

HONGSEN 鸿森

2021-2022

HONGSEN MACHINERY

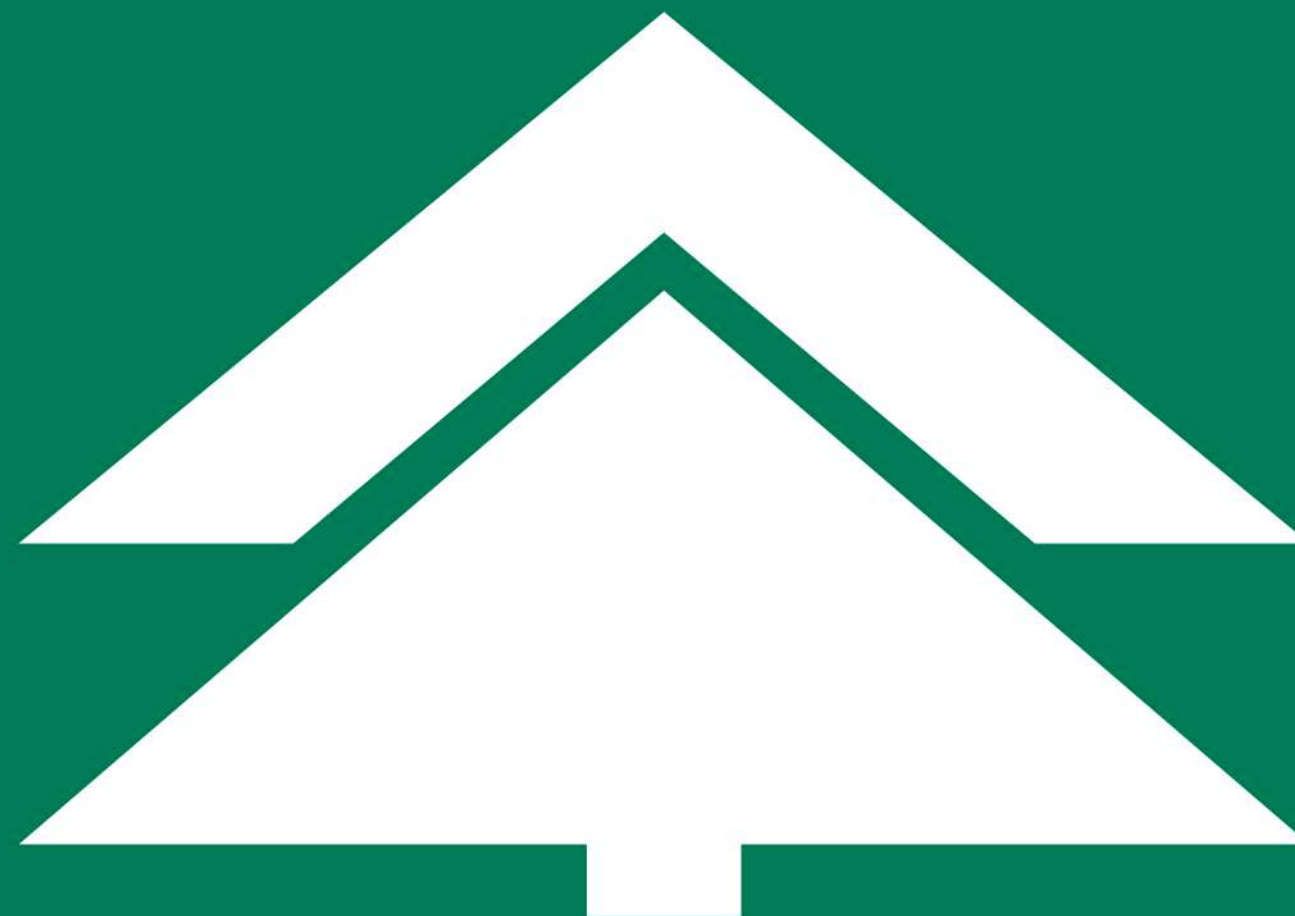
Escort For Safe Refrigeration

# REFRIGERATION A/C SYSTEM ACCESSORIES

制冷空调系统配件

制冷空调系统配件

REFRIGERATION A/C SYSTEM ACCESSORIES



**HONGSEN® 鸿森®**

浙江鸿森机械有限公司

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安全是一种责任；  
安全是一种担当。  
多一点安全，  
多一份守护，  
为安全制冷护航。

Safety is a duty;  
Safety is a responsibility.  
A bit more safety,  
More protection.  
Escort for safe refrigeration.

# ESCORT FOR SAFE REFRIGERATION

为安全制冷护航

专注制冷三十年 更懂制冷

# FOCUS ON REFRIGERATION FOR 30 YEARS

专注做一件事  
并把它做到极致，  
就是专业。

Focus on one thing  
And make it the best,  
It's professional.



关于鸿森

# ABOUT HONGSEN

REFRIGERATION & A/C SYSTEM ACCESSORIES

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。20多年来，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。在浙江大学、上海交通大学和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，现已形成电磁阀系列、球阀系列、视液镜系列、膨胀阀系列、截止阀系列、避震管系列、过滤器系列等多个产品，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. In the past tens 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 ten techicians. Hongsen Machinery has a close cooperation with the professors and experts in Zhejiang University, Shanghai Jiao Tong University and 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 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.



电子膨胀阀生产线  
ELECTRIC EXPANSION  
VALVE PRODUCTION LINE

国内领先技术  
全自动化生产

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.

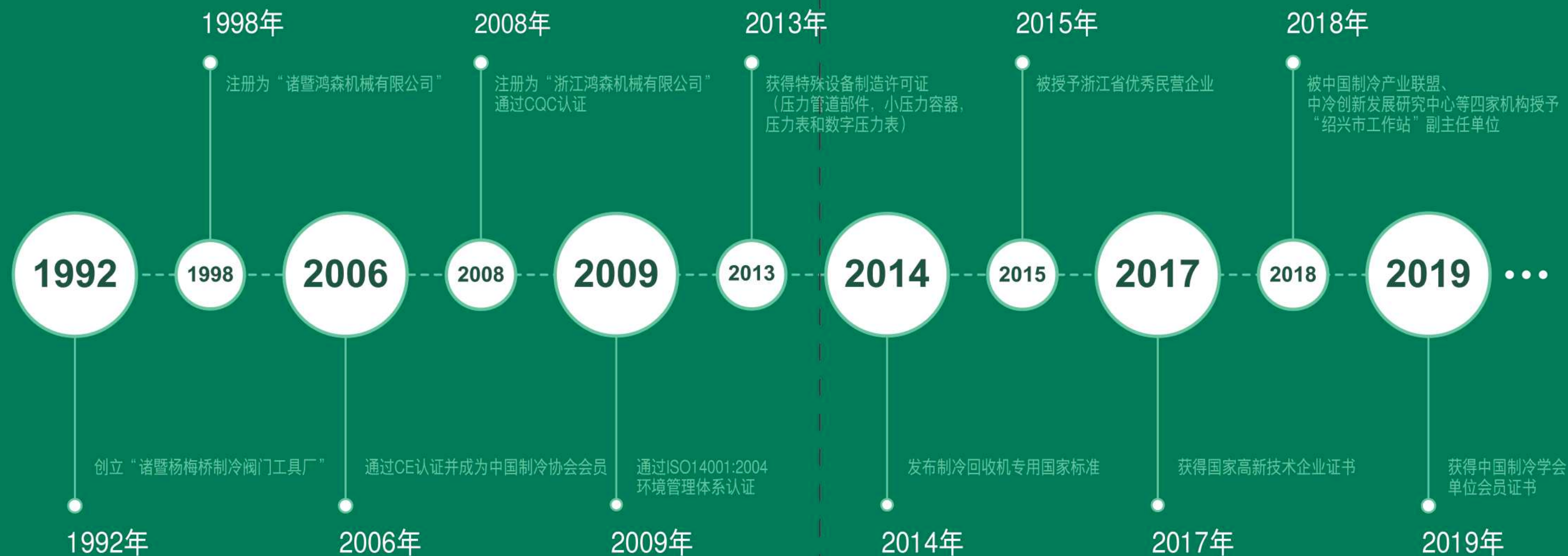
# HONGSEN

HISTORY

## 发展历程

## DEVELOPMENT HISTORY

ESCORT FOR SAFE REFRIGERATION 为安全制冷护航



## 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/DPFS 系列电子膨胀阀

DPF/DPFS Series electronic expansion valve



DPF 系列  
DPF series



DPFS 系列  
DPFS series

产品概述 Product Description

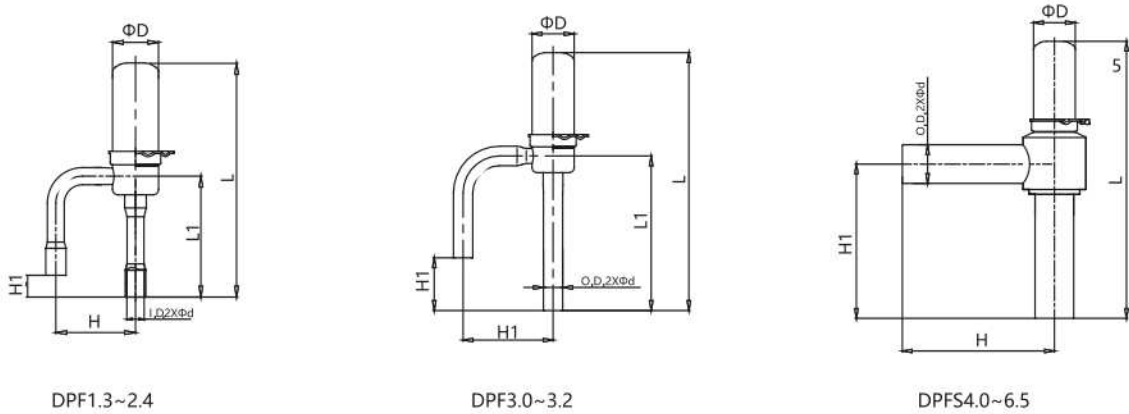
|                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DPF/DPFS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/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. |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

特点 Features

|                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• 体积小、重量轻，性能稳定可靠；</li><li>• 反应和动作速度快；</li><li>• 膨胀阀新结构设计，噪音低，故障率低；</li><li>• DPFS系列产品采用平衡口设计，逆向开阀压力高；</li><li>• 适用于少油或无油系统。</li></ul> | <ul style="list-style-type: none"><li>• Small size, light weight, stable and reliable performance;</li><li>• Fast response and action;</li><li>• New structure design of expansion valve, low noise and low failure rate;</li><li>• DPFS series products apply design of balanced port, and the reverse valve opening pressure is high;</li><li>• Suitable for systems with little oil or no oil.</li></ul> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| 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℃                                            |  |
| 环境温度 Environment temperature             | -30~+60℃                                            |  |
| 环境湿度 Environment humidity                | 95%RH以下                                             |  |
| 全开脉冲 Full open pulse                     | 500PS                                               |  |
| 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                                                |  |

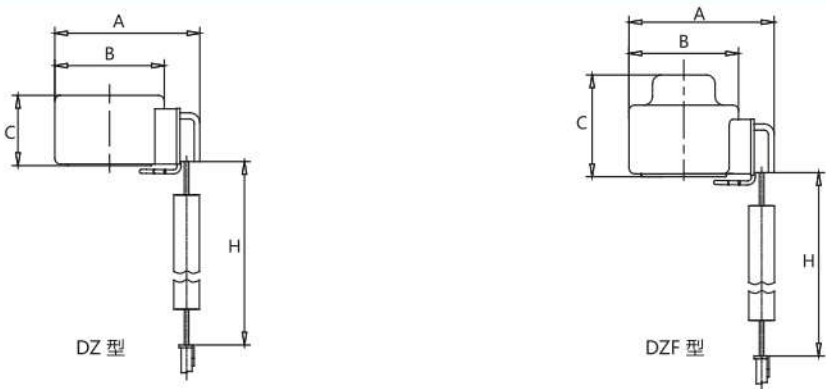
结构 Structure



| 外型尺寸 Overall dimension |                        |     |      |    |      |      |
|------------------------|------------------------|-----|------|----|------|------|
| 型号 Model               | 外形尺寸 Overall dimension |     |      |    |      |      |
|                        | φD                     | L   | L1   | H  | H1   | φd   |
| DPF1.3~2.4             | 17.3                   | 87  | 36.8 | 30 | 8    | 6.5  |
| DPFS3.0~3.2            | 17.3                   | 105 | 41.5 | 37 | 21.5 | 7.94 |
| DPFS4.0~6.5            | 17.3                   | 114 | /    | 63 | 64   | 16   |

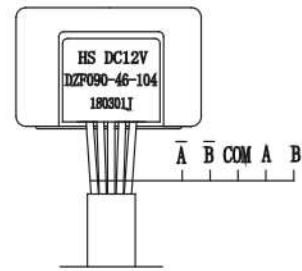
注：接管尺寸可以根据要求定制。 Note: dimension of connecting pipe can be customized according to requirements

线圈 Coil

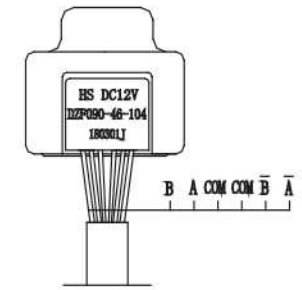
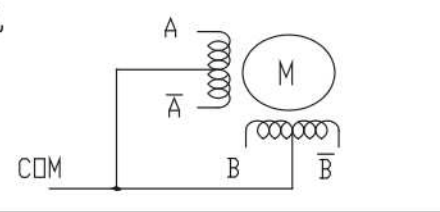


| 外型尺寸 Overall dimension |                 |    |      |      |      |                                  |
|------------------------|-----------------|----|------|------|------|----------------------------------|
| 系列 Series              | 线圈型号 Coil model | A  | B    | C    | H    | 接器型号 Connector model             |
| DZ                     | DZ090-4612-□□□  | 51 | 38.5 | 25   | 900  | XHP-5<br>XHP-6<br>XAP-5<br>XAP-6 |
|                        | DZ120-4612-□□□  | 51 | 38.5 | 25   | 1200 |                                  |
|                        | DZ200-4612-□□□  | 51 | 38.5 | 25   | 2000 |                                  |
|                        | DZ300-4612-□□□  | 51 | 38.5 | 25   | 3000 |                                  |
| DZF                    | DZF090-4612-□□□ | 51 | 38.5 | 35.5 | 900  | XHP-5<br>XHP-6<br>XAP-5<br>XAP-6 |
|                        | DZF120-4612-□□□ | 51 | 38.5 | 35.5 | 1200 |                                  |
|                        | DZF200-4612-□□□ | 51 | 38.5 | 35.5 | 2000 |                                  |
|                        | DZF300-4612-□□□ | 51 | 38.5 | 35.5 | 3000 |                                  |

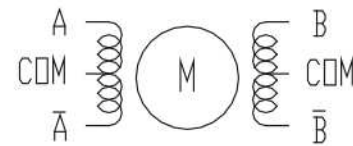
注：导线长度和连接器可根据客户要求定制。 Note: the lead wire length and connector can be customized according to customer's requirements.



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 |   |   |   |   |   |   |   |   |

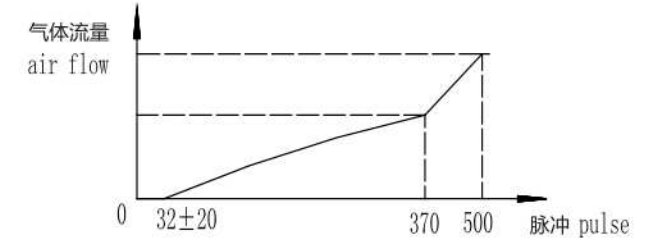
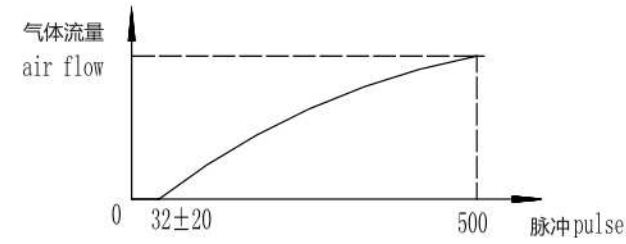
动作顺序: 1→2→3→4→5→6→7→8 关阀  
8→7→6→5→4→3→2→1 开阀

选型表 Model selection

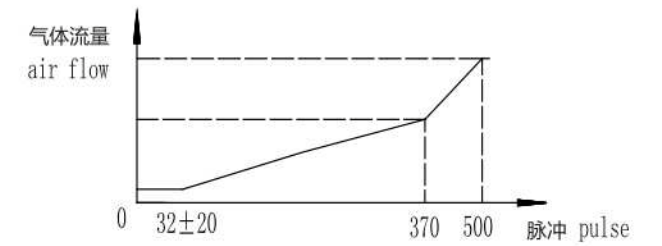
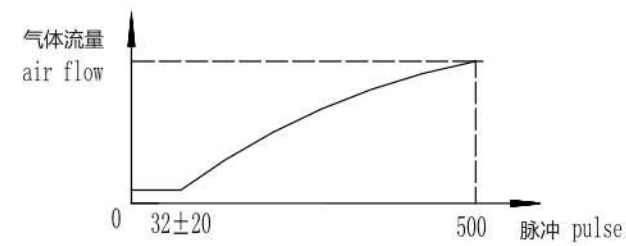
| 产品系列<br>Product series | 全开步数<br>Full open steps | 通径<br>Diameter<br>[mm] | KV <sup>(2)</sup><br>[m <sup>3</sup> /h] | 名义容量 [kW] <sup>(1)</sup><br>Nominal capacity |       |                      |            |                      | 最大工作压力<br>Max. working<br>pressure<br>[MPa] | 最大工作压差<br>Max. working<br>pressure difference<br>[MPa] | 逆向开阀压差<br>Reverse valve opening<br>pressure difference<br>[MPa] |
|------------------------|-------------------------|------------------------|------------------------------------------|----------------------------------------------|-------|----------------------|------------|----------------------|---------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------|
|                        |                         |                        |                                          | R22                                          | R134a | R407C <sup>(1)</sup> | R404A/R507 | R410A <sup>(1)</sup> |                                             |                                                        |                                                                 |
| DPF1.3                 | 500                     | 1.30                   | 0.06                                     | 3.5                                          | 2.7   | 3.50                 | 2.50       | 4.20                 | 4.2                                         | 4.2                                                    | ≥2.1                                                            |
| DPF1.65                | 500                     | 1.65                   | 0.08                                     | 5.3                                          | 4.1   | 5.30                 | 3.70       | 6.35                 | 4.2                                         | 4.2                                                    | ≥2.1                                                            |
| DPF1.8                 | 500                     | 1.80                   | 0.10                                     | 7.0                                          | 5.4   | 7.00                 | 4.90       | 8.40                 | 4.2                                         | 4.2                                                    | ≥2.1                                                            |
| DPF2.0                 | 500                     | 2.00                   | 0.16                                     | 8.8                                          | 6.7   | 8.75                 | 6.10       | 10.5                 | 4.2                                         | 4.2                                                    | ≥2.1                                                            |
| DPF2.2                 | 500                     | 2.20                   | 0.20                                     | 10.5                                         | 8.1   | 10.5                 | 7.40       | 12.6                 | 4.2                                         | 4.2                                                    | ≥2.1                                                            |
| DPF2.4                 | 500                     | 2.40                   | 0.23                                     | 17.5                                         | 13.5  | 17.5                 | 12.3       | 21.0                 | 4.2                                         | 4.2                                                    | ≥2.1                                                            |
| DPF3.0                 | 500                     | 3.00                   | 0.39                                     | 21.0                                         | 16.2  | 21.0                 | 14.7       | 25.2                 | 4.2                                         | 4.2                                                    | ≥1.47                                                           |
| DPF3.2                 | 500                     | 3.20                   | 0.43                                     | 28.0                                         | 21.4  | 28.0                 | 19.6       | 33.6                 | 4.2                                         | 4.2                                                    | ≥1.47                                                           |
| DPFS4.0                | 500                     | 6.50                   | 0.50                                     | 42.0                                         | 32.3  | 42.0                 | 29.4       | 50.4                 | 4.2                                         | 4.2                                                    | ≥3.5                                                            |
| DPFS4.5                | 500                     | 6.50                   | 0.70                                     | 52.5                                         | 40.4  | 52.0                 | 36.8       | 63.0                 | 4.2                                         | 4.2                                                    | ≥3.5                                                            |
| DPFS5.5                | 500                     | 6.50                   | 0.80                                     | 70.0                                         | 53.9  | 70.0                 | 49.0       | 84.0                 | 4.2                                         | 4.2                                                    | ≥3.5                                                            |
| DPFS6.5                | 500                     | 6.50                   | 1.10                                     | 105                                          | 80.9  | 100                  | 73.5       | 126                  | 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。

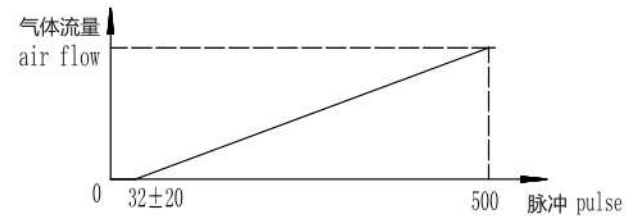
Nominal condition:  
• Rated capacity is based on: R407C condensing temperature: +38°C; evaporating temperature: +5°C; super cooling degree: 0 K; super heat degree: 0 K;  
• Kv value: the pressure difference based on the two sides between water with density 1T/m<sup>3</sup> and the valve is equal to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



DPF1.0~DPF3.2



DPFS4.5~DPFS6.5



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]<br>Condensing temperature | DPF1.3                           |      |      |      |      |      |      | DPF1.65                          |      |      |       |       |       |       |
|                          |                                    | 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]<br>Condensing temperature | DPF1.8                           |       |       |       |       |       |       | DPF2.0                           |       |       |       |       |       |       |
|                          |                                    | 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]<br>Condensing temperature | DPF2.2                           |       |       |       |       |       |       | DPF2.4                           |       |       |       |       |       |       |
|                          |                                    | 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 |

SPF 系列电子膨胀阀

SPF Series electronic expansion valve



SPF12.5/25



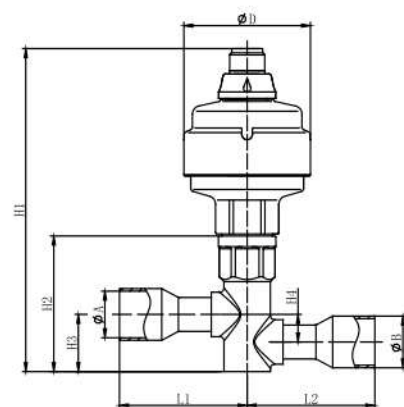
SPF50/100



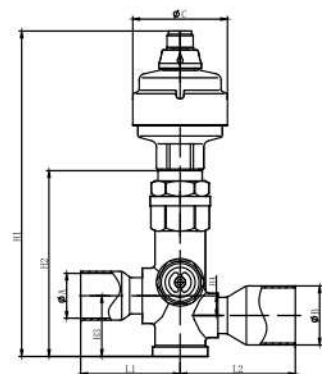
SPF250/400

| 产品概述 Product Description                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SPF型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                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <ul style="list-style-type: none"><li>• 集电磁阀、膨胀阀、视镜功能于一体，性能稳定可靠；</li><li>• 反应和动作速度快，调节精准；</li><li>• 膨胀阀新结构设计，易拆卸清理，噪音低；</li><li>• 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；</li><li>• 适用于少油或无油系统。</li></ul> | <ul style="list-style-type: none"><li>• Integrated with the function of solenoid valve, expansion valve and sight glass, stable and reliable performance;</li><li>• Fast response and action, precise adjustment;</li><li>• New structure design of expansion valve, easy to dismantle and clean, low noise;</li><li>• SPF series products apply a balanced port design with high reverse valve opening pressure, and have bidirectional cut-off function;</li><li>• Suitable for systems with little oil or no oil.</li></ul> |
| 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℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 环境温度 Environment temperature                                                                                                                                                                       | -40℃ ~ +60℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 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

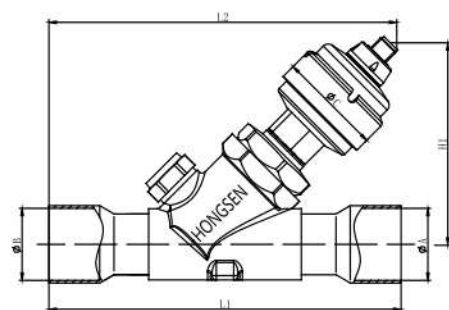


SPF12.5/25

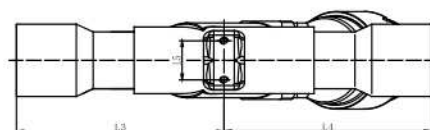


SPF50/100

| 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

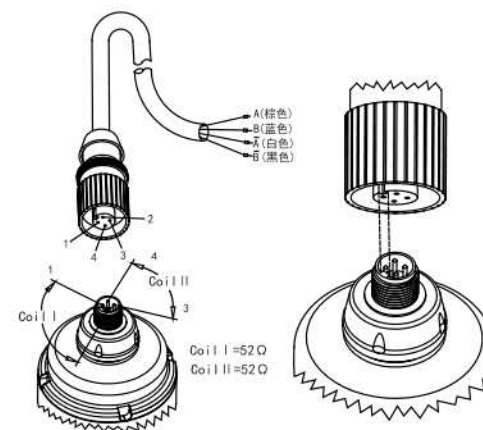


| 型号 Model     | H1    | L1    | L2    | L3    | L4    | L5 | A    | B    | C  |
|--------------|-------|-------|-------|-------|-------|----|------|------|----|
| SPF250-9-9   | 206.3 | 168.5 | 184.3 | 84.3  | 84.3  | 24 | 28.7 | 28.7 | 60 |
| SPF250-11-11 | 206.3 | 203   | 189.3 | 89.3  | 89.3  | 24 | 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

驱动时序 Driving Schedule



| 相序                | 1   | 2   | 3   | 4   |  |
|-------------------|-----|-----|-----|-----|--|
| A (棕)             | no  | no  | off | off |  |
| B (蓝)             | no  | off | off | no  |  |
| A-bar (白)         | off | off | no  | no  |  |
| B-bar (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 | 示意图 Schematic pic. |
| M124×Z1MD                        | -40°C~+80°C            | 1米        | M12×1 (防水)                   | 引出线4×0.18mm2                         |                    |

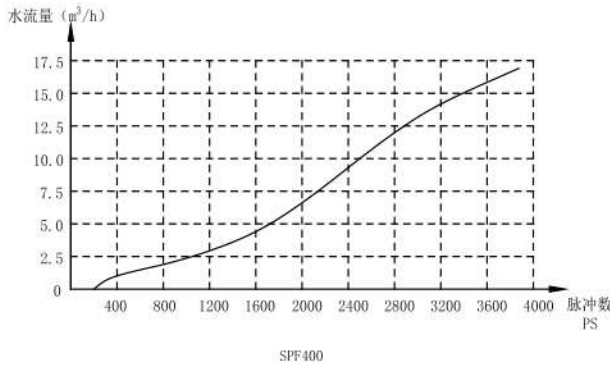
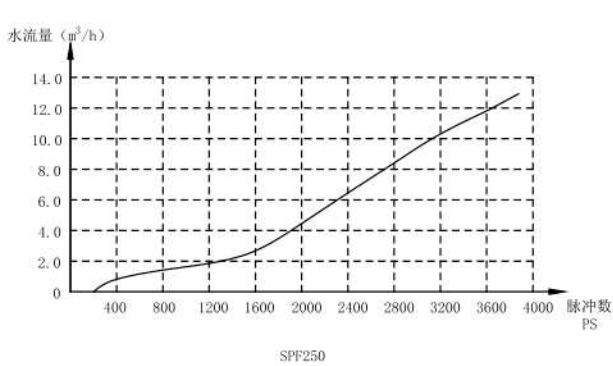
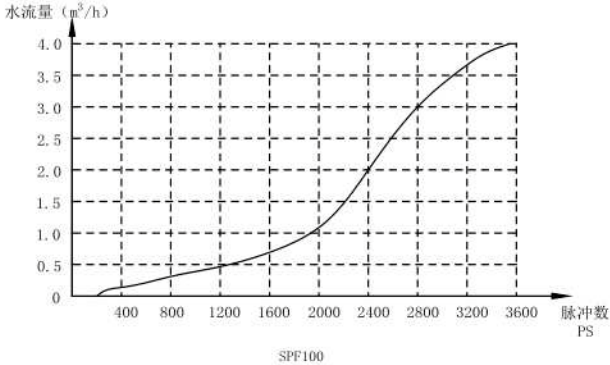
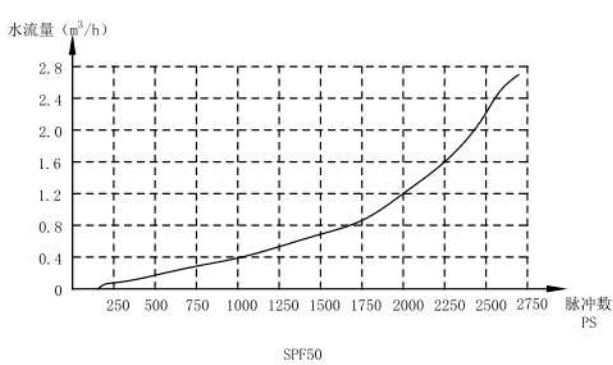
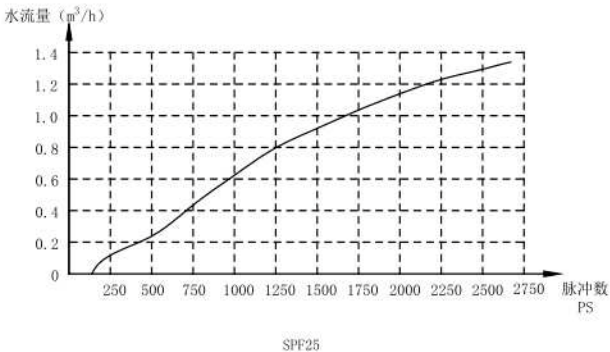
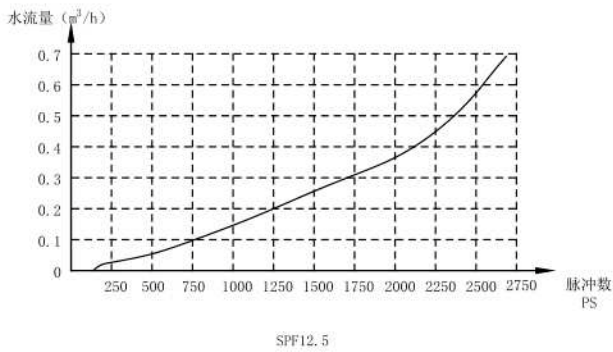
| 选型表 Model selection |                      |             |                   |                                           |       |                      |            |                      |                              |                                         |                                                  |
|---------------------|----------------------|-------------|-------------------|-------------------------------------------|-------|----------------------|------------|----------------------|------------------------------|-----------------------------------------|--------------------------------------------------|
| 产品系列 Product series | 全开步数 Full open steps | 通径 Diameter | KV <sup>(2)</sup> | 名义容量 [KW] <sup>(1)</sup> Nominal capacity |       |                      |            |                      | 最大工作压力 Max. working pressure | 最大工作压差 Max. working pressure difference | 逆向开阀压差 Reverse valve opening pressure difference |
|                     |                      | [mm]        | [m3/h]            | R22                                       | R134a | R407C <sup>(1)</sup> | R404A/R507 | R410A <sup>(1)</sup> | [MPa]                        | [MPa]                                   | [MPa]                                            |
| 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/m3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/m3 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ΔP[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[℃] | 正向流额定能力[KW] Positive flow rated capacity |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |
|                          |       | SPF50                                    |       |       |       |       |       |       |       | SPF100 |       |       |       |       |       |       |       |
|                          |       | 压降ΔP[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 |

| 额定能力 (kW) Rated capacity |        |                                          |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|--------------------------|--------|------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                          | te[°C] | 正向流额定能力[KW] Positive flow rated capacity |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|                          |        | SPF250                                   |        |        |        |        |        |        |        | SPF400 |        |        |        |        |        |        |        |
|                          |        | 压降ΔP[bar] Pressure drop                  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|                          |        | 2                                        | 4      | 6      | 8      | 10     | 12     | 14     | 16     | 2      | 4      | 6      | 8      | 10     | 12     | 14     | 16     |
| R22                      | -40    | 778.5                                    | 995.0  | 1121.0 | 1205.0 | 1259.5 | 1297.0 | 1318.5 | 1328.5 | 1249.2 | 1595.0 | 1799.0 | 1931.6 | 2021.1 | 2079.4 | 2115.6 | 2133.6 |
|                          | -30    | 771.0                                    | 992.5  | 1126.0 | 1213.5 | 1273.0 | 1262.5 | 1339.0 | 1351.5 | 1236.2 | 1593.0 | 1805.0 | 1945.7 | 2041.2 | 2105.5 | 2146.7 | 2169.8 |
|                          | -20    | 755.5                                    | 984.0  | 1120.5 | 1213.0 | 1276.0 | 1320.0 | 1348.5 | 1364.5 | 1213.1 | 1576.9 | 1798.0 | 1944.7 | 2046.2 | 2116.5 | 2161.8 | 2148.9 |
|                          | -10    | 737.0                                    | 966.0  | 1107.0 | 1201.5 | 1269.0 | 1315.0 | 1347.0 | 1366.0 | 1180.9 | 1548.7 | 1774.8 | 1927.6 | 2034.2 | 2108.5 | 2158.8 | 2189.9 |
|                          | -5     | 723.0                                    | 954.0  | 1095.0 | 1193.0 | 1260.5 | 1308.0 | 1341.0 | 1360.0 | 1161.8 | 1529.6 | 1756.8 | 1912.5 | 2021.1 | 2097.5 | 2149.7 | 2181.9 |
|                          | 10     | 680.5                                    | 905.0  | 1049.0 | 1146.0 | 1218.0 | 1267.0 | 1303.0 | 1323.0 | 1091.4 | 1453.2 | 1681.4 | 1839.2 | 1951.7 | 2032.1 | 2088.4 | 2124.6 |
| R134a                    | -40    | 683.5                                    | 832.0  | 901.5  | 934.0  | 942.5  | 936.0  | 918.5  | 890.5  | 1097.5 | 1334.7 | 1446.2 | 1497.5 | 1512.6 | 1501.5 | 1472.4 | 1429.1 |
|                          | -30    | 687.0                                    | 846.0  | 924.0  | 963.0  | 976.0  | 974.5  | 960.0  | 935.0  | 1103.5 | 1357.8 | 1481.4 | 1542.7 | 1565.8 | 1562.8 | 1539.7 | 1501.5 |
|                          | -20    | 683.5                                    | 853.5  | 938.0  | 983.0  | 1002.0 | 1004.0 | 994.5  | 973.5  | 1099.5 | 1368.8 | 1505.5 | 1576.9 | 1608.0 | 1611.0 | 1595.0 | 1562.8 |
|                          | -10    | 676.0                                    | 853.0  | 944.0  | 995.0  | 1020.0 | 1025.5 | 1020.0 | 1002.0 | 1135.4 | 1366.8 | 1514.6 | 1595.0 | 1635.2 | 1645.2 | 1635.2 | 1608.0 |
|                          | -5     | 669.5                                    | 849.0  | 942.5  | 997.0  | 1023.0 | 1033.0 | 1029.0 | 1012.5 | 1074.4 | 1360.8 | 1513.5 | 1599.0 | 1642.2 | 1656.3 | 1649.2 | 1625.1 |
|                          | 10     | 640.0                                    | 823.5  | 927.0  | 987.0  | 1020.0 | 1033.5 | 1033.0 | 1022.5 | 1026.1 | 1321.6 | 1485.4 | 1581.9 | 1635.2 | 1658.3 | 1659.3 | 1643.2 |
| R404A                    | -40    | 615.0                                    | 763.0  | 836.0  | 871.0  | 884.0  | 881.0  | 867.0  | 844.0  | 985.9  | 1223.1 | 1339.7 | 1397.0 | 1417.1 | 1413.0 | 1389.9 | 1352.7 |
|                          | -30    | 606.0                                    | 761.0  | 840.0  | 881.0  | 899.0  | 900.0  | 890.0  | 870.0  | 971.9  | 1220.1 | 1346.7 | 1413.0 | 1441.2 | 1443.2 | 1426.1 | 1394.0 |
|                          | -20    | 591.0                                    | 750.0  | 835.0  | 881.0  | 903.0  | 908.0  | 901.0  | 884.0  | 946.7  | 1203.0 | 1338.7 | 1412.1 | 1447.2 | 1455.3 | 1444.2 | 1417.1 |
|                          | -10    | 569.0                                    | 731.0  | 819.0  | 869.0  | 894.0  | 903.0  | 899.0  | 884.0  | 912.6  | 1171.8 | 1312.5 | 1392.9 | 1433.1 | 1447.2 | 1440.2 | 1418.1 |
|                          | -5     | 556.0                                    | 718.0  | 807.0  | 858.0  | 885.0  | 895.0  | 892.0  | 879.0  | 891.5  | 1150.8 | 1293.5 | 1375.9 | 1419.1 | 1435.2 | 1430.1 | 1409.0 |
|                          | 10     | 510.0                                    | 665.0  | 754.0  | 806.0  | 836.5  | 849.0  | 849.0  | 836.5  | 818.1  | 1067.3 | 1210.1 | 1294.5 | 1341.7 | 1361.8 | 1360.8 | 1342.7 |
| R407C                    | -40    | 810.5                                    | 1016.0 | 1128.0 | 1194.0 | 1232.0 | 1248.5 | 1251.0 | 1242.5 | 1300.5 | 1630.1 | 1810.0 | 1914.6 | 1973.4 | 2002.0 | 2007.0 | 1994.0 |
|                          | -30    | 805.5                                    | 1021.0 | 1140.0 | 1211.5 | 1255.0 | 1276.0 | 1284.0 | 1278.0 | 1292.4 | 1637.2 | 1829.1 | 1943.7 | 2012.0 | 2047.2 | 2059.3 | 2051.2 |
|                          | -20    | 792.5                                    | 1016.0 | 1142.5 | 1220.0 | 1268.0 | 1294.0 | 1306.0 | 1303.0 | 1272.3 | 1629.1 | 1832.1 | 1956.8 | 2033.1 | 2075.4 | 2093.4 | 2092.4 |
|                          | -10    | 772.5                                    | 1002.0 | 1133.0 | 1216.0 | 1268.0 | 1298.0 | 1315.0 | 1315.5 | 1241.2 | 1606.0 | 1817.1 | 1949.7 | 2034.2 | 2083.4 | 2107.5 | 2111.5 |
|                          | -5     | 761.5                                    | 990.0  | 1123.0 | 1207.5 | 1264.0 | 1296.0 | 1314.0 | 1317.0 | 1221.1 | 1587.9 | 1802.0 | 1938.7 | 2026.1 | 2078.4 | 2105.5 | 2112.5 |
|                          | 10     | 715.0                                    | 940.5  | 1076.5 | 1167.0 | 1226.0 | 1262.5 | 1284.5 | 1291.5 | 1146.7 | 1509.5 | 1727.6 | 1871.3 | 1965.8 | 2026.1 | 2059.3 | 2072.3 |
| R410A                    | -40    | /                                        | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      |
|                          | -30    | /                                        | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      |
|                          | -20    | /                                        | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      |
|                          | -10    | /                                        | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      |
|                          | -5     | /                                        | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      |
|                          | 10     | /                                        | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      | /      |

DPF/DPFS系列电子膨胀阀控制器

DPF/DPFS series electronic expansion valve controller



T0055 (一拖二)



T0056 (一拖三)

| 产品概述 Product Description                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 用于DPF/DPFS系列电子膨胀阀的过热度控制和机组控制，适用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，降低系统功耗（提高系统COP），提高系统的制冷能力。                                                     | Used for super heat degree control and unit control of DPF/DPFS series electronic expansion vlave, 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 is operating within a safe range, improve the reliability of compressor and system, reduce system power consumption (improve system COP), enhance the refrigerating capacity of system.             |
| 特点 Features                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <ul style="list-style-type: none"><li>通过采集系统各部位温度信息，分析系统当前运行状态，运用模糊算法，使用自适应控制；</li><li>反应和动作速度快，调节精准；</li><li>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；</li><li>导轨式安装方便。</li></ul> | <ul style="list-style-type: none"><li>Analyze the system current running state by collecting temperature information of each part of the system, use fuzzy algorithms, and adopt self-adaptive control;</li><li>Fast response and action, precise adjustment;</li><li>The electronic expansion valve controller can be set according to the system parameters to adapt demands of different equipments and conditions;</li><li>Easy installation of guide rail type</li></ul> |
| 技术参数 Technical Parameters                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 使用环境 Working environment                                                                                                                                                  | 温度-20~55℃，相对湿度≤90%RH(无凝露) temperature -20~55℃, relative humidity ≤90%RH (no condensation)                                                                                                                                                                                                                                                                                                                                                                                     |
| 保存环境 Storing environment                                                                                                                                                  | 温度-40~80℃，相对湿度≤95%RH(无凝露) temperature -40~80℃, relative humidity ≤95%RH(no condensation)                                                                                                                                                                                                                                                                                                                                                                                      |
| 输入电源 Input power                                                                                                                                                          | 单相交流110~220V/50Hz(60Hz) single phase alternative current 110~220V/50Hz(60Hz)                                                                                                                                                                                                                                                                                                                                                                                                  |
| 电子膨胀阀输出 Electronic expansion valve outpu                                                                                                                                  | 2路，单相最大负荷输出0.5A/12V 2 way, single phase maximum load output 0.5A/12V                                                                                                                                                                                                                                                                                                                                                                                                          |
| 温度传感器输入 Temperature sensor input                                                                                                                                          | 5路(含压力传感器),温度传感器B3470/5K；温度分辨率：0.1℃ 5 way (including presssure sensor), temperature sensor B3470/5K; temperature resolution: 0.1℃                                                                                                                                                                                                                                                                                                                                             |
| 压力传感器输入 Pressure sensor input                                                                                                                                             | 1路；压力分辨率0.01Bar 1 way; pressure resolution: 0.01Bar                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 交流输入开关 AC input switch                                                                                                                                                    | 2路 2 way                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 继电器输出 Relay output                                                                                                                                                        | 2路无源开关，负载能力：5A/220V 2 way passive switch, load capacity: 5A/220V                                                                                                                                                                                                                                                                                                                                                                                                              |
| 通信接口 Communication interface                                                                                                                                              | 1路,RS485 1 way, RS485                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| 选型表 Model selection |                                                                              |         |                        |                                           |                               |             |                                                                  |                    |
|---------------------|------------------------------------------------------------------------------|---------|------------------------|-------------------------------------------|-------------------------------|-------------|------------------------------------------------------------------|--------------------|
| 序号 No               | 控制方式 Control method                                                          | 代号 code | 控制器型号 Controller model | 适配器件型号 Adapter model                      |                               | 数量 Quantity | 功能描述 Function description                                        | 设置参数 Set parameter |
| 1                   | 回气过热度控制<br>Air return<br>super heat<br>degree control                        | T0055   | PCH-FP2N               | 电子膨胀阀<br>Electronic<br>expansion<br>valve | DPF、DPFS系列<br>DPF、DPFS series | 1           | 一路主<br>(一拖一)<br>图1<br>One main way<br>(1 carrying 1)<br>PIC 1    |                    |
|                     |                                                                              |         |                        | 压力传感器<br>Presssure<br>sensor              | NS-P321-30-20barG             | 1           |                                                                  | 201                |
|                     |                                                                              |         |                        | 温度传感器<br>Temperature<br>sensor            | NTC5K3470                     | 1           |                                                                  |                    |
|                     | 回气过热度控制<br>Air return<br>super heat<br>degree control                        | T0055   | PCH-FP2N               | 电子膨胀阀<br>Electronic<br>expansion<br>valve | DPF、DPFS系列<br>DPF、DPFS series | 2           | 二路主<br>(一拖二)<br>图2<br>Two main ways<br>(1 carrying 2)<br>Pic 2   |                    |
|                     |                                                                              |         |                        | 压力传感器<br>Presssure<br>sensor              | NS-P321-30-20barG             | 1           |                                                                  | 201                |
|                     |                                                                              |         |                        | 温度传感器<br>Temperature<br>sensor            | NTC5K3470                     | 2           |                                                                  |                    |
|                     | 回气过热度控制<br>Air return<br>super heat<br>degree control                        | T0056   | PCH-FP3N               | 电子膨胀阀<br>Electronic<br>expansion<br>valve | DPF、DPFS系列<br>DPF、DPFS series | 3           | 三路主<br>(一拖三)<br>图3<br>Three main ways<br>(1 carrying 3)<br>Pic 3 |                    |
|                     |                                                                              |         |                        | 压力传感器<br>Presssure<br>sensor              | NS-P321-30-20barG             | 1           |                                                                  | 201                |
|                     |                                                                              |         |                        | 温度传感器<br>Temperature<br>sensor            | NTC5K3470                     | 3           |                                                                  |                    |
| 2                   | 回气过热度+喷液冷却<br>Air return<br>super heat<br>degree+liquid<br>injecting cooling | T0055   | PCH-SP1L               | 电子膨胀阀<br>Electronic<br>expansion<br>valve | DPF、DPFS系列<br>DPF、DPFS series | 2           | 一路主、一路辅<br>图4<br>One main way,<br>one auxiliary<br>Pic 4         |                    |
|                     |                                                                              |         |                        | 压力传感器<br>Presssure<br>sensor              | NS-P321-30-20barG             | 1           |                                                                  | 201                |
|                     |                                                                              |         |                        | 温度传感器<br>Temperature<br>sensor            | NTC5K3470                     | 2           |                                                                  |                    |

| 选型表 Model selection |                                                                                              |            |                           |                                           |                |                                                          |                       |  |
|---------------------|----------------------------------------------------------------------------------------------|------------|---------------------------|-------------------------------------------|----------------|----------------------------------------------------------|-----------------------|--|
| 序号<br>No            | 控制方式<br>Control method                                                                       | 代号<br>code | 控制器型号<br>Controller model | 适配器件型号<br>Adapter model                   | 数量<br>Quantity | 功能描述<br>Function description                             | 设置参数<br>Set parameter |  |
| 3                   | 回(排)气过热度+<br>喷气增焓<br>Air return(exhaust)<br>super heat<br>degree+enhanced<br>vapor injection | T0055      | PCH-SD1G                  | 电子膨胀阀<br>Electronic<br>expansion<br>valve | 2              | 一路主、一路辅<br>图5<br>One main way,<br>one auxiliary<br>Pic 5 | 201                   |  |
|                     |                                                                                              |            |                           | 压力传感器<br>Pressure<br>sensor               | 0              |                                                          |                       |  |
|                     |                                                                                              |            |                           | 温度传感器<br>Temperature<br>sensor            | 5              |                                                          |                       |  |
| 4                   | 排气过热度+<br>喷液冷却<br>Air exhaust super<br>heat degree+liquid<br>injecting cooling               | T0055      | PCH-SD1L                  | 电子膨胀阀<br>Electronic<br>expansion<br>valve | 2              | 一路主、一路辅<br>图6<br>One main way,<br>one auxiliary<br>Pic 6 | 201                   |  |
|                     |                                                                                              |            |                           | 压力传感器<br>Pressure<br>sensor               | 0              |                                                          |                       |  |
|                     |                                                                                              |            |                           | 温度传感器<br>Temperature<br>sensor            | 3              |                                                          |                       |  |
| 5                   | 排气过热度控制<br>Air exhaust<br>super degree                                                       | T0055      | PCH-SD1N                  | 电子膨胀阀<br>Electronic<br>expansion<br>valve | 1              | 一路主<br>图7<br>One main way<br>Pic 7                       | 201                   |  |
|                     |                                                                                              |            |                           | 压力传感器<br>Pressure<br>sensor               | 0              |                                                          |                       |  |
|                     |                                                                                              |            |                           | 温度传感器<br>Temperature<br>sensor            | 3              |                                                          |                       |  |

系统应用 Application in system

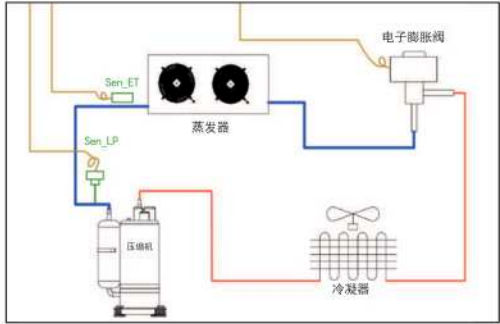


图1  
回气过热度控制 (一拖一)  
Air return super heat degree control (1 by 1)

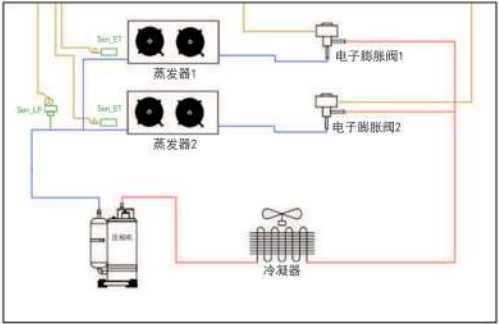


图2  
回气过热度控制 (一拖二)  
Air return super heat degree control (1 by 2)

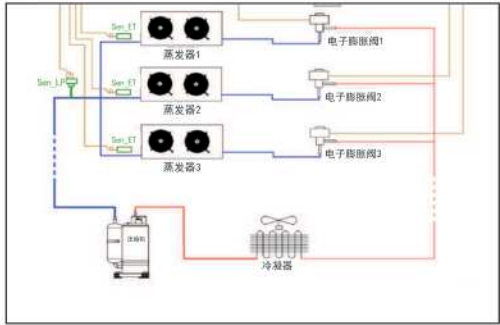


图3  
回气过热度控制 (一拖三)  
Air return super heat degree control (1 by 3)

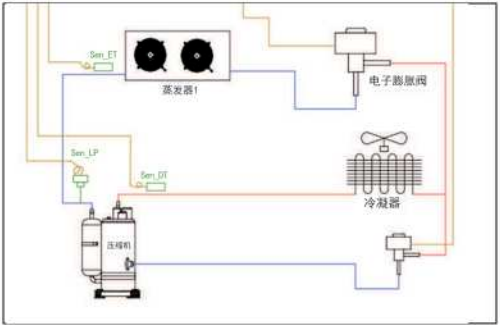


图4  
回气过热度+喷液冷却 (一路主、一路辅)  
Air return super heat degree+liquid injecting cooling  
(One main way, one auxiliary)

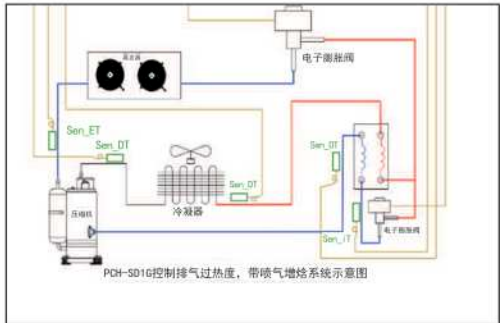


图5  
回(排)气过热度+喷气增焓 (一路主、一路辅)  
Air return(exhaust) super heat degree+enhanced vapor injection  
(One main way, one auxiliary)

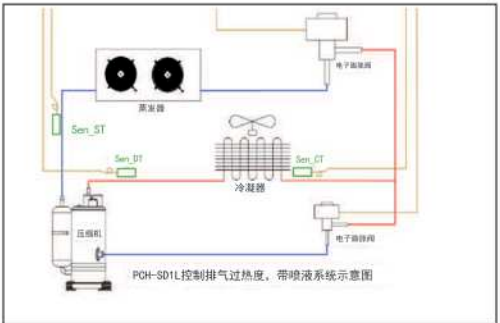


图6  
排气过热度+喷液冷却 (一路主、一路辅)  
Air exhaust super heat degree+liquid injecting cooling  
(One main way, one auxiliary)

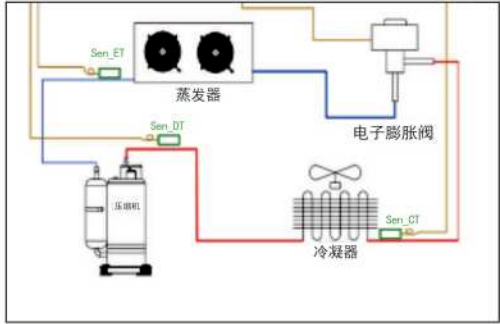
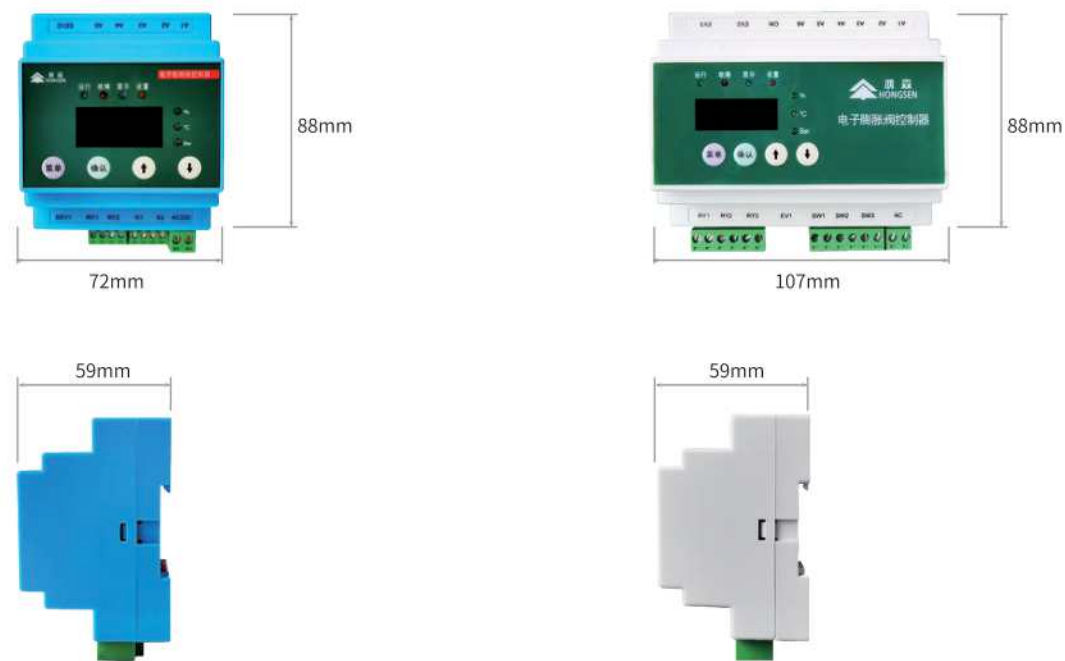
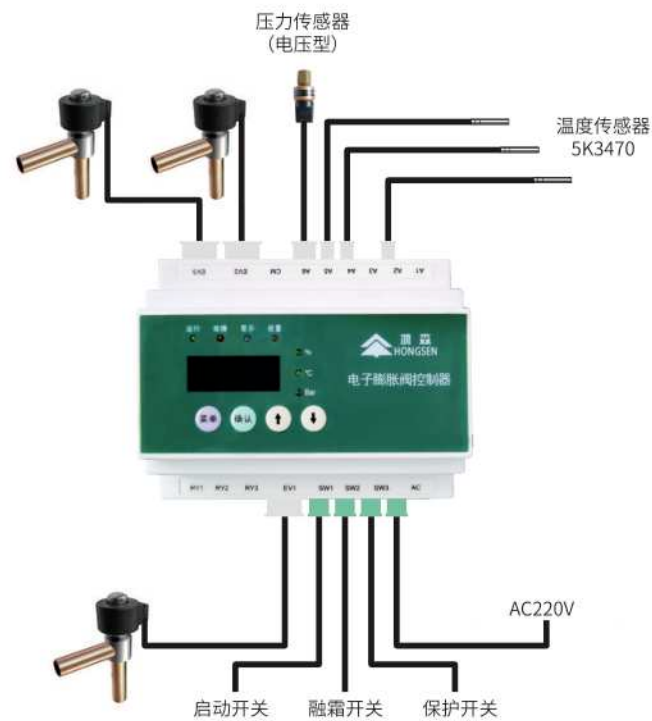


图7  
排气过热度控制 (一路主)  
Air exhaust super degree (One main way)

外形尺寸 Overall dimension



接线图 Wiring drawing



注：机组控制接线方式请参照说明书。  
Note: Please refer to the instruction for detail of unit's controlling wiring method

DPF/DPFS系列电子膨胀阀控制器  
Controller for DPF/DPFS 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                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <ul style="list-style-type: none"><li>• 多种制冷剂可选：R22、R134a、R404a、R410a、R507c；</li><li>• 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；</li><li>• MOP保护：蒸发压力超压保护；</li><li>• LOP保护：蒸发压力低压保护；</li><li>• 告警输出：一路无源继电器触点输出；</li><li>• 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。</li></ul> | <ul style="list-style-type: none"><li>• More refrigerants available: R22, R134a, R404a, R410a, R507c;</li><li>• 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;</li><li>• MOP protection: evaporative pressure overpressure protection;</li><li>• LOP protection: evaporative pressure low-pressure protection;</li><li>• Alarm output: one way passive relay contact output;</li><li>• Centralized monitoring: ON-OFF, parameter setting, data check can be performed through RS485 communication.</li></ul> |

| 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℃～60℃，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！）<br>altitude below 2000meters; temperature -10℃～60℃, 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，<br>常温温度传感器（NTC-NT05）2件，<br>压力传感器(77CP055) 1件，变压器（KBE4825）1件，<br>备用电源（GFB300）1件<br>Accessories: Controller（GEC1702）*1,<br>Normal temp. sensor（NTC-NT05）*2,<br>Pressure sensor (77CP055)*1, transformer (KBE4825) *1,<br>backup power (GFB300) *1 |

接线图 Wiring Lagout



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℃                     |
| 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℃)                                   |
| 工作温度 working temp.        | -40～125℃                                           |
| 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    |

## Ex1230电子膨胀阀控制器

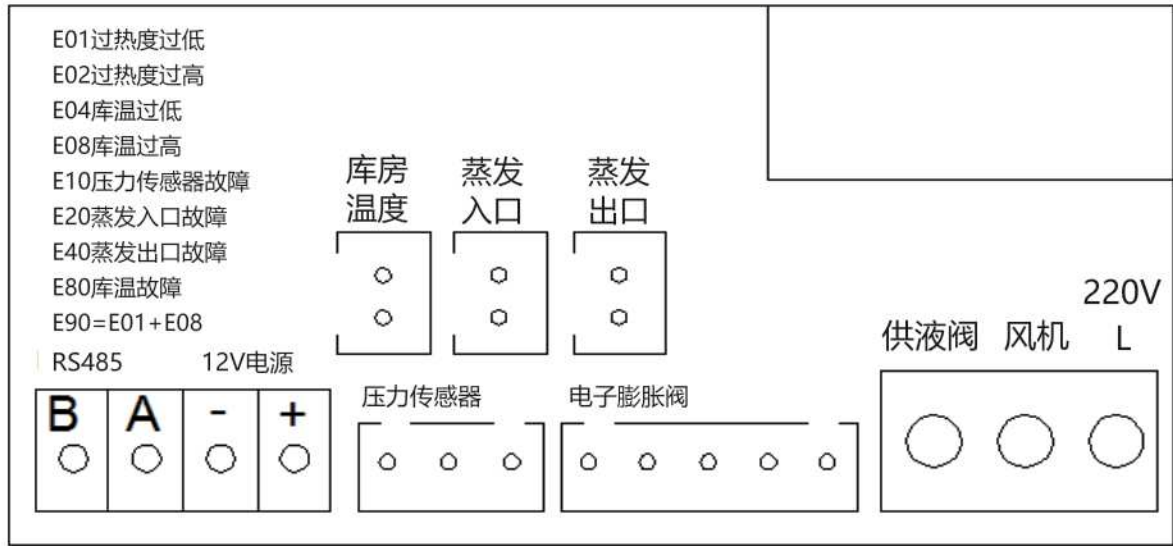
### Ex 1230 electronic expansion valve controller



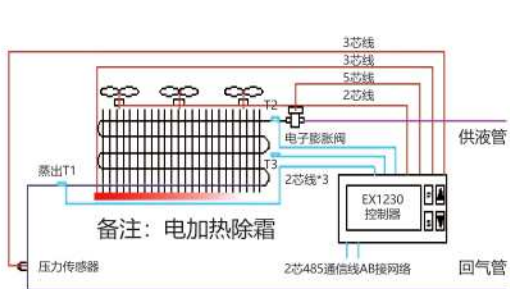
| 产品概述 Product Description                                                      |                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 主要用于超市冷柜系统DPF/DPFS系列电子膨胀阀的过热度控制，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。 | It is mainly used for super heat control of DPF/DPFS series electronic expansion valves in supermarket refrigerator system. It uses 4-phase 8- beat 1-2 phase excitation drive method to accurately control refrigerant flow, improve system COP and achieve the purpose of rapid cooling and energy saving. |

| 特点 Features                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>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；</li><li>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；</li><li>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；</li><li>采用变过热度算法控制，使制冷系统效率更高；</li><li>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者冷柜场合，安装调试简便；</li><li>带RS485通信口，可接外部网络。</li></ul> | <ul style="list-style-type: none"><li>Integrated with fan control, de-frost control, feed liquid valve control, expansion valve opening adjustment, taking into account the function of the temperature controller in refrigerator or refrigeration store;</li><li>The super heat degree is controlled by the pressure corresponding to temperature, whose fluctuation is low, and store temperature keeps more stable;</li><li>Various built-in programs ensure precise control of the electronic expansion valve, to make sure safe and reliable operation of the refrigeration system;</li><li>Control by means of changing super heat algorithm, to make the refrigeration system more efficient;</li><li>Multiple temperature controls can share one pressure value control, suitable for the occation with a host unit carrying several coolers or refrigerators, easy to install and commissioning;</li><li>Equipped with RS485 communication port, which can be connected with external network.</li></ul> |

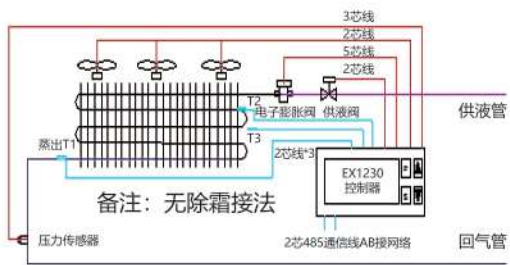
| 技术参数 Technical Parameters        |                                                                    |
|----------------------------------|--------------------------------------------------------------------|
| 传感器长 Length of sensor            | 1.5 米(含探头) 1.5 meters (including probe)                            |
| 感温元件 Temperature sensing element | NTC, R25II = 5K,B25/50II = 3470K                                   |
| 环境温度 Environment temperature     | -10~45℃                                                            |
| 工作湿度 Working humidity            | 5~85%RH (不结露) 5~85%RH(no condensation)                             |
| 设定范围 Setting range               | -40~120℃                                                           |
| 显示范围 Display range               | -50~130℃                                                           |
| 电源电压 Power voltage               | 185~245Vac, 50/60Hz                                                |
| 端子接线 Terminal wiring             | 导线不超过 2*1.5mm, 或1*2.5mm lead wire no more than 2*1.5mm, or 1*2.5mm |
| 整机尺寸 Dimension of whole machine  | 长 78 x 宽 34.5 x 深 71(毫米) length78 * width 34.5* depth 71(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) length71 * width 29(mm)                            |
| 防护等级 Protection grade            | IP65(前面板) IP65 (front panel)                                       |



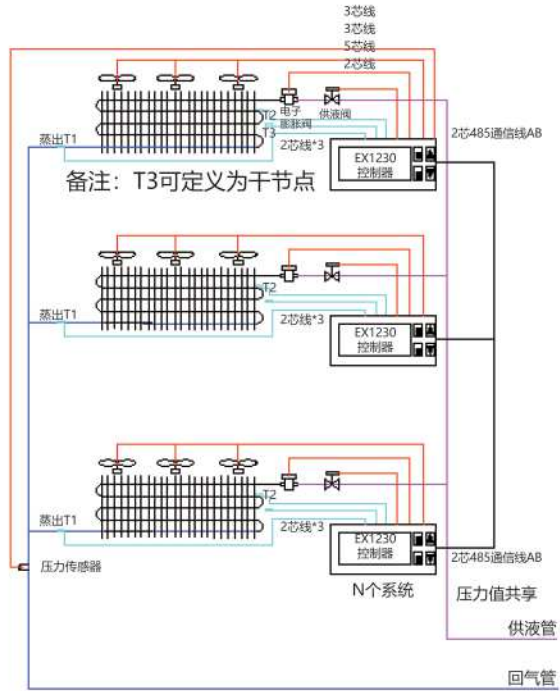
运用 Application



一拖一冷柜/冷库控制系统图（电除霜）



一拖一冷柜/冷库控制系统图（无除霜）



一拖多高温冷柜/冷库控制系统图

长 78(毫米) x 宽 34.5(毫米) x 深 71(毫米) length78 \* width 34.5\* depth 71(mm)

压力传感器 Pressure/temperature sensor



电流型电流型 (P22)  
Current type (P22)

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

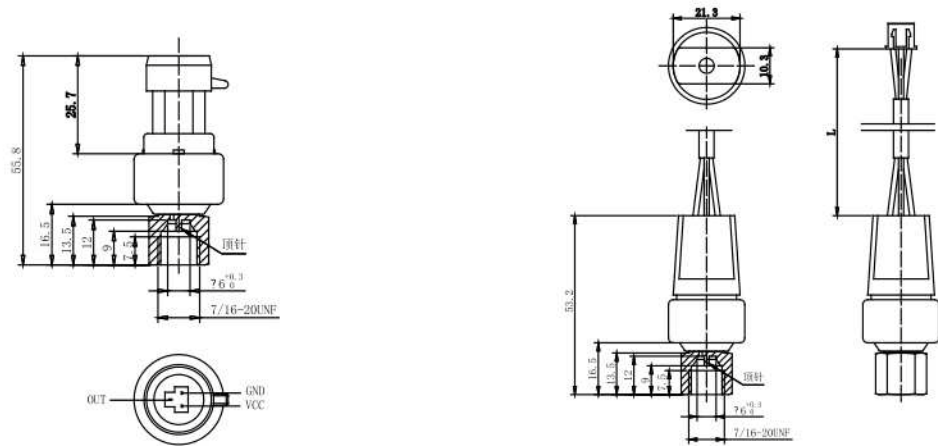
技术参数 Technical Parameters

|                         |                                  |
|-------------------------|----------------------------------|
| 工作电压 Working voltage    | 5±0.25VDC                        |
| 介质温度 Medium temperature | -40℃~120℃                        |
| 使用寿命 Service life       | 大于1000万次 more than10000000 times |
| 适用量程 Applicable range   | -1~50bar                         |
| 输出信号 Output signa       | 电压/电流 voltage/current            |

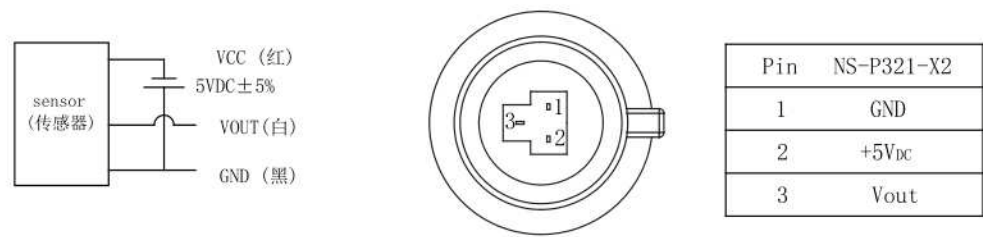
选型表 Model selection

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

外形尺寸 Overall dimension



接线图 Wiring drawing



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℃

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

型号 Model

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

电动调节阀系列

# MOTORIZED REGULATING VALVE *Series*

ESCORT FOR SAFE REFRIGERATION 为安全制冷护航

REFRIGERATION & A/C SYSTEM ACCESSORIES

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.



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，焊接性能良好，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℃ ~ +105℃                      |
| 适用环境温度 Application Ambient Temperature of | -35℃ ~ +65℃                       |
| 额定功率/电压 Rated power/voltage               | 6W/DC12V                          |

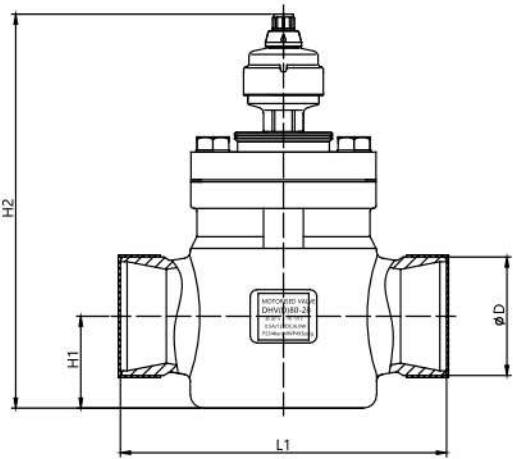
选型表 Model Selection

| 型号Model      | 规格Spec        | 开启压差 ΔP(bar) ΔP(bar) |                          | 最大工作压力(bar)<br>Max Operating Pressure(bar) | Kv值(m³/h) |
|--------------|---------------|----------------------|--------------------------|--------------------------------------------|-----------|
|              | 接口 Connection | 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       |

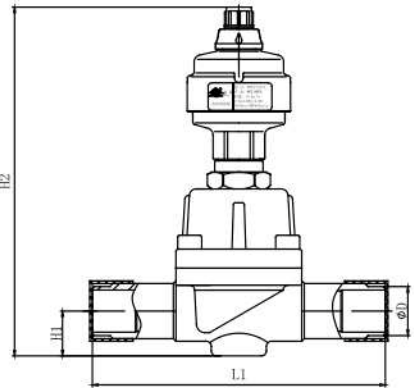
1) Kv值：密度为1吨/m³的水在通过阀的压差等于100KPa时的流量，单位为m³/h;  
2) 气态介质的MOPD约高1bar.

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)

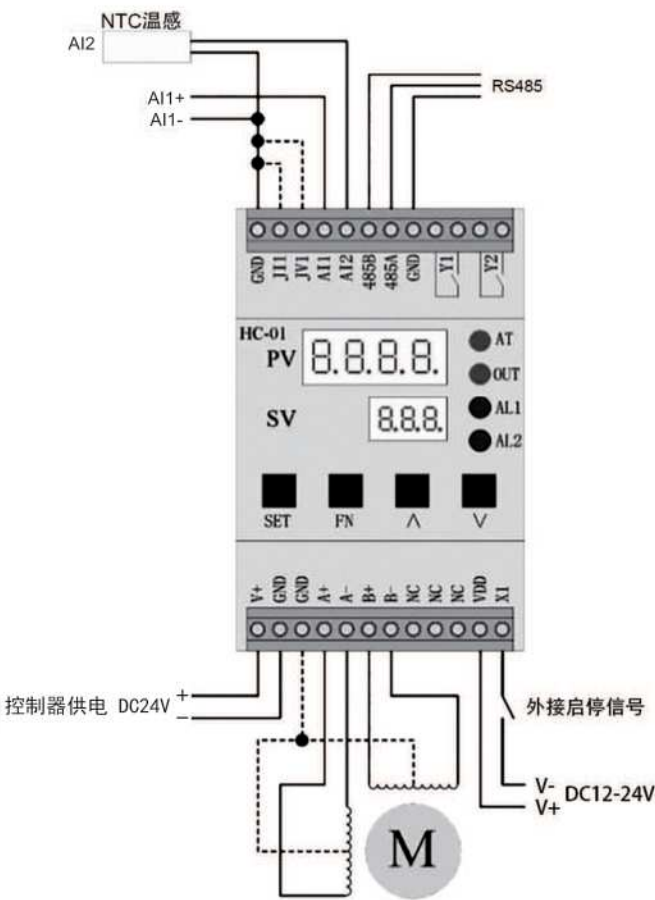
| 型号Model      | 外形尺寸 External dimension |     |      |       | 重量(Kg) Weight (Kg) |
|--------------|-------------------------|-----|------|-------|--------------------|
|              | D                       | L1  | H1   | H2    |                    |
| DHV(S)25-9   | 28                      | 170 | 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                |

HC-10 PID 控制器 HC-10 PID controller

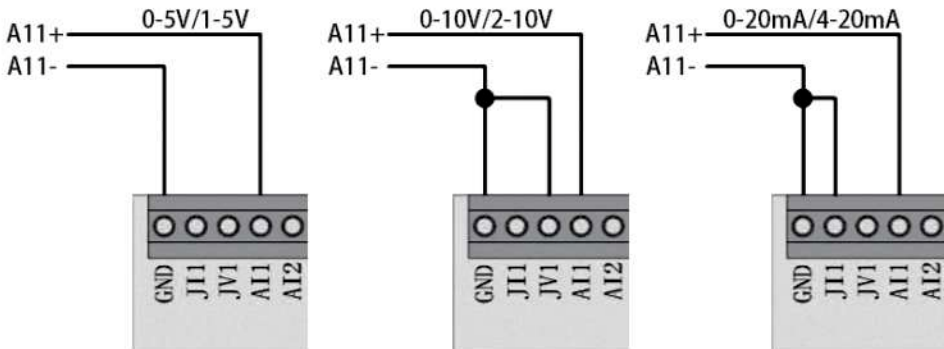


| 产品概述 Product Description                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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。                                                                                                | 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.                                                                                                       |
| 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> |
| 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<br>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）<br>12VDC, (support 4 wire, 5 wire, 6 wire system stepping motor electronic expansion valve)                                                                                                                                                                                                                                                            |
| RS485 通讯协议 RS485 communication protocol (ModbusRTU format)<br>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

控制器 (HS888、HS888-2可选)



技术参数 Technical Parameters

|                                    |                                               |
|------------------------------------|-----------------------------------------------|
| 电源电压 Power supply voltage          | AC220V                                        |
| 备用电源 Emergency power supply        | DC12V/2F                                      |
| 使用环境温度 Service ambient temperature | -20℃~+45℃                                     |
| 使用环境湿度 Environmental humidity      | ≤85%无凝露 No condensation.                      |
| 双极驱动能力 Bipolar drive capability    | 最大输出电流(MAX Output Current): 1A                |
| 控制器驱动方式 Controller driving mode    | 无源驱动、AC220V有源驱动 (可选) Without/With 220V driver |

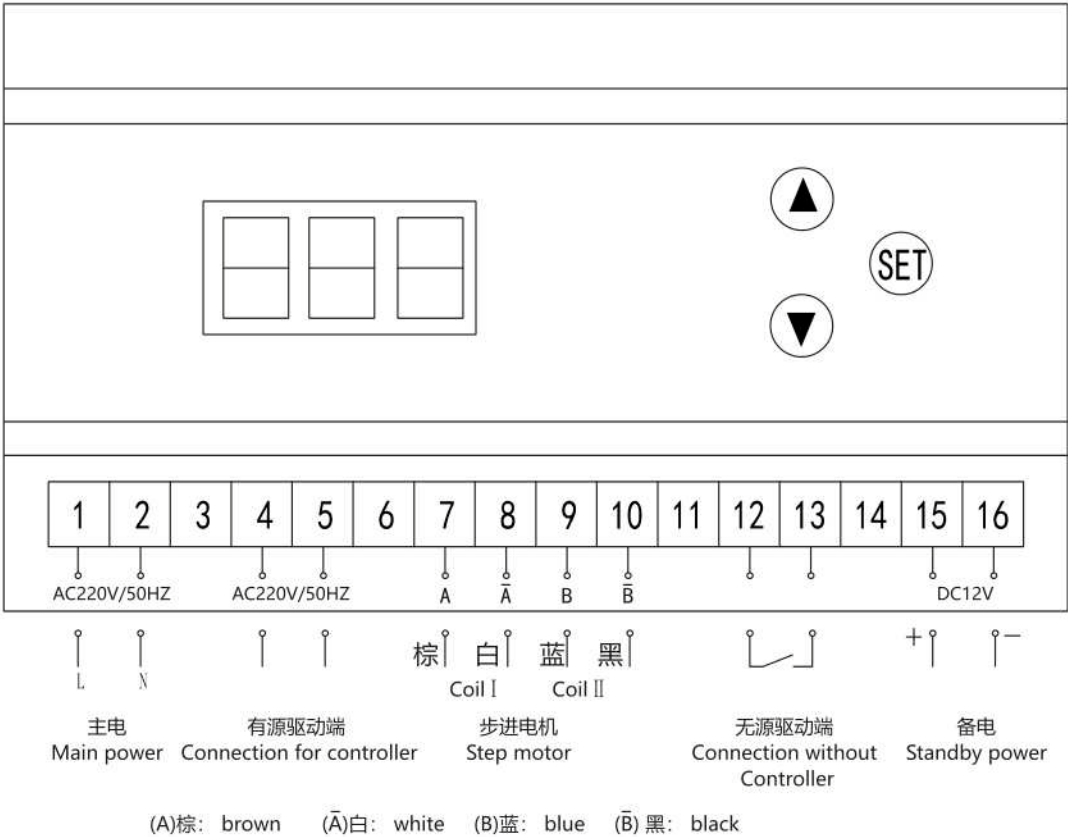
产品特点 Product characteristics

|                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• 专用模块：鸿森电动调节阀开关阀控制模块，确保系统控制精确无误；</li><li>• 开/关阀信号输入：一路无源、AC220V有源（可选）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>• Special module: Hongsen Motorized Regulating Valve on-off valve control module to ensure that the system control is accurate;</li><li>• Open / close valve signal input: a passive, AC220V active (optional) on-off signal for the controller to receive the open or close valve signal.</li></ul> |
|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

产品功能 Product function

|                                             |                                                                             |                                                                                             |                                                                                                                                                                                                            |
|---------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HS888控制器：<br>1、开度设置；<br>2、脉冲数设置；<br>3、断电关阀。 | HS888-2控制器：<br>1、开度设置；<br>2、脉冲数设置；<br>3、断电关阀；<br>4、一次开阀开度设置；<br>5、二次开启延时设置。 | HS888 controller:<br>1. Opening setting;<br>2. Pulse number setting;<br>3. Power off valve. | HS888-2 controller:<br>1. Opening setting;<br>2. Pulse number setting;<br>3. Power off valve;<br>4. Setting the opening degree of the primary opening valve;<br>5. Setting the delay of secondary opening. |
|---------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

结构 Structure



## 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.



HVH型活塞式电磁阀
Model HVH Piston Type Solenoid Valve



Table with 2 columns: Product Description and details. It lists various features of the HVH piston type solenoid valve, such as its use in refrigeration, cold storage, and air conditioning, and its suitability for different voltage coils.

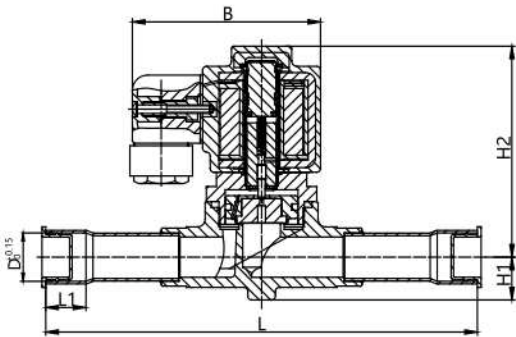
Table with 2 columns: Features and details. It highlights the valve's features, including its patented coil design for waterproofing, the availability of various AC and DC electromagnetic coils, and its unique structural design for large valve opening capability.

Table with 2 columns: Technical Parameters and specifications. It provides technical details such as applicable refrigerants (HCFC or HFC), medium temperature range (-40°C to +140°C), ambient temperature range (-40°C to +65°C), standard voltage (AC 380V, AC 220V/50Hz), allowable voltage fluctuation (+10% to -15%), and connection type (IP67 with terminal box).

Table containing Model Selection and Nominal Refrigerating Capacity data. The Model Selection table lists various valve models (HVH3-2T to HVH15-7T) with their specifications. The Nominal Refrigerating Capacity table provides capacity data in kW for different refrigerants (R22, R407C, R134a, R404A/R507, R410A) under liquid and hot vapor conditions.

Table containing Structure and Overall Dimension information. The Structure section lists 12 numbered components of the valve. The Overall Dimension section includes a technical drawing of the valve with dimension lines and labels (B, H2, H1, L, D15) indicating its physical measurements.

Table with 8 columns: Model, Overall Dimension (B, D, L1, L, H1, H2), and Weight (kg). It provides the overall dimensions and weight for each valve model listed in the table.



HVD型活塞式电磁阀
Model HVD Piston Type Solenoid Valve



产品概述 Product Description

|                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>HVD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>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。</li><li>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。</li><li>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。</li></ul> | <ul style="list-style-type: none"><li>Model HVH piston type solenoid valve is a twice open-type solenoid valve to be suitable to one-way flow.</li><li>Model HVH 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 HVH piston type solenoid valve with a universal valve body.</li><li>Model HVH piston type solenoid valve could be supplied in whole or in split, that means valve body and coil could be supplied separately.</li></ul> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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择。</li><li>焊接连接可达1-5/8in。</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 applicateion.</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>1-5/8 inch is the maximum welded connection size.</li></ul> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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ΔP(bar) |             |              | 最大工作压力(bar)<br>Max.Operating Pressure | Kv值<br>Kv(m³/h) |
|-----------|------------------------|-------------|-------------|--------------|---------------------------------------|-----------------|
|           | 焊接口<br>Weld Connection | 最小Min       | 最大工作压力差MOPD | 液体 LiquidMOP |                                       |                 |
| 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/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  |
| HVD25   | 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   | 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   | 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 tc=-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 ΔP=15KPa Pressure Drop after Solenoid Valve: ΔP = 15KPa

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 tc=+40°C Condensation Temperature: tc = +40°C;  
经过电磁阀的压力降 ΔP=0.8bar Pressure Drop after Solenoid Valve: ΔP = 0.8bar;  
热气温度 th=+65°C Hot Vapor Temperature: th = +65°C;  
液体制冷剂过冷度 Δtsub=4K Liquid Refrigerant Overcooling: Δtsub= 4K

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<br>Model | 外形尺寸Overall Dimension |    |       |    |       |      |     | 重量(kg)<br>Weight(kg) |
|-------------|-----------------------|----|-------|----|-------|------|-----|----------------------|
|             | A                     | B  | D     | L1 | L2    | H1   | H2  |                      |
| HVD25-9T    | 103                   | 85 | Φ28.7 | 20 | 246.5 | 26.5 | 139 | 3.02                 |
| HVD32-11T   | 110                   | 85 | Φ35.2 | 25 | 281.0 | 28   | 145 | 3.45                 |
| HVD40-13T   | 119                   | 85 | Φ41.5 | 29 | 316.0 | 32   | 150 | 4.60                 |

HVP型活塞式电磁阀
Model HVP Piston Type Solenoid Valve



产品概述 Product Description

|                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• HVP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>• 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。</li><li>• 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。</li><li>• 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。</li></ul> | <ul style="list-style-type: none"><li>• Model HVP piston type solenoid valve is a twice open-type solenoid valve to be suitable to one-way flow.</li><li>• 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.</li><li>• The coil of varies voltages is available for Model HVP piston type solenoid valve with a universal valve body.</li><li>• Model HVP piston type solenoid valve could be supplied in whole or in split, that means valve body and coil could be supplied separately.</li></ul> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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择。</li><li>• 焊接连接可达2-1/8in。</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 hign and low temperature applicateion.</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>• 2-1/8 inch is the maximum welded connection size.</li></ul> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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ΔP(bar) |                          | 最大工作压力(bar)<br>Max Operating Pressure(bar) | Kv值<br>Kv(m³/h) |
|---------|------------------------|-------------|--------------------------|--------------------------------------------|-----------------|
|         | 焊接口<br>Weld Connection | 最小Min       | 最大工作压力差MOPD 液体 LiquidMOP |                                            |                 |
| 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.

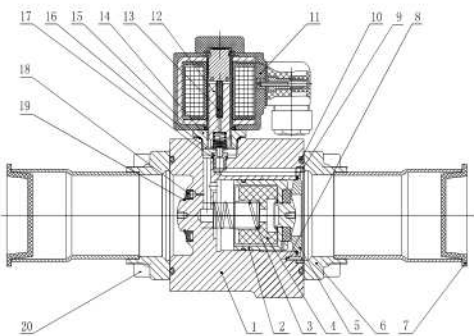
| 型号Model | 名义制冷量 KWNominal Refrigerating Capacity kW |        |            |        |                |       |            |       |               |        |            |        |
|---------|-------------------------------------------|--------|------------|--------|----------------|-------|------------|-------|---------------|--------|------------|--------|
|         | 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 tc=-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 ΔP=15KPa Pressure Drop after Solenoid Valve: ΔP = 15KPa

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 tc=+40°C Condensation Temperature: tc = +40°C;  
经过电磁阀的压力降 ΔP=0.8bar Pressure Drop after Solenoid Valve: ΔP = 0.8bar;  
热气温度 th=+65°C Hot Vapor Temperature: th = +65°C;  
液体制冷剂过冷度 Δtsub=4K Liquid Refrigerant Overcooling: Δtsub= 4K

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<br>Model | 外形尺寸Overall Dimension |    |       |    |       |      |     | 重量(kg)<br>Weight(kg) |
|-------------|-----------------------|----|-------|----|-------|------|-----|----------------------|
|             | A                     | B  | D     | L1 | L2    | H1   | H2  |                      |
| HVP25       | 100                   | 85 | Φ28.7 | 20 | 281.5 | 51.5 | 111 | 4.522                |
| HVP32       | 100                   | 85 | Φ35.2 | 25 | 281.5 | 51.5 | 111 | 4.562                |
| HVP40       | 100                   | 85 | Φ41.5 | 29 | 281.5 | 51.5 | 111 | 4.708                |
| HVP54       | 100                   | 85 | Φ54.2 | 34 | 281.5 | 51.5 | 111 | 4.778                |

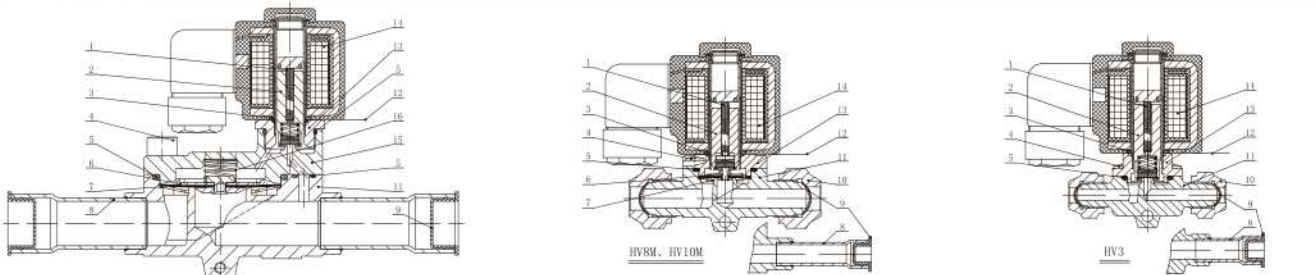
HV型电磁阀
Model HV solenoid valve



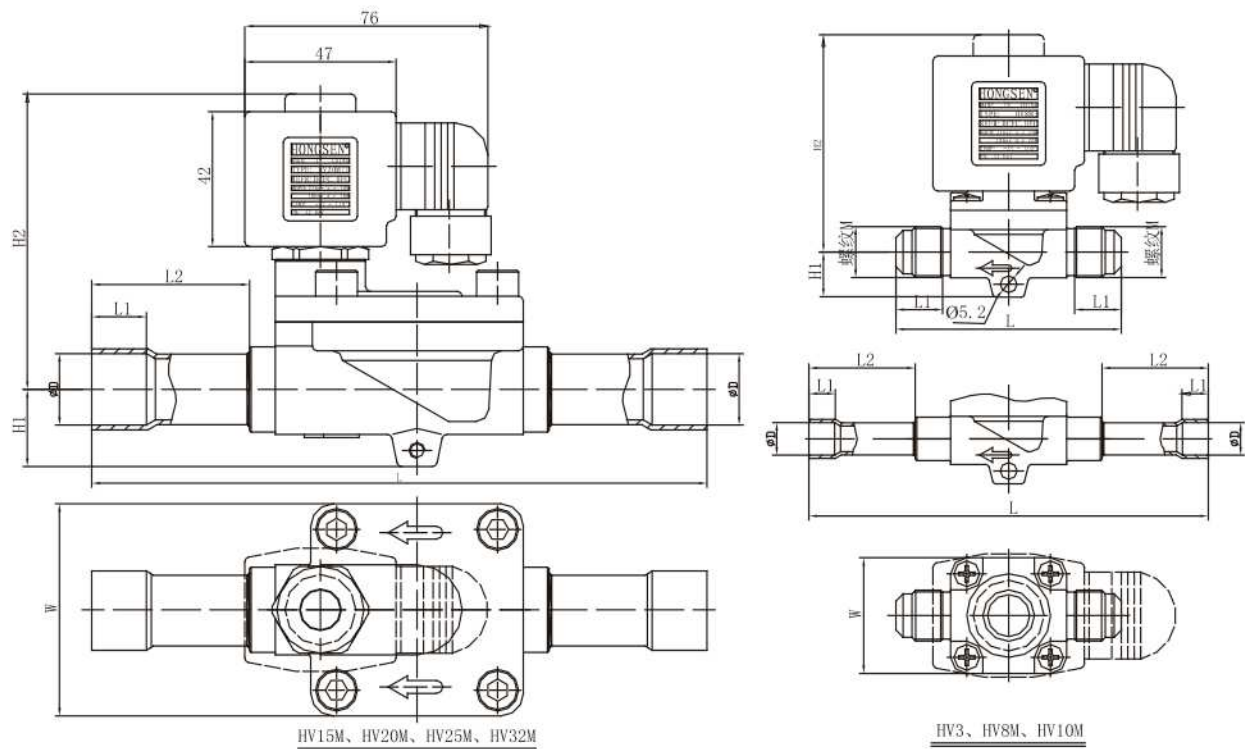
Table with 2 columns: Product Description (产品概述) and Features (特点). The Product Description column lists technical details and applications of the HV solenoid valve. The Features column lists key characteristics such as valve types, power supply options, and installation requirements.

Table with 2 columns: Technical Parameters (技术参数) and Specifications. The Specifications column lists applicable refrigerants, medium temperatures, ambient temperatures, standard voltage, allowable voltage fluctuation, and connection types for the solenoid.

Table with 7 columns: Model Selection (选型表), Structure (结构), and various performance metrics. The Model Selection table lists different valve models (HV3-2, HV3-2T, HV3-3, HV3-3T, HV8M3, HV8M3T, HV8M4, HV8M4T, HV10M4, HV10M4T, HV10M5, HV10M5T, HV15M5, HV15M5T, HV15M6, HV15M6T, HV20M7T, HV25M9T) and their corresponding specifications, including connection types, pressure ratings, and flow rates.



- 1. 回复弹簧 recovery spring
- 2. 芯铁部件 iron core (改性PTFE密封) (modified PTEE 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



| 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 solenoidcoil 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.

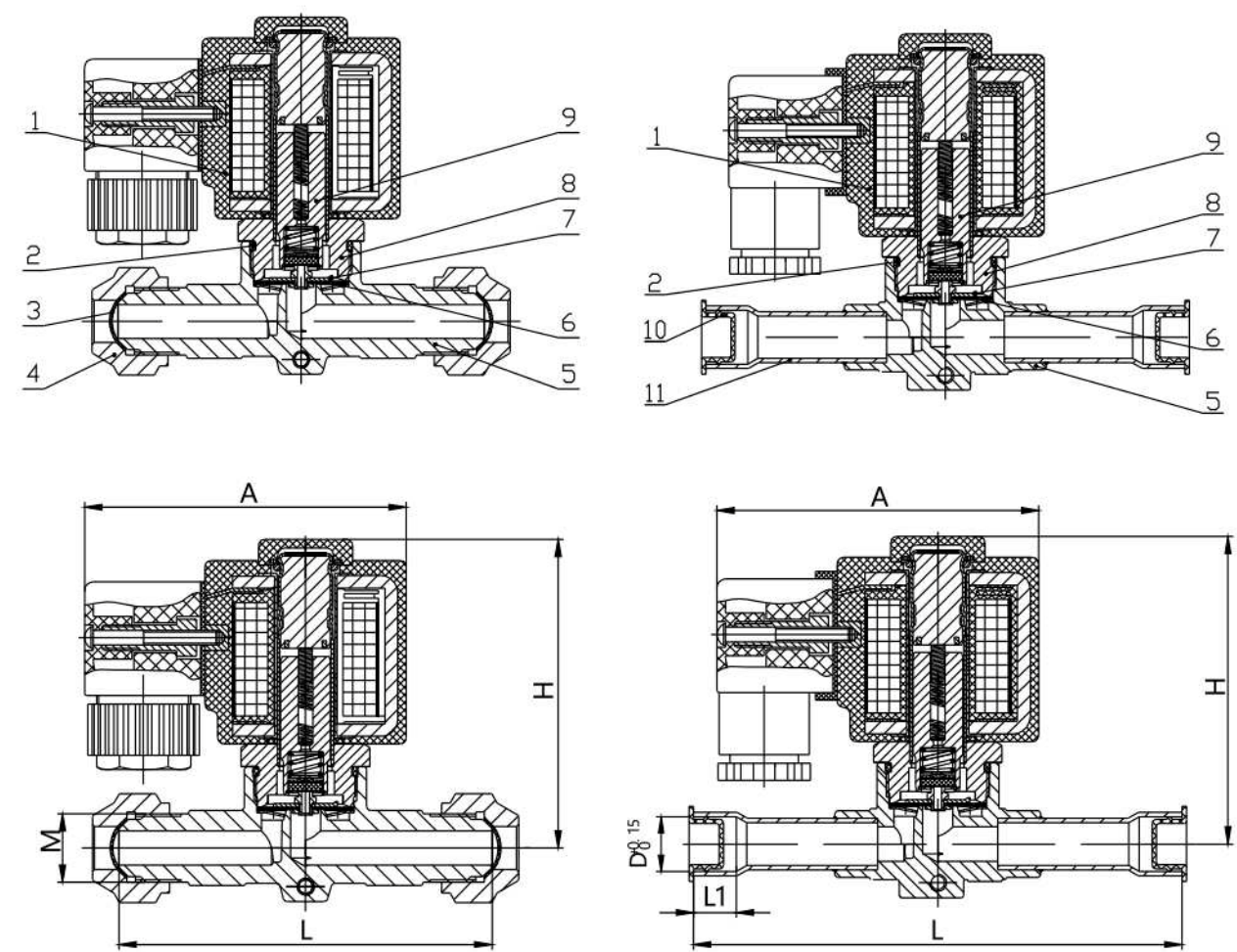
### 技术参数 Technical Parameters

|                                                       |                                                                                     |
|-------------------------------------------------------|-------------------------------------------------------------------------------------|
| 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℃~+105℃                                                                          |
| 线圈的适用环境温度 Application Ambient Temperature of Solenoid | -40℃~+65℃                                                                           |
| 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ΔP(bar) ~P(bar) |                               | 最大工作压力(bar)<br>Max Operating Pressure(bar) | Kv值(m³/h) |     |  |
|                                                                                                                                                                                                                                                                                                                             |         | 规格Spec        | 型式Type | 最小Minimum           | 最大工作压力差MOPD<br>液体 LiquidMOP   |                                            |           |     |  |
| 直接开启式<br>Direct Operated                                                                                                                                                                                                                                                                                                    | SV20-2  | 1/4           | 螺口 SAE | 0.0                 | 31 (常闭 close)<br>21 (常开 open) | 45                                         | 0.2       |     |  |
|                                                                                                                                                                                                                                                                                                                             | SV28-2  |               | 焊口 ODF |                     |                               |                                            |           |     |  |
|                                                                                                                                                                                                                                                                                                                             | SV20-3  | 3/8           | 螺口 SAE | 0.0                 |                               |                                            | 0.27      |     |  |
|                                                                                                                                                                                                                                                                                                                             | SV28-3  |               | 焊口 ODF |                     |                               |                                            |           |     |  |
| 膜片二次开启式<br>Servo-Operated                                                                                                                                                                                                                                                                                                   | SV64-3  | 1/2           | 螺口 SAE | 0.05                |                               | 45                                         | 0.8       |     |  |
|                                                                                                                                                                                                                                                                                                                             | SV68-3  |               | 焊口 ODF |                     |                               |                                            |           |     |  |
|                                                                                                                                                                                                                                                                                                                             | SV64-4  | 1/2           | 螺口 SAE |                     |                               |                                            |           |     |  |
|                                                                                                                                                                                                                                                                                                                             | SV68-4  |               | 焊口 ODF |                     |                               |                                            |           |     |  |
|                                                                                                                                                                                                                                                                                                                             | SV70-5  | 5/8           | 螺口 SAE |                     |                               | 45                                         | 2.6       |     |  |
|                                                                                                                                                                                                                                                                                                                             | SV78-5  |               | 焊口 ODF |                     |                               |                                            |           |     |  |
|                                                                                                                                                                                                                                                                                                                             | SV70-6  | 3/4           | 螺口 SAE |                     |                               |                                            |           |     |  |
|                                                                                                                                                                                                                                                                                                                             | SV78-6  |               | 焊口 ODF |                     |                               |                                            |           |     |  |
|                                                                                                                                                                                                                                                                                                                             | SV98-7  | 7/8           | 焊口 ODF |                     | 0.2                           |                                            |           | 5.7 |  |
| <div>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;</div> <div>2) 气态介质的MOPD约高1bar.</div> <div>1) Kv value: When the pressure differential is 100 KPa, the flowrate at m³h of water in density 1 t/m³ flows the solenoid valve.</div> <div>2) The MOPD of gaseous medium is about 1 bar higher than that of liquid.</div> |         |               |        |                     |                               |                                            |           |     |  |

| 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  |
| 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 |
| 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 |
| <div>液体和吸气名义制冷量的工况条件为:</div> <div>• 蒸发温度 te= +40°C</div> <div>• 阀前液体温度 t1= +25°C</div> <div>• 经过电磁阀的压力降 ΔP=15KPa</div> <div>The working condition the nominal refrigerating capacity of liquid and air suction is as follows:</div> <div>• Evaporation Temperature: te = -10°C;</div> <div>• Liquid Temperature before Valve: t1 = +25°C;</div> <div>• Pressure Drop after Solenoid Valve: ΔP = 15KPa</div> <div>热气名义制冷量的工况条件为:</div> <div>• 冷凝温度 tc= +40°C</div> <div>• 经过电磁阀的压力降 ΔP=80KPa</div> <div>• 热气温度 th= +65°C</div> <div>• 液体制冷剂过冷度 Δtsub=4K</div> <div>The working condition the nominal refrigerating capacity of hot vapor is as follows:</div> <div>• Condensation Temperature: tc = +40°C;</div> <div>• Pressure Drop after Solenoid Valve: ΔP = 80KPa;</div> <div>• Hot Vapor Temperature: th = +65°C;</div> <div>• Liquid Refrigerant Overcooling: Δtsub= 4K</div> |                                           |        |            |        |                |       |            |       |               |       |            |       |

| 结构 Structure |                        |    |     |    |      |              |                |
|--------------|------------------------|----|-----|----|------|--------------|----------------|
| 型号Model      | 外形尺寸 Overall Dimension |    |     |    |      |              | 重量(g)Weight(g) |
|              | A                      | H  | L   | L1 | ΦD   | M            |                |
| SV20-2       | 70                     | 65 | 58  | —  | —    | 7/16-20UNF   | 395            |
| SV28-2       | 70                     | 65 | 90  | 7  | 6.5  | —            | 395            |
| SV20-3       | 70                     | 65 | 64  | —  | —    | 5/8-18UNF    | 450            |
| SV28-3       | 70                     | 65 | 104 | 8  | 10.1 | —            | 450            |
| SV64-3       | 70                     | 72 | 87  | —  | —    | 5/8-18UNF    | 496            |
| SV68-3       | 70                     | 72 | 108 | 8  | 10.1 | —            | 496            |
| SV64-4       | 70                     | 72 | 89  | —  | —    | 3/4-16UNF    | 503            |
| SV68-4       | 70                     | 72 | 114 | 10 | 12.8 | —            | 458            |
| SV70-5       | 70                     | 75 | 104 | —  | —    | 7/8-14UNF    | 746            |
| SV78-5       | 70                     | 75 | 152 | 14 | 16.1 | —            | 598            |
| SV70-6       | 70                     | 75 | 104 | —  | —    | 1-1/16-14UNS | 816            |
| SV78-6       | 70                     | 75 | 158 | 16 | 19.2 | —            | 616            |
| SV98-7       | 70                     | 88 | 180 | 17 | 22.3 | —            | 1020           |



1.电磁线圈 solenoid coi 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

HV型卸载电磁阀
Model HV Unloading Solenoid Valve

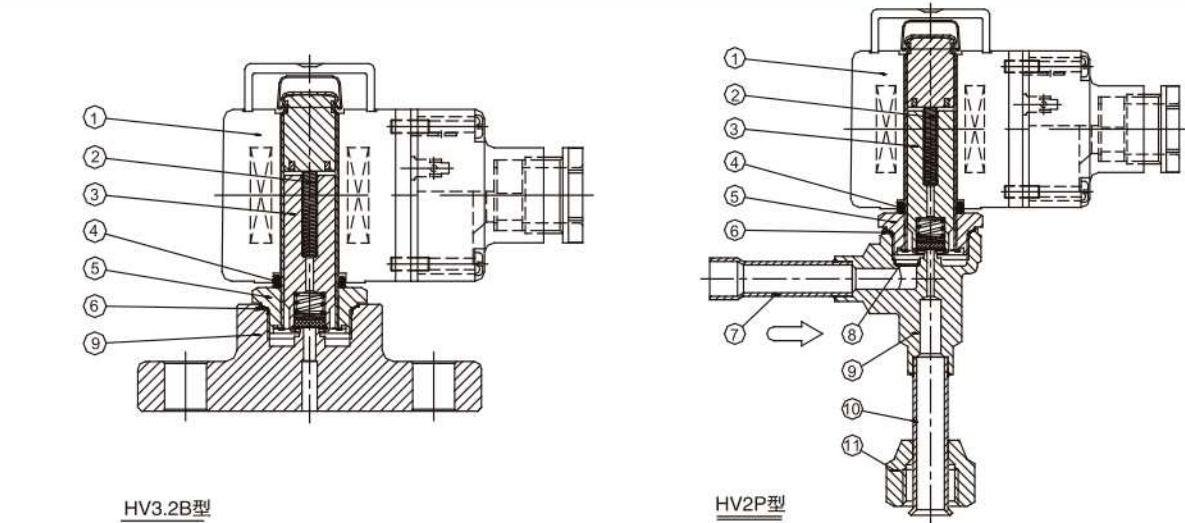


Table with 2 columns: Product Description and English description. It details the valve's function as a direct-operated valve for unloading compressors, its application in refrigeration systems, and its availability in both packed and separated configurations.

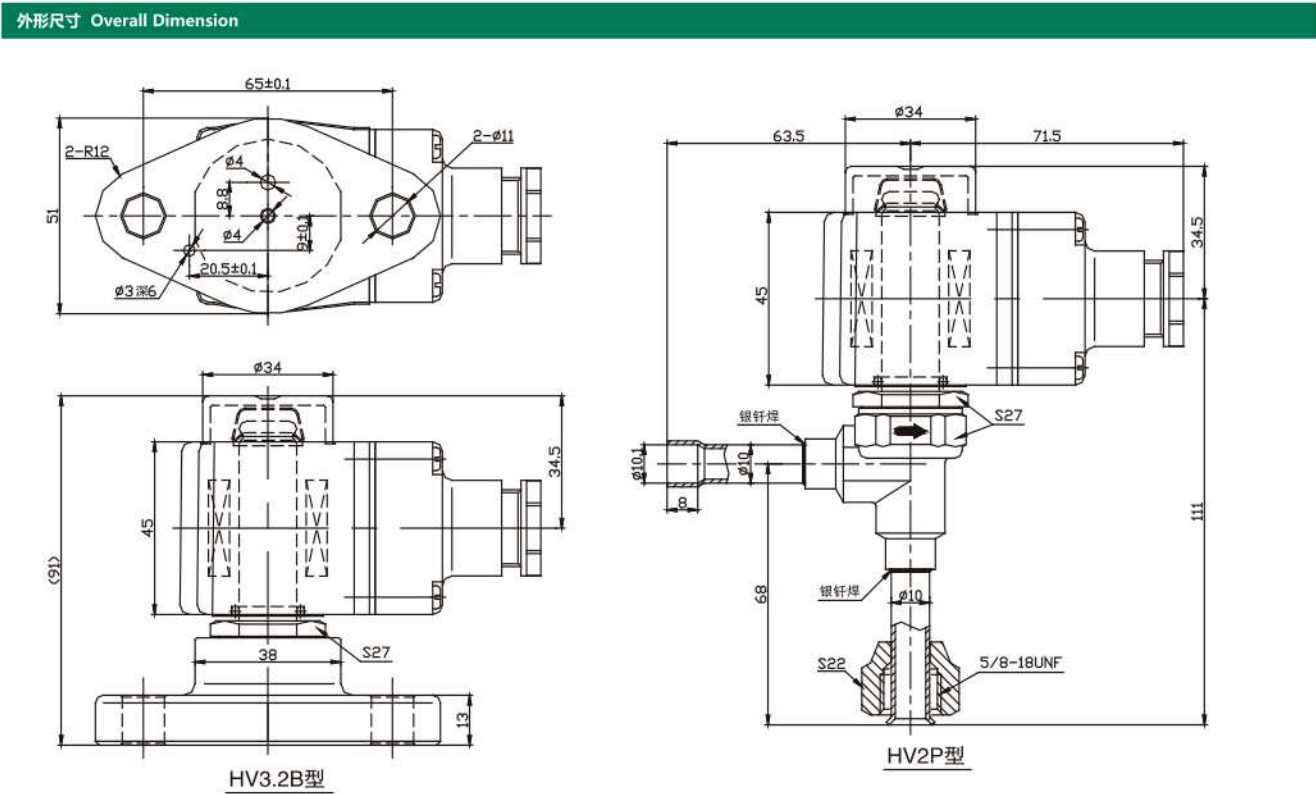
Table with 2 columns: Features and English description. It lists key features such as the availability of NC type valves, design temperature of 110°C, 10W high power solenoid, and ease of installation with a screwdriver.

Table with 2 columns: Technical Parameters and English description. It provides technical specifications including applicable refrigerants (HCFC, HFC), medium temperature range (-30°C to +105°C), ambient temperature range (-40°C to +65°C), standard voltage (AC220V/50HZ), and connection type (Ip67 with terminal box).

Table with 6 columns: Model Selection, Connection, Pressure Differential, Max. Operating Pressure, Kv value, and Weight. It provides selection criteria for HV3.2B and HV2P models based on these parameters.



- 1.电磁线圈 (10W) solenoid(10W)
- 2.回复弹簧 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-Ring
- 5.阀座部件 valve seat
- 6.密封环 sealing
- 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



## 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.



TH THW 型热力膨胀阀 Thermostatic Expansion Valve



| 产品概述 Product Description                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• T型膨胀阀是一种可换芯的新型热力膨胀阀</li><li>• T型膨胀阀用于调节蒸发器中液体制冷剂的供给量</li><li>• T型膨胀阀特别适合于干式蒸发器中制冷剂液体的供给</li><li>• T型膨胀阀是通过制冷剂的过热度调节来进行自动控制的</li></ul> | <ul style="list-style-type: none"><li>• T-type expansion valve is a novel thermostatic expansion valve with replaceable valve element</li><li>• T-type expansion valve is used for adjusting the supply quantity of liquid refrigerant in evaporator</li><li>• T-type expansion valve is particularly suitable for supplying liquid refrigerant in dry-type evaporator</li><li>• T-type expansion valve has autocontrol through regulating the-superheating degree of refrigerant.</li></ul> |

| 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，有效降低外泄漏概率。</li><li>• 带过滤功能的可换阀芯组件，便于库存、匹配和维修。</li><li>• 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>• Large scope of evaporating temperature.</li><li>• be capable of providing MOP function so as not to damage the compressor motor due to overhigh evaporating pressure.</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, greatly improve the working performance at low temperature.</li><li>• The bonnet adopts a secondary sealing structure to reduce the percentage of external leakage .</li><li>• With filting orifice,convenient storage, matching and maintenance</li><li>• The temperature wrap has mixed charging technology so as to have the feature of superheating degree within the whole evaporating temperature range</li></ul> |

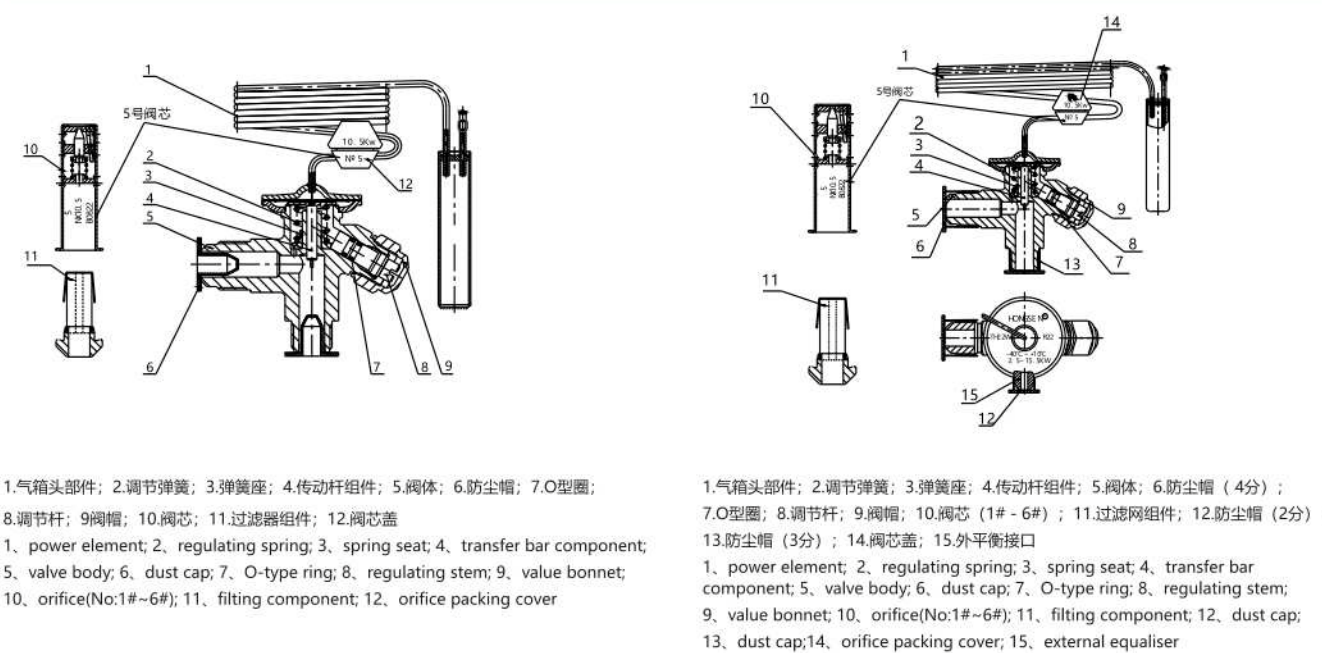
| 技术参数 Technical Parameters                |                                                          |                                                                                                                                                                                                                                                     |
|------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 适用制冷剂 Applicable Refrigerants            | R22/R407C、R134a、R404A冷媒等介质                               | <ul style="list-style-type: none"><li>• T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。</li><li>• Capillary length of T-type thermostatic expansion valve:1.5m in atandard; under special situation,it can be customized based on clients' requirements.</li></ul> |
| 适用介质温度 Applicable Medium                 | R22/R407C: -40℃~-+10℃; R134a:-30℃~-+10℃;R404A:-40℃~-+10℃ |                                                                                                                                                                                                                                                     |
| 名义容量 Norminal Capacity                   | 2.5KW~15.5KW、1.8KW~10.5KW、1.6KW~9.1KW                    |                                                                                                                                                                                                                                                     |
| 过热度调节范围 Adjustable Range of Superheat    | 2℃~8℃                                                    |                                                                                                                                                                                                                                                     |
| 出厂静热度调定值 Ex-Works Static Heat Adjustment | 3.5℃                                                     |                                                                                                                                                                                                                                                     |
| 最大工作压力 Maximum Working Pressure          | 2.8MPa                                                   |                                                                                                                                                                                                                                                     |
| 最大测试压力 Maximum Testing Pressure          | 3.2MPa                                                   |                                                                                                                                                                                                                                                     |

| 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           | TH22/ TH22W   | 1#       | 25                        | 1.3/0.37                         | 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     | 3.75/1.07  | 3.88/1.11  | 3.81/1.09  |
|                     |               | 3#       |                           | 2.44/0.7                         | 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  | 6.29/1.8   | 6.53/1.87  | 6.46/1.85  |
|                     |               | 4#       |                           | 3.52/1.01                        | 4.07/1.16 | 4.7/1.34  | 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 | 13.29/3.8  |
|                     |               | 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 |
|                     | TH22/ TH22W   | 1#       | 35                        | 1.34/0.38                        | 1.54/0.44 | 1.76/0.5  | 2/0.57    | 2.26/0.65  | 2.53/0.72  | 2.8/0.8    | 3.06/0.87  | 3.27/0.93  | 3.4/0.97   | 3.43/0.98  |
|                     |               | 2#       |                           | 1.52/0.43                        | 1.76/0.5  | 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  | 7.7/2.2    | 8.8/2.51   | 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 | 8.76/2.5   | 10.13/2.89 | 11.68/3.34 | 13.35/3.81 | 15/4.29    | 16.4/4.69  | 17.19/4.91 |
|                     |               | 6#       |                           | 5.77/1.65                        | 6.65/1.9  | 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 |
|                     | TH22/ TH22W   | 1#       | 45                        | 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     | 3.74/1.07  | 3.87/1.11  |
|                     |               | 2#       |                           | 1.56/0.45                        | 1.81/0.52 | 2.09/0.6  | 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  | 8.75/2.5   | 9.42/2.69  |
|                     |               | 4#       |                           | 3.96/1.13                        | 4.55/1.3  | 5.24/1.5  | 6.05/1.73 | 6.98/1.99  | 8.05/2.3   | 9.26/2.65  | 10.56/3.02 | 11.9/3.4   | 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 |
|                     | TH22/ TH22W   | 1#       | 55                        | 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  | 3.3/0.94   | 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 | 2.44/0.7  | 2.81/0.8   | 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 | 3.6/1.03  | 4.16/1.19 | 4.8/1.37   | 5.52/1.58  | 6.34/1.81  | 7.26/2.07  | 8.25/2.36  | 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 | 13.65/3.9  | 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 | 8.2/2.34  | 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               | TH134/ TH134w | 1#       | 25                        | 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  | 3.7/1.06   | 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  |
|                     | TH134/ TH134w | 1#       | 35                        | 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 |
|                     | TH134/ TH134w | 1#       | 45                        | 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 |

| 选型表 Model Selection |                  |             |                                    |                                  |           |           |            |            |            |            |            |            |            |            |
|---------------------|------------------|-------------|------------------------------------|----------------------------------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|
| 制冷剂<br>Refrigerant  | 型号<br>Model      | 阀芯<br>Spool | 冷凝温度<br>(°C)<br>Condensing<br>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               | TH134/<br>TH134w | 1#          | 55                                 | 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               | TH404/<br>TH404W | 1#          | 25                                 | 0.99/0.28                        | 1.18/0.34 | 1.39/0.4  | 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  | 3.15/0.9   |
|                     |                  | 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 |
|                     | TH404/<br>TH404W | 1#          | 35                                 | 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     | 3.65/1.04  | 3.95/1.13  |
|                     |                  | 3#          |                                    | 1.69/0.48                        | 2.11/0.6  | 2.67/0.76 | 3.15/0.9   | 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 |
|                     | TH404/<br>TH404W | 1#          | 45                                 | 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  | 2.45/0.7   | 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     | 4.23/1.21  | 4.92/1.41  | 5.61/1.6   | 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 | 4.21/1.2   | 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  | 11.1/3.17  | 13.1/3.74  | 14.25/4.07 | 15.02/4.29 |
|                     |                  | 6#          |                                    | 3.78/1.08                        | 4.56/1.3  | 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 | 16.8/4.8   | 17.85/5.1  |
|                     | TH404/<br>TH404W | 1#          | 55                                 | 0.73/0.21                        | 0.86/0.25 | 1.15/0.33 | 1.32/0.38  | 1.51/0.43  | 1.75/0.5   | 2.06/0.59  | 2.16/0.62  | 2.5/0.71   | 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  | 2.1/0.6    | 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  | 6.31/1.8   | 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  | 9.1/2.6    | 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 | 13.6/3.89  | 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  | 8.39/2.4   | 10.38/2.97 | 12.26/3.5  | 14.4/4.11  | 16.2/4.63  | 17.35/4.96 |
| R410A               | TH410/TH<br>410W | 1#          | 25                                 | 1.03/0.29                        | 1.33/0.38 | 1.68/0.48 | 1.96/0.56  | 2.35/0.67  | 2.69/0.77  | 3.1/0.89   | 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  | 9.62/2.75  | 7.53/2.15  | 8.35/2.39  | 7.86/2.25  | 7.63/2.18  |
|                     |                  | 4#          |                                    | 3.49/1                           | 4.5/1.29  | 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 | 12.1/3.46  | 19.88/5.68 | 15.92/4.55 | 17.68/5.05 | 19.58/5.59 | 18.78/5.37 | 17.9/5.11  |
|                     | TH410/TH<br>410W | 1#          | 35                                 | 1.1/0.31                         | 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  | 4.21/1.2   | 4.15/1.19  | 4.08/1.17  |
|                     |                  | 2#          |                                    | 1.32/0.38                        | 1.69/0.48 | 2.12/0.61 | 2.5/0.71   | 2.96/0.85  | 3.52/1.01  | 3.96/1.13  | 4.56/1.3   | 5.15/1.47  | 5.1/1.46   | 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    | 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  | 10.1/2.89  | 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#          |                                    | 5.61/1.6                         | 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 | 21.69/6.2  |

| 选型表 Model Selection                                                                                                                                                                                                                                                                                                                                                                              |                  |             |                                    |                                  |           |           |           |            |            |            |            |            |            |            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------|------------------------------------|----------------------------------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|
| 制冷剂<br>Refrigerant                                                                                                                                                                                                                                                                                                                                                                               | 型号<br>Model      | 阀芯<br>Spool | 冷凝温度<br>(°C)<br>Condensing<br>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                                                                                                                                                                                                                                                                                                                                                                                            | TH410/T<br>H410W | 1#          | 45                                 | 1.06/0.3                         | 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     | 4.06/1.16  | 4.71/1.35  | 5.29/1.51  | 5.29/1.51  | 5.46/1.56  |
|                                                                                                                                                                                                                                                                                                                                                                                                  |                  | 3#          |                                    | 2.29/0.65                        | 2.96/0.85 | 3.68/1.05 | 4.48/1.28 | 5.4/1.54   | 6.28/1.79  | 7.31/2.09  | 8.44/2.41  | 9.63/2.75  | 9.68/2.77  | 9.85/2.81  |
|                                                                                                                                                                                                                                                                                                                                                                                                  |                  | 4#          |                                    | 3.35/0.96                        | 4.38/1.25 | 5.39/1.54 | 6.65/1.9  | 7.89/2.25  | 9.42/2.69  | 10.9/3.11  | 12.58/3.59 | 14.55/4.16 | 14.69/4.2  | 15.02/4.29 |
|                                                                                                                                                                                                                                                                                                                                                                                                  |                  | 5#          |                                    | 4.36/1.25                        | 5.58/1.59 | 6.93/1.98 | 8.61/2.46 | 10.1/2.89  | 11.85/3.39 | 13.68/3.91 | 15.99/4.57 | 18.25/5.21 | 15.65/4.47 | 18.91/5.4  |
|                                                                                                                                                                                                                                                                                                                                                                                                  |                  | 6#          |                                    | 5.44/1.55                        | 6.92/1.98 | 8.65/2.47 | 10.49/3   | 12.56/3.59 | 14.9/4.26  | 17.22/4.92 | 20.01/5.72 | 22.69/6.48 | 23.3/6.66  | 23.75/6.79 |
|                                                                                                                                                                                                                                                                                                                                                                                                  | TH410/T<br>H410W | 1#          | 55                                 | 0.96/0.27                        | 1.31/0.37 | 1.62/0.46 | 1.95/0.56 | 2.26/0.65  | 2.75/0.79  | 3.15/0.9   | 3.69/1.05  | 4.31/1.23  | 4.28/1.22  | 4.42/1.26  |
|                                                                                                                                                                                                                                                                                                                                                                                                  |                  | 2#          |                                    | 1.23/0.35                        | 1.62/0.46 | 1.88/0.54 | 2.38/0.68 | 2.85/0.81  | 3.29/0.94  | 3.86/1.1   | 4.56/1.3   | 5.2/1.49   | 5.41/1.55  | 5.61/1.6   |
|                                                                                                                                                                                                                                                                                                                                                                                                  |                  | 3#          |                                    | 2.15/0.61                        | 2.79/0.8  | 3.43/0.98 | 4.31/1.23 | 5.06/1.45  | 6.02/1.72  | 7.08/2.02  | 8.15/2.33  | 9.5/2.71   | 9.63/2.75  | 10.1/2.89  |
|                                                                                                                                                                                                                                                                                                                                                                                                  |                  | 4#          |                                    | 3.15/0.9                         | 4.21/1.2  | 5.12/1.46 | 6.29/1.8  | 7.53/2.15  | 9.01/2.57  | 10.4/2.97  | 12.36/3.53 | 14.11/4.03 | 14.68/4.19 | 15.2/4.34  |
|                                                                                                                                                                                                                                                                                                                                                                                                  |                  | 5#          |                                    | 4.03/1.15                        | 5.32/1.52 | 6.39/1.83 | 7.96/2.27 | 9.56/2.73  | 11.36/3.25 | 13.25/3.79 | 15.43/4.41 | 17.69/5.05 | 18.33/5.24 | 18.96/5.42 |
|                                                                                                                                                                                                                                                                                                                                                                                                  |                  | 6#          |                                    | 5.02/1.43                        | 6.49/1.85 | 8.01/2.29 | 9.98/2.85 | 11.95/3.41 | 14.31/4.09 | 16.61/4.75 | 19.38/5.54 | 22.19/6.34 | 23.1/6.6   | 23.68/6.77 |
| <div>• 膨胀阀按照蒸发器冷量选型</div> <div>• 如蒸发器有分液头，建议选择外平衡热力膨胀阀</div> <div>• 注意制冷剂型号，选择对应的热力膨胀阀</div> <div>• Model of expansion valve should be selected by refrigerating capacity of evaporators.</div> <div>• External equalisation thermostatic expansion valve should be chosen for evaporators with distributors.</div> <div>• Pay attention to the refrigerant when choosing expansion valve.</div> |                  |             |                                    |                                  |           |           |           |            |            |            |            |            |            |            |

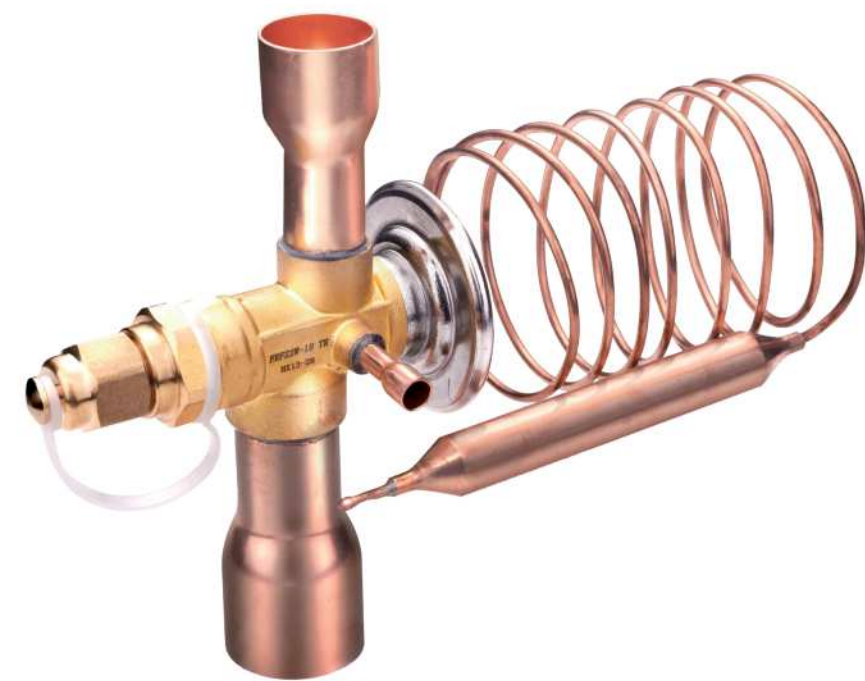
结构 Structure



| 可换芯选择 Replaceable element model |                                              |       |       |       |                                              |       |       |       |
|---------------------------------|----------------------------------------------|-------|-------|-------|----------------------------------------------|-------|-------|-------|
| 阀体编号 Valve element No.          | 名义制冷量 (TR)Nominal refrigerating capacity(TR) |       |       |       | 名义制冷量 (KW)Nominal refrigerating capacity(KW) |       |       |       |
|                                 | R22/R407C                                    | R134a | R404A | R410A | R22                                          | R134a | R404A | R410A |
| No.1                            | 0.7                                          | 0.5   | 0.45  | 0.92  | 2.5                                          | 1.8   | 1.6   | 3.25  |
| No.2                            | 1.0                                          | 0.8   | 0.6   | 1.55  | 3.5                                          | 2.6   | 2.1   | 5.45  |
| No.3                            | 1.5                                          | 1.3   | 1.2   | 2.5   | 5.2                                          | 4.6   | 4.2   | 8.7   |
| No.4                            | 2.3                                          | 1.9   | 1.7   | 4     | 8.0                                          | 6.7   | 6.0   | 14.15 |
| No.5                            | 3.0                                          | 2.5   | 2.2   | 4.9   | 10.5                                         | 8.6   | 7.7   | 17.28 |
| No.6                            | 4.5                                          | 3.0   | 2.6   | 5.7   | 15.5                                         | 10.5  | 9.1   | 19.95 |

| 主阀体造型 Model of main value body                                                                                                                                                                           |             |                               |             |           |                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------------------------|-------------|-----------|-------------------------|
| 制冷剂<br>Refrigerant                                                                                                                                                                                       | 型号<br>Model | 压力平衡<br>Pressure Equalisation | 接口螺纹 Thread |           |                         |
|                                                                                                                                                                                                          |             |                               | 进口端Intet    | 出口端Outlet | 外平衡口 External Equaliser |
| R22/R407C                                                                                                                                                                                                | TH22        | 内平衡 Internal Equalisation     | 3/8 SAE     | 1/2 SAE   |                         |
| R22/R407C                                                                                                                                                                                                | TH22W       | 外平衡 External Equalisation     | 3/8 SAE     | 1/2 SAE   | 1/4 SAE                 |
| R134a                                                                                                                                                                                                    | TH134       | 内平衡 Internal Equalisation     | 3/8 SAE     | 1/2 SAE   |                         |
| R134a                                                                                                                                                                                                    | TH134W      | 外平衡 External Equalisation     | 3/8 SAE     | 1/2 SAE   | 1/4 SAE                 |
| R404A                                                                                                                                                                                                    | TH404       | 内平衡 Internal Equalisation     | 3/8 SAE     | 1/2 SAE   |                         |
| R404A                                                                                                                                                                                                    | TH404W      | 外平衡 External Equalisation     | 3/8 SAE     | 1/2 SAE   | 1/4 SAE                 |
| R410A                                                                                                                                                                                                    | TH410       | 内平衡 Internal Equalisation     | 3/8 SAE     | 1/2 SAE   |                         |
| R410A                                                                                                                                                                                                    | TH410W      | 外平衡 External Equalisation     | 3/8 SAE     | 1/2 SAE   | 1/4 SAE                 |
| • 名义制冷屋的工况条件为：蒸发温度5℃；冷凝温度35℃；<br>过热度3.5℃；过冷度4℃。<br>• Working Condition of Nominal Refrigerating Capacity: Evaporation<br>Temperature: + 5℃; Condensation Temperature:+35℃; Superheat:3.5℃;Subcooling:4℃. |             |                               |             |           |                         |

FRF 型热力膨胀阀  
FRF Thermostatic Expansion Valve



FRF型 (英制焊口)  
Model FRF (inch ODF)

| 安装使用要求 Installation and usage requirements                                                                                                                                               |                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>1) 焊管式膨胀阀在与系统管子焊接时，必须注意以下几点:</div> <div>1.1、首先用湿布或湿棉纱包在阀体上保护阀体，以防在焊接时温度过高烧坏阀内零件。</div> <div>1.2、焊接时请注意焊枪火焰方向为朝阀体外向。</div> <div>1.3、选用低温银焊条焊接。</div> <div>2) 膨胀阀维修保养应指定专业人员进行。</div> |                                                 | <div>1) welded pipe expansion valve with the system pipe welding, we must pay attention to the following points;</div> <div>1.1、use a damp cloth or a wet cotton bag to protect bodyon the body, To avoid high that temperature burn in the valve parts in welding. Please note that the</div> <div>1.2、welding torch flame direction toward the body outward. 1.3 low temperature silverelec trode welding.</div> <div>2) expansion valve maintenance should be designated professional staff.</div> |
| 技术参数 Technical Parameters                                                                                                                                                                |                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 适用制冷剂 Applicable Refrigerants                                                                                                                                                            | R22、R134a、R404A冷媒等介质                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 适用介质温度 Applicable Medium                                                                                                                                                                 | R22: -40℃~+10℃; R134a:-30℃~+10℃;R404A:-40℃~+10℃ |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 过热度调节范围 Adjustable Range of Superheat                                                                                                                                                    | 2℃~8℃                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 最大工作压力 Maximum Working Pressure                                                                                                                                                          | 2.8MPa                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 最大测试压力 Maximum Testing Pressure                                                                                                                                                          | 3.2MPa                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

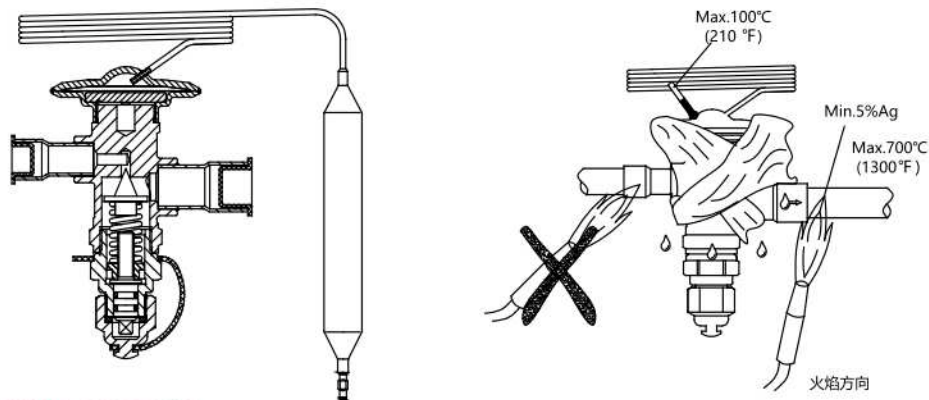
| 选型表 Model Selection |                                    |                 |                                  |             |             |             |             |             |             |             |             |
|---------------------|------------------------------------|-----------------|----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 制冷剂<br>Refrigerant  | 冷凝温度<br>(°C)<br>Condensing<br>Temp | 型号<br>Model     | 制冷量(KW)/(TR)                     |             |             |             |             |             |             |             |             |
|                     |                                    |                 | 蒸发温度(°C) Evaporation temperature |             |             |             |             |             |             |             |             |
|                     |                                    |                 | -35                              | -30         | -25         | -20         | -15         | -10         | -5          | 0           | 5           |
| R22                 | 40                                 | FRF22W-3-3-5    | 4.99/1.43                        | 5.69/1.63   | 6.43/1.84   | 7.2/2.06    | 7.98/2.28   | 8.75/2.5    | 9.49/2.71   | 10.17/2.91  | 10.72/3.06  |
|                     |                                    | FRF22W-3-4-5    | 4.99/1.43                        | 5.69/1.63   | 6.43/1.84   | 7.2/2.06    | 7.98/2.28   | 8.75/2.5    | 9.49/2.71   | 10.17/2.91  | 10.72/3.06  |
|                     |                                    | FRF22W-4-4-7    | 6.68/1.91                        | 7.63/2.18   | 8.63/2.47   | 9.68/2.77   | 10.75/3.07  | 11.81/3.37  | 12.83/3.67  | 13.76/3.93  | 14.52/4.15  |
|                     |                                    | FRF22W-6-4-5    | 9.69/2.77                        | 11.1/3.17   | 12.58/3.59  | 14.12/4.03  | 15.7/4.49   | 17.26/4.93  | 18.77/5.36  | 20.12/5.75  | 21.24/6.07  |
|                     |                                    | FRF22W-6-4-7    | 9.69/2.77                        | 11.1/3.17   | 12.58/3.59  | 14.12/4.03  | 15.7/4.49   | 17.26/4.93  | 18.77/5.36  | 20.12/5.75  | 21.24/6.07  |
|                     |                                    | FRF22W-7.5-5-7  | 12.00/3.43                       | 13.86/3.96  | 15.84/4.53  | 17.89/5.11  | 19.97/5.71  | 21.03/6.01  | 22.98/6.57  | 25.72/7.35  | 27.1/7.74   |
|                     |                                    | FRF22W-11-5-7   | 19.44/5.55                       | 22.45/6.41  | 25.58/7.31  | 28.73/8.21  | 31.98/9.14  | 34.6/9.89   | 37.07/10.59 | 38.85/11.1  | 39.95/11.41 |
|                     |                                    | FRF22W-11-5-9   | 19.44/5.55                       | 22.45/6.41  | 25.58/7.31  | 28.73/8.21  | 31.98/9.14  | 34.6/9.89   | 37.07/10.59 | 38.85/11.1  | 39.95/11.41 |
|                     |                                    | FRF22W-12-5-7   | 19.86/5.67                       | 22.01/6.29  | 25.07/7.16  | 28.26/8.07  | 31.51/9     | 34.25/9.79  | 37.91/10.83 | 40.11/11.46 | 42.61/12.17 |
|                     |                                    | FRF22W-12-5-9   | 19.86/5.67                       | 22.01/6.29  | 25.07/7.16  | 28.26/8.07  | 31.51/9     | 34.25/9.79  | 37.91/10.83 | 40.11/11.46 | 42.61/12.17 |
|                     |                                    | FRF22W-15-5-9   | 22.47/6.42                       | 25.11/7.17  | 28.3/8.09   | 31.96/9.13  | 35.69/10.2  | 38.86/11.1  | 41.85/11.96 | 51.13/14.61 | 54.25/15.5  |
|                     |                                    | FRF22W-15-7-9   | 22.47/6.42                       | 25.11/7.17  | 28.3/8.09   | 31.96/9.13  | 35.69/10.2  | 38.86/11.1  | 41.85/11.96 | 51.13/14.61 | 54.25/15.5  |
|                     |                                    | FRF22W-18-7-9   | 25.31/7.23                       | 28.72/8.21  | 33.17/9.48  | 38.98/11.14 | 45.08/12.88 | 49.37/14.11 | 53.68/15.34 | 58.76/16.79 | 63.22/18.06 |
|                     |                                    | FRF22W-18-7-11  | 25.31/7.23                       | 28.72/8.21  | 33.17/9.48  | 38.98/11.14 | 45.08/12.88 | 49.37/14.11 | 53.68/15.34 | 58.76/16.79 | 63.22/18.06 |
|                     |                                    | FRF22W-26-7-11  | 36.48/10.42                      | 42.31/12.09 | 48.76/13.93 | 55.84/15.95 | 63.49/18.14 | 71.61/20.46 | 79.99/22.85 | 88.29/25.23 | 92.02/26.29 |
|                     |                                    | FRF22W-26-9-11  | 36.48/10.42                      | 42.31/12.09 | 48.76/13.93 | 55.84/15.95 | 63.49/18.14 | 71.61/20.46 | 79.99/22.85 | 88.29/25.23 | 92.02/26.29 |
|                     |                                    | FRF22W-30-7-11  | 41.30/11.80                      | 47.93/13.69 | 55.26/15.79 | 63.29/18.08 | 71.98/20.57 | 81.2/23.2   | 90.69/25.91 | 100.1/28.6  | 104.8/29.94 |
|                     |                                    | FRF22W-30-9-11  | 41.30/11.80                      | 47.93/13.69 | 55.26/15.79 | 63.29/18.08 | 71.98/20.57 | 81.2/23.2   | 90.69/25.91 | 100.1/28.6  | 104.8/29.94 |
|                     |                                    | FRF22W-38-9-11  | 48.63/13.89                      | 55.75/15.93 | 64.95/18.56 | 75.29/21.51 | 86.78/24.79 | 99.3/28.37  | 111.5/31.86 | 123.7/35.34 | 134.7/38.49 |
| R404A               | 40                                 | FRF404W-4-4-5   | 4.1/1.17                         | 4.71/1.35   | 5.38/1.54   | 6.09/1.74   | 6.84/1.95   | 7.62/2.18   | 8.39/2.4    | 9.11/2.6    | 9.73/2.78   |
|                     |                                    | FRF404W-5-5-7   | 5.1/1.46                         | 5.71/1.63   | 6.48/1.85   | 7.59/2.17   | 8.84/2.53   | 9.52/2.72   | 10.39/2.97  | 11.36/3.25  | 12.28/3.51  |
|                     |                                    | FRF404W-7.5-5-7 | 7.55/2.16                        | 8.71/2.49   | 10.1/2.89   | 11/3.14     | 12.94/3.7   | 14/4        | 15.55/4.44  | 16.5/4.71   | 17.97/5.13  |
|                     |                                    | FRF404W-9-5-7   | 9.57/2.73                        | 10.98/3.14  | 12.51/3.57  | 14.14/4.04  | 15.83/4.52  | 17.53/5.01  | 19.18/5.48  | 20.7/5.91   | 21.98/6.28  |
|                     |                                    | FRF404W-11-5-9  | 12.07/3.45                       | 13.93/3.98  | 15.92/4.55  | 18.02/5.15  | 20.16/5.76  | 22.29/6.37  | 24.28/6.94  | 25.98/7.42  | 27.21/7.77  |
|                     |                                    | FRF404W-13-7-9  | 12.93/3.69                       | 15.1/4.31   | 17.1/4.89   | 19/5.43     | 22.1/6.31   | 25.05/7.16  | 27.1/7.74   | 30.55/8.73  | 32.17/9.19  |
|                     |                                    | FRF404W-18-7-11 | 16.59/4.74                       | 19.54/5.58  | 22.27/6.36  | 25.13/7.18  | 29.03/8.29  | 32.94/9.41  | 36.69/10.48 | 40.27/11.51 | 43.57/12.45 |
|                     |                                    | FRF404W-21-7-11 | 26.03/7.44                       | 29.79/8.51  | 33.77/9.65  | 37.87/10.82 | 41.93/11.98 | 45.77/13.08 | 49.21/14.06 | 52.06/14.87 | 54.14/15.47 |
|                     |                                    | FRF404W-26-9-11 | 24.64/7.04                       | 28.59/8.17  | 33.03/9.44  | 37.91/10.83 | 43.18/12.34 | 48.69/13.91 | 54.28/15.51 | 59.71/17.06 | 64.74/18.5  |
| R134A               | 40                                 | FRF134W-3-3-5   | 2.7/0.77                         | 3.06/0.87   | 3.46/0.99   | 3.89/1.11   | 4.36/1.25   | 4.85/1.39   | 5.36/1.53   | 5.86/1.67   | 5.86/1.67   |
|                     |                                    | FRF134W-3-4-5   | 2.7/0.77                         | 3.06/0.87   | 3.46/0.99   | 3.89/1.11   | 4.36/1.25   | 4.85/1.39   | 5.36/1.53   | 5.86/1.67   | 5.86/1.67   |
|                     |                                    | FRF134W-4-4-7   | 3.65/1.04                        | 4.15/1.19   | 4.69/1.34   | 5.29/1.51   | 5.93/1.69   | 6.6/1.89    | 7.3/2.09    | 7.99/2.28   | 7.99/2.28   |
|                     |                                    | FRF134W-6-4-5   | 5.41/1.55                        | 6.15/1.76   | 6.97/1.99   | 7.85/2.24   | 8.81/2.52   | 9.82/2.81   | 10.86/3.1   | 11.89/3.4   | 11.89/3.4   |
|                     |                                    | FRF134W-6-4-7   | 5.41/1.55                        | 6.15/1.76   | 6.97/1.99   | 7.85/2.24   | 8.81/2.52   | 9.82/2.81   | 10.86/3.1   | 11.89/3.4   | 11.89/3.4   |
|                     |                                    | FRF134W-7.5-5-7 | 7/2                              | 7.52/2.15   | 9/2.57      | 10.1/2.89   | 11.1/3.17   | 12.35/3.53  | 13.75/3.93  | 15.11/4.32  | 15.11/4.32  |
|                     |                                    | FRF134W-11-5-7  | 10.8/3.09                        | 12.39/3.54  | 14.08/4.02  | 15.91/4.55  | 17.85/5.1   | 19.86/5.67  | 21.85/6.24  | 23.71/6.77  | 23.71/6.77  |
|                     |                                    | FRF134W-11-5-9  | 10.8/3.09                        | 12.39/3.54  | 14.08/4.02  | 15.91/4.55  | 17.85/5.1   | 19.86/5.67  | 21.85/6.24  | 23.71/6.77  | 23.71/6.77  |
|                     |                                    | FRF134W-12-5-7  | 11.5/3.29                        | 12.94/3.7   | 14.73/4.21  | 16.3/4.66   | 18.23/5.21  | 21/6        | 23.27/6.65  | 24.43/6.98  | 24.43/6.98  |
|                     |                                    | FRF134W-12-5-9  | 11.5/3.29                        | 12.94/3.7   | 14.73/4.21  | 16.3/4.66   | 18.23/5.21  | 21/6        | 23.27/6.65  | 24.43/6.98  | 24.43/6.98  |
|                     |                                    | FRF134W-15-5-9  | 14.2/4.06                        | 15.5/4.43   | 16.93/4.84  | 18.97/5.42  | 21.13/6.04  | 24.57/7.02  | 27.1/7.74   | 30.1/8.6    | 30.1/8.6    |
|                     |                                    | FRF134W-15-7-9  | 14.2/4.06                        | 15.5/4.43   | 16.93/4.84  | 18.97/5.42  | 21.13/6.04  | 24.57/7.02  | 27.1/7.74   | 30.1/8.6    | 30.1/8.6    |
|                     |                                    | FRF134W-18-7-9  | 16.1/4.6                         | 18.5/5.29   | 20.22/5.78  | 24.46/6.99  | 27.69/7.91  | 30.69/8.77  | 35.5/10.14  | 38.39/10.97 | 38.39/10.97 |
|                     |                                    | FRF134W-18-7-11 | 16.1/4.6                         | 18.5/5.29   | 20.22/5.78  | 24.46/6.99  | 27.69/7.91  | 30.69/8.77  | 35.5/10.14  | 38.39/10.97 | 38.39/10.97 |

| 选型表 Model Selection                                                                                                                                                                                                                                                                                                                                                                                                          |                                    |                 |                                  |            |             |             |             |             |             |             |             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------|----------------------------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 制冷剂<br>Refrigerant                                                                                                                                                                                                                                                                                                                                                                                                           | 冷凝温度<br>(°C)<br>Condensing<br>Temp | 型号<br>Model     | 制冷量(KW)/(TR)                     |            |             |             |             |             |             |             |             |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                    |                 | 蒸发温度(°C) Evaporation temperature |            |             |             |             |             |             |             |             |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                    |                 | -35                              | -30        | -25         | -20         | -15         | -10         | -5          | 0           | 5           |
| R134A                                                                                                                                                                                                                                                                                                                                                                                                                        | 40                                 | FRF134W-26-7-11 | 23.02/6.58                       | 26.54/7.58 | 0.53/8.72   | 35.01/10    | 40.01/11.43 | 45.5/13     | 51.39/14.68 | 57.5/16.43  | 57.5/16.43  |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                    | FRF134W-26-9-11 | 23.02/6.58                       | 26.54/7.58 | 30.53/8.72  | 35.01/10    | 40.01/11.43 | 45.5/13     | 51.39/14.68 | 57.5/16.43  | 57.5/16.43  |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                    | FRF134W-30-7-11 | 26.17/7.48                       | 30.19/8.63 | 34.74/9.93  | 39.85/11.39 | 45.55/13.01 | 51.8/14.8   | 58.51/16.72 | 65.47/18.71 | 65.47/18.71 |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                    | FRF134W-30-9-11 | 26.17/7.48                       | 30.19/8.63 | 34.74/9.93  | 39.85/11.39 | 45.55/13.01 | 51.8/14.8   | 58.51/16.72 | 65.47/18.71 | 65.47/18.71 |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                    | FRF134W-38-9-11 | 31/8.86                          | 35.2/10.06 | 40.32/11.52 | 46.03/13.15 | 53.03/15.15 | 60.85/17.39 | 69.43/19.84 | 77.37/22.11 | 77.37/22.11 |
| <div><div><div>• 膨胀阀按照蒸发器冷量选型</div><div>• 如蒸发器有分液头，建议选择外平衡热力膨胀阀</div><div>• 注意制冷剂型号，选择对应的热力膨胀阀</div></div><div><div>• Model of expansion valve should be selected by refrigerating capacity of evaporators.</div><div>• External equalisation thermostatic expansion valve should be chosen for evaporators with distributors.</div><div>• Pay attention to the refrigerant when choosing expansion valve.</div></div></div> |                                    |                 |                                  |            |             |             |             |             |             |             |             |

| 产品参数 Product Parameters |                 |                                     |       |                                  |                                   |                       |                            |
|-------------------------|-----------------|-------------------------------------|-------|----------------------------------|-----------------------------------|-----------------------|----------------------------|
| 制冷剂<br>Refrigerant      | 型号<br>Model     | 名义制冷量Nominal Refrigerating Capacity |       | 压力平衡<br>Pressure<br>Equalisation | 接口螺纹（接口尺寸）Thread(Connection Size) |                       |                            |
|                         |                 | 冷吨 TR                               | 千瓦 kW |                                  | 进口端 Inlet<br>英制 inch              | 出口端 Outlet<br>英制 inch | 外平衡口<br>External Equaliser |
| R22                     | FRF22W-3-3-5    | 3                                   | 10    | 外平衡<br>External<br>Equalisation  | 3/8"ODF                           | 5/8"ODF               | 1 /4" ODF                  |
|                         | FRF22W-3-4-5    | 3                                   | 10    |                                  | 1/2"ODF                           | 5/8"ODF               |                            |
|                         | FRF22W-4-4-7    | 4                                   | 14    |                                  | 1/2"ODF                           | 7/8"ODF               |                            |
|                         | FRF22W-6-4-5    | 6                                   | 20    |                                  | 1/2"ODF                           | 5/8"ODF               |                            |
|                         | FRF22W-6-4-7    | 6                                   | 20    |                                  | 1/2"ODF                           | 7/8"ODF               |                            |
|                         | FRF22W-7.5-5-7  | 7.5                                 | 27    |                                  | 5/8"ODF                           | 7/8"ODF               |                            |
|                         | FRF22W-11-5-7   | 11                                  | 38    |                                  | 5/8"ODF                           | 7/8"ODF               |                            |
|                         | FRF22W-11-5-9   | 11                                  | 38    |                                  | 5/8"ODF                           | 1-1/8"ODF             |                            |
|                         | FRF22W-12-5-7   | 12                                  | 43    |                                  | 5/8"ODF                           | 7/8"ODF               |                            |
|                         | FRF22W-12-5-9   | 12                                  | 43    |                                  | 5/8"ODF                           | 1-1/8"ODF             |                            |
|                         | FRF22W-15-5-9   | 15                                  | 54    |                                  | 5/8"ODF                           | 1-1/8"ODF             |                            |
|                         | FRF22W-15-7-9   | 15                                  | 54    |                                  | 7/8"ODF                           | 1-1/8"ODF             |                            |
|                         | FRF22W-18-7-9   | 18                                  | 63    |                                  | 7/8"ODF                           | 1-1/8"ODF             |                            |
|                         | FRF22W-18-7-11  | 18                                  | 63    |                                  | 7/8"ODF                           | 1-3/8"ODF             |                            |
|                         | FRF22W-26-7-11  | 26                                  | 92    |                                  | 7/8"ODF                           | 1-3/8"ODF             |                            |
|                         | FRF22W-26-9-11  | 26                                  | 92    |                                  | 1-1/8"ODF                         | 1-3/8"ODF             |                            |
|                         | FRF22W-30-7-11  | 30                                  | 104   |                                  | 7/8"ODF                           | 1-3/8"ODF             |                            |
|                         | FRF22W-30-9-11  | 30                                  | 104   |                                  | 1-1/8"ODF                         | 1-3/8"ODF             |                            |
| R134a                   | FRF22W-38-9-11  | 38                                  | 134   |                                  | 1-1/8"ODF                         | 1-3/8"ODF             |                            |
|                         | FRF134W-3.5-4-5 | 3.5                                 | 12    | 外平衡<br>External<br>Equalisation  | 1/2" ODF                          | 5/8" ODF              | 1 /4" ODF                  |
|                         | FRF134W-4.5-5-7 | 4.5                                 | 17    |                                  | 5/8" ODF                          | 7/8" ODF              |                            |
|                         | FRF134W-7-5-7   | 7                                   | 24    |                                  | 5/8" ODF                          | 7/8" ODF              |                            |
|                         | FRF134W-8-5-9   | 8                                   | 29    |                                  | 5/8" ODF                          | 1-1/8" ODF            |                            |
|                         | FRF134W-10-7-9  | 10                                  | 37    |                                  | 7/8" ODF                          | 1-1/8" ODF            |                            |
|                         | FRF134W-12-7-11 | 12                                  | 44    |                                  | 7/8" ODF                          | 1-3/8" ODF            |                            |
|                         | FRF134W-17-7-11 | 17                                  | 61    |                                  | 7/8" ODF                          | 1-3/8" ODF            |                            |
|                         | FRF134W-20-9-11 | 20                                  | 70    |                                  | 1-1/8" ODF                        | 1-3/8" ODF            |                            |

| 产品参数 Product Parameters                                                                                                                                                                                                           |                 |                                      |       |                                  |                                    |                       |                            |          |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------|-------|----------------------------------|------------------------------------|-----------------------|----------------------------|----------|--|
| 制冷剂<br>Refrigerant                                                                                                                                                                                                                | 型号<br>Model     | 名义制冷量 Nominal Refrigerating Capacity |       | 压力平衡<br>Pressure<br>Equalisation | 接口螺纹 (接口尺寸) Thread Connection Size |                       |                            |          |  |
|                                                                                                                                                                                                                                   |                 | 冷吨 TR                                | 千瓦 kW |                                  | 进口端 Inlet<br>英制 inch               | 出口端 Outlet<br>英制 inch | 外平衡口<br>External Equaliser |          |  |
| R404A                                                                                                                                                                                                                             | FRF404W-4-4-5   | 4                                    | 14    | 外平衡<br>External<br>Equalisation  | 1/2" ODF                           | 5/8" ODF              | 1/4" ODF                   |          |  |
|                                                                                                                                                                                                                                   | FRF404W-5-5-7   | 5                                    | 18    |                                  | 5/8" ODF                           | 7/8" ODF              |                            |          |  |
|                                                                                                                                                                                                                                   | FRF404W-7.5-5-7 | 7.5                                  | 26    |                                  | 5/8" ODF                           | 7/8" ODF              |                            |          |  |
|                                                                                                                                                                                                                                   | FRF404W-9-5-7   | 9                                    | 31    |                                  | 5/8" ODF                           | 7/8" ODF              |                            |          |  |
|                                                                                                                                                                                                                                   | FRF404W-11-5-9  | 11                                   | 39    |                                  | 5/8" ODF                           | 1-1/8" ODF            |                            |          |  |
|                                                                                                                                                                                                                                   | FRF404W-13-7-9  | 13                                   | 45    |                                  | 7/8" ODF                           | 1-1/8" ODF            |                            |          |  |
|                                                                                                                                                                                                                                   | FRF404W-18-7-11 | 18                                   | 64    |                                  | 7/8" ODF                           | 1-3/8" ODF            |                            |          |  |
|                                                                                                                                                                                                                                   | FRF404W-21-7-11 | 21                                   | 72    |                                  | 7/8" ODF                           | 1-3/8" ODF            |                            |          |  |
|                                                                                                                                                                                                                                   | FRF404W-26-9-11 | 26                                   | 92    |                                  | 1-1/8" ODF                         | 1-3/8" ODF            |                            |          |  |
| R410A                                                                                                                                                                                                                             | FRF410W-3.5-3-5 | 3.5                                  | 12    |                                  | 3/8" ODF                           | 5/8" ODF              |                            |          |  |
|                                                                                                                                                                                                                                   | FRF410W-4.5-4-7 | 4.5                                  | 16    |                                  | 1/2" ODF                           | 7/8" ODF              |                            |          |  |
|                                                                                                                                                                                                                                   | FRF410W-6.5-4-7 | 6.5                                  | 24    |                                  | 1/2" ODF                           | 7/8" ODF              |                            |          |  |
|                                                                                                                                                                                                                                   | FRF410W-9-5-7   | 9                                    | 32    |                                  | 5/8" ODF                           | 7/8" ODF              |                            |          |  |
|                                                                                                                                                                                                                                   | FRF410W-13-5-7  | 13                                   | 45    |                                  | 5/8" ODF                           | 7/8" ODF              |                            |          |  |
|                                                                                                                                                                                                                                   | FRF410W-15-5-7  | 15                                   | 54    |                                  | 5/8" ODF                           | 7/8" ODF              |                            |          |  |
|                                                                                                                                                                                                                                   | FRF410W-19-5-9  | 19                                   | 68    |                                  | 5/8" ODF                           | 1-1/8" ODF            |                            |          |  |
|                                                                                                                                                                                                                                   | FRF410W-23-7-9  | 23                                   | 79    |                                  | 7/8" ODF                           | 1-1/8" ODF            |                            |          |  |
|                                                                                                                                                                                                                                   | FRF410W-31-7-11 | 31                                   | 110   |                                  | 7/8" ODF                           | 1-3/8" ODF            |                            |          |  |
|                                                                                                                                                                                                                                   | FRF410W-35-7-11 | 35                                   | 125   |                                  | 7/8" ODF                           | 1-3/8" ODF            |                            |          |  |
|                                                                                                                                                                                                                                   | FRF410W-46-9-11 | 46                                   | 161   |                                  | 1-1/8" ODF                         | 1-3/8" ODF            |                            |          |  |
|                                                                                                                                                                                                                                   | R407C           | FRF407C-3.5-4-7                      | 3.5   |                                  | 14                                 | 1/2" ODF              |                            | 7/8" ODF |  |
| FRF407C-5-4-7                                                                                                                                                                                                                     |                 | 5                                    | 19    |                                  | 1/2" ODF                           | 7/8" ODF              |                            |          |  |
| FRF407C-7-5-7                                                                                                                                                                                                                     |                 | 7                                    | 25    |                                  | 5/8" ODF                           | 7/8" ODF              |                            |          |  |
| FRF407C-10-5-7                                                                                                                                                                                                                    |                 | 10                                   | 36    |                                  | 5/8" ODF                           | 7/8" ODF              |                            |          |  |
| FRF407C-12-5-9                                                                                                                                                                                                                    |                 | 12                                   | 42    |                                  | 5/8" ODF                           | 1-1/8" ODF            |                            |          |  |
| FRF407C-15-7-9                                                                                                                                                                                                                    |                 | 15                                   | 53    |                                  | 7/8" ODF                           | 1-1/8" ODF            |                            |          |  |
| FRF407C-18-7-11                                                                                                                                                                                                                   |                 | 18                                   | 62    |                                  | 7/8" ODF                           | 1-3/8" ODF            |                            |          |  |
| <div>• 名义制冷量的工况条件为: 蒸发温度te= + 5℃ 冷凝温度tk= + 40℃ 过冷度2℃</div> <div>• Working Condition of Nominal Refrigerating Capacity: Evaporation Temperature: + 5°C;<br/>Condensation Temperature: +40°C; Superheat:3.5°C;Subcooling:2°C.</div> |                 |                                      |       |                                  |                                    |                       |                            |          |  |

结构 Structure



ERF ERFW 型热力膨胀阀  
ERF ERFW Thermostatic Expansion Valve



ERF型 (公制/英制螺口)  
Model ERF (metric/inch flare)



ERFW型 (英制螺口)  
Model ERFW (inch flare)

产品概述 Product Description

- ERF、ERFW型热力膨胀阀用于调节蒸发器的液体制冷剂的供给量，可提供多种制冷剂及其各种工况下的充注，能满足冷藏设备、制冰机、除湿机以及各种蒸发温度范围内的制冷和空调的要求。
- Model ERF/FRW thermal expansion valve are used to adjust the liquid refrigerant supply volume to the evaporator and they are suitable to various refrigerants and different charging condition. It meets the requirements of the cold storage facility, ice maker and dehumidifier as well as the refrigeration and air conditioning requirements under varied evaporation temperature.

特点 Features

- 采用大动力头结构模式，线性优良，过热调节性能稳定。
  - 采用新型结构，蒸发温度范围大，低温工作幅值大。
  - 具有专利技术，膜片动作迟滞<0.5k，阀门具有良好的稳定性。
  - 阀帽采用防呆设计，防止其丢失，保证二次密封可靠性。
- The big power head structure with perfect linear performance has a stable adjustment on the degree of superheat.
  - New structure has large scope of evaporation temperature and big work amplitude under low temperature.
  - With proprietary technology, the diaphragm movement hysteresis <0.5k and the valve has good stability.
  - The bonnet features fool-proofing design to prevent loss and ensure the reliability of sealing.

技术参数 Technical Parameters

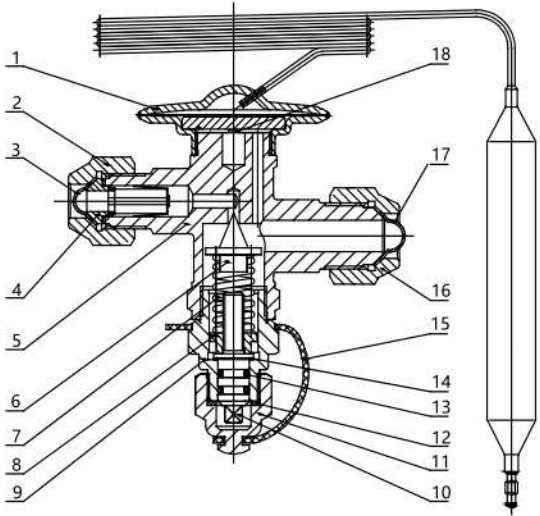
|                                          |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 适用制冷剂 Applicable Refrigerants:           | R404A,R22、R134a 冷媒等介质 | <ul style="list-style-type: none"><li>• ERF ( ERFW ) 和FRF型膨胀阀包括2种接口：螺口 ( Flare ) 和焊口 ( ODF ) 。</li><li>• Model ERF (ERFW) and FRF thermostatic expansion valve have two types of connection: Flare/ODF.</li><li>• ERF (ERFW) 和FRF型膨胀阀毛细管长度：标准1.5m，(φ10 - φ13的是3m)，特殊情况可按用户要求。</li><li>• Capillary length of Model ERF (ERFW) and FRF thermostatic expansion valve can be standard 1.5 m, (φ10~ 13 is 3m ) or customized.</li></ul> |
| 适用介质温度 Applicable Medium Temperature:    | -40℃~+10℃             |                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 名义容量 Nominal Capacity:                   | 3.5KW~158KW           |                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 过热调节范围 Adjustable Range of Superheat:    | 2℃~8℃                 |                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 出厂静热度调定值 Ex-Works Static Heat Adjustment | 3.5℃                  |                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 外均端泄露量 Outer Equilibrium End Leakage:    | ≤75ml/min             |                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 最大工作压力 Maximum Working Pressure:         | 2.8MPa                |                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 最大测试压力 Maximum Testing Pressure:         | 3.2MPa                |                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                          |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| 选型表 Model Selection                                                                                                                                                                                        |             |                                             |                                     |            |              |            |                            |              |                                      |         |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------|-------------------------------------|------------|--------------|------------|----------------------------|--------------|--------------------------------------|---------|-----------|
| 制冷剂<br>Refrigerant                                                                                                                                                                                         | 型号<br>Model | 压力平衡<br>Pressure<br>Equalisation            | 接口螺纹 (接口尺寸) Thread(Connection Size) |            |              |            |                            |              | 名义制冷量 Nominal Refrigerating Capacity |         |           |
|                                                                                                                                                                                                            |             |                                             | 进口端 Inlet                           |            | 出口端 Outlet   |            | 外平衡口<br>External Equaliser |              | 冷吨 TR                                | 千瓦 kW   | 大卡 kcal/h |
|                                                                                                                                                                                                            |             |                                             | 公制<br>metric                        | 英制<br>inch | 公制<br>metric | 英制<br>inch | 公制<br>metric               | 英制<br>inch   |                                      |         |           |
| R22                                                                                                                                                                                                        | ERF22-Φ1.0  | 内平衡 (螺口)<br>Internal<br>Equalisation(flare) | M16X1.5                             |            | M18X1.5      |            | —                          | —            | 1.0                                  | 3.5     | 3024      |
|                                                                                                                                                                                                            | ERF22-Φ1.5  |                                             |                                     |            |              |            |                            |              | 1.6                                  | 5.6     | 4840      |
|                                                                                                                                                                                                            | ERF22-Φ2.0  |                                             |                                     |            |              |            |                            |              | 2.0                                  | 7.0     | 6048      |
|                                                                                                                                                                                                            | ERF22-Φ2.5  |                                             |                                     |            |              |            |                            |              | 2.5                                  | 8.8     | 7560      |
|                                                                                                                                                                                                            | ERF22-Φ3.0  |                                             |                                     |            |              |            |                            |              | 3.0                                  | 10.5    | 9072      |
|                                                                                                                                                                                                            | ERF22-Φ4.0  |                                             |                                     |            | 5.0          |            |                            |              | 17.6                                 | 15120   |           |
|                                                                                                                                                                                                            | ERF22-Φ5.0  |                                             |                                     |            | 6.0          |            |                            |              | 21.0                                 | 18144   |           |
|                                                                                                                                                                                                            | ERF22-Φ6.0  |                                             |                                     |            | 7.5          |            |                            |              | 26.0                                 | 22680   |           |
|                                                                                                                                                                                                            | ERF22-Φ7.0  |                                             |                                     |            | 8.5          |            |                            |              | 29.9                                 | 25704   |           |
|                                                                                                                                                                                                            | ERF22-Φ8.0  |                                             | 12.0                                | 42.2       | 36288        |            |                            |              |                                      |         |           |
|                                                                                                                                                                                                            | ERF22-Φ9.0  |                                             | 15.0                                | 52.7       | 45360        |            |                            |              |                                      |         |           |
| R134a                                                                                                                                                                                                      | ERF134-Ø1.0 |                                             | M16X1.5                             |            | M18X1.5      | —          | —                          | 0.5          | 1.75                                 | 1510    |           |
|                                                                                                                                                                                                            | ERF134-Ø1.5 |                                             |                                     |            |              |            |                            | 0.7          | 2.5                                  | 2116    |           |
|                                                                                                                                                                                                            | ERF134-Ø2.0 |                                             |                                     |            |              |            |                            | 1.5          | 5.2                                  | 4500    |           |
|                                                                                                                                                                                                            | ERF134-Ø2.5 |                                             |                                     |            |              |            |                            | 1.6          | 5.6                                  | 4838    |           |
|                                                                                                                                                                                                            | ERF134-Ø3.0 |                                             |                                     |            | 2.0          |            |                            | 7.0          | 6048                                 |         |           |
|                                                                                                                                                                                                            | ERF134-Ø4.0 |                                             |                                     |            | 3.0          |            |                            | 10.5         | 9072                                 |         |           |
|                                                                                                                                                                                                            | ERF134-Ø5.0 |                                             |                                     |            | 5.0          |            |                            | 17.6         | 15120                                |         |           |
|                                                                                                                                                                                                            | ERF134-Ø7.0 |                                             | 6.5                                 | 22.9       | 19656        |            |                            |              |                                      |         |           |
|                                                                                                                                                                                                            | ERF134-Ø9.0 |                                             | 11.0                                | 38.7       | 33264        |            |                            |              |                                      |         |           |
| R22                                                                                                                                                                                                        | ERF22W-Ø1.0 | 外平衡<br>External<br>Equalisation             |                                     | 3/8 SAE    | 1/2 SAE      |            |                            | 1.0          | 3.5                                  | 3024    |           |
|                                                                                                                                                                                                            | ERF22W-Ø1.5 |                                             |                                     |            |              |            |                            | 1.6          | 5.6                                  | 4840    |           |
|                                                                                                                                                                                                            | ERF22W-Ø2.0 |                                             |                                     |            |              |            |                            | 2.0          | 7.0                                  | 6048    |           |
|                                                                                                                                                                                                            | ERF22W-Ø2.5 |                                             |                                     |            |              |            |                            | 2.5          | 8.8                                  | 7560    |           |
|                                                                                                                                                                                                            | ERF22W-Ø3.0 |                                             |                                     |            |              |            |                            | 3.0          | 10.5                                 | 9072    |           |
|                                                                                                                                                                                                            | ERF22W-Ø4.0 |                                             |                                     |            |              |            |                            | 5.0          | 17.6                                 | 15120   |           |
|                                                                                                                                                                                                            | ERF22W-Ø5.0 |                                             |                                     | 1/2 SAE    | 5/8 SAE      |            |                            | 6.0          | 21.0                                 | 18144   |           |
|                                                                                                                                                                                                            | ERF22W-Ø6.0 |                                             |                                     |            |              |            |                            | 7.5          | 26.5                                 | 22680   |           |
|                                                                                                                                                                                                            | ERF22W-Ø7.0 |                                             |                                     |            |              |            |                            | 8.5          | 29.9                                 | 25704   |           |
|                                                                                                                                                                                                            | ERF22W-Ø8.0 |                                             |                                     |            |              |            |                            | 12.0         | 42.2                                 | 36288   |           |
|                                                                                                                                                                                                            | ERF22W-Ø9.0 |                                             |                                     |            |              |            |                            | 15.0         | 52.7                                 | 45360   |           |
|                                                                                                                                                                                                            | R134a       |                                             |                                     |            |              |            |                            | ERF134W-Ø1.0 |                                      | 3/8 SAE | 1/2 SAE   |
| ERF134W-Ø1.5                                                                                                                                                                                               |             | 0.7                                         | 2.5                                 | 2116       |              |            |                            |              |                                      |         |           |
| ERF134W-Ø2.0                                                                                                                                                                                               |             | 1.5                                         | 5.2                                 | 4500       |              |            |                            |              |                                      |         |           |
| ERF134W-Ø2.5                                                                                                                                                                                               |             | 1.6                                         | 5.6                                 | 4838       |              |            |                            |              |                                      |         |           |
| ERF134W-Ø3.0                                                                                                                                                                                               |             | 2.0                                         | 7.0                                 | 6048       |              |            |                            |              |                                      |         |           |
| ERF134W-Ø4.0                                                                                                                                                                                               |             | 3.0                                         | 10.5                                | 9072       |              |            |                            |              |                                      |         |           |
| ERF134W-Ø5.0                                                                                                                                                                                               |             | 5.0                                         | 17.6                                | 15120      |              |            |                            |              |                                      |         |           |
| ERF134W-Ø7.0                                                                                                                                                                                               |             | 6.5                                         | 22.9                                | 19656      |              |            |                            |              |                                      |         |           |
| ERF134W-Ø9.0                                                                                                                                                                                               |             | 11.0                                        | 38.7                                | 33264      |              |            |                            |              |                                      |         |           |
| • 名义制冷量的工况条件为: 蒸发温度te= + 5℃ 冷凝温度tK= + 40℃ 过冷度2℃<br>• Working Condition of Nominal Refrigerating Capacity: Evaporation Temperature te = + 5℃;<br>Condensation Temperature tK = +40℃; Degree of Superheat 2℃ |             |                                             |                                     |            |              |            |                            |              |                                      |         |           |

结构 Structure

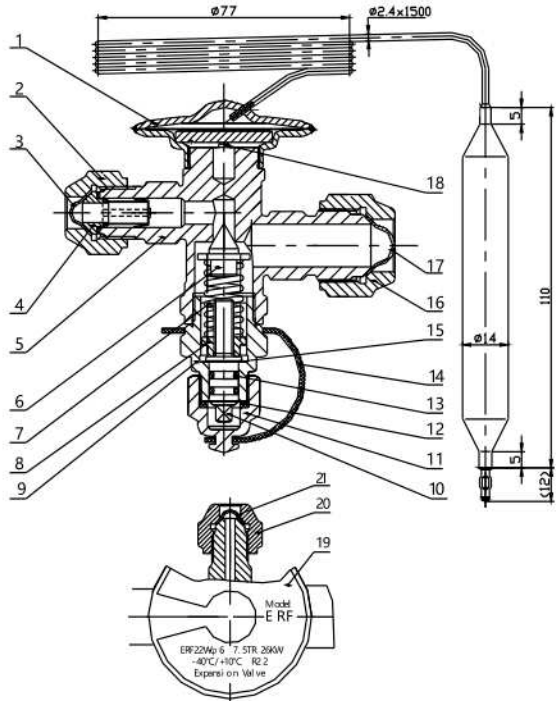
ERF型 (公制螺口) Model ERF(metric flare)

- 1.气箱头部件; 2.纳子; 3.封帽; 4.过滤网部件;  
5.阀体; 6.阀芯; 7.调节弹簧; 8.调节螺母; 9.调  
节座; 10.阀杆; 11.阀帽; 12.密封圈; 13.O形  
圈; 14.密封垫; 15.保险带; 16.公制纳子; 17.封  
帽; 18.传动杆
- 1、 power element; 2、 nut; 3、 seal cap; 4、  
filtering component; 5、 valve body; 6、 value  
element; 7、 adjusting spring; 8、 adjusting  
nut; 9、 adjusting seat; 10、 valve stem; 11、  
bonnet; 12、 seal ring; 13、 O-ring; 14、  
gasket; 15、 security belt; 16、 metric nut;  
17、 seal cap; 18、 drive pin



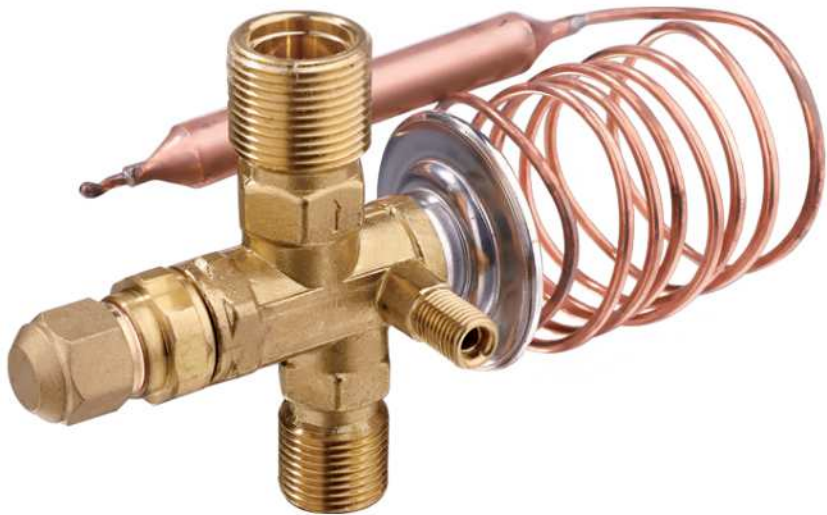
ERFW型 (英制螺口) Model ERFW(inch flare)

1. 气箱头部件 power element      12. 密封圈 seal ring  
2. 纳子 nut      13. O形圈 O-ring  
3. 封帽 seal cap      14. 保险带 security belt  
4. 过滤网部件 filtering component      15. 密封垫 gasket  
5. 阀体 valve body      16. 纳子 nut  
6. 阀芯 valve element      17. 封帽 seal cap  
7. 调节弹簧 adjusting spring      18. 传动杆 drive pin  
8. 调节螺母 adjusting nut      19. 标贴 label  
9. 调节座 adjusting seat      20. 纳子 nut  
10. 阀杆 valve stem      21. 封帽 seal cap  
11. 阀帽 bonnet



QRF 型热力膨胀阀

QRF Thermostatic Expansion Valve



QRF型（英制螺口）  
Model QRF（inch flare）

| 产品概述 Product Description                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• QRF134aW型膨胀阀用于调节蒸发器中液体制冷剂的供给量</li><li>• QRF134aW型膨胀阀具有双向节流功能，被广泛运用在热泵、汽车空调制冷系统</li></ul>                                                | <ul style="list-style-type: none"><li>• QRF134aW expansion Valve used for regulating the supply of liquid refrigerant in Evaporator.</li><li>• QRF134aW expansion valve with two-way throttling function is widely used in heat pump, Automotive air conditioning and refrigeration system</li></ul>                                                                                                                                                                       |
| 特点 Features                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <ul style="list-style-type: none"><li>• 膨胀阀膜片采用知名供应商同一材料。</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></ul> | <ul style="list-style-type: none"><li>• The expansion valve diaphragm is made of the same material as the well-known supplier.</li><li>• MOP function can be provided, so that the compressor motor will not be damaged by excessive evaporation pressure.</li><li>• The patented membrane structure greatly improves the working performance at low temperature.</li><li>• The valve bonnet adopts secondary sealing structure to ensure zero external leakage.</li></ul> |
| 技术参数 Technical Parameters                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 适用制冷剂 Applicable Refrigerants                                                                                                                                                   | R134a                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 适用介质温度 Applicable Medium                                                                                                                                                        | -30°C~+10°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 过热度调节范围 Adjustable Range of Superheat                                                                                                                                           | 2°C~8°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 最大工作压力 Maximum Working Pressure                                                                                                                                                 | 2.8MPa                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 最大测试压力 Maximum Testing Pressure                                                                                                                                                 | 3.2MPa                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| QREF型热力膨胀阀毛细管长度：标准1.5m,特殊情况可按用户需求。<br>QREF type thermal expansion valve capillary length: standard 1.5m, special circumstances can be according to user demand.                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| 选型表 Model Selection                                                                                                                                                                                                                  |                  |                                  |             |           |                         |                                         |    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------|-------------|-----------|-------------------------|-----------------------------------------|----|
| 制冷剂<br>Refrigerant                                                                                                                                                                                                                   | 型号<br>Model      | 压力平衡<br>Pressure<br>Equalisation | 接口螺纹 Thread |           |                         | 名义制冷量<br>Nominal Refrigerating Capacity |    |
|                                                                                                                                                                                                                                      |                  |                                  | 进口端Inlet    | 出口端Outlet | 外平衡口 External Equaliser | TR                                      | KW |
| R134a                                                                                                                                                                                                                                | QRF134aW-2.5-3-4 | 外平衡<br>External<br>Equalisation  | 3/8 SAE     | 1/2 SAE   | 1/4 SAE                 | 2.5                                     | 8  |
|                                                                                                                                                                                                                                      | QRF134aW-3.5-3-4 |                                  | 3/8 SAE     | 1/2 SAE   |                         | 3.5                                     | 12 |
|                                                                                                                                                                                                                                      | QRF134aW-4.5-5-6 |                                  | 5/8SAE      | 3/4SAE    |                         | 4.5                                     | 17 |
|                                                                                                                                                                                                                                      | QRF134aW-7-5-6   |                                  | 5/8SAE      | 3/4SAE    |                         | 7                                       | 24 |
|                                                                                                                                                                                                                                      | QRF134aW-10-5-6  |                                  | 5/8SAE      | 3/4SAE    |                         | 10                                      | 37 |
| <div>• 名义制冷量的工况条件为：蒸发温度5℃ 冷凝温度35℃ 过热度3.5℃ 过冷度4℃</div> <div>• The working condition of nominal refrigerating capacity is: evaporation temperature: 5℃; condensation temperature: 35℃; superheat: 3.5℃; supercooling degree: 4℃.</div> |                  |                                  |             |           |                         |                                         |    |

结构 Structure

1. 气箱头部件; 2. 防尘帽; 3. 阀体; 4. 阀芯; 5. 调节弹簧; 6. 调节螺母; 7. 调节座; 8. 阀杆; 9. 阀帽; 10. O型圈; 11. 垫片; 12. 密封垫; 13. 防尘帽; 14. 传动杆; 15. 防尘帽; 16. 标贴; 17. 螺母; 18. 螺钉; 19. 抱箍

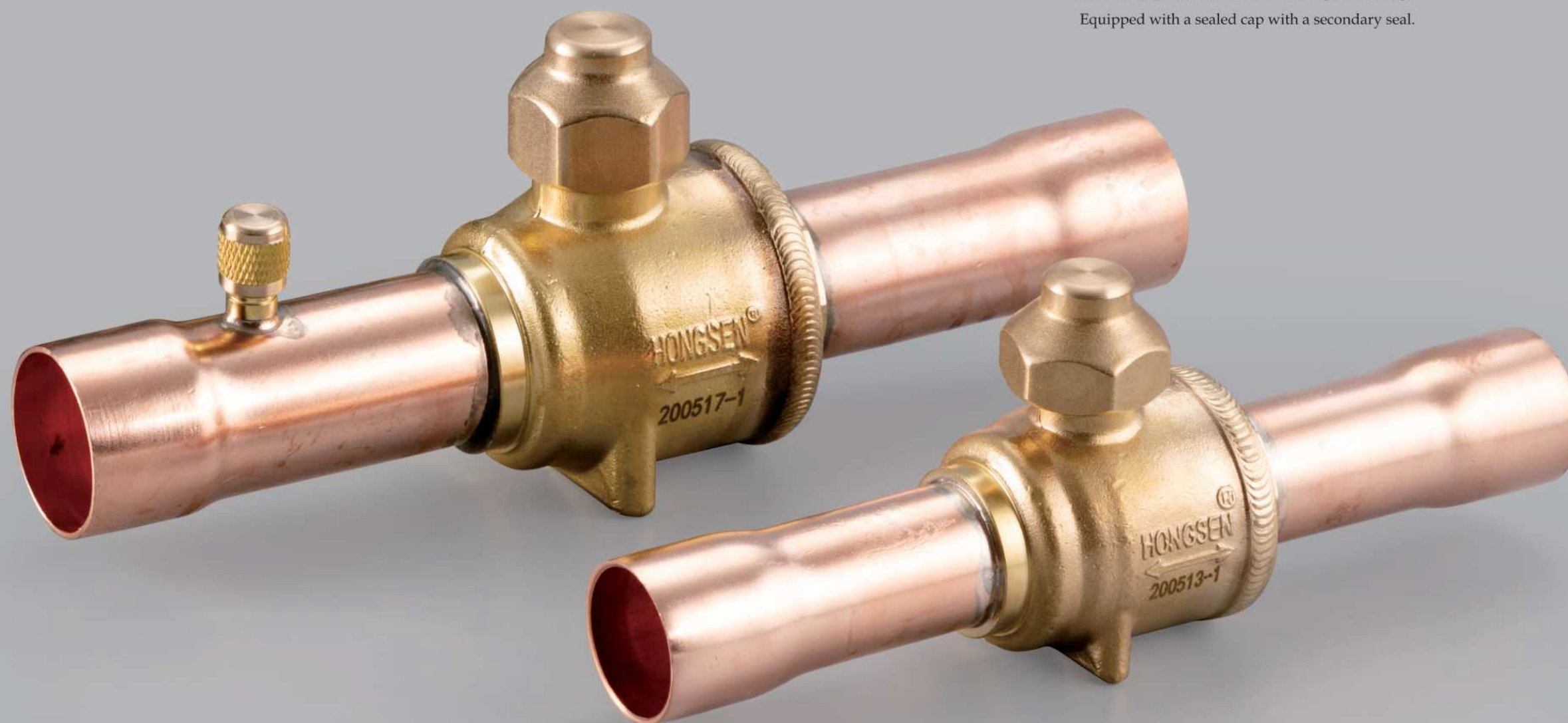
1. power element; 2. dust cap; 3. valve body; 4. spool; 5. adjusting spring; 6. adjusting nut; 7. adjusting seat; 8. valve stem; 9. valve bonnet; 10. O-ring; 11. gasket; 12. gasket; 13. dust cap; 14. drive pin; 15. dust cap; 16. label; 17. nut; 18. bolt; 19. hoop

## 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.



GBC型球阀 Model GBC Ball Valve



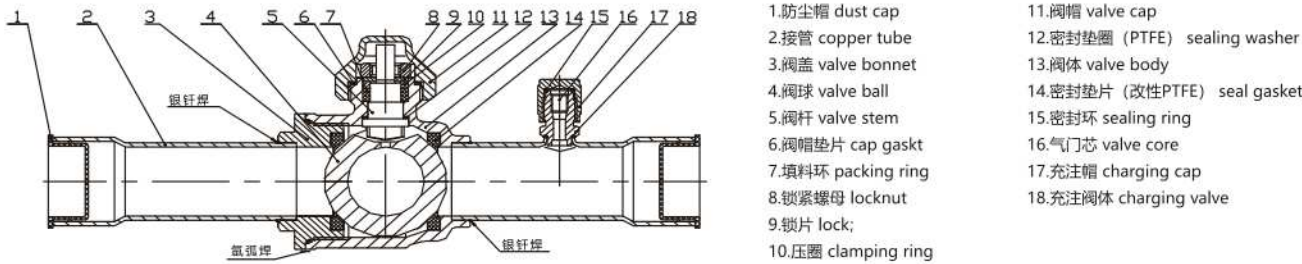
| 产品概述 Product Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| <div><div><div>• GBC型球阀是手动调节的截止阀，适用于双向流动。</div><div>• GBC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。</div><div>• GBC型球阀的阀座与密封处具有很好的密封性。</div><div>• GBC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。</div><div>• GBC型球阀配有一个带二次密封的密封帽。</div></div><div><div>• Model GBC ball valve is a manually regulated shut-off valve, which is applicable to two-direction flow.</div><div>• Model GBC ball valve is used on the liquid, air suction and hot vapor piping of the freezer, could store and air conditioning unit.</div><div>• The valve seat of Model GBC ball valve is well sealed with perfect sealing performance.</div><div>• Model GBC ball valve is a through-type ball valve with maximum flow rate and wide scope of operating temperature.</div><div>• Model GBC ball valve is equipped with a secondary sealing cap.</div></div></div> |  |  |
| 特点 Features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |  |
| <div><div><div>• 流动无压力降</div><div>• 从全开到全闭只需转动1/4圈</div><div>• 全开和全闭均有旋转限位</div><div>• 阀杆顶端标记是阀的全开和全闭</div><div>• 具有双向流动性</div><div>• 氩弧焊接结构</div></div><div><div>• 防爆阀杆设计</div><div>• 改性的PTFE密封</div><div>• 可防止内部积液</div><div>• 能安装在控制板上</div></div><div><div>• No pressure drop in flow.</div><div>• Only turn 1/4 circle to make valve full open or full close.</div><div>• Turning stop for full open or full close.</div><div>• Full Open and Full Close mark on top of valve stem.</div><div>• Two-direction flow is available.</div><div>• Argon arc welded structure.</div><div>• Explosion-proof valve stem design.</div><div>• Modified PTFE sealing.</div><div>• Inside liquid accumulation is avoided.</div><div>• Could be mounted on the control panel.</div></div></div>                                 |  |  |
| 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℃                          |
| 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                          |

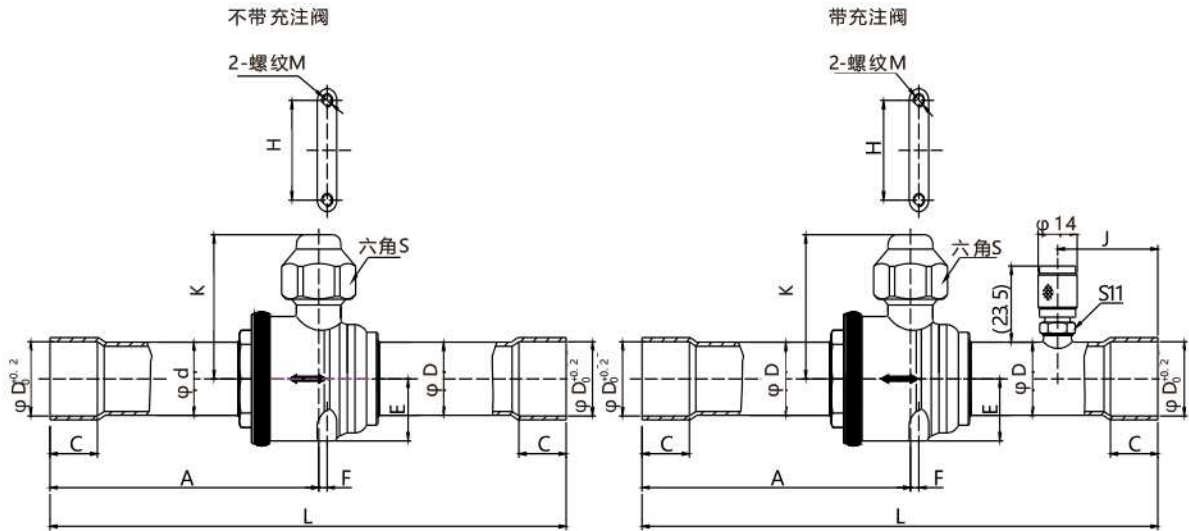
- GBC型球阀包括2种阀型：一种带充注检测口，一种不带充注检测口。
- Two types of Model GBC ball valve are available: one is equipped with the charging and inspection port; the other is not equipped with the charging and inspection port.

| 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) |
| GBC-6S              | 1/4(Φ6)  | Φ10      | 2         | GBC-28  | 1-1/8(Φ28) | Φ25      | 52.0      |
| GBC-10S             | 3/8(Φ10) | Φ10      | 5.7       | GBC-35  | 1-3/8(Φ35) | Φ31      | 80        |
| GBC-12S             | 1/2(Φ12) | Φ10      | 5.7       | GBC-42  | 1-5/8(Φ42) | Φ37      | 121       |
| GBC-10              | 3/8(Φ10) | Φ14      | 5.7       | GBC-54  | 2-1/8(Φ54) | Φ50      | 200       |
| GBC-12              | 1/2(Φ12) | Φ14      | 10.6      | GBC-67  | 2-5/8(Φ67) | Φ50      | 200       |
| GBC-16              | 5/8(Φ16) | Φ14      | 14.1      | GBC-79  | 3-1/8(Φ79) | Φ50      | 200       |
| GBC-19              | 3/4(Φ19) | Φ16      | 20.4      | GBC-67A | 2-5/8(Φ67) | Φ60.5    | 310       |
| GBC-22              | 7/8(Φ22) | Φ19      | 28.2      | GBC-79A | 3-1/8(Φ79) | Φ73      | 700       |

结构 Structure



外形尺寸 Overall Dimension



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

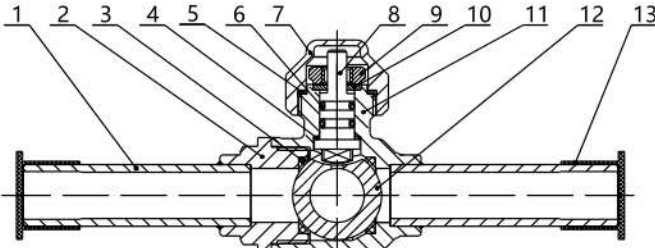
QF-CO2型 球阀 Model QF-CO2 Ball Valve



| 产品概述 Product Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| <div><div><ul style="list-style-type: none"><li>• 双向流动，可任意安装。</li><li>• 精密铸造阀体带不锈钢管。</li><li>• 全阀口结构与阀道内径匹配，流动无压力降。</li><li>• 防爆阀杆设计。</li><li>• 特选兼容CO2运行环境的密封圈。</li><li>• 全开和全闭均有旋转限位。</li><li>• 阀杆部位具有二次可靠密封结构。</li></ul></div><div><ul style="list-style-type: none"><li>• Model GBC ball valve is a manually regulated shut-off valve, which is applicable to two-direction flow.</li><li>• Model GBC 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 GBC ball valve is well sealed with perfect sealing performance.</li><li>• Model GBC ball valve is a through-type ball valve with maximum flow rate and wide scope of operating temperature.</li><li>• Model GBC ball valve is equipped with a secondary sealing cap and the metal wire could be used to prevent the sealing cap from missing and avoid any mistake operation in maintenance.</li></ul></div></div> |  |  |
| 特点 Features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |
| <div><div><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></div><div><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></div><div><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>• 认证Certification • ISO9001 • QS • UL</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></div></div>                                                                       |  |  |
| 技术参数 Technical Parameters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |
| <div><div>工作温度 Working temperature:</div><div>-50℃ ~ +150℃</div></div> <div><div>最大工作压力 MAX.Working Pressure:</div><div>12MPa</div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |

| 选型表 Model Selection |            |          |           |
|---------------------|------------|----------|-----------|
| 型号Model             | 规格Size     | 通径OD(mm) | Kv值(m3/h) |
|                     | 焊接口外径 (mm) |          |           |
| QF12-CO2            | 12         | 10       | 10        |
| QF16-CO2            | 16         | 14       | 14        |
| QF19-CO2            | 19         | 16       | 20        |
| QF22-CO2            | 22.3       | 19       | 28        |
| QF28-CO2            | 28.6       | 25       | 52        |
| QF35-CO2            | 35         | 31       | 80        |
| QF42-CO2            | 41.3       | 37       | 121       |
| QF54-CO2            | 56         | 50       | 200       |

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0.1MPa。  
1) Kv value: the flow of water with density of 1 ton/ m³ when passing through the solenoid valve under 100KPa differential pressure  
2) MOPD of gaseous medium is about 0.1MPa.

| 结构 Structure                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <div><div><div>1. 接管 copper tube</div><div>2. 阀盖 valve bonnet</div><div>3. 密封垫片 seal gasket</div><div>4. 密封垫 A seal</div><div>5. 阀帽垫片 cap gasket</div><div>6. 密封圈 Seal ring</div><div>7. 阀帽 valve cap</div><div>8. 阀杆 valve stem</div><div>9. 锁紧螺母 locknut</div><div>10. 限位片 Limiter</div></div><div><div>11. 阀体 valve body</div><div>12. 阀球 valve ball</div><div>13. 防尘帽 dust cap</div></div></div> |
| 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 | 56.1  | 68    | 19   | 16 | M5 | S24 |
| QF16-CO2 | φ16                    | 154   | 55.3  | 81.3  | 15   | 22 | M5 | S24 |
| QF19-CO2 | φ19                    | 168   | 62    | 89.8  | 19   | 30 | M5 | S24 |
| QF22-CO2 | φ22.3                  | 193.5 | 62    | 102.6 | 19   | 30 | M5 | S24 |
| QF28-CO2 | φ28.6                  | 213   | 82.4  | 112.3 | 30   | 30 | M5 | S28 |
| QF35-CO2 | φ35                    | 232.6 | 98.7  | 125   | 30   | 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 |

## 视液镜系列

# SIGHT GLASS *Series*

ESCORT FOR SAFE REFRIGERATION 为安全制冷护航

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                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>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。</li><li>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。</li><li>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。</li><li>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。</li><li>SGN型/SGR型液视镜采用防爆压接的结构，观察窗清晰而安全。</li></ul> | <ul style="list-style-type: none"><li>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.</li><li>Model SGN sight glass and is equipped with one moisture indicator, which will change color to indicate the water cut in the refrigerant.</li><li>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.</li><li>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.</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: | -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     |

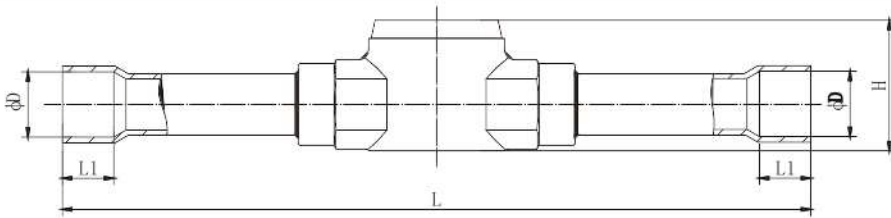
注意：全封闭压缩机的允许含水量一般在30 - 75ppm之间，而其他压缩机则略高。为使系统得到有效保护，必须谨慎地监视指示器，若颜色变为黄色，则必须更换干燥器。

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.

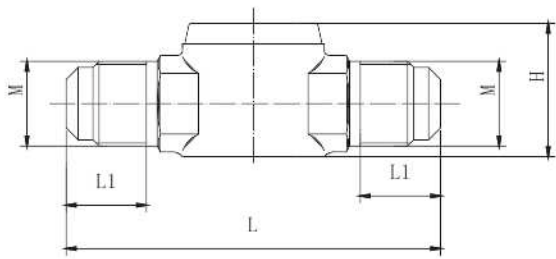
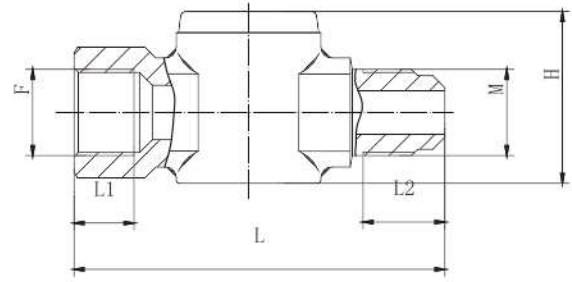
| 选型表 Model Selection             |            |                                   |         |
|---------------------------------|------------|-----------------------------------|---------|
| 焊口型号 Model of Welded Connection | 规格 Size    | 螺口型号 Model of Threaded Connection | 规格 Size |
| SGN-1/4 ODF                     | 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    |

| 特点 Features                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SGN                                                                                                                                                                                                                                                                                                                        | SGR型                                                                                                                                                                                                                                       |
| <ul style="list-style-type: none"><li>用于HCFC/HFC制冷剂</li><li>指示系统中过高的含水量</li><li>制冷剂液体无过冷度指示</li><li>冷剂充注量不足指示</li><li>焊口、螺口两种接口</li></ul>                                                                                                                                                                                  | <ul style="list-style-type: none"><li>HCFC/HFC制冷剂</li><li>贮液器中液位指示</li><li>压缩机曲轴箱中油液位指示</li><li>NPT螺纹连接</li></ul>                                                                                                                          |
| <b>Model SGN</b>                                                                                                                                                                                                                                                                                                           | <b>Model SGR</b>                                                                                                                                                                                                                           |
| <ul style="list-style-type: none"><li>Be applicable to HCFC/HFC refrigerants.</li><li>Indicate high water cut in system if any.</li><li>Indicate no overcooling in refrigerant liquid.</li><li>Indicate insufficient charging of refrigerant if any.</li><li>Both welded and threaded connections are available.</li></ul> | <ul style="list-style-type: none"><li>Be applicable to HCFC/HFC refrigerants.</li><li>Indicate the liquid level in the liquid drum.</li><li>Indicate the oil level in the compressor crankcase.</li><li>NPT threaded connection.</li></ul> |

| 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                        | 中间颜色         | 黄色         | 绿色        | 中间颜色         | 黄色         |
|                                                   | Green/DRY                 | Medium Color | Yellow/WET | Green/DRY | Medium Color | Yellow/WET |
| R22/R502                                          | <30                       | 30 ~ 120     | >120       | <50       | 50 ~ 200     | >200       |
| HFC-134a                                          | <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       |

| 结构 Structure                                                                        |  |
|-------------------------------------------------------------------------------------|--|
|  |  |
| 焊口液视镜<br>Soldering type sight glass                                                 |  |

| Model       | L   | L1 | D    | H    | Model         | L   | L1 | D    | H    |
|-------------|-----|----|------|------|---------------|-----|----|------|------|
| SGN-1/4 ODF | 102 | 7  | 6.5  | 21.5 | SGN-3/4 ODF   | 167 | 16 | 19.2 | 35   |
| SGN-3/8 ODF | 119 | 8  | 10.1 | 22.5 | SGN-7/8 ODF   | 173 | 17 | 22.2 | 39   |
| SGN-1/2 ODF | 146 | 10 | 12.8 | 26.5 | SGN-1-1/8 ODF | 216 | 20 | 28.7 | 44.5 |
| SGN-5/8 ODF | 152 | 14 | 16.1 | 29.5 |               |     |    |      |      |

|                                                                                       |                                                                                       |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |
| 螺口液视镜<br>Flare type sight glass                                                       | 内外螺口液视镜<br>M/F flare type sight glass                                                 |

| Model       | L  | L1   | H    | Thread M     | Model      | L  | L1   | L2 | H    | Thread F/M |
|-------------|----|------|------|--------------|------------|----|------|----|------|------------|
| SGN-1/4 SAE | 64 | 13   | 21.5 | 7/16-20UNF   | SGN-1/4-MF | 60 | 8.5  | 12 | 25   | 7/16-20UNF |
| SGN-3/8 SAE | 70 | 15   | 25   | 5/8-18UNF    | SGN-3/8-MF | 68 | 11   | 15 | 31.5 | 5/8-18UNF  |
| SGN-1/2 SAE | 75 | 16   | 26.5 | 3/4-16UNF    | SGN-1/2-MF | 70 | 11.5 | 16 | 34.5 | 3/4-16UNF  |
| SGN-5/8 SAE | 80 | 18   | 29.5 | 7/8-14UNF    | SGN-5/8-MF | 78 | 13   | 18 | 38   | 7/8-14UNF  |
| SGN-3/4 SAE | 90 | 20.5 | 35   | 1-1/16-14UNS |            |    |      |    |      |            |

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。

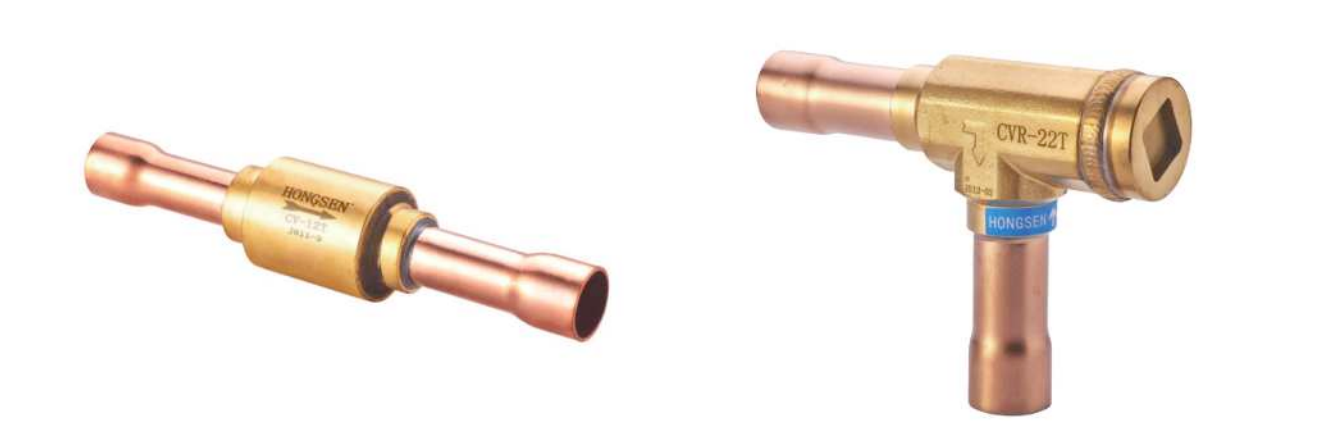
(单向阀) 确保唯一的正确的流动方向，阀口有很好的密封性。

(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



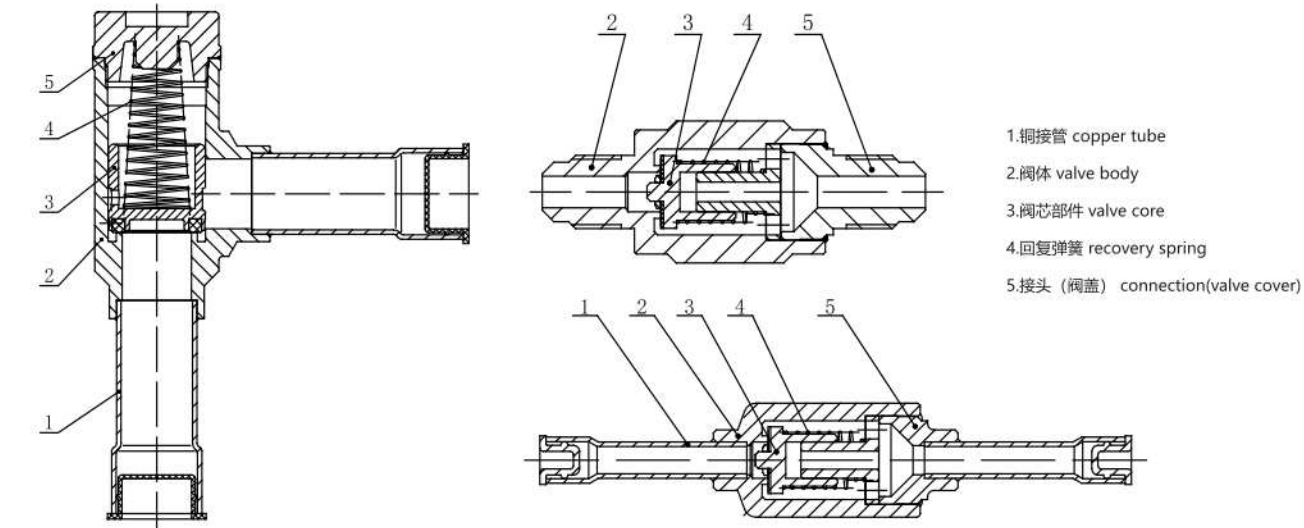
| 产品概述 Product Description                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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           |

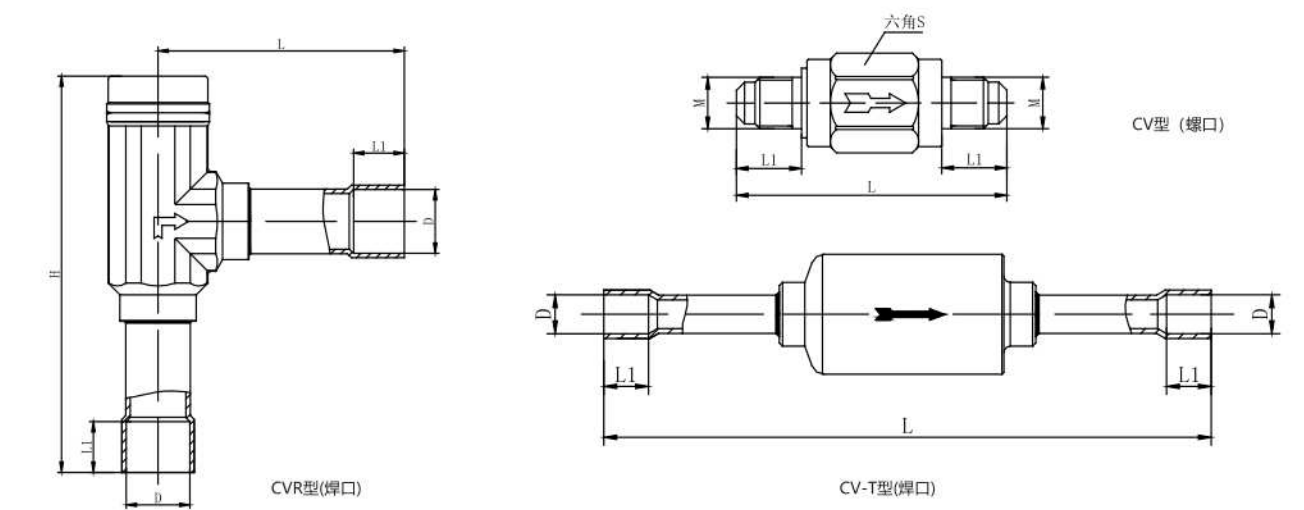
| 选型表 Model Selection |         |          |           |                 |                    |
|---------------------|---------|----------|-----------|-----------------|--------------------|
| 型号 Model            | 型式 Type | 规格 Spes  |           | 通径(mm) I.D.(mm) | Kv值(m³/h) Kv(m³/h) |
|                     |         | 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     | 1/4 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               |
| CVRH-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/m³的水在通过单向阀的压差等于100KPa时的流量, 单位为m³/h  
1) Kv value: When the pressure differential is 100KPa, the flowrate at m³/h water in density 1 t/m³ flows through the solenoid valve.

结构 Structure



外形尺寸 Overall Dimension



| 型号 Model | 外形尺寸 Overall Dimension |                        |    |       | 重量 Weight(g) | 重量 (加2只接管螺母) (g) |
|----------|------------------------|------------------------|----|-------|--------------|------------------|
|          | L                      | M                      | L1 | S     |              |                  |
| CV-6     | 58                     | 7/16-20UNF             | 14 | 19    | 68.6         | 101.8            |
| CV-10    | 62                     | 5/8-18UNF              | 16 | 21    | 91.6         | 153.6            |
| CV-12    | 68                     | 3/4-16UNF              | 18 | 24    | 125.3        | 193.4            |
| CV-16    | 78                     | 7/8-14UNF              | 21 | 27    | 172.1        | 270.0            |
| CV-19    | 90                     | 1-1/16-14UNS           | 24 | 32    | 277.3        | 417.4            |
|          | L                      | D                      | L  |       |              |                  |
| CV-6T    | 95                     | φ6.5 <sup>+0.15</sup>  | 7  |       | 67.9         |                  |
| CV-10GT  | 109                    | φ10.1 <sup>+0.15</sup> | 8  |       | 79.1         |                  |
| CV-12T   | 119                    | φ12.8 <sup>+0.15</sup> | 10 |       | 104.6        |                  |
| CV-16T   | 138                    | φ16.1 <sup>+0.15</sup> | 14 |       | 148.8        |                  |
| CV-19T   | 150                    | φ19.2 <sup>+0.15</sup> | 16 |       | 212.6        |                  |
|          | L                      | D                      | L1 | H     |              |                  |
| CVRH-22  | 84                     | φ22.3 <sup>+0.15</sup> | 17 | 136.5 | 474.7        |                  |
| CVRH-28  | 113                    | φ28.7 <sup>+0.15</sup> | 20 | 184   | 1040         |                  |
| CVRH-35  | 126                    | φ35.2 <sup>+0.15</sup> | 25 | 197   | 1120         |                  |
| CVRH-42  | 126                    | φ41.5 <sup>+0.15</sup> | 29 | 197   | 1125         |                  |

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。  
Nite:(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.

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

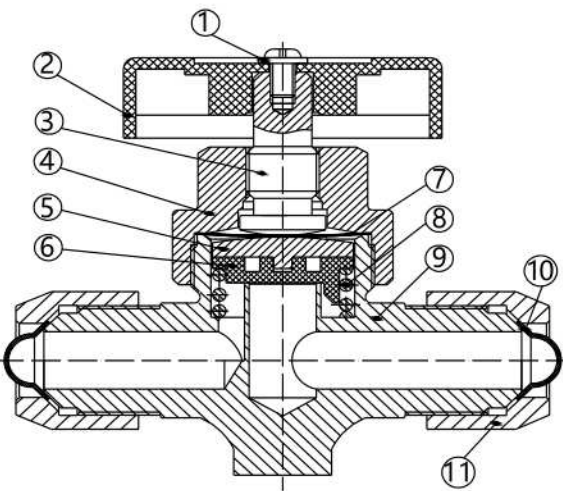
- 带有2片不锈钢膜片，在阀的整个使用寿命期间内防止泄漏。
- 阀口采用弹性密封，用很小的力矩就可将阀关闭。
- 特殊阀盖设计，防止水、粉尘等进入阀内部。
- 阀杆只需旋转一圈半就可全开或全闭，操作便捷。

- 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 a sued 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℃~+100℃     |
| 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

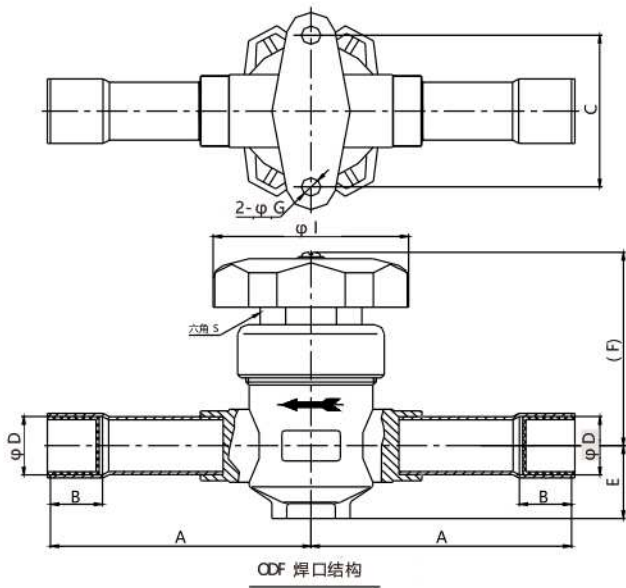
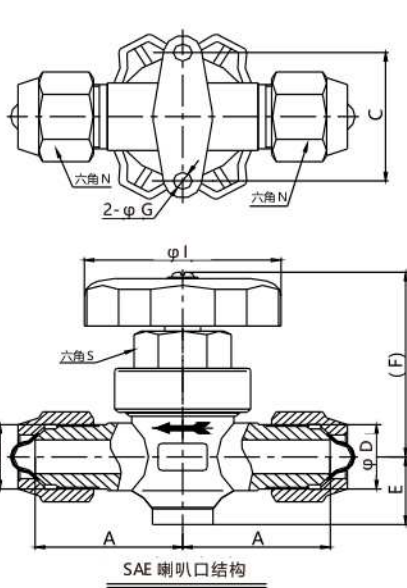


1. 螺钉 screw 2. 手轮 hand wheel 3. 阀杆 valve stem  
4. 阀盖 valve bonnet 5. 铜片 copper sheet 6. 阀芯 valve element  
7. 膜片 diaphragm 8. 弹簧 spring 9. 阀体 valve body  
10. 防尘帽 dust cap 11. 纳子（接管螺母） nut (piping nut)

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                     | —  |    | —    |    |      |      |     |     | S22 | 5/8 -18UNF    |
| 3/8 ODF | 59                     | 8  | 38 | 9.7  | 19 | (57) | Φ5   | Φ60 | S22 | —   | —             |
| 1/2 SAE | 39                     | —  |    | —    |    |      |      |     |     | S24 | 3/4 -16UNF    |
| 1/2 ODF | 66                     | 10 |    | 12.8 |    |      |      |     |     | —   | —             |
| 5/8 SAE | 39                     | —  | 50 | —    | 24 | (64) | Φ6   | Φ71 | S27 | S27 | 7/8-14UNF     |
| 5/8 ODF | 74                     | 14 |    | 16.1 |    |      |      |     |     | —   | —             |
| 3/4 SAE | 50                     | —  |    | —    |    |      |      |     |     | S32 | 1-1/16-14UNS  |
| 3/4 ODF | 80                     | 16 | 50 | 19.1 |    |      |      |     |     | —   | —             |
| 7/8 ODF | 80                     | 17 |    | 22.3 |    |      |      |     |     | —   | —             |

## 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.



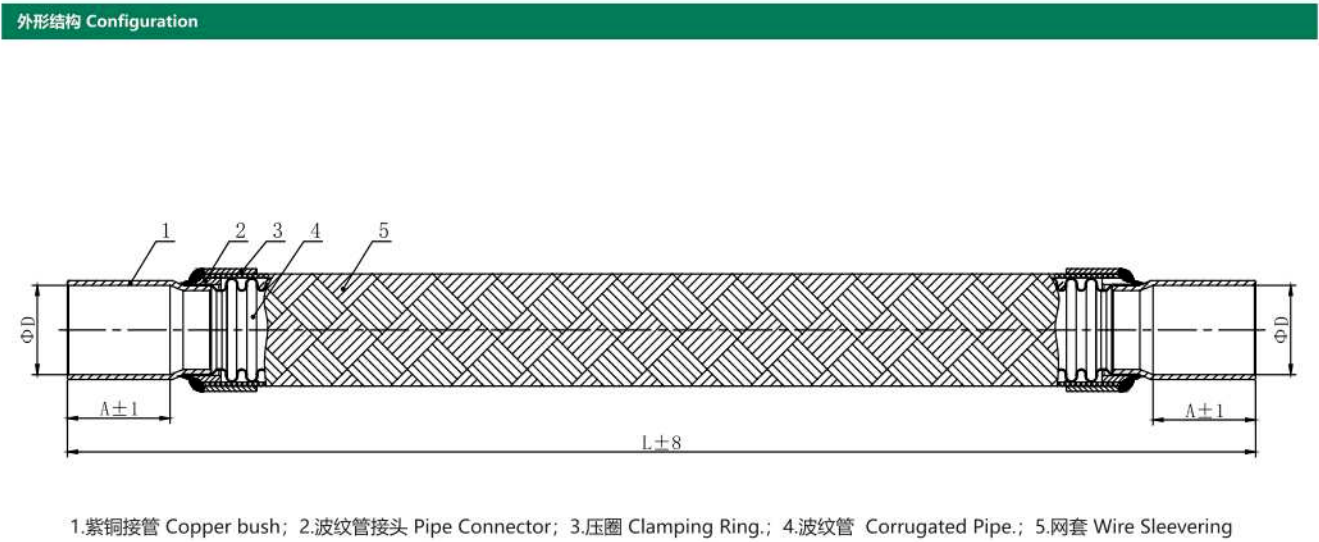
VAFX型避震管
VAFX Type vibration Eliminator



| 产品概述 Product Description                                                                                  |                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>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。</li> </ul> | <ul style="list-style-type: none"> <li>VAFX Type vibration Eliminator is designed to be assembled in refrigeration or air conditioning system to lower the vibration from compressors.</li> </ul> |

| 产品特点 Features                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>波纹管材质为SUS316L，耐腐蚀性能优异。</li> <li>采用三位一体焊将接头、网套、压圈一起氩弧焊，具有安全、强度高等特点。</li> <li>具有良好的吸震和补偿热位移。</li> </ul> | <ul style="list-style-type: none"> <li>SUS316L corrugated pipe supports with high corrosion resistance</li> <li>Trinity Argon Arc welding of wire sleeve, pipe connector and clamping ring makes the vibration eliminator stronger and more safety.</li> <li>Perfect vibration resistance and good compensation for the heat displacement.</li> </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℃~+150℃                          |  |
| 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.) |  |



| 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     | 16                               | 210 | 9.70 <sup>+0.15</sup> <sub>0</sub>  | 4.5                                     | 80                                  | 180            |
| VAFX-012-12         | 1/2     | 18                               | 230 | 12.80 <sup>+0.2</sup> <sub>0</sub>  |                                         | 95                                  | 215            |
| VAFX-058-16         | 5/8     | 20                               | 250 | 16.10 <sup>+0.2</sup> <sub>0</sub>  |                                         | 120                                 | 270            |
| VAFX-034-19         | 3/4     | 22                               | 260 | 19.10 <sup>+0.2</sup> <sub>0</sub>  |                                         | 145                                 | 325            |
| VAFX-078-22         | 7/8     | 26                               | 300 | 22.30 <sup>+0.2</sup> <sub>0</sub>  |                                         | 160                                 | 360            |
| VAFX-100-25         | 1       | 32                               | 330 | 25.60 <sup>+0.2</sup> <sub>0</sub>  |                                         | 175                                 | 400            |
| VAFX-118-28         | 1-1/8   | 30                               | 330 | 28.70 <sup>+0.2</sup> <sub>0</sub>  | 4.2                                     | 175                                 | 400            |
| VAFX-114-32         | 1-1/4   | 50                               | 400 | 32.10 <sup>+0.2</sup> <sub>0</sub>  |                                         | 225                                 | 510            |
| VAFX-138-35         | 1-3/8   | 35                               | 400 | 35.20 <sup>+0.2</sup> <sub>0</sub>  |                                         | 225                                 | 510            |
| VAFX-158-42         | 1-5/8   | 42                               | 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.

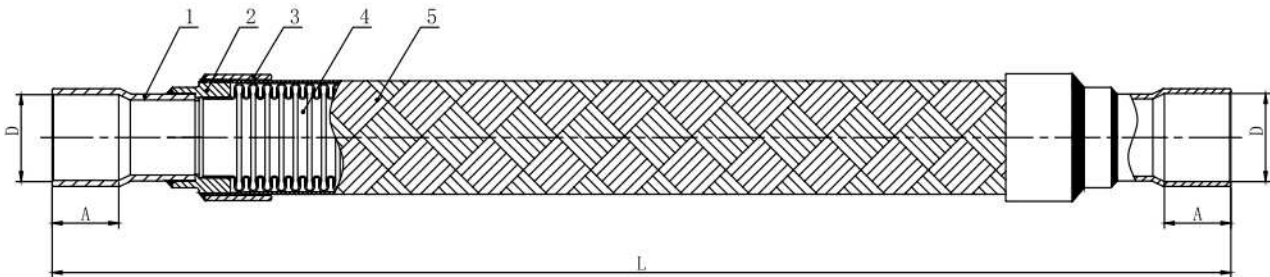
产品特点 Features

- 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、强度高等特点。
  - 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 Sleevering

选型表 Model Selection

| 型号<br>Type | 规格<br>Size | 外形尺寸 (mm)<br>Outline Dimension (mm) |     |                                     | 最大工作压力 (MPa)<br>Max.Working Pressure (MPa) | 最小弯曲半径 (mm)<br>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          | 20                                  | 330 | 25.60 <sup>+0.2</sup> <sub>0</sub>  | 5.0                                        | 175                                    | 400            |
| VAF-118-28 | 1-1/8      | 20                                  | 330 | 28.70 <sup>+0.2</sup> <sub>0</sub>  |                                            | 175                                    | 400            |
| VAF-114-32 | 1-1/4      | 40                                  | 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。

40 $\mu$ 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 40  $\mu$ 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• BFK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</li><li>• BFK型双向干燥过滤器的主要组分是80%分子筛+20%氧化铝和100um滤棉</li><li>• BFK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</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <ul style="list-style-type: none"><li>• 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.</li><li>• Model BFK bidirectional dry filter is composed of 80% 3A molecular sieve &amp; 20% active aluminium with 100um filter cartridge.</li><li>• The filter core of 80% molecular sieve &amp; 20% active aluminium can be used</li><li>• be for HFC and HCFC refrigerants and synthesized polyester oil (POE or PAG) system.</li></ul> |



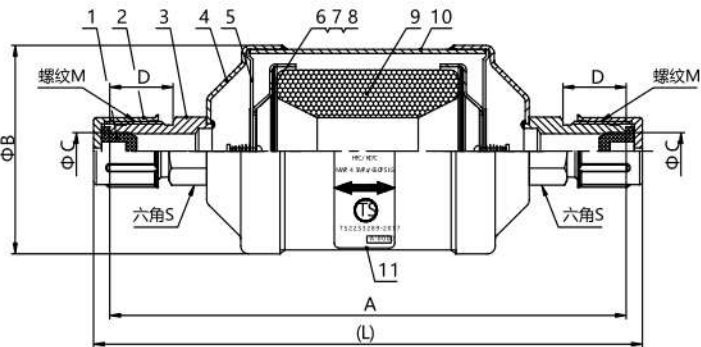
| 产品特点 Features                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• BFK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。</li><li>• 40μm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。</li></ul>                                                                                                                                                                                                                                                                                                             |
| <ul style="list-style-type: none"><li>• Filter cartridge of 80% 3A molecular sieve and 20% active aluminium filter cartridge presents powerful drying capacity and powerful deacidification capacity.</li><li>• With a filter fineness of 40 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.</li></ul> |

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.端盖 end cap
  - 5.双向座冲件 circuit change valve
  - 6.滤网 filter net
  - 7.细滤网 fine filter
  - 8.滤棉 filter pad
  - 9.烧结滤芯 solid filter cartridge
  - 10.筒体 barrel
  - 11.标贴 label
- 焊口 Soldering:

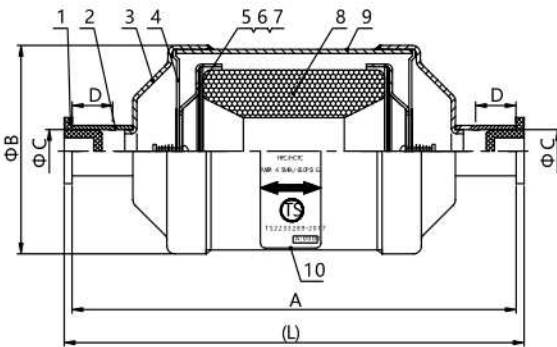
  - 1.橡胶塞 rubber plug
  - 2.接管 weiding pipe
  - 3.端盖 end cap
  - 4.双向座冲件 circuit change valve
  - 5.滤网 filter net
  - 6.细滤网 fine filter
  - 7.滤棉 filter pad
  - 8.烧结滤芯 solid filter cartridge
  - 9.筒体 barrel
  - 10.标贴 label



螺口 Thread

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℃~+120℃ |
| 最大工作压力 Maxum Working Pressure         | 4.2MPa     |
| 最大试验压力 Maximum Test Pressure          | 6.3MPa     |



| 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 SAE connection |               |     |       |     |      |     |    |              |              |
|-----------------------|---------------|-----|-------|-----|------|-----|----|--------------|--------------|
| 型号 Model              | 接口 Connection | A   | ΦB    | ΦC  | D    | L   | S  | 螺纹 Thread M  | 重量 Weight(g) |
| BFK-083               | 3/8 SAE       | 158 | Φ66.5 | Φ8  | 17   | 167 | 16 | 5/8-18UNF    | 582          |
| BFK-084               | 1/2 SAE       | 165 | Φ66.5 | Φ10 | 19   | 175 | 19 | 3/4-16UNF    | 624          |
| BFK-085               | 5/8 SAE       | 176 | Φ66.5 | Φ13 | 23.5 | 188 | 22 | 7/8-14UNF    | 661          |
| BFK-163               | 3/8 SAE       | 170 | Φ79   | Φ8  | 17   | 179 | 16 | 5/8-18UNF    | 799          |
| BFK-164               | 1/2 SAE       | 179 | Φ79   | Φ10 | 19   | 189 | 19 | 3/4-16UNF    | 839          |
| BFK-165               | 5/8 SAE       | 186 | Φ79   | Φ13 | 23.5 | 198 | 22 | 7/8-14UNF    | 893          |
| BFK-303               | 3/8 SAE       | 245 | Φ79   | Φ8  | 17   | 254 | 16 | 5/8-18UNF    | 1303         |
| BFK-304               | 1/2 SAE       | 254 | Φ79   | Φ10 | 19   | 264 | 19 | 3/4-16UNF    | 1334         |
| BFK-305               | 5/8 SAE       | 261 | Φ79   | Φ13 | 23.5 | 273 | 22 | 7/8-14UNF    | 1294         |
| BFK-306               | 3/4 SAE       | 265 | Φ79   | Φ16 | 25   | 277 | 27 | 1-1/16-14UNS | 1352         |

| ODF 接口 ODF connection |               |     |       |       |    |     |              |
|-----------------------|---------------|-----|-------|-------|----|-----|--------------|
| 型号 Model              | 接口 Connection | A   | ΦB    | ΦC    | D  | L   | 重量 Weight(g) |
| BFK-083S              | 3/8 ODF       | 141 | Φ66.5 | Φ9.7  | 9  | 147 | 542          |
| BFK-084S              | 1/2 ODF       | 149 | Φ66.5 | Φ12.8 | 11 | 155 | 558          |
| BFK-085S              | 5/8 ODF       | 149 | Φ66.5 | Φ16.1 | 11 | 155 | 570          |
| BFK-163S              | 3/8 ODF       | 153 | Φ79   | Φ9.7  | 9  | 159 | 757          |
| BFK-164S              | 1/2 ODF       | 161 | Φ79   | Φ12.8 | 11 | 167 | 773          |
| BFK-165S              | 5/8 ODF       | 161 | Φ79   | Φ16.1 | 11 | 167 | 780          |
| BFK-303S              | 3/8 ODF       | 228 | Φ79   | Φ9.7  | 9  | 234 | 1200         |
| BFK-304S              | 1/2 ODF       | 236 | Φ79   | Φ12.8 | 11 | 242 | 1215         |
| BFK-305S              | 5/8 ODF       | 236 | Φ79   | Φ16.1 | 11 | 242 | 1227         |
| BFK-306S              | 3/4 ODF       | 241 | Φ79   | Φ19.1 | 12 | 247 | 1232         |
| BFK-307S              | 7/8 ODF       | 247 | Φ79   | Φ22.3 | 15 | 253 | 1242         |
| BFK-309S              | 1-1/8 ODF     | 256 | Φ79   | Φ28.7 | 16 | 262 | 1280         |

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）及过滤系统日的固体杂质、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100un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 100un 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.

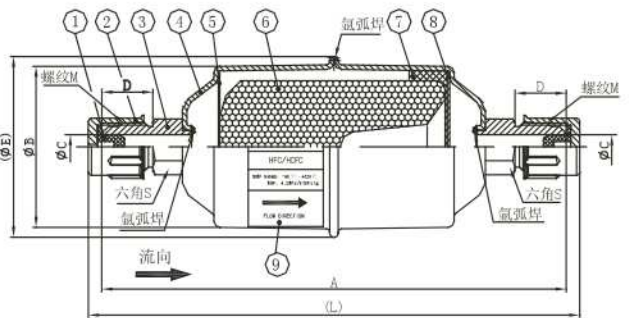


产品特点 Features

- 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。
  - 40µm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 40 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

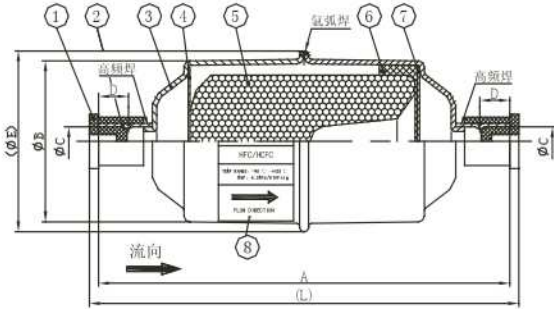
- 螺口 Thread:
- 1.橡胶塞 rubber plug
  - 2.螺纹封帽 thread cap
  - 3.铁接头 steel connector
  - 4.铁碗 steel cup
  - 5.挡片 barrier
  - 6.烧结滤芯 solid filter cartridge
  - 7.滤棉 filter pad
  - 8.滤网 filter net
  - 9.标贴 label
- 焊口 Soldering:
- 1.橡胶塞帽 rubber plug hat
  - 2.接管 weiding pipe
  - 3.铁碗 steel cup
  - 4.挡片 barrier
  - 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        | 4.2MPa       |
| 最大试验压力 Maximum Test Pressure          | 6.3MPa       |



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 | A   | ΦB  | ΦC   | D    | ΦE  | L   | S  | 螺纹 Thread M | 重量 Weight(g) |
| DFS-032                 | 1/4 SAE      | 110 | Φ43 | Φ4.8 | 14   | Φ46 | 114 | 14 | 7/16-20UNF  | 183          |
| DFS-033                 | 3/8 SAE      | 119 | Φ43 | Φ8   | 17   | Φ46 | 128 | 16 | 5/8-18UNF   | 211          |
| DFS-052                 | 1/4 SAE      | 118 | Φ54 | Φ4.8 | 14   | Φ57 | 124 | 14 | 7/16-20UNF  | 261          |
| DFS-053                 | 3/8 SAE      | 127 | Φ54 | Φ8   | 17   | Φ57 | 136 | 16 | 5/8-18UNF   | 289          |
| DFS-083                 | 3/8 SAE      | 152 | Φ54 | Φ8   | 17   | Φ57 | 161 | 16 | 5/8-18UNF   | 372          |
| DFS-084                 | 1/2 SAE      | 159 | Φ54 | Φ10  | 19   | Φ57 | 169 | 19 | 3/4-16UNF   | 403          |
| DFS-085                 | 5/8 SAE      | 170 | Φ54 | Φ13  | 23.5 | Φ57 | 182 | 22 | 7/8-14UNF   | 440          |
| DFS-163                 | 3/8 SAE      | 159 | Φ75 | Φ8   | 17   | Φ79 | 168 | 16 | 5/8-18UNF   | 615          |
| DFS-164                 | 1/2 SAE      | 168 | Φ75 | Φ10  | 19   | Φ79 | 178 | 19 | 3/4-16UNF   | 655          |
| DFS-165                 | 5/8 SAE      | 177 | Φ75 | Φ13  | 23.5 | Φ79 | 189 | 22 | 7/8-14UNF   | 695          |
| DFS-304                 | 1/2 SAE      | 256 | Φ79 | Φ10  | 19   | Φ79 | 266 | 19 | 3/4-16UNF   | 1325         |
| DFS-305                 | 5/8 SAE      | 267 | Φ79 | Φ13  | 23.5 | Φ79 | 279 | 22 | 7/8-14UNF   | 1365         |
| DFS-306                 | 3/4 SAE      | 268 | Φ79 | Φ16  | 25   | Φ79 | 280 | 27 | 1-1/16-UNS  | 1423         |

| ODF 接口 Welding connection |               |     |     |       |    |     |     |              |
|---------------------------|---------------|-----|-----|-------|----|-----|-----|--------------|
| 型号 Model                  | 接口 Connection | A   | ΦB  | ΦC    | D  | ΦE  | L   | 重量 Weight(g) |
| DFS-032S                  | 1/4 ODF       | 99  | Φ43 | Φ6.5  | 8  | Φ46 | 103 | 159          |
| DFS-033S                  | 3/8 ODF       | 101 | Φ43 | Φ9.7  | 9  | Φ46 | 107 | 166          |
| DFS-052S                  | 1/4 ODF       | 107 | Φ54 | Φ6.5  | 8  | Φ57 | 111 | 235          |
| DFS-053S                  | 3/8 ODF       | 109 | Φ54 | Φ9.7  | 9  | Φ57 | 115 | 242          |
| DFS-083S                  | 3/8 ODF       | 134 | Φ54 | Φ9.7  | 9  | Φ57 | 140 | 320          |
| DFS-084S                  | 1/2 ODF       | 142 | Φ54 | Φ12.8 | 11 | Φ57 | 148 | 335          |
| DFS-085S                  | 5/8 ODF       | 142 | Φ54 | Φ16.1 | 11 | Φ57 | 148 | 348          |
| DFS-163S                  | 3/8 ODF       | 142 | Φ75 | Φ9.7  | 9  | Φ79 | 148 | 527          |
| DFS-164S                  | 1/2 ODF       | 150 | Φ75 | Φ12.8 | 11 | Φ79 | 156 | 542          |
| DFS-165S                  | 5/8 ODF       | 150 | Φ75 | Φ16.1 | 11 | Φ79 | 156 | 547          |
| DFS-304S                  | 1/2 ODF       | 239 | Φ79 | Φ12.8 | 11 | Φ79 | 245 | 1263         |
| DFS-305S                  | 5/8 ODF       | 239 | Φ79 | Φ16.1 | 11 | Φ79 | 245 | 1268         |
| DFS-306S                  | 3/4 ODF       | 244 | Φ79 | Φ19.1 | 12 | Φ79 | 250 | 1286         |
| DFS-307S                  | 7/8 ODF       | 250 | Φ79 | Φ22.3 | 15 | Φ79 | 256 | 1302         |

DFS型干燥过滤筒

Model DFS Replaceable Dry Filter Cartridge

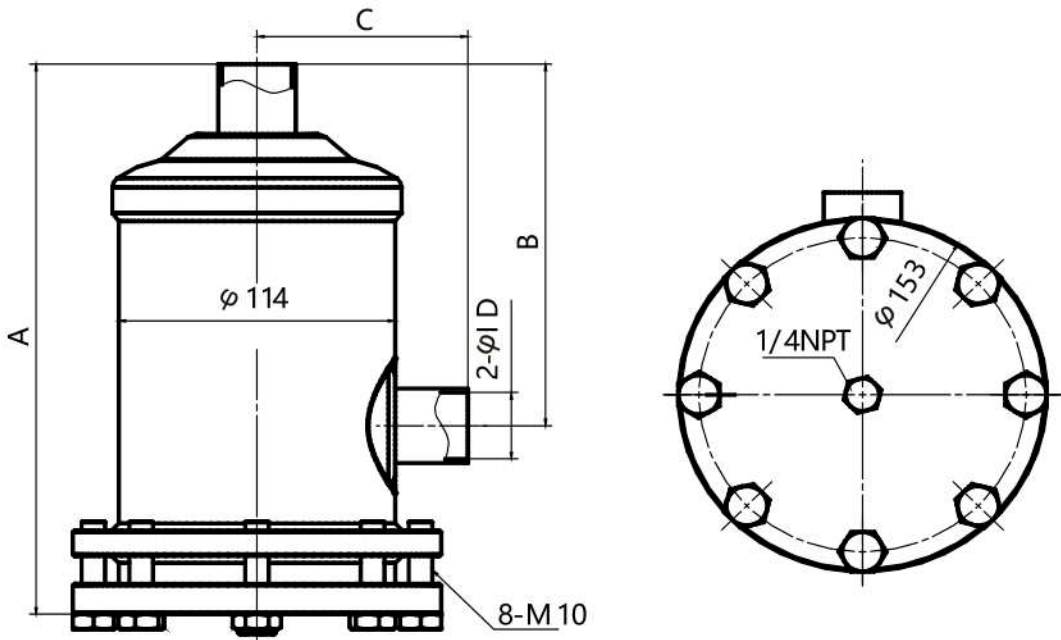


| 产品概述 Product Description                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>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。</li><li>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</li></ul> | <ul style="list-style-type: none"><li>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.</li><li>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.</li></ul> |

| 产品特点 Features                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>可拆式结构、便于安装及维修；</li><li>100目出口滤网；</li><li>全流通设计，最大限度的减少压降；</li><li>钢制壳体，铜接管焊接口，高频焊接采用翻边结构，增加焊接可靠性；</li><li>改性聚四氟乙烯新材料，确保密封性；</li><li>外涂层采用环氧树脂静电喷漆。</li></ul> | <ul style="list-style-type: none"><li>Removable structure for convenient installation and maintenance;</li><li>100 mesh outlet filter screen;</li><li>Full pass through design to minimize pressure drop;</li><li>Steel casing, copper pipe welded connection, high frequency welding flanging structure to improve welding reliability;</li><li>Modified Teflon new material to ensure perfect sealing;</li><li>Outer surface applies epoxy resin coating protection.</li></ul> |

| 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℃~+70℃    |
| 最大工作压力 Maximum Working Pressure    | 4.2MPa       |
| 最大试验压力 Maximum Test Pressure       | 6.3MPa       |

| 选型表 Model Selection |                                             |                         |                                 |                    |     |     |
|---------------------|---------------------------------------------|-------------------------|---------------------------------|--------------------|-----|-----|
| 型号<br>Type          | 进出口尺寸<br>Connections To<br>solder ID (inch) | 芯体数量<br>Number of cores | 过滤面积(㎡)<br>Filtering surface(㎡) | 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 |
| DFS-19211S          | 1-3/8ODF                                    | 4                       | 1680                            | 668                | 587 | 91  |
| DFS-19213S          | 1-5/8ODF                                    |                         |                                 | 670                | 589 | 93  |
| DFS-19217S          | 2-1/8ODF                                    |                         |                                 | 674                | 588 | 99  |
| DFS-19221S          | 2-5/8ODF                                    |                         |                                 | 670                | 584 | 106 |





## 压力传输配件系列

# 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

ESCORT FOR SAFE REFRIGERATION 为安全制冷护航



HONGSEN

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



242# (Y63)  
(-5℃ ~+120℃)

128# (ZY63)  
(-40℃ ~+120℃)

191# (ZY63)  
(-40℃ ~+120℃)

产品概述 Product Description

- 充油压力表是内部充油的制冷专用的抗振压力表。
  - 充油压力表用于冷冻、冷藏和空气调节装置的机组上。
  - 充油压力表由多种制冷剂共组一表，方便使用。
  - 充油压力表使用全不锈钢表壳、超宽铍青铜弹簧管。
  - 充油压力表为带法兰安装边的轴向压力表。
- The pressure gauge is a vibration-proof pressure gauge with oil filled inside for refrigeration use only.
  - The oil-filled pressure gauge is used on freezer, cold store and air-conditioning unit.
  - The oil-filled pressure gauge is convenient in application as it features one gauge for multiple refrigerants.
  - The oil-filled pressure gauge has full stainless steel casing and wider beryllium bonze spring tube.
  - The oil-filled pressure gauge is an axial pressure gauge with edges for flange joint.

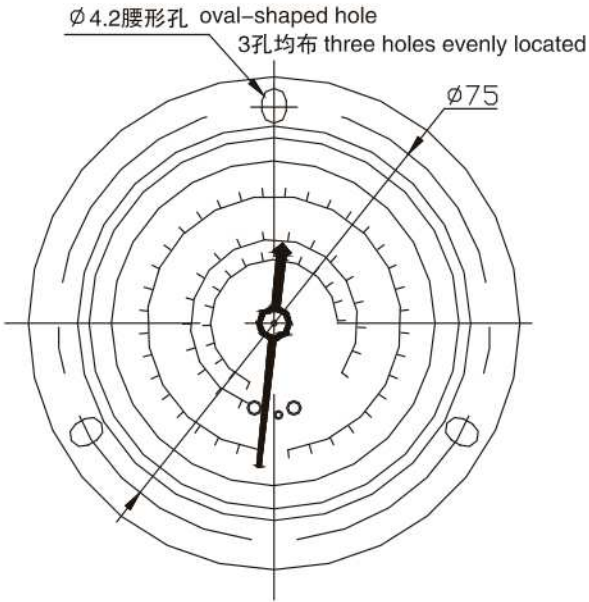
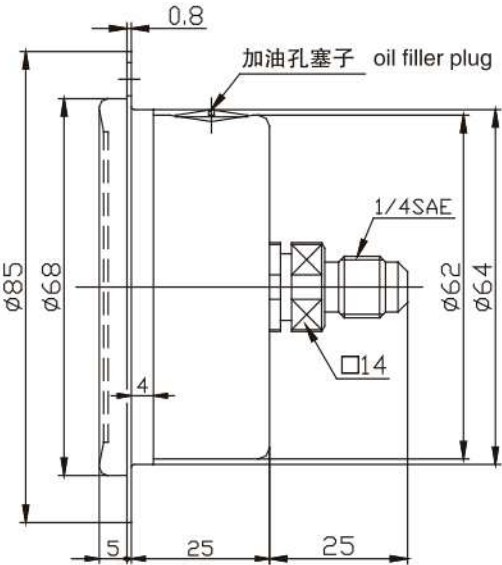
产品特点 Features

- 内部充油可抗机组的高频振动
  - 带阻尼油杯可防指针快速跳动
  - 带法兰安装边方便安装
  - 设有超压限位装置
  - 经强化超压确保零位误差
  - 合理的油封设计无漏油隐患
  - 设有压力温度对照
  - 具有超长的使用寿命
- The inside filled oil functions damping to the high frequency vibration of machinery.
  - The damping oil cup prevents gauge pointer from quick jumping.
  - The flanged edge is for convenient mounting.
  - Over-pressure limit stop is equipped.
  - Zero error is ensured with strengthening overpressure measures.
  - Rational oil seal design and no oil leakage worry.
  - Pressure versus Temperature readings for easy use.
  - Extra long service life.

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℃~+120℃ (-40℃~+120℃)                |
| 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<br>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> |                             |                                          |

**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

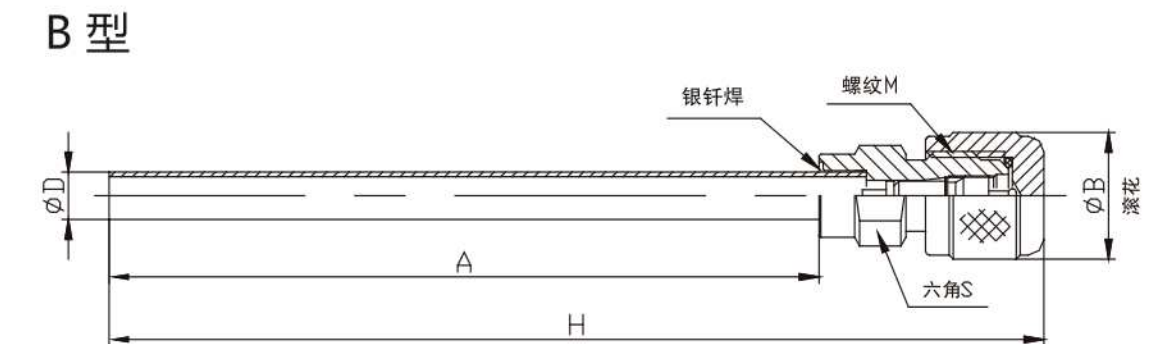
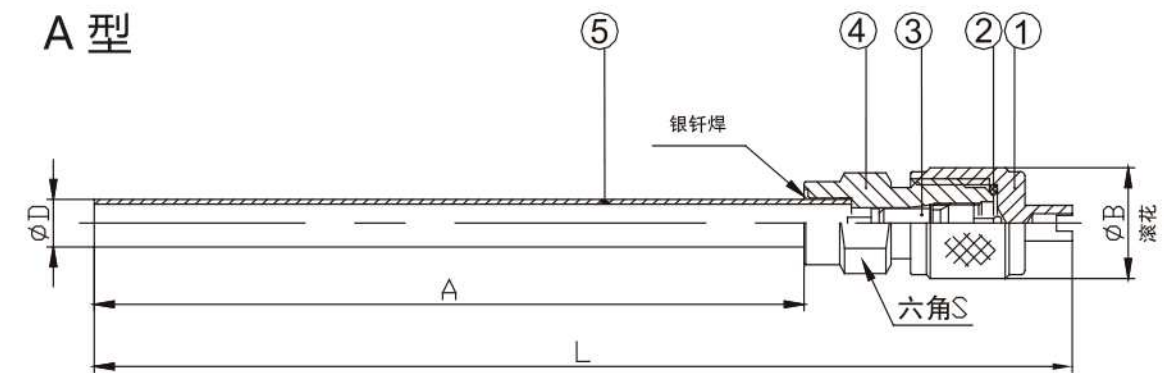
- 采用优质供应商气门芯，性能可靠
- 双重密封确保无泄漏
- 可提供各种长度和硬度的铜接管
- 阀帽滚花设计，装卸方便

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

## 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                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div><div><div>• 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。</div><div>• 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.</div></div></div> |

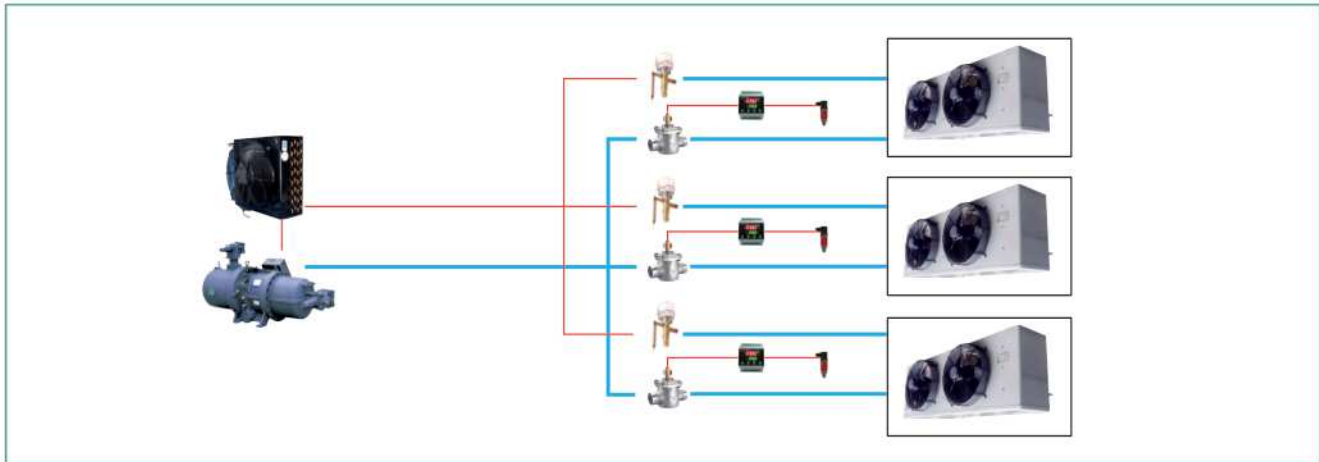
| 选型表 Model Selection |                                                                                     |   |                                                                                      |   |                                                                                       |
|---------------------|-------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------|
| A                   |    | B |     | C |     |
| D                   |  | E |   | F |    |
|                     |                                                                                     | G |  | H |  |
| I                   |  | J |   | K |    |
|                     |                                                                                     | L |  | M |  |
| N                   |  | O |   | P |    |
|                     |                                                                                     | Q |  | R |  |
| S                   |  | T |   | U |    |

| 产品特点 Features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <div><div><div>• 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。</div><div>• 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.</div></div></div> |              |
| 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℃~+100℃   |

| 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                       |       |       |                                     |                                       |

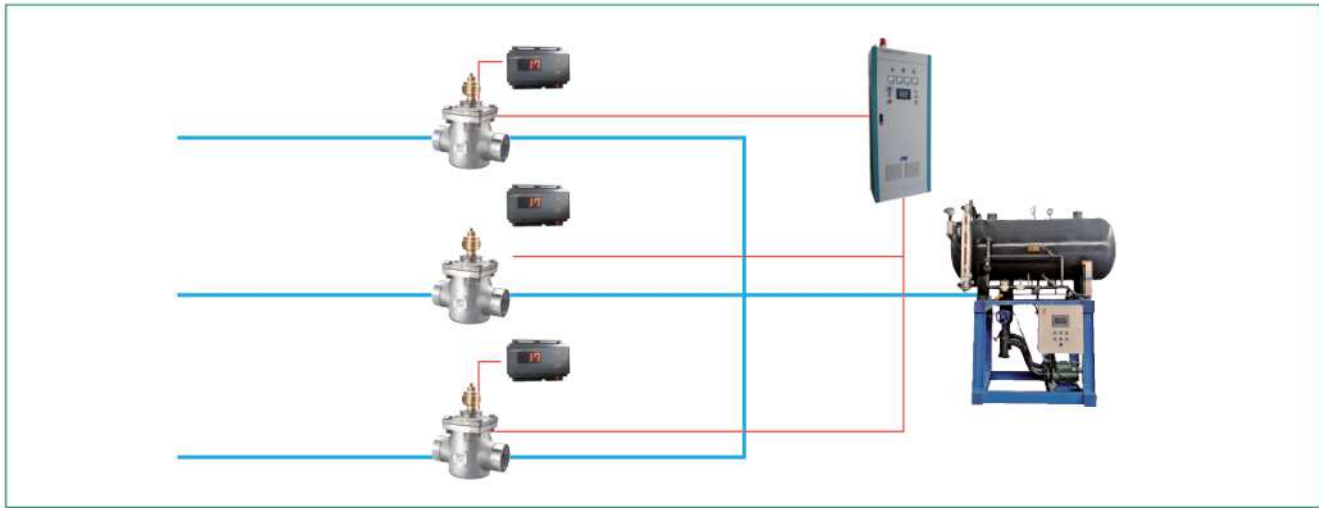
蒸发压力控制  
Evaporation pressure control

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



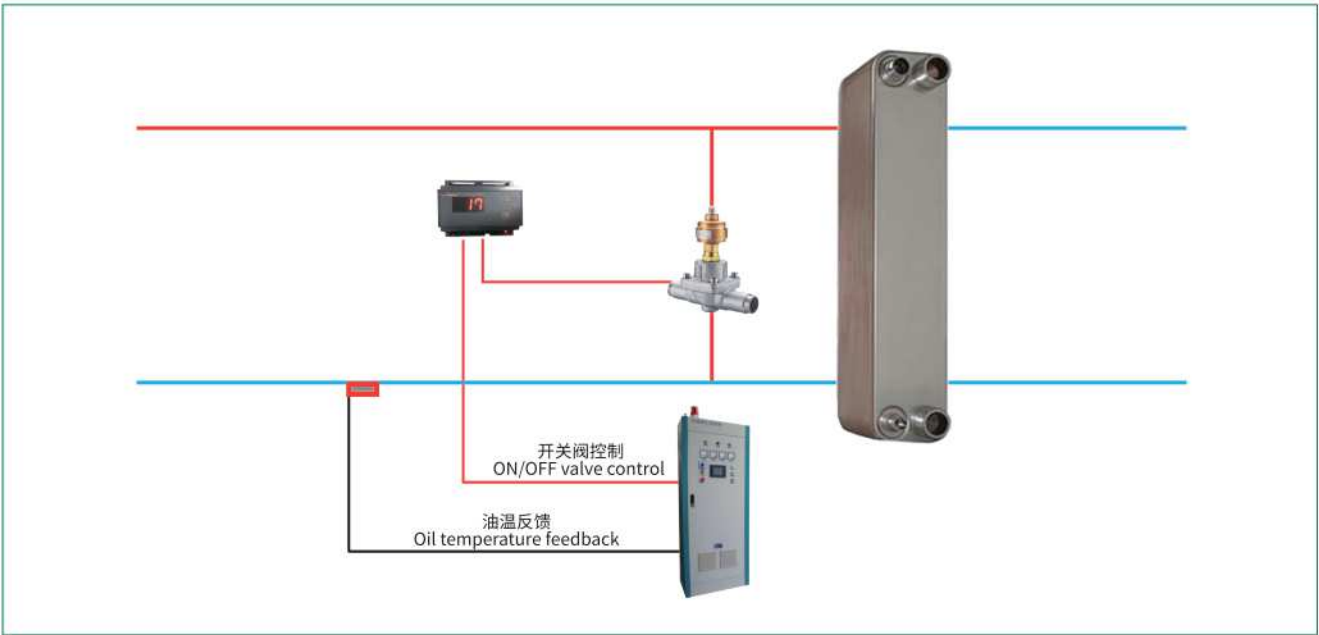
- | 产品特点 Features |                                                             |
|---------------|-------------------------------------------------------------|
| • 实现单系统多温库功能  | · For multi-temperature cold rooms within one single system |
| • 库温稳定可调节     | · For stable and adjustable temperature in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

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

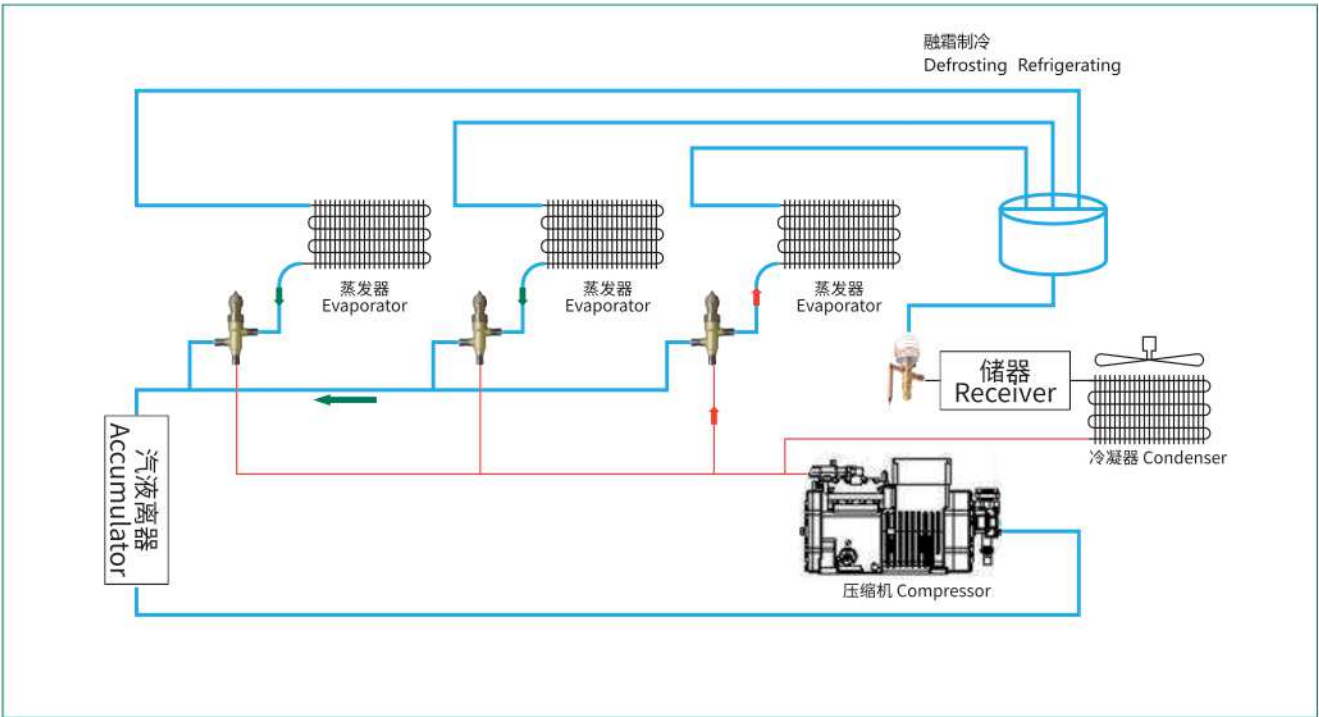


- | 产品特点 Features          |                                              |
|------------------------|----------------------------------------------|
| • 零压差开启                | · Work at $\Delta P=0$                       |
| • 避免工业管道液锤现象           | · Avoid liquid hammer                        |
| •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

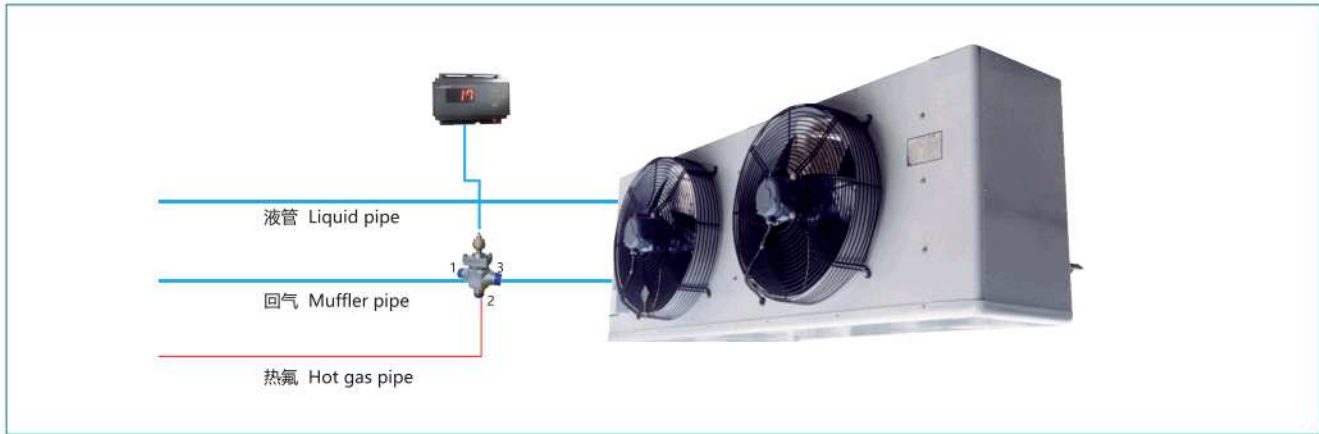
恒定温度控制（推荐）：油温控制精度 $\pm 1^{\circ}\text{C}$   
Constant temperature control: Oil temperature $\pm 1^{\circ}\text{C}$



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

