li> <li>• Automative close when power</li> <li>• Power disconnection detection</li> <li>• Error alarm</li> <li>• Openness adjustable at firstly opening</li> <li>• Time delay adjustable at secondary opening</li> </ul>

## 接线图 Wiring drawing



## 选型表 Model Selection

控制器类型 Controller type	功能 Function	控制器型号 Controller Model	配用电动调节阀型号 Corresponding Motorized regulating valve model	工作电源 Working voltage	
HS888-T	一次开启 Primary opening	HS888-20/25/32/40	DHV(S)20, DHV(S)25, DHV(F)25, DHV(F)32, DHV(F)40	AC220V	
		HS888-32S	HS888-32S		
		HS888-40S	HS888-40S		
		HS888-50S	HS888-50S		
		HS888-50	HS888-50		
		HS888-65/80	HS888-65/80		
		HS888-100	HS888-100		
		HS888-125	HS888-125		
		HS888-2-20/25/32/40	DHV(S)20, DHV(S)25, DHV(F)25, DHV(F)32, DHV(F)40		
	二次开启 Secondary opening	HS888-2-32S	DHV(S)32		
		HS888-2-40S	DHV(S)40		
		HS888-2-50S	DHV(S)50		
		HS888-2-50	DHV(D)50		
		HS888-2-65/80	DHV(D)65, DHV(D)80		
		HS888-2-100	DHV(D)100		
		HS888-2-125	DHV(D)125		
		用于电动三通阀 Used for Motorized 3-way regulating valve	HS888-3-16		DSV(F)16
			HS888-3-25		DSV(F)25
HS888-3-32/40	DSV(F)32, DSV(F)40				
HS888-3-50	DSV(D)50				
HS888-3-65/80	DSV(D)65, DSV(D)80				
	DSV(D)125				
HS888-T-2 (No Power Switch)	一次开启 Primary opening	HS888-20/25/32/40	DHV(S)20, DHV(S)25, DHV(F)25, DHV(F)32, DHV(F)40	DC12V	
		HS888-32S	DHV(S)32		
		HS888-40S	DHV(S)40		
		HS888-50S	DHV(S)50		
		HS888-50	DHV(D)50		
		HS888-65/80	DHV(D)65, DHV(D)80		
		HS888-100	DHV(D)100		
		HS888-125	DHV(D)125		
		二次开启 Secondary opening	HS888-2-20/25/32/40		DHV(S)20, DHV(S)25, DHV(F)25, DHV(F)32, DHV(F)40
	HS888-2-32S		DHV(S)32		
	HS888-2-40S		DHV(S)40		
	HS888-2-50S		DHV(S)50		
	HS888-2-50		DHV(D)50		
	HS888-2-65/80		DHV(D)65, DHV(D)80		
	HS888-2-100		DHV(D)100		
	HS888-2-125		DHV(D)125		
	用于电动三通阀 Used for Motorized 3-way regulating valve		HS888-3-16	DSV(F)16	
		HS888-3-25	DSV(F)25		
HS888-3-32/40		DSV(F)32, DSV(F)40			
HS888-3-50		DSV(D)50			
HS888-3-65/80		DSV(D)65, DSV(D)80			
		DSV(D)125			

## 电磁阀系列

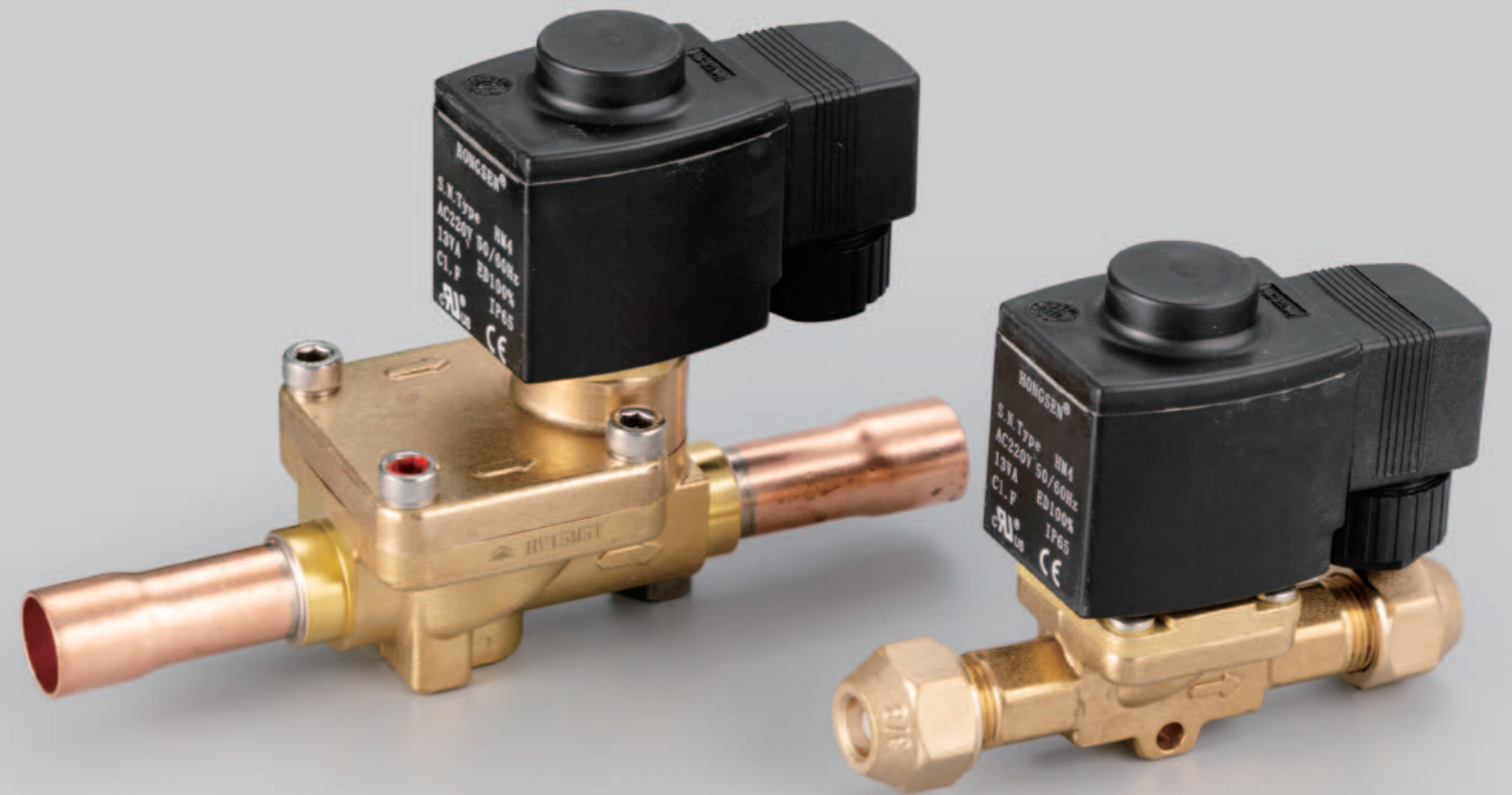
# SOLENOID VALVE *Series*

专利线圈 低温升、大功率、防水性能好。  
应用新材料,耐高温性能更好。  
采用新工艺,阀口密封优良开启压力更小。

The patent coil has the advantages of low temperature rise, high power and good waterproof performance.

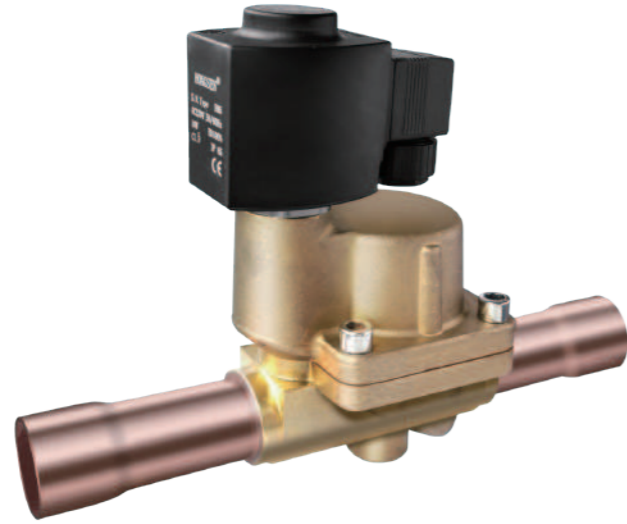
The new material has better heat resistance performance.

With new technology, the valve opening is excellent and the opening pressure is smaller.



# HVD型活塞式电磁阀

## Model HVD Piston Type Solenoid Valve



### 产品概述 Product Description

- HVD型活塞式电磁阀是二次开启式电磁阀，适用于单向流动。
- HVD型活塞式电磁阀用于冷冻、冷藏和空气调节装置的液体、吸气和热气管路上。
- HVD型活塞式电磁阀可提供多种电压的线圈，而阀体是通用的。
- HVD型活塞式电磁阀可提供整体供货，也可分体供货，即阀体和线圈分开单独供货。

- Model HVD piston type solenoid valve is a twice open-type solenoid valve to be suitable to one-way flow.
- Model HVD piston type solenoid valve is used on the liquid, air suction and hot vapor pipes of the refrigeration, cold storage and air conditioning facilities.
- The coil of varies voltages is available for Model HVD piston type solenoid valve with a universal valve body.
- Model HVD piston type solenoid valve could be supplied in whole or in split, that means valve body and coil could be supplied separately.

### 特点 Features

- 专利线圈，防水性能好 (IP65)。
- 应用新材料，耐高低温性能好。
- 24W的大功率电磁线圈，开阀能力大。
- 活塞行程大，工作流量大。
- 多种交流和直流电磁线圈可供选择。
- 焊接连接可达1-5/8in.

- The proprietary coil has perfect waterproof performance (IP65).
- Using new material, it has performance in high and low temperature application.
- The 24W high-power solenoid coil has high capability to open the valve.
- The high flow rate is assured by a big piston stroke.
- Various AC and DC solenoid coils are available for choice.
- 1-5/8 inch is the maximum welded connection size.

### 技术参数 Technical Parameters

适用制冷剂 Applicable Refrigerants	HCFC or HFC(客户指定 Customer specified)
适用介质温度 Applicable Medium Temperature	-30°C~+105°C
线圈的适用环境温度 Application Ambient Temperature of Solenoid	-40°C~+65°C
线圈的标准电压 Standard Voltage of Solenoid	AC 380V, AC 220V/50Hz(也可按客户指定做 Customer design is available)
线圈的允许电压波动 Allowable Voltage Fluctuation for Solenoid	+10%~-15%
线圈的连接 Connection of Solenoid	3线插入式标准连接器 Standard 3-wire insert connector

### 选型表 Model Selection

型号Model	规格Size	开启差值 $\Delta P$ (bar)		最大工作压力(bar) Max Working Pressure(bar)	Kv值 Kv(m <sup>3</sup> /h)
	焊接口 Weld Connection	最小Min	最大工作压力差MOPD 液体 Liquid MOPD		
HVD8-3T	3/8ODF	0.05	31	45	0.8
HVD10-4T	1/2ODF	0.05	31	45	1.4
HVD10-5T	5/8ODF	0.05	31	45	1.9
HVD15-6T	3/4ODF	0.05	31	45	2.6
HVD15-7T	7/8 ODF	0.05	31	45	2.8
HVD25-9T	1-1/8ODF	0.2	31	45	10
HVD32-11T	1-3/8ODF	0.2	31	45	16
HVD40-13T	1-5/8ODF	0.2	31	45	25

1) Kv值：密度为1吨/m<sup>3</sup>的水在通过电磁阀的压差等于100KPa时的流量，单位为m<sup>3</sup>/h；  
 2) 气态介质的MOPD约高1bar。  
 1) Kv value: The flow rate (m<sup>3</sup>/h) of water of density 1t/m<sup>3</sup> passing through the solenoid valve with the pressure differential of 100 KPa.  
 2) The MOPD of gaseous medium is about 1 bar higher than that of liquid.

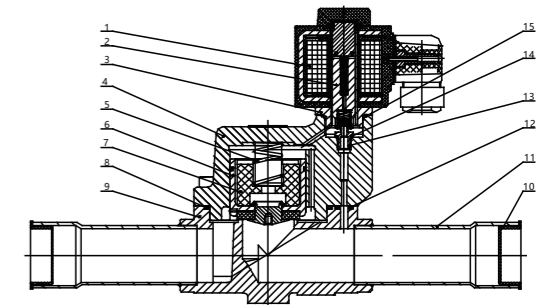
型号Model	名义制冷量 KWNominal Refrigerating Capacity kW											
	液体 Liquid				吸气 Air Suction				热蒸汽 Hot Vapor			
	R22/R407C	R134a	R404A/R507	R410A	R22/R407C	R134a	R404A/R507	R410A	R22/R407C	R134a	R404A/R507	R410A
HVD8-3T	16.10	14.80	11.20	16.08	1.80	1.30	1.60	2.32	7.40	5.90	6.00	11.18
HVD10-4T	28.18	25.90	19.60	28.14	3.15	2.28	2.80	4.06	12.95	10.33	10.50	19.57
HVD10-5T	38.24	35.15	26.60	38.19	4.28	3.09	3.80	5.51	17.58	14.01	14.25	26.55
HVD15-6T	52.33	48.10	36.40	52.26	5.85	4.23	5.20	7.54	24.05	19.18	19.50	36.34
HVD15-7T	56.35	51.80	39.20	56.28	6.30	4.55	5.60	8.12	25.90	20.65	21.00	39.13
HVD25-9T	201.25	185.00	140.00	201.00	22.50	16.25	20.00	29.00	92.50	73.75	75.00	139.75
HVD32-11T	322.00	296.00	224.00	321.60	36.00	26.00	32.00	46.40	148.00	118.00	120.00	223.60
HVD40-13T	503.13	462.50	350.00	502.50	56.25	40.63	50.00	72.50	231.25	184.38	187.50	349.38

液体和吸气名义制冷量的工况条件为  
 The working condition the nominal refrigerating capacity of liquid and air suction is as follows:  
 蒸发温度  $t_c = -10^\circ\text{C}$  Evaporation Temperature:  $t_e = -10^\circ\text{C}$ ;  
 阀前液体温度  $t_1 = +25^\circ\text{C}$  Liquid Temperature before Valve:  $t_1 = +25^\circ\text{C}$ ;  
 经过电磁阀的压力降  $\Delta P = 15\text{KPa}$  Pressure Drop after Solenoid Valve:  $\Delta P = 15\text{KPa}$

热蒸汽名义制冷量的工况条件为  
 The working condition the nominal refrigerating capacity of hot vapor is as follows:  
 冷凝温度  $t_c = +40^\circ\text{C}$  Condensation Temperature:  $t_c = +40^\circ\text{C}$ ;  
 经过电磁阀的压力降  $\Delta P = 0.8\text{bar}$  Pressure Drop after Solenoid Valve:  $\Delta P = 0.8\text{bar}$ ;  
 热蒸汽温度  $t_h = +65^\circ\text{C}$  Hot Vapor Temperature:  $t_h = +65^\circ\text{C}$ ;  
 液体制冷剂过冷度  $\Delta t_{\text{sub}} = 4\text{K}$  Liquid Refrigerant Overcooling:  $\Delta t_{\text{sub}} = 4\text{K}$

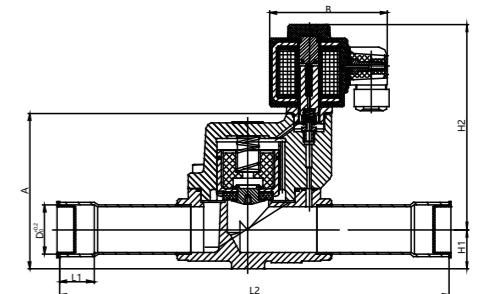
### 结构 Structure

- |                      |                              |
|----------------------|------------------------------|
| 1.电磁线圈 solenoid coil | 8.密封垫 PTFE gasket            |
| 2.芯铁部件 core iron     | 9.阀体 valve body              |
| 3.阀座部件 valve seat    | 10.防尘帽 dust cap              |
| 4.阀盖 bonnet          | 11.接管 pipe                   |
| 5.复位弹簧 reset spring  | 12.O形圈 O-ring                |
| 6.活塞部件 piston        | 13.阀芯 value element          |
| 7.活塞芯 piston core    | 14.阀芯垫片 value element gasket |
|                      | 15.密封环 seal ring             |



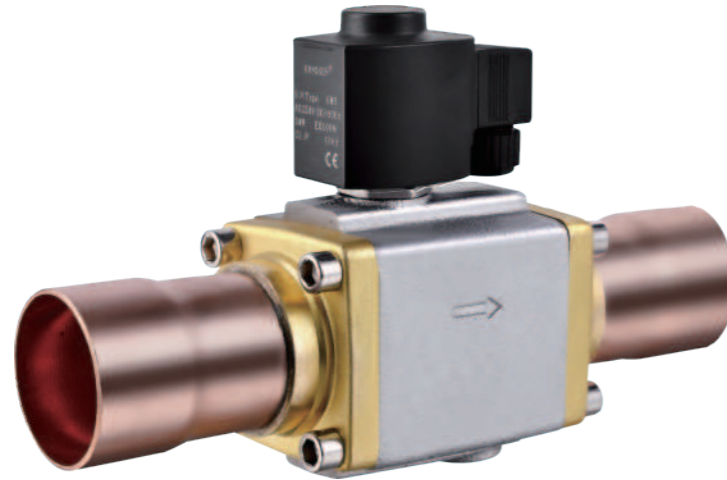
### 外形尺寸 Overall Dimension

型号Model	外形尺寸Overall Dimension						
	A	B	D	L1	L2	H1	H2
HVD25-9T	103	85	$\Phi 28.7$	20	246.5	26.5	139
HVD32-11T	110	85	$\Phi 35.2$	25	281.0	28	145
HVD40-13T	119	85	$\Phi 41.5$	29	316.0	32	150



# HVP型活塞式电磁阀

## Model HVP Piston Type Solenoid Valve



### 产品概述 Product Description

- HVP型活塞式电磁阀是二次开启式电磁阀，适用于单向流动。
- HVP型活塞式电磁阀用于冷冻、冷藏和空气调节装置的液体、吸气和热气管路上。
- HVP型活塞式电磁阀可提供多种电压的线圈，而阀体是通用的。
- HVP型活塞式电磁阀可提供整体供货，也可分体供货，即阀体和线圈分开单独供货。

- Model HVP piston type solenoid valve is a twice open-type solenoid valve to be suitable to one-way flow.
- Model HVP piston type solenoid valve is used on the liquid, air suction and not vapor pipes of the refrigeration, cold storage and air conditioning facilities.
- The coil of varies voltages is available for Model HVP piston type solenoid valve with a universal valve body.
- Model HVP piston type solenoid valve could be supplied in whole or in split, that means valve body and coil could be supplied separately.

### 特点 Features

- 专利线圈，防水性能好 (IP65)。
- 应用新材料，耐高低温性能好。
- 24W的大功率电磁线圈，开阀能力大。
- 活塞行程大，工作流量大。
- 多种交流和直流电磁线圈可供选择。
- 焊接连接可达2-1/8in。

- The proprietary coil has perfect waterproof performance (IP65).
- Using new material, it has performance in high and low temperature application.
- The 24W high-power solenoid coil has high capability to open the valve.
- The high flow rate is assured by a big piston stroke.
- Various AC and DC solenoid coils are available for choice.
- 2-1/8 inch is the maximum welded connection size.

### 技术参数 Technical Parameters

适用制冷剂 Applicable Refrigerants	HFC or HFC(客户指定 Customer specified)
适用介质温度 Applicable Medium Temperature	-30°C~+105°C
线圈的适用环境温度 Application Ambient Temperature of Solenoid	-40°C~+65°C
线圈的标准电压 Standard Voltage of Solenoid	AC 380V, AC 220V/50Hz(也可按客户指定做 Customer design is available)
线圈的允许电压波动 Allowable Voltage Fluctuation for Solenoid	+10%~-15%
线圈的连接 Connection of Solenoid	3线插入式标准连接器 Standard 3-wire insert connector

### 选型表 Model Selection

型号Model	规格Size	开启差值ΔP(bar)		最大工作压力(bar) Max Working Pressure(bar)	Kv值 Kv(m³/h)
	焊接接口 Weld Connection	最小Min	最大工作压力差MOPD 液体 Liquid MOPD		
HVP25	1-1/8 ODF	0.2	31	45	10
HVP32	1-3/8 ODF	0.2	31	45	16
HVP40	1-5/8 ODF	0.2	31	45	25
HVP54	2-1/8 ODF	0.2	31	45	28

- 1) Kv值: 密度为1吨/m³的水在通过电磁阀的压差等于100KPa时的流量, 单位为m³/h;  
2) 气态介质的MOPD约高1bar.

- 1) Kv value: The flow rate (m³/h) of water of density 1t/m³ passing through the solenoid valve with the pressure differential of 100 KPa.  
2) The MOPD of gaseous medium is about 1 bar higher than that of liquid.

型号Model	名义制冷量 KWNominal Refrigerating Capacity kW											
	液体 Liquid				吸气 Air Suction				热蒸汽 Hot Vapor			
	R22/R407C	R134a	R404A/R507	R410A	R22/R407C	R134a	R404A/R507	R410A	R22/R407C	R134a	R404A/R507	R410A
HVP25	201.25	185.00	140.00	201.00	22.50	16.25	20.00	29.00	92.50	73.75	75.00	139.75
HVP32	322.00	296.00	224.00	321.60	36.00	26.00	32.00	46.40	148.00	118.00	120.00	223.60
HVP40	503.13	462.50	350.00	502.50	56.25	40.63	50.00	72.50	231.25	184.38	187.50	349.38
HVP54	563.50	518.00	392.00	562.80	63.00	45.50	56.00	81.20	259.00	206.50	210.00	391.30

液体和吸气名义制冷量的工况条件为

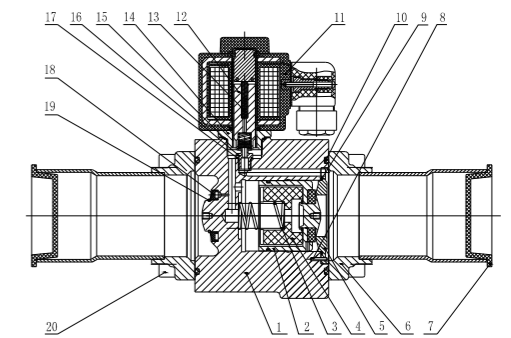
The working condition the nominal refrigerating capacity of liquid and air suction is as follows:  
蒸发温度  $t_c = -10^\circ\text{C}$  Evaporation Temperature:  $t_e = -10^\circ\text{C}$ ;  
阀前液体温度  $t_1 = +25^\circ\text{C}$  Liquid Temperature before Valve:  $t_1 = +25^\circ\text{C}$ ;  
经过电磁阀的压力降  $\Delta P = 15\text{KPa}$  Pressure Drop after Solenoid Valve:  $\Delta P = 15\text{KPa}$

热气名义制冷量的工况条件为

The working condition the nominal refrigerating capacity of hot vapor is as follows:  
冷凝温度  $t_c = +40^\circ\text{C}$  Condensation Temperature:  $t_c = +40^\circ\text{C}$ ;  
经过电磁阀的压力降  $\Delta P = 0.8\text{bar}$  Pressure Drop after Solenoid Valve:  $\Delta P = 0.8\text{bar}$ ;  
热气温度  $t_h = +65^\circ\text{C}$  Hot Vapor Temperature:  $t_h = +65^\circ\text{C}$ ;  
液体制冷剂过冷度  $\Delta t_{\text{sub}} = 4\text{K}$  Liquid Refrigerant Overcooling:  $\Delta t_{\text{sub}} = 4\text{K}$

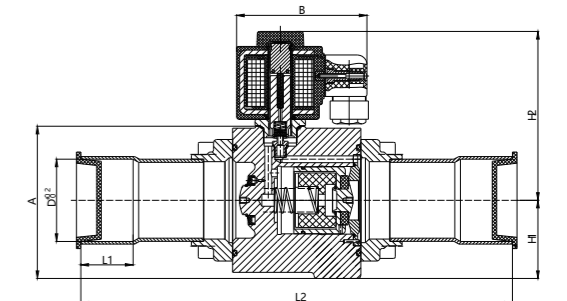
### 结构 Structure

- |                         |                                    |
|-------------------------|------------------------------------|
| 1. 阀体 valve body        | 11. 电磁线圈 (24W) solenoid coil (24W) |
| 2. 活塞部件 piston          | 12. 芯铁部件 core iron                 |
| 3. 弹簧 spring            | 13. 复位弹簧 reset spring              |
| 4. 活塞芯 piston core      | 14. 阀座部件 valve seat                |
| 5. 密封座 sealing seat     | 15. 密封环 seal ring                  |
| 6. 法兰组件 Flange assembly | 16. 阀芯 valve element               |
| 7. 防尘帽 dust cap         | 17. 阀芯垫片 valve element gasket      |
| 8. 定位销 dowel pin        | 18. 过滤网组件 filter assembly          |
| 9. O形圈 O-ring           | 19. 挡圈 retainer ring               |
| 10. 密封垫 PTFE gasket     | 20. 螺钉 screw                       |



### 外形尺寸 Overall Dimension

型号 Model	外形尺寸 Overall Dimension						
	A	B	D	L1	L2	H1	H2
HVP25	100	85	Φ28.7	20	281.5	51.5	111
HVP32	100	85	Φ35.2	25	281.5	51.5	111
HVP40	100	85	Φ41.5	29	281.5	51.5	111
HVP54	100	85	Φ54.2	34	281.5	51.5	111



# HV型电磁阀

## Model HV solenoid valve



### 产品概述 Product Description

- HV型电磁阀是一次开启式或二次开启式电磁阀，适用于单向流动。
- HV型电磁阀用于冷冻、冷藏和空气调节装置的液体、吸气和热气管路上。
- HV型电磁阀的阀座与密封处具有很好的密封性。
- HV型电磁阀可提供多种电压的线圈。
- HV型电磁阀可提供整体供货，也可分体供货，即阀体和线圈分开单独供货。

- Model HV solenoid valve is a one-step on/off or two-step on/off solenoid valve, which is applicable to one-way flow.
- Model HV solenoid valve is used on the piping of liquid, suction gas or hot air on the freezing, cold storage and air conditioner units.
- The valve seat and seals of Model HV solenoid valve have excellent sealing performance.
- Model HV solenoid valve could be supplied with coils of varied voltage.
- Model HV solenoid valve could be supplied in assembly or in separate components, that is, the valve body and the coil could be supplied separately.

### 特点 Features

- 可提供常闭 (NC) 型阀。
- 可提供多种接口尺寸。
- 多种电源的电磁线圈可选择。
- 功率9W的电磁线圈，最大工作压差 (MOPD) 可达3.1MPa。
- 夹卡式电磁线圈只需一把螺丝刀可简单地拆卸。
- 可用于冷冻、冷藏和空气调节装置的各种场合。
- 使用寿命长的密封线圈，可在恶劣环境条件下使用。

- Only NC type solenoid valve is available.
- Coils of various power supply are available for choice.
- For 9W solenoid, MOPD is up to 3.1 MPa.
- For clamping type solenoid valve, it is simple and just need one screwdriver in installation.
- It is suitable to various application in freezing, cold storage and air conditioner units.
- The sealed coil has a long service life and could be used in adverse circumstances.
- Certification • ISO 9001 • QS (XK-015-00246) • CE UL

### 技术参数 Technical Parameters

适用制冷剂 Applicable Refrigerants	HCFC、HFC 及相应介质粘度 $\leq 2^{\circ}E$ 润滑油油HCFC、HFC and related medium viscosity $\leq 2^{\circ}E$ lubricant oil
适用介质温度 Applicable Medium Temperature	-30°C~+105°C
线圈的适用环境温度 Application Ambient Temperature of Solenoid	-40°C~+65°C
线圈的标准电压 Standard Voltage of Solenoid	AC380V、220V、110V、24V/50、60Hz、DC12V
线圈的允许电压波动 Allowable Voltage Fluctuation for Solenoid	+10%~-15%
线圈的连接 Connection of Solenoid	3线插入式标准 连接器 Standard 3-wire insert connector

### 选型表 Model Selection

结构Structure	型号Model	接口 Connection		开启压差 $\Delta P$ (bar)		最大工作压力(bar) Max Working Pressure(bar)	Kv值(m <sup>3</sup> /h)	
		规格Spec	型式Type	最小 Min.	最大工作压力差 MOPD 液体 Liquid MOP			
直接开启式 Direct Operated	HV3-2	1/4	螺口 SAE	0.0	31 (常闭 close)	45	0.2	
	HV3-2T		焊口 ODF					
	HV3-3	3/8	螺口 SAE	0.05			0.27	
HV3-3T	焊口 ODF							
HV8M3	螺口 SAE		0.05	0.8				
HV8M3T	焊口 ODF							
HV8M4	1/2	螺口 SAE					0.05	2.2
HV8M4T		焊口 ODF						
HV10M4	5/8	螺口 SAE					0.2	2.6
HV10M4T		焊口 ODF						
膜片二次开启式 Servo-Operated	HV10M5	3/4			螺口 SAE	0.2	2.6	
	HV10M5T				焊口 ODF			
	HV15M5	7/8			螺口 SAE	0.2	5.7	
	HV15M5T				焊口 ODF			
	HV15M6	1-1/8	螺口 SAE	0.2	10			
	HV15M6T		焊口 ODF					
	HV20M7T		焊口 ODF					
HV25M9T		焊口 ODF						

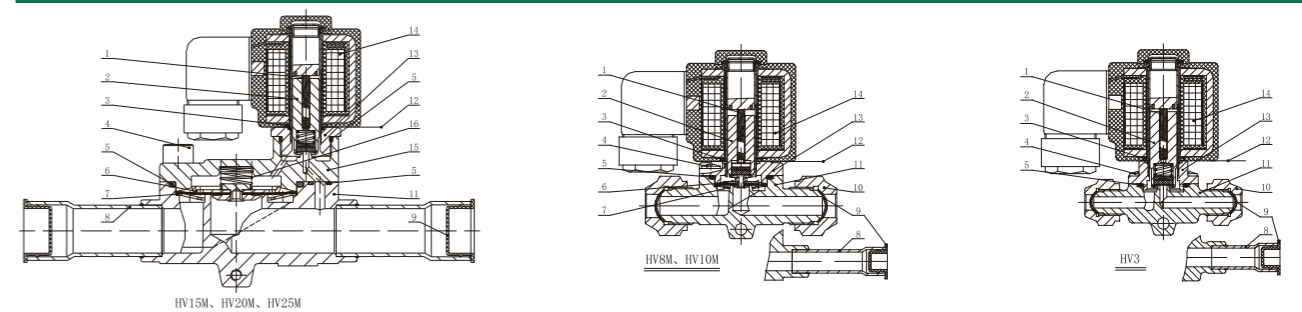
- 1) Kv值: 密度为1吨/m<sup>3</sup>的水在通过电磁阀的压差等于100KPa时的流量, 单位为m<sup>3</sup>/h;  
 2) 气态介质的MOPD约高1bar.  
 1) Kv value: The flow rate (m<sup>3</sup>/h) of water of density 1t/m<sup>3</sup> passing through the solenoid valve with the pressure differential of 100 KPa.  
 2) The MOPD of gaseous medium is about 1 bar higher than that of liquid.

型号Model	名义制冷量 KWNominal Refrigerating Capacity kW											
	液体 Liquid				吸气 Air Suction				热蒸汽 Hot Vapor			
	R22/R407C	R134a	R404A/R507	R410A	R22/R407C	R134a	R404A/R507	R410A	R22/R407C	R134a	R404A/R507	R410A
HV3-3T	4.03	3.70	2.80	4.02	0.45	0.33	0.40	0.58	1.85	1.48	1.50	2.80
HV8M3T	16.10	14.80	11.20	16.08	1.80	1.30	1.60	2.32	7.40	5.90	6.00	11.18
HV10M4T	38.24	35.15	26.60	38.19	4.28	3.09	3.80	5.51	17.58	14.01	14.25	26.55
HV10M5T												
HV15M5T	52.33	48.10	36.40	52.26	5.85	4.23	5.20	7.54	24.05	19.18	19.50	36.34
HV15M7T	100.63	92.50	70.00	100.50	11.25	8.13	10.00	14.50	46.25	36.88	37.50	69.88
HV20M7T												
HV25M9T	201.25	185.00	140.00	201.00	22.50	16.25	20.00	29.00	92.50	73.75	75.00	139.75

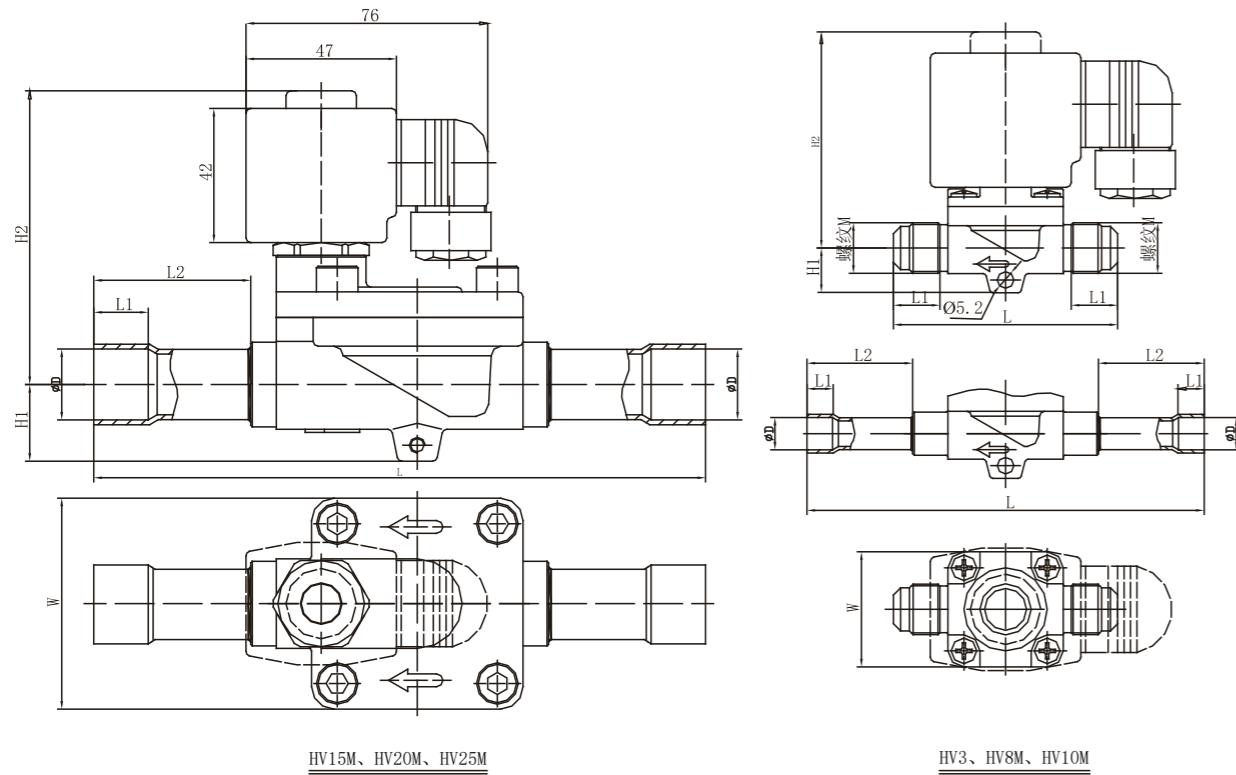
液体和吸气名义制冷量的工况条件为  
 The working condition the nominal refrigerating capacity of liquid and air suction is as follows:  
 蒸发温度  $t_e = -10^{\circ}C$  Evaporation Temperature:  $t_e = -10^{\circ}C$ ;  
 阀前液体温度  $t_1 = +25^{\circ}C$  Liquid Temperature before Valve:  $t_1 = +25^{\circ}C$ ;  
 经过电磁阀的压力降  $\Delta P = 15KPa$  Pressure Drop after Solenoid Valve:  $\Delta P = 15KPa$

热蒸汽名义制冷量的工况条件为  
 The working condition the nominal refrigerating capacity of hot vapor is as follows:  
 冷凝温度  $t_c = +40^{\circ}C$  Condensation Temperature:  $t_c = +40^{\circ}C$ ;  
 经过电磁阀的压力降  $\Delta P = 0.8bar$  Pressure Drop after Solenoid Valve:  $\Delta P = 0.8bar$ ;  
 热蒸汽温度  $t_h = +65^{\circ}C$  Hot Vapor Temperature:  $t_h = +65^{\circ}C$ ;  
 液体制冷剂过冷度  $\Delta t_{sub} = 4K$  Liquid Refrigerant Overcooling:  $\Delta t_{sub} = 4K$

### 结构 Structure



1. 回复弹簧 recovery spring 2. 芯铁部件 iron core (改性PTFE密封) (modified PTFE sealing) 3. 耐油橡胶oil-resistance rubber 4. 紧固螺钉 (4个) fastening screw(4 pieces) 5. 密封垫 PTFE gasket 6. 阀芯部件 valve core (移动式) (改性PTFE复合膜片) (mobile) (modified PTFE composite diaphragm) 7. 挡片 flapper 8. 铜接管 copper tube 9. 防尘帽 dust cap 10. 接管螺母 connection tube nut 11. 阀体 valve body 12. 阀盖部件 valve cover 13. 电磁线圈 (9W) solenoid coils(9W) 14. 阀盖 valve cover 15. 大回复弹簧 big recovery spring

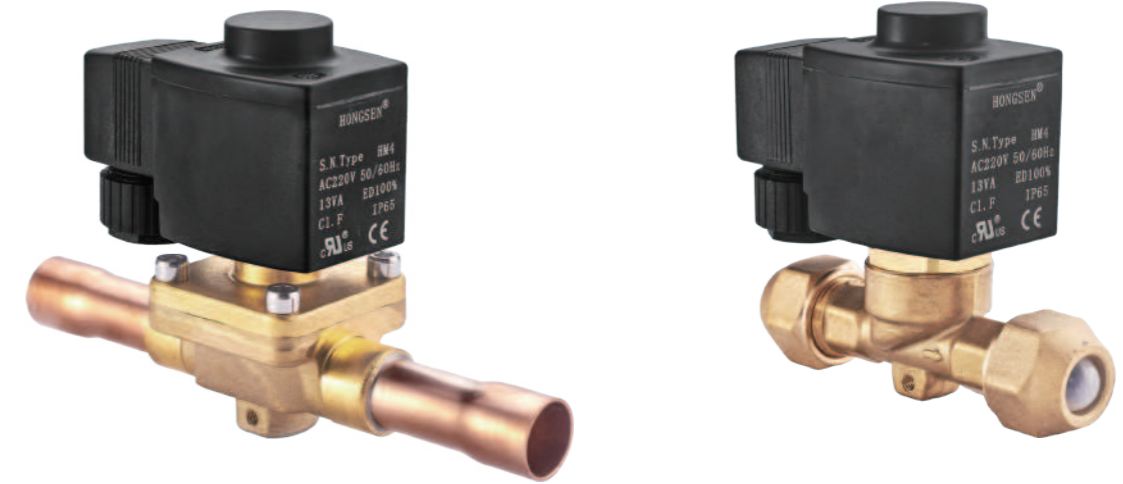


HV15M、HV20M、HV25M

HV3、HV8M、HV10M

型号Model	外形尺寸 Overall Dimension							
	H1	H2	W	L	L1	L2	ØD	螺纹 M
HV3-2	14	66	30	78	14.5	—	—	7/16-20UNF
HV3-2T	14	66	30	102	7	27	6.5	—
HV3-3	14	66	30	78	14.5	—	—	5/8-18UNF
HV3-3T	14	66	30	114	8	35	10.1	—
HV8M3	14	67	36	96	16	—	—	5/8-18UNF
HV8M3T	14	67	36	124	8	33	10.1	—
HV8M4	14	67	36	98	17	—	—	3/4-16UNF
HV8M4T	14	67	36	130	10	36	12.8	—
HV10M4	15	77	45	103	18	—	—	3/4-16UNF
HV10M4T	15	77	45	138	10	36	12.8	—
HV10M5	15	77	45	112	20	—	—	7/8-14UNF
HV10M5T	15	77	45	156	14	42	16.1	—
HV15M5	18	88	52	133	19.5	—	—	7/8-14UNF
HV15M5T	18	88	52	165	14	43	16.1	—
HV15M6	18	88	52	133	21	—	—	1-1/16-14UNS
HV15M6T	18	88	52	172	16	46	19.2	—
HV20M7T	24	92	66	191	17	49	22.3	—
HV25M9T	26.5	96	73	246	22	73	28.7	—

## SV型电磁阀 Model SV Solenoid Valve



### 产品概述 Product Description

- SV型电磁阀是一次开启式或二次开启式电磁阀，适用于单向流动。
- SV型电磁阀用于冷冻、冷藏和空气调节装置的液体、吸气和热气管路上。
- SV型电磁阀的阀座与密封处具有很好的密封性。
- SV型电磁阀可提供多种电压的线圈，而阀体是通用的。
- SV型电磁阀可提供整体供货，也可分体供货，即阀体和线圈分开单独供货。

- Model SV solenoid valve is a once open-type or twice open-type solenoid valve to be suitable to one-way flow.
- Model SV solenoid valve is used on the liquid, air suction and hot vapor pipes of the refrigeration, cold storage and air conditioning facilities.
- Model SV solenoid valve has perfect sealing on its valve seat and sealing part.
- The coil of varies voltages is available for Model SV solenoid valve with a universal valve body.
- Model SV solenoid valve could be supplied in whole or in split, that means the valve body and coil could be supplied separately.

### 特点 Features

- 线圈为专利产品，整体密封设计；可有效防水，使用寿命长（IP65）。
- 线圈在电压波动大的状况下也能正常工作。
- 多种交直流电磁线圈可供选择。
- 夹卡式电磁线圈拆卸安装方便。
- 可用于冷冻、冷藏和空气调节装置的各种压缩机上。

- The proprietary coil is an entirely sealed design with an effective waterproof performance and a long service life(IP65).
- The solenoid coil could be operated properly even under unstable voltage.
- Various AC and DC solenoid coils are available for choice.
- Clip type solenoid coil is convenient in assembly and disassembly.
- It is applicable to various compressors in the refrigeration, cold storage and air conditioning facilities.

### 技术参数 Technical Parameters

适用制冷剂 Applicable Refrigerants	HCFC、HFC及相应介质粘度 ≤2° E 润滑油HCFC、HFC and related medium viscosity ≤2° E lubricant oil
适用介质温度 Applicable Medium Temperature	-30°C~+105°C
线圈的适用环境温度 Application Ambient Temperature of Solenoid	-40°C~+65°C
线圈的标准电压 Standard Voltage of Solenoid	AC380V、220V、110V、24V/50、60Hz、DC12V
线圈的允许电压波动 Allowable Voltage Fluctuation for Solenoid	+10%~-15%
线圈的连接 Connection of Solenoid	3线插入式标准连接器 Standard 3-wire insert connector

选型表 Model Selection							
结构Structure	型号Model	接口 Connection		开启压差 $\Delta P$ (bar)		最大工作压力(bar) Max Working Pressure(bar)	Kv值(m <sup>3</sup> /h)
		规格Spec	型式Type	最小Minimum	最大工作压力差MOPD 液体 LiquidMOP		
直接开启式 Direct Operated	SV20-2	1/4	螺口 SAE	0.0	31	45	0.2
	SV28-2		焊口 ODF				
	SV20-3	螺口 SAE					
	SV28-3	焊口 ODF					
膜片二次开启式 Servo-Operated	SV64-3	3/8	螺口 SAE	0.05	31	45	0.8
	SV68-3		焊口 ODF				
	SV64-4	螺口 SAE					
	SV68-4	焊口 ODF					
	SV70-5	螺口 SAE					
	SV78-5	焊口 ODF					
	SV70-6	螺口 SAE					
	SV78-6	焊口 ODF					
	SV98-7	7/8	焊口 ODF	0.2			5.7

1) Kv值: 密度为1吨/m<sup>3</sup>的水在通过电磁阀的压差等于100KPa时的流量, 单位为m<sup>3</sup>/h;  
2) 气态介质的MOPD约高1bar.

1) Kv value: When the pressure differential is 100 KPa, the flowrate at m<sup>3</sup>/h of water in density 1 t/m<sup>3</sup> flows the solenoid valve.  
2) The MOPD of gaseous medium is about 1 bar higher than that of liquid.

型号Model	名义制冷量 KWNominal Refrigerating Capacity kW											
	液体 Liquid				吸气 Air Suction				热蒸汽 Hot Vapor			
	R22/R407C	R134a	R404A/R507	R410A	R22/R407C	R134a	R404A/R507	R410A	R22/R407C	R134a	R404A/R507	R410A
SV20	4.03	3.70	2.80	4.02	0.45	0.33	0.40	0.58	1.85	1.48	1.50	2.80
SV28	4.03	3.70	2.80	4.02	0.45	0.33	0.40	0.58	1.85	1.48	1.50	2.80
SV64	16.10	14.80	11.20	16.08	1.80	1.30	1.60	2.32	7.40	5.90	6.00	11.18
SV70	52.33	48.10	36.40	52.26	5.85	4.23	5.20	7.54	24.05	19.18	19.50	36.34
SV78	52.33	48.10	36.40	52.26	5.85	4.23	5.20	7.54	24.05	19.18	19.50	36.34
SV98	114.71	105.45	79.80	114.57	12.83	9.26	11.40	16.53	52.73	42.04	42.75	79.66

液体和吸气名义制冷量的工况条件为:

- 蒸发温度  $t_e = +40^\circ\text{C}$
- 阀前液体温度  $t_1 = +25^\circ\text{C}$
- 经过电磁阀的压力降  $\Delta P = 15\text{KPa}$

热气名义制冷量的工况条件为:

- 冷凝温度  $t_c = +40^\circ\text{C}$
- 经过电磁阀的压力降  $\Delta P = 80\text{KPa}$
- 热气温度  $t_h = +65^\circ\text{C}$
- 液体制冷剂过冷度  $\Delta t_{\text{sub}} = 4\text{K}$

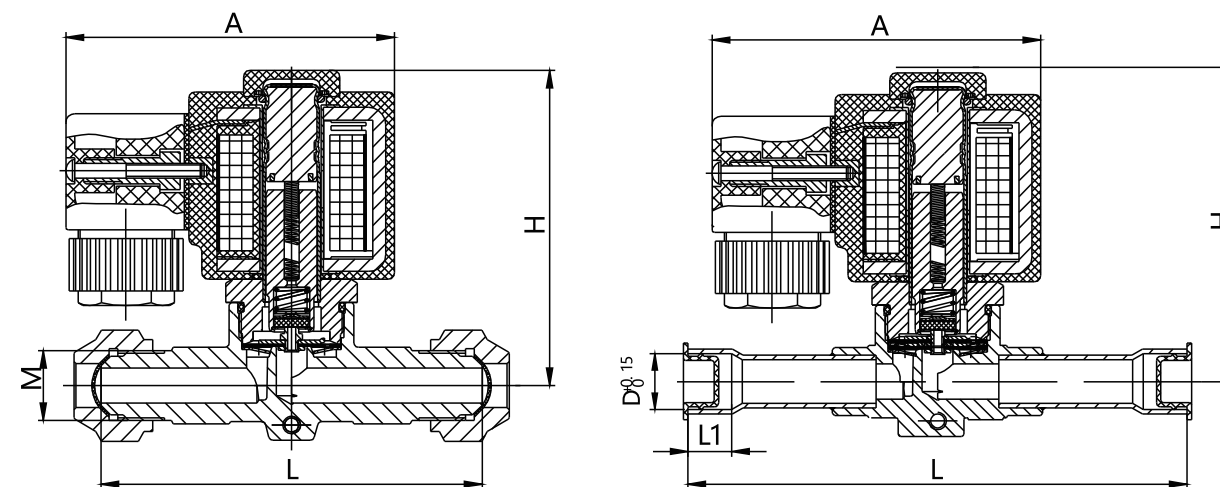
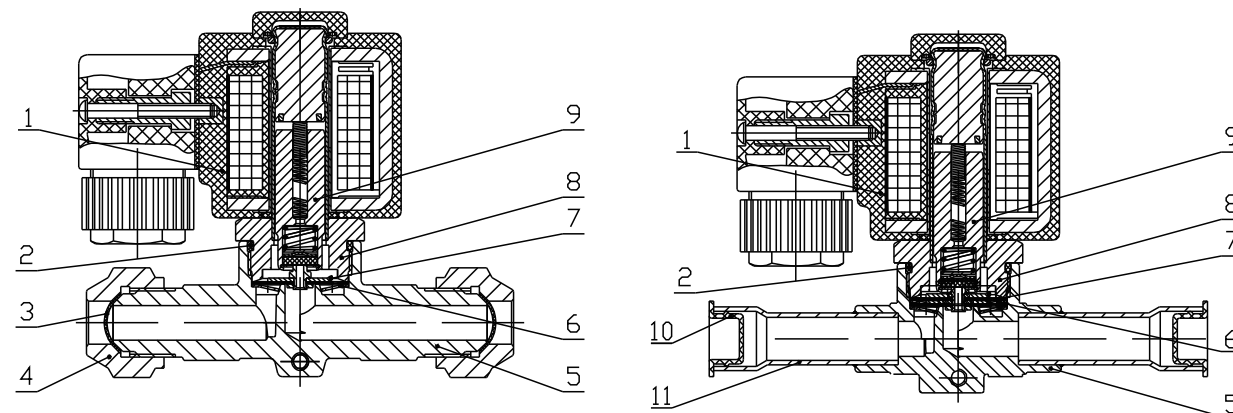
The working condition the nominal refrigerating capacity of liquid and air suction is as follows:

- Evaporation Temperature:  $t_e = -10^\circ\text{C}$ ;
- Liquid Temperature before Valve:  $t_1 = +25^\circ\text{C}$ ;
- Pressure Drop after Solenoid Valve:  $\Delta P = 15\text{KPa}$

The working condition the nominal refrigerating capacity of hot vapor is as follows:

- Condensation Temperature:  $t_c = +40^\circ\text{C}$ ;
- Pressure Drop after Solenoid Valve:  $\Delta P = 80\text{KPa}$ ;
- Hot Vapor Temperature:  $t_h = +65^\circ\text{C}$ ;
- Liquid Refrigerant Overcooling:  $\Delta t_{\text{sub}} = 4\text{K}$

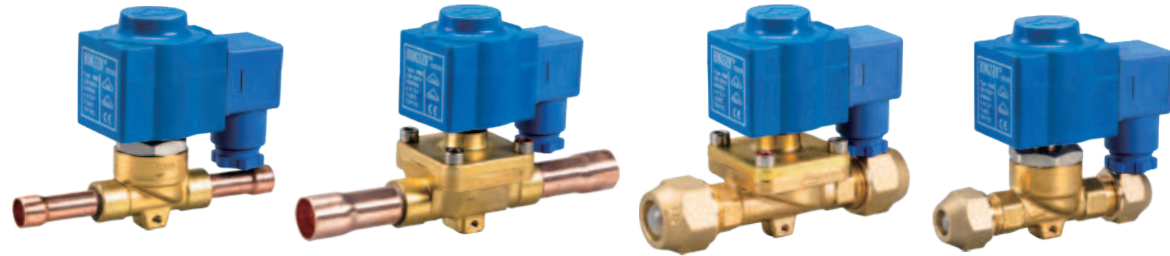
结构 Structure						
型号Model	外形尺寸 Overall Dimension					
	A	H	L	L1	$\Phi D$	M
SV20-2	70	65	58	—	—	7/16-20UNF
SV28-2	70	65	90	7	6.5	—
SV20-3	70	65	64	—	—	5/8-18UNF
SV28-3	70	65	104	8	10.1	—
SV64-3	70	72	81	—	—	5/8-18UNF
SV68-3	70	72	108	8	10.1	—
SV64-4	70	72	85	—	—	3/4-16UNF
SV68-4	70	72	114	10	12.8	—
SV70-5	70	75	104	—	—	7/8-14UNF
SV78-5	70	75	152	14	16.1	—
SV70-6	70	75	104	—	—	1-1/16-14UNS
SV78-6	70	75	158	16	19.2	—
SV98-7	70	78	180	17	22.3	—



1.电磁线圈 solenoid coil 2.O形圈 O-Ring 3.封帽 sealing cap 4.纳子 nut 5.阀体 valve body

6.挡片 plate 7.阀芯部件 valve element 8.阀座部件 valve seat 9.芯铁部件 core cap 10.防尘帽 dust cap 11.接管 pipe

# 10系列电磁阀 Model 10 Solenoid Valve



## 产品概述 Product Description

<ul style="list-style-type: none"> <li>10型电磁阀是一次开启式或二次开启式电磁阀, 适用于单向流动。</li> <li>10型电磁阀用于冷冻、冷藏和空气调节装置的液体、吸气和热气管路上。</li> <li>10型电磁阀的阀座与密封处具有很好的密封性。</li> <li>10型电磁阀可提供多种电压的线圈, 而阀体是通用的。</li> <li>10型电磁阀可提供整体供货, 也可分体供货, 即阀体和线圈分开单独供货。</li> </ul>	<ul style="list-style-type: none"> <li>Model 10 solenoid valve is a once open-type or twice open-type solenoid valve to be suitable to one-way flow.</li> <li>Model 10 solenoid valve is used on the liquid, air suction and hot vapor pipes of the refrigeration, cold storage and air conditioning facilities.</li> <li>Model 10 solenoid valve has perfect sealing on its valve seat and sealing part.</li> <li>The coil of various voltages is available for Model SV solenoid valve with a universal valve body.</li> <li>Model 10 solenoid valve could be supplied in whole or in split, that means the valve body and coil could be supplied separately.</li> </ul>
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## 特点 Features

<ul style="list-style-type: none"> <li>可提供常闭 (NC) 型阀。</li> <li>可提供多种接口尺寸。</li> <li>多种电源的电磁线圈可选择。</li> <li>功率8W的电磁线圈, 最大工作压力差 (MOPD) 可达2.5MPa。</li> <li>夹卡式电磁线圈只需一把螺丝刀可简单地拆卸。</li> <li>可用于冷冻、冷藏和空气调节装置的各种场合。</li> <li>使用寿命长的密封线圈, 可在恶劣环境条件下使用。</li> </ul>	<ul style="list-style-type: none"> <li>Only NC type solenoid valve is available.</li> <li>Coils of various power supply are available for choice.</li> <li>For 8W solenoid, MOPD is up to 2.5 MPa.</li> <li>For clamping type solenoid valve, it is simple and just need one screwdriver in installation.</li> <li>It is suitable to various application in freezing, cold storage and air conditioner units.</li> <li>The sealed coil has a long service life and could be used in adverse circumstances.</li> </ul>
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## 技术参数 Technical Parameters

适用制冷剂 Applicable Refrigerants	HCFC、HFC 及相关介质粘度 $\leq 2^\circ \text{E}$ 润滑油 HCFC、HFC and related medium viscosity $\leq 2^\circ \text{E}$ lubricant oil
适用介质温度 Applicable Medium Temperature	-30°C ~ +105°C
线圈的适用环境温度 Application Ambient Temperature of Solenoid	-40°C ~ +65°C
线圈的标准电压 Standard Voltage of Solenoid	AC380V、220V、110V、24V/50、60Hz、DC12V
线圈的允许电压波动 Allowable Voltage Fluctuation for Solenoid	+10% ~ -15%
线圈的连接 Connection of Solenoid	3线插入式标准连接器 Standard 3-wire insert connector

## 选型表 Model Selection

结构 Structure	型号 Model	接口 Connection		开启压差 $\Delta P$ (bar)		最大工作压力 (bar) Max Working Pressure (bar)	Kv值 (m³/h)
		规格 Spec	型式 Type	最小 Minimum	最大工作压力差 MOPD 液体 Liquid MOP		
直接开启式 Direct Operated	1020-2	1/4	螺口 SAE	0.0	25	45	0.2
	1028-2		焊口 ODF				
	1020-3	3/8	螺口 SAE				0.27
	1028-3		焊口 ODF				
膜片二次开启式 Servo-Operated	1064-3	1/2	螺口 SAE	0.05	25	45	0.8
	1068-3		焊口 ODF				
	1064-4	1/2	螺口 SAE				0.8
	1068-4		焊口 ODF				
	1070-5	5/8	螺口 SAE				2.6
	1078-5		焊口 ODF				
	1070-6	3/4	螺口 SAE				2.6
	1078-6		焊口 ODF				

- 1) Kv值: 密度为1吨/m³的水在通过电磁阀的压差等于100KPa时的流量, 单位为m³/h;  
 2) 气态介质的MOPD约高1bar.  
 1) Kv value: When the pressure differential is 100 KPa, the flowrate at m³/h of water in density 1 t/m³ flows the solenoid valve.  
 2) The MOPD of gaseous medium is about 1 bar higher than that of liquid.

型号 Model	名义制冷量 KWNominal Refrigerating Capacity kW											
	液体 Liquid				吸气 Air Suction				热蒸汽 Hot Vapor			
	R22/R407C	R134a	R404A/R507	R410A	R22/R407C	R134a	R404A/R507	R410A	R22/R407C	R134a	R404A/R507	R410A
1020	4.03	3.70	2.80	4.02	0.45	0.33	0.40	0.58	1.85	1.48	1.50	2.80
1028	4.03	3.70	2.80	4.02	0.45	0.33	0.40	0.58	1.85	1.48	1.50	2.80
1064	16.10	14.80	11.20	16.08	1.80	1.30	1.60	2.32	7.40	5.90	6.00	11.18
1068	16.10	14.80	11.20	16.08	1.80	1.30	1.60	2.32	7.40	5.90	6.00	11.18
1070	52.33	48.10	36.40	52.26	5.85	4.23	5.20	7.54	24.05	19.18	19.50	36.34
1078	52.33	48.10	36.40	52.26	5.85	4.23	5.20	7.54	24.05	19.18	19.50	36.34

液体和吸气名义制冷量的工况条件为:

- 蒸发温度  $t_e = +40^\circ \text{C}$
- 阀前液体温度  $t_1 = +25^\circ \text{C}$
- 经过电磁阀的压力降  $\Delta P = 15 \text{KPa}$

The working condition the nominal refrigerating capacity of liquid and air suction is as follows:

- Evaporation Temperature:  $t_e = -10^\circ \text{C}$ ;
- Liquid Temperature before Valve:  $t_1 = +25^\circ \text{C}$ ;
- Pressure Drop after Solenoid Valve:  $\Delta P = 15 \text{KPa}$

热气名义制冷量的工况条件为:

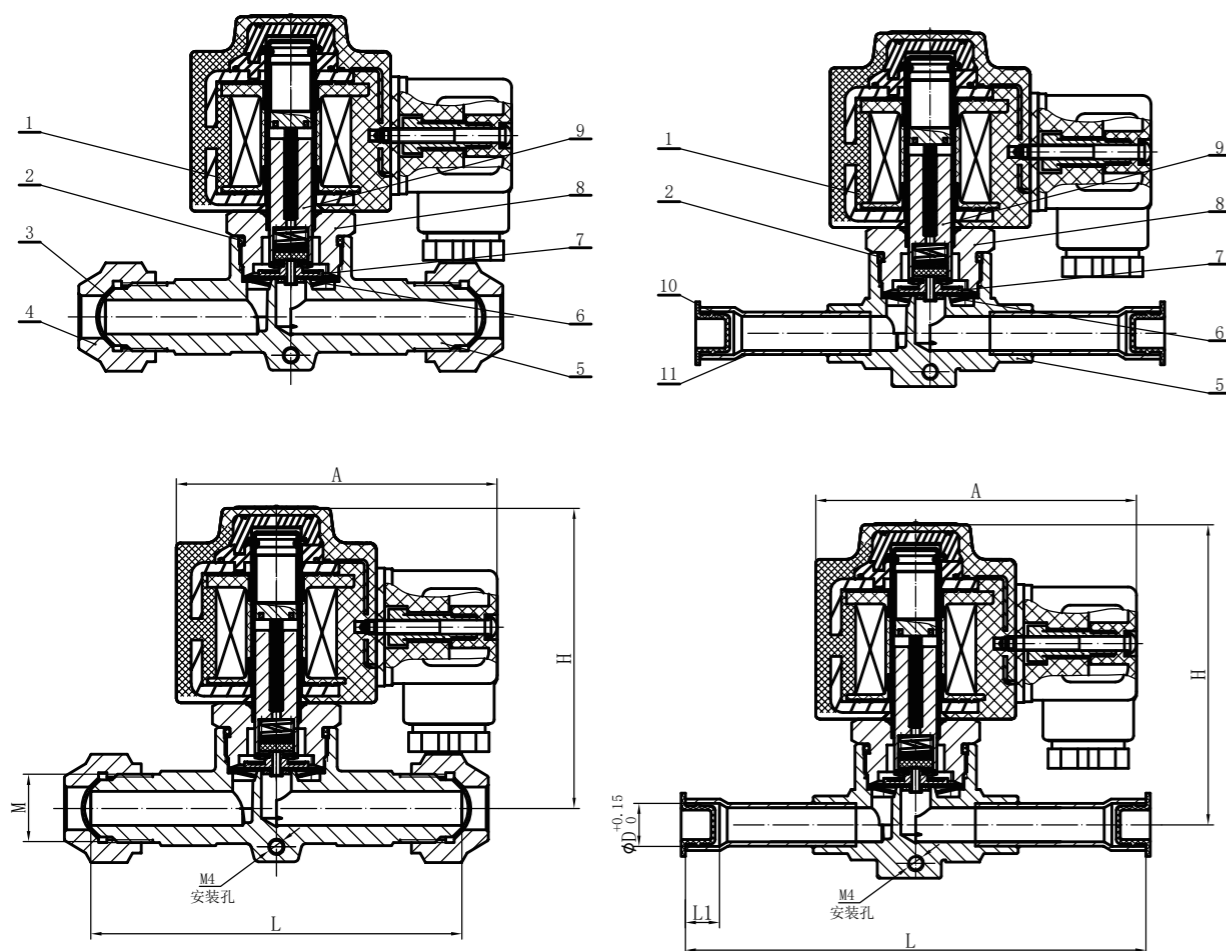
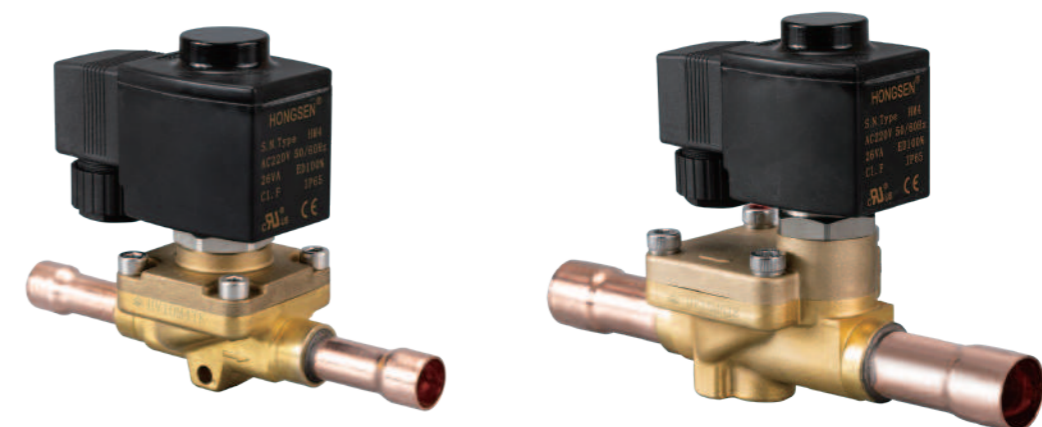
- 冷凝温度  $t_c = +40^\circ \text{C}$
- 经过电磁阀的压力降  $\Delta P = 80 \text{KPa}$
- 热气温度  $t_h = +65^\circ \text{C}$
- 液体制冷剂过冷度  $\Delta t_{\text{sub}} = 4 \text{K}$

The working condition the nominal refrigerating capacity of hot vapor is as follows:

- Condensation Temperature:  $t_c = +40^\circ \text{C}$ ;
- Pressure Drop after Solenoid Valve:  $\Delta P = 80 \text{KPa}$ ;
- Hot Vapor Temperature:  $t_h = +65^\circ \text{C}$ ;
- Liquid Refrigerant Overcooling:  $\Delta t_{\text{sub}} = 4 \text{K}$

结构 Structure						
型号Model	外形尺寸 Overall Dimension					
	A	H	L	L1	ΦD	M
1020-2	75	64	58	—	—	7/16-20UNF
1028-2	75	64	90	7	6.5	—
1020-3	75	64	64	—	—	5/8-18UNF
1028-3	75	64	104	8	10.1	—
1064-3	75	71	81	—	—	5/8-18UNF
1068-3	75	71	108	8	10.1	—
1064-4	75	71	85	—	—	3/4-16UNF
1068-4	75	71	114	10	12.8	—
1070-5	75	74	104	—	—	7/8-14UNF
1078-5	75	74	152	14	16.1	—
1070-6	75	74	104	—	—	1-1/16-14UNS
1078-6	75	74	158	16	19.2	—

## HVK型常开电磁阀 Model HVK normal open solenoid valve



1.电磁线圈 solenoid coil 2.O形圈 O-Ring 3.封帽 sealing cap 4.纳子 nut 5.阀体 valve body  
6.挡片 plate 7.阀芯部件 valve element 8.阀座部件 valve seat 9.芯铁部件 core cap 10.防尘帽 dust cap 11.接管 pipe

### 产品概述 Product Description

- HVK型电磁阀是一次开启或二次开启式电磁阀，适用于单向流动。
- HVK型电磁阀用于冷冻、冷藏和空气调节装置的液体、吸气和热气管路上。
- HVK型电磁阀的阀座与密封处具有很好的密封性。
- HVK型电磁阀可提供多种电压的线圈。
- HVK型电磁阀可提供整体供货，也可分体供货，即阀体和线圈分开单独供货。

- Model HVK solenoid valve is a one-step on/off or two-step on/off solenoid valve, which is applicable to one-way flow.
- Model HVK solenoid valve is used on the piping of liquid, suction gas or hot air on the freezing, cold storage and air conditioner units.
- The valve seat and seals of Model HVK solenoid valve have excellent sealing performance.
- Model HVK solenoid valve could be supplied with coils of varied voltage.
- Model HVK solenoid valve could be supplied in assembly or in separate components, that is, the valve body and the coil could be supplied separately.

### 特点 Features

- 可提供常开 (NO) 型阀。
- 可提供多种接口尺寸。
- 多种电源的电磁线圈可选择。
- 功率26VA的电磁线圈，最大工作压差 (MOPD) 可达2.1MPa。
- 夹卡式电磁线圈只需一把螺丝刀可简单地拆卸。
- 可用于冷冻、冷藏和空气调节装置的各种场合。
- 使用寿命长的密封线圈，可在恶劣环境条件下使用。

- Only NO type solenoid valve is available.
- Coils of various power supply are available for choice.
- For 26VA solenoid, MOPD is up to 2.1 MPa.
- For clamping type solenoid valve, it is simple and just need one screwdriver in installation.
- It is suitable to various application in freezing, cold storage and air conditioner units.
- The sealed coil has a long service life and could be used in adverse circumstances.
- 认证 Certification • ISO 9001 • QS (XK-015-00246) • 线圈CE UL

### 技术参数 Technical Parameters

适用制冷剂 Applicable Refrigerants	HCFC、HFC 及相应介质粘度 $\leq 2^\circ \text{E}$ 润滑油 HCFC、HFC and related medium viscosity $\leq 2^\circ \text{E}$ lubricant oil
适用介质温度 Applicable Medium Temperature	$-30^\circ \text{C} \sim +105^\circ \text{C}$
线圈的适用环境温度 Application Ambient Temperature of Solenoid	$-40^\circ \text{C} \sim +65^\circ \text{C}$
线圈的标准电压 Standard Voltage of Solenoid	AC380V、220V、110V、24V/50、60Hz、DC12V
线圈的允许电压波动 Allowable Voltage Fluctuation for Solenoid	+10%~-15%
线圈的连接 Connection of Solenoid	3线插入式标准连接器 Standard 3-wire insert connector

选型表 Model Selection							
结构Structure	型号Model	接口 Connection		开启压差 $\Delta P$ (bar)		最大工作压力(bar) Max Working Pressure(bar)	Kv值(m <sup>3</sup> /h)
		规格Spec	型式Type	最小 Min.	最大工作压力差 MOPD 液体 Liquid MOP		
直接开启式 Direct Operated	HVK3-2	1/4	螺口 SAE	0.0	21 (常开 open)	45	0.2
	HVK3-2T		焊口 ODF				
	HVK3-3	3/8	螺口 SAE				0.27
	HVK3-3T		焊口 ODF				
	HVK8M3		螺口 SAE				0.8
	HVK8M3T		焊口 ODF				
膜片二次开启式 Servo-Operated	HVK8M4	1/2	螺口 SAE	0.05	21 (常开 open)	45	0.8
	HVK8M4T		焊口 ODF				
	HVK10M4	5/8	螺口 SAE	0.2	2.2		
	HVK10M4T		焊口 ODF				
	HVK10M5	3/4	螺口 SAE	0.2	2.6		
	HVK10M5T		焊口 ODF				
	HVK15M5	7/8	螺口 SAE	0.2	2.6		
	HVK15M5T		焊口 ODF				
	HVK15M6	1-1/8	螺口 SAE	0.2	5.7		
	HVK15M6T		焊口 ODF				
	HVK20M7T		焊口 ODF		10		

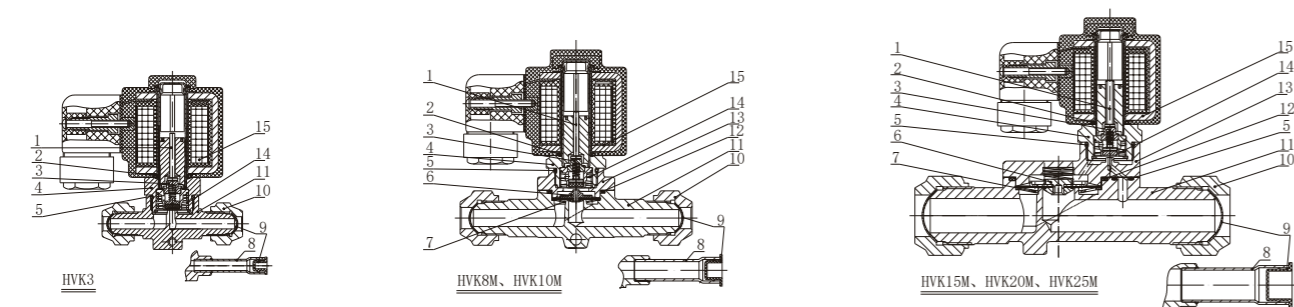
1) Kv值: 密度为1吨/m<sup>3</sup>的水在通过电磁阀的压差等于100KPa时的流量, 单位为m<sup>3</sup>/h;  
 2) 气态介质的MOPD约高1bar.  
 1) Kv value: The flow rate (m<sup>3</sup>/h) of water of density 1t/m<sup>3</sup> passing through the solenoid valve with the pressure differential of 100 KPa.  
 2) The MOPD of gaseous medium is about 1 bar higher than that of liquid.

型号Model	名义制冷量 KWNominal Refrigerating Capacity kW											
	液体 Liquid				吸气 Air Suction				热蒸汽 Hot Vapor			
	R22/R407C	R134a	R404A/R507	R410A	R22/R407C	R134a	R404A/R507	R410A	R22/R407C	R134a	R404A/R507	R410A
HVK3-3T	4.03	3.70	2.80	4.02	0.45	0.33	0.40	0.58	1.85	1.48	1.50	2.80
HVK8M3T	16.10	14.80	11.20	16.08	1.80	1.30	1.60	2.32	7.40	5.90	6.00	11.18
HVK10M4T	38.24	35.15	26.60	38.19	4.28	3.09	3.80	5.51	17.58	14.01	14.25	26.55
HVK10M5T												
HVK15M5T	52.33	48.10	36.40	52.26	5.85	4.23	5.20	7.54	24.05	19.18	19.50	36.34
HVK15M7T	100.63	92.50	70.00	100.50	11.25	8.13	10.00	14.50	46.25	36.88	37.50	69.88
HVK20M7T												
HVK25M9T	201.25	185.00	140.00	201.00	22.50	16.25	20.00	29.00	92.50	73.75	75.00	139.75

液体和吸气名义制冷量的工况条件为  
 The working condition the nominal refrigerating capacity of liquid and air suction is as follows:  
 蒸发温度 te=-10°C Evaporation Temperature: te = -10°C;  
 阀前液体温度 t1=+25°C Liquid Temperature before Valve: t1 = +25°C;  
 经过电磁阀的压力降  $\Delta P=15\text{KPa}$  Pressure Drop after Solenoid Valve:  $\Delta P = 15\text{KPa}$

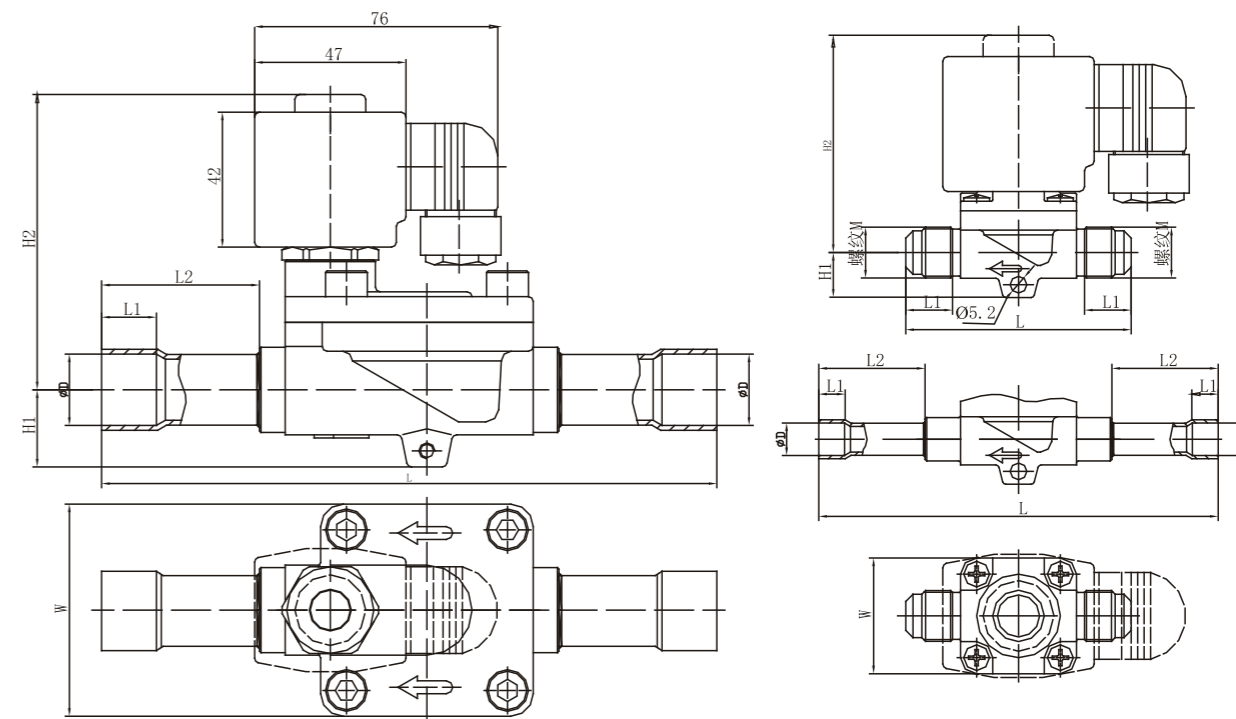
热名义制冷量的工况条件为  
 The working condition the nominal refrigerating capacity of hot vapor is as follows:  
 冷凝温度 tc=+40°C Condensation Temperature: tc = +40°C;  
 经过电磁阀的压力降  $\Delta P=0.8\text{bar}$  Pressure Drop after Solenoid Valve:  $\Delta P = 0.8\text{bar}$ ;  
 热气温度 th=+65°C Hot Vapor Temperature: th = +65°C;  
 液体制冷剂过冷度  $\Delta t_{\text{sub}}=4\text{K}$  Liquid Refrigerant Overcooling:  $\Delta t_{\text{sub}}=4\text{K}$

#### 结构 Structure



- 1.传动杆 drive rod    2.耐油橡胶oil-resistance rubber    3.芯铁部件 iron core (改性PTFE密封) (modified PTEE sealing)    4.阀座部件 valve seat    5.O形圈 O-Ring
- 6.阀芯部件 valve core (移动式) (改性PTFE复合膜片) (mobile) (modified PTFE composite diaphragm)    7.挡片 flapper    8.铜接管 copper tube    9.防尘帽 dust cap
- 10.接管螺母 connection tube nut    11.阀体 valve body    12.密封垫 PTFE gasket    13.阀盖 valve cover    14.回复弹簧 recovery spring    15.电磁线圈 solenoid coil

#### 外形尺寸 Overall Dimension



HVK15M、HVK20M、HVK25M

HVK3、HVK8M、HVK10M

型号Model	外形尺寸 Overall Dimension							
	H1	H2	W	L	L1	L2	ØD	螺纹 M
HVK3-2	12	S24	30	58	13	—	—	7/16-20UNF
HVK3-2T	12	S24	30	90	7	27	6.5	—
HVK3-3	12	S24	30	64	16	—	—	5/8-18UNF
HVK3-3T	12	S24	30	104	8	35	10.1	—
HVK8M3	14	67	36	96	16	—	—	5/8-18UNF
HVK8M3T	14	67	36	124	8	33	10.1	—
HVK8M4	14	67	36	98	17	—	—	3/4-16UNF
HVK8M4T	14	67	36	130	10	36	12.8	—
HVK10M4	15	77	45	103	18	—	—	3/4-16UNF
HVK10M4T	15	77	45	138	10	36	12.8	—
HVK10M5	15	77	45	112	20	—	—	7/8-14UNF
HVK10M5T	15	77	45	156	14	42	16.1	—
HVK15M5	18	88	52	133	19.5	—	—	7/8-14UNF
HVK15M5T	18	88	52	165	14	43	16.1	—
HVK15M6	18	88	52	133	21	—	—	1-1/16-14UNS
HVK15M6T	18	88	52	172	16	46	19.2	—
HVK20M7T	24	92	66	191	17	49	22.3	—
HVK25M9T	26.5	96	73	246	22	73	28.7	—

# HV型卸载电磁阀

## Model HV Unloading Solenoid Valve



### 产品概述 Product Description

- HV型卸载电磁阀是一次开启式电磁阀，适用于单向流动。
  - HV型卸载电磁阀用于冷冻、冷藏和空气调节装置的压缩机上。
  - 根据热负荷的减少情况进行自动卸载，从而使压缩机节能，并延长使用寿命。
  - HV型卸载电磁阀的阀座与密封处具有很好的密封性。
  - HV型卸载电磁阀可提供整体供货，也可分体供货，即阀体和线圈分开单独供货。
- Model HV unloading solenoid valve is a direct-operated valve, which is applicable to one direction flow.
  - Model HV unloading solenoid valve is used on the compressor of the freezer, could store and air conditioning unit. It will automatically unload in accordance with the decrease of heat so that it could save the compressor energy and extend the service life of compressor.
  - The valve seat of Model HV unloading solenoid valve is well sealed with perfect sealing performance.
  - Both packed and separated Model HV unloading solenoid valves are available and it means the valve body could supplied separately from the solenoid.

### 特点 Features

- 可提供常闭 (NC) 型阀。
  - 设计耐温可达110°C。
  - 10W的大功率电磁线圈，最大工作压差 (MOPD) 可达3.0MPa。
  - 夹卡式电磁线圈可不借助任何工具安装，只需一把螺丝刀就可简单地拆卸。
  - 可用于冷冻、冷藏和空气调节装置的各种压缩机。
  - 使用寿命长的密封线圈，可在恶劣环境条件下使用。
- Only NC type solenoid valve is available.
  - The max. design temperature is 110°C.
  - 10W high power solenoid and max. operating pressure differential (MOPD) is 3.0 MPa.
  - It is applicable to various compressors in freezer, cold store and air conditioning unit.
  - The clamped joint solenoid is easy to be mounted or dismantled only with one screwdriver.
  - The sealed solenoid has a long service life and it can be used even in an adverse circumstance.

### 技术参数 Technical Parameters

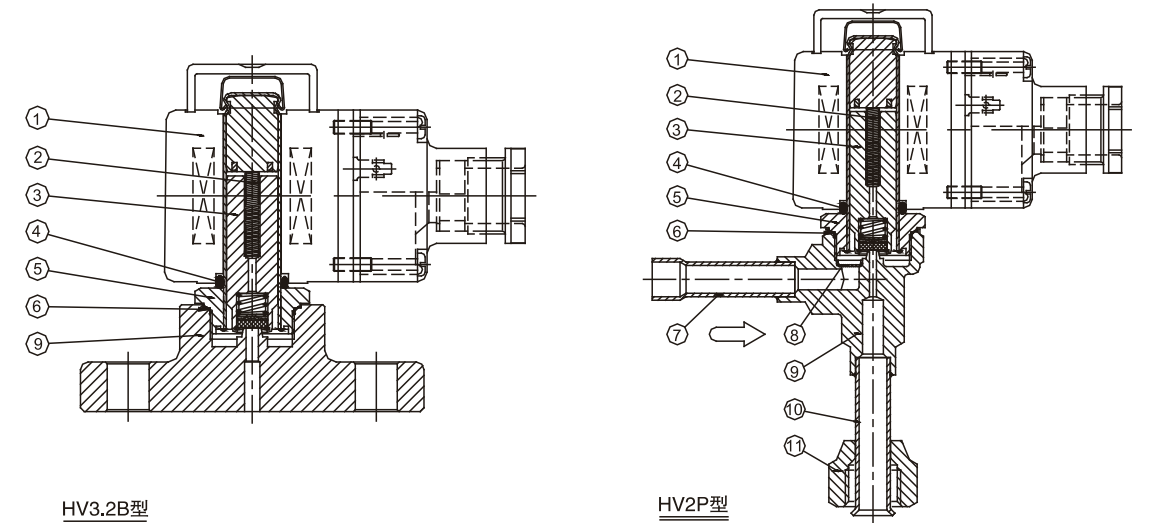
适用制冷剂 Applicable Refrigerants	HCFC、HFC 及相应介质粘度 $\leq 2^{\circ}E$ 润滑油 HCFC、HFC and related medium viscosity $\leq 2^{\circ}E$ lubricant oil
适用介质温度 Applicable Medium Temperature	-30°C ~ +105°C
线圈的适用环境温度 Application Ambient Temperature of Solenoid	-40°C ~ +65°C
线圈的标准电压 Standard Voltage of Solenoid	AC220V/50HZ
线圈的允许电压波动 Allowable Voltage Fluctuation for Solenoid	+10% ~ -15%
线圈的连接 Connection of Solenoid	Ip67 附带接线盒 Ip67 with terminal box

### 选型表 Model Selection

型号 Model	接口 Connection		开启压差 $\Delta P$ (bar) Pressure Differential to Open Valve		最大工作压力(bar) Max Working Pressure(bar)	Kv值 Kv(m <sup>3</sup> /h)
	进口端 Inlet	出口端 Outlet	最小 Min	最大工作压力差 (MOPD)		
HV3.2B	法兰连接 Flanged Connectio		0.0	31	45bar	0.27
HV2P	3/8 ODF	3/8 SAE	0.0	31	45bar	0.2

注：Kv值：密度为1吨/m<sup>3</sup>的水在通过电磁阀的等于100KPa时的流量，单位为m<sup>3</sup>/h；

Note: Kv: The flow rate (m<sup>3</sup>/h) of water of density 1 t/m<sup>3</sup> passing through the solenoid valve under the pressure differential of 100 KPa.



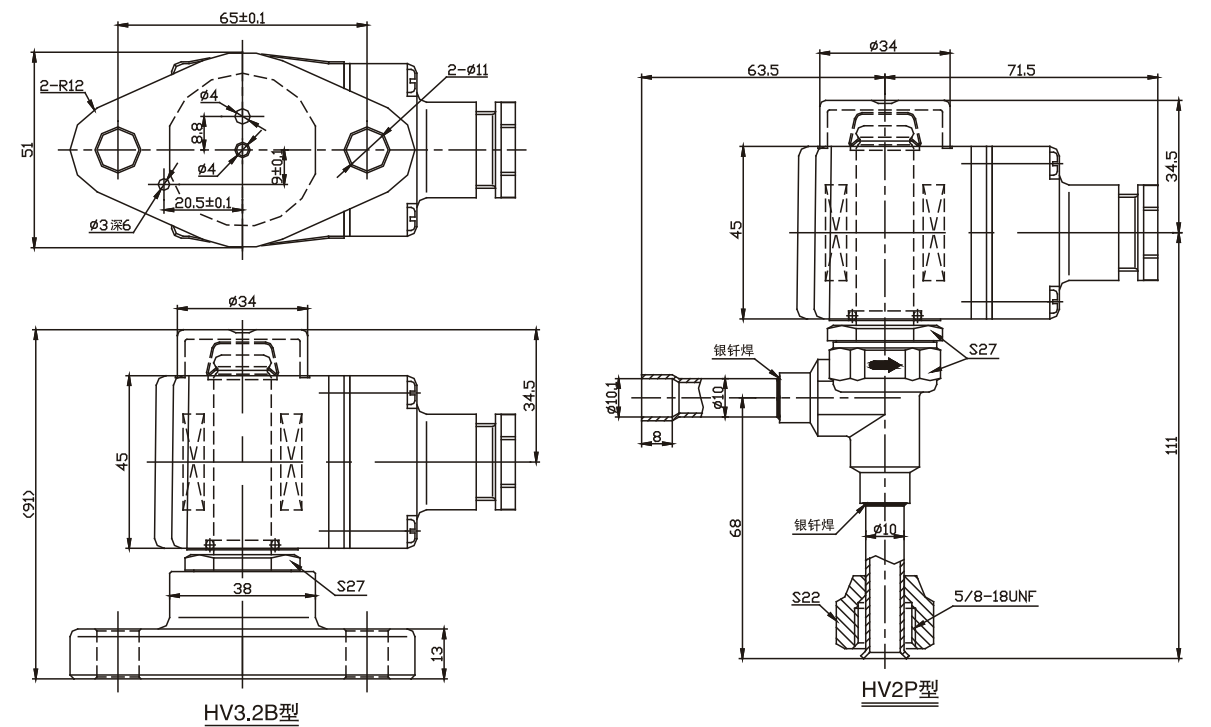
HV3.2B型

1. 电磁线圈 (10W) solenoid(10W)
2. 回弹弹簧 return spring
3. 芯铁部件 (改性PTFE密封、进口不锈钢磁钢) iron core(modified PTFE sealing and imported stainless magnet steel)
4. O形圈 O-Ring
5. 阀座部件 valve seat
6. 密封环 sealing

HV2P型

7. 进口接管 suction tube
8. 过滤网 filter
9. 阀体 valve body
10. 出口接管 outlet tube
11. 接管螺母 tube nut

### 外形尺寸 Overall Dimension

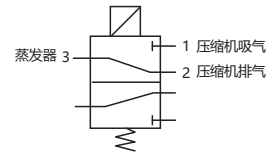


HV3.2B型

HV2P型

# HVS(R)型热氟化霜电磁阀

## Model HVS(R) defrosting solenoid valve



### 产品概述 Product Description

- HVS(R)型氟化霜电磁阀是应用于制冷系统中专为热氟化霜设计的电磁调节阀；
- 通过电磁控制内部活塞位置来实现切换流道；
- 电磁线圈断电时：2口通道关闭，3口与1口连通，即蒸发器与压缩机回气连通，实现制冷循环；
- 电磁线圈通电时：1口通道关闭，2口通道打开与3口连通，热气进入蒸发器实现化霜；
- 只能与压缩机排气集成管连接，不允许与排气管连接。

- Model HVS(R) is a solenoid valve specially designed for defrosting in refrigeration system.
- Switch the flow channel by electromagnetically controlling the position of the internal piston.
- When the solenoid coil is powered off: Port 2 will be closed, Port 3 will be connected to Port 1, the evaporator connects to the suction side of the compressor realize the refrigeration cycle;
- When the solenoid coil is powered on: Port 1 will be closed, Port 2 will be connected to Port 3, hot gas goes through the evaporator in order to realize the defrosting
- This valve can Only be connected to the compressor exhaust integrated pipe, **DON' T connect it to the exhaust main pipe.**

### 特点 Features

- 专为工业应用场合设计；
- 小体积大口径阀门；
- 高度集成的活塞结构，拧下阀盖螺钉便可对内部所有零部件进行内部清理；
- 精细化设计，实现阀门内泄漏300ml/min以下。

- Specially designed for industrial application;
- Large diameter , compact design, light weight
- Highly integrated piston structure, all internal parts can be cleaned internally by unscrewing the bonnet screw;
- Refined design to achieve internal leakage under 300ml/min

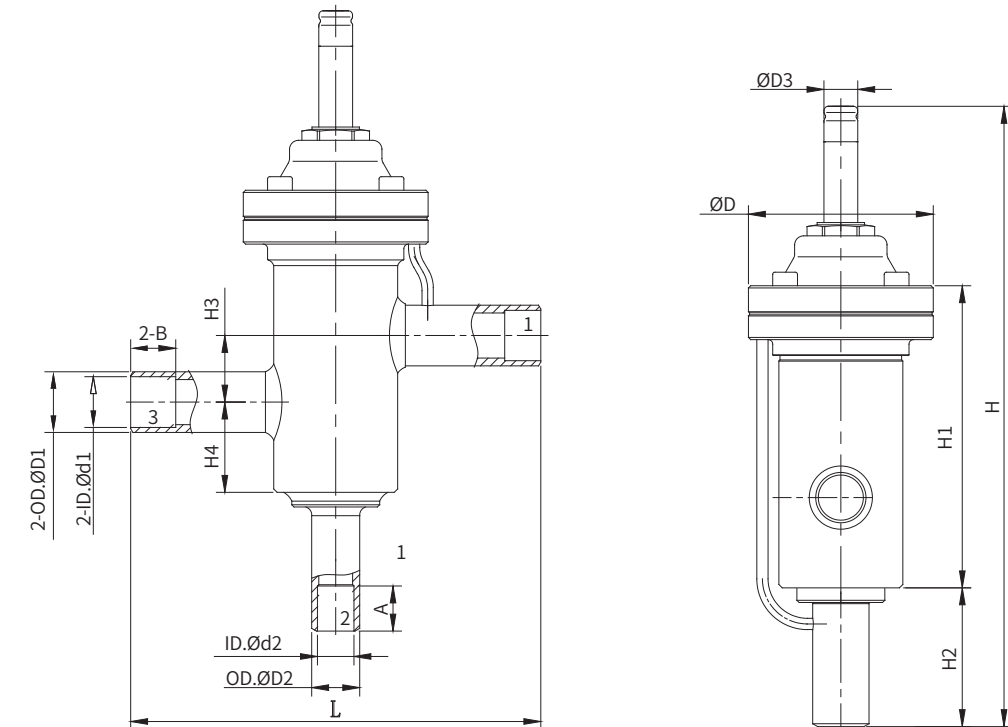
### 技术参数 Technical Parameters

适用介质 Applicable refrigerant	HCFC/HFC
环境温度 Environment temperature	-35~+65°C
介质温度 Medium temperature	-35~+105°C
适用线圈电压 Rated voltage	220V+10% -15% / 50HZ
线圈的连接 Coil connection	3线插入式标准连接器 3-wire plug-in standard connector

### 选型表 Model Selection

规格 Model	最高工作压力 Max.OP(bar)	最大工作压力差 Max.OPD(bar)	最小工作压力差 Min. OPD(bar)	KV值 Kv Value(m³/h)	
HVS(R)-27-22	30	21	2.5	热氟 Hot gas	7.1
回液 Liquid				8.3	
HVS(R)-34-27				热氟 Hot gas	9.5
回液 Liquid				13.7	
HVS(R)-42-34				热氟 Hot gas	12.7
回液 Liquid				20.2	
HVS(R)-48-42				热氟 Hot gas	12.7
				回液 Liqui	20.2

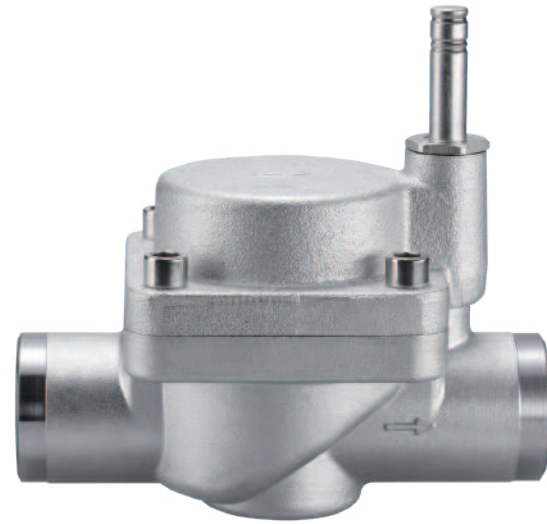
### 外形尺寸 Dimensions



型号 Model	外形尺寸 Size													
	H	H1	H2	H3	H4	L	D	D1	D2	D3	d1	d2	A	B
HVS(R)-27-22	275	134	61.5	29.5	40	182	82	26.9	21.3	15	22.5	16.2	20	20
HVS(R)-34-27	315	162	72.5	35	47	127	102.5	33.7	26.9	15	28.9	22.5	25	20
HVS(R)-42-34	351	188	80	47	59	145	111	42.4	33.7	15	35.3	28.9	25	25
HVS(R)-48-42	351	188	80	47	59	145	111	48.3	42.4	15	42.3	35.3	25	25

# HVDF型活塞式电磁阀

## Model HVDF Piston Type Solenoid Valve



### 产品概述 Product Description

<ul style="list-style-type: none"> <li>• HVDF型活塞式电磁阀是二次开启式电磁阀，适用于单向流动。</li> <li>• HVDF型活塞式电磁阀用于冷冻、冷藏和空气调节装置的液体、吸气和热气管路上。</li> <li>• HVDF型活塞式电磁阀可提供多种电压的线圈，而阀体是通用的。</li> <li>• HVDF型活塞式电磁阀可提供分体供货，即阀体和线圈分开单独供货。</li> </ul>	<ul style="list-style-type: none"> <li>• Model HVDF piston type solenoid valve is a twice open-type solenoid valve to be suitable to one-way flow.</li> <li>• Model HVDF piston type solenoid valve is used on the liquid, air suction and hot vapor pipes of the refrigeration, cold storage and air conditioning facilities.</li> <li>• The coil of varies voltages is available for Model HVDF piston type solenoid valve with a universal valve body.</li> <li>• Model HVDF piston type solenoid valve could be supplied in split, that means valve body and coil could be supplied separately.</li> </ul>
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### 特点 Features

<ul style="list-style-type: none"> <li>• 专利线圈，防水性能好 (IP65)。</li> <li>• 应用新材料，耐高低温性能好。</li> <li>• 24W的大功率电磁线圈，开阀能力大。</li> <li>• 活塞行程大，工作流量大。</li> <li>• 多种交流和直流电磁线圈可供选。</li> <li>• 焊接连接可达2-3/8in。</li> </ul>	<ul style="list-style-type: none"> <li>• The proprietary coil has perfect waterproof performance (IP65).</li> <li>• Using new material, it has performance in high and low temperature application.</li> <li>• The 24W high-power solenoid coil has high capability to open the valve.</li> <li>• The high flow rate is assured by a big piston stroke.</li> <li>• Various AC and DC solenoid coils are available for choice.</li> <li>• 2-3/8 inch is the maximum welded connection size.</li> </ul>
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### 技术参数 Technical Parameters

适用制冷剂 Applicable Refrigerants	HCFC or HFC(客户指定 Customer specified)
适用介质温度 Applicable Medium Temperature	-30°C~+105°C
线圈的适用环境温度 Application Ambient Temperature of Solenoid	-40°C~+65°C
线圈的标准电压 Standard Voltage of Solenoid	AC 380V, AC 220V/50Hz(也可按客户指定做 Customer design is available)
线圈的允许电压波动 Allowable Voltage Fluctuation for Solenoid	+10%~-15%
线圈的连接 Connection of Solenoid	3线插入式标准连接器 Standard 3-wire insert connector

### 选型表 Model Selection

型号 Model	规格 Size	开启差值 $\Delta P$ (bar)		最大工作压力(bar) Max Working Pressure(bar)	Kv值 Kv(m <sup>3</sup> /h)
	焊接口 Weld Connection	最小 Min	最大工作压力差 MOPD 液体 Liquid MOPD		
HVDF25-9	Ø28.2 ODF	0.2	31	45	10
HVDF25-11	Ø33.7 ODF	0.2	31	45	10
HVDF32-13	Ø42.4 ODF	0.2	31	45	16
HVDF40-15	Ø48.3 ODF	0.2	31	45	25
HVDF50-19	Ø59.3 ODF	0.2	31	45	28

1) Kv值: 密度为1吨/m<sup>3</sup>的水在通过电磁阀的压差等于100KPa时的流量, 单位为m<sup>3</sup>/h;  
 2) 气态介质的MOPD约高1bar.  
 1) Kv value: The flow rate (m<sup>3</sup>/h) of water of density 1t/m<sup>3</sup> passing through the solenoid valve with the pressure differential of 100 KPa.  
 2) The MOPD of gaseous medium is about 1 bar higher than that of liquid.

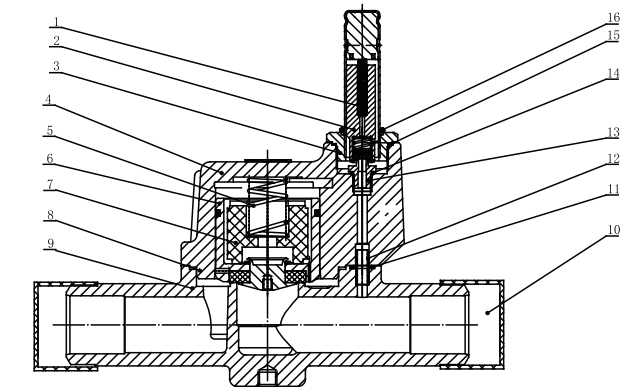
型号 Model	名义制冷量 KWNominal Refrigerating Capacity kW											
	液体 Liquid				吸气 Air Suction				热蒸汽 Hot Vapor			
	R22/R407C	R134a	R404A/R507	R410A	R22/R407C	R134a	R404A/R507	R410A	R22/R407C	R134a	R404A/R507	R410A
HVDF25-9	201.25	185.00	140.00	201.00	22.50	16.25	20.00	29.00	92.50	73.75	75.00	139.75
HVDF25-11	201.25	185.00	140.00	201.00	22.50	16.25	20.00	29.00	92.50	73.75	75.00	139.75
HVDF32-13	322.00	296.00	224.00	321.60	36.00	26.00	32.00	46.00	148.00	118.00	120.00	223.60
HVDF40-15	503.13	462.50	350.00	502.50	56.25	40.63	50.00	72.50	231.25	184.38	187.50	349.38
HVDF50-19	563.50	518.00	392.00	562.80	63.00	45.50	56.00	81.20	259.00	206.50	210.00	391.30

液体和吸气名义制冷量的工况条件为  
 The working condition the nominal refrigerating capacity of liquid and air suction is as follows:  
 蒸发温度  $t_c = -10^\circ\text{C}$  Evaporation Temperature:  $t_e = -10^\circ\text{C}$ ;  
 阀前液体温度  $t_1 = +25^\circ\text{C}$  Liquid Temperature before Valve:  $t_1 = +25^\circ\text{C}$ ;  
 经过电磁阀的压力降  $\Delta P = 15\text{KPa}$  Pressure Drop after Solenoid Valve:  $\Delta P = 15\text{KPa}$

热气名义制冷量的工况条件为  
 The working condition the nominal refrigerating capacity of hot vapor is as follows:  
 冷凝温度  $t_c = +40^\circ\text{C}$  Condensation Temperature:  $t_c = +40^\circ\text{C}$ ;  
 经过电磁阀的压力降  $\Delta P = 0.8\text{bar}$  Pressure Drop after Solenoid Valve:  $\Delta P = 0.8\text{bar}$ ;  
 热气温度  $t_h = +65^\circ\text{C}$  Hot Vapor Temperature:  $t_h = +65^\circ\text{C}$ ;  
 液体制冷剂过冷度  $\Delta t_{\text{sub}} = 4\text{K}$  Liquid Refrigerant Overcooling:  $\Delta t_{\text{sub}} = 4\text{K}$

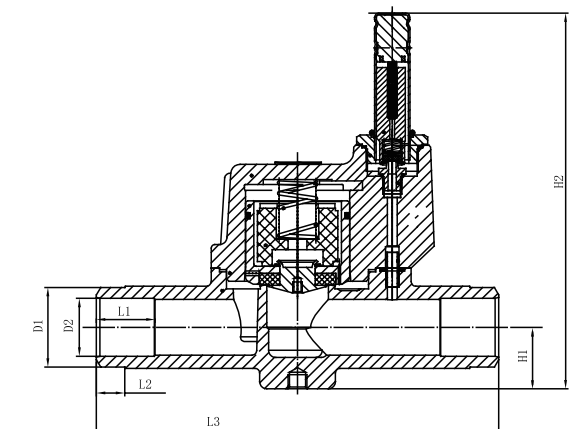
### 结构 Structure

- |                     |                              |
|---------------------|------------------------------|
| 1.复位弹簧 reset spring | 9.阀体 valve body              |
| 2.芯铁部件 core iron    | 10.防尘帽 dust cap              |
| 3.阀座部件 valve seat   | 11.O形圈 O-ring                |
| 4.阀盖 bonnet         | 12.空心销 Hollow pin            |
| 5.复位弹簧 reset spring | 13.阀芯 value element          |
| 6.活塞部件 piston       | 14.阀芯垫片 value element gasket |
| 7.活塞芯 piston core   | 15.密封环 seal ring             |
| 8.密封垫 PTFE gasket   | 16.O形圈 O-ring                |



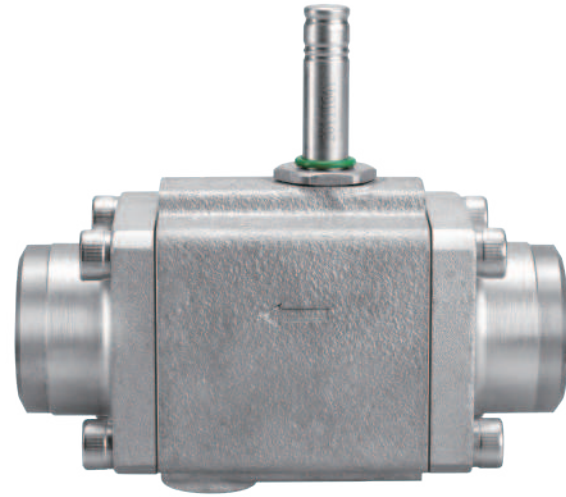
### 外形尺寸 Overall Dimension

型号 Model	外形尺寸 Overall Dimension						
	D1	D2	L1	L2	L3	H1	H2
HVDF25-9	28.2	24.4	25	12	170	26	159
HVDF25-11	33.7	26	25	12	170	26	159
HVDF32-13	42.4	33	25	12	194	29.5	169
HVDF40-15	48.3	29.5	25	12	208	33	176
HVDF50-19	59.3	51	25	12	207	38	199



# HVPF型活塞式电磁阀

## Model HVPF Piston Type Solenoid Valve



### 产品概述 Product Description

- HVPF型活塞式电磁阀是二次开启式电磁阀,适用于单向流动。
- HVPF型活塞式电磁阀用于冷冻、冷藏和空气调节装置的液体、吸气和热气管路上。
- HVPF型活塞式电磁阀可提供多种电压的线圈,而阀体是通用的。
- HVPF型活塞式电磁阀可提供分体供货,即阀体和线圈分开单独供货。

- Model HVPF piston type solenoid valve is a twice open-type solenoid valve to be suitable to one-way flow.
- Model HVPF piston type solenoid valve is used on the liquid, air suction and hot vapor pipes of the refrigeration, cold storage and air conditioning facilities.
- The coil of varies voltages is available for Model HVPF piston type solenoid valve with a universal valve body.
- Model HVPF piston type solenoid valve could be supplied in split, that means valve body and coil could be supplied separately.

### 特点 Features

- 专利线圈,防水性能好(IP65)。
- 应用新材料,耐高低温性能好。
- 24W的大功率电磁线圈,开阀能力大。
- 活塞行程大,工作流量大。
- 多种交流和直流电磁线圈可供选择。
- 焊接连接可达2-3/8in。

- The proprietary coil has perfect waterproof performance (IP65).
- Using new material, it has performance in high and low temperature application.
- The 24W high-power solenoid coil has high capability to open the valve.
- The high flow rate is assured by a big piston stroke.
- Various AC and DC solenoid coils are available for choice.
- 2-3/8 inch is the maximum welded connection size.

### 技术参数 Technical Parameters

适用制冷剂 Applicable Refrigerants	HCFC or HFC(客户指定 Customer specified)
适用介质温度 Applicable Medium Temperature	-30°C~+105°C
线圈的适用环境温度 Application Ambient Temperature of Solenoid	-40°C~+65°C
线圈的标准电压 Standard Voltage of Solenoid	AC 380V, AC 220V/50Hz(也可按客户指定做 Customer design is available)
线圈的允许电压波动 Allowable Voltage Fluctuation for Solenoid	+10%~-15%
线圈的连接 Connection of Solenoid	3线插入式标准连接器 Standard 3-wire insert connector

### 选型表 Model Selection

型号Model	规格Size	开启差值 $\Delta P$ (bar)		最大工作压力(bar) Max Working Pressure(bar)	Kv值 Kv(m <sup>3</sup> /h)
	焊接口 Weld Connection	最小Min	最大工作压力差MOPD 液体 Liquid MOPD		
HVPF32	Ø35 ODF	0.2	31	45	10
HVPF40	Ø42 ODF	0.2	31	45	16
HVPF45	Ø48.3 ODF	0.2	31	45	25
HVPF54	Ø54.5 ODF	0.2	31	45	28
HVPF60	Ø60.3 ODF	0.2	31	45	30

- 1) Kv值: 密度为1吨/m<sup>3</sup>的水在通过电磁阀的压差等于100KPa时的流量, 单位为m<sup>3</sup>/h;  
 2) 气态介质的MOPD约高1bar.  
 1) Kv value: The flow rate (m<sup>3</sup>/h) of water of density 1t/m<sup>3</sup> passing through the solenoid valve with the pressure differential of 100 KPa.  
 2) The MOPD of gaseous medium is about 1 bar higher than that of liquid.

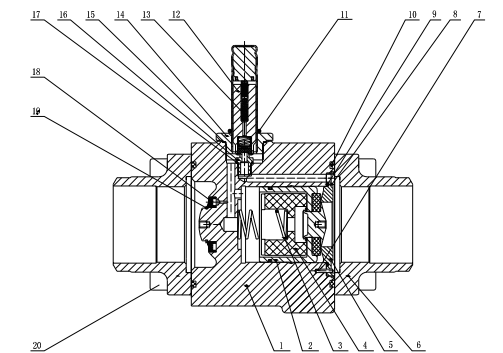
型号Model	名义制冷量 KWNominal Refrigerating Capacity kW											
	液体 Liquid				吸气 Air Suction				热蒸汽 Hot Vapor			
	R22/R407C	R134a	R404A/R507	R410A	R22/R407C	R134a	R404A/R507	R410A	R22/R407C	R134a	R404A/R507	R410A
HVPF32	201.25	185.00	140.00	201.00	22.50	16.25	20.00	29.00	92.50	73.75	75.00	139.75
HVPF40	322.00	296.00	224.00	321.60	36.00	26.00	32.00	46.40	148.00	118.00	120.00	223.60
HVPF45	503.13	462.50	350.00	502.50	56.25	40.63	50.00	72.50	231.25	184.38	187.50	349.38
HVPF54	563.50	518.00	392.00	562.80	63.00	45.50	56.00	81.20	259.00	206.50	210.00	391.30
HVPF60	603.75	555.00	420.00	603.00	67.50	48.75	60.00	87.00	277.50	221.25	225.00	419.25

液体和吸气名义制冷量的工况条件为  
 The working condition the nominal refrigerating capacity of liquid and air suction is as follows:  
 蒸发温度  $t_c = -10^\circ\text{C}$  Evaporation Temperature:  $t_e = -10^\circ\text{C}$ ;  
 阀前液体温度  $t_1 = +25^\circ\text{C}$  Liquid Temperature before Valve:  $t_1 = +25^\circ\text{C}$ ;  
 经过电磁阀的压力降  $\Delta P = 15\text{KPa}$  Pressure Drop after Solenoid Valve:  $\Delta P = 15\text{KPa}$

热气名义制冷量的工况条件为  
 The working condition the nominal refrigerating capacity of hot vapor is as follows:  
 冷凝温度  $t_c = +40^\circ\text{C}$  Condensation Temperature:  $t_c = +40^\circ\text{C}$ ;  
 经过电磁阀的压力降  $\Delta P = 0.8\text{bar}$  Pressure Drop after Solenoid Valve:  $\Delta P = 0.8\text{bar}$ ;  
 热气温度  $t_h = +65^\circ\text{C}$  Hot Vapor Temperature:  $t_h = +65^\circ\text{C}$ ;  
 液体制冷剂过冷度  $\Delta t_{\text{sub}} = 4\text{K}$  Liquid Refrigerant Overcooling:  $\Delta t_{\text{sub}} = 4\text{K}$

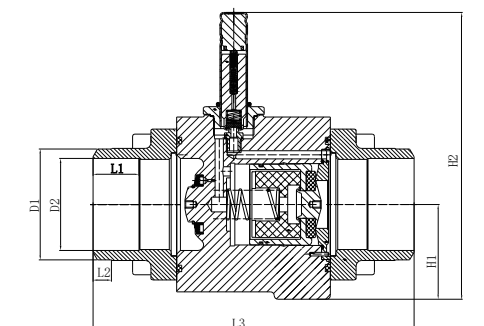
### 结构 Structure

- |                         |                               |
|-------------------------|-------------------------------|
| 1. 阀体 valve body        | 11. O形圈 O-ring                |
| 2. 活塞部件 piston          | 12. 芯铁部件 core iron            |
| 3. 弹簧 spring            | 13. 复位弹簧 reset spring         |
| 4. 活塞芯 piston core      | 14. 阀座部件 valve seat           |
| 5. 密封座 sealing seat     | 15. 密封环 seal ring             |
| 6. 法兰组件 Flange assembly | 16. 阀芯 value element          |
| 7. 定位销 dowel pin        | 17. 阀芯垫片 value element gasket |
| 8. 卡环 snap ring         | 18. 过滤网组件 filter assembly     |
| 9. O形圈 O-ring           | 19. 挡圈 retainer ring          |
| 10. 密封垫 PTFE gasket     | 20. 螺钉 screw                  |



### 外形尺寸 Overall Dimension

型号 Model	外形尺寸 Overall Dimension						
	D1	D2	L1	L2	L3	H1	H2
HVPF32	35	26	25	10	174.5	51.5	155.5
HVPF40	42	33	25	10	174.5	51.5	155.5
HVPF45	48.3	39.5	25	10	174.5	51.5	155.5
HVPF54	54.5	45	25	10	174.5	51.5	155.5
HVPF60	60.3	50	25	10	174.5	51.5	155.5



## 热力膨胀阀系列

# THERMOSTATIC EXPANSION VALVE *Series*

采用进口膜片,线性更稳定  
采用独特的充注技术,库内库外均可使用

Using imported diaphragm, linearity is more stable.  
With unique charging technology, can be used in/outside of the cold room.



# TF/TFW 型热力膨胀阀 TF/TFW Thermostatic Expansion Valve



TF型  
Model TF



Model TRFW Thermostatic expansion valve  
TFW型  
Model TFW

## 产品概述 Product Description

<ul style="list-style-type: none"> <li>• TF/TFW型膨胀阀是一种可换芯的新型热力膨胀阀。</li> <li>• TF/TFW型膨胀阀用于调节蒸发器中液体制冷剂的供给量。</li> <li>• TF/TFW型膨胀阀特别适合于干式蒸发器中制冷剂液体的供给。</li> </ul>	<ul style="list-style-type: none"> <li>• Model TF/TFW Thermostatic expansion valve is a novel thermostatic expansion valve with Interchangeable orifice assembly.</li> <li>• Model TF/TFW Thermostatic expansion valve is used for regulating the supply quantity of refrigerant liquid into evaporators.</li> <li>• Model TF/TFW Thermostatic expansion valve is especially suitable for liquid injection in dry-type evaporators.</li> </ul>
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## 特点 Features

<ul style="list-style-type: none"> <li>• 蒸发温度范围大。</li> <li>• 可提供MOP功能，可使压缩机电机不会因过高的蒸发压力而损伤。</li> <li>• 具有内外平衡两种形式，能有效的消除蒸发器压力损失带来的影响。</li> <li>• 具有发明专利的膜片结构，大大改善了低温下的工作性能。</li> <li>• 阀帽采用二次密封结构，确保外泄漏为零。</li> <li>• 带100目过滤器的可换阀芯组件，便于库存、匹配和维修。</li> <li>• 感温包采用混合充注技术，使整个蒸发温度范围内都具有等过热度特性。</li> </ul>	<ul style="list-style-type: none"> <li>• Wide temperature range.</li> <li>• Can be supplied with MOP(Max. Operation Pressure) function. Protect the compressor against excessive evaporating pressure during normal operation.</li> <li>• Have two forms of internal and external equaliser, be capable of removing influence brought by loss of evaporator pressure effectively.</li> <li>• Have the membrane structure with invention patent, improve the lifetime of the valves greatly.</li> <li>• The bonnet uses double sealing structure to ensure no external leakage.</li> <li>• Interchangeable orifice with 100 mesh filter, easily for storage, matching and service.</li> <li>• With mixed charging technology in bulb, the superheat is equal and stable within whole evaporating temperature range.</li> </ul>
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## 技术参数 Technical Parameters

适用制冷剂 Applicable refrigerants medium	R22/R407C、R134a、R404A/R507、R410A、R454B、R290、R23、R236fa冷媒等介质	TF型热力膨胀阀毛细管长度： 标准1.5m，特殊情况可按用户要求。 TF type thermal expansion valve capillary tube length: standard 1.5m. Special customization available.
适用介质温度 Applicable temperature	常规温度范围：R22/R407C/R404A/R507/R134a/R454B/R410A/R236fa: -40°C ~ +10°C NM系列温度范围：R22/R407C/R404A/R507/R134a: -40°C ~ -5°C NL系列温度范围：R22/R407C/R404A/R507/R134a: -40°C ~ -15°C B系列温度范围：R22/R407C/R404A/R507/R134a: -60°C ~ -25°C MOP R23: -90°C ~ -40°C	
名义容量 Nominal Capacity	0.09~6.5 TR/ 0.32KW ~ 22.9KW	
过热度调节范围 Adjustable Range of Superheat	0°C ~ 8°C	
出厂静态过热度设定值 Factory setting point of static superheat	4°C	
最大工作压力 Maximum Working Pressure	3.4MPa/4.6MPa(R410A)	

## 选型表 Model Selection

制冷剂 Refrigerant	型号 Model	阀芯 Spool	冷凝温度 (°C) Condensing Temp	制冷量(kW)/(TR)											
				蒸发温度(°C) Evaporation temperature											
				-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
R22/R407C	TF22/TF22W	X#	25	0.74/0.21	0.774/0.22	0.80/0.23	0.83/0.23	0.84/0.24	0.85/0.24	0.84/0.24	0.83/0.23	0.79/0.23	0.74/0.21	0.66/0.19	
		0#		0.93/0.26	1.04/0.30	1.16/0.33	1.26/0.36	1.36/0.39	1.44/0.41	1.50/0.43	1.53/0.44	1.52/0.43	1.46/0.42	1.34/0.38	
		1#		1.30/0.37	1.48/0.42	1.69/0.48	1.91/0.55	2.14/0.61	2.36/0.67	2.58/0.74	2.75/0.79	2.86/0.82	2.86/0.82	2.72/0.78	
		2#		1.46/0.42	1.69/0.48	1.94/0.55	2.22/0.63	2.52/0.72	2.85/0.81	3.18/0.91	3.49/1.0	3.75/1.07	3.88/1.11	3.81/1.09	
		3#		2.44/0.70	2.83/0.81	3.26/0.93	3.73/1.07	4.24/1.21	4.78/1.37	5.33/1.52	5.85/1.67	6.29/1.80	6.53/1.87	6.46/1.85	
		4#		3.52/1.01	4.07/1.16	4.70/1.34	5.42/1.55	6.24/1.78	7.11/2.03	8.02/2.29	8.87/2.53	9.55/2.73	9.88/2.82	9.71/2.77	
		5#		4.6/1.31	5.31/1.52	6.14/1.75	7.08/2.02	8.15/2.33	9.34/2.67	10.62/3.03	11.86/3.39	12.91/3.69	13.48/3.85	13.29/3.80	
	6#	5.43/1.55	6.26/1.79	7.22/2.06	8.32/2.38	9.56/2.73	10.95/3.13	12.43/3.55	13.91/3.97	15.18/4.34	15.91/4.55	15.71/4.49			
	TF22/TF22W	X#	35	0.77/0.22	0.80/0.23	0.84/0.24	0.87/0.25	0.89/0.25	0.9/0.26	0.91/0.26	0.91/0.26	0.9/0.26	0.87/0.25	0.83/0.24	
		0#		0.96/0.27	1.08/0.31	1.20/0.34	1.32/0.38	1.44/0.41	1.54/0.44	1.63/0.46	1.70/0.48	1.74/0.49	1.73/0.49	1.69/0.48	
		1#		1.34/0.38	1.54/0.44	1.76/0.50	2.0/0.57	2.26/0.65	2.53/0.72	2.8/0.80	3.06/0.87	3.27/0.93	3.4/0.97	3.43/0.98	
		2#		1.52/0.43	1.76/0.50	2.03/0.58	2.34/0.67	2.68/0.77	3.06/0.87	3.46/0.99	3.88/1.11	4.29/1.23	4.63/1.32	4.83/1.38	
		3#		2.56/0.73	2.97/0.85	3.44/0.98	3.95/1.13	4.52/1.29	5.16/1.47	5.84/1.67	6.55/1.87	7.24/2.07	7.83/2.24	8.2/2.34	
		4#		3.77/1.08	4.34/1.24	5.02/1.43	5.8/1.66	6.69/1.91	7.70/2.20	8.80/2.51	9.94/2.84	11.03/3.15	11.92/3.41	12.45/3.56	
		5#		4.92/1.41	5.67/1.62	6.54/1.87	7.57/2.16	8.76/2.50	10.13/2.89	11.68/3.34	13.35/3.81	15.0/4.29	16.40/4.69	17.19/4.91	
	6#	5.77/1.65	6.65/1.90	7.66/2.19	8.85/2.53	10.23/2.92	11.82/3.38	13.62/3.89	15.59/4.45	17.57/5.02	19.3/5.51	20.32/5.81			
	TF22/TF22W	X#	45	0.78/0.22	0.82/0.23	0.86/0.24	0.89/0.25	0.92/0.26	0.94/0.26	0.95/0.27	0.96/0.27	0.96/0.27	0.95/0.27	0.93/0.26	
		0#		0.98/0.28	1.10/0.31	1.23/0.35	1.36/0.39	1.48/0.42	1.60/0.45	1.70/0.48	1.79/0.51	1.86/0.53	1.89/0.54	1.89/0.54	
		1#		1.37/0.39	1.58/0.45	1.81/0.52	2.06/0.59	2.33/0.67	2.63/0.75	2.93/0.84	3.24/0.93	3.51/1.0	3.74/1.07	3.87/1.11	
		2#		1.56/0.45	1.81/0.52	2.09/0.60	2.41/0.69	2.77/0.79	3.18/0.91	3.64/1.04	4.13/1.18	4.63/1.32	5.11/1.46	5.48/1.57	
		3#		2.64/0.75	3.07/0.88	3.55/1.01	4.09/1.17	4.71/1.35	5.41/1.55	6.18/1.77	7.03/2.01	7.91/2.26	8.75/2.50	9.42/2.69	
		4#		3.96/1.13	4.55/1.3	5.24/1.50	6.05/1.73	6.98/1.99	8.05/2.30	9.26/2.65	10.56/3.02	11.9/3.40	13.15/3.76	14.17/4.05	
		5#		5.17/1.48	5.94/1.7	6.84/1.95	7.91/2.26	9.16/2.62	10.64/3.04	12.53/3.58	14.28/4.08	16.35/4.67	18.32/5.23	19.87/5.68	
	6#	6.04/1.73	6.94/1.98	7.99/2.28	9.22/2.63	10.68/3.05	12.39/3.54	14.38/4.11	16.65/4.76	19.13/5.47	21.57/6.16	23.55/6.73			
TF22/TF22W	X#	55	0.77/0.22	0.82/0.23	0.87/0.25	0.89/0.25	0.92/0.26	0.94/0.27	0.96/0.27	0.97/0.28	0.98/0.28	0.98/0.28	0.97/0.28		
	0#		0.98/0.28	1.10/0.31	1.23/0.35	1.35/0.38	1.48/0.42	1.60/0.45	1.72/0.49	1.82/0.52	1.90/0.54	1.96/0.56	1.98/0.56		
	1#		1.38/0.39	1.59/0.45	1.82/0.52	2.07/0.59	2.35/0.67	2.66/0.76	2.98/0.85	3.30/0.94	3.61/1.03	3.88/1.11	4.08/1.17		
	2#		1.58/0.45	1.83/0.52	2.12/0.61	2.44/0.70	2.81/0.80	3.24/0.93	3.71/1.06	4.24/1.21	4.79/1.37	5.34/1.53	5.81/1.66		
	3#		2.68/0.77	3.11/0.89	3.60/1.03	4.16/1.19	4.80/1.37	5.52/1.58	6.34/1.81	7.26/2.07	8.23/3.49	9.24/2.64	10.09/2.88		
	4#		4.11/1.17	4.66/1.33	5.38/1.54	6.19/1.77	7.13/2.04	8.21/2.35	9.43/2.69	10.79/3.08	12.23/3.49	13.65/3.90	14.93/4.27		
	5#		5.36/1.53	6.14/1.75	7.05/2.01	8.12/2.32	9.38/2.68	10.89/3.11	12.65/3.61	14.67/4.19	16.9/4.83	19.17/5.48	21.13/6.04		
6#	6.24/1.78	7.14/2.04	8.20/2.34	9.44/2.7	10.92/3.12	12.66/3.62	14.73/4.21	17.13/4.89	19.83/5.67	22.64/6.47	25.16/7.19				
R134a	TF134/TF134w	X#	25	0.47/0.13	0.50/0.14	0.53/0.15	0.56/0.16	0.58/0.17	0.6/0.17	0.61/0.17	0.61/0.17	0.60/0.17	0.57/0.16	0.53/0.15	
		0#		0.50/0.14	0.57/0.16	0.65/0.18	0.72/0.20	0.80/0.23	0.87/0.25	0.93/0.26	0.98/0.28	1.01/0.29	1.00/0.28	0.96/0.27	
		1#		0.71/0.20	0.81/0.23	0.93/0.27	1.09/0.31	1.21/0.35	1.29/0.37	1.52/0.43	1.59/0.45	1.68/0.48	1.83/0.52	1.82/0.52	
		2#		0.79/0.23	0.89/0.25	1.02/0.29	1.19/0.34	1.43/0.41	1.52/0.43	1.72/0.49	1.92/0.55	2.12/0.61	2.21/0.63	2.19/0.63	
		3#		1.31/0.37	1.53/0.44	1.69/0.48	2.02/0.58	2.31/0.66	2.63/0.75	2.91/0.83	3.18/0.91	3.49/1.00	3.70/1.06	3.84/1.10	
		4#		1.88/0.54	2.21/0.63	2.52/0.72	2.91/0.83	3.31/0.95	3.69/1.05	4.19/1.20	4.69/1.34	5.58/1.59	5.56/1.59	5.73/1.64	
		5#		2.52/0.72	2.93/0.84	3.29/0.94	3.79/1.08	4.35/1.24	4.91/1.40	5.63/1.61	6.15/1.76	6.83/1.95	7.33/2.09	7.51/2.15	
	6#	2.99/0.85	3.38/0.97	3.91/1.12	4.51/1.29	5.23/1.49	5.88/1.68	6.72/1.92	7.56/2.16	8.25/2.36	8.76/2.50	8.99/2.57			
	TF134/TF134w	X#	35	0.48/0.14	0.52/0.15	0.55/0.16	0.58/0.17	0.61/0.17	0.64/0.18	0.65/0.19	0.67/0.19	0.67/0.19	0.67/0.19	0.65/0.18	
		0#		0.52/0.15	0.59/0.17	0.67/0.19	0.75/0.21	0.84/0.24	0.92/0.26	1.00/0.28	1.08/0.31	1.14/0.32	1.18/0.34	1.19/0.34	
		1#		0.71/0.20	0.82/0.23	0.98/0.28	1.12/0.32	1.16/0.33	1.39/0.40	1.30/0.37	1.80/0.51	2.02/0.58	2.02/0.58	2.13/0.61	
		2#		0.82/0.23	0.93/0.27	1.12/0.32	1.19/0.34	1.42/0.41	1.58/0.45	1.89/0.54	2.12/0.61	2.39/0.68	2.53/0.72	2.81/0.80	
		3#		1.39/0.40	1.62/0.46	1.82/0.52	2.13/0.61	2.37/0.68	2.83/0.81	3.09/0.88	3.45/0.99	4.01/1.15	4.51/1.29	4.75/1.36	
		4#		2.02/0.58	2.33/0.67	2.63/0.75	3.01/0.86	3.53/1.01	3.99/1.14	4.59/1.31	5.18/1.48	5.95/1.70	6.58/1.88	7.22/2.06	
5#		2.73/0.78		3.01/0.86	3.52/1.01	4.02/1.15	4.62/1.32	5.33/1.52	6.08/1.74	6.91/1.97	7.76/2.22	8.69/2.48	9.41/2.69		
6#	3.18/0.91	3.62/1.03	4.11/1.17	4.85/1.39	5.53/1.58	6.28/1.79	7.22/2.06	8.24/2.35	9.26/2.65	10.31/2.95	11.25/3.21				

选型表 Model Selection															
制冷剂 Refrigerant	型号 Model	阀芯 Spool	冷凝温度 (°C) Condensing Temp	制冷量(kW)/(TR)											
				蒸发温度(°C) Evaporation temperature											
				-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
R134a	TF134/TF134w	X#	45	0.47/0.13	0.52/0.15	0.55/0.16	0.59/0.17	0.62/0.18	0.65/0.18	0.67/0.19	0.69/0.20	0.71/0.20	0.72/0.20	0.72/0.20	
		0#		0.52/0.15	0.59/0.17	0.67/0.19	0.76/0.22	0.85/0.24	0.94/0.27	1.04/0.30	1.13/0.32	1.21/0.34	1.28/0.36	1.35/0.38	
		1#		0.77/0.22	0.83/0.24	0.96/0.27	1.08/0.31	1.34/0.38	1.46/0.42	1.73/0.49	1.92/0.55	2.11/0.60	2.25/0.64	2.53/0.72	
		2#		0.81/0.23	0.92/0.26	1.12/0.32	1.33/0.38	1.52/0.43	1.69/0.48	1.92/0.55	2.23/0.64	2.53/0.72	2.85/0.81	3.16/0.90	
		3#		1.42/0.41	1.66/0.47	1.83/0.52	2.16/0.62	2.49/0.71	2.75/0.79	3.34/0.95	3.71/1.06	4.23/1.21	4.69/1.34	5.32/1.52	
		4#		2.11/0.60	2.42/0.69	2.68/0.77	3.21/0.92	3.58/1.02	4.26/1.22	4.76/1.36	5.61/1.60	6.31/1.80	7.12/2.03	7.85/2.24	
		5#		2.83/0.81	3.15/0.90	3.66/1.05	4.15/1.19	4.86/1.39	5.55/1.59	6.25/1.79	7.28/2.08	8.15/2.33	9.25/2.64	10.29/2.94	
		6#		3.36/0.96	3.72/1.06	4.31/1.23	4.94/1.41	5.62/1.61	6.52/1.86	7.46/2.13	8.63/2.47	9.91/2.83	11.2/3.20	12.44/3.55	
	TF134/TF134w	X#	55	0.46/0.13	0.50/0.14	0.54/0.15	0.58/0.16	0.61/0.17	0.64/0.18	0.67/0.19	0.70/0.20	0.72/0.20	0.73/0.21	0.74/0.21	
		0#		0.51/0.15	0.58/0.16	0.66/0.19	0.74/0.21	0.84/0.24	0.95/0.27	1.03/0.29	1.13/0.32	1.22/0.35	1.31/0.37	1.38/0.39	
		1#		0.75/0.21	0.82/0.23	0.96/0.27	1.13/0.32	1.32/0.38	1.56/0.45	1.75/0.50	1.93/0.55	2.14/0.61	2.33/0.67	2.54/0.73	
		2#		0.83/0.24	0.95/0.27	1.12/0.32	1.28/0.37	1.49/0.43	1.78/0.51	1.89/0.54	2.15/0.61	2.53/0.72	2.75/0.79	3.18/0.91	
		3#		1.44/0.41	1.62/0.46	1.82/0.52	2.06/0.59	2.38/0.68	2.69/0.77	3.41/0.97	3.74/1.07	4.26/1.22	4.63/1.32	5.26/1.50	
		4#		2.11/0.60	2.42/0.69	2.83/0.81	3.25/0.93	3.65/1.04	4.26/1.22	4.76/1.36	5.53/1.58	6.21/1.77	7.08/2.02	7.93/2.27	
		5#		2.86/0.82	3.21/0.92	3.56/1.02	4.23/1.21	4.91/1.40	5.52/1.58	6.33/1.81	7.23/2.07	8.21/2.35	9.4/2.69	10.3/2.94	
		6#		3.29/0.94	3.74/1.07	4.29/1.23	4.92/1.41	5.82/1.66	6.43/1.84	7.52/2.15	8.66/2.47	9.85/2.81	11.2/3.20	12.35/3.53	
	R404A/R507	TF404/TF404W	X#	25	0.53/0.15	0.56/0.16	0.59/0.17	0.61/0.17	0.62/0.18	0.63/0.18	0.64/0.18	0.63/0.18	0.61/0.17	0.57/0.16	0.52/0.15
			0#		0.69/0.20	0.79/0.22	0.89/0.25	0.98/0.28	1.06/0.30	1.13/0.32	1.17/0.33	1.19/0.34	1.18/0.34	1.13/0.32	1.05/0.30
			1#		0.99/0.28	1.18/0.34	1.39/0.40	1.65/0.47	1.83/0.52	1.93/0.55	2.13/0.61	2.23/0.64	2.41/0.69	2.43/0.69	2.36/0.67
			2#		1.12/0.32	1.34/0.38	1.56/0.45	1.93/0.55	2.21/0.63	2.52/0.72	2.85/0.81	3.02/0.86	3.32/0.95	3.19/0.91	3.15/0.90
			3#		1.13/0.32	2.22/0.63	2.67/0.76	3.12/0.89	3.71/1.06	4.15/1.19	4.65/1.33	5.31/1.52	5.53/1.58	5.5/1.57	5.36/1.53
			4#		2.73/0.78	3.21/0.92	3.83/1.09	4.62/1.32	5.44/1.55	6.13/1.75	7.21/2.06	7.82/2.23	8.52/2.43	8.72/2.49	8.59/2.45
			5#		3.52/1.01	4.23/1.21	5.03/1.44	6.03/1.72	7.21/2.06	8.26/2.36	9.35/2.67	10.34/2.95	11.23/3.21	11.43/3.27	11.17/3.19
			6#		4.23/1.21	5.02/1.43	6.11/1.75	7.12/2.03	8.36/2.39	9.85/2.81	11.13/3.18	12.56/3.59	13.41/3.83	13.8/3.94	13.25/3.79
TF404/TF404W		X#	35	0.50/0.14	0.54/0.15	0.57/0.16	0.60/0.17	0.62/0.18	0.64/0.18	0.65/0.19	0.66/0.19	0.66/0.19	0.64/0.18	0.62/0.18	
		0#		0.64/0.18	0.74/0.21	0.85/0.24	0.95/0.27	1.04/0.30	1.13/0.32	1.20/0.34	1.26/0.36	1.29/0.37	1.29/0.37	1.25/0.36	
		1#		0.93/0.27	1.16/0.33	1.25/0.36	1.63/0.47	1.82/0.52	1.98/0.57	2.35/0.67	2.39/0.68	2.65/0.76	2.77/0.79	2.68/0.77	
		2#		1.21/0.35	1.25/0.36	1.53/0.44	1.82/0.52	2.13/0.61	2.61/0.75	2.91/0.83	3.41/0.97	3.49/1.0	3.65/1.04	3.95/1.13	
		3#		1.69/0.48	2.11/0.60	2.67/0.76	3.15/0.90	3.65/1.04	4.29/1.23	4.92/1.41	5.63/1.61	6.03/1.72	6.62/1.89	6.63/1.89	
		4#		2.54/0.73	3.06/0.87	3.85/1.1	4.61/1.32	5.51/1.57	6.51/1.86	7.46/2.13	8.62/2.46	9.38/2.68	10.31/2.95	10.62/3.03	
		5#		3.46/0.99	3.99/1.14	4.91/1.4	5.81/1.66	7.12/2.03	8.2/2.34	9.75/2.79	11.21/3.2	12.53/3.58	13.52/3.86	13.59/3.88	
		6#		4.12/1.18	4.76/1.36	5.86/1.67	7.1/2.03	8.33/2.38	10.1/2.89	11.8/3.37	13.52/3.86	14.92/4.26	16.03/4.58	16.25/4.64	
TF404/TF404W		X#	45	0.44/0.13	0.48/0.14	0.52/0.15	0.55/0.16	0.58/0.16	0.6/0.17	0.625/0.18	0.64/0.18	0.65/0.19	0.66/0.19	0.65/0.18	
		0#		0.57/0.16	0.67/0.19	0.77/0.22	0.87/0.25	0.96/0.27	1.06/0.30	1.15/0.33	1.21/0.34	1.29/0.37	1.32/0.38	1.32/0.38	
		1#		0.88/0.25	0.98/0.28	1.16/0.33	1.46/0.42	1.72/0.49	1.79/0.51	2.25/0.64	2.51/0.72	2.61/0.75	2.72/0.78	2.93/0.84	
		2#		0.96/0.27	1.22/0.35	1.42/0.41	1.75/0.5	2.03/0.58	2.45/0.70	2.71/0.77	3.22/0.92	3.53/1.01	3.95/1.13	4.22/1.21	
		3#		1.55/0.44	2.05/0.59	2.51/0.72	2.93/0.84	3.51/1.0	4.23/1.21	4.92/1.41	5.61/1.60	6.13/1.75	6.68/1.91	7.15/2.04	
		4#		2.36/0.67	2.92/0.83	3.66/1.05	4.21/1.20	5.23/1.49	6.21/1.77	7.35/2.1	8.38/2.39	9.65/2.76	10.92/3.12	11.29/3.23	
		5#		3.25/0.93	3.82/1.09	4.53/1.29	5.49/1.57	6.6/1.89	8.1/2.31	9.49/2.71	11.10/3.17	13.1/3.74	14.25/4.07	15.02/4.29	
		6#		3.78/1.08	4.56/1.30	5.51/1.57	6.63/1.89	7.85/2.24	9.7/2.77	11.52/3.29	13.6/3.89	15.33/4.38	16.8/4.80	17.85/5.10	
TF404/TF404W	X#	55	0.37/0.10	0.40/0.11	0.44/0.13	0.48/0.14	0.51/0.14	0.53/0.15	0.56/0.16	0.58/0.16	0.59/0.17	0.60/0.17	0.60/0.17		
	0#		0.48/0.14	0.57/0.16	0.65/0.18	0.74/0.21	0.83/0.24	0.92/0.26	1.01/0.29	1.09/0.31	1.16/0.33	1.21/0.34	1.23/0.35		
	1#		0.73/0.21	0.86/0.25	1.15/0.33	1.32/0.38	1.51/0.43	1.75/0.50	2.06/0.59	2.16/0.62	2.50/0.71	2.53/0.72	2.76/0.79		
	2#		0.86/0.25	0.98/0.28	1.23/0.35	1.49/0.43	1.82/0.52	2.1/0.60	2.43/0.69	2.99/0.85	3.23/0.92	3.75/1.07	4.03/1.15		
	3#		1.35/0.39	1.69/0.48	2.21/0.63	2.53/0.72	3.01/0.86	3.63/1.04	4.36/1.25	5.03/1.44	5.76/1.65	6.31/1.80	6.85/1.96		
	4#		2.23/0.64	2.65/0.76	3.12/0.89	3.69/1.05	4.52/1.29	5.51/1.57	6.55/1.87	7.61/2.17	9.10/2.60	10.01/2.86	10.92/3.12		
	5#		2.91/0.83	3.43/0.98	4.06/1.16	4.85/1.39	5.93/1.69	7.25/2.07	8.69/2.48	10.41/2.97	11.75/3.36	13.60/3.89	14.3/4.09		
	6#		3.29/0.94	4.01/1.15	4.75/1.36	5.82/1.66	7.11/2.03	8.39/2.40	10.38/2.97	12.26/3.5	14.40/4.11	16.20/4.63	17.35/4.96		

选型表 Model Selection														
制冷剂 Refrigerant	型号 Model	阀芯 Spool	冷凝温度 (°C) Condensing Temp	制冷量(kW)/(TR)										
				蒸发温度(°C) Evaporation temperature										
				-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
R410A	TF410/TF410W	X#	25	0.39/0.11	0.48/0.14	0.58/0.16	0.67/0.19	0.75/0.21	0.82/0.23	0.90/0.26	0.93/0.26	0.95/0.27	0.94/0.27	0.90/0.26
		0#		0.75/0.21	0.93/0.26	1.12/0.32	1.29/0.37	1.46/0.42	1.61/0.46	1.76/0.50	1.87/0.53	1.98/0.56	1.83/0.52	1.68/0.48
		1#		1.03/0.29	1.33/0.38	1.68/0.48	1.96/0.56	2.35/0.67	2.69/0.77	3.10/0.89	3.29/0.94	3.81/1.09	3.65/1.04	3.29/0.94
		2#		1.32/0.38	1.68/0.48	2.05/0.59	2.45/0.7	2.86/0.82	3.25/0.93	3.65/1.04	4.24/1.21	4.62/1.32	4.29/1.23	4.28/1.22
		3#		2.35/0.67	3.03/0.87	3.62/1.03	4.39/1.25	5.19/1.48	5.93/1.69	6.62/2.75	7.53/2.15	8.35/2.39	7.86/2.25	7.63/2.18
		4#		3.49/1.0	4.50/1.29	5.51/1.57	6.51/1.86	7.95/2.27	8.79/2.51	9.99/2.85	11.35/3.24	12.54/3.58	12.03/3.44	11.53/3.29
		5#		4.36/1.25	5.56/1.59	6.79/1.94	8.31/2.37	9.68/2.77	11.25/3.21	12.58/3.59	14.23/4.07	16.73/4.78	14.98/4.28	14.4/4.11
		6#		5.39/1.54	6.93/1.98	8.55/2.44	10.32/2.95	12.10/3.46	19.88/5.68	15.92/4.55	17.68/5.05	19.58/5.59	18.78/5.37	17.9/5.11
	TF410/TF410W	X#	35	0.39/0.11	0.49/0.14	0.60/0.17	0.69/0.20	1.35/0.38	0.89/0.25	0.94/0.27	0.99/0.28	1.03/0.29	1.05/0.30	1.05/0.30
		0#		0.76/0.22	0.95/0.27	1.15/0.33	1.33/0.38	1.52/0.43	1.70/0.48	1.88/0.53	2.04/0.58	2.20/0.62	2.12/0.60	2.04/0.58
		1#		1.10/0.31	1.43/0.41	1.68/0.48	2.01/0.57	2.39/0.68	2.91/0.83	3.21/0.92	3.72/1.06	4.21/1.20	4.15/1.19	4.08/1.17
		2#		1.32/0.38	1.69/0.48	2.12/0.61	2.50/0.71	2.96/0.85	3.52/1.01	3.96/1.13	4.56/1.30	5.15/1.47	5.10/1.46	5.06/1.45
		3#		2.25/0.64	3.12/0.89	3.68/1.05	4.51/1.29	5.36/1.53	6.31/1.8	7.2/2.06	8.15/2.33	9.22/2.63	9.08/2.59	9.08/2.59
		4#		3.39/0.97	4.39/1.25	5.62/1.61	6.67/1.91	8.01/2.29	9.42/2.69	10.81/3.09	13.38/3.82	14.01/4.0	13.91/3.97	13.88/3.97
		5#		4.39/1.25	5.68/1.62	7.03/2.01	8.46/2.42	10.10/2.89	11.68/3.34	13.4/3.83	15.51/4.43	17.2/4.91	17.25/4.93	17.42/4.98
		6#		5.61/1.60	7.05/2.01	8.82/2.52	10.59/3.03	15.61/4.46	14.69/4.2	16.65/4.76	19.43/5.55	21.75/6.21	21.77/6.22	21.69/6.20
	TF410/TF410W	X#	45	0.38/0.11	0.48/0.14	0.58/0.16	0.68/0.19	0.79/0.22	0.88/0.25	0.93/0.26	0.98/0.28	1.04/0.30	1.08/0.31	1.13/0.32
		0#		0.74/0.21	0.94/0.27	1.13/0.32	1.33/0.38	1.52/0.43	1.72/0.49	1.91/0.54	2.10/0.60	2.29/0.65	2.25/0.64	2.22/0.63
		1#		1.06/0.30	1.38/0.39	1.59/0.45	2.01/0.57	2.39/0.68	2.86/0.82	3.19/0.91	3.82/1.09	4.28/1.22	4.3/1.23	4.41/1.26
		2#		1.33/0.38	1.66/0.47	2.06/0.59	2.39/0.68	3.01/0.86	3.51/1.0	4.06/1.				

可换芯选择 Replaceable element model

N 系列: -40 ~ +10°C								
阀芯编号 Valve element No.	名义制冷量 (TR)Nominal refrigerating capacity(TR)							
	R134a	R404A	R407C	R22	R236fa	R407F	R407A	R410A
No.X	0.19	0.18	0.26	0.25	0.09	0.28	0.25	0.35
No.0	0.34	0.37	0.51	0.51	0.11	0.56	0.49	0.63
No.1	0.59	0.75	1.00	1.00	0.16	1.10	1.00	1.1
No.2	0.73	1.00	1.40	1.30	0.18	1.50	1.30	1.36
No.3	1.20	1.80	2.30	2.30	0.30	2.60	2.30	2.23
No.4	1.80	2.80	3.50	3.40	0.43	4.10	3.50	3.35
No.5	2.40	3.70	4.70	4.80	0.57	5.40	4.60	4.46
No.6	2.90	4.40	5.60	5.60	0.69	6.50	5.60	5.39

测试: 蒸发温度:4.4°C/ 冷凝温度:38°C/ 过冷度4°C。 Test condition: evaporating temp: 4.4°C/ condensing temp: 38°C/ sub cooling: 4°C.  
 ☆ 其它制冷剂根据客户要求定制 ☆ Other refrigerants customizable according to customer requirements

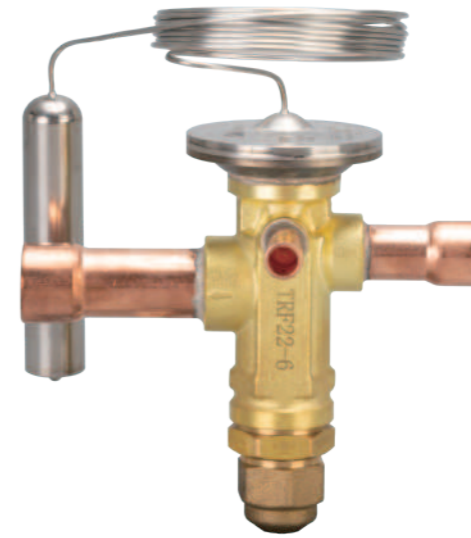
N 系列: -40 ~ +10°C								
阀芯编号 Valve element No.	名义制冷量 (kW)Nominal refrigerating capacity(kW)							
	R134a	R404A	R407C	R22	R236fa	R407F	R407A	R410A
No.X	0.68	0.64	0.92	0.90	0.32	1.00	0.88	1.26
No.0	1.20	1.30	1.80	1.80	0.39	2.00	1.70	2.23
No.1	2.10	2.60	3.50	3.50	0.55	3.90	3.40	3.91
No.2	2.60	3.70	4.80	4.70	0.62	5.40	4.70	4.84
No.3	4.30	6.30	8.10	8.00	1.00	9.20	8.00	8.00
No.4	6.40	9.90	12.40	12.10	1.50	14.30	12.40	11.90
No.5	8.40	13.00	16.50	16.70	2.00	19.00	16.30	15.62
No.6	10.10	15.50	19.70	19.70	2.40	22.90	19.60	18.79

测试: 蒸发温度:4.4°C/ 冷凝温度:38°C/ 过冷度4°C。 Test condition: evaporating temp: 4.4°C/ condensing temp: 38°C/ sub cooling: 4°C.  
 ☆ 其它制冷剂根据客户要求定制 ☆ Other refrigerants customizable according to customer requirements

产品选型 Product model										
制冷剂 Refrigerant	型号 Model	压力平衡 Pressure Equalisation	接口螺纹 Thread			接口铜管 Solder				
			进口端 Intet	出口端 Outlet	外均端 External Equaliser	进口端 Intet	出口端Outlet		外均端 External Equaliser	
							in.	mm	in.	mm
R22/R407C	TF22	内平衡 Internal Equalisation	3-8SAE	1/2 SAE	1/4SAE	3-8SAE	1/2	12		
	TF22W	外平衡 External Equalisation					1/2	12	1/4	6
R134a	TF134	内平衡 Internal Equalisation					1/2	12		
	TF134W	外平衡 External Equalisation					1/2	12	1/4	6
R404A/R507	TF404	内平衡 Internal Equalisation					1/2	12		
	TF404W	外平衡 External Equalisation					1/2	12	1/4	6
R410A	TF410	内平衡 Internal Equalisation	1/2	12						
	TF410W	外平衡 External Equalisation	1/2	12	1/4	6				

# TRFW 型热力膨胀阀

## TRFW Thermostatic Expansion Valve



TRFW 型  
Model TRFW

### 产品概述 Product Description

- TRFW型热力膨胀阀适用于所有常用制冷剂，用于调节蒸发器中液体制冷剂的供给量。
- TRFW型热力膨胀阀通过制冷剂的过热度调节来进行自动控制。
- TRFW型热力膨胀阀适用于水冷机组、空调系统、热泵、冷藏箱、传统制冷系统等多种场景。
- Model TRFW Thermostatic expansion valve is suitable to all common refrigerants and used to adjust the liquid refrigerant quantity to the evaporator.
- Model TRFW Thermostatic expansion valve is auto-controlled by the refrigerant superheat.
- Model TRFW Thermostatic expansion valve is suitable to water-chilled units, air conditioning system, heat pump, cold storage facility, traditional cooling system.

### 特点 Features

- 制冷剂：R22,R407C,R404A,R507,R134a,R410A,R32, R452B,R454B,R1234ze,R513A,R407A和 R290。
- 容量范围：3.5-52TR/12-182KW(R410A)。
- 提供MOP设计(最大工作压力)。
- 直通型设计。
- 低迟滞。
- 平衡流口设计。
- 旁通流口设计。
- 最大工作压力46bar/667psig。
- 热泵系统中使用寿命长。
- 过热度可调。
- TRFW系列产品(不带MOP)可用于双向流。
- 激光焊接不锈钢感温包及毛细管。
- 提供多种接口尺寸。
- Refrigerants：R22,R407C,R404A,R507,R134a,R410A,R32, R452B,R454B,R1234ze,R513A,R407A, and R290.
- Capacity range: 3.5-52TR/12-182KW(R410A).
- MOP =Max. Operation Pressure.
- Srtaightway design.
- Low hysteresis.
- Balance port design.
- Bleed Percentage design.
- Maximum working pressure 46bar/667psig.
- Long Lifetime in heat pump applications.
- Adjustable superheat setting.
- TRFW series (without MOP) are suitable to biflow applications in both directions.
- Laser welded, stainless steel power element, capillary tube and bulb.
- Be capable of providing various connection dimensions.

### 技术参数 Technical Parameters

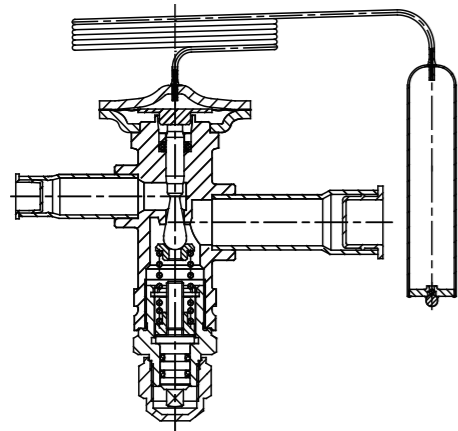
温度范围 Temperature range	动力头最高温度 Max. temperature of power element: MAH:150°C/302°F K:150°C/302°F N:100°C/210°F 阀体最高温度 Max. temperature of valve body:110°C/230°F
标准蒸发温度范围 Standard evaporating temperature range	MAH:-30-15°C/-22-60°F N:-40-10°C/-40-50°F(不带MOP without MOP) K:-25-10°C,MOP 15°C/-15-50°F,MOP 60°F
过热度调节范围 Adjustable range of superheat	0-8K
最大工作压力 Max. working pressure	46bar/667psig
出厂静止过热度调定值 Factory setting point of static superheat	4°C
毛细管长度 Capillary length	TRFW 3.5 ~ 26TR(410A):1.5m(59 inch) TRFW 31 ~ 52TR(410A):3m(118 inch) (特殊情况可按客户要求定制) (it can be customized based on clients' requirements)

名义制冷量 Nominal refrigerating capacity																
阀型 Model		TRFW														
阀芯编码 Orifice code		3	4	6	8	9	11	12.5	16	20	21	26	30	40	42	
范围 RANGE N K MAH	R22/R407C	TR	3	4	6	7.5	9	11	12	15	18	21	26	30	38	42
		kW	10	14	20	27	32	38	43	54	63	75	92	104	134	148
	R404A/R507	TR	2	2.5	4	5	6	7.5	9	11	13	15	18	21	26	30
		kW	7	9	14	18	21	26	31	39	45	53	64	72	92	105
	R134a	TR	1.5	2.5	3.5	4.5	5.5	7	8	10	12	15	17	20	25	29
		kW	6	8	12	17	20	24	29	37	44	51	61	70	87	102
	R410A	TR	3.5	4.5	6.5	9	11	13	15	19	23	26	31	35	46	52
		K	12	16	24	32	37	45	54	68	79	91	110	125	161	182
	R32	TR	5	7	10	13	15	19	23	29	34	38	47	53	67	78
		K	18	24	35	47	54	68	81	102	120	135	165	187	236	273
	R452B	TR	3.5	4.5	6.5	9	11	13	15	19	23	28	33	38	49	59
		kW	12	16	24	32	38	46	55	68	81	98	117	134	172	208
	R454B	TR	3.5	5	7.5	10	12	14	16	21	25	29	34	39	51	59
		K	12	18	26	35	42	49	56	74	88	102	120	137	179	208
	R1234ze	TR	1.5	2	3	4	4.5	5.5	6	7.5	8.5	11	14	16	20	23
		kW	5	7	10	14	16	20	22	27	31	39	49	57	72	81
	R513A	TR	1.5	2	3	4	5	6	7.5	9	11	13	15	17	21	24
		K	5	7	10	14	17	21	26	32	38	44	53	60	75	86
	R407A	TR	2.5	3.5	5	6.5	8	10	11	14	17	21	23	26	33	40
		kW	9	12	17	23	28	34	39	50	59	72	80	91	116	140
	R290	TR	3	4	5	7	9	10	12	15	18	21	26	30	38	43
		kW	10	14	19	25	32	36	44	54	63	75	92	106	133	152

• 名义容量测试: 蒸发温度te: 4.4°C/40°F, 冷凝温度tc: 38°C/100°F, 阀组前制冷剂温度t: 37°C/98°F;  
 ※ 其它制冷剂根据客户要求定制。

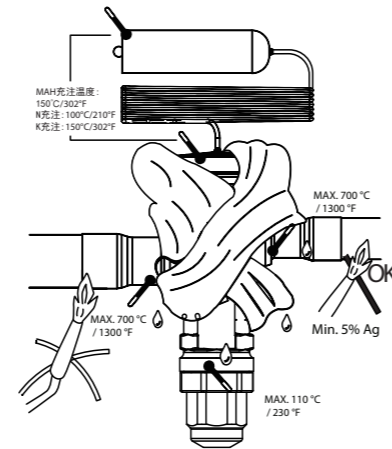
• Working Condition of Nominal Capacity: Evaporation Temperature te: 4.4°C/40°F, Condensing temperature tc: 38°C/100°F, Refrigerant temperature before valve group tl: 37°C/98°F;  
 ※ It can be customized based on clients' requirements for other refrigerants.

结构 Structure      外接管焊接示意图 Welding diagram for external connecting pipe



焊接说明:  
 • 首先用湿布或湿棉纱包在阀体上保护阀体内腔, 以防在焊接时温度过高烧坏阀内密封零件。  
 • 焊接时请注意焊枪火焰方向(应朝向外端)。  
 • 最好选用低温银焊条焊接, 降低焊接温度。

Welding instruction:  
 • Please use a wet cloth or wet cotton gauze to wrap the valve body to prevent the damage of sealing parts in the valve body during welding.  
 • Pay attention to the direction of the flames of the welding gun(it should be outward)  
 • It is better to use low temperature silver electrode for welding to lower the welding temperature.



选型表 Model selection							
制冷剂 Refrigerant	型号 Model	类型 Model	名义制冷量 Nominal refrigerating capacity		接口螺纹 (接口尺寸) Thread(Connection Size)		
					进口管 Inlet tube	出口管 Outlet tube	平衡管 Equalisation tube
			TR	kW			
R22	TRF22W-3-3-5	TRFW	3	10	3/8	5/8	1/4
	TRF22W-3-4-5		3	10	1/2	5/8	1/4
	TRF22W-4-4-7		4	14	1/2	7/8	1/4
	TRF22W-6-4-5		6	20	1/2	5/8	1/4
	TRF22W-6-4-7		6	20	1/2	7/8	1/4
	TRF22W-6-5-5		6	20	5/8	5/8	1/4
	TRF227-6-5-7		6	20	5/8	7/8	1/4
	TRF22W-7.5-5-7		7.5	27	5/8	7/8	1/4
	TRF22W-9-5-7		9	32	5/8	7/8	1/4
	TRF22W-9-5-9		9	32	5/8	1-1/8	1/4
	TRF22W-11-5-7		11	38	5/8	7/8	1/4
	TRF22W-11-5-9		11	38	5/8	1-1/8	1/4
	TRF22W-12-5-7		12	43	5/8	7/8	1/4
	TRF22W-12-5-9		12	43	5/8	1-1/8	1/4
	TRF22W-15-5-7		15	54	5/8	7/8	1/4
	TRF22W-15-5-9		15	54	5/8	1-1/8	1/4
	TRF22W-15-7-9		15	54	7/8	1-1/8	1/4
	TRF227-18-7-9		18	63	7/8	1-1/8	1/4
	TRF22W-18-7-11		18	63	7/8	1-3/8	1/4
	TRF22W-26-7-9		26	92	7/8	1-1/8	1/4
	TRF22W-26-7-11		26	92	7/8	1-3/8	1/4
	TRF22W-30-7-11		30	104	7/8	1-3/8	1/4
	TRF22W-30-9-11		30	104	1-1/8	1-3/8	1/4
	TRF22W-38-9-11		38	134	1-1/8	1-3/8	1/4
TRF22W-42-9-11	42	148	1-1/8	1-3/8	1/4		
R404A	TRF404W-2-3-5	TRFW	2	7	3/8	5/8	1/4
	TRF404W-2.5-4-7		2.5	9	1/2	7/8	1/4
	TRF404W-4-4-5		4	14	1/2	5/8	1/4
	TRF404W-4-4-7		4	14	1/2	7/8	1/4
	TRF404W-5-4-5		5	18	1/2	5/8	1/4
	TRF404W-5-5-7		5	18	5/8	7/8	1/4
	TRF404W-6-5-7		6	21	5/8	7/8	1/4
	TRF404W-7.5-5-7		7.5	26	5/8	7/8	1/4
	TRF404W-9-5-7		9	31	5/8	7/8	1/4
	TRF404W-11-5-9		11	39	5/8	1-1/8	1/4
	TRF404W-11-7-9		11	39	7/8	1-1/8	1/4
	TRF404W-11-9-11		11	39	1-1/8	1-3/8	1/4
	TRF404W-13-7-9		13	45	7/8	1-1/8	1/4
	TRF404W-18-7-11		18	64	7/8	1-3/8	1/4
	TRF404W-21-9-11		21	72	1-1/8	1-3/8	1/4
	TRF404W-26-9-11		26	92	1-1/8	1-3/8	1/4

选型表 Model selection							
制冷剂 Refrigerant	型号 Model	类型 Model	名义制冷量 Nominal refrigerating capacity		接口螺纹 (接口尺寸) Thread(Connec-tion Size)		
			TR	kW	进口管 Inlet tube	出口管 Outlet tube	平衡管 Equalisation tube
R134a	TRF134W-1.5-3-5	TRFW	1.5	6	3/8	5/8	1/4
	TRF134W-2.5-4-7		2.5	8	1/2	7/8	1/4
	TRF134W-3.5-4-5		3.5	12	1/2	5/8	1/4
	TRF134W-3.5-4-7		3.5	12	1/2	7/8	1/4
	TRF134W-4.5-5-7		4.5	17	5/8	7/8	1/4
	TRF134W-5.5-5-7		5.5	20	5/8	7/8	1/4
	TRF134W-7-5-7		7	24	5/8	7/8	1/4
	TRF134W-8-5-7		8	29	5/8	7/8	1/4
	TRF134W-10-5-9		10	37	5/8	1-1/8	1/4
	TRF134W-10-7-9		10	37	7/8	1-1/8	1/4
	TRF134W-12-7-9		12	44	7/8	1-1/8	1/4
	TRF134W-17-7-11		17	61	7/8	1-3/8	1/4
	TRF134W-17-9-11		17	61	1-1/8	1-3/8	1/4
	TRF134W-20-7-11		20	70	7/8	1-3/8	1/4
	TRF134W-20-9-11		20	70	1-1/8	1-3/8	1/4
TRF134W-25-9-11	25	87	1-1/8	1-3/8	1/4		
R410A	TRF410W-3.5-3-5	TRFW	3.5	12	3/8	5/8	1/4
	TRF410W-3.5-4-5		3.5	12	1/2	5/8	1/4
	TRF410W-4.5-4-7		4.5	16	1/2	7/8	1/4
	TRF410W-6.5-4-5		6.5	24	1/2	5/8	1/4
	TRF410W-6.5-4-7		6.5	24	1/2	7/8	1/4
	TRF410W-6.5-5-7		6.5	24	5/8	7/8	1/4
	TRF410W-9-4-5		9	32	1/2	5/8	1/4
	TRF410W-9-5-7		9	32	5/8	7/8	1/4
	TRF410W-11-5-7		11	37	5/8	7/8	1/4
	TRF410W-13-5-7		13	45	5/8	7/8	1/4
	TRF410W-15-5-7		15	54	5/8	7/8	1/4
	TRF410W-15-5-9		15	54	5/8	1-1/8	1/4
	TRF410W-15-7-7		15	54	7/8	7/8	1/4
	TRF410W-15-7-9		15	54	7/8	1-1/8	1/4
	TRF410W-19-5-9		19	68	5/8	1-1/8	1/4
	TRF410W-19-7-9		19	68	7/8	1-1/8	1/4
	TRF410W-23-7-9		23	79	7/8	1-1/8	1/4
	TRF410W-23-7-11		23	79	7/8	1-3/8	1/4
	TRF410W-26-7-9		26	91	7/8	1-1/8	1/4
	TRF410W-31-9-9		31	110	1-1/8	1-1/8	1/4
TRF410W-31-7-11	31	110	7/8	1-3/8	1/4		
TRF410W-31-9-11	31	110	1-1/8	1-3/8	1/4		
TRF410W-35-9-11	35	125	1-1/8	1-3/8	1/4		
TRF410W-46-9-11	46	161	1-1/8	1-3/8	1/4		
TRF410W-52-9-11	52	182	1-1/8	1-3/8	1/4		

## TER/ TERW型热力膨胀阀 TER/ TERW Thermostatic Expansion Valve



TER型  
Model TER

### 产品概述 Product Description

- TER/TERW型热力膨胀阀适用于所有常用制冷剂，用于调节蒸发器中液体制冷剂的供给量。
- TER/TERW型膨胀阀适用于水冷机组、空调系统、热泵、冷藏箱、传统制冷系统等多种场景。

- Model TER/TERW Thermostatic expansion valve is suitable to all common refrigerants and used to adjust the liquid refrigerant supply volume to the evaporator.
- Mode TER/TERW Thermostatic expansion valve is suitable to water-chilled units, air conditioning system, heat pump, cold storage facility, traditional refrigerating system and other many sites.

### 特点 Features

- 制冷剂：R22,R407C,R404A,R507,R134a,R410A,R32,R452B,R454B,R1234ze,R513A,R407A和 R290。
- 容量范围：1/4-10TR/0.88-42.24kW。
- 提供MOP设计(最大工作压力)。
- 直通型设计。
- 低迟滞。
- 平衡流口设计。
- 旁通流口设计。
- 最大工作压力46bar/667psig。
- 热泵系统中使用寿命长。
- 过热度可调。
- TER、TERW系列产品(不带MOP)可用于双向流。
- 提供各种安装连接方式(喇叭口、MIO、ORFS)。

- Refrigerants : R22,R407C,R404A,R507,R134a,R410A,R32, R452B,R454B,R1234ze,R513A,R407A.and R290.
- Capacity range: 1/4-10TR/0.88-42.24kW.
- MOP =Max. Operation Pressure.
- Be capable of providing MOP design (Max. working pressure).
- Srtaightway design.
- Low hysteresis.
- Balance port design.
- Bleed Percentage design.
- Maximum working pressure 46bar/667psig.
- Long lifetime in heat pump applications.
- Adjustable superheat setting.
- TER、TERW series (without MOP) are suitable to biflow applications in both directions.
- Be capable of providing various installing and connecting method (flared、MIO、ORFS) .

### 技术参数 Technical Parameters

温度范围 Temperature range	动力头最高温度 Max. temperature of power element: MAH:150°C/302°F K:150°C/302°F N:100°C/210°F 阀体最高温度 110°C/230°F Max. temperature of valve body: 110°C/230°F
标准蒸发温度范围 Standard evaporating temperature range	MAH:-30-15°C/-22-60°F N:-40-10°C/-40-50°F(不带MOP without MOP) K:-25-10°C,MOP 15°C/-15-50°F,MOP 60°F
过热度调节范围 Adjustable range of superheat	0-8K
最大工作压力 Max. working pressure	46bar/667psig
出厂静止过热度调定值 Factory setting point of static superheat	4°C
毛细管长度 Capillary length	1.5m (59 inch) (特殊情况可按客户要求定制) (it can be customized based on clients' requirements)

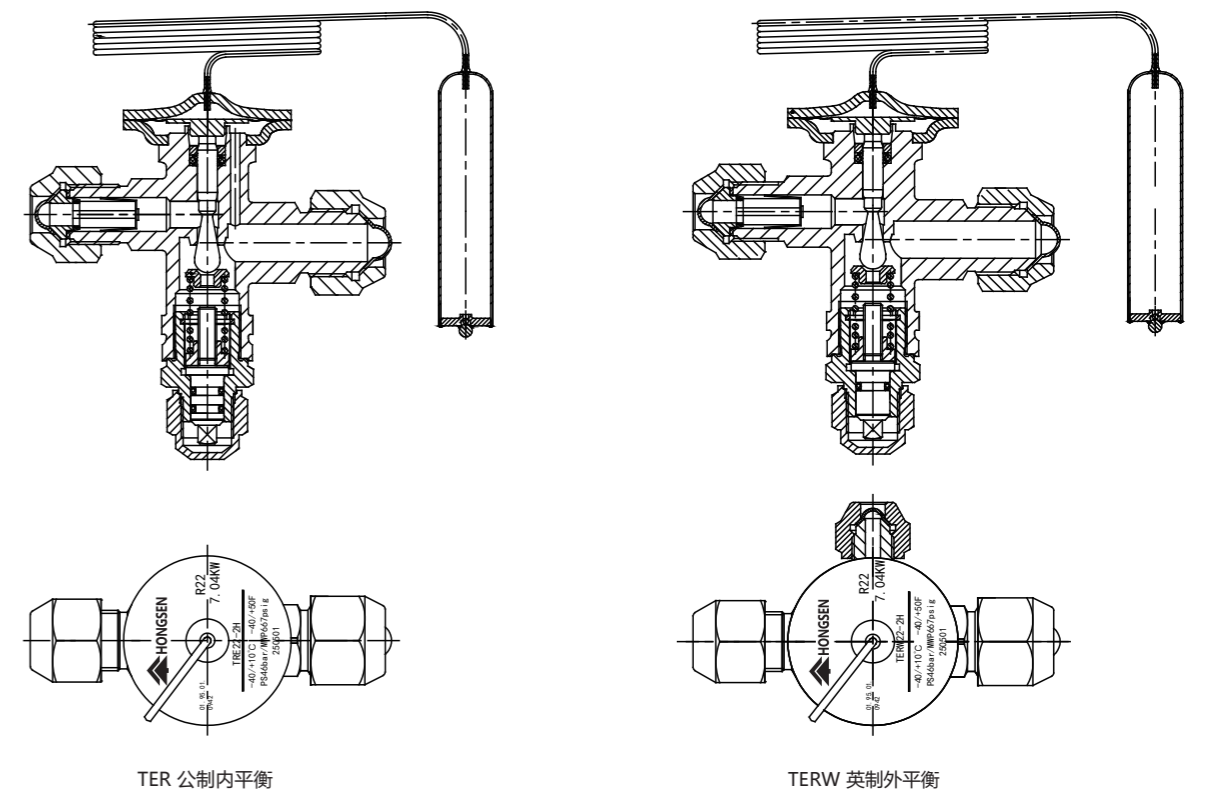
名义制冷量 Nominal refrigerating capacity														
阀型 Model			TER/TERW											
范围 N, K, MAH	R22	型号Model	1/2H	1H	1-1/2H	2H	3H	4H	5H	6H	7-1/2H	10H	12H	
		kW	1.76	3.52	5.28	7.04	10.56	14.08	17.6	21.12	26.4	35.2	42.24	
	R407c	型号Model	1/2N	1N	1-1/2N	2N	3N	4N	5N	6N	7-1/2N	10N	12N	
		kW	1.76	3.52	5.28	7.04	10.56	14.08	17.6	21.12	26.4	35.2	42.24	
	R134a	型号Model	1/4M	1/2M	1M	1-1/2M	2M	2-1/2M	3M	4M	5-1/2M	7-1/2M	9M	
		kW	0.88	1.76	3.52	5.28	7.04	8.8	10.56	12.32	19.36	26.4	31.68	
	R404A/ R507	型号Model	1/3S	2/3S	1S	1-1/2S	2S	3S	3-1/2S	4S	5S	7S	8-1/2S	
		kW	1.17	2.35	3.52	5.28	7.04	10.56	12.32	14.08	17.6	26.64	29.92	
	<p>• 名义容量测试: 蒸发温度te: 4.4°C/40°F, 冷凝温度tc: 38°C/100°F, 阀组前制冷剂温度tl: 37°C/98°F;            ※ 其它制冷剂根据客户要求定制。</p> <p>• Working Condition of Nominal Capacity: Evaporation Temperature te: 4.4°C/40°F, Condensing temperature tc: 38°C/100°F, Refrigerant temperature before valve group tl: 37°C/98°F;            ※ It can be customized based on clients' requirements for other refrigerants.</p>													

选型表 Model selection									
制冷剂 Refrigerant	型号 Model	类型 Model	型号 Model	名义制冷量 Nominal refrigerating capacity (kW)	接口螺纹 (接口尺寸) Thread(Connection Size)				
					平衡方式 Pressure Equalisation	进口管 Inlet tube	出口管 Outlet tube	平衡管 Equalisation tube	
R22	TER22-1/2H(Dg8*Dg10)	TER	1/2H	1.76	内平衡 Internal equalisation	M16*1.5(Φ10)	M18*1.5(Φ12)	/	
	TER22-1H(Dg8*Dg10)		1H	3.52		M16*1.5(Φ10)	M18*1.5(Φ12)	/	
	TER22-1-1/2H(Dg8*Dg10)		1-1/2H	5.28		M16*1.5(Φ10)	M18*1.5(Φ12)	/	
	TER22-2H(Dg8*Dg10)		2H	7.04		M16*1.5(Φ10)	M18*1.5(Φ12)	/	
	TER22-3H(Dg8*Dg10)		3H	10.56		M16*1.5(Φ10)	M18*1.5(Φ12)	/	
	TER22-4H(Dg8*Dg10)		4H	14.08		M16*1.5(Φ10)	M18*1.5(Φ12)	/	
	TER22-5H(Dg8*Dg13)		5H	17.60		M16*1.5(Φ10)	M22*1.5(Φ16)	/	
	TER22-6H(Dg10*Dg13)		6H	21.12		M18*1.5(Φ12)	M22*1.5(Φ16)	/	
	TER22-7-1/2H(Dg10*Dg13)		7-1/2H	26.40		M18*1.5(Φ12)	M22*1.5(Φ16)	/	
	TER22-10H(Dg10*Dg13)		10H	35.20		M18*1.5(Φ12)	M22*1.5(Φ16)	/	
	TER22-12H(Dg10*Dg13)		12H	42.24		M18*1.5(Φ12)	M22*1.5(Φ16)	/	
	TERW22-1/2H (3/8 SAE*1/2 SAE)		TERW	1/2H		1.76	外平衡 External equalisation	3/8 SAE	1/2 SAE
	TERW22-1H (3/8 SAE*1/2 SAE)	1H		3.52	3/8 SAE	1/2 SAE		1/4SAE	
	TERW22-1-1/2H (3/8 SAE*1/2 SAE)	1-1/2H		5.28	3/8 SAE	1/2 SAE		1/4SAE	
	TERW22-2H (3/8 SAE*1/2 SAE)	2H		7.04	3/8 SAE	1/2 SAE		1/4SAE	
	TERW22-3H (3/8 SAE*1/2 SAE)	3H		10.56	3/8 SAE	1/2 SAE		1/4SAE	
	TERW22-4H (3/8 SAE*1/2 SAE)	4H		14.08	3/8 SAE	1/2 SAE		1/4SAE	
	TERW22-5H (3/8 SAE*5/8 SAE)	5H		17.60	3/8 SAE	5/8 SAE		1/4SAE	
	TERW22-6H (1/2 SAE*5/8 SAE)	6H		21.12	1/2 SAE	5/8 SAE		1/4SAE	
	TERW22-7-1/2H (1/2 SAE*5/8 SAE)	7-1/2H		26.40	1/2 SAE	5/8 SAE		1/4SAE	
	TERW22-10H (1/2 SAE*5/8 SAE)	10H		35.20	1/2 SAE	5/8 SAE		1/4SAE	
	TERW22-12H (1/2 SAE*5/8 SAE)	12H		42.24	1/2 SAE	5/8 SAE		1/4SAE	
	R134a	TER134-1/4M(Dg8*Dg10)		TER	1/4M	0.88		内平衡 Internal equalisation	M16*1.5(Φ10)
		TER134-1/2M(Dg8*Dg10)	1/2M		1.76	M16*1.5(Φ10)	M18*1.5(Φ12)		/
TER134-1M(Dg8*Dg10)		1M	3.52		M16*1.5(Φ10)	M18*1.5(Φ12)	/		
TER134-1-1/2M(Dg8*Dg10)		1-1/2M	5.28		M16*1.5(Φ10)	M18*1.5(Φ12)	/		
TER134-2M(Dg8*Dg10)		2M	7.04		M16*1.5(Φ10)	M18*1.5(Φ12)	/		
TER134-2-1/2M(Dg8*Dg10)		2-1/2M	8.80		M16*1.5(Φ10)	M18*1.5(Φ12)	/		
TER134-3M(Dg8*Dg13)		3M	10.56		M16*1.5(Φ10)	M22*1.5(Φ16)	/		
TER134-4M(Dg10*Dg13)		4M	12.32		M18*1.5(Φ12)	M22*1.5(Φ16)	/		
TER134-5-1/2M(Dg10*Dg13)		5-1/2M	19.36		M18*1.5(Φ12)	M22*1.5(Φ16)	/		
TER134-7-1/2M(Dg10*Dg13)		7-1/2M	26.40		M18*1.5(Φ12)	M22*1.5(Φ16)	/		
TER134-9M(Dg10*Dg13)		9M	31.68		M18*1.5(Φ12)	M22*1.5(Φ16)	/		
TERW134-1/4M (3/8 SAE*1/2 SAE)		TERW	1/4M		0.88	外平衡 External equalisation	3/8 SAE		1/2 SAE
TERW134-1/2M (3/8 SAE*1/2 SAE)			1/2M	1.76	3/8 SAE		1/2 SAE	1/4SAE	
TERW134-1M (3/8 SAE*1/2 SAE)			1M	3.52	3/8 SAE		1/2 SAE	1/4SAE	
TERW134-1-1/2M (3/8 SAE*1/2 SAE)			1-1/2M	5.28	3/8 SAE		1/2 SAE	1/4SAE	
TERW134-2M (3/8 SAE*1/2 SAE)			2M	7.04	3/8 SAE		1/2 SAE	1/4SAE	
TERW134-2-1/2M (3/8 SAE*1/2 SAE)			2-1/2M	8.80	3/8 SAE		1/2 SAE	1/4SAE	
TERW134-3M (3/8 SAE*5/8 SAE)			3M	10.56	3/8 SAE		5/8 SAE	1/4SAE	
TERW134-4M (1/2 SAE*5/8 SAE)			4M	12.32	1/2 SAE		5/8 SAE	1/4SAE	

选型表 Model selection									
制冷剂 Refrigerant	型号 Model	类型 Model	型号 Model	名义制冷量 Nominal refrigerating capacity (kW)	接口螺纹 (接口尺寸) Thread(Connection Size)				
					平衡方式 Pressure Equalisation	进口管 Inlet tube	出口管 Outlet tube	平衡管 Equalisation tube	
R134a	TERW134-5-1/2M (1/2 SAE*5/8 SAE)	TERW	5-1/2M	19.36	外平衡 External equalisation	1/2 SAE	5/8 SAE	1/4SAE	
	TERW134-7-1/2M (1/2 SAE*5/8 SAE)		7-1/2M	26.40		1/2 SAE	5/8 SAE	1/4SAE	
	TERW134-9M (1/2 SAE*5/8 SAE)		9M	31.68		1/2 SAE	5/8 SAE	1/4SAE	
R407C	TER407-1/2N(Dg8*Dg10)	TER	1/2N	1.76	内平衡 Internal equalisation	M16*1.5(Φ10)	M18*1.5(φ12)	/	
	TER407-1N(Dg8*Dg10)		1N	3.52		M16*1.5(Φ10)	M18*1.5(φ12)	/	
	TER407-1-1/2N(Dg8*Dg10)		1-1/2N	5.28		M16*1.5(Φ10)	M18*1.5(φ12)	/	
	TER407-2N(Dg8*Dg10)		2N	7.04		M16*1.5(Φ10)	M18*1.5(φ12)	/	
	TER407-3N(Dg8*Dg10)		3N	10.56		M16*1.5(Φ10)	M18*1.5(φ12)	/	
	TER407-4N(Dg8*Dg10)		4N	14.08		M16*1.5(φ10)	M18*1.5(φ12)	/	
	TER407-5N(Dg8*Dg13)		5N	17.60		M16*1.5(φ10)	M22*1.5(Φ16)	/	
	TER407-6N(Dg10*Dg13)		6N	21.12		M18*1.5(φ12)	M22*1.5(Φ16)	/	
	TER407-7-1/2N(Dg10*Dg13)		7-1/2N	26.40		M18*1.5(Φ12)	M22*1.5(Φ16)	/	
	TER407-10N(Dg10*Dg13)		10N	35.20		M18*1.5(Φ12)	M22*1.5(Φ16)	/	
	TER407-12N(Dg10*Dg13)		12N	42.24		M18*1.5(Φ12)	M22*1.5(φ16)	/	
	TERW407-1N (3/8 SAE*1/2 SAE)		TERW	1/2N		1.76	外平衡 External equalisation	3/8 SAE	1/2 SAE
	TERW407-1-1/2N (3/8 SAE*1/2 SAE)	1N		3.52	3/8 SAE	1/2 SAE		1/4SAE	
	TERW407-2N (3/8 SAE*1/2 SAE)	1-1/2N		5.28	3/8 SAE	1/2 SAE		1/4SAE	
	TERW407-2N (3/8 SAE*1/2 SAE)	2N		7.04	3/8 SAE	1/2 SAE		1/4SAE	
	TERW407-3N (3/8 SAE*1/2 SAE)	3N		10.56	3/8 SAE	1/2 SAE		1/4SAE	
	TERW407-4N (3/8 SAE*1/2 SAE)	4N		14.08	3/8 SAE	1/2 SAE		1/4SAE	
	TERW407-5N (3/8 SAE*5/8 SAE)	5N		17.60	3/8 SAE	5/8 SAE		1/4SAE	
	TERW407-6N (1/2 SAE*5/8 SAE)	6N		21.12	1/2 SAE	5/8 SAE		1/4SAE	
	TERW407-7-1/2N (1/2 SAE*5/8 SAE)	7-1/2N		26.40	1/2 SAE	5/8 SAE		1/4SAE	
	TERW407-10N (1/2 SAE*5/8 SAE)	10N		35.20	1/2 SAE	5/8 SAE		1/4SAE	
	TERW407-12N (1/2 SAE*5/8 SAE)	12N		42.24	1/2 SAE	5/8 SAE		1/4SAE	
	R404A/ R507	TER404-1/3S(Dg8*Dg10)		TER	1/3S	1.17		内平衡 Internal equalisation	M16*1.5(Φ10)
		TER404-2/3S(Dg8*Dg10)	2/3S		2.35	M16*1.5(Φ10)	M18*1.5(φ12)		/
TER404-1S(Dg8*Dg10)		1S	3.52		M16*1.5(Φ10)	M18*1.5(φ12)	/		
TER404-1-1/2S(Dg8*Dg10)		1-1/2S	5.28		M16*1.5(Φ10)	M18*1.5(φ12)	/		
TER404-2S(Dg8*Dg10)		2S	7.04		M16*1.5(Φ10)	M18*1.5(φ12)	/		
TER404-3S(Dg8*Dg10)		3S	10.56		M16*1.5(φ10)	M18*1.5(φ12)	/		
TER404-3-1/2S(Dg8*Dg13)		3-1/2S	12.32		M16*1.5(φ10)	M22*1.5(Φ16)	/		
TER404-4S(Dg10*Dg13)		4S	14.08		M18*1.5(φ12)	M22*1.5(Φ16)	/		
TER404-5S(Dg10*Dg13)		5S	17.60		M18*1.5(Φ12)	M22*1.5(Φ16)	/		
TER404-7SDg10*Dg13)		7S	26.64		M18*1.5(Φ12)	M22*1.5(Φ16)	/		
TER404-8-1/2S(Dg10*Dg13)		8-1/2S	29.92		M18*1.5(Φ12)	M22*1.5(φ16)	/		
TERW404-1/3S (3/8 SAE*1/2 SAE)		TERW	1/3S		1.17	外平衡 External equalisation	3/8 SAE		1/2 SAE
TERW404-2/3S (3/8 SAE*1/2 SAE)			2/3S	2.35	3/8 SAE		1/2 SAE	1/4SAE	
TERW404-1S (3/8 SAE*1/2 SAE)			1S	3.52	3/8 SAE		1/2 SAE	1/4SAE	
TERW404-1-1/2S (3/8 SAE*1/2 SAE)			1-1/2S	5.28	3/8 SAE		1/2 SAE	1/4SAE	
TERW404-2S (3/8 SAE*1/2 SAE)			2S	7.04	3/8 SAE		1/2 SAE	1/4SAE	

选型表 Model selection								
制冷剂 Refrigerant	型号 Model	类型 Model	型号 Model	名义制冷量 Nominal refrigerating capacity (kW)	接口螺纹 (接口尺寸) Thread(Connection Size)			
					平衡方式 Pressure Equalisation	进口管 Inlet tube	出口管 Outlet tube	平衡管 Equalisation tube
R404A/ R507	TERW404-3S (3/8 SAE*1/2 SAE)	TERW	3S	10.56	外平衡 External equalisation	3/8 SAE	1/2 SAE	1/4SAE
	TERW404-3-1/2S (3/8 SAE*5/8 SAE)		3-1/2S	12.32		3/8 SAE	5/8 SAE	1/4SAE
	TERW404-4S (1/2 SAE*5/8 SAE)		4S	14.08		1/2 SAE	5/8 SAE	1/4SAE
	TERW404-5S (1/2 SAE*5/8 SAE)		5S	17.60		1/2 SAE	5/8 SAE	1/4SAE
	TERW404-7S (1/2 SAE*5/8 SAE)		7S	26.64		1/2 SAE	5/8 SAE	1/4SAE
	TERW404-8-1/2S (1/2 SAE*5/8 SAE)		8-1/2S	29.92		1/2 SAE	5/8 SAE	1/4SAE

结构 Structure



## 球阀系列

# BALL VALVE *Series*

适用于双向流动,用于冷冻、冷藏和空气调节装置的液体、暖气和热气管路上,阀座与密封处具有很好的密封性。

配有一个带二次密封的密封帽。

Suitable for bidirectional flow, used in refrigeration, refrigeration and air conditioning devices of liquid, heating and heat pipes, seats and seals have good sealing.

Equipped with a sealed cap with a secondary seal.



# DQF型电动球阀 DQF type electric ball valve



产品概述 Product Description	
<ul style="list-style-type: none"> <li>DQF型球阀是电动调节的截止阀，适用于双向流动；</li> <li>DQF型球阀用于冷冻、冷藏和空气调节装置的液体、吸气和热气管路上；</li> <li>DQF型球阀的阀座与密封处具有很好的密封性；</li> <li>DQF型球阀为直通型，可提供最大的流量，同时该阀的工作温度范围宽；</li> <li>DQF型球阀带电动驱动装置，可实现远程控制。</li> </ul>	<ul style="list-style-type: none"> <li>DQF ball valve is a shut-off valve for electric adjustment, which is suitable for bi-flow direction;</li> <li>DQF ball valve can be used on the liquid, air suction and hot vapor pipelines of the refrigeration, cold storage and air condition facilities.</li> <li>The DQF ball valve has a good sealing performance at the seat.</li> <li>The DQF ball valve has a direct pass, which provides the maximum flow. Meanwhile, it has wide working temperature range.</li> <li>DQF ball valve can help to achieve remote control with an electric driver.</li> </ul>
特点 Features	
<ul style="list-style-type: none"> <li>全开和全关通电动驱动器自动控制且均有旋转限位</li> <li>断电可手动调节</li> <li>超低运行噪音</li> <li>流动无压降</li> <li>从全开到全闭只需转动1/4圈</li> </ul>	<ul style="list-style-type: none"> <li>具有双向流动性</li> <li>氩弧焊接结构，强度高。</li> <li>防爆阀杆设计，安全性好</li> <li>改性PTFE密封，密封可靠</li> </ul>
<ul style="list-style-type: none"> <li>Full open/close can be realized automatically through the driver, rotating limit pin applied.</li> <li>Manual adjustment available when power off</li> <li>Ultra-low running noise</li> <li>No flowing pressure drop</li> <li>A 1/4 circle rotating to realize full open/close</li> <li>Bi-flow direction</li> <li>Arc welding structure, high strength.</li> <li>Explosion-proof design on valve stem, additional safety</li> <li>Modified PTFE sealing, reliable sealing</li> </ul>	

技术参数 Technical Parameters	
适用介质: HCFC, HFC	Applicable medium: HCFC, HFC
适用介质温度: -40°C ~ +120°C	Applicable medium temperature: -40 °C ~ +120 °C
最大工作压力: 4.5MPa	Maximum work pressure: 4.5MPa
最大耐压压力: 6.5MPa	Maximum pressure resistance: 6.5MPa

DQF球阀选型表 Model Selection						
型号 Model	规格 Size	通径 OD(mm)	Kv值(m³/h)	扭矩 (N.m) Torque	动作时间(S) Running time	配套驱动器 Driver
DQF10	3/8 (φ10)	φ14	5.7	5	20	HS/HVD24-5Q
DQF12	1/2 (φ12)	φ14	10.6	5	20	HS/HVD24-10Q
DQF16	5/8 (φ16)	φ14	14.1	5	20	
DQF19	3/4 (φ19)	φ16	20.4	5	20	
DQF22	7/8 (φ22)	φ19	28.2	10	20	
DQF28	1-1/8 (φ28)	φ25	52	10	20	HS/HVD24-20Q
DQF35	1-3/8 (φ35)	φ31	80	20	20	
DQF42	1-5/8 (φ42)	φ37	121	40	20	HS/HVD24-40Q
DQF54	2-1/8 (φ54)	φ50	200	40	20	
DQF67	2-5/8 (φ67)	φ50	200	40	20	
DQF79	3-1/8 (φ79)	φ50	200	40	20	

电动驱动器选型表 Model selection for Motor driver									
型号 Model	旋转角 Rotating ang	扭矩 Torque	动作时 Running time	额定电压 (V) Voltage	功率(W) Power	防护等级 Saterproof level	噪音 Noise	重量(kg) Weight	
HS/HVD24-5Q	90°	5	20	AC/DC24V 50/60Hz	运行Running 3.0W 待机Standby 0.5W	IP54	55db	1.1	
HS/HVD24-10Q	90°	10	20	AC/DC24V 50/60Hz	运行 Running 4.5W 待机 Standby 0.5W			1.1	
HS/HVD24-20Q	90°	20	20	AC/DC24V 50/60Hz	运行 Running 8.0W 待机 Standby 0.5W			1.4	
HS/HVD24-40Q	90°	40	20	AC/DC24V 50/60Hz	运行 Running 15W 待机 Standby 3.0W			1.5	

## 接线图 Wiring

### 开关型接线表

适用于

HS-HVD24S-5Q HS-HVD230S-5Q  
 HS-HVD24S-10Q HS-HVD230S-10Q  
 HS-HVD24S-20Q HS-HVD230S-20Q  
 HS-HVD24S-40Q HS-HVD230S-40Q  
 HS-HVD24S-5UQ HS-HVD230S-5UQ  
 HS-HVD24S-8UQ HS-HVD230S-8UQ

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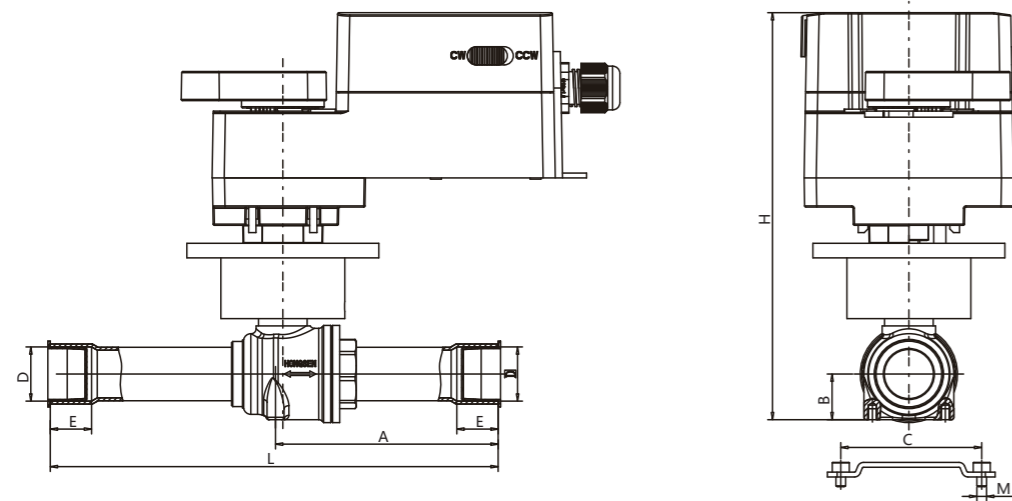
### 模拟型接线表

适用于

HS-HVA24S-5Q HS-HVA230S-5Q  
 HS-HVA24S-10Q HS-HVA230S-10Q  
 HS-HVA24S-20Q HS-HVA230S-20Q  
 HS-HVA24S-40Q HS-HVA230S-40Q  
 HS-HVA24S-5UQ HS-HVA230S-5UQ  
 HS-HVA24S-8UQ HS-HVA230S-8UQ

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HS-HVA24-5Q HS-HVA230-5Q  
 HS-HVA24-10Q HS-HVA230-10Q  
 HS-HVA24-20Q HS-HVA230-20Q  
 HS-HVA24-40Q HS-HVA230-40Q  
 HS-HVA24-5UQ HS-HVA230-5UQ  
 HS-HVA24-8UQ HS-HVA230-8UQ



型号 Model	外形尺寸 Overall Dimension							
	D	L	E	H	A	B	C	M
DQF10	$\varphi 10.1^{+0.20}_0$	138	8	139	75	15	50	M4
DQF12	$\varphi 12.8^{+0.20}_0$	159	10	139	83	15	50	M4
DQF16	$\varphi 16.1^{+0.20}_0$	159	12	139	83	15	50	M4
DQF19	$\varphi 19.1^{+0.20}_0$	185	14	145	100.5	16.5	58	M4
DQF22	$\varphi 22.3^{+0.20}_0$	184	17	168	99	19	58	M4
DQF28	$\varphi 28.7^{+0.20}_0$	208	20	191	112	24	66	M4
DQF35	$\varphi 35.2^{+0.20}_0$	251	25	211	135	30	80	M6
DQF42	$\varphi 41.5^{+0.20}_0$	280	28	222.5	150.5	35	87	M6
DQF54	$\varphi 54.2^{+0.20}_0$	305	34	242	166.5	45.5	106	M6
DQF67	$\varphi 66.8^{+0.20}_0$	306	37	242	167	45.5	106	M6
DQF79	$\varphi 79.6^{+0.20}_0$	305	41	242	166.5	45.5	106	M6

It is not consciousness that determines life, but life that determines consciousness.

— Marx and Engels in Germany (philosopher, thinker)

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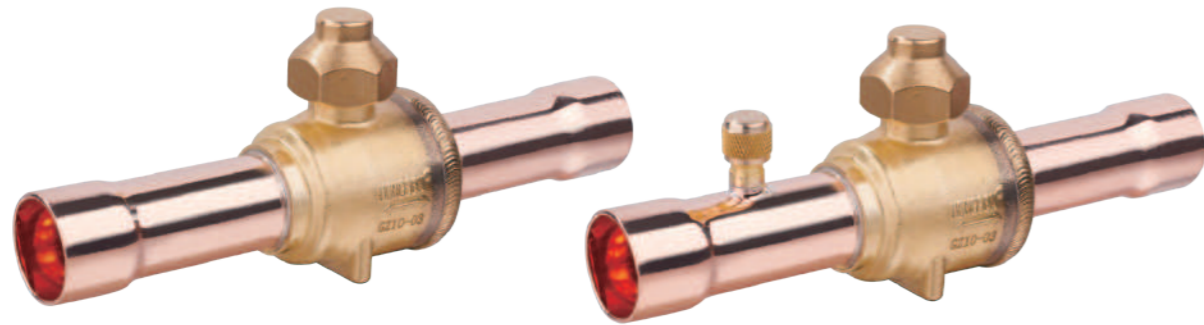


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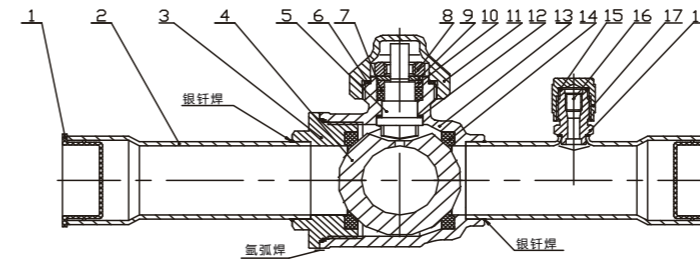
不是意识决定生活，而是生活决定意识。

— 德国的马克思&恩格斯（哲学家，思想家）

# HBC型球阀 Model HBC Ball Valve

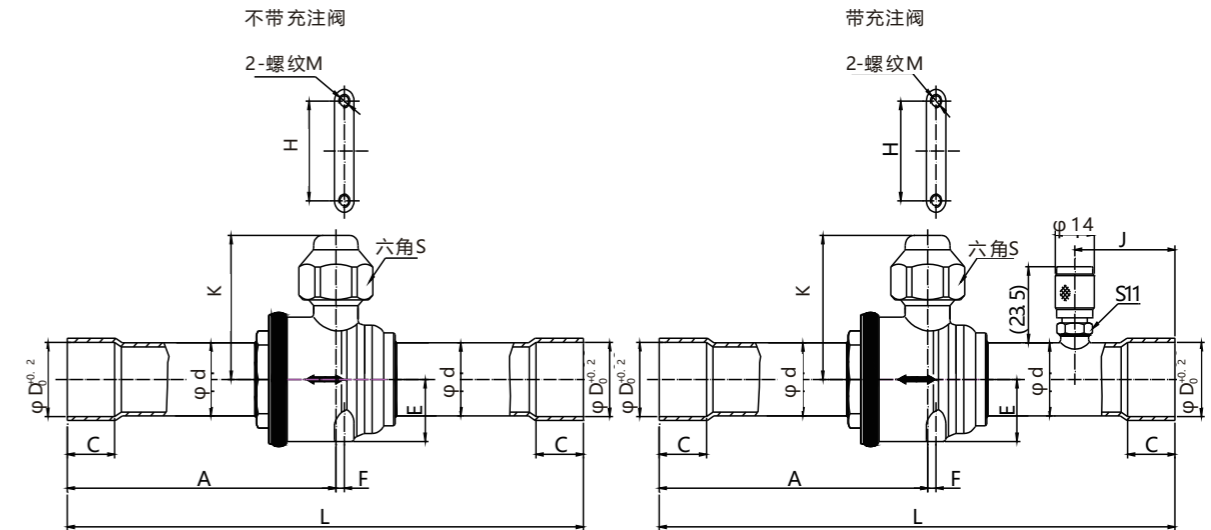


## 结构 Structure



- |                      |                                |
|----------------------|--------------------------------|
| 1. 防尘帽 dust cap      | 11. 阀帽 valve cap               |
| 2. 接管 copper tube    | 12. 密封垫圈 (PTFE) sealing washer |
| 3. 阀盖 valve bonnet   | 13. 阀体 valve body              |
| 4. 阀球 valve ball     | 14. 密封垫片 (改性PTFE) seal gasket  |
| 5. 阀杆 valve stem     | 15. 密封环 sealing ring           |
| 6. 阀帽垫片 cap gasket   | 16. 气门芯 valve core             |
| 7. 填料环 packing ring  | 17. 充注帽 charging cap           |
| 8. 锁紧螺母 locknut      | 18. 充注阀体 charging valve        |
| 9. 锁片 lock;          |                                |
| 10. 压圈 clamping ring |                                |

## 外形尺寸 Overall Dimension



产品概述 Product Description	
<ul style="list-style-type: none"> <li>HBC型球阀是手动调节的截止阀, 适用于双向流动。</li> <li>HBC型球阀用于冷冻、冷藏和空气调节装置的液体、吸气和热气管路上。</li> <li>HBC型球阀的阀座与密封处具有很好的密封性。</li> <li>HBC型球阀为直通型, 可提供最大的流量, 同时该阀的工作温度范围宽。</li> <li>HBC型球阀配有一个带二次密封的密封帽。</li> </ul>	<ul style="list-style-type: none"> <li>Model HBC ball valve is a manually regulated shut-off valve, which is applicable to two-direction flow.</li> <li>Model HBC ball valve is used on the liquid, air suction and hot vapor piping of the freezer, could store and air conditioning unit.</li> <li>The valve seat of Model HBC ball valve is well sealed with perfect sealing performance.</li> <li>Model HBC ball valve is a through-type ball valve with maximum flow rate and wide scope of operating temperature.</li> <li>Model HBC ball valve is equipped with a secondary sealing cap.</li> </ul>
特点 Features	
<ul style="list-style-type: none"> <li>流动无压力降</li> <li>从全开到全闭只需转动1/4圈</li> <li>全开和全闭均有旋转限位</li> <li>阀杆顶端标记是阀的全开和全闭</li> <li>具有双向流动性</li> <li>氩弧焊接结构</li> </ul>	<ul style="list-style-type: none"> <li>防爆阀杆设计</li> <li>改性的PTFE密封</li> <li>可防止内部积液</li> <li>能安装在控制板上</li> </ul>
<ul style="list-style-type: none"> <li>No pressure drop in flow.</li> <li>Only turn 1/4 circle to make valve full open or full close.</li> <li>Turning stop for full open or full close.</li> <li>Full Open and Full Close mark on top of valve stem.</li> <li>Two-direction flow is available.</li> <li>Argon arc welded structure.</li> <li>Explosion-proof valve stem design.</li> <li>Modified PTFE sealing.</li> <li>Inside liquid accumulation is avoided.</li> <li>Could be mounted on the control panel.</li> </ul>	
技术参数 Technical Parameters	

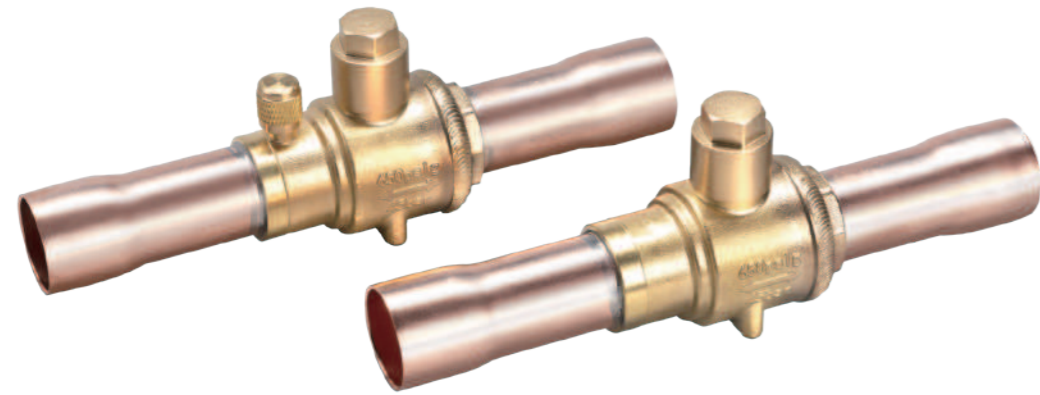
适用制冷剂 Applicable Refrigerant:	HCFC or HFC(客户选择)(Customer choice)
适用介质温度 Applicable Medium Temperature:	-40~+120°C
最大工作压力 MAX.Working Pressure	4.5MPa
最大耐压压力 MAX. Compression Pressure	6.5MPa
制冷剂年泄漏量 Yearly Leakage of Refrigerant	≤2g R22/a

- HBC型球阀包括2种阀型: 一种带充注检测口, 一种不带充注检测口。
- Two types of Model HBC ball valve are available: one is equipped with the charging and inspection port; the other is not equipped with the charging and inspection port.

选型表 Model Selection							
型号Model	规格Size	通径OD(mm)	Kv值(m3/h)	型号Model	规格Size	通径OD(mm)	Kv值(m3/h)
HBC-6S	1/4(Φ6)	Φ10	2	HBC-28	1-1/8(Φ28)	Φ25	52.0
HBC-10S	3/8(Φ10)	Φ10	5.7	HBC-35	1-3/8(Φ35)	Φ31	80
HBC-12S	1/2(Φ12)	Φ10	5.7	HBC-42	1-5/8(Φ42)	Φ37	121
HBC-10	3/8(Φ10)	Φ14	5.7	HBC-54	2-1/8(Φ54)	Φ50	200
HBC-12	1/2(Φ12)	Φ14	10.6	HBC-67	2-5/8(Φ67)	Φ50	200
HBC-16	5/8(Φ16)	Φ14	14.1	HBC-79	3-1/8(Φ79)	Φ50	200
HBC-19	3/4(Φ19)	Φ16	20.4	HBC-67A	2-5/8(Φ67)	Φ60.5	310
HBC-22	7/8(Φ22)	Φ19	28.2	HBC-79A	3-1/8(Φ79)	Φ73	700

型号 Model	A	C	D	d	E	F	K	M	J	H	L
HBC-6S	57	6	6.5	10	14	0	32.5	M4	20	44	110
HBC-10S	65	8	10.1	10	14	0	32.5	M4	26	44	126
HBC-12S	67	10	12.8	12	14	0	32.5	M4	26	44	130
HBC-10	73	9	10.1	16	14.5	2	38	M4	30	50	138
HBC-12	83	10	12.8	16	14.5	2	38	M4	30	50	159
HBC-16	83	12	16.1	16	14.5	2	38	M4	30	50	159
HBC-19	97	14	19.1	19	16.5	3	42	M4	36	58	185
HBC-22	96	17	22.3	22	19	3	43	M4	36	58	185
HBC-28	108	20	28.7	28	24	4	52.5	M4	44	66	208
HBC-35	130	25	35.2	35	30	5	64	M6	44	80	251
HBC-42	145	29	41.5	41.3	35	6	74	M6	56	87	281
HBC-54	157	35	54.2	54	45.5	9	83.5	M6	56	106	305
HBC-67	157	37	67	54	45.5	9	83.5	M6	63	106	305
HBC-79	157	40	79.6	54	45.5	9	83.5	M6	63	106	305
HBC-67A	171	37	67	66.8	54	16	94	M6	72	117	343
HBC-79A	207	37	79.6	79.4	64	16	104	M6	80	117	413

# QFT型球阀 Model QFT Ball Valve



## 产品概述 Product Description

• QFT型球阀是手动调节的截止阀，适用于双向流动，用于冷冻、冷藏和空气调节装置的液体、暖气和热气管路上。采用阀杆密封和球阀密封两个特有的密封组件设计，并选用特殊的密封材质，保证了产品在常用制冷工况环境下良好运行。

Model QFT ball valve is a manually adjusted shut off valve, which is applicable to bidirectional flow, can be applied in the liquid, heating and hot gas pipelines of Refrigeration and A/C equipment. The special design of stem seal and valve ball seal with special sealing materials ensure the superior performance under common refrigerant working environment.

## 特点 Features

- 双向流动，可任意安装。
- 精密锻造优质铜材阀体。
- 介质流动压力降小。
- 防爆阀杆设计。
- 特选兼容常用制冷工况运行环境的密封圈。
- 全开和全闭均有旋转限位。
- 阀杆部位具有二次可靠密封结构。
- 能安装在控制板上便于固定。

- Bi-flow direction, can be installed arbitrarily.
- Precision forged high-quality copper valve body.
- Small pressure drop from medium refrigerants.
- Explosion-proof stem design.
- Sealing rings applicable for rotary-limit design for fully open/closed
- Secondary reliable sealing structure on the valve stem.
- Can be installed on the control board for easy fixation.

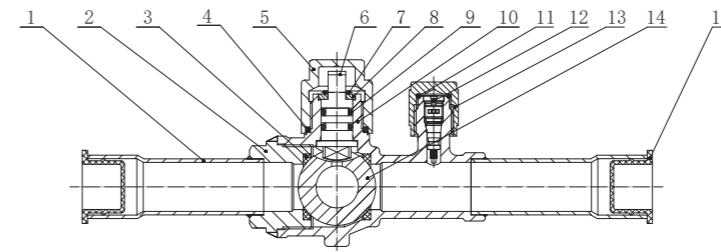
## 技术参数 Technical Parameters

最大工作压力 MAX. working pressure	650PSI/45BAR
适用制冷剂 Applicable refrigerant	R22, R134a, R404A, R407C, R410A等 R22, R134a, R404A, R407C, R410A, etc.
适用介质工作温度 Applicable medium working temperature	-40°C ~ +120°C

## 选型表 Model Selection

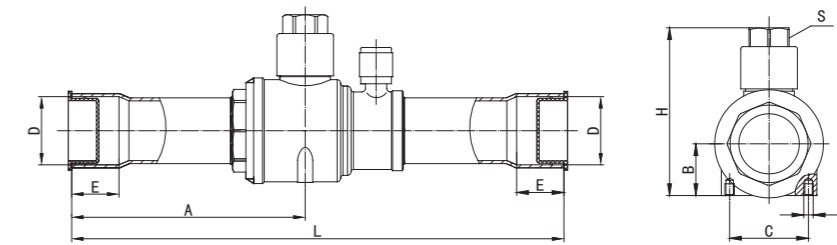
型号 Model	规格 size	
	焊接承口内径 ID (mm)	
QFT-6V / QFT-6	φ6.50 <sup>+0.20</sup>	
QFT-10V / QFT-10	φ10.10 <sup>+0.20</sup>	
QFT-12V / QFT-12	φ12.80 <sup>+0.20</sup>	
QFT-16V / QFT-16	φ16.10 <sup>+0.20</sup>	
QFT-19V / QFT-19	φ19.20 <sup>+0.20</sup>	
QFT-22V / QFT-22	φ22.30 <sup>+0.20</sup>	
QFT-28V / QFT-28	φ28.70 <sup>+0.20</sup>	
QFT-35V / QFT-35	φ35.20 <sup>+0.20</sup>	
QFT-42V / QFT-42	φ41.50 <sup>+0.23</sup>	
QFT-54V / QFT-54	φ54.20 <sup>+0.25</sup>	

## 结构 Structure

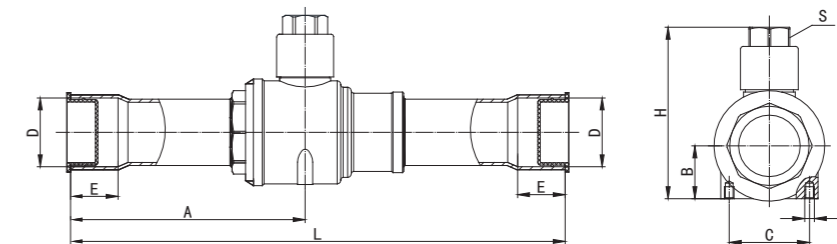


1. 接管 Copper tube
2. 阀盖 Valve bonnet
3. 密封垫片 Seal gasket
4. 阀帽垫片 cap gasket
5. 阀帽 Valve cap
6. 阀杆 Valve stem
7. 挡圈 Check ring
8. 限位片 Limiter
9. O形圈 O-Ring
10. 阀体 Valve body
11. 密封圈 Seal gasket
12. 气门芯 Valve core
13. 充注平帽 Charging cap
14. 钢球 Valve ball
15. 防尘帽 Cap

## 外形尺寸 Dimensions



带芯型QFT-V with Charging port



不带芯型QFT without Charging port

型号 Model	外形尺寸 Overall Dimension								
	D	L	E	H	A	B	C	M	S
QFT-6V/QFT-6	φ6.50 <sup>+0.20</sup>	120	7	45.2	51.1	14	16	M4	S12
QFT-10V/QFT-10	φ10.10 <sup>+0.20</sup>	140	9	45.2	60.9	14	16	M4	S12
QFT-12V/QFT-12	φ12.80 <sup>+0.20</sup>	140	10	45.2	60.9	14	16	M4	S12
QFT-16V/QFT-16	φ16.10 <sup>+0.20</sup>	159	14	53.3	70.8	17	16	M4	S14
QFT-19V/QFT-19	φ19.20 <sup>+0.20</sup>	169	16	54.2	76.5	16.5	22	M4	S14
QFT-22V/QFT-22	φ22.30 <sup>+0.20</sup>	186	17	57.0	86.5	18	24.8	M4	S14
QFT-28V/QFT-28	φ28.70 <sup>+0.20</sup>	208	20	70.4	98.8	22	34	M4	S17
QFT-35V/QFT-35	φ35.20 <sup>+0.20</sup>	251	25	80.0	119.2	27	38	M4	S17
QFT-42V/QFT-42	φ41.50 <sup>+0.23</sup>	280	29	100.1	137.1	33	48	M6	S24
QFT-54V/QFT-54	φ54.20 <sup>+0.25</sup>	305	34	115.2	150.6	40.5	62	M6	S24

# QF-CO2型 球阀 Model QF-CO2 Ball Valve



## 产品概述 Product Description

- 双向流动，可任意安装。
- 精密铸造阀体带不锈钢管。
- 全阀口结构与阀道内径匹配，流动无压力降。
- 防爆阀杆设计。
- 特选兼容CO2运行环境的密封圈。
- 全开和全闭均有旋转限位。
- 阀杆部位具有二次可靠密封结构。

- Model QF-CO2 ball valve is applicable to two-direction flow, can be installed freely.
- Precision cast body with stainless steel.
- No pressure drop due to the full bore structure.
- Explosion-proof stem design.
- Special seals compatible with CO2 operating environment
- Rotation limit for both full open and close.
- Reliable structure with a secondary seal at valve stem.

## 特点 Features

- 流动无压力降
- 从全开到全闭只需转动1/4圈
- 全开和全闭均有旋转限位
- 阀杆顶端标记是阀的全开和全闭
- 具有双向流动性
- 氩弧焊接结构
- 防爆阀杆设计
- 改性的PTFE密封
- 可防止内部积液
- 能安装在控制板上

- No pressure drop in flow.
- Only turn 1/4 circle to make valve full open or full close.
- Turning stop for full open or full close.
- Full Open and Full Close mark on top of valve stem.
- Two-direction flow is available.
- Argon arc welded structure.
- Explosion-proof valve stem design.
- Modified PTFE sealing.
- Inside liquid accumulation is avoided.
- Could be mounted on the control panel.

## 技术参数 Technical Parameters

工作温度 Working temperature:	-50°C ~ +150°C
最大工作压力 MAX.Working Pressure:	12MPa

## 选型表 Model Selection

型号Model	规格Size	通径OD(mm)	Kv值(m <sup>3</sup> /h)
	焊接口外径 (mm)		
QF12-CO2	12	10	10
QF16-CO2	16	14	14
QF19-CO2	19	15	20
QF22-CO2	22.3	18.2	28
QF28-CO2	28.6	24.4	52
QF35-CO2	35	29	80
QF42-CO2	41.3	35	121
QF54-CO2	56.3	49	200

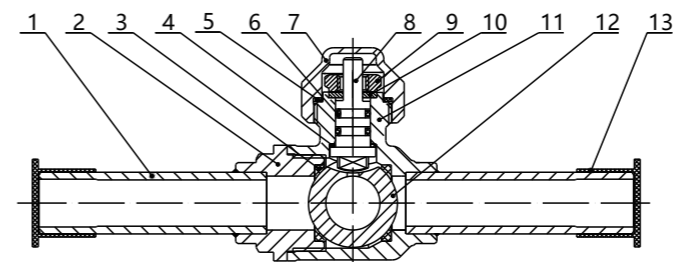
1)Kv值: 密度为1吨/m<sup>3</sup>的水在通过电磁阀的压差等于100KPa时的流量, 单位为m<sup>3</sup>/h;

2)气态介质的MOPD约高0.1MPa.

1) Kv value: the flow of water with density of 1 ton/ m<sup>3</sup> when passing through the solenoid valve under 100KPa differential pressure

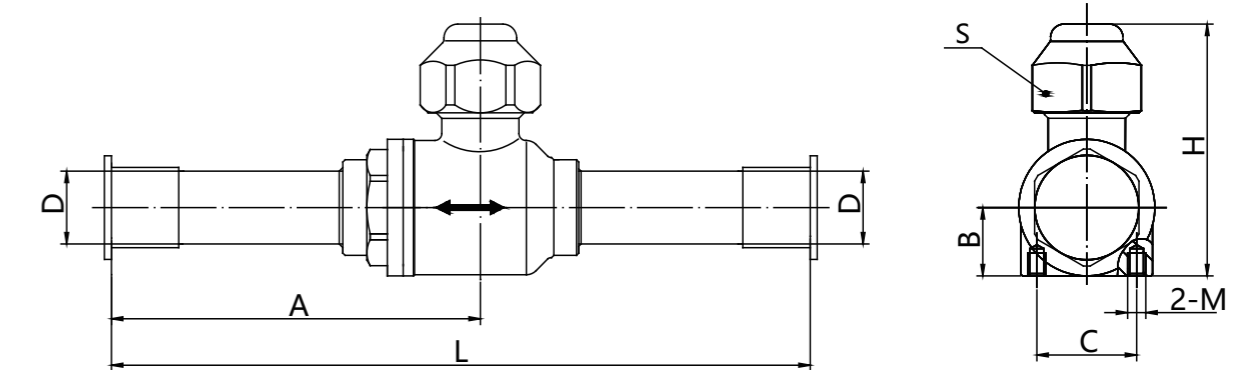
2) MOPD of gaseous medium is about 0.1MPa.

## 结构 Structure



- |                     |                   |
|---------------------|-------------------|
| 1. 接管 copper tube   | 11. 阀体 valve body |
| 2. 阀盖 valve bonnet  | 12. 阀球 valve ball |
| 3. 密封垫片 seal gasket | 13. 防尘帽 dust cap  |
| 4. 密封垫 seal         |                   |
| 5. 阀帽垫片 cap gasket  |                   |
| 6. 密封圈 Seal ring    |                   |
| 7. 阀帽 valve cap     |                   |
| 8. 阀杆 valve stem    |                   |
| 9. 锁紧螺母 locknut     |                   |
| 10. 限位片 Limiter     |                   |

## 外形尺寸 Overall Dimension



型号 Model	外形尺寸 Overall Dimension							
	D	L	H	A	B	C	M	S
QF12-CO2	φ12	131.5	50.4	68	13.2	/	M5	S24
QF16-CO2	φ16	154	55.8	81.3	15	22	M5	S24
QF19-CO2	φ19	168	63	89.8	19	30	M5	S24
QF22-CO2	φ22.3	193.5	63	102.6	19	30	M5	S24
QF28-CO2	φ28.6	213	82.8	112.3	30	30	M5	S28
QF35-CO2	φ35	232.6	98.7	125	29.8	48	M6	S32
QF42-CO2	φ41.3	245.3	108.5	127.1	34	55	M6	S32
QF54-CO2	φ56.3	304	129.9	163	45.5	74	M6	S36

## 安全阀系列

# SAFETY VALVE *Series*

弹簧直接载荷式安全阀, 当在设定条件下, 推力超过作用在关闭件上的弹簧的反作用力时, 通过撞击在关闭件上的欠压流体打开泄压。

It is spring direct loaded, valve will open when the thrust exceeds the reaction force of the spring on the closure.



# FS FL型安全阀 Model FS/FL Safety Valve



(FS型)



(FS型)



(FL型)

## 产品概述 Product Description

• 鸿森安全阀为弹簧直接载荷式安全阀，当在设定条件下，推力超过作用在关闭件上的弹簧的反作用力时，通过撞击在关闭件上的欠压流体打开泄压。该阀门用于安装在民用和工业型制冷和调节设备上，如蒸发器、冷凝器、容积式压缩机、液体接收器、液体储能器、热交换器、油分离器、管道和简单的未燃烧压力容器等设备。其功能是保护上述设备由于设计的操作条件免受可能的超压影响。

• The Hongsen safety valve is spring direct loaded, valve will open when the thrust exceeds the reaction force of the spring on the closure. The valve is used to installed on civil and industrial refrigeration and regulatory equipment, such as evaporator, condenser, volume compressor, liquid receiver, liquid energy storage, heat exchanger, oil separator, pipeline and simple unbusted pressure Containers and other equipments. This valve is to avoid these equipments from possible overpressure effects due to the special design.

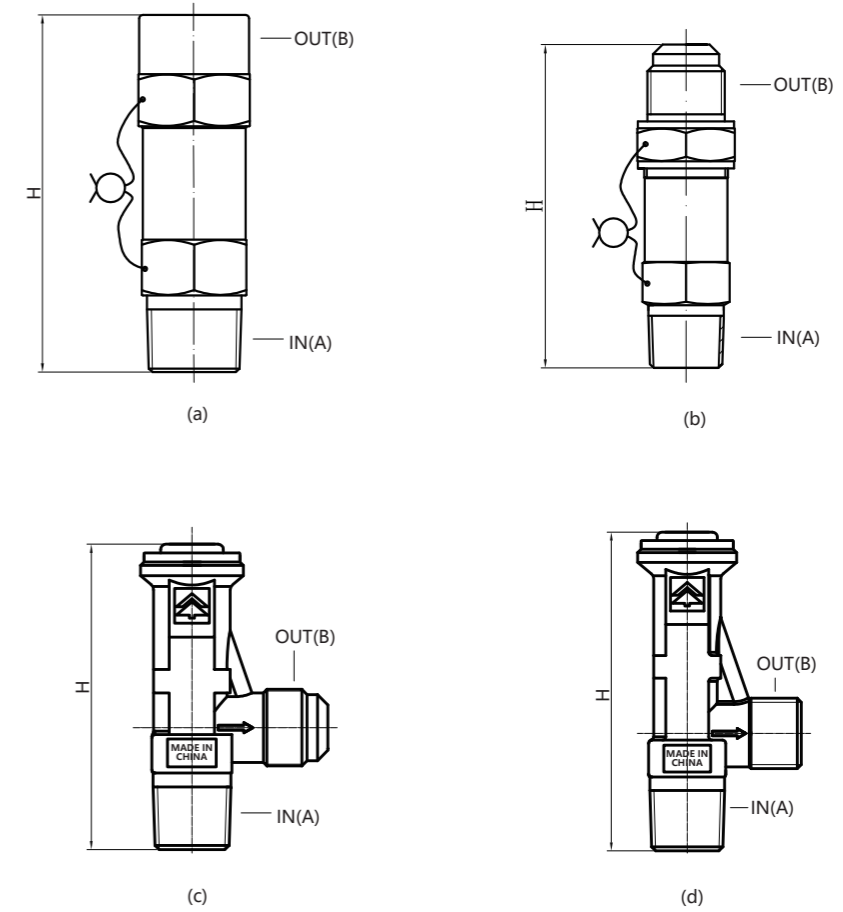
## 技术参数 Technical Parameters

适用制冷剂 Applicative refrigerants	CFC、HCFC、HFC
运行温度范围 Running temperature	-50°C~150°C
整定压力 Set-pressure	鸿森标准和根据客户要求定制 :Hongsen standard, customization applicable

## 接口标准 Standard

- 容积 < 50L的，安全阀接口3/8" -18NPT;
  - 容积≥50L且 < 500L的，安全阀接口1/2" -14NPT;
  - 容积≥500L且 < 1000L的，安全阀接口3/4" -14NPT;
  - 容积≥1000L的，安全阀接口1" -11.5NPT.
- The volume < 50L,the safety valve connection is 3/8" -18NPT;
  - The volume ≥50L & < 500L,the safety valve connection is 1/2" -14NPT;
  - The volume ≥50L & < 1000L,the safety valve connection is 3/4" -14NPT;
  - The volume ≥1000L,the safety valve connection is 1" -11.5NPT.

## 外形尺寸 Overall Dimension



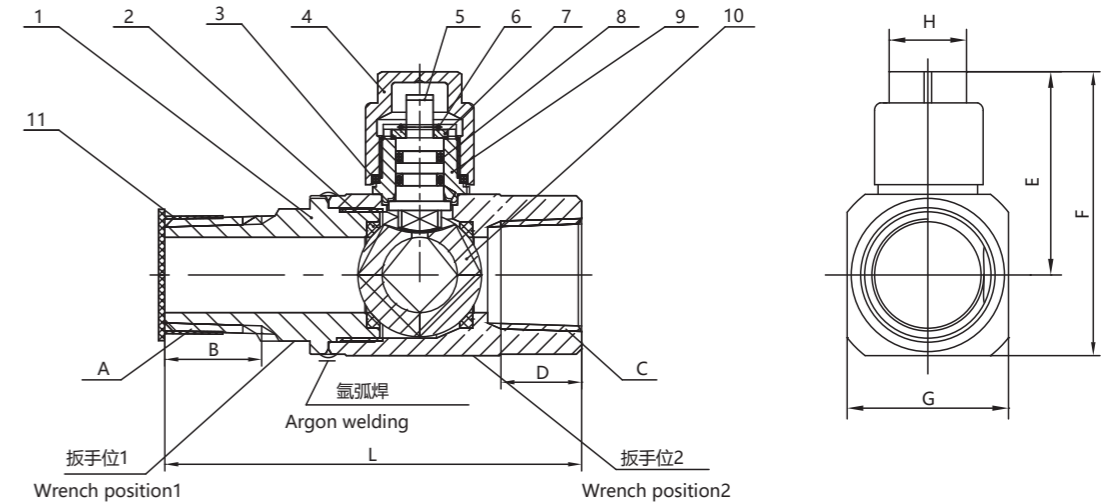
型号 Model	喉径 (流通直径) Throat diameter (Flow diameter) (mm)	H (mm)	阀体六角尺寸 Valve body six angle size	A (进口接口型式) Inlet form	B (出口接口型式) Outlet form	图例 Fig.
DN25 FS-A8N8	Φ18	117	S46	1"NPT	1"NPT	a
DN20 FS-A6N6	Φ11	102	S31	3/4"NPT	3/4"NPT	a
DN15 FS-A4B5	Φ7.5	93	S25	1/2"NPT	5/8SAE	b
DN15 FS-A4B4	Φ7.5	89	S25	1/2"NPT	1/2SAE	b
DN10 FS-A3B3	Φ7	86	S25	3/8"NPT	3/8SAE	b
DN8 FS-A2B3	Φ6	84	S25	1/4"NPT	3/8SAE	b
DN15 FL-A4B5	Φ7.5	89	S25	1/2"NPT	5/8SAE	c
DN15 FL-A4B4	Φ7.5	89	S25	1/2"NPT	1/2SAE	c
DN10 FL-A3B4	Φ7	84	S25	3/8"NPT	1/2SAE	c
DN10 FL-A3B3	Φ7	84	S25	3/8"NPT	3/8SAE	c
DN8 FL-A2B3	Φ6	82	S25	1/4"NPT	3/8SAE	c
DN15 FL-A4G4	Φ7.5	96	S25	1/2"NPT	G1/2	d
DN10 FL-A3G4	Φ7.5	90	S25	3/8"NPT	G1/2	d

鸿森标准整定压力: Hongsen standard set-pressure  
1, 2.0MPa 2, 2.4MPa 3, 2.8MPa 4, 3.1MPa 5, 3.4MPa

# GFM-S-NPT型球阀 Model NPT Ball Valve



## 结构 Structure



### 产品概述 Product Description

GFM-S-NPT螺纹型球阀是手动调节的截止阀，适用于双向流动，用于冷冻、冷藏和空气调节装置的液体、暖气和热气管路上，采用阀杆密封和球阀密封两个特有的密封组件设计，并选用特殊的密封材质，保证了产品在常用制冷工况环境应用下良好运行。

Model NPT ball valve is a manually adjusted shut off valve, which is applicable to bidirectional flow, can be applied in the liquid, heating and hot gas pipe lines of refrigeration and A/C equipment. The special design of stem and valve ball seal with special materials ensure the superior performance under common refrigerant working environment.

### 特点 Features

- 双向流动，可任意安装。
- 精密锻造优质铜材阀体。
- 防爆阀杆设计。
- 全开和全闭均有旋转限位。
- 阀杆部位具有二次可靠密封结构。
- 适用于大多数常用制冷工况。

- Bi-flow direction, can be installed arbitrarily
- Precision forged high-quality copper valve body
- Explosion-proof stem design.
- Rotary-limit design for full open/closed.
- Secondary reliable sealing structure on the valve stem
- Can be used in most kinds of common refrigerants

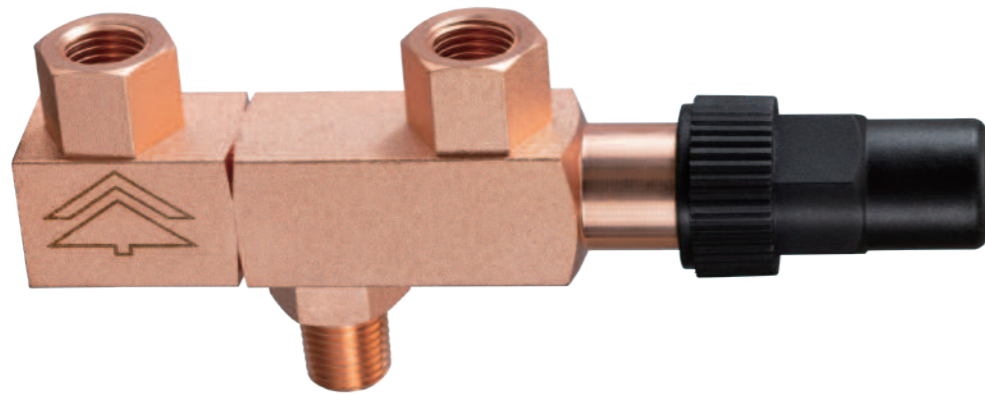
### 技术参数 Technical Parameters

最大工作压力 MAX.Working Pressure	1740Psi/120Bar
适用制冷剂 Applicable Refrigerant	R22、R134a、R404A、R407C、R410A
适用介质工作温度 Applicable Medium Temperature	-40°C ~ 120°C

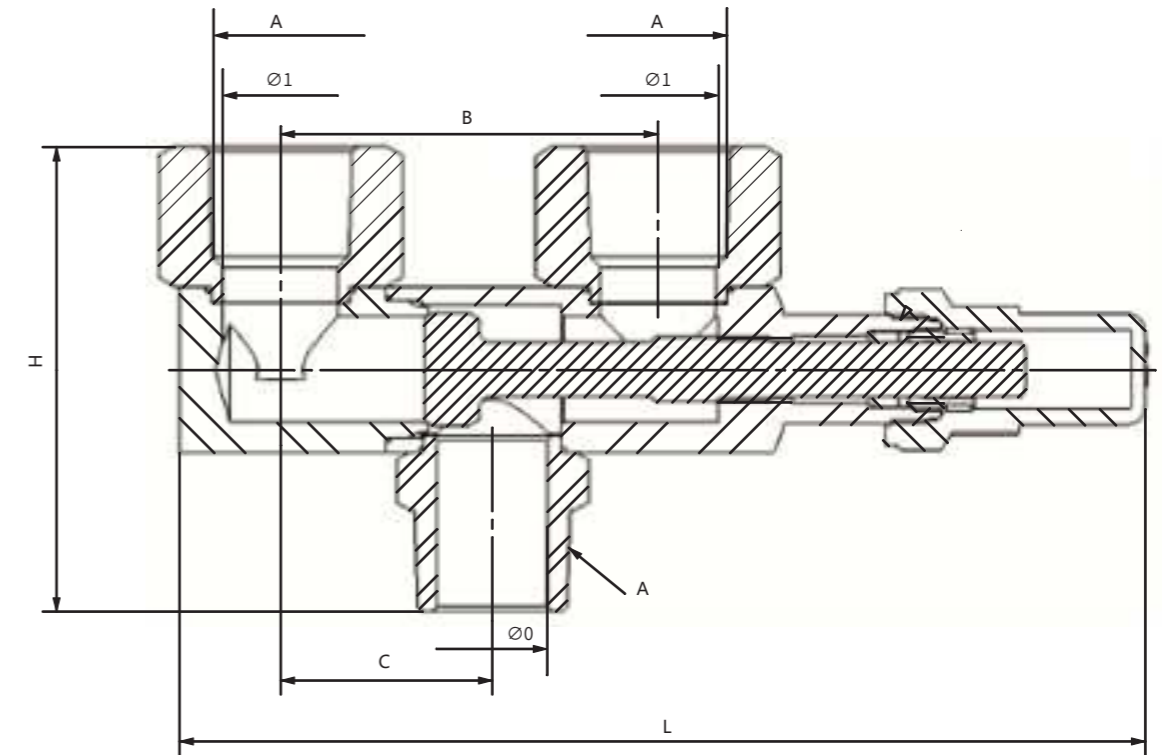
- 1、阀盖 valve bonnet
- 2、密封垫片 cap gasket
- 3、阀帽垫片 cap gasket
- 4、阀帽 valve cap
- 5、阀杆 valve stem
- 6、挡圈 Retainer
- 7、锁片 lock
- 8、O形圈 O-Ring
- 9、阀体组件 Valve body
- 10、钢球 Steel ball
- 11、防尘帽 Dust cap

连接螺纹 Connection Thread	A	B	C	D	E	F	G	H	L
GFM-S-NPT 1/4	NPT 1/4	12	NPT 1/4	12	31	43	□24	S12	64.5
GFM-S-NPT 3/8	NPT 3/8	13.5	NPT 3/8	13	31	43	□24	S12	64.5
GFM-S-NPT 1/2	NPT 1/2	18	NPT 1/2	15	38	53	□30	S14	77.5
GFM-S-NPT 3/4	NPT 3/4	16.5	NPT 3/4	16	41	57	□32	S14	86.5
GFM-S-NPT 1	NPT 1	17.5	NPT 1	17	42	61	□38	S14	96

# 双出口泄压阀 TWO-OUTLET PRESSURE RELIEF VALVE



## 外形尺寸 Dimensions



技术参数 Technical Parameters	
最大工作压力 MAX.Working Pressurre	4.2Mpa
最大耐压压力 MAX.Compression Pressurre	6.3Mpa
适用介质温度 Applicable MEDIUM Temperature	-40°C~150°C
适用制冷剂 Applicable Refrigerant	R22、R134a、R410A、R507A、R448A、R449A、R404A

型号 Model	阀体 Valve body	A	Ø1	Ø0	B	C	H	L
HS-2F-NPT1/4	□22	NPT1/4 " -18	Ø8.5	Ø8.5	55	31.5	58	145
HS-2F-NPT3/8	□22	NPT3/8 " -18	Ø11.5	Ø11	55	31.5	64	146
HS-2F-NPT1/2	□22	NPT1/2 " -14	Ø13	Ø13	55	31.5	71.5	146
HS-2F-NPT3/4	□30	NPT3/4 " -14	Ø19	Ø19	66	38	81	170
HS-2F-NPT1	□36	NPT1 " -11.5	Ø25	Ø24	82	46	101	215
HS-2F-NPT1-1/4	□36	NPT1-1/4 " -11.5	Ø27	Ø27	112	98	110.5	243

## 视液镜系列

# SIGHT GLASS *Series*

使用改性PTEE密封材质, 适用于多种制冷剂及冷冻油, 又具有很好的密封性能。  
采用防爆压结构, 观察窗清晰而安全。  
采用优质铜棒锻压, 强度高, 塑性好。

The modified PTEE seal material is suitable for various refrigerants and refrigerant oils.

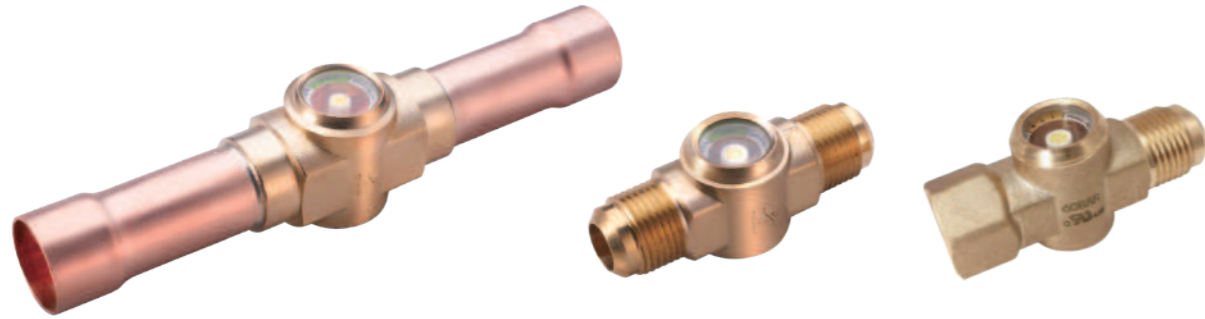
It also has good sealing performance.

The explosion-proof structure is adopted, and the observation window is clear and safe.

High quality copper bar is used for forging, high strength and good plasticity.



# SGN型液视镜 Model SGN Sight Glass



## 产品概述 Product Description

- SGN型液视镜用于制冷、空调装置的液体管路上，用来指示制冷剂的流动状况、制冷剂中的含水量及油分离器回油管路中润滑油的流动状况。
- SGN型液视镜带有一潮湿指示器，通过改变颜色来指示制冷剂中的含水量。
- SGR型液视镜用于贮液器中制冷剂的液位或压缩机曲轴箱中润滑油的液位。
- SGN型液视镜均使用改性PTFE密封材料，适用于多种制冷剂及冷冻油又具有很好的密封性能。
- SGN型/SGR型液视镜采用防爆压接的结构，观察窗清晰而安全。

- Both Model SGN sight glass is used on the liquid piping of the refrigeration and air conditioning unit to indicate the flow condition of the refrigerant, water cut of the refrigerant and lubricant oil flow condition of the oil return piping on the oil separator.
- Model SGN sight glass and is equipped with one moisture indicator, which will change color to indicate the water cut in the refrigerant.
- Model SGR sight glass is used to indicate the level of the refrigerant in the liquid drum and the lubricant oil level in the compressor crankcase.
- The modified PTFE sealing is used in both Model SGN sight glass and Model SGR sight glass, which is applicable to various refrigerants and oils with perfect sealing performance. The structure of both Model SGN sight glass and Model SGR sight glass is an explosion-proof press fit and the viewing glass is clear and safety.

## 技术参数 Technical Parameters

适用制冷剂 Applicable Refrigerant:	HCFC and HFC
适用介质温度 Applicable Medium Temperature:	-40°C ~ +80°C
最大工作压力 MAX. Working Pressure	4.5MPa
最大耐压压力 MAX. Compression Pressure	6.8MPa
制冷剂年泄漏量 Yearly Leakage of Refrigerant	≤2g R22/a

注意：全封闭压缩机的允许含水量一般在30 - 75ppm之间，而其他压缩机则略高。为使系统得到有效保护，必须谨慎地监视指示器，若颜色变为黄色，则必须更换干燥器。  
Note: For the fully enclosed compressor, generally the allowable water cut is in a range 30~75ppm, but for other types of compressor, the water cut will be higher slightly. For an effective protection, it is necessary to monitor the indicator carefully and replace the drier immediately if the color is changed into yellow.

## 特点 Features

### SGN

- 用于HCFC/HFC制冷剂
- 指示系统中过高的含水量
- 制冷剂液体无过冷度指示
- 冷剂充注量不足指示
- 焊口、螺口两种接口

### Model SGN

- Be applicable to HCFC/HFC refrigerants.
- Indicate high water cut in system if any.
- Indicate no overcooling in refrigerant liquid.
- Indicate insufficient charging of refrigerant if any.
- Both welded and threaded connections are available.

### SGR型

- HCFC/HFC制冷剂
- 贮液器中液位指示
- 压缩机曲轴箱中油液位指示
- NPT螺纹连接

### Model SGR

- Be applicable to HCFC/HFC refrigerants.
- Indicate the liquid level in the liquid drum.
- Indicate the oil level in the compressor crankcase.
- NPT threaded connection.

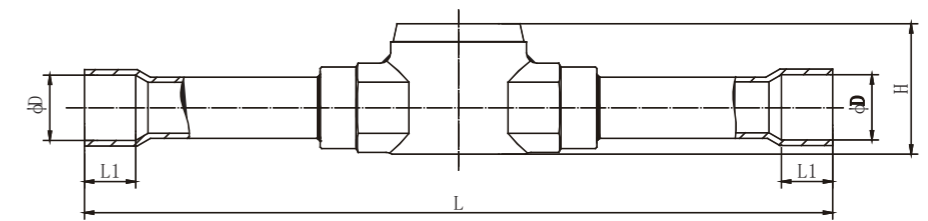
## 选型表 Model Selection

焊口型号 Model of Welded Connection	规格 Size	螺口型号 Model of Threaded Connection	规格 Size
SGN-1/4 ODF	1/4(Φ6)	SGN-1/4 SAE	1/4 SAE
SGN-3/8 ODF	3/8(Φ10)	SGN-3/8 SAE	3/8 SAE
SGN-1/2 ODF	1/2(Φ12)	SGN-1/2 SAE	1/2 SAE
SGN-5/8 ODF	5/8(Φ16)	SGN-5/8 SAE	5/8 SAE
SGN-3/4 ODF	3/4(Φ19)	SGN-3/4 SAE	3/4 SAE
SGN-7/8 ODF	7/8(Φ22)	SGN-3/4NPT	3/4NPT
SGN-1 1/8 ODF	1 1/8(Φ28)	SGR-G3/4	G3/4

## 含水量与颜色的关系 Correlation between Water Cut and Color

	Water Cut(ppm) 含水量(百万分之一)					
	25°C	25°C	25°C	43°C	43°C	43°C
	绿色 Green/DRY	中间颜色 Medium Color	黄色 Yellow/WET	绿色 Green/DRY	中间颜色 Medium Color	黄色 Yellow/WET
R22/R502	<30	30 ~ 120	>120	<50	50 ~ 200	>200
R134a	<30	30 ~ 100	>100	<45	45 ~ 170	>170
R404A	<20	20 ~ 70	>70	<25	25 ~ 100	>100
R407c	<30	30 ~ 140	>140	<60	60 ~ 225	>225
R507	<15	15 ~ 60	>60	<30	30 ~ 110	>110
R410A	<66	66 ~ 266	>266	<135	135 ~ 540	>540

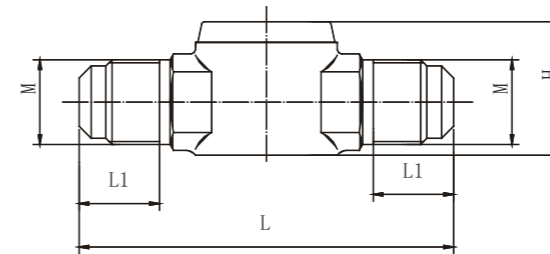
## 结构 Structure



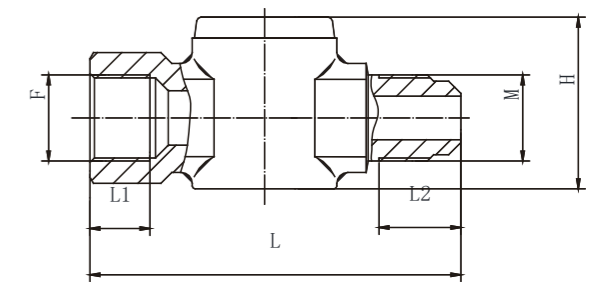
焊口液视镜  
Soldering type sight glass

Model	L	L1	D	H
SGN-1/4 ODF	102	7	6.5	21.5
SGN-3/8 ODF	119	8	10.1	22.5
SGN-1/2 ODF	146	10	12.8	26.5
SGN-5/8 ODF	152	14	16.1	29.5

Model	L	L1	D	H
SGN-3/4 ODF	167	16	19.2	35
SGN-7/8 ODF	173	17	22.2	39
SGN-1-1/8 ODF	216	20	28.7	44.5



螺口液视镜  
Flare type sight glass



内外螺口液视镜  
M/F flare type sight glass

Model	L	L1	H	Thread M
SGN-1/4 SAE	64	13	21.5	7/16-20UNF
SGN-3/8 SAE	70	15	25	5/8-18UNF
SGN-1/2 SAE	75	16	26.5	3/4-16UNF
SGN-5/8 SAE	80	18	29.5	7/8-14UNF
SGN-3/4 SAE	90	20.5	35	1-1/16-14UNS

Model	L	L1	L2	H	Thread F/M
SGN-1/4-MF	60	8.5	12	25	7/16-20UNF
SGN-3/8-MF	68	11	15	31.5	5/8-18UNF
SGN-1/2-MF	70	11.5	16	34.5	3/4-16UNF
SGN-5/8-MF	78	13	18	38	7/8-14UNF

## 单向阀\截止阀

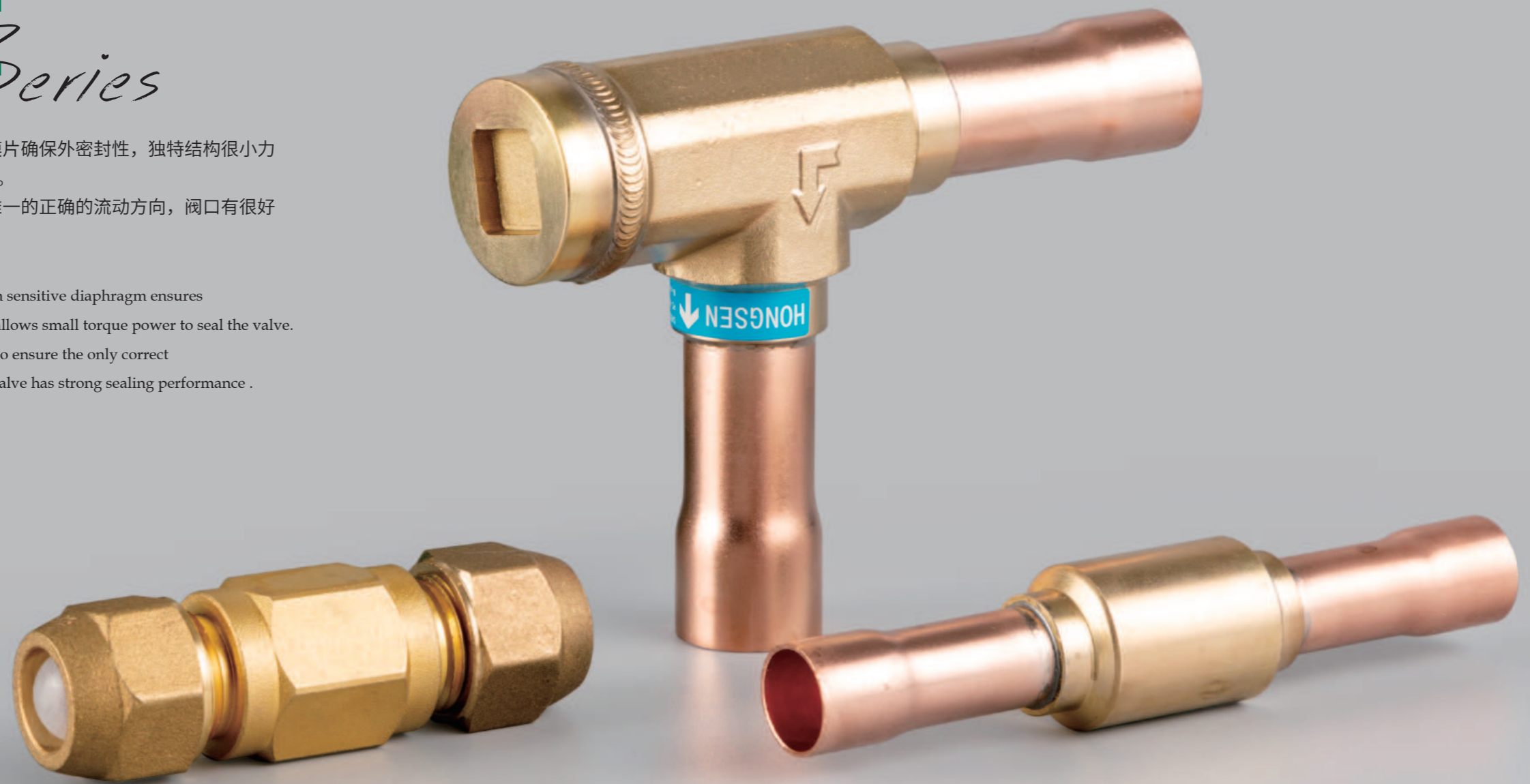
# CHECK VALVE / SHUT OFF VALVE *Series*

(手阀) 高品质膜片确保外密封性，独特结构很小力矩可实现内密封。

(单向阀) 确保唯一的正确的流动方向，阀口有很好的密封性。

(Hand valve) High sensitive diaphragm ensures good sealing, and allows small torque power to seal the valve.

(One-way Valve) To ensure the only correct direction of flow, valve has strong sealing performance .



# CV型单向阀 Model CV Check Valve

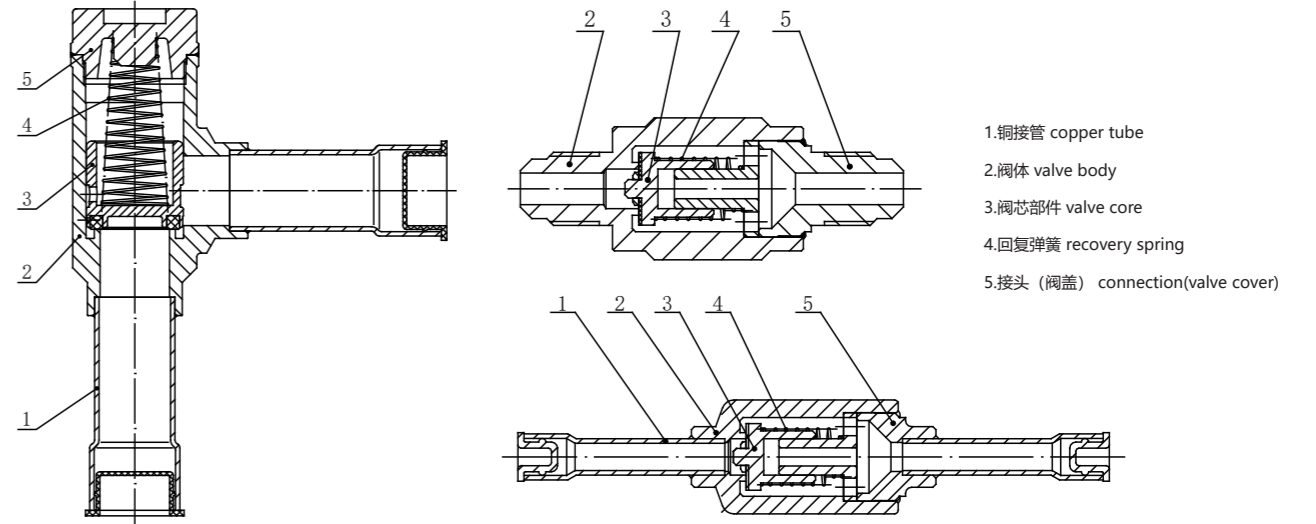


产品概述 Product Description	
<ul style="list-style-type: none"> <li>CV和CVRH型单向阀用于冷冻、冷藏和空气调节装置的液体、吸气和热气管路上。</li> <li>CV和CVRH型单向阀可提供超大尺寸连接，以提高单向阀应用的灵活性。</li> </ul>	<ul style="list-style-type: none"> <li>Model CV check valve is used on the piping of liquid, suction gas or hot air on the freezing, cold storage and air conditioner units.</li> <li>The valve seat and seals of Model CV check valve have excellent sealing performance.</li> <li>For Model CV check valve, both threaded and welded connections are available.</li> </ul>
特点 Features	
<ul style="list-style-type: none"> <li>该阀可确保唯一的正确的流动方向。</li> <li>有直通型和角阀两种形式，阀座和密封处具有很好的密封性。</li> <li>可防止制冷剂从高温蒸发器向低温蒸发器回流。</li> <li>内置减震活塞，可安装在有压力脉冲的地方，如压缩机的排气管路上。</li> <li>CV单向阀可提供螺口和焊口两种接口。</li> <li>CVRH具有<math>\Delta P=0.3\text{bar}</math>的加强弹簧，应用于压缩机并联的制冷装置中。</li> </ul>	<ul style="list-style-type: none"> <li>Ensure one flow direction and avoid reversal</li> <li>With the built-in damper and could be mounted on the piping with pressure pulsation.</li> <li>Prevent refrigerant back flow from high temperature evaporator to low temperature evaporator.</li> <li>Applicable to the refrigeration unit in parallel with compressor.</li> <li>Both direct flow type and right-angle type are available.</li> </ul>
技术参数 Technical Parameters	
适用制冷剂 Applicable Refrigerant:	HCFC或HFC (客户指定)
适用介质温度 Applicable Medium Temperature:	-50°C ~ +140°C
最大工作压力 MAX.Working Pressure	46bar
最大试验压力 Maximum Test Pressure	60bar

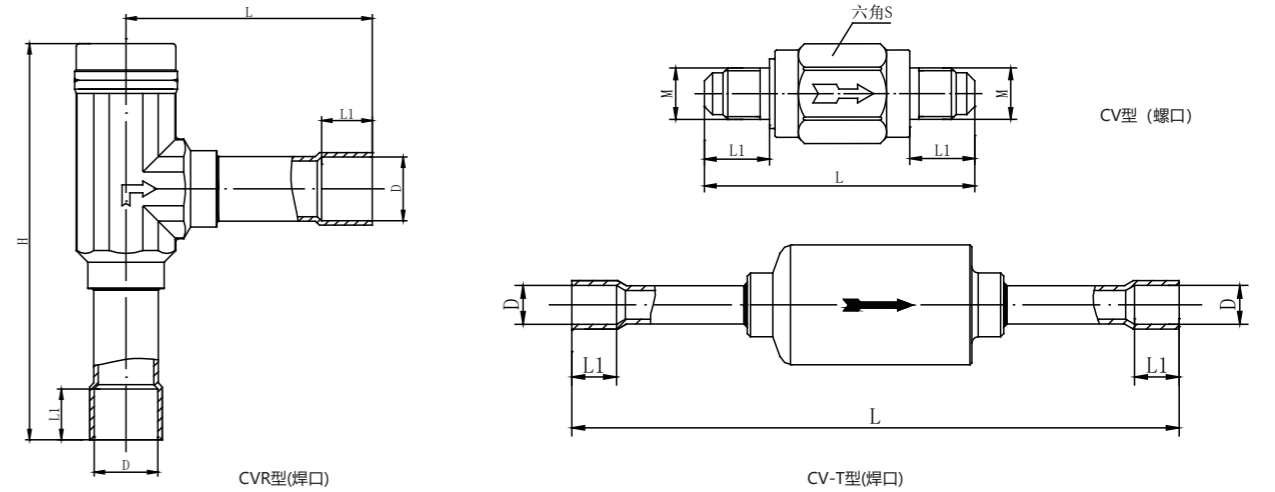
选型表 Model Selection					
型号 Model	型式 Type	规格 Spes		通径(mm) I.D.(mm)	Kv值(m <sup>3</sup> /h) Kv(m <sup>3</sup> /h)
		喇叭口Flare	焊接口Welded		
CV-6	直通型	1/4 SAE	/	4.8	0.56
CV-6T	直通型	/	1/4 ODF	4.8	0.56
CV-10	直通型	3/8 SAE	/	8	1.43
CV-10GT	直通型	/	φ10 ODF	8	1.43
CV-12	直通型	1/2 SAE	/	10	2.05
CV-12T	直通型	/	1/2 ODF	10	2.05
CV-16	直通型	5/8 SAE	/	13	3.60
CV-16T	直通型	/	5/8 ODF	13	3.60
CV-19	直通型	3/4 SAE	/	16	5.50
CV-19T	直通型	/	3/4 ODF	16	5.50
CV-22T	直通型	/	7/8 ODF	19	8.50
CVR-22	直角型	/	7/8 ODF	19	8.50
CVRH-28	直角型	/	1-1/8 ODF	26	19.0
CVRH-35	直角型	/	1-3/8 ODF	31	29.0
CVRH-42	直角型	/	1-5/8 ODF	31	30.0

1) Kv值: 密度为1吨/m<sup>3</sup>的水在通过单向阀的压差等于100KPa时的流量, 单位为m<sup>3</sup>/h  
 1) Kv value: When the pressure differential is 100KPa, the flowrate at m<sup>3</sup>/h water in density 1 t/m<sup>3</sup> flows through the solenoid valve.

## 结构 Structure



## 外形尺寸 Overall Dimension



型号 Model	外形尺寸 Overall Dimension			
	L	M	L1	S
CV-6	58	7/16-20UNF	14	19
CV-10	62	5/8-18UNF	16	21
CV-12	68	3/4-16UNF	18	24
CV-16	78	7/8-14UNF	21	27
CV-19	90	1-1/16-14UNF	24	32
	L	D	L	
CV-6T	95	φ6.5	7	
CV-10GT	109	φ10.1	8	
CV-12T	119	φ12.8	10	
CV-16T	138	φ16.1	14	
CV-19T	150	φ19.2	16	
CV-22T	175.5	φ22.3	17	
	L	D	L1	H
CVR-22	84	φ22.3	17	136.5
CVRH-28	113	φ28.7	20	184
CVRH-35	126	φ35.2	25	197
CVRH-42	126	φ41.5	29	197

注: ①上述重量不带纳子; ②纳子单重: 1/4-18g, 3/8-30g, 1/2-33g, 5/8-50g, 3/4-93g。  
 Note: (1) Nut is excluded from above mentioned weight. (2) Nut weight: 1/4-18g, 3/8-30g, 1/2-33g, 5/8-50g and 3/4-93g.

# CVS型膜片式单向阀 Model CVS Diaphragm Type Check Valve



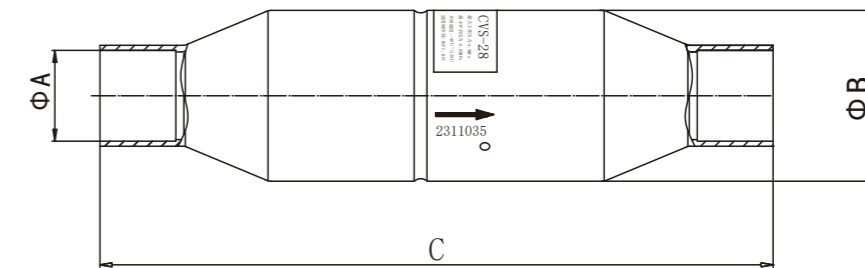
选型表 Selection						
型号 Model	接口尺寸ΦA Connection size	阀体尺寸ΦB Valve size	总长度C Length	泄漏量(≤ml/min) Leaking rate	KV值 (m3/h) KV value	
CVS-6	6.4	22	102	50	0.49	
CVS-10	9.7				1.19	
CVS-12	12.8	29	127		1.86	
CVS-16	16				3.48	
CVS-19	19.1	41.3	178	80	5.61	
CVS-22	22.3				7.74	
CVS-28	28.7				13.38	
CVS-35	35	67	238		23.28	
CVS-42	41.4	80	267		100	27.42
CVS-54	54.1	92	305			46.44
CVS-67	66.8	105	330	67.80		
CVS-79	79.5			67.80		

产品概述 Product Description	
膜片式单向阀采用磁性膜片式设计，金属和金属密封，应用于压缩机排气管路上，内部采用导向装置、自吸机构设计，从而使单向阀不受安装角度限制和反向压力大小的关系影响阀门的自动闭合。	The check valve adopts a magnetic diaphragm design, metal and metal seal. It can be used on the compressor exhaust pipeline. The guide component and self-absorbing structure design ensures the automatic close free off the influence from installation angle or reverse pressure difference.

特点 Features	
<ul style="list-style-type: none"> <li>复合膜片设计</li> <li>通体紫铜管的设计，消除了外漏隐患</li> <li>阀体中装有过滤网，兼备止回阀和过滤器的功能</li> <li>工艺先进：先锡焊阀体与阀座，再装膜片和磁条，没有烧伤膜片，磁条退磁的隐患</li> <li>逆向泄露小</li> <li>极小的流通阻力，大流量，系统可忽略不计的损失效率</li> <li>安装位置不受限制</li> </ul>	<ul style="list-style-type: none"> <li>Composite film design</li> <li>The design of the whole copper tube body, eliminates the potential outer leaks</li> <li>Extra filter net, provides function of both check valve and filter</li> <li>Special artworks: tin welding before assembling diaphragm and magnetic strips, so that both diaphragm and magnetic strips can be protected.</li> <li>Extremely low reverse leak</li> <li>Low circulation resistance and large flow lift up the energy efficiency of system</li> <li>No special installation angle requested</li> </ul>

技术参数 Technical Parameters	
适用制冷剂：HFC、HCFC	Applicable Refrigerant: HFC、HCFC
工作温度：-30℃~+120℃	Working temperature: -30℃~+120℃
介质温度：-40℃~+130℃	Applicable medium temp.: -40℃~+130℃
最大工作压力：4.5MPa	MAX working pressure: 4.5MPa
最小开启压力：0.02MPa	MIN open pressure: 0.02MPa

## 外形尺寸 Overall Dimension



# KM型 膜片式手阀 Model KM Diaphragm Hand Valve



## 产品概述 Product Description

- KM型手阀是一种手动膜片式截止阀，适用于单向流动
- KM型手阀用于冷冻/冷藏和空气调节装置的液体/吸气和热气管路上
- KM型手阀按接口方式分为两种：一种是螺口连接（SAE），可提供螺口规格1/4 SAE至3/4 SAE，另一种是焊口连接ODF，可提供接口尺寸1/4"至7/8"。所有KM型手阀都有安装固定孔，可用于仪表板上的安装。

- Model KM hand valve is a manually operated diaphragm stop valve for one-way flow control.
- Model KM hand valve is mounted on the liquid, air suction and hot air piping in the refrigeration, cold storage and air conditioner.
- Two types of connection are available for Model KM hand valve, that is, threaded connection (SAE) with threading size 1/4 SAE to 3/4 SAE and welded connection both ODF, structure hand valves have connection size 1/4" to 7/8" .
- All Model KM hand valves are equipped with mounting hole for the installation on the instrument panel.

## 特点 Features

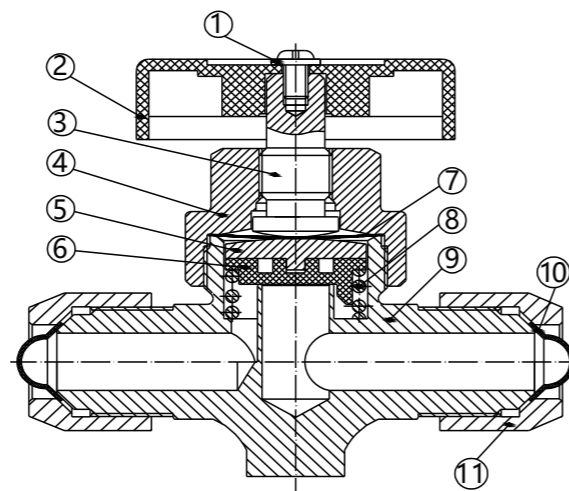
- 带有2片不锈钢膜片，在阀的整个使用寿命期间内防止泄漏。
- 阀口采用弹性密封，用很小的力矩就可将阀关闭。
- 特殊阀盖设计，防止水、粉尘等进入阀内部。
- 阀杆只需旋转一圈半就可全开或全闭，操作便捷。

- There are 2 pieces of stainless steel diaphragm to prevent the hand valve from leakage during the whole service life of the hand valve.
- The elastic sealing is used on the valve port so that the hand valve could be shut off by small torque.
- The special valve bonnet design is used to prevent the hand valve from water or dust penetration.
- The hand valve is easy to be operated for full open or half open just by turning the valve stem for one and half turn

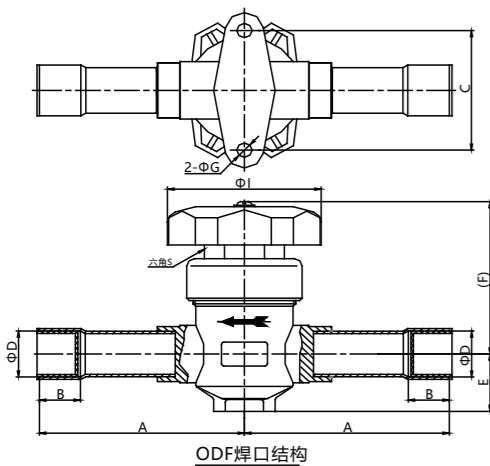
## 技术参数 Technical Parameters

适用制冷剂 Applicable Refrigerant:	HCFC、HFC
适用介质温度 Applicable Medium Temperature:	-25°C~+100°C
最大工作压力 MAX.Working Pressure	3.0MPa
使用压力范围 Scope of Operating Pressure	-0.1MPa~2.1MPa
最大耐压试验压力 Maximum Hydrostatic Test Pressure	4.5MPa

## 结构 Structure



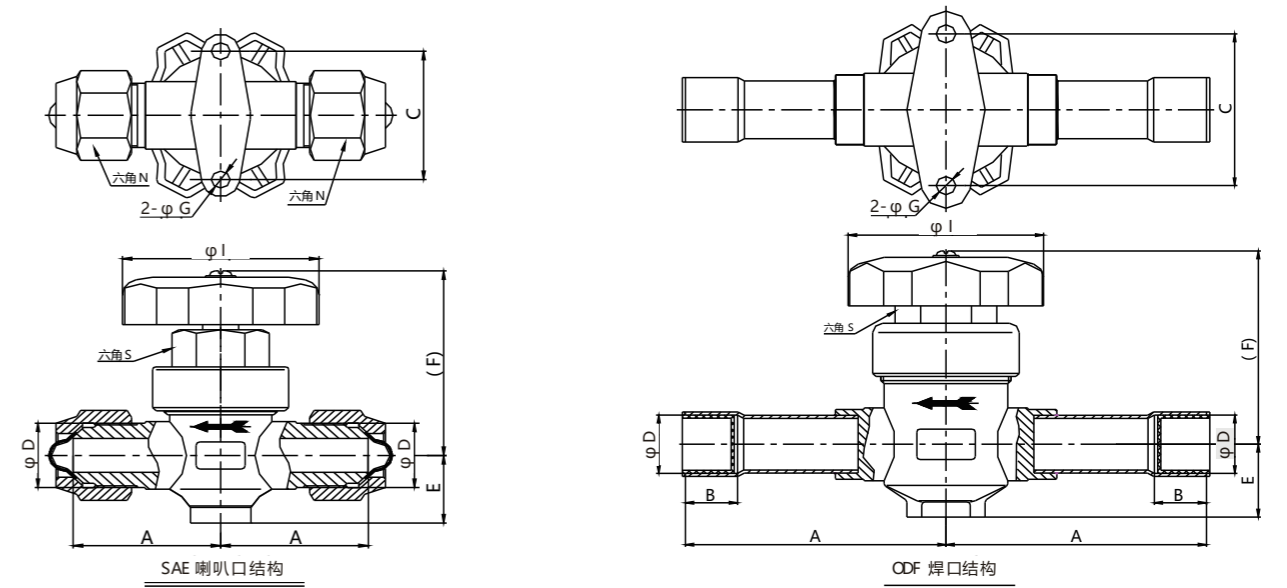
1. 螺钉 screw
2. 手轮 hand wheel
3. 阀杆 valve stem
4. 阀盖 valve bonnet
5. 铜片 copper sheet
6. 阀芯 valve element
7. 膜片 diaphragm
8. 弹簧 spring
9. 阀体 valve body
10. 防尘帽 dust cap
11. 纳子 (接管螺母) nut (piping nut)



## 选型表 Model Selection

型号 Model	喇叭口 Flare	焊接口(带铜管) Welded(with copper tube)	Kv(m³/h)
KM-1/4	1/4 SAE	1/4 ODF	0.28
KM-3/8	3/8 SAE	3/8 ODF	0.30
KM-1/2	1/2 SAE	1/2 ODF	1.30
KM-5/8	5/8 SAE	5/8 ODF	1.80
KM-3/4	3/4 SAE	3/4 ODF	3.65
KM-7/8	—	7/8 ODF	3.65

## 外形尺寸 Overall Dimension



型号 Model	外形尺寸 Overall Dimension										
	A	B	C	ΦD	E	(F)	ΦG	ΦI	S	N	螺纹 M Thread M
1/4 SAE	28.5	—	36	—	14	(53)	Φ4.5	Φ53	S18	S17	7/16-20UNF
1/4 ODF	51	7		6.5						—	—
3/8 SAE	31	—	38	—	19	(57)	Φ5	S22	S22	5/8-18UNF	
3/8 ODF	59	8		9.7					—	—	
1/2 SAE	39	—	50	—	24	(64)	Φ6	S27	S24	3/4-16UNF	
1/2 ODF	66	10		12.8					—	—	
5/8 SAE	39	—	50	—	24	(64)	Φ6	S27	S27	7/8-14UNF	
5/8 ODF	74	14		16.1					—	—	
3/4 SAE	50	—	50	—	24	(64)	Φ6	S27	S32	1-1/16-14UNS	
3/4 ODF	80	16		19.1					—	—	
7/8 ODF	80	17	—	22.3	—	—	Φ71	—	—	—	

## 避震波纹金属软管系列

# VIBRATION RESISTANT CORRUGATED METAL HOSE

*Series*

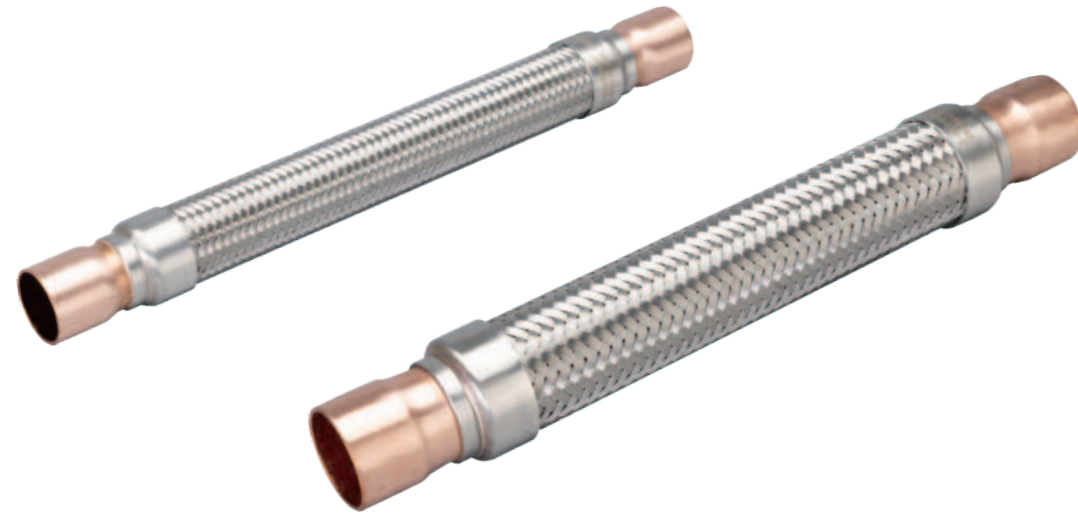
软管能够适度的弯曲,具有很好的耐疲劳性能。  
适用于全制冷剂,采用三位一体焊将接头、网套、压圈一起氩弧焊而成,具有安全、强度高、防腐、耐热。  
具有良好的吸震和补偿热位移。

The hose can be moderately bent and has good fatigue resistance.  
Suitable for all refrigerants, Trinity welding joint, mesh, ring with argon arc welding, with safety, high strength, corrosion resistance, heat resistance.  
It has good shock absorption and compensation thermal displacement.



# VAFX型避震管

## VAFX Type vibration Eliminator



### 产品概述 Product Description

• VAFX型避震管是设计用于安装在制冷系统和空调的吸气和排气管路中，可降低由压缩机产生并通过系统管路传输的震动。

• VAFX Type vibration Eliminator is designed to be assembled in refrigeration or air conditioning system to lower the vibration from compressors.

### 产品特点 Features

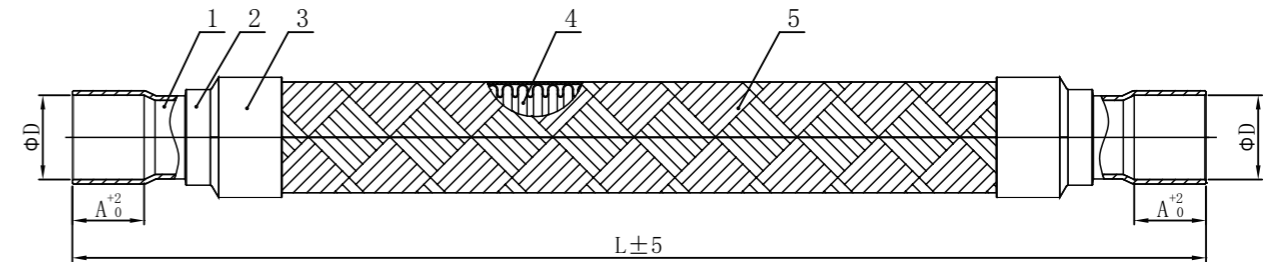
• 波纹管材质为SUS316L，耐腐蚀性能优异。  
• 采用三位一体焊接接头、网套、压圈一起氩弧焊，具有安全、强度高特点。  
• 具有良好的吸震和补偿热位移。

• SUS316L corrugated pipe supports with high corrosion resistance  
• Trinity Argon Arc welding of wire sleeve, pipe connector and clamping ring makes the vibration eliminator stronger and more safety.  
• Perfect vibration resistance and good compensation for the heat displacement.

### 技术参数 Technical Parameters

适用制冷剂 Applicable Refrigerants	HCFC/HFC
适用介质温度 Applicable Medium Temp	-40°C~+150°C
最大工作压力 MAX Working Pressure	见选型尺寸表(See Model Selection table)
最大耐压压力 Maximum Proof Pressure	最大工作压力的1.5倍(1.5 time of the M.W.P.)

### 外形结构 Configuration



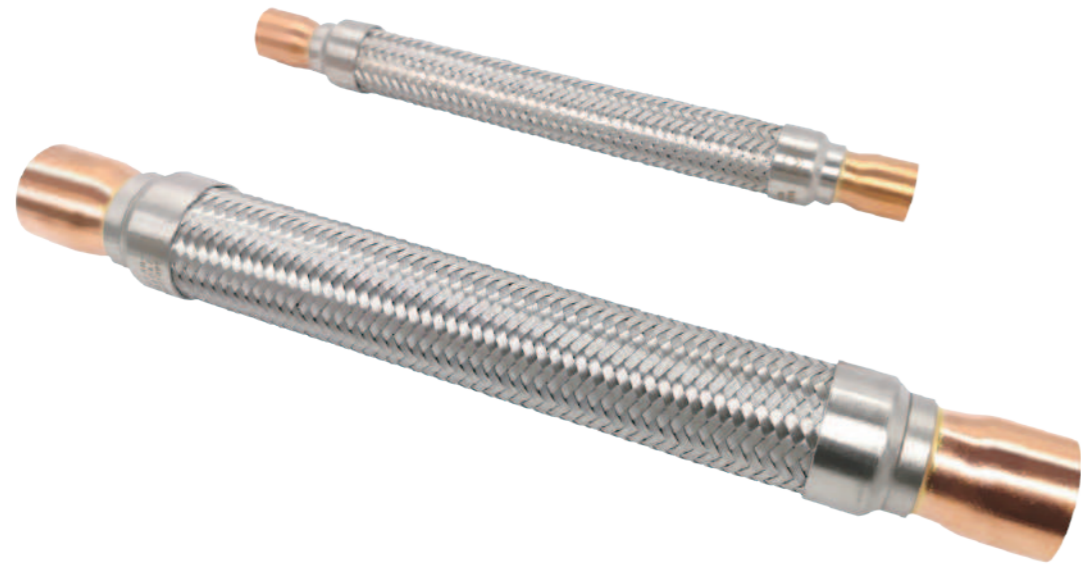
1.紫铜接管 Copper bush; 2.波纹管接头 Pipe Connector; 3.压圈 Clamping Ring; 4.波纹管 Corrugated Pipe; 5.网套 Wire Sleeving

### 选型表 Model Selection

型号 Type	规格 Size	外形尺寸 (mm) Outline Dimension (mm)			最大工作压力 (MPa) Max.Working Pressure (MPa)	最小弯曲半径 (mm) Min.Bending Radius (mm)	
		A	L	D		静态 Static(Rj)	动态 Dynamic(Rd)
VAFX-038-10	3/8	10	210	9.70 <sup>+0.15</sup> <sub>0</sub>	4.5	80	180
VAFX-012-12	1/2	10	230	12.80 <sup>+0.2</sup> <sub>0</sub>		95	215
VAFX-058-16	5/8	13	250	16.10 <sup>+0.2</sup> <sub>0</sub>		120	270
VAFX-034-19	3/4	16	260	19.10 <sup>+0.2</sup> <sub>0</sub>		145	325
VAFX-078-22	7/8	19	300	22.30 <sup>+0.2</sup> <sub>0</sub>		160	360
VAFX-100-25	1	23	330	25.60 <sup>+0.2</sup> <sub>0</sub>		175	400
VAFX-118-28	1-1/8	23	330	28.70 <sup>+0.2</sup> <sub>0</sub>	4.2	175	400
VAFX-114-32	1-1/4	25	400	32.10 <sup>+0.2</sup> <sub>0</sub>		225	510
VAFX-138-35	1-3/8	25	400	35.20 <sup>+0.2</sup> <sub>0</sub>		225	510
VAFX-158-42	1-5/8	28	400	41.50 <sup>+0.20</sup> <sub>0</sub>	3.0	280	640

# VAF型避震管

## VAF Type Vibration Eliminator



### 产品概述 Product Description

- VAF型避震管是设计用于安装在制冷系统和空调的吸气和排气管路中，可降低由压缩机产生并通过系统管路传输的震动。
- VAF Type vibration Eliminator is designed to be assembled in refrigeration or air conditioning system to lower the vibration from compressors.

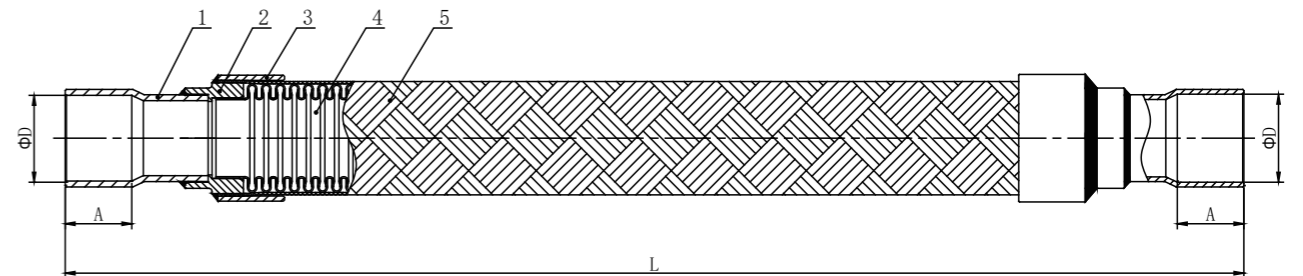
### 产品特点 Features

- 波纹管材质为SUS316L，耐腐蚀性能优异。
- 采用三位一体焊将接头、网套、压圈一起氩弧焊，具有安全、强度高特点。
- 波纹管与接头采用炉中钎焊，焊接质量稳定。
- 安装范围广(可安装于汽车空调系统)。
- 具有良好的吸震和补偿热位移。
- VAF型避震管已通过UL认证。
- SUS316L corrugated pipe supports with high corrosion resistance
- Trinity Argon Arc welding of wire sleeve, pipe connector and clamping ring makes the vibration eliminator stronger and more safety.
- Furnace brazing between the connector and the corrugated pipe provides steady welding quality.
- Wide application range(can be also adopted in automotive A/C)
- Perfect vibration resistance and good compensation for the heat displacement.
- VAF Type vibration Eliminator has been proved by UL.

### 技术参数 Technical Parameters

适用制冷剂 Applicable Refrigerants	HCFC/HFC
适用介质温度 Applicable Medium Temp	-40°C~+150°C
最大工作压力 MAX Working Pressure	见选型尺寸表(See Model Selection table)
最大耐压压力 Maximum Proof Pressure	最大工作压力的1.5倍(1.5 time of the M.W.P)

### 外形结构 Configuration



1.紫铜接管 Copper bush; 2.波纹管接头 Pipe Connector; 3.压圈 Clamping Ring.; 4.波纹管 Corrugated Pipe.; 5.网套 Wire Sleevring

### 选型表 Model Selection

型号 Type	规格 Size	外形尺寸 (mm) Outline Dimension (mm)			最大工作压力 (MPa) Max.Working Pressure (MPa)	最小弯曲半径 (mm) Min.Bending Radius (mm)		
		A	L	D		静态 Static(Rj)	动态 Dynamic(Rd)	
VAF-038-10	3/8	16	230	9.70 <sup>+0.15</sup> <sub>0</sub>	6.0	80	180	
VAF-012-12	1/2	10	250	12.80 <sup>+0.2</sup> <sub>0</sub>		95	215	
VAF-058-16	5/8	12	270	16.10 <sup>+0.2</sup> <sub>0</sub>		120	270	
VAF-034-19	3/4	14	290	19.10 <sup>+0.2</sup> <sub>0</sub>		145	325	
VAF-078-22	7/8	17	300	22.30 <sup>+0.2</sup> <sub>0</sub>		160	360	
VAF-100-25	1	24	330	25.60 <sup>+0.2</sup> <sub>0</sub>	5.0	175	400	
VAF-118-28	1-1/8	24	330	28.70 <sup>+0.2</sup> <sub>0</sub>		175	400	
VAF-114-32	1-1/4	38	380	32.10 <sup>+0.2</sup> <sub>0</sub>		225	510	
VAF-138-35	1-3/8	25	380	35.20 <sup>+0.2</sup> <sub>0</sub>		225	510	
VAF-158-42	1-5/8	30	430	41.50 <sup>+0.25</sup> <sub>0</sub>		4.5	280	640
VAF-218-54	2-1/8	65	520	54.20 <sup>+0.25</sup> <sub>0</sub>	2.3		350	800
VAF-258-67	2-5/8	75	610	66.80 <sup>+0.25</sup> <sub>0</sub>			390	845
VAF-318-79	3-1/8	80	680	79.60 <sup>+0.25</sup> <sub>0</sub>			480	1000

## 过滤器系列

# DRY FILTER *Series*



100%3A固体滤芯,干燥能力强,不会相互移动,避免了粉末的产生。

25 $\mu$ m过滤精度,可在最小压降下保持高效过滤,耐腐蚀的表面粉末喷涂,可用于各种环境标准螺口及焊口连接,也可按用户需要定制可任意方向安装。

100% 3A filter cartridge with powerful drying capacity, not mutual mobile, avoid the powder production

With a filter fineness of 25  $\mu$ m. Corrosion resistant powder coating finish is applicable to various environments. Threaded connection and welded connection is normal design and customer design is available. Could be mounted in any desirable direction.

# BFK型双向过滤器 BFK Bidirectional Dry Filter

## 产品概述 Product Description

- BKF型双向干燥过滤器用于制冷空调装置的液体管路上，用来干燥制冷剂（吸收系统的水分）及过滤系统内的固体杂质、以有效而安全地保护制冷空调系统
  - BKF型双向干燥过滤器的主要组分是80%分子筛+20%氧化铝和25um滤棉
  - BKF型双向干燥过滤器是80%分子筛+20%氧化铝的固体滤芯，可用于HFC和HCFC制冷剂以及合成聚酯油（POE或PAG）系统
- BFK bidirectional dry filter is used on the liquid piping of refrigeration and air conditioning unit to dry refrigerant (absorb water from system) and filter the solid from system in order to protect the refrigeration and air conditioning system for an efficient and safety operation.
- Model BFK bidirectional dry filter is composed of 80% 3A molecular sieve & 20% active aluminium with 25um filter cartridge.
- The filter core of 80% molecular sieve & 20% active aluminium can be used for HFC and HCFC refrigerants and synthesized polyester oil (POE or PAG) system.



## 产品特点 Features

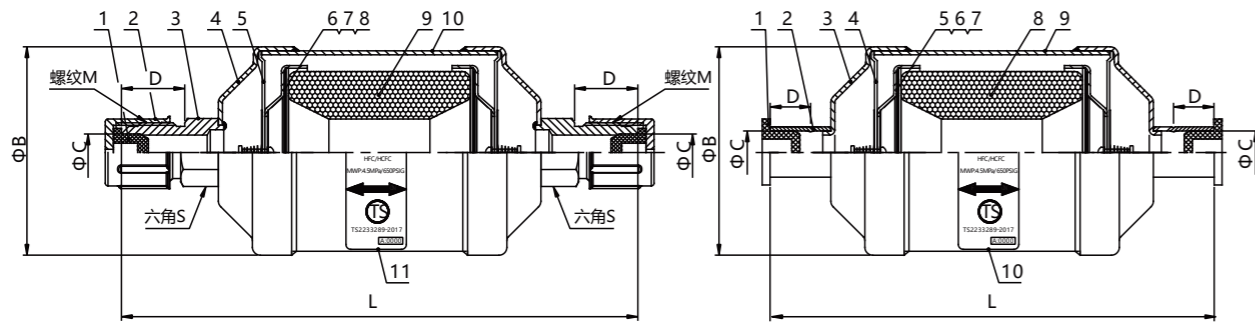
- BKF型双向干燥过滤器80%3A+20%氧化铝固体滤芯，干燥能力强，除酸能力强。
- 25um过滤精度，可在最小压降下保持高效过滤，耐腐蚀的表面粉末喷涂，可用于各种环境标准螺口及焊口连接，也可按用户需要定制可任意方向安装。
- Filter cartridge of 80% 3A molecular sieve and 20% active aluminium filter cartridge presents powerful drying capacity and powerful deacidification capacity.
- With a filter fineness of 25 μm. Corrosion resistant powder coating finish is applicable to various environments. Threaded connection and welded connection is normal design and customer design is available. Could be mounted in any desirable direction.

## 外形结构 Configuration

- 螺口 Thread:
- 橡胶塞 rubber plug
  - 螺纹封帽 thread cap
  - 铁接头 steel connector
  - 端盖 end cap
  - 双向座冲件 circuit change valve
  - 滤网 filter net
  - 细滤网 fine filter
  - 滤棉 filter pad
  - 烧结滤芯 solid filter cartridge
  - 筒体 barrel
  - 标贴 label
- 焊口 Soldering:
- 橡胶塞 rubber plug
  - 接管 weiding pipe
  - 端盖 end cap
  - 双向座冲件 circuit change valve
  - 滤网 filter net
  - 细滤网 fine filter
  - 滤棉 filter pad
  - 烧结滤芯 solid filter cartridge
  - 筒体 barrel
  - 标贴 label

## 技术参数 Technical Parameters

适用制冷剂 Applicable Refrigerant:	HCFC、HFC
适用介质温度 Applicable Medium Temperature:	-40°C ~ +120°C
最大工作压力 Maxum Working Pressure	4.5MPa
最大试验压力 Maximum Test Pressure	6.75MPa



螺口 Thread

焊口 Welding

## 选型 Product Model

### 螺口 Thread

型号 Model			规格 Size
BFK-083	BFK-163	BFK-303	3/8 SAE
BFK-084	BFK-164	BFK-304	1/2 SAE
BFK-085	BFK-165	BFK-305	5/8 SAE
—	—	BFK-306	3/4 SAE
—	—	—	—
—	—	—	—

## 选型 Product Model

### 焊口 Soldering

型号 Model			规格 Size
BFK-083S	BFK-163S	BFK-303S	3/8 ODF
BFK-084S	BFK-164S	BFK-304S	1/2 ODF
BFK-085S	BFK-165S	BFK-305S	5/8 ODF
—	—	BFK-306S	3/4 ODF
—	—	BFK-307S	7/8 ODF
—	—	BFK-309S	1-1/8 ODF

## SAE 接口 Flare connection

型号 Model	接口 Connection	ΦB	ΦC	D	L	S	螺纹 Thread M
BFK-083	3/8 SAE	Φ66.5	Φ8	17	158	16	5/8-18UNF
BFK-084	1/2 SAE	Φ66.5	Φ10	19	165	19	3/4-16UNF
BFK-085	5/8 SAE	Φ66.5	Φ13	23.5	176	22	7/8-14UNF
BFK-163	3/8 SAE	Φ79	Φ8	17	170	16	5/8-18UNF
BFK-164	1/2 SAE	Φ79	Φ10	19	179	19	3/4-16UNF
BFK-165	5/8 SAE	Φ79	Φ13	23.5	186	22	7/8-14UNF
BFK-303	3/8 SAE	Φ79	Φ8	17	245	16	5/8-18UNF
BFK-304	1/2 SAE	Φ79	Φ10	19	254	19	3/4-16UNF
BFK-305	5/8 SAE	Φ79	Φ13	23.5	261	22	7/8-14UNF
BFK-306	3/4 SAE	Φ79	Φ16	25	265	27	1-1/16-14UNS

## ODF 接口 Welding connection

型号 Model	接口 Connection	ΦB	ΦC	D	L
BFK-083S	3/8 ODF	Φ66.5	Φ9.7	9	141
BFK-084S	1/2 ODF	Φ66.5	Φ12.8	11	149
BFK-085S	5/8 ODF	Φ66.5	Φ16.1	11	149
BFK-163S	3/8 ODF	Φ79	Φ9.7	9	153
BFK-164S	1/2 ODF	Φ79	Φ12.8	11	161
BFK-165S	5/8 ODF	Φ79	Φ16.1	11	161
BFK-303S	3/8 ODF	Φ79	Φ9.7	9	228
BFK-304S	1/2 ODF	Φ79	Φ12.8	11	236
BFK-305S	5/8 ODF	Φ79	Φ16.1	11	236
BFK-306S	3/4 ODF	Φ79	Φ19.1	12	241
BFK-307S	7/8 ODF	Φ79	Φ22.3	15	247
BFK-309S	1-1/8 ODF	Φ79	Φ28.7	16	256

# DFS型干燥过滤器 Model DFS Dry Filter

## 产品概述 Product Description

- DFS型干燥过滤器用于制冷空调装置的液体管路上，用来干燥制冷剂（吸收系统的水份）及过滤系统内的固体杂质、以有效而安全地保护制冷空调系统。
  - DFS型干燥过滤器的主要组分是100%3A分子筛和25um滤棉。
  - DFS型干燥过滤器的分子筛是100%3A固体滤芯，可用于HFC和HCFC制冷剂以及合成聚脂油（POE或PAG）系统。
- Model DFS dry filter is used on the liquid piping of refrigeration and air conditioning unit to dry refrigerant (absorb water from system) and filter the solid from system in order to protect the refrigeration and air conditioning system for an efficient and safety operation.
- Model DFS dry filter is composed of 100% 3A molecular sieve and 25um filter cartridge.
- Model DFS dry filter' s molecular sieve is 100% 3A solid filter cartridge. This solid filter is used for HFC and HCFC refrigerants and synthesized polyester oil (POE or PAG) system.

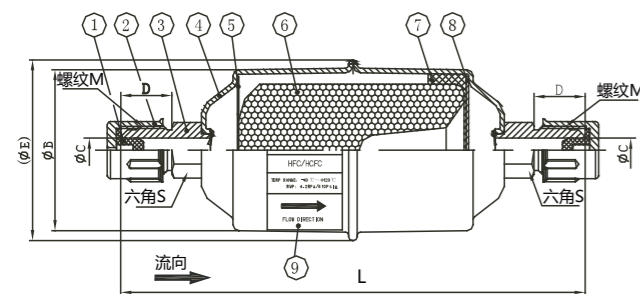


## 产品特点 Features

- 100%3A固体滤芯，干燥能力强，不会相互移动，避免了粉末的产生。
  - 25um过滤精度，可在最小压降下保持高效过滤，耐腐蚀的表面粉末喷涂，可用于各种环境标准螺口及焊口连接，也可按用户需要定制可任意方向安装。
- 100% 3A filter cartridge with powerful drying capacity, not mutual mobile, avoid the powder production.
  - With a filter fineness of 25 μm. Corrosion resistant powder coating finish is applicable to various environments. Threaded connection and welded connection is normal design and customer design is available. Could be mounted in any desirable direction.

## 外形结构 Configuration

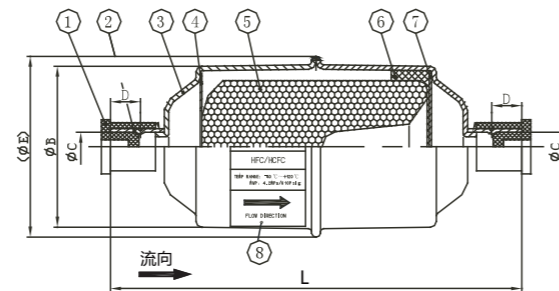
- 螺口 Thread:
1. 橡胶塞 rubber plug
  2. 螺纹封帽 thread cap
  3. 铁接头 steel connector
  4. 铁碗 steel cup
  5. 挡片 barrier
  6. 烧结滤芯 solid filter cartridge
  7. 滤棉 filter pad
  8. 滤网 filter net
  9. 标贴 label
- 焊口 Soldering:
1. 橡胶塞帽 rubber plug hat
  2. 接管 weiding pipe
  3. 铁碗 steel cup
  4. 挡片 barrier
  5. 烧结滤芯 solid filter cartridge
  6. 滤棉 filter pad
  7. 滤网 filter net
  8. 标贴 label



螺口 Flare

## 技术参数 Technical Parameters

适用制冷剂 Applicable Refrigerant:	HCFC、HFC
适用介质温度 Applicable Medium Temperature:	-40°C~+120°C
最大工作压力 Maxmum Working Pressure	4.5MPa
最大试验压力 Maximum Test Pressure	6.75MPa



焊口 Welding

## 选型 Product Model

螺口 Flare				
型号 Model				规格 Size
DFS-052	—	—	—	1/4 SAE
DFS-053	DFS-083	DFS-163	—	3/8 SAE
—	DFS-084	DFS-164	DFS-304	1/2 SAE
—	DFS-085	DFS-165	DFS-305	5/8 SAE
—	—	—	DFS-306	3/4 SAE
—	—	—	—	—
—	—	—	—	—

## 选型 Product Model

焊口 Welding				
型号 Model				规格 Size
DFS-052S	-----	-----	-----	1/4ODF
DFS-053S	DFS-083S	DFS-163S	-----	3/8ODF
-----	DFS-084S	DFS-164S	DFS-304S	1/2ODF
-----	DFS-085S	DFS-165S	DFS-305S	5/8ODF
-----	-----	-----	DFS-306S	3/4ODF
-----	-----	-----	DFS-307S	7/8ODF
-----	-----	-----	DFS-309S	1-1/8ODF

## SAE 接口 Flare connection

型号 Model	接口 Connection	ΦB	ΦC	D	ΦE	L	S	螺纹 Thread M
DFS-032	1/4 SAE	Φ43	Φ4.8	14	Φ46	110	14	7/16-20UNF
DFS-033	3/8 SAE	Φ43	Φ8	17	Φ46	119	16	5/8-18UNF
DFS-052	1/4 SAE	Φ54	Φ4.8	14	Φ57	118	14	7/16-20UNF
DFS-053	3/8 SAE	Φ54	Φ8	17	Φ57	127	16	5/8-18UNF
DFS-083	3/8 SAE	Φ54	Φ8	17	Φ57	152	16	5/8-18UNF
DFS-084	1/2 SAE	Φ54	Φ10	19	Φ57	159	19	3/4-16UNF
DFS-085	5/8 SAE	Φ54	Φ13	23.5	Φ57	170	22	7/8-14UNF
DFS-163	3/8 SAE	Φ75	Φ8	17	Φ79	159	16	5/8-18UNF
DFS-164	1/2 SAE	Φ75	Φ10	19	Φ79	166	19	3/4-16UNF
DFS-165	5/8 SAE	Φ75	Φ13	23.5	Φ79	177	22	7/8-14UNF
DFS-304	1/2 SAE	Φ79	Φ10	19	Φ79	256	19	3/4-16UNF
DFS-305	5/8 SAE	Φ79	Φ13	23.5	Φ79	267	22	7/8-14UNF
DFS-306	3/4 SAE	Φ79	Φ16	25	Φ79	268	27	1-1/16-14UNS

## ODF 接口 Welding connection

型号 Model	接口 Connection	ΦB	ΦC	D	ΦE	L
DFS-032S	1/4 ODF	Φ43	Φ6.5	8	Φ46	99
DFS-033S	3/8 ODF	Φ43	Φ9.7	9	Φ46	101
DFS-052S	1/4 ODF	Φ54	Φ6.5	8	Φ57	107
DFS-053S	3/8 ODF	Φ54	Φ9.7	9	Φ57	109
DFS-083S	3/8 ODF	Φ54	Φ9.7	9	Φ57	134
DFS-084S	1/2 ODF	Φ54	Φ12.8	11	Φ57	142
DFS-085S	5/8 ODF	Φ54	Φ16.1	11	Φ57	142
DFS-163S	3/8 ODF	Φ75	Φ9.7	9	Φ79	142
DFS-164S	1/2 ODF	Φ75	Φ12.8	11	Φ79	150
DFS-165S	5/8 ODF	Φ75	Φ16.1	11	Φ79	150
DFS-304S	1/2 ODF	Φ79	Φ12.8	11	Φ79	239
DFS-305S	5/8 ODF	Φ79	Φ16.1	11	Φ79	239
DFS-306S	3/4 ODF	Φ79	Φ19.1	12	Φ79	244
DFS-307S	7/8 ODF	Φ79	Φ22.3	15	Φ79	250
DFS-309S	1-1/8 ODF	Φ79	Φ28.7	16	Φ79	259

# DFS型干燥过滤筒

## Model DFS Replaceable Dry Filter Cartridge



选型表 Model Selection						
型号 Type	进出口尺寸 Connections To solder ID (inch)	芯体数量 Number of cores	过滤面积(m <sup>2</sup> ) Filtering surface(m <sup>2</sup> )	尺寸 Dimensions (mm)		
				A	B	C
DFS-485S	5/8ODF	1	420	234	153	85
DFS-486S	3/4ODF			234	153	85
DFS-487S	7/8ODF			234	153	85
DFS-489S	1-1/8ODF			236	155	87
DFS-4811S	1-3/8ODF			240	159	91
DFS-4813S	1-5/8ODF			242	161	93
DFS-4817S	2-1/8ODF			246	160	99
DFS-4821S	2-5/8ODF			244	158	106
DFS-967S	7/8ODF	2	840	376	295	85
DFS-969S	1-1/8ODF			378	297	87
DFS-9611S	1-3/8ODF			382	301	91
DFS-9613S	1-5/8ODF			384	303	93
DFS-9617S	2-1/8ODF			388	302	99
DFS-9621S	2-5/8ODF			386	300	106
DFS-1449S	1-1/8ODF	3	1260	520	439	87
DFS-14411S	1-3/8ODF			524	443	91
DFS-14413S	1-5/8ODF			526	445	93
DFS-14417S	2-1/8ODF			530	444	99
DFS-14421S	2-5/8ODF			528	442	106

### 产品概述 Product Description

- DFS型干燥过滤筒安装在系统的液、汽管路中，可有效去除残留的污染物，从而使压缩机得到更好的保护，延长其使用寿命。
- DFS型干燥过滤筒是可更换滤芯的，最大的特点是用于吸附压缩机马达烧毁后进入系统中大量的水分

- Model DFS dry filter cartridge is installed on the liquid and vapor piping, which could effectively remove any residual contaminant to protect compressor for a longer service life.
- The filter element of Model DFS dry filter cartridge is replaceable and it is capable to absorb large amount of water in the system in case the compressor motor burns up.

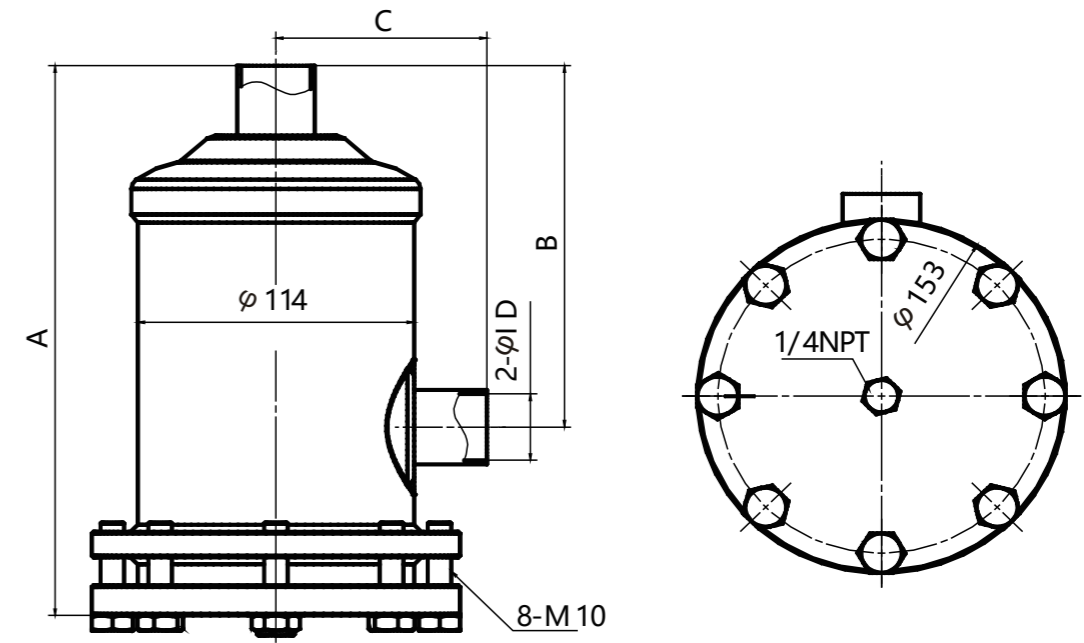
### 产品特点 Features

- 可拆式结构、便于安装及维修；
- 100目出口滤网；
- 全流通设计，最大限度的减少压降；
- 钢制壳体，铜接管焊接接口，高频焊接采用翻边结构，增加焊接可靠性；
- 改性聚四氟乙烯新型材料，确保密封性；
- 外涂层采用环氧树脂静电喷漆。

- Removable structure for convenient installation and maintenance;
- 100 mesh outlet filter screen;
- Full pass through design to minimize pressure drop;
- Steel casing, copper pipe welded connection, high frequency welding flanging structure to improve welding reliability;
- Modified Teflon new material to ensure perfect sealing;
- Outer surface applies epoxy resin coating protection.

### 技术参数 Technical Parameters

适用制冷剂 Suitable Refrigerants	HCFC、HFC、CFC
适用介质温度 Suitable Medium Temperature	-35°C ~ +70°C
最大工作压力 Maximum Working Pressure	4.2MPa
最大试验压力 Maximum Test Pressure	6.3MPa





YL 型油流量开关

# YL TYPE OIL FLOW SWITCH

*Series*

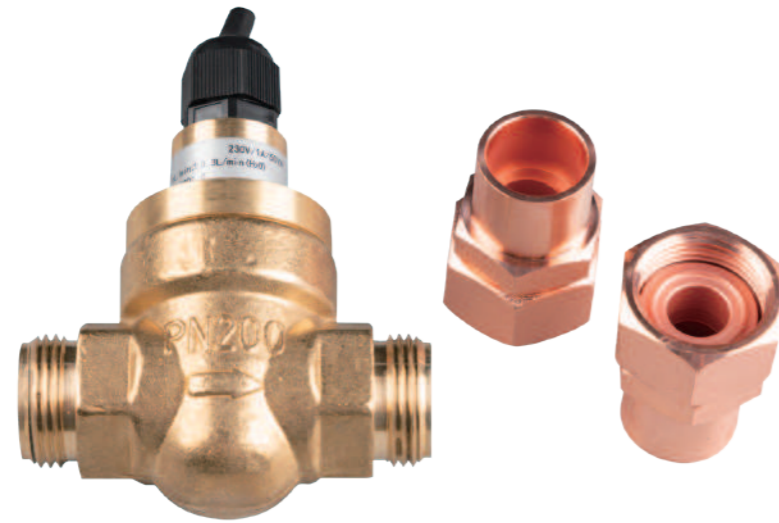
REFRIGERATION & A/C SYSTEM ACCESSORIES

不需要外部供电  
世界知名磁簧开关品牌, 可靠性高  
硅橡胶引出线, 耐油性能好  
带用于管路焊接的钎焊接头

No need for external power supply;  
Apply world-renowned reed switch , high reliability;  
Silicone rubber lead wire, good oil resistance;  
With brazing joints for pipeline welding;



# YL 型油流量开关 YL type oil flow switch



## 产品概述 Product Description

• 磁性活塞在流体推力作用下压缩弹簧，流体流量达到设定值时触发阀内部的磁簧开关，形成电气回路输出信号。当流体流量减小时，磁簧开关断开，电信号断开。主要用于水与油介质的流量监控。

• The magnetic piston compresses the spring under the action of the fluid thrust, the reed switch will be turned on when the fluid flow reaches the set value, then electrical circuit output signal will be formed to control the valve. When the fluid flow decreases, the reed switch will be turned off and the electrical signal will be off. Mainly applied for flow monitoring of water and oil media.

## 特点 Features

- 不需要外部供电;
- 世界知名磁簧开关品牌，可靠性高;
- 硅橡胶引出线，耐油性良好;
- 带用于管路焊接的钎焊接头;

- No need for external power supply;
- Apply world-renowned reed switch, high reliability;
- Silicone rubber lead wire, good oil resistance;
- With brazing joints for pipeline welding;

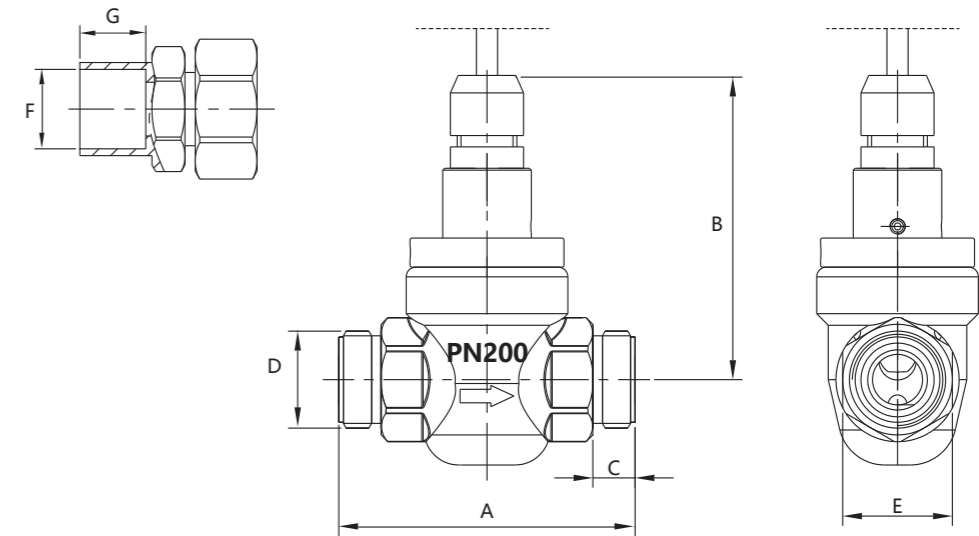
## 技术参数 Technical Parameters

适用介质 Applicable media	油、水 water, oil
环境温度 Ambient temperature	-20~+70°C
介质温度 Medium temperature	-20~+110°C
开关形式 Switch form	常开 Normal open
额定电压 Rated voltage	AC 220V
电流 Current	Max.1A
触点容量 Contact rating	70AV / 50W
防护等级 Protection level	IP65
线长 Cable length	1M

## 选型表 Model Selection

规格 Model	耐压 (Bar) Working pressure	最大流量(L/min) <sup>1)</sup> MAX. Flow	断开值 (L/min) Cut-off value	重量 (Kg) Weight
YL15-040-16	200	15	4±0.3	0.7
YL15-060-19			6±0.3	
YL15-100-22		20	10±0.3	

## 外形尺寸 Dimensions



型号 Model	A	B	C	D	E	F	G
YL15-040-16	77	78	11	1"-14UNS	29	φ16.2	16
YL15-060-19	77	78	11	1"-14UNS	29	φ19.2	16
YL15-100-22	77	78	11	1"-14UNS	29	φ22.3	16

# 直角阀 Right angle valve



## 产品概述 Product Description

直角阀是手动调节的截止阀，适用于90度角型流动，用于冷冻、冷藏和空气调节装置的液体、暖气和热气管路上。采用阀杆硬密封和阀帽密封两个特有的密封组件设计，并选用特殊的密封材质，保证了产品在常用制冷工况环境下良好运行。

Right angle valve is a manually adjusted cut off valve, which suitable for 90 degree angle flow, the valve is used in the liquid, heating and hot gas piping for refrigeration, refrigerated and air-regulating device. The two special sealing components of valve stem seal and valve cap seal is used, and choose special sealing materials to ensure that the product is running well under the application of common refrigeration working quality environment.

## 特点 Features

- 90度角型转向流动，便于转角安装。
- 精密锻造优质铜材阀体。
- 凡尔线阀口设计，密封可靠。
- 特选兼容常用制冷工况运行环境的密封圈。
- 阀杆部位具有二次可靠密封结构。

- 90 degree Angle steering flow for easy corner installation.
- Precision forged high quality copper valve body.
- Vere line vlave port design, reliable sealing.
- Selected seals compatible with common refrigerant operating environments.
- The valve stem part has a secondary reliable sealing structure.

## 技术参数 Technical Parameters

最大工作压力: 4.5MPa	Maximum work pressure: 4.5MPa
适用制冷剂: R22/R407C、R134a、R404A/R507、R410A	Applicable refrigerant: R22/R407C、R134a、R404A/R507、R410A
适用介质工作温度: -40°C ~ +150°C	Applicable medium working temperature: -40°C ~ +150°C

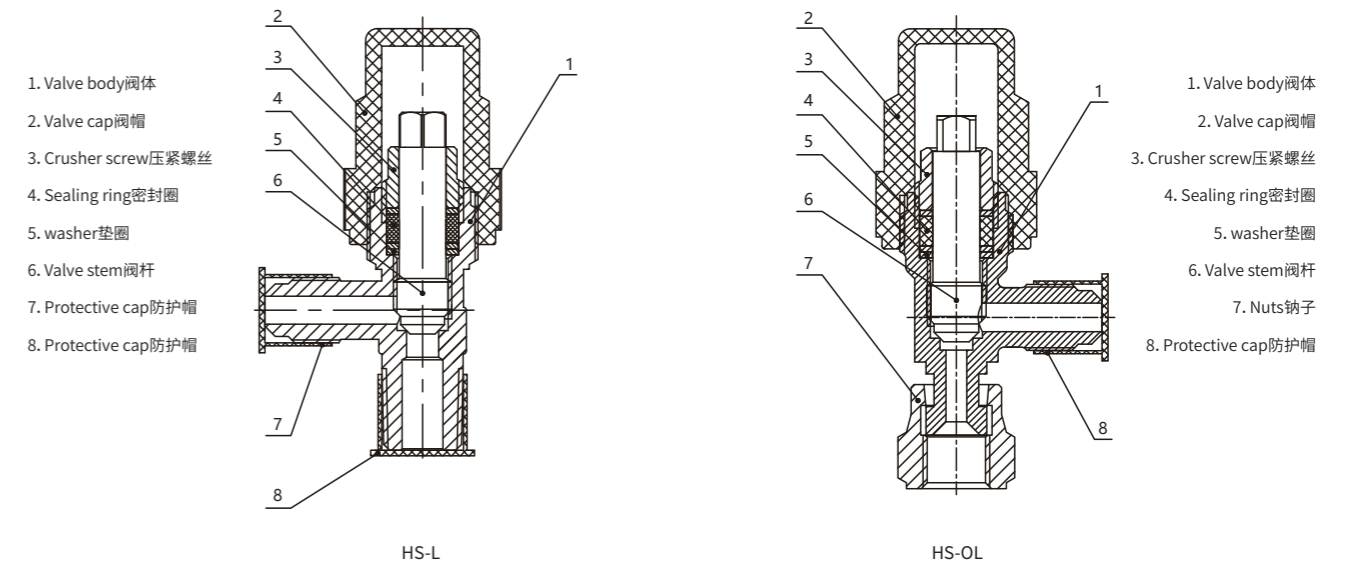
## 选型表 Selection

HS直角阀				HS油路直角阀			
型号 Model	最小通径(mm) Minimum diameter(mm)	连接螺纹 Connection thread	Kv值(m³/h) Kv Value(m³/h)	型号 Model	最小通径(mm) Minimum diameter(mm)	连接螺纹 Connection thread	Kv值(m³/h) Kv Value(m³/h)
HS-L-022	φ4.8	Upper 1/4SAE-down NPT1/4	0.4	HS-OL-022	φ4.8	Upper 1/4SAE-down 1/4SAE	0.4
HS-L-032	φ5.5	Upper 3/8SAE-down NPT1/4	0.5	HS-OL-023	φ4.8	Upper 1/4SAE-down 3/8SAE	0.4
HS-L-023	φ4.8	Upper 1/4SAE-down NPT3/8	0.4	HS-OL-033	φ5.5	Upper 3/8SAE-down 3/8SAE	0.5
HS-L-033	φ7	Upper 3/8SAE-down NPT3/8	0.8	HS-OL-W022	φ3.5	Upper 1/4SAE-down 1/4SAE	0.3
HS-L-044	φ8.5	Upper 1/2SAE-down NPT1/2	1.3	HS-OL-W032	φ4.8	Upper 3/8SAE-down 1/4SAE	0.4
HS-L-066	φ11.5	Upper 3/4SAE-down NPT3/4	3.5	HS-OL-W033	φ5.5	Upper 3/8SAE-down 3/8SAE	0.5

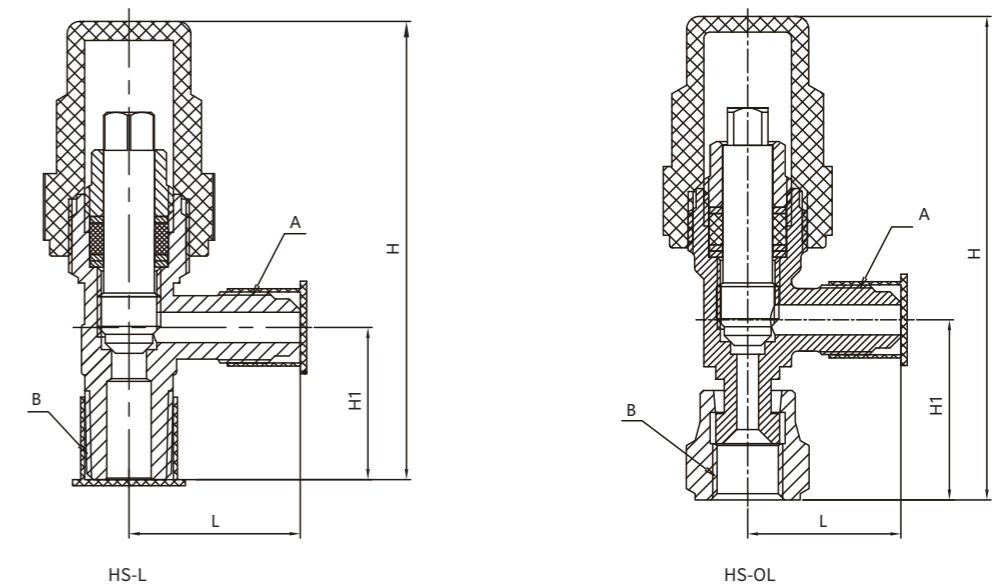
- Kv值: 密度为1吨/m³的水在通过电磁阀的压差等于100KPa时的流量, 单位为m³/h;
- 气态介质的MOPD约高0.1MPa。

- Kv value: The flow of water with a density of 1 ton/m when the pressure difference between the solenoid valve is equal to 100kPa, the unit is M³/H;
- Mopd of the gaseous medium is about 0.1MPa high.

## 结构 Structure



## 外形尺寸 Overall Dimension



## 外形尺寸 Overall Dimension

HS直角阀						HS油路直角阀					
型号 Model	A	B	L	H1	H	型号 Model	A	B	L	H1	H
HS-L-022	7/16-20UNF	NPT1/4	27	24	72	HS-OL-022	7/16-20UNF	7/16-20UNF	24.5	28.5	77
HS-L-032	5/8-18UNF	NPT1/4	29	27	81	HS-OL-023	7/16-20UNF	5/8-18UNF	24.5	32.5	81
HS-L-023	7/16-20UNF	NPT3/8	29	27	81	HS-OL-033	5/8-18UNF	5/8-18UNF	27.5	32.5	81
HS-L-033	5/8-20UNF	NPT3/8	29	27	81	HS-OL-W022	7/16-20UNF	7/16-20UNF	30.5	23.5	72
HS-L-044	3/4-16UNF	NPT1/2	33	28.5	96	HS-OL-W032	5/8-18UNF	7/16-20UNF	34	23.5	72
HS-L-066	1-1/16-14UNS	NPT3/4	42	38	109	HS-OL-W033	5/8-18UNF	5/8-18UNF	34	24.5	73

# 压力传输配件系列

ESCORT FOR SAFE REFRIGERATION 为安全制冷护航

## FITTING Series

高端压力表, 功能强大, 附件配套齐全, 使用便捷。  
高品质密封材料, 使用多种冷媒。

High class pressure gauge,  
complete accessories arrange,  
quality sealing material,  
available for more refrigerants.

REFRIGERATION & A/C SYSTEM ACCESSORIES



HONGSEN

# 充油 (真空) 压力表 Oil-filled(vacuum)Pressure Gauge



**242# (Y63)**  
(-5°C ~ +120°C)

**128# (ZY63)**  
(-40°C ~ +120°C)

**191# (ZY63)**  
(-40°C ~ +120°C)

## 产品概述 Product Description

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• 充油压力表是内部充油的制冷专用的抗振压力表。</li> <li>• 充油压力表用于冷冻、冷藏和空气调节装置的机组上。</li> <li>• 充油压力表由多种制冷剂共组一表，方便使用。</li> <li>• 充油压力表使用全不锈钢表壳、超宽铍青铜簧管。</li> <li>• 充油压力表为带法兰安装边的轴向压力表。</li> </ul> | <ul style="list-style-type: none"> <li>• The pressure gauge is a vibration-proof pressure gauge with oil filled inside for refrigeration use only.</li> <li>• The oil-filled pressure gauge is used on freezer, cold store and air-conditioning unit.</li> <li>• The oil-filled pressure gauge is convenient in application as it features one gauge for multiple refrigerants.</li> <li>• The oil-filled pressure gauge has full stainless steel casing and wider beryllium bronze spring tube.</li> <li>• The oil-filled pressure gauge is an axial pressure gauge with edges for flange joint.</li> </ul> |
|--|--|

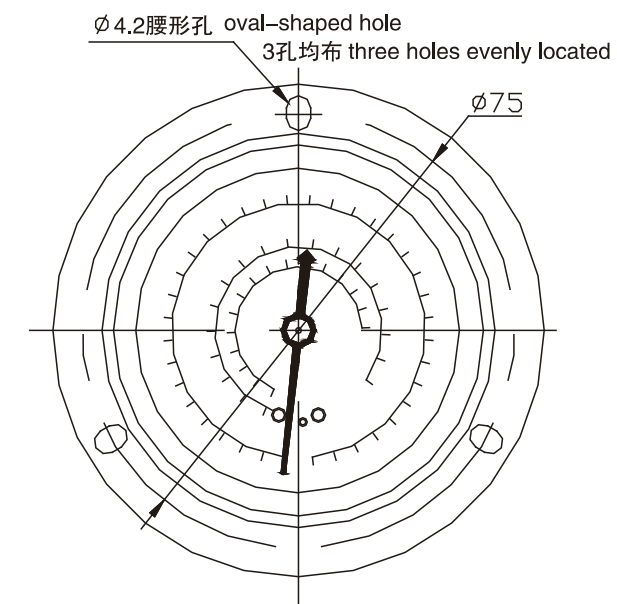
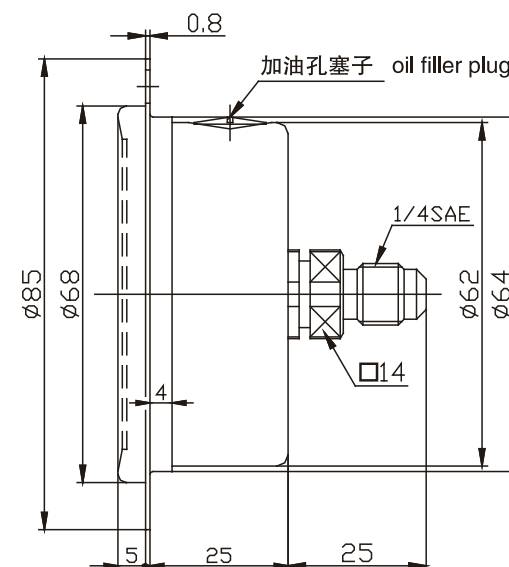
## 产品特点 Features

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• 内部充油可抗机组的高频振动</li> <li>• 带阻尼油杯可防指针快速跳动</li> <li>• 带法兰安装边方便安装</li> <li>• 设有超压限位装置</li> <li>• 经强化超压确保零位误差</li> <li>• 合理的油封设计无漏油隐患</li> <li>• 设有压力温度对照</li> <li>• 具有超长的使用寿命</li> </ul> | <ul style="list-style-type: none"> <li>• The inside filled oil functions damping to the high frequency vibration of machinery.</li> <li>• The damping oil cup prevents gauge pointer from quick jumping.</li> <li>• The flanged edge is for convenient mounting.</li> <li>• Over-pressure limit stop is equipped.</li> <li>• Zero error is ensured with strengthening overpressure measures.</li> <li>• Rational oil seal design and no oil leakage worry.</li> <li>• Pressure versus Temperature readings for easy use.</li> <li>• Extra long service life.</li> </ul> |
|--|---|

## 技术参数 Technical Parameters

适用制冷剂 Applicable Refrigerant	HCFC and HFC
适用介质温度 Applicable Medium Temperature	-5°C ~ +120°C (-40°C ~ +120°C)
接口尺寸 Connection Size	1/4SAE
结构型式 Structure	轴向同心嵌装式 Axial concentrically-embedded
外壳公称直径 Casing Nominal Diameter	2.5 in(Φ63.5)
精度等级 Accuracy Class	1.6级

## 外形尺寸 Overall Dimension



型号 model	充油 (真空) 压力表 Oil-filled (vacuum) pressure Gauge		
技术参数 Technical Parameters	编号 Code Number: 242#	编号 Code Number: 128#	编号 Code Number: 191#
	接口 Connector: 1/4SAE (ZY63)	接口 Connector: 1/4SAE (ZY63)	接口 Connector: 1/4SAE (ZY63)
	适用制冷剂 Application: R22 R134a R404A R407C	适用制冷剂 Application: R410A	适用制冷剂 Application: R22 R134a R404A R407C
特点 Features	<ul style="list-style-type: none"> <li>• 进口高精度压力表机芯</li> <li>• 特殊的超压限位装置</li> <li>• 自动调零装置</li> </ul>	<ul style="list-style-type: none"> <li>• Imported high precision gauge internal</li> <li>• Special overpressure limiting device</li> <li>• Micro-adjustable zero</li> </ul>	

# 充注阀 Charging valve



## 产品概述 Product Description

- 充注阀是一种带气门芯的单向检修用阀。
- 充注阀用于冷冻、冷藏和空气调节装置的各个部位。

- The charging valve is an one-way service valve with valve inside.
- The charging valve is used on the freezer, cold store and air-conditioning unit.

## 产品特点 Features

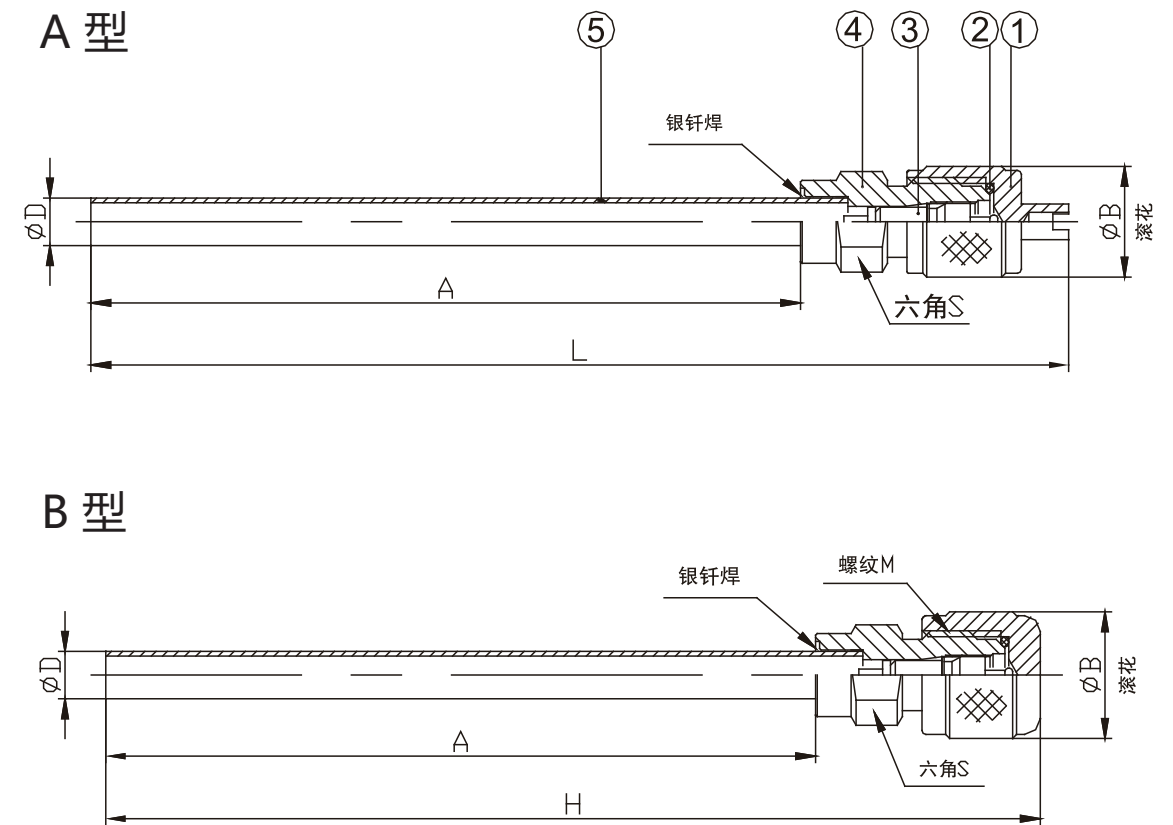
- 采用优质供应商气门芯，性能可靠
- 双重密封确保无泄漏
- 可提供各种长度和硬度的铜接管
- 阀帽滚花设计，装卸方便

- Equipped with imported valve inside of reliable performance.
- Double sealing ensure leak-tight.
- Copper tube of various lengths and hardness are available.
- Valve bonnet is knurled for easy handling.

## 技术参数 Technical Parameters

适用制冷剂 Applicable Refrigerant	HCFC and HFC
适用介质温度 Applicable Medium Temperature	-25°C~+120°C
最大工作压力 Max. Operating Pressure	3.0MPa
最大耐压压力 Max. Allowable Pressure	4.5MPa

## 外形结构 Configuration



- 1. 阀帽 valve bonnet
- 2. O形圈 O-ring
- 3. 气门芯 valve core
- 4. 阀体 valve body
- 5. 铜接管 copper tube

## 选型表 Model Selection

型号 Type	接口 Connection	规格 Size	外形尺寸 Overall Dimension					六角 Hexagonal S	螺纹 Thread M	重量(g) Weight(g)
			A	B	ΦD	H	L			
Type A	1/4SAE	1/8	60	14	3.17	--	94	11	7/16-20UNF	22
	1/4SAE	3/16	60	14	4.76	--	94	11	7/16-20UNF	23
	1/4SAE	1/4	90	14	6.35	--	124	11	7/16-20UNF	28
Type B	1/4SAE	1/4	90	14	6.35	118	---	12	7/16-20UNF	30
	1/2SAE	1/4	90	16	6.35	118	---	14	1/2-20UNF	39
	1/2SAE	1/4	90	16	6.35	118	---	14	1/2-16UNF	40

注：A、H、L长度也可按客户要求定制

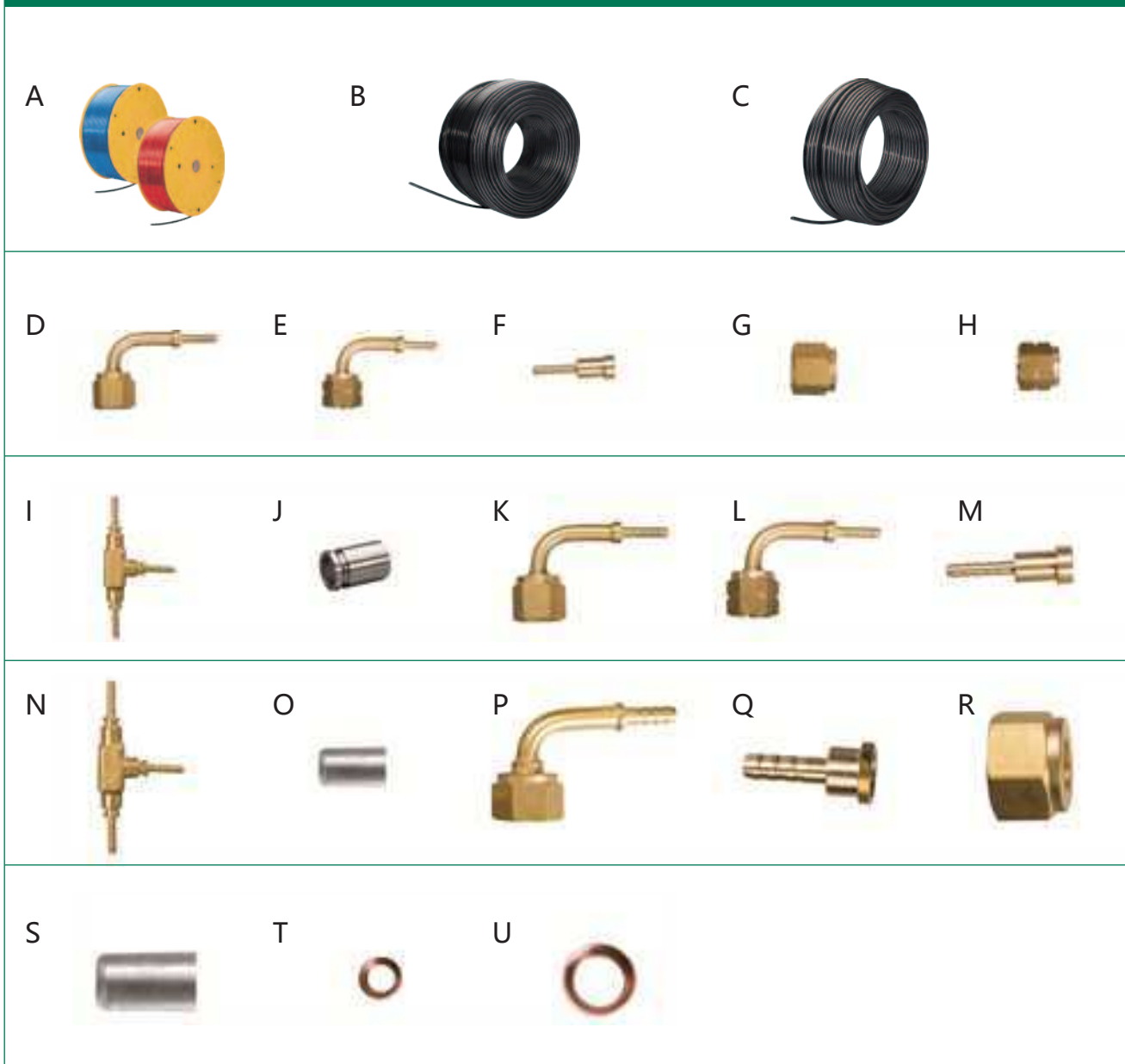
# HMG型高压毛细软管 接头类

## Type HMG High Pressure Hose and Fittings

### 产品概述 Product Description

- HMG型高压软管是柔性连接件，主要用于冷冻、冷藏及空气调节装置的压缩机吸排气管。
- Type HMG hose is a flexible connection piece and it is mainly used as compressor suction and/or exhaust tube in the refrigeration, cold storage and air conditioning facilities.

### 选型表 Model Selection



### 产品特点 Features

- 采用优质尼龙、聚酯材料制作，产品耐高压、耐高温、耐老化性能强，内壁光滑，介质流阻小。代替铜管焊接不牢固，容易振动失漏，无法维修，噪音大等缺点，而且节省系统连接时间，长度任意取舍，技术可靠性大大提高。
- Made of high quality nylon and polyester. High pressure resistance, high temperature resistance and high ageing resistance. Small flow resistance due to its smooth internal wall. Eliminate the shortcomings of copper tube such as soldering failure, leakage, noise and difficult service. Selectable length at ease and short the connection operation time, improve the technical reliability obviously.

### 技术参数 Technical Parameters

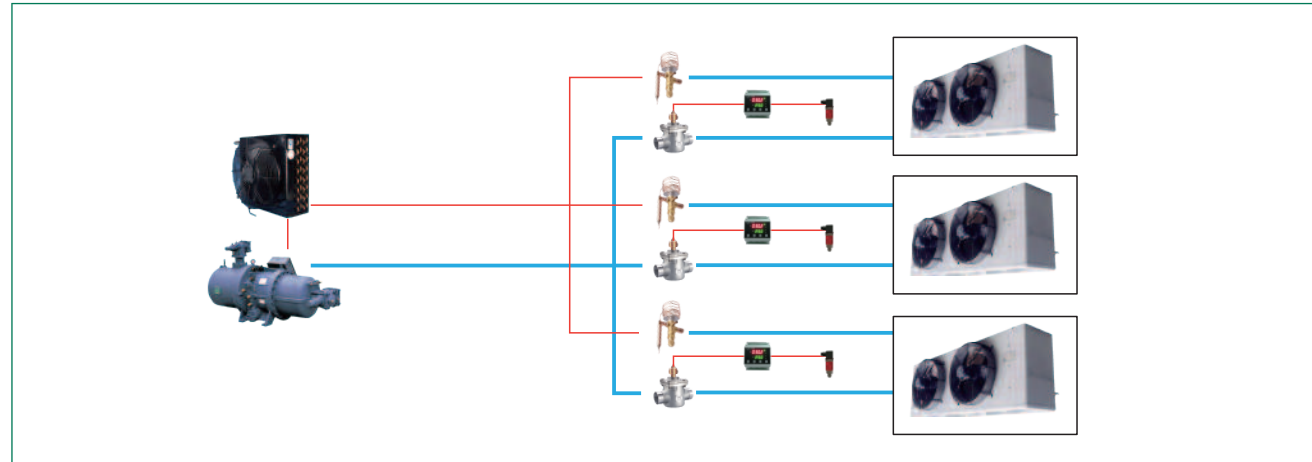
适用制冷剂 Applicable Refrigerant	HCFC and HFC
适用介质温度 Applicable Medium Temperature	-40°C~+100°C

### 选型表 Model Selection

编号 Code	型号规格 Type	名称 Description	内径 ID	外径 OD	最大工作压力 MPa Max.Working Pressure MPa	爆破试验压力 MPa Blasting Test Pressure MPa
A	HS-HMG-2	高压软管 high pressure hose Φ2	Φ2.5	Φ5.6	5.5	30
B	HS-HMG-4	高压软管 high pressure hose Φ4	Φ3.4	Φ7.8	5.5	30
C	HS-HMG-8	高压软管 high pressure hose Φ8	Φ6.2	Φ10.5	4.2	20
D	Φ2.6×1/4"	弯芯90° 带纳子 90° bend core with 1/4" nut1/4"	Φ1.0	Φ2.6		
E	Φ2.6×Dg4	弯芯90° 带纳子Dg4 90° bend core with Dg4 nut	Φ1.0	Φ2.6		
F	φ2.6	直芯 straight core	Φ1.0	Φ2.6		
G	1/4"	纳子1/4" 1/4" nut				
H	Dg4	纳子 Dg4 nut				
I	φ2.6	三通 (T型) Tee	Φ1.0	Φ2.6		
J	φ5.9×12.3	铝套 aluminum sleeve	Φ5.9	Φ8		
K	φ3.5×1/4"	弯芯90° 带纳子 1/4" 90° bend core with 1/4" nut	Φ1.7	Φ3.5		
L	φ3.5×Dg4	弯芯90° 带纳子Dg4 90° bend core with Dg4 nut	Φ1.7	Φ3.5		
M	φ3.5	直芯 straight core	Φ1.7	Φ3.5		
N	φ3.5	三通 (T型) Tee	Φ1.7	Φ3.5		
O	φ8×18	铝皮套 Aluminium sleeve	Φ8	Φ11		
P	φ6.3×3/8"	弯芯90° 带纳子 3/8" 90° bend core with 3/8" nut	Φ3.2	Φ6.3		
Q	Φ6.3	直芯 straight core	Φ3.2	Φ6.3		
R	3/8"	纳子 3/8" 3/8" nut				
S	Φ10.8×18	铝皮套 Aluminium sleeve	Φ10.8	Φ13.1		
T	1/4"	铜封环 copper seal ring				
U	3/8"	铜封环 copper seal ring				

## 蒸发压力控制 Evaporation pressure control

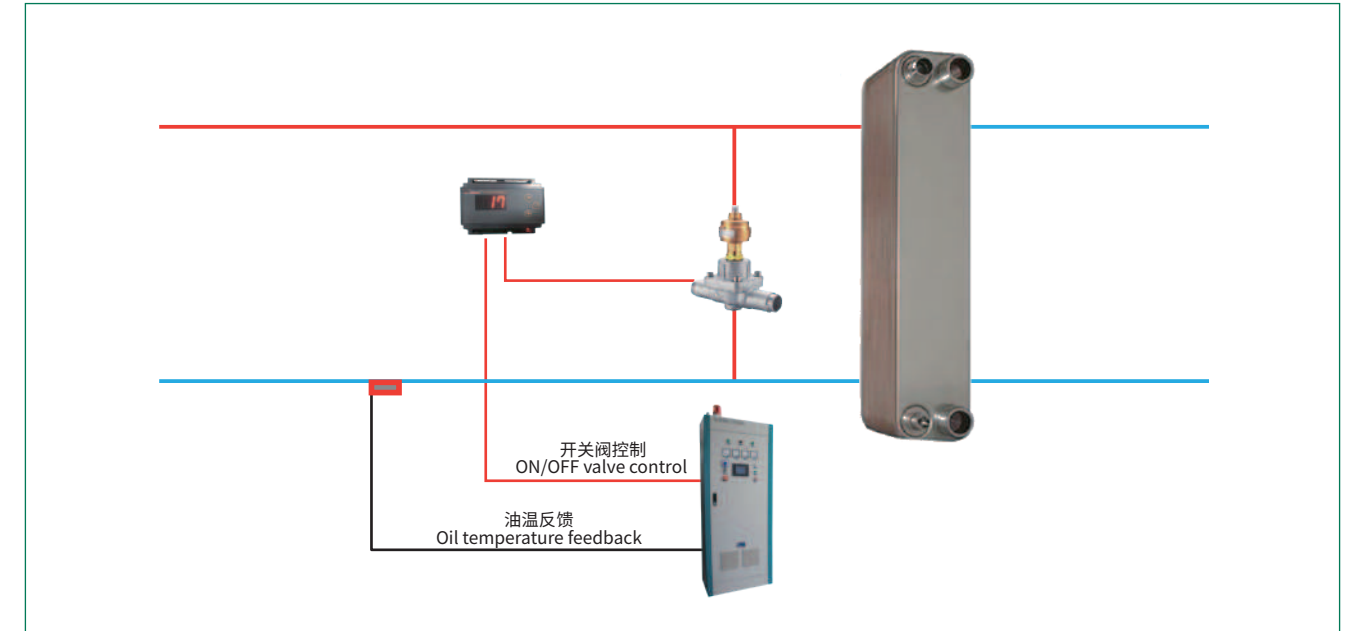
工程案例: 多温库和变温库(+10°C~0°C, -5°C~-15°C, -18°C~-25°C)



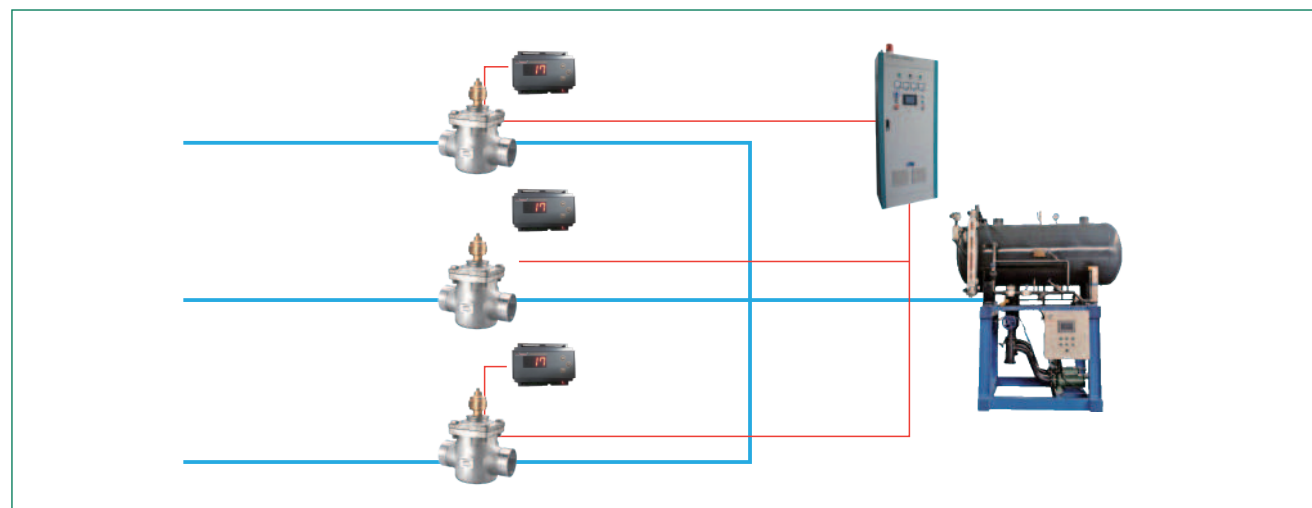
### 产品特点 Features

- 实现单系统多温库功能
- 库温稳定可调节
- For multi-temperature cold rooms within one single system
- For stable and adjustable temperature in cold room

## 恒定温度控制 (推荐): 油温控制精度±1°C Constant temperature control: Oil temperature±1°C



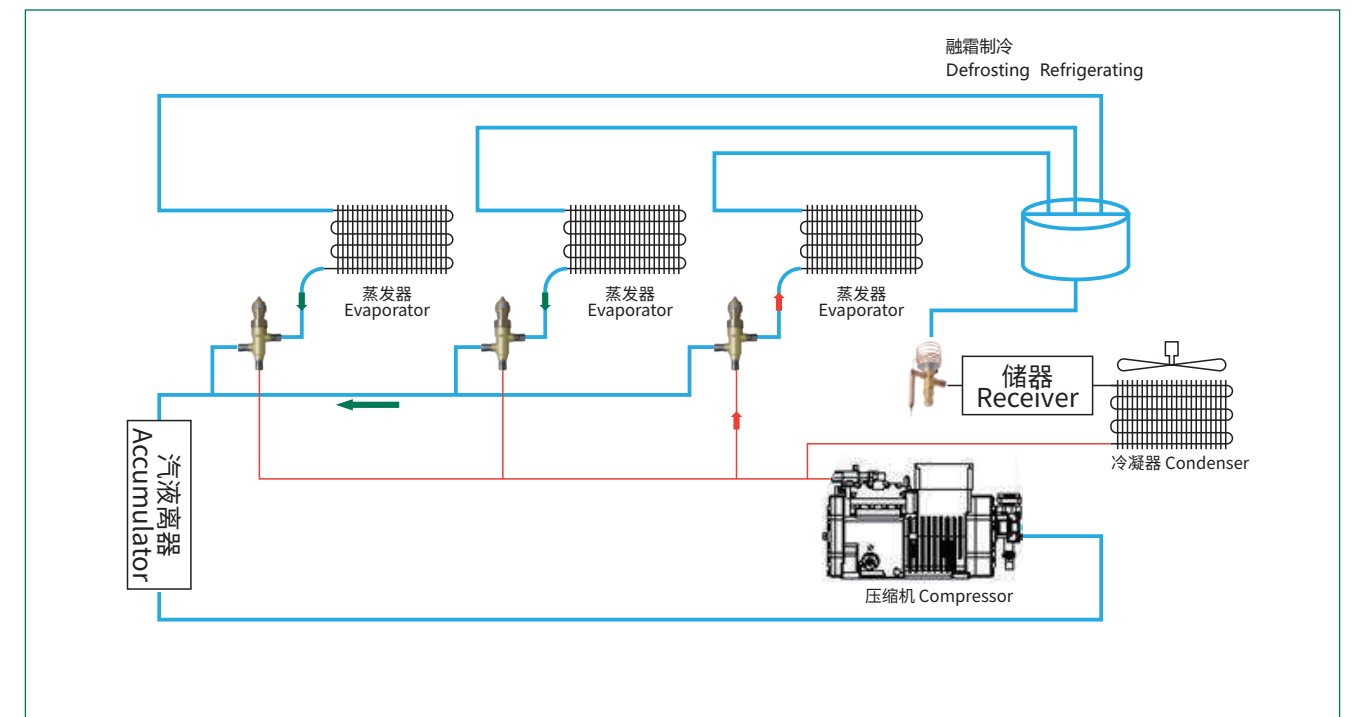
## 满液系统供液控制 Liquid supplement in barrel pump system



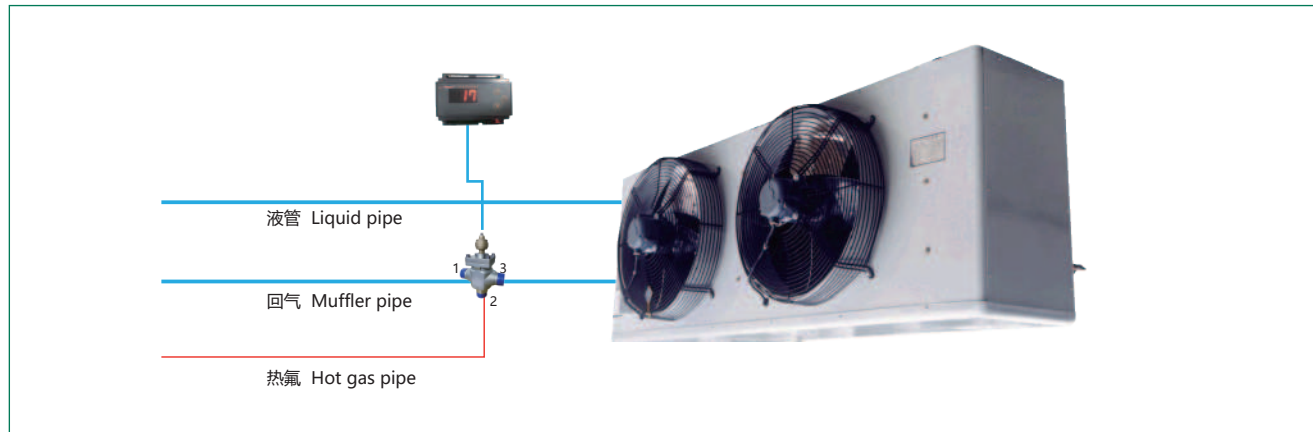
### 产品特点 Features

- 零压差开启
- 避免工业管道液锤现象
- 集中供液时开度大小, 可以任意设置分液均匀
- 两步式开启功能
- Work at  $\Delta P=0$
- Avoid liquid hammer
- Average the flow by adjust the open degree
- Step open

## 多路分组热氟融霜控制 3-way regulating valve applied for defrosting control



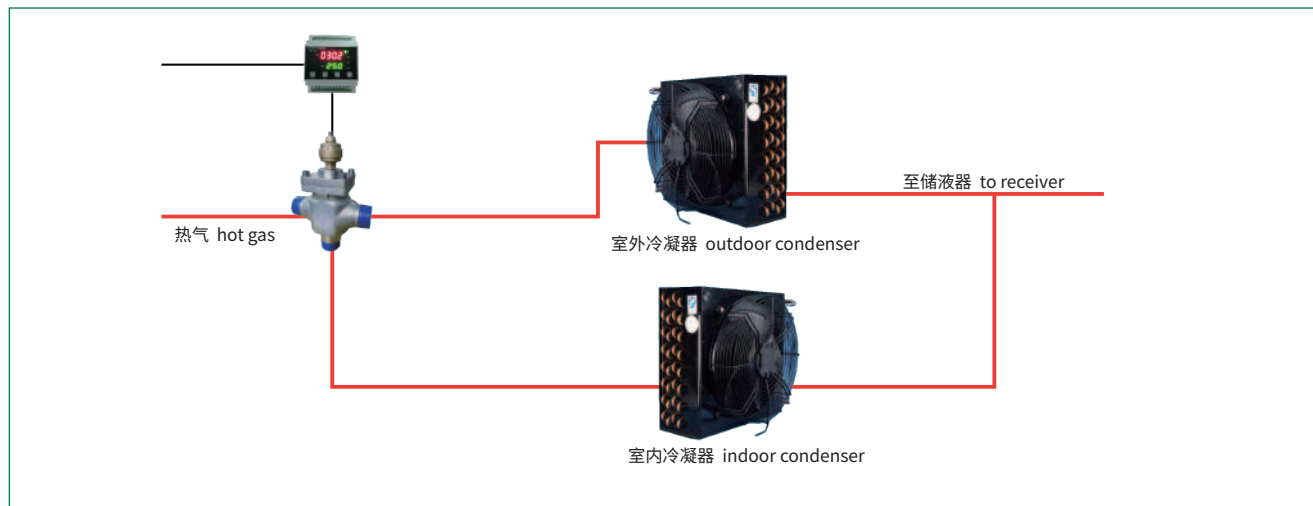
### 三通电动调节阀在热氟化霜中的应用 3-way regulating valve applied for defrosting control



#### 产品特点 Features

- 二步开启, 避免液锤
- 三通, 减少阀门, 代替电磁阀和化霜阀
- 节能, 可靠
- Two step open, avoid liquid hammer
- 3-way, reduce valves by replacing solenoid valve and defrosting valve
- Energy efficient and reliable

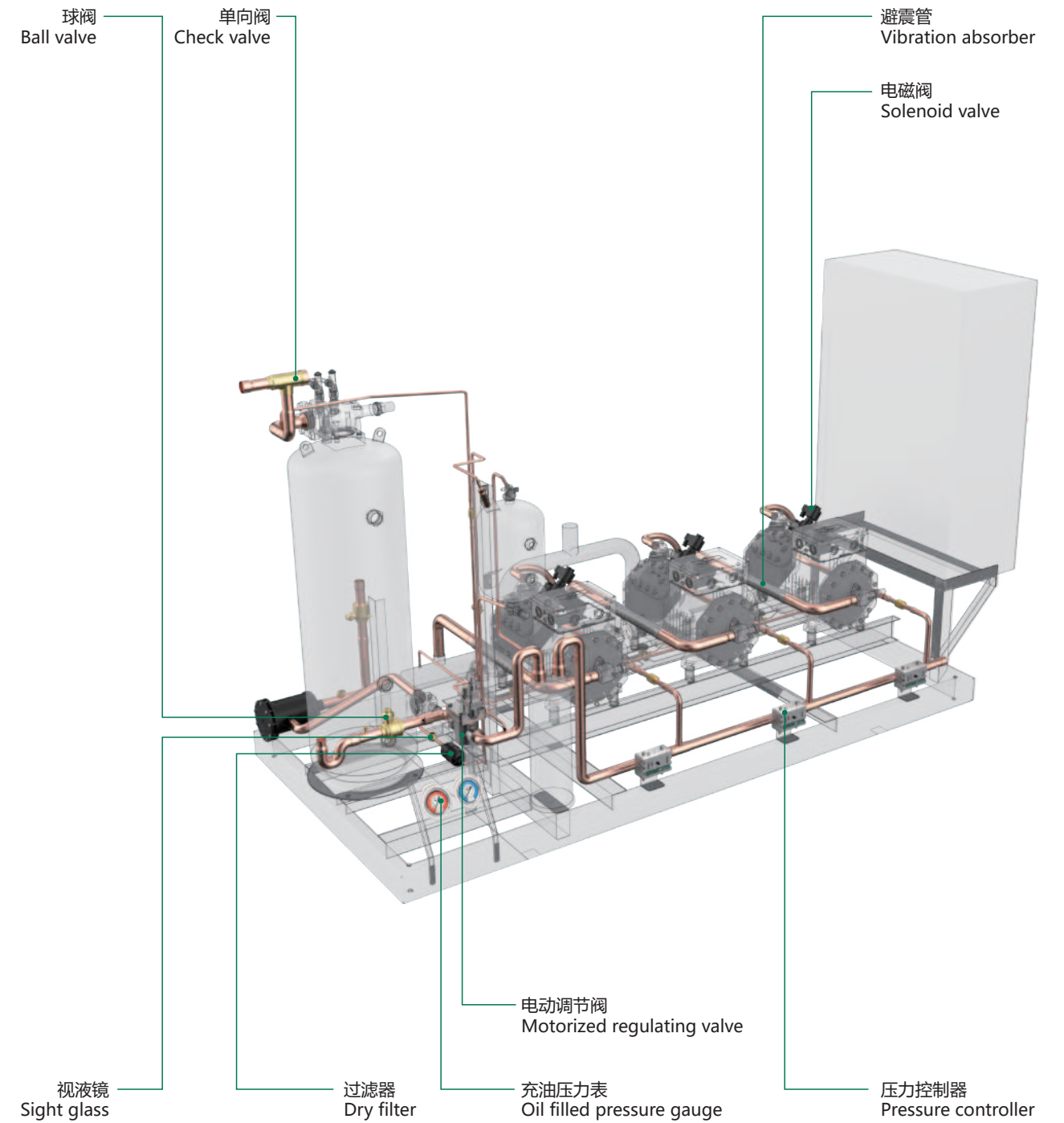
### 电动三通调节阀 (热泵烘干控制) 3 way motorized regulating valve applied in heat pump dryer



#### 产品特点 Features

- 干燥效率高
- 节能
- More efficient by shorten drying time
- Energy efficiency

### 制冷系统中的应用 Application in refrigeration system



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