ANKANG

浙江安康制冷设备有限公司

Zhejiang Ankang Refrigeration Equipment Co.,Lid.

活塞式制冷压缩机

Piston Compressor

QR3-58A

产品规格书

Product Specification

修订记录 Revision Record			
版本 Revision	修订人 Reviser	描述 Description	日期 Date
A		发布	25/8/1

审核人 Checked By 日期 Date

批准人 Approved By 日期 Date

1 规格参数 Specification

1.1 基本参数

压缩机型号 Compressor Model	QR3-58A
压缩机类别 Compressor Type	活塞式压缩机 Piston Compressor
应用 Application	空调 冷冻冷藏 Medium/high back pressure
制冷剂 Refrigerant	R404A
排气量 Displacement(cc/Rev)	58.2
重量润滑油类别 Oil Type	POE
粘度（sCt,40℃） Viscosity	32
加油量 Oil Charge （mL）	1500
额定转速 Rated Speed （r/min）	2900
IP 等级 IP Class	IP21
压缩机颜色 Compressor Colour	黑色 Blaclk
吸气管内径（ID OF SUCTION TUBE）	Ø 19.1±0.2
排气管内径（ID OF DISCHARGE TUBE）	Ø 12.7±0.2
工艺管内径（ID OF PROCESS TUBE）	Ø 7±0.2

1.2 性能参数 Performance Specifications

制冷量 Cooling Capacity (W)	7967
制冷量 Cooling Capacity (BTU)	27170
输入功率 input Power (W)	3080
制冷能效比 COP (W/W)	2.6
制冷能效比 EER （BTU/WH）	8.8
运行电流 Rated run Current （A）	5.0
噪声（声功率级） Sound Power (dBA)	≤ 65

测试工况 Test Condition

	蒸发温度 ℃ Evaporating Temp.	冷凝温度 ℃ Condensing Temp.	吸气温度 ℃ Suction Temp.	液体过冷度 K Liquid Subcooling	环境温度 ℃ Ambient Temp.
中、高回压、空调 M/HPB-AC	+7.2	+54.5	+35	8.3	+35
低回压 LBP	-23.3	+54.5	+32	22.2	+32

1.3 电气特性 Electrical Characteristics

电机类型 Motor type	3PH
电机极数 Motor Poles	2
电机电源 Power Supply	380--400V 3~ 50Hz 460V 3~ 60Hz
启动电容 Starting capacitor (μF/V)	/
运行电容 Running capacitor (μF/V)	/
启动继电器 Potential Relay	/
绕组电阻 Winding Resistance (Ω 25℃)	4.0
堵转电流 Locked Rotor Current (A)	39
绝缘等级 Insulation Class	F
电气强度 Dielectric Strength	2000VAC/1S/5mA

1.4 安全运行限制 Safety Running Limitation

气密性压力测试 (Mpa) Tightness Test Pressure	2.2
高压侧最大运行压力 (Mpa) High Side Max Running pressure	3.2
低压侧最大运行压力 (Mpa) Low side Max Running Pressure	2.0
排气温度上限 (℃) Discharge Temp.Limit	≤125

2 压缩机保护 Compressor Protection

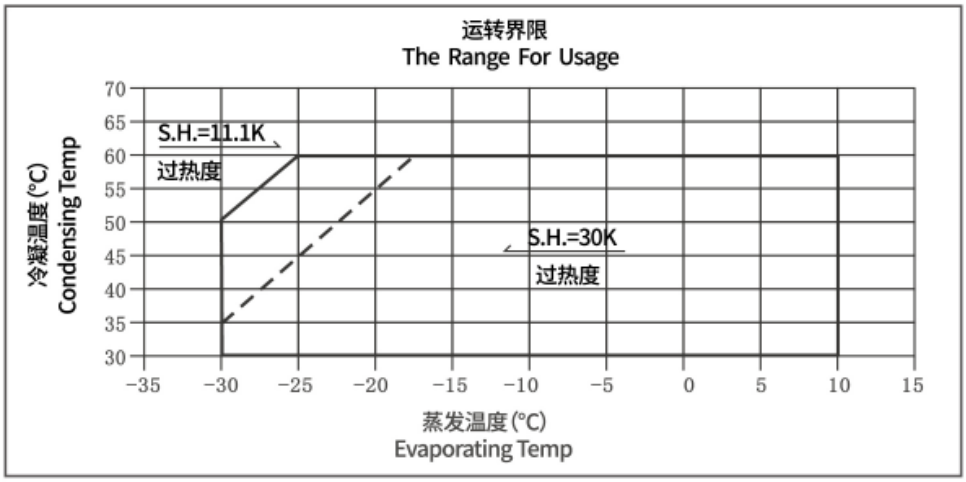
2.1 电机保护 motor protector

内置式保护器 Internal Protector For Motor Protection

2.2 压力保护 High Pressure Relieve

内置压力保护 Internal Pressure Protection

3 运行范围 Running Envelope



4 性能参数

Performance date **type** QR3-58A

Performance date at 50Hz

Refrigerating capacity (watts)

evaporating temperature ℃	Condensing temperature ℃						
	30	35	40	45	50	55	60
-20	3680	3455					
-15	4910	4663	4155	3632			
-10	6339	6056	5475	4876	4572	3956	
-5	8002	7671	6991	6291	5935	5217	4498
0	9935	9544	8741	7916	7497	6652	5809
5	12176	11713	10764	9791	9298	8305	7318
10	14764	14218	13103	11963	11386	10226	9081

Motor input (watts)

evaporating temperature ℃	Condensing temperature ℃						
	30	35	40	45	50	55	60
-20	1670	1676					
-15	1893	1916	1945	1952			
-10	2100	2138	2200	2243	2257	2271	
-5	2295	2349	2441	2516	2548	2599	2634
0	2486	2552	2672	2778	2826	2911	2981
5	2678	2755	2901	3035	3097	3213	3316
10	2877	2965	3133	3292	3368	3512	3645

Return gas **35** ℃
Subcooling **8.3** K

5 压缩机附件 Accessories

序号 Serial number	名称 Name	数量 Quantity	备注 Notes
1	压缩机 Compressor	1	
2	减震垫 Grommet	4	
3	减震套管 Sleeve	4	
4	接口阀 VALVE	2	根据需要配给 Needed

6.产品的包装、运输和贮存 PACKING，TRANSPORTATION AND STORAGE

6..1 压缩机包装应能避免运输中受潮和损伤，包装箱上的文字标记清晰整齐。

The packing should be moisture-resistant, and prevent the compressor in it being damaged. The letters and marks on the package should be clearly painted.

6.2 压缩机运输和搬运过程中，应保持平稳、轻放、倾斜角不得大于 45°。

Don’t incline the compressor more than 45°.

6.3 压缩机应贮存在室温、无腐蚀性气体存在的环境中。

The compressor should be kept in the place with normal room temperature, and should be kept out of corrosive atmosphere.

7 注意事项 Attention

7.1 压缩机不得被当作系统抽真空的工具使用，确保系统制冷剂充注完成后才能启动；

It is not allowed to perform vacuum in the system by using the refrigeration compressor. The compressor can start only after the refrigerant is charged;

7.2 不能直接从压缩机的吸、排气管等接口及附近充注制冷剂，尽量选择从气分、储液罐等远离压缩机接口的位置充注制冷剂，防止液态制冷剂迁移进入压缩机吸气腔内，造成带液启动；

It is not allowed to charge the refrigerant from the suction or discharge line closes to the compressor. The charge port should be arranged on the connection pipe of suction line accumulator or receiver, which is far away from the compressor, to avoid the liquid refrigerant flooding back;

7.3 制冷剂充注量参照当地法律法规；

The refrigerant charge amount complies with local regulations;

7.4 不得真空运行、空转或长时间逆转；

It is not allowed to run compressor in vacuum, not allowed to run compressor without refrigerant, and not allowed to run compressor in the reversed direction for long duration;

7.5 不得使用压缩机标明的制冷剂之外的其他气体或物质；

The compressor can only work with approved refrigerants;

7.6 不得超出压缩机标明的运行范围运行，应尽量避免吸气带液启动，正常运行时应保证吸气侧是过热气体；

The compressor is not allowed to work outside its envelope. System design should guarantee the suction line superheat and avoid the liquid refrigerant flooding back;

7.7 压缩机吸气、排气等接口的胶塞打开后，需在 15 分钟内完成焊接和组装工作；

When the suction and discharge plugs are removed, the assembly and brazing should be done in 15 minutes;

7.8 压缩机不得频繁启停，以免压缩机内润滑油随制冷剂被大量地排出压缩机；连续运行需 10 分钟以上，应使油回到最低油位以上（最低油位：50%油充注量的位置）；停机再次启动间隔 3 分钟以上，应使高低压达到平衡；

The frequently start/stop compressor should be avoided. The suggested minimum continuous running time is 10 minutes to guarantee the safe oil level (>=50% initial charge volume), the suggested minimum interval between start and stop is 3 minutes.

7.9 低温工况的应用，由于大量制冷剂可能会迁移到压缩机腔体内造成带液启动，建议加装曲轴箱加热装置，曲轴箱加热装置的功率推荐 45W；

A 45W crankcase heater is recommended to avoid the refrigerant migration during the off circle and flooded start. The crankcase heater should be powered on 12 hours earlier before the first start or restart after long duration off;

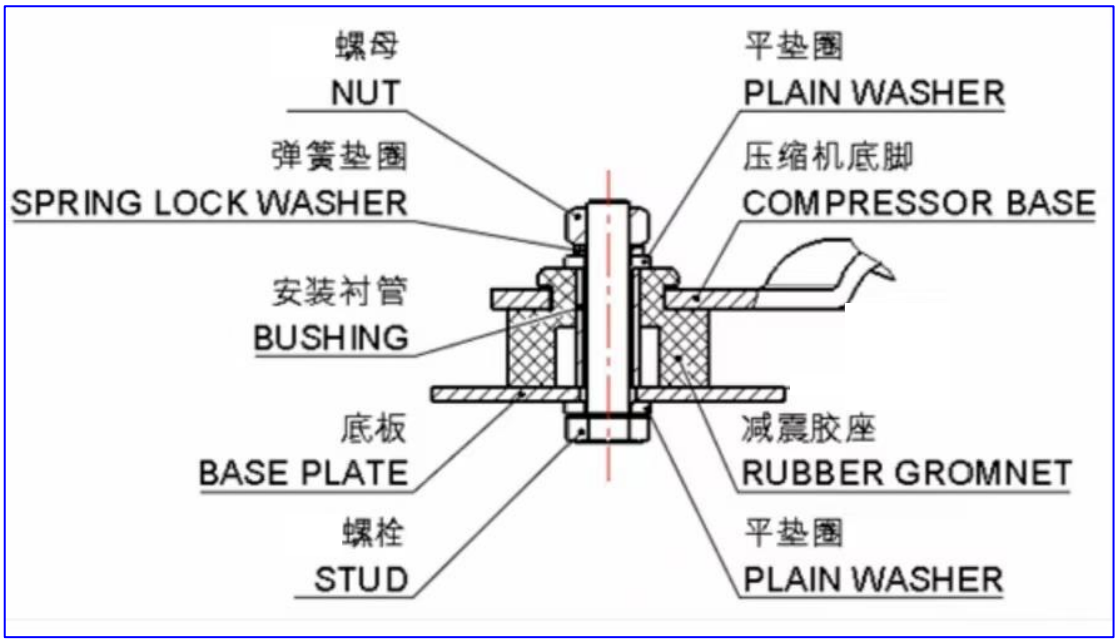
7.10 系统应配置必要的压力、温度、过流、缺相等保护及回油装置等；

The system should be equipped with necessary protection devices for pressure, temperature, oil return, overcurrent and phase fault, etc.

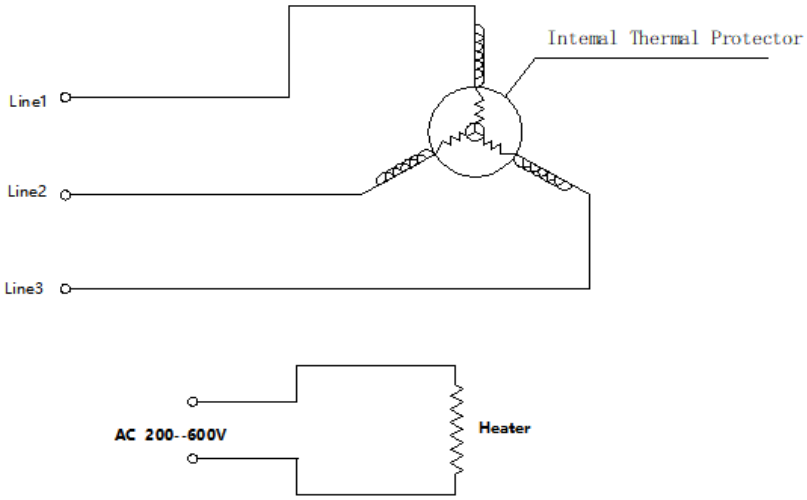
7.11 压缩机搬运、安装过程中不得平放、倒置，运输及运行过程中最大倾斜角度 15°；

The compressor is not allowed to lay down or place upside down during transportation, stock and installation. The maximum inclination is 15° when the compressor is running.

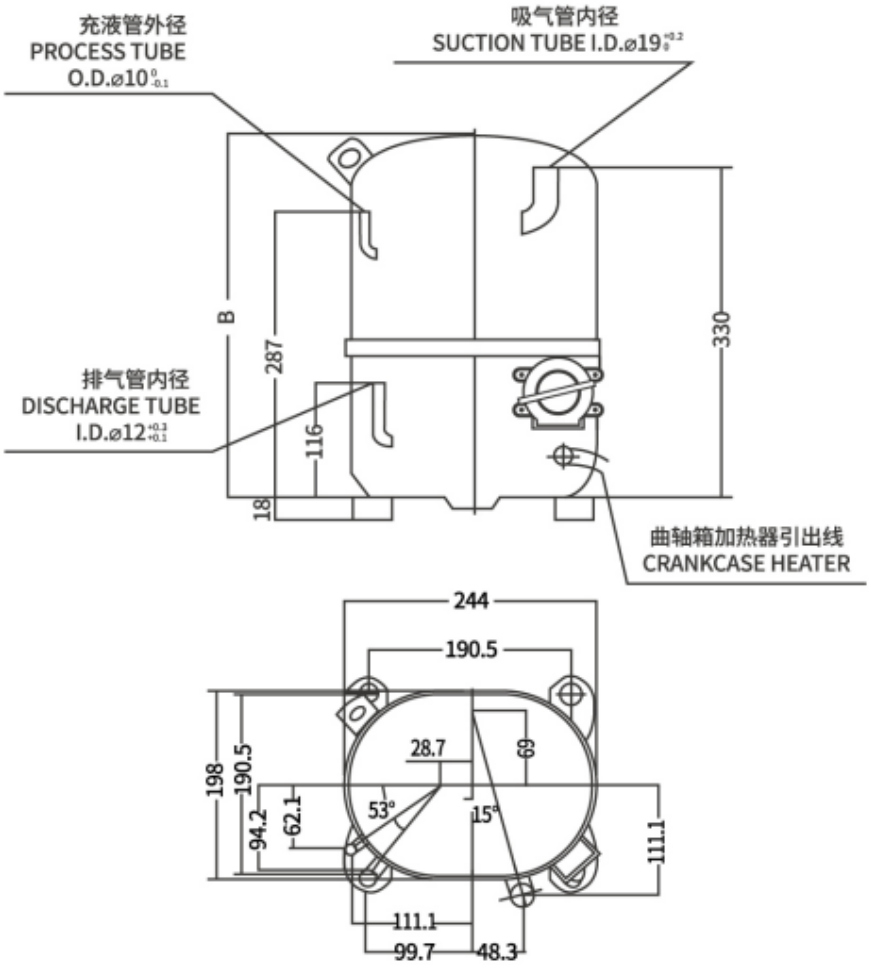
8 安装图 Mount Diagram



9 接线图　Wiring Diagram



10 活塞式压缩机外形尺寸图　PISTON COMPRESSOR Dimensional Drawing



MODEL	B　(IN/mm)
QR41A (QR3-41A)	14.4/365
QR44A(QR3-44A)	
QR52A(QR3-52A)	14.4/365
QL52A(QL3-52A)	
QR62A(QR3-62A)	14.4/365
QL62A(QL3-62A)	
QR3-74A	14.4/365
QL3-74A	