ANKANG

Zhejiang Ankang Refrigeration Equipment Co.,Lid.

XINGFA

PISTON COMPRESSOR

QR3-90

PRODUCT SPECIFICATION

Revision Record

Revision	Reviser	Description	Date
A		Released	25/8/1
Checked By		**Date**	
Approved By		**Date**	

1 Specification

1.1 Basic Parameters

Compressor Model	QR3-90
Compressor Type	Piston Compressor
Application	Medium/high back pressure
Refrigerant	R404A
Displacement (cc/Rev)	90.2
Oil Type	POE
Viscosity (sCt, 40°C)	32
Oil Charge (mL)	2000
Rated Speed (r/min)	2900
IP Class	IP21
Compressor Colour	Blaclk
ID OF SUCTION TUBE	1 3/4''-12 UNF
ID OF DISCHARGE TUBE	1 1/4''-12 UNF
ID OF PROCESS TUBE	Ø 7 ±0.2

1.2 Performance Specifications

Cooling Capacity (W)	11300
Cooling Capacity (BTU)	38530
Input Power (W)	4600
COP (W/W)	2.6
EER (BTU/WH)	8.4
Rated Run Current (A)	7.3
Sound Power (dBA)	≤ 65

Test Condition

	Evaporating Temp. (°C)	Condensing Temp. (°C)	Suction Temp. (°C)	Liquid Subcooling (K)	Ambient Temp. (°C)
M/HPB-AC	+7.2	+54.5	+35	8.3	+35
LBP	-23.3	+54.5	+32	22.2	+32

1.3 Electrical Characteristics

Motor Type	3PH
Motor Poles	2
Power Supply	380--400V 3~ 50Hz 460v 3~ 60Hz
Starting Capacitor (μF/V)	/
Running Capacitor (μF/V)	/
Potential Relay	/
Winding Resistance (Ω, 25°C)	3.6
Locked Rotor Current (A)	55
Insulation Class	F
Dielectric Strength	2000VAC/1S/5mA

1.4 Safety Running Limitation

Tightness Test Pressure (MPa)	2.2
High Side Max Running Pressure (MPa)	3.2
Low Side Max Running Pressure (MPa)	2.0
Discharge Temp. Limit (°C)	≤125

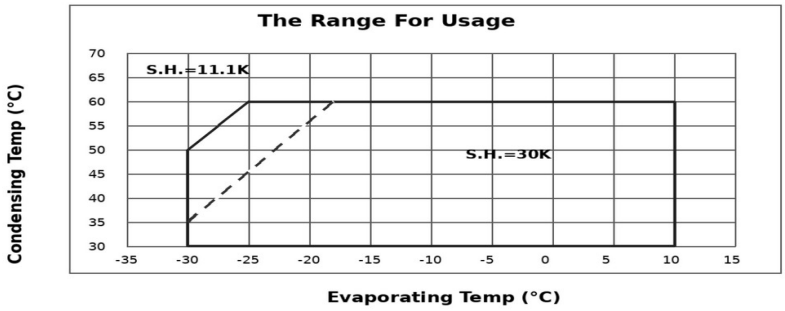
2 Compressor Protection

2.1 Motor Protector	Internal Protector For Motor Protection

2.2 High Pressure Relieve	Internal Pressure Protection

3 Running Envelope

QR MODELS Operating Conditions R404A



4 Performance Data

Type: QR3-90 | Performance data at 50Hz

Refrigerating capacity (watts)

Evaporating temp. (°C)	30	35	40	45	50	55	60
-20	4786	4439					
-15	6689	6277	5455	4645			
-10	9004	8506	7510	6521	6033	5078	
-5	11784	11181	9970	8763	8164	6987	5852
0	15088	14359	12895	11431	10703	9266	7874
5	18971	18099	16346	14590	13715	11985	10305
10	23497	22465	20390	18310	17274	15223	13233

Motor input (watts)

Evaporating temp. (°C)	30	35	40	45	50	55	60
-20	2162	2157					
-15	2521	2541	2558	2537			
-10	2849	2892	2959	2996	3001	2978	
-5	3151	3214	3327	3416	3449	3489	3486
0	3434	3515	3669	3804	3863	3959	4020
5	3705	3801	3990	4167	4249	4396	4515
10	3970	4079	4296	4510	4613	4806	4977

Return gas 35 ℃ | Subcooling 8.3 K

5 Accessories

Serial number	Name	Quantity	Notes
1	Compressor	1	
2	Grommet	4	
3	Sleeve	4	
4	VALVE	2	Needed

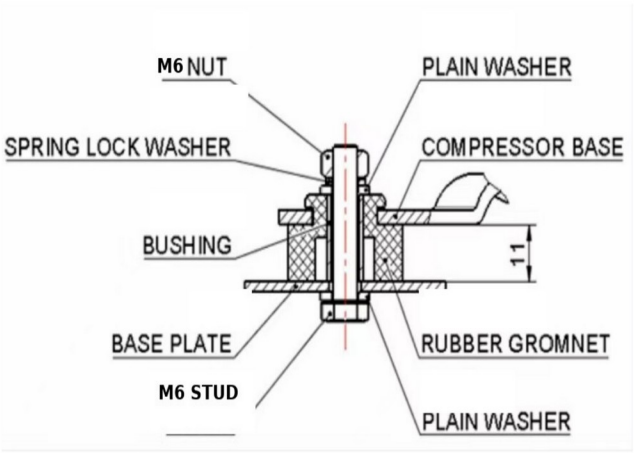
6 Packing, Transportation and Storage

6.1	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	Don’t incline the compressor more than 45°.
6.3	The compressor should be kept in the place with normal room temperature, and should be kept out of corrosive atmosphere.

7 Attention

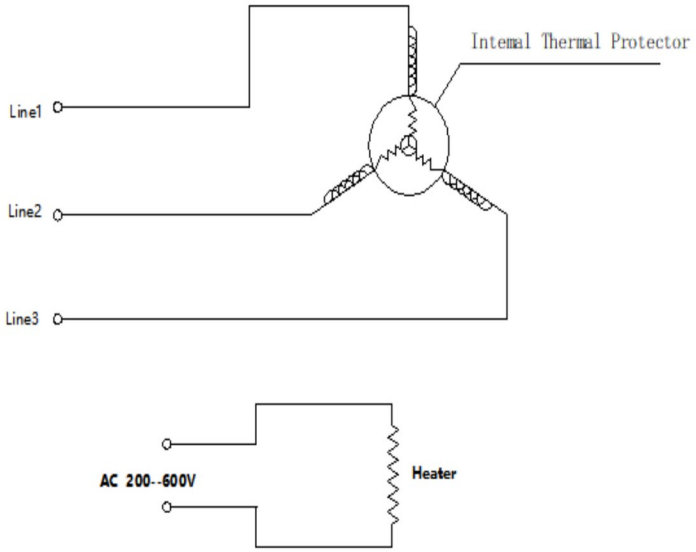
7.1	It is not allowed to perform vacuum in the system by using the refrigeration compressor. The compressor can start only after the refrigerant is charged;
7.2	It is not allowed to charge the refrigerant from the suction or discharge line closes to the compressor. The charge port should be arranged 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	The refrigerant charge amount complies with local regulations;
7.4	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	The compressor can only work with approved refrigerants;
7.6	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	When the suction and discharge plugs are removed, the assembly and brazing should be done in 15 minutes;
7.8	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	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	The system should be equipped with necessary protection devices for pressure, temperature, oil return, overcurrent and phase fault, etc.
7.11	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 Mount Diagram

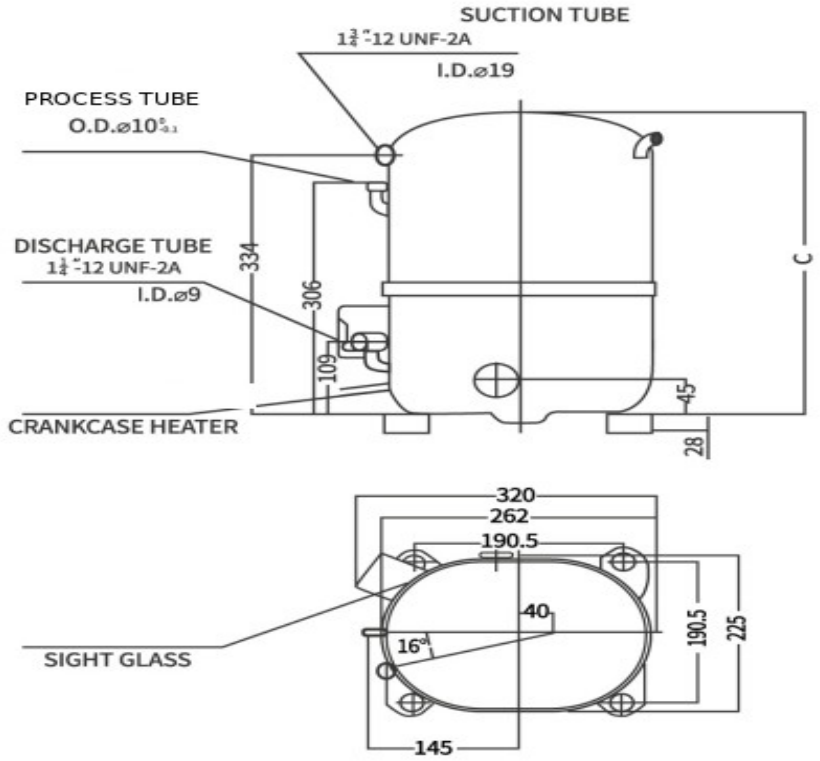


MOUNTING TYPE: (1)

9 Wiring Diagram



10 Dimensional Drawing



MODEL	C (IN/mm)
QR3-90	15.7/398
QR3-100	15.7/398
QR3-112	15.7/398
QL3-112	15.7/398
QR3-124	15.7/398
QL3-124	15.7/398
QR3-134	15.7/398
QL3-134	15.7/398