

车载专用压缩机 Scroll Compressor for Mobile Application

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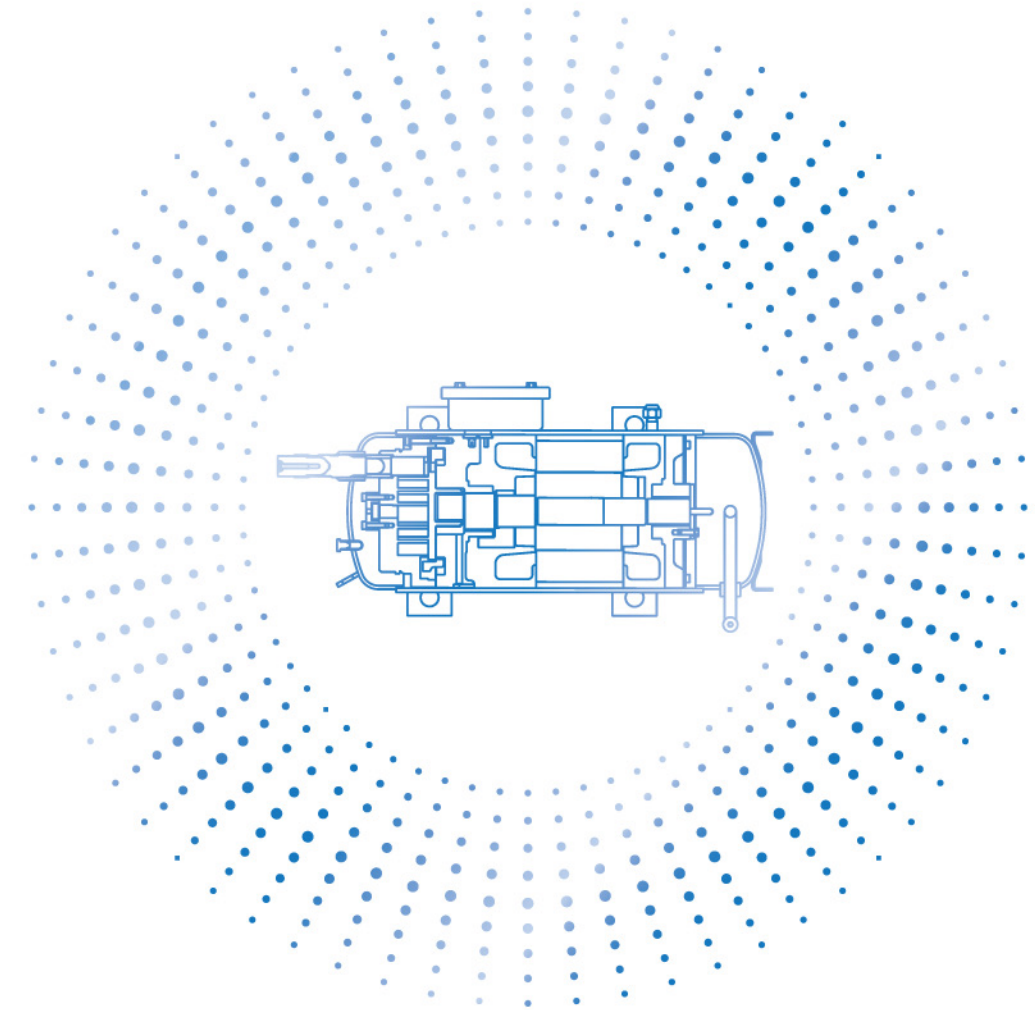
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样本中所有产品图片仅供参考,以实际订货产品为准。
参数如有变动恕不另行通知。

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抖音号

冰山松洋压缩机(大连)有限公司
Sonyo Compressor (Dalian) Co., Ltd.



6 大产品特点

- 1 矢量变频控制技术，实现室内温度精准控制，为乘客带来舒适体验；
- 2 喷气增焓技术有效解决压缩机低温运转特性，提升性能；
- 3 结构紧凑（高度小于180mm），缩小安装空间，降低机组设计成本；
- 4 压缩机与驱动模块分体式设计，确保驱动系统视运转环境而优先化选取；
- 5 全金属外壳的耐候性设计，可实现IP67防护等级，满足行业最高防护标准要求；
- 6 采用环保的R407C、R410A、R134a、R513A等多种主流制冷剂。

6 PRODUCTS FEATURES

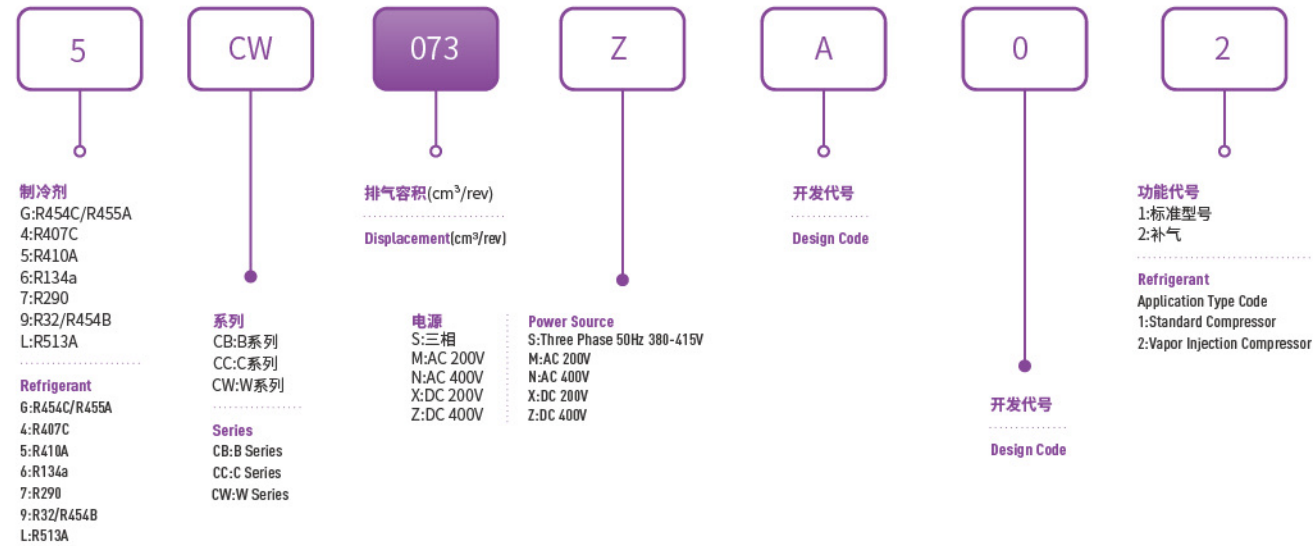
- 1 Variable speed compressor technology to achieve accurate temperature control, bring comfortable experience to passengers.
- 2 Vapor injection technology to improve performance under low ambient temperature conditions.
- 3 Compact structure[height less than 180mm], saving installation space and reduce cost for customer on unit design.
- 4 Split-type design between the compressor and drive module ensure that the drive system could be optimized and chosen according to the operating envelope.
- 5 Hermetic compressor with IP67 terminal box meets the highest protection class standard in the industry.
- 6 Environmental friendly refrigerant R407A,R410A,R134a,R513A.

01	产品特点	Product Features
03	命名规则	Model Nomenclature
04	产品型谱	Product Line-up
05	技术参数	Basic Parameters
07	运行范围	Operation Envelope
08	使用标准	Application Standard
11	外观图	Outline Graph

* 如需使用其他制冷剂或应用范围，请与我司联系
For more information about other refrigerants products
and applications, please contact with us.

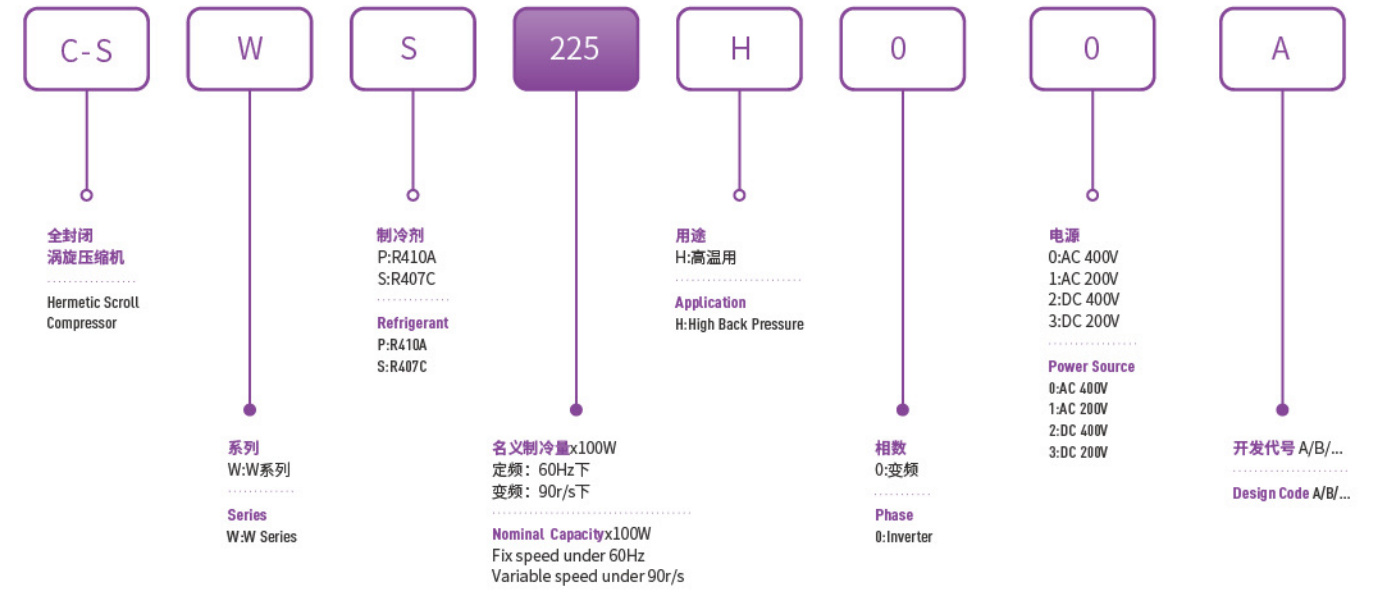
命名规则-排量命名法1

Product Nomenclature-Nomenclature of displacement 1



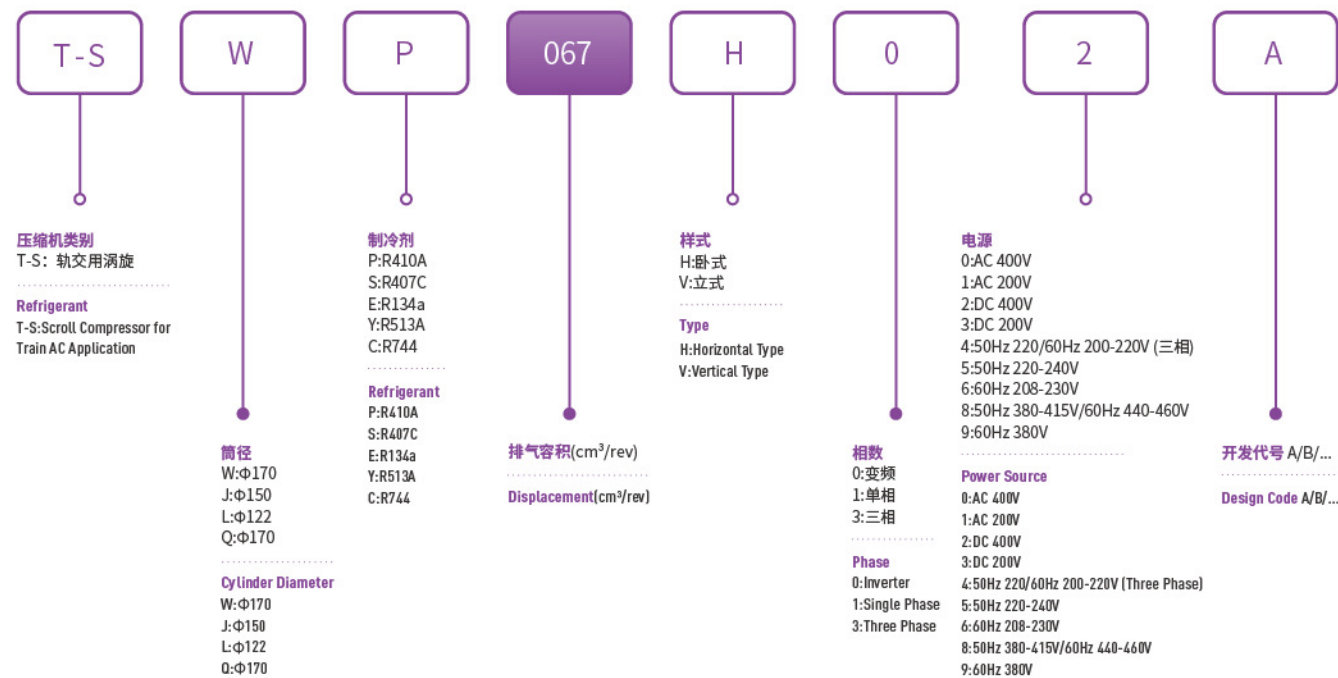
命名规则-冷量命名法

Product Nomenclature-Nomenclature of cooling capacity



命名规则-排量命名法2

Product Nomenclature-Nomenclature of displacement 2



产品型谱

Product Line-up

制冷剂 Refrigerant	电源 Power Source	排气容积 Displacement	制冷能力 Capacity (kW)											
			5	10	15	20	25	30	35	40	45	50	55	
R410A	DC Inverter	42cc	6-20											
		60cc	8-30											
		67cc	10-33											
		73cc(EVI)	9-48											
		81cc	10-53											
R407C	AC Inverter	56cc	6-21											
		74cc	8-27											
		110cc	12-35											
R513A	AC Inverter	74cc	5-16											
		110cc	7-23											

电动大巴空调用—技术参数
Basic Parameters for Electric Bus Application

R410A		DC Inverter 380V				
压缩机型号 Compressor Model		5CW042ZA01 5CW042ZA11	5CX060ZA01	5CW067ZA01	5CW073ZA02	5CW081ZA01
额定功率 Output	HP	6	8	9	10	11
排气量 Displacement	cm ³ /rev	42	60	67	73	81
转速范围 Revolution Range	r/s	30-90	20-100	30-90	20-100	20-100
额定性能 Rated Performance	制冷量 Capacity	KW	13.8	19.7	22.3	26.8
	输入功率 Input Power	KW	4.35	6.1	7.00	7.85
	电流 Current	A	11.4	18	17.7	23.5
	COP	W/W	3.17	3.23	3.19	3.16
冷冻机油 Oil	种类 Category	FV68S				
	充注量 Charge	ml	1600	1300	2200	1600
电动机 Motor	种类 Category	直流无刷电机 DC Brushless Motor				
	绝缘等级 Insulation Class	—	E	F	F	E
净重 Net Weight(Include Oil)	kg	39	28	40	40	40.5
防护等级 Ingress Protection	—	IP67	IP67	IP67	IP67	IP67
吸气接管 Discharge Accepting	mm(φ0D)	22.2(7/8)	25.4(1)	22.2(7/8)	25.4(1)	25.4(1)
排气接管 Suction Accepting	mm(φ0D)	12.7(1/2)	12.7(1/2)	12.7(1/2)	12.7(1/2)	12.7(1/2)
备注 Remark	—	—	轻量化 Light Weight	—	补气功能 EVI	—

轨道列车空调用—技术参数
Basic Parameters for Train Application

R410A		R513A	
压缩机型号 Compressor Model		DC Inverter 380V C-SWP330H02C T-SWP067H02A	AC Inverter 380V T-SWY074H00A T-SWY110H00A
额定功率 Output	HP	9	5 7
排气量 Displacement	cm ³ /rev	67	74 110
转速范围 Revolution Range	r/s(Hz)	30-90	30-100 30-90
额定性能 Rated Performance	制冷量 Capacity	KW	22.3 11.0
	输入功率 Input Power	KW	7.00 3.5
	电流 Current	A	17.7 6.4
	COP	W/W	3.19 3.14
冷冻机油 Oil	种类 Category	—	FV68S
	充注量 Charge	ml	2200 1600 1900
电动机 Motor	种类 Category	—	直流无刷电机 DC Brushless Motor 三相交流变频电机 3PH Induction Inverter Motor
	绝缘等级 Insulation Class	—	F E F
净重 Net Weight(Include Oil)	kg	40	44.5 47.5
防护等级 Ingress Protection	—	IP67	IP67 IP67
吸气接管 Discharge Accepting	mm(φ0D)	22.2 (7/8)	22.2 (7/8) 25.4 (1)
排气接管 Suction Accepting	mm(φ0D)	12.7(1/2)	12.7 (1/2) 15.9 (5/8)
备注 Remark	—	—	—

R407C		AC Inverter 380V		AC Inverter 220V	
压缩机型号 Compressor Model		4CW074NA01	4CW110NA01	4CW056MA01	4CW074MA01 4CW074MA21
额定功率 Output	HP	7	10	5	7 7
排气量 Displacement	cm ³ /rev	74	110	56	74 74
转速范围 Revolution Range	Hz	30-100	30-90	30-100	30-100 30-100
额定性能 Rated Performance	制冷量 Capacity	KW	16.5	25.2	12.9 16.5
	输入功率 Input Power	KW	5.4	7.75	4.25 5.2
	电流 Current	A	9.21	13.5	13 18.1
	COP	W/W	3.06	3.25	3.19 3.17
冷冻机油 Oil	种类 Category	FV68S			
	充注量 Charge	ml	1600	1900	1600
电动机 Motor	种类 Category	三相交流变频电机 3PH Induction Inverter Motor			
	绝缘等级 Insulation Class	—	E	F	E
净重 Net Weight(Include Oil)	kg	44.5	47.5	44.5	44.5 44.5
防护等级 Ingress Protection	—	IP67	IP67	IP67	IP67 —
吸气接管 Discharge Accepting	mm(φ0D)	22.2(7/8)	25.4(1)	22.2(7/8)	22.2(7/8) 22.2(7/8)
排气接管 Suction Accepting	mm(φ0D)	12.7(1/2)	15.9(5/8)	12.7(1/2)	12.7(1/2) 12.7(1/2)
备注 Remark	—	—	—	—	—

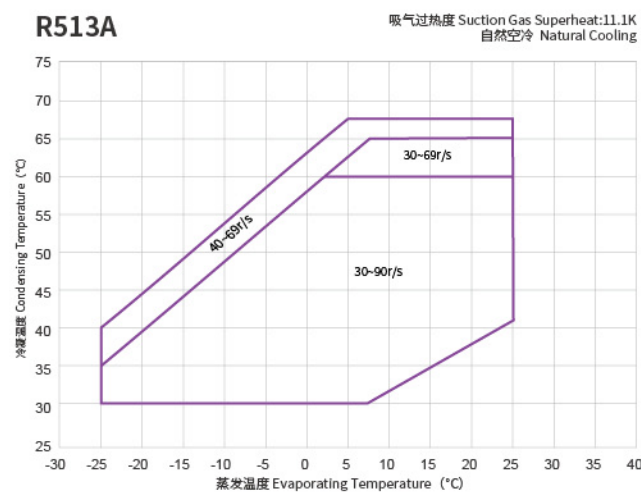
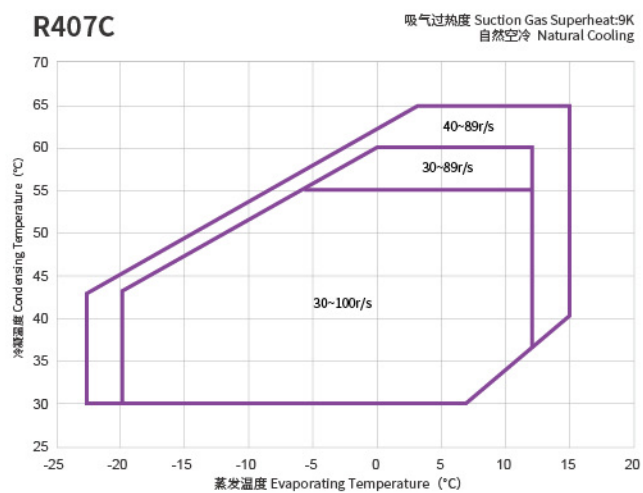
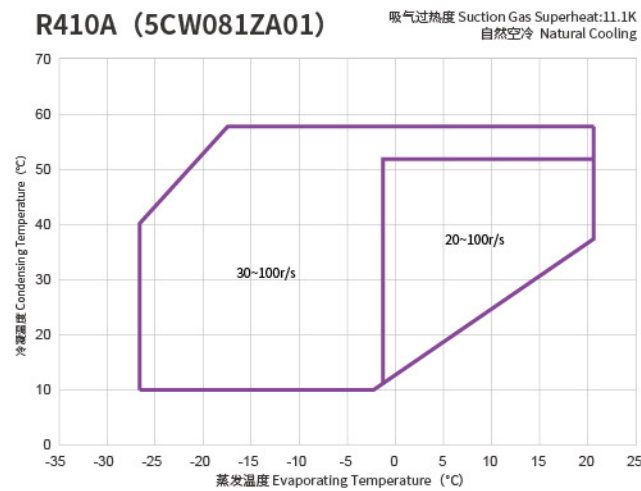
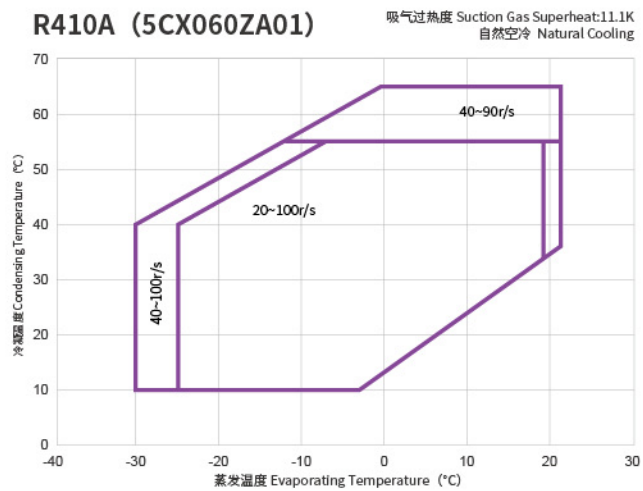
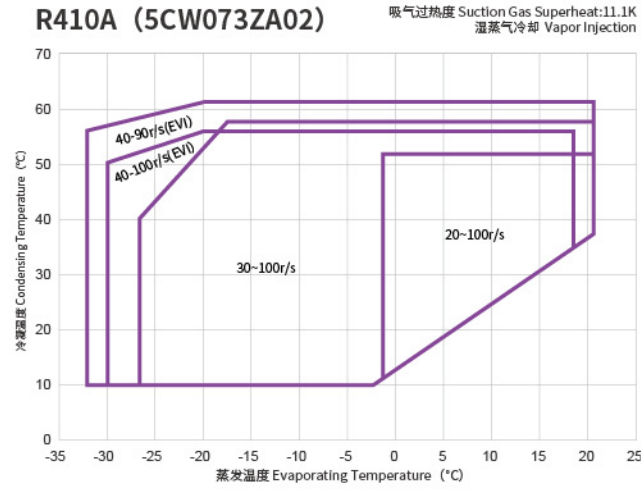
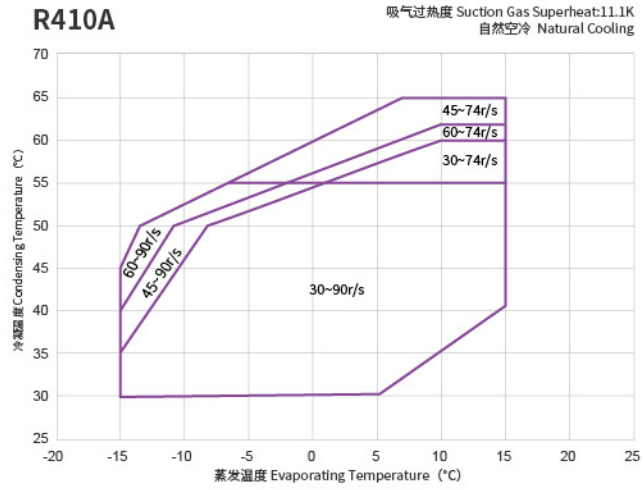
R407C		AC Inverter 380V				AC Inverter 220V	
压缩机型号 Compressor Model		C-SWS225H00A	C-SWS225H00C C-SWS225H00F	C-SWS225H00G	T-SWS110H00A	C-SWS180H01C T-SWS056H01A	C-SWS225H01C
额定功率 Output	HP	7	7	7	10	5	7
排气量 Displacement	cm ³ /rev	74	74	74	110	56	74
转速范围 Revolution Range	Hz	30-100	30-100	30-100	30-90	30-100	30-100
额定性能 Rated Performance	制冷量 Capacity	KW	16.5	16.5	16.5	25.2	12.9
	输入功率 Input Power	KW	5.4	5.4	5.4	7.75	4.25
	电流 Current	A	9.21	9.21	9.21	13.5	13
	COP	W/W	3.03	3.03	3.03	3.25	3.19
冷冻机油 Oil	种类 Category	FV68S					
	充注量 Charge	ml	1600		1900	1600	
电动机 Motor	种类 Category	三相交流变频电机 3PH Induction Inverter Motor					
	绝缘等级 Insulation Class	—	E	E	F	F	E
净重 Net Weight(Include Oil)	kg	45	45	45	47.5	45	45
防护等级 Ingress Protection	—	—	IP67	IP67	IP67	IP67	IP67
吸气接管 Discharge Accepting	mm(φ0D)	22.2 (7/8)	22.2 (7/8)	22.2 (7/8)	25.4 (1)	22.2 (7/8)	22.2 (7/8)
排气接管 Suction Accepting	mm(φ0D)	12.7(1/2)	12.7(1/2)	12.7(1/2)	15.9 (5/8)	12.7(1/2)	12.7(1/2)
备注 Remark	—	—	—	—	—	—	—

注:适用于R134a/R513A制冷剂 For R134a/R513A Refrigerant

测试条件:冷凝温度54.4°C, 蒸发温度7.2°C, 过冷度8.3K, 过热度11.1K
Rating Condition: Condensing Temperature 54.4°C, Evaporating Temperature 7.2°C, Sub Cooling 8.3K, Superheat 11.1K

测试条件:冷凝温度54.4°C, 蒸发温度7.2°C, 过冷度8.3K, 过热度11.1K
Rating Condition: Condensing Temperature 54.4°C, Evaporating Temperature 7.2°C, Sub Cooling 8.3K, Superheat 11.1K

运行范围
Operation Envelope



不同机型的运行范围稍有区别, 详见规格书。
The operation envelope is different from models, please refer to the specification for details.

R410A机型使用标准·使用极限
Application Standard & Limit(R410A Standard Model)

为正确使用卧式涡旋压缩机, 对其使用标准、使用极限作如下规定:
使用标准值:适用于常用条件下(日本JIS B8616与JIS B8616相关标准、过载、低温条件下的商品运转条件)的运转。
不包含过渡条件下(启动时、除霜时等)的短时间运转范围。

The following requirement apply to Horizontal type Hermetic Scroll Compressors:Applicable to ordinary conditions in Japan JIS B8616 or equivalent condition,such as standard rating conditions, maximum operating conditions, low temp erature conditions,etc. not Applicable to transitional brief periods, such as start-up and beginning of defrost mode.

序号 No.	项目 Item	使用标准值 Standard	备注 Note
1	制冷剂 Refrigerant	R410A	组成 Composition
			R32/R125=50/50 wt (%)
2	蒸发温度范围 Evaporating Temp.	参照压缩机运行范围 Refer to Operation Envelope	
3	冷凝温度范围 Condensing Temp.	参照压缩机运行范围 Refer to Operation Envelope	
4	电动机绕组温度 Winding Temp.	115°C Max.	
5	压缩机外壳底部温度 Shell Bottom Temp.	100°C Max.	
6	排气温度 Discharge Gas Temp.	115°C Max.	上盖位置 On the top of compressor
7	吸气温度 Suction Gas Temp.	吸气过热度在5K以上 Superheat:5K Min	压缩机入口30cm以内位置的吸气管温度 Within 30cm of the suction fitting
8	启停周期 On/Off Period	运转时间: 至少应使油回到指定油位所需的时间 ON Period:Until the oil level returns to the center of the lower bearing.	一个循环周期为10分钟以上, 停机3分钟, 以此为基准, 启停周期不得超过20万个周期 For at least 7 minutes -on/3 minutes-off is recommendable.200,000 cycle Max.
		停止时间: 至少应使高低压达到平衡所需的时间 OFF Period:Until balance of high and low pressure is obtained.	
9	制冷剂注入量 Refrigerant Charge	油/制冷剂重量比推荐为0.35以上 Oil、Refrigerant(wt.)≥0.35	油比重: 0.94 Specific gravity Oil:0.94
10	压缩机内最低油面 Minimum Oil Level	保持在吸油管下端28mm以上 Keep oil level above 28mm of the bottom of oil suction pipe	
11	异常升压/降压 Abnormal Pressure Rise/Drop	压力上升: 4.15MPa(G)以下 Pressure Rise: 4.15MPa(G)Max.	高压开关设定值 By high pressure switch
		压力下降: 0.15MPa(G)以上 Pressure Drop: 0.15MPa(G)Max.	低压开关设定值 By low pressure switch
12	水份 System Moisture Level	200ppm以下 200ppm Max.	
13	不凝性气体 System Uncondensable Gas Level	1%(容积比)以下 1 Vol.% Max.	抽真空24小时以后绝对压力应在1.01kPa以下 24hrs. after vacuuming:1.01kPa Max.
		残留氧气要求在0.1%(容积比)以下 Residual Oxygen 0.1 Vol.% Max.	
14	倾斜角度 Tilt	10°以内 10°Max.	
15	电动机峰值电流 (120°C) (电机退磁保护) Peak current(120°C) (Demagnetization protection)	42cc、67cc: 47[A0-peak] Max.	即使瞬时超过也不可 Even in an instant, it is not allowed
		73cc、81cc: 73[A0-peak] Max.	

■ 超出以上极限范围的运转必须得到我公司的认可。Operation beyond the above limits must be approved by our company.

(G): 表压 Gauge Pressure

R407C机型使用标准・使用极限
Application Standard & Limit(R407C Standard Model)

为正确使用卧式涡旋压缩机，对其使用标准、使用极限作如下规定：

使用标准值:适用于常用条件下(日本JIS B8616与JIS B8616相关标准、过载、低温条件下的商品运转条件)的运转。

不包含过渡条件下(启动时、除霜时等)的短时间运转范围。

The following requirement apply to Horizontal type Hermetic Scroll Compressors:Applicable to ordinary conditions in Japan JIS B8616 or equivalent condition,such as standard rating conditions, maximum operating conditions, low temp erature conditions,etc. not Applicable to transitional brief periods, such as start-up and beginning of defrast mode.

序号 No.	项目 Item	使用标准值 Standard	备注 Note
1	制冷剂 Refrigerant	R407C	
2	蒸发温度范围 Evaporating Temp.	参照压缩机运行范围 Refer to Operation Envelope	
3	冷凝温度范围 Condensing Temp.	参照压缩机运行范围 Refer to Operation Envelope	
4	电动机绕组温度 Winding Temp.	115°C Max.	
5	压缩机外壳底部温度 Shell Bottom Temp.	100°C Max.	
6	排气温度 Discharge Gas Temp.	115°C Max.	上盖位置 On the top of compressor
7	吸气温度 Suction Gas Temp.	吸气过热度在5K以上 Superheat:5K Min	压缩机入口30cm以内位置的吸气管温度 Within 30cm of the suction fitting
8	启停周期 On/Off Period	运转时间: 至少应使油回到指定油位所需的时间 ON Period:Until the oil level returns to the center of the lower bearing.	一个循环周期为10分钟以上, 停机3分钟, 以此为基准, 启停周期不得超过20万个周期 For at least 7 minutes -on/3 minutes-off is recommendable.200,000 cycle Max.
		停止时间: 至少应使高低压达到平衡所需的时间 OFF Period:Until balance of high and low pressure is obtained.	
9	制冷剂注入量 Refrigerant Charge	油/制冷剂重量比推荐为0.35以上 Oil、Refrigerant(wt.)≥0.35	油比重: 0.94 Specific gravity Oil:0.94
10	压缩机内最低油面 Minimum Oil Level	保持在吸油管下端28mm以上 Keep oil level above 28mm of the bottom of oil suction pipe	
11	异常升压/降压 Abnormal Pressure Rise/Drop	压力上升: 3.2MPa(G)以下 Pressure Rise: 3.2MPa(G)Max.	高压开关设定值 By high pressure switch
		压力下降: 0.05MPa(G)以上 Pressure Drop: 0.05MPa(G)Max.	低压开关设定值 By low pressure switch
12	水份 System Moisture Level	200ppm以下 200ppm Max.	
13	不凝性气体 System Uncondensable Gas Level	1%(容积比)以下 1 Vol.% Max.	抽真空24小时以后绝对压力应在1.01kPa以下 24hrs. after vacuuming:1.01kPa Max.
		残留氧气要求在0.1%(容积比)以下 Residual Oxygen 0.1 Vol.% Max.	
14	倾斜角度 Tilt	10 °以内 10°Max.	

■ 超出以上极限范围的运转必须得到我公司的认可。Operation beyond the above limits must be approved by our company.

(G): 表压 Gauge Pressure

R513A机型使用标准・使用极限
Application Standard & Limit(R513A Standard Model)

为正确使用卧式涡旋压缩机，对其使用标准、使用极限作如下规定：

使用标准值:适用于常用条件下(日本JIS B8616与JIS B8616相关标准、过载、低温条件下的商品运转条件)的运转。

不包含过渡条件下(启动时、除霜时等)的短时间运转范围。

The following requirement apply to Horizontal type Hermetic Scroll Compressors:Applicable to ordinary conditions in Japan JIS B8616 or equivalent condition,such as standard rating conditions, maximum operating conditions, low temp erature conditions,etc. not Applicable to transitional brief periods, such as start-up and beginning of defrast mode.

序号 No.	项目 Item	使用标准值 Standard	备注 Note
1	制冷剂 Refrigerant	R513A	
2	蒸发温度范围 Evaporating Temp.	参照压缩机运行范围 Refer to Operation Envelope	
3	冷凝温度范围 Condensing Temp.	参照压缩机运行范围 Refer to Operation Envelope	
4	电动机绕组温度 Winding Temp.	100°C Max.	
5	压缩机外壳底部温度 Shell Bottom Temp.	85°C Max.	
6	排气温度 Discharge Gas Temp.	120°C Max.	上盖位置 On the top of compressor
7	吸气温度 Suction Gas Temp.	吸气过热度在5K以上 Superheat:5K Min	压缩机入口30cm以内位置的吸气管温度 Within 30cm of the suction fitting
8	启停周期 On/Off Period	运转时间: 至少应使油回到指定油位所需的时间 ON Period:Until the oil level returns to the center of the lower bearing.	一个循环周期为10分钟以上, 停机3分钟, 以此为基准, 启停周期不得超过20万个周期 For at least 7 minutes -on/3 minutes-off is recommendable.200,000 cycle Max.
		停止时间: 至少应使高低压达到平衡所需的时间 OFF Period:Until balance of high and low pressure is obtained.	
9	制冷剂注入量 Refrigerant Charge	油/制冷剂重量比推荐为0.35以上 Oil、Refrigerant(wt.)≥0.35	油比重: 0.94 Specific gravity Oil:0.94
10	压缩机内最低油面 Minimum Oil Level	保持在吸油管下端28mm以上 Keep oil level above 28mm of the bottom of oil suction pipe	
11	异常升压/降压 Abnormal Pressure Rise/Drop	压力上升: 2.2MPa(G)以下 Pressure Rise: 2.2MPa(G)Max.	高压开关设定值 By high pressure switch
		压力下降: 0.02MPa(G)以上 Pressure Drop: 0.02MPa(G)Max.	低压开关设定值 By low pressure switch
12	水份 System Moisture Level	200ppm以下 200ppm Max.	
13	不凝性气体 System Uncondensable Gas Level	1%(容积比)以下 1 Vol.% Max.	抽真空24小时以后绝对压力应在1.01kPa以下 24hrs. after vacuuming:1.01kPa Max.
		残留氧气要求在0.1%(容积比)以下 Residual Oxygen 0.1 Vol.% Max.	
14	倾斜角度 Tilt	10 °以内 10°Max.	

■ 超出以上极限范围的运转必须得到我公司的认可。Operation beyond the above limits must be approved by our company.

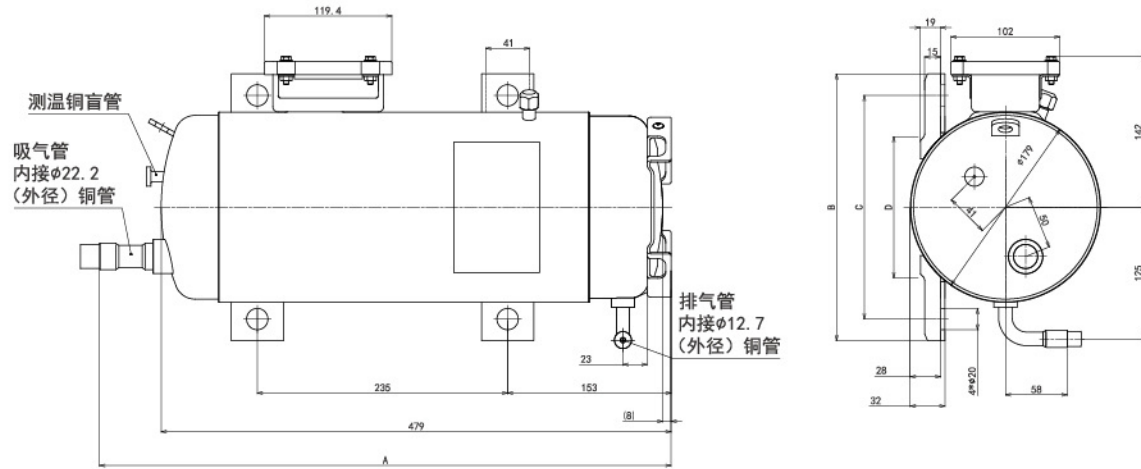
(G): 表压 Gauge Pressure

外观图

Outline Graph

代表机型(常规)
Standard Model

机型 Model	A	B	C	D
5CW042ZA11	532	230.5	190.5	148.5
4CW056MA01	532	230.5	190.5	148.5
5CW067ZA01	537	230.5	190.5	148.5
4CW074MA01	537	230.5	190.5	148.5
4CW074MA01	537	230.5	190.5	148.5
4CW074MA11	537	250.4	210	133

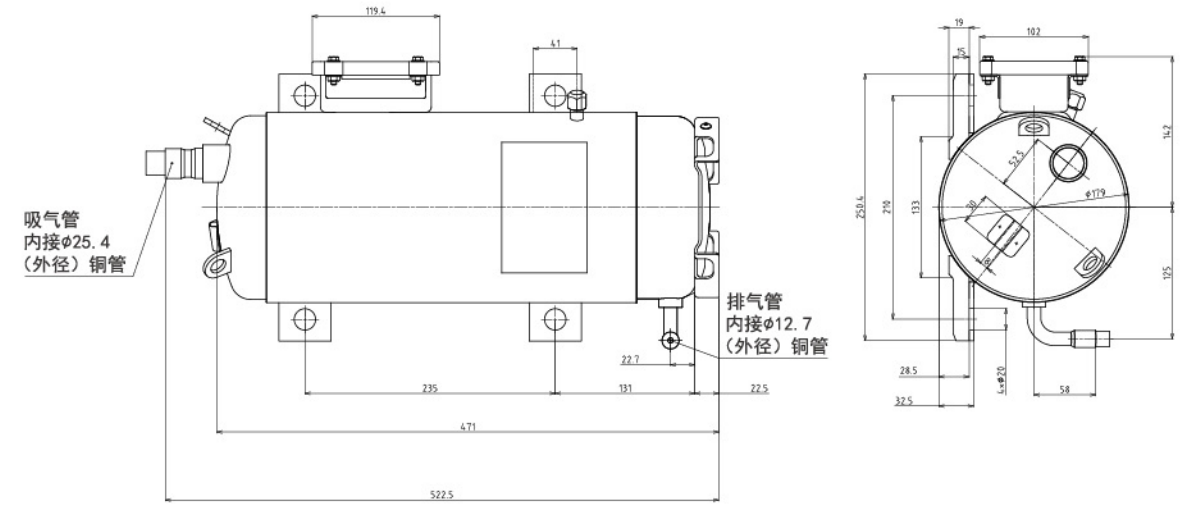


外观图

Outline Graph

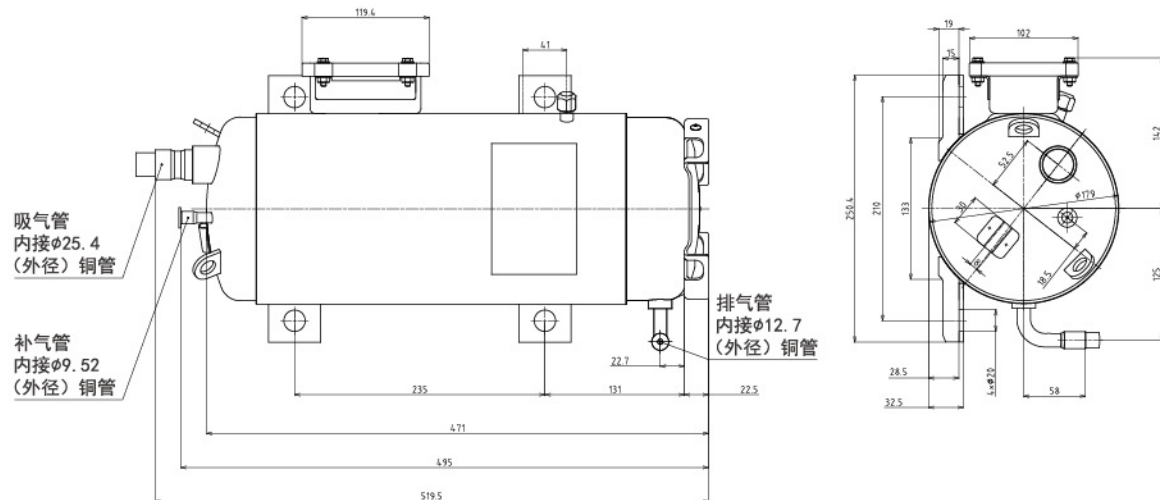
代表机型(常规)
Standard Model

机型 Model
5CW081ZA01



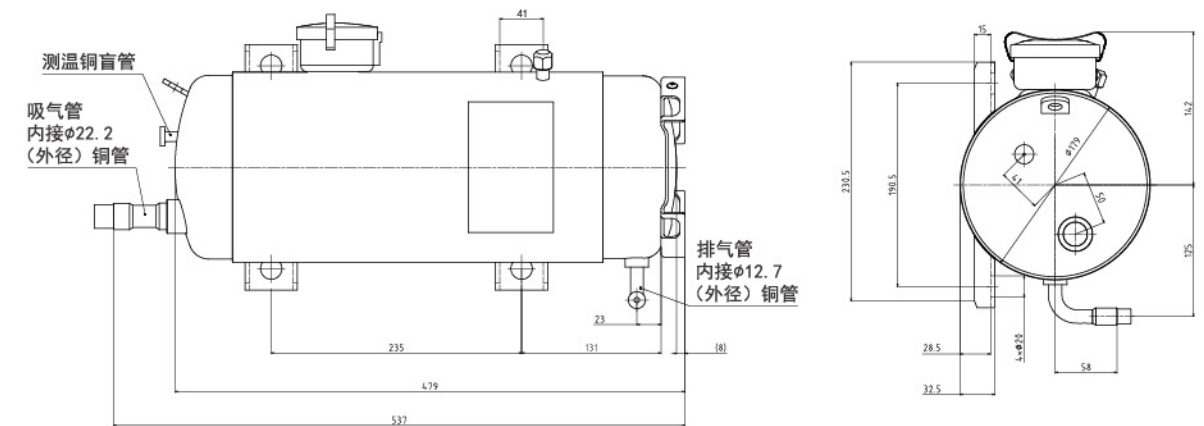
代表机型(补气)
Vapor Injection Model

机型 Model
5CW073ZA02



代表机型(常规)
Standard Model

机型 Model
4CW074MA21

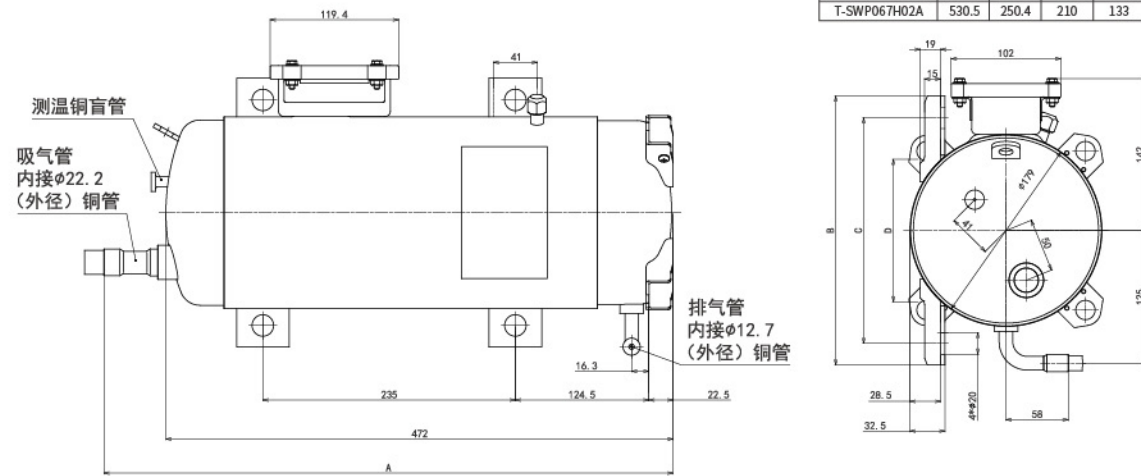


外观图

Outline Graph

代表机型(常规)
Standard Model

机型 Model	A	B	C	D
C-SWS225H00C	530.5	230.5	190.5	148.5
C-SWS180H01C	526	230.5	190.5	148.5
5CW042ZAD1	526	230.5	190.5	148.5
C-SWS225H00F	530.5	250.4	210	133
C-SWS225H00G	530.5	250.4	210	133
T-SWS056H01A	530.5	250.4	210	133
T-SWY074H00A	530.5	250.4	210	133
T-SWP067H02A	530.5	250.4	210	133

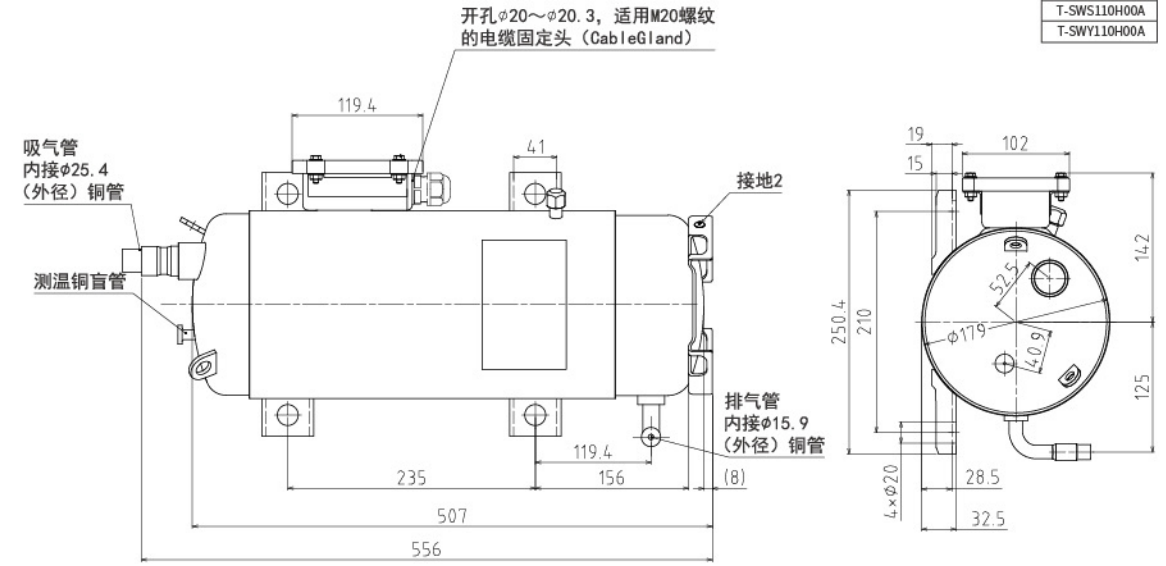


外观图

Outline Graph

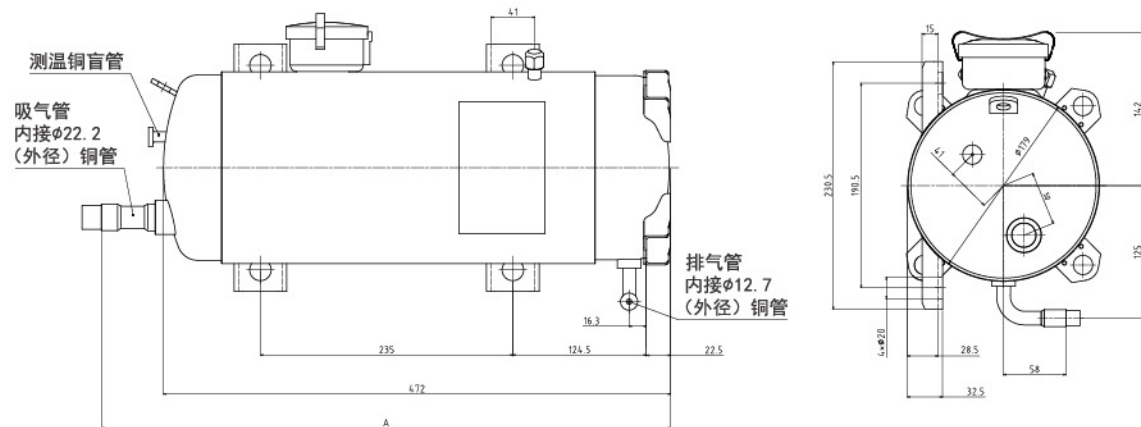
代表机型(常规)
Standard Model

机型 Model
4CW110NA01
T-SWS110H00A
T-SWY110H00A



代表机型(常规)
Standard Model

机型 Model	A
C-SWS225H00A	530.5



代表机型(常规)
Standard Model

机型 Model
5CX060ZA01

