



*** YM132E7G 100Specification**

Specification		Notes
Standard Model	YM132E7G-100	Basic Model
Extended Model		
Extended Model		
Extended Model		
Extended Model		
Extended Model		

Revision Record			
Version	Reviser	Description	Date

Checked by

Date

Approved by

Date

1 Specification

1.1 Basic Specification

Model	YM132E7G-100(Including Extended Model)
Type	Low Side Shell Design Scroll Compressor
Application	Refrigeration
Refrigerant	R404A
Displacement(cc/rev)	123
Cooling Capacity(W) ^(a)	15729
Input Power(W) ^(a)	7659
RLA(A) ^(a)	25.3
Cooling COP(W/W) ^(a)	2.05
Power Supply	208-230V/3~/60Hz
Min. Operating Voltage(V)	187
Max. Operating Voltage(V)	253
LRA(A)	241
Max. Operating Current(A) ^(b)	38.46
Rated Speed(r/min) ^(a)	3500
Compressor Weight(With Oil)(kg)	53
Oil Type	POE
Oil Kinematic Viscosity(cSt, 40°C)	32
Oil Density(kg/L, 20°C)	0.977
Primary Charge(L)	2.7
Recharge(L)	2.55
Oil Circulation Rate ^(a)	≤1%
Rated Sound(Sound Power)(dBA) ^(c)	78
Max. Operating Sound in Running Envelope (Sound Power)(dBA)	83
Vibration Displacement Peak-Peak(mm) ^(d)	≤0.12
Moisture(mg)	≤1100
Impurity(mg)	≤140
LVS(V) ^(e)	177
MOV (V) ^(f)	187
Start Capacitor(μF/V)	/
Start Relay	/
Run Capacitor(μF/V)	/
IP Class of Terminal Box	IP54
Compressor Color	Black

1.2 Motor Parameters

Motor Type	Three-phase asynchronous motor
Motor Pole	2
Motor Insulation Class(°C)	130(B Class)
Line to Line Resistance UV(CS)(Ω, 25°C)	0.25(±10%)
Line to Line Resistance UW(CR)(Ω, 25°C)	0.25(±10%)
Line to Line Resistance VW(SR)(Ω, 25°C)	0.25(±10%)
Dielectric Strength	2000VAC / 1s / 50Hz, Leakage Current≤5mA
Insulation Resistance(MΩ)	≥20
Ground Resistance(Ω)	≤0.1

1.3 Safety Operating Limit

Tightness Test Pressure(MPa)	3.8-4.0
Max. Operating Pressure	
High Side(MPa)	H3.2/L2.0
Low Side(MPa)	
Compressor FreeSpace(Without Oil)	
High Side(L)	H0.9/L6.5
Low Side(L)	
Max. Refrigerant Charge(kg)	See Notes
Discharge Temperature Limit(°C)	≤125 (120mm to compressor discharge connection and well insulated)
Start-Stop Interval	See Notes

Performance Condition:

Condition	Condition Description
a	Rated Condition
b	Max. Load Condition, 90% Rated Voltage
c	Rated Condition, A Weighted Sound Power
d	Rated Condition, Max Operating Normal Displacement of Compressor Housing
e	Discharge Pressure and Suction Pressure: Saturated Refrigerant Pressure at 40°C
f	Max. Load Condition

2 Rated Condition, 48 Hours Break-in-Running before implementing Performance and Sound Testing

Item	Rated Condition	Max. Load Condition
E.T.(°C)/C.T.(°C)/S.H.(K)/ S.C.(K)/A.T.(°C)	-6.7/48.9/11.1/0/35	10/65/11.9/0/46.1
Cooling Capacity Deviation	≥92.5%	-
Power Deviation	≤107.5%	-
COP Deviation	≥92.5%	-

3 Internal Protector

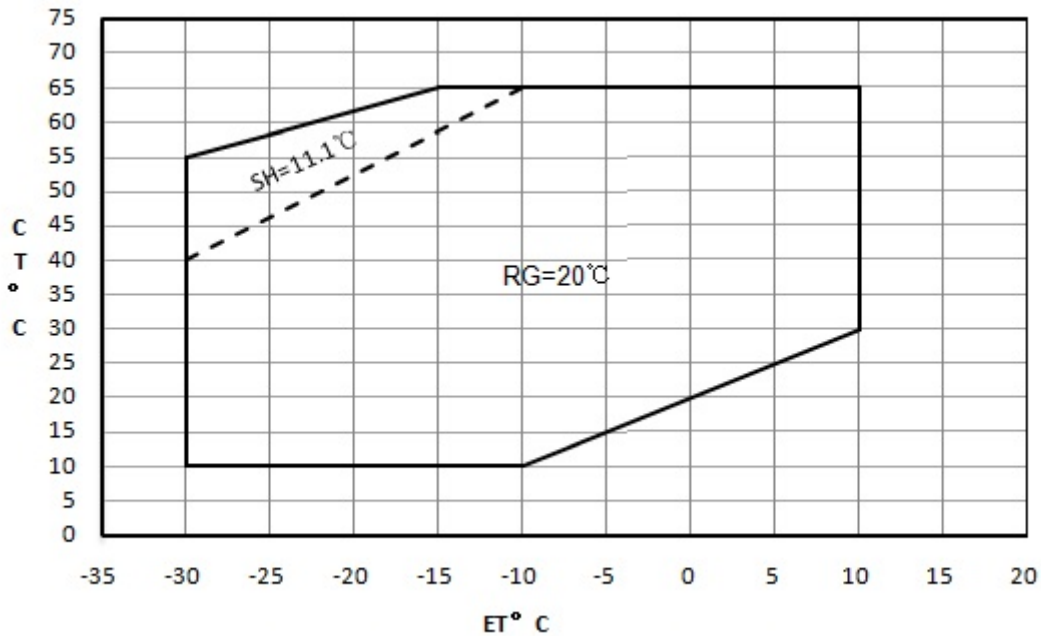
Protection Method	Config	Parameter		
		Vendor	Vendor1	Vendor2
Internal Overload Protector	With	Model	UP28NA03B-XX	
		Open Temp.(°C)	135±5	
		Close Temp. (°C)	70±10	
		Short Time Trip	120A 3-10s	A s
		Internal Pressure Relieve Valve	With	2.76-3.10MPa

4 Accessory

YM132E7G-100			
Item	Name	P.N.	PCS
1	Grommet	070-0003-00	4
2	Sleeve	010-0014-00	4
3			
4			
5			

5 Compressor Operating Envelope

5.1 Compressor Operating Envelope



5.2 EVI control logic(only for EVI module)

- Recommend system subcooling 5K
- $DLT \leq 95^{\circ}\text{C}$, control superheat of injection line=5K
- $DLT > 95^{\circ}\text{C}$, control $DLT=95^{\circ}\text{C}$
- Max injection pressure $\leq 2.0\text{MPa}$

6 Compressor Performance Sheet

- Performance Based on Superheat is within the Operating Envelope, Subcooling after Condenser is 0K;
- Performance Calculated by Coefficients of Polynomial is Only Suitable for the Condition within Operating Envelope
- Capacity, Power can be Calculated by Coefficients of Polynomial

6.1 Performance Table

Item	E.T.(°C)	-20	-10	0	10
	C.T.(°C)				
Heating Cap.(W) (Cooling Cap.)	50				
	40				
	30				
Cooling Cap. (W)	50	10238	14910	21136	29476
	40	11962	17488	24962	34945
	30	13490	19870	28592	40216
Power(W)	50	7085	7771	8390	8917
	40	5939	6523	7076	7574
	30	4993	5499	6011	6505

6.2 Ten Coefficients of Polynomial

Expression	$z = p_0 + p_1*x + p_2*y + p_3*x^2 + p_4*x*y + p_5*y^2 + p_6*x^3 + p_7*x^2*y + p_8*x*y^2 + p_9*y^3$		
Description	z: Cooling Capacity(W) or Power (W) Specially: Heating Capacity(W)=Cooling Capacity(W)+Power (W) x: E.T. °C y: C.T. °C p0~p9: Coefficients of Polynomial		
Cooling Cap. Factor	Value	Power Factor	Value
p0	40614.88781	p0	4028.594621
p1	1440.843744	p1	58.539623
p2	-475.277046	p2	41.315184
p3	20.412501	p3	0.458916
p4	-14.418806	p4	-0.629541
p5	3.639346	p5	0.686903
p6	0.093234	p6	-0.003892
p7	-0.196845	p7	-0.018292
p8	-0.000359	p8	0.012244
p9	-0.038506	p9	0.004623

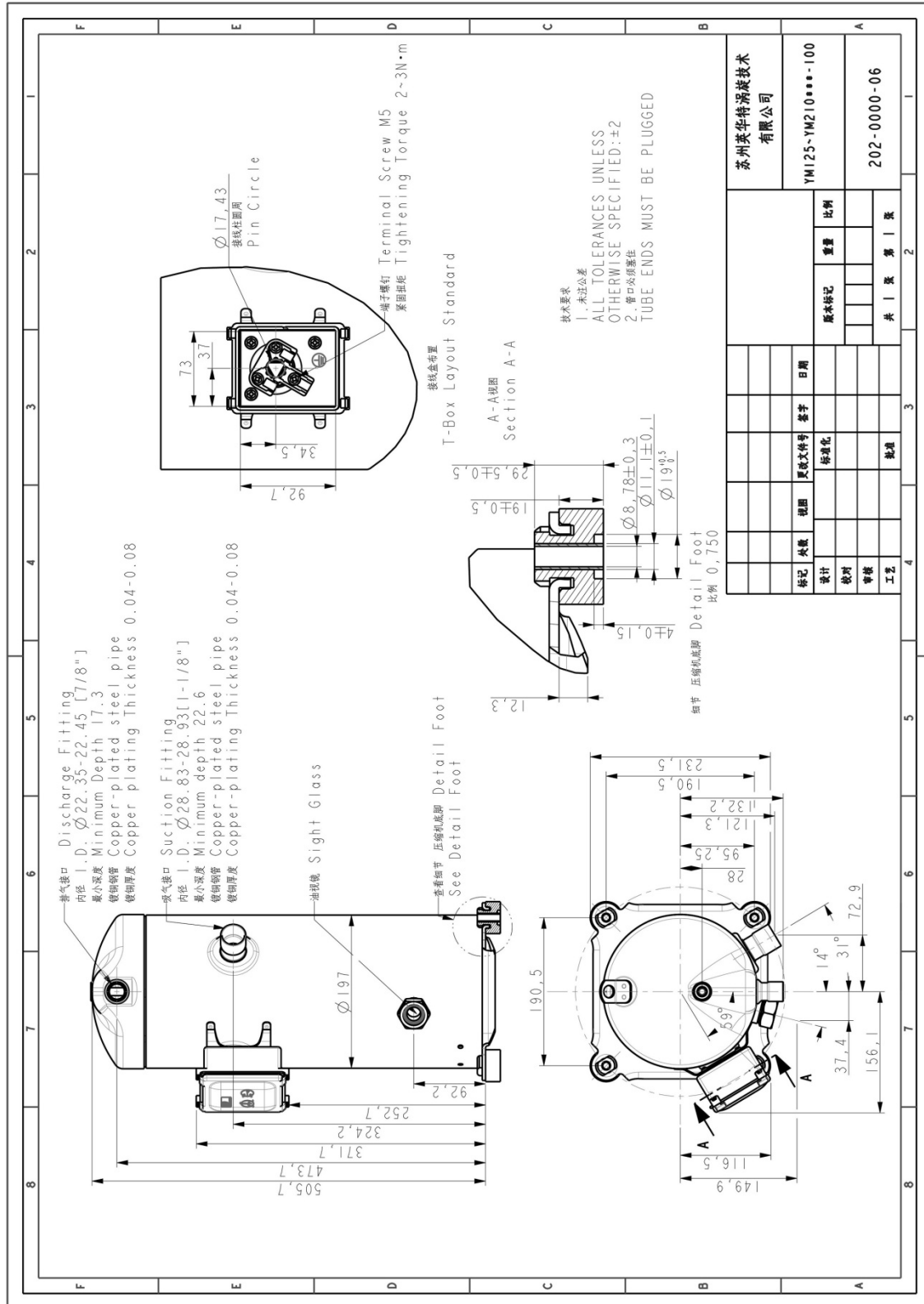
Notes: Coefficients of polynomial are based on the fitting results of some sample data, which can be used as a reference of compressor selection, but cannot completely eliminate customer's test.

7 Notes

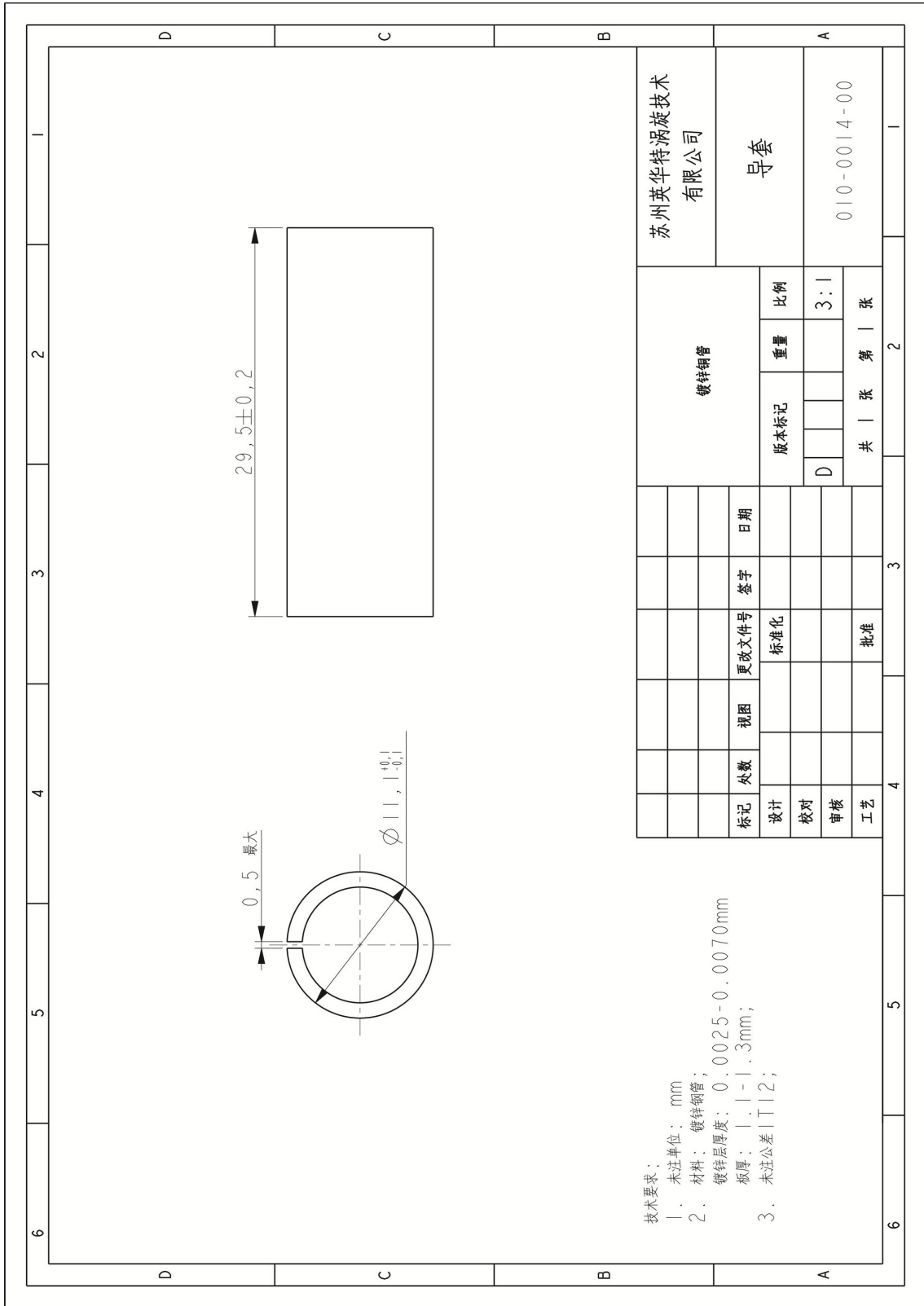
- 7.1 It is not allowed to perform vacuum in the system by using the refrigeration compressor. The compressor can start only after the refrigerant is charged. In some cases, such as on the field site, if it is limited by the situation that can't charge the required volume of refrigerant, 50% of the required refrigerant is charged necessary before the compressor starts. Double check the system and make sure everything is under safe status, then power on the compressor and charge the remained refrigerant when the compressor is running.
- 7.2 It is not allowed to charge the refrigerant from the suction or discharge line close to the compressor. The charge port should be arranged on the connection pipe of suction line accumulator or receiver, which is on the side far away from the compressor, to avoid the liquid refrigerant flood back.
- 7.3 Refrigerant charge limitation: the ratio between the weight of oil and refrigerant should be ≥ 0.4 .
- 7.4 It is not allowed to vacuum by compressor, not allowed to run the compressor without refrigerant, and not allowed to run the compressor in the reversed direction for long duration.
- 7.5 The compressor can only work with approved refrigerant.
- 7.6 The compressor is not allowed to work outside its envelope, the system should guarantee the suction line superheat and avoid the liquid refrigerant flood 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 should be avoided. The suggested minimum continuous running time is 10 minutes to guarantee the safe oil level ($\geq 50\%$ initial charge volume), the suggested minimum interval duration between start and stop is 3 minutes.
- 7.9 The deviation of supplied voltage should be less than $\pm 10\%$ of rated voltage.
- 7.10 A 90W crankcase heater is recommended to avoid the refrigerant migration during the off cycle and flood start. The crankcase heater should be powered on 12 hours earlier than the first start or restart after long duration off.
- 7.11 The system should be equipped with necessary protection devices, such as pressure, temperature, oil return, overcurrent and phase fault, etc.
- 7.12 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 Drawings

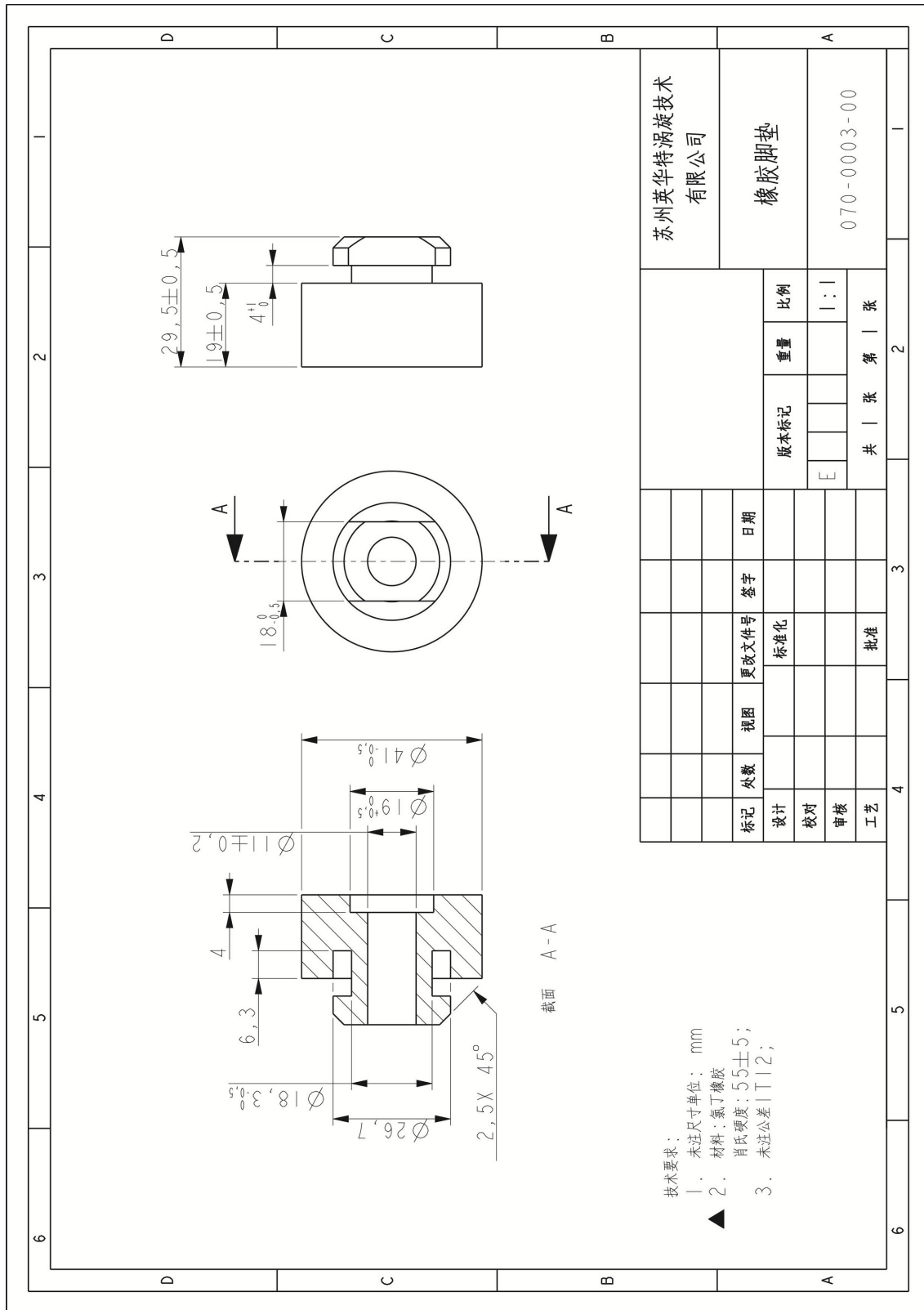
8.1 Outline Drawing



8.2 Sleeve Drawing



8.3 Grommet Drawing



9 Single Phase Compressor Wiring Diagram
Only for single phase

10 Application

See Details in the 《YM serial MBP refrigerant scroll compressor application manual》