*** YH150C7 100Specification**

Specification		Notes
Standard Model	YH150C7-100	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	YH150C7-100(Including Extended Model)
Type	Low Side Shell Design Scroll Compressor
Application	Air-condition Refrigeration
Refrigerant	R410A
Displacement(cc/rev)	59.2
Cooling Capacity(W)[a]	18300
Input Power(W)[a]	5874
RLA(A)[a]	18
Cooling COP(W/W)[a]	3.12
Power Supply	208-230V/3~/60Hz
Min. Operating Voltage(V)	187
Max. Operating Voltage(V)	253
LRA(A)	136
Max. Operating Current(A)[b]	27.17
Rated Speed(r/min)[a]	3500
Compressor Weight(With Oil)(kg)	31
Oil Type	POE
Oil Kinematic Viscosity(cSt, 40℃)	32
Oil Density(kg/L, 20℃)	0.977
Primary Charge(L) Recharge(L)	1.6 1.45
Oil Circulation Rate[a]	≤1%
Rated Sound(Sound Power)(dBA)[c]	71
Max. Operating Sound in Running Envelope (Sound Power)(dBA)	76
Vibration Displacement Peak-Peak(mm)[d]	≤0.1
Moisture(mg)	≤600
Impurity(mg)	≤120
LVS(V)[e]	177
MOV (V)[f]	187
Start Capacitor(μF/V)	/
Start Relay	/
Run Capacitor(μF/V)	/
IP Class of Terminal Box	IP21
Compressor Color	Black

1.2 Motor Parameters

Motor Type	Three-phase asynchronous motor
Motor Pole	2
Motor Insulation Class(℃)	130(B Class)
Line to Line Resistance UV(CS)(Ω, 25℃)	0.572(±10%)
Line to Line Resistance UW(CR)(Ω, 25℃)	0.572(±10%)
Line to Line Resistance VW(SR)(Ω, 25℃)	0.572(±10%)
Dielectric Strength	2000VAC / 1s / 50Hz or 60Hz, 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) Low Side(MPa)	H4.3/L2.0
Compressor FreeSpace(Without Oil)	
High Side(L) Low Side(L)	H1.0/L3.6
Max. Refrigerant Charge(kg)	See Notes
Discharge Temperature Limit(℃)	≤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℃
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.T.(℃)/S.H.(K)/ S.C.(K)/A.T.(℃)	7.2/54.4/11.1/8.3/35	11.9/65.5/11.9/8.3/46.1
Cooling Capacity Deviation	≥95.0%	-
Power Deviation	≤105.0%	-
COP Deviation	≥95.0%	-

3 Internal Protector

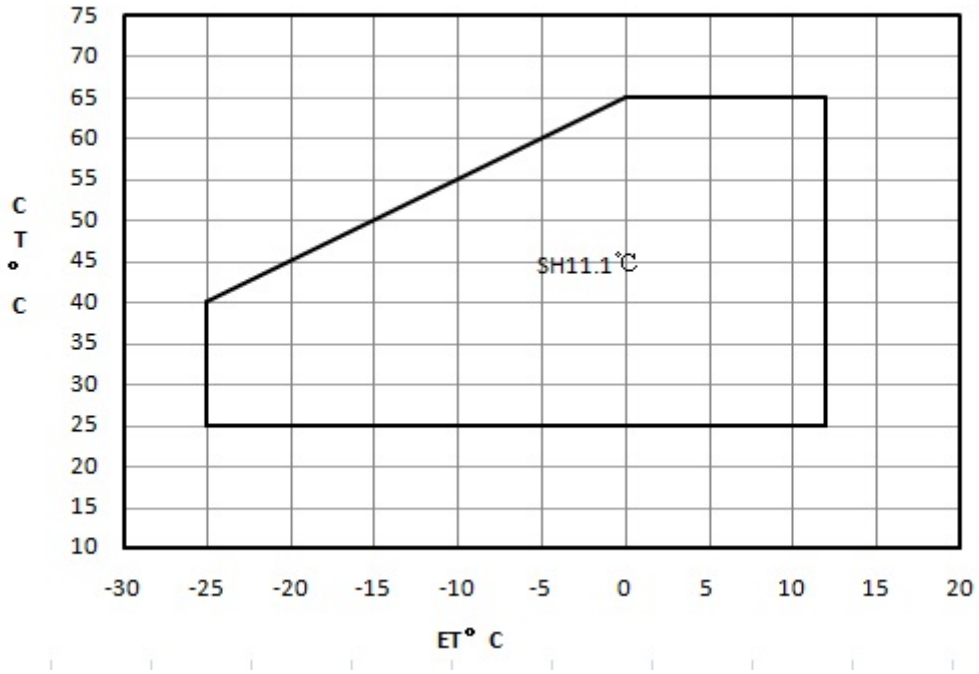
Protection Method	Config	Parameter		
Internal Overload Protector	With	Vendor	Vendor1	Vendor2
		Model	UP28LA05B-XX	
		Open Temp.(℃)	125±5	
		Close Temp. (℃)	70±10	
		Short Time Trip	103A 3-10s	A s
Internal Pressure Relieve Valve	With	3.97-4.31MPa		

4 Accessory

YH150C7-100			
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 the compressors with EVI module)

- Recommend system subcooling 5K
- DLT≤95℃,control superheat of injection line=5K
- DLT＞95℃,control DLT=95℃
- Max injection pressure≤2.0MPa

6 Compressor Performance Sheet

- Performance Based on Superheat is within the Operating Envelope, Subcooling after Condenser is 8.3K；
- 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.T.(℃)	-25	-20	-15	-10	-5	0	5	10
Cooling Cap. (W)	65						11256	13784	16690
	60					10357	12689	15336	18397
	55				9312	11488	13918	16697	19925
	50			8144	10205	12456	14994	17917	21323
	45		6873	8860	10973	13310	15970	19049	22646
	40	5523	7475	9490	11668	14104	16897	20144	23943
	35	6073	8031	10088	12341	14888	17826	21254	25268
	30	6616	8593	10704	13045	15715	18811	22430	26671
	25	7206	9214	11390	13831	16636	19901	23725	28204
Power (W)	65						7879	7798	7739
	60					6987	6900	6829	6781
	55				6231	6143	6066	6006	5970
	50			5582	5500	5423	5357	5310	5287
	45		5014	4944	4873	4807	4754	4721	4713
	40	4499	4447	4388	4329	4277	4238	4220	4229
	35	3983	3942	3896	3851	3813	3790	3789	3816
	30	3508	3480	3448	3417	3396	3390	3408	3455
	25	3055	3041	3024	3010	3007	3020	3057	3126

6.2 Ten Coefficients of Polynomial

Expression	z = p0 + p1*x + p2*y + p3*x^2 + p4*x*y + p5*y^2 + p6*x^3 + p7*x^2*y + p8*x*y^2 + p9*y^3		
Description	z:Cooling Capacity(W) or Power (W) Specially: Heating Capacity(W)=Cooling Capacity(W)+Power (W) x: E.T. ℃ y: C.T. ℃ p0~p9: Coefficients of Polynomial		
Cooling Cap. Factor	Value	Power Factor	Value
p0	28755.950727	p0	937.806423
p1	928.632583	p1	28.83993
p2	-519.346989	p2	110.137803
p3	14.634491	p3	0.595964
p4	-10.125147	p4	-1.110825
p5	8.32976	p5	-1.712955
p6	0.130167	p6	0.009178
p7	-0.138674	p7	-0.004667
p8	0.048219	p8	0.006044
p9	-0.068952	p9	0.02556

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 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 closes 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 to 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 on 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 (>=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 +/-10% of rated voltage.

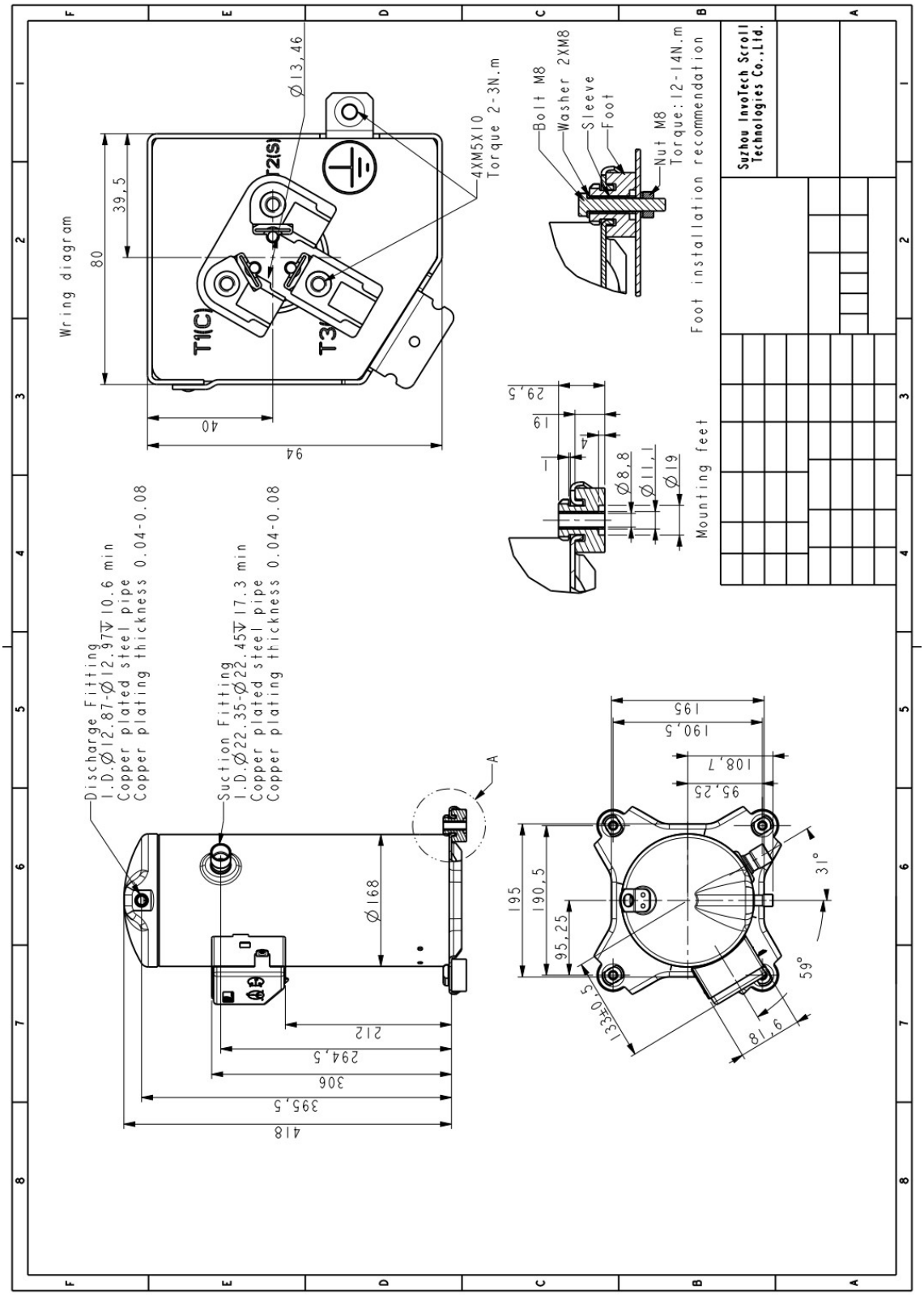
7.10 A 70W crankcase heater is recommended to avoid the refrigerant migration during the off circle and flood start. The crankcase heater should be power on 12 hours earlier than the first start or restart after long duration off.

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

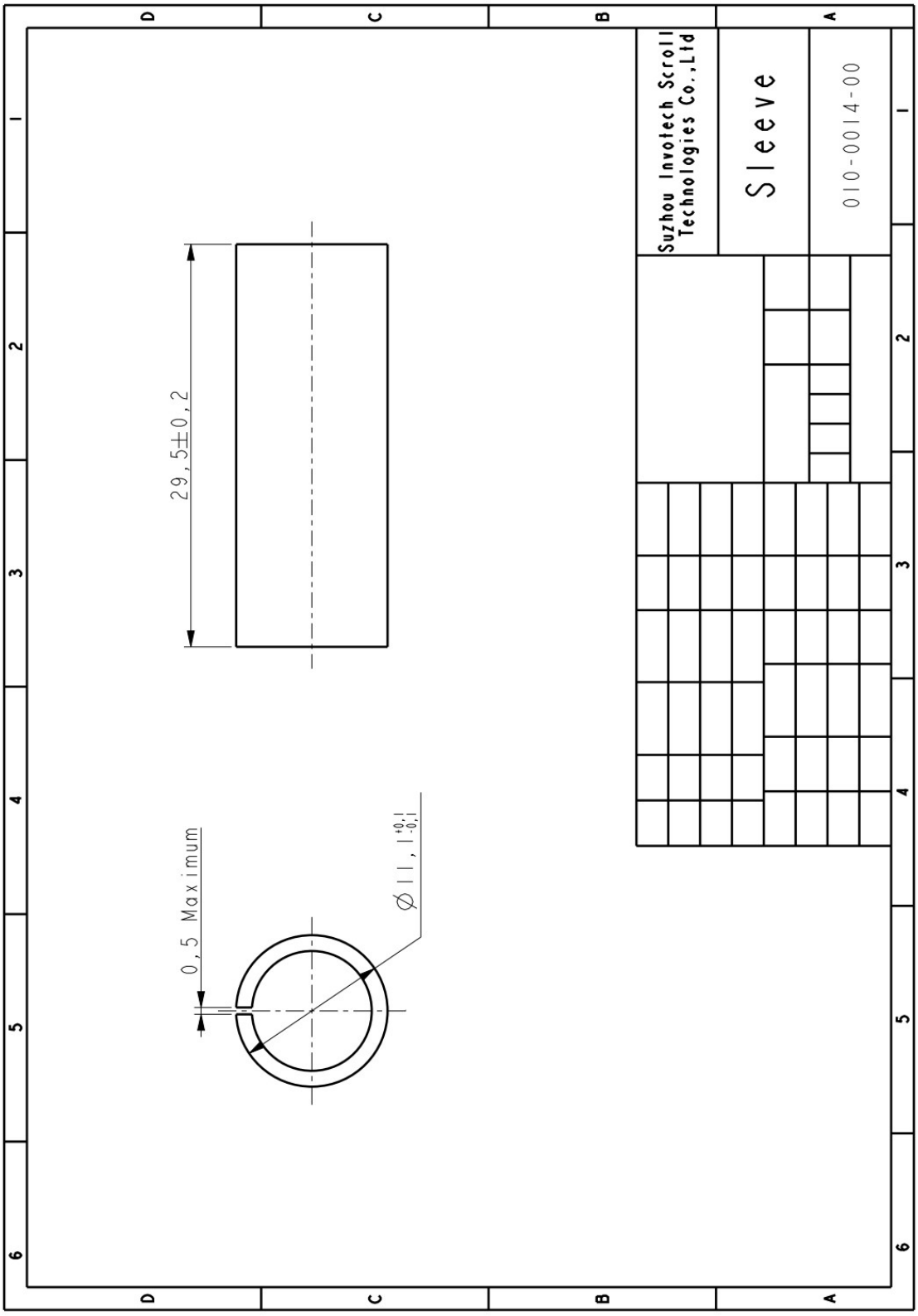
7.12 The compressor is not allowed to lay down or place upside down during transportation, stock and installation. The maximum inclination is 15° when the compressor is running.

8 Drawings

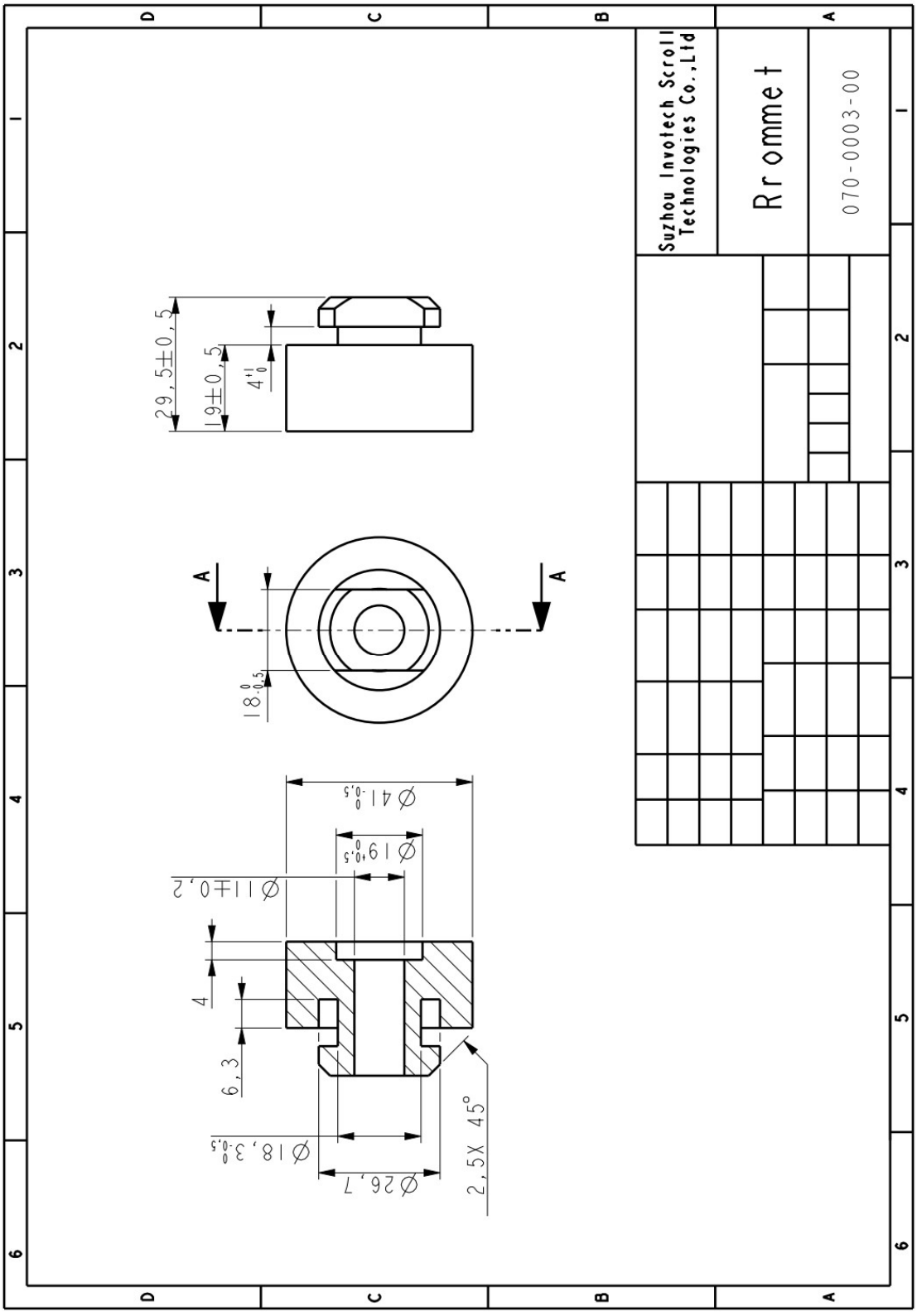
8.1 Outline Drawing



8.2 Sleeve Drawing



8.3 Grommet Drawing



9 Single Phase Compressor Wiring Diagram

Only for single phase

10 Application

See Details in the 《YH serial air-condition scroll compressor application manual》