*** YH150C3 100Specification**

Specification		Notes
Standard Model	YH150C3-100	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	YH150C3-100(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]	18000
Input Power(W)[a]	5941
RLA(A)[a]	30
Cooling COP(W/W)[a]	3.03
Power Supply	208-230V/1~/60Hz
Min. Operating Voltage(V)	187
Max. Operating Voltage(V)	253
LRA(A)	140
Max. Operating Current(A)[b]	43
Rated Speed(r/min)[a]	3500
Compressor Weight(With Oil)(kg)	37
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)	250
Start Relay	HLR3800-3F3C
Run Capacitor(μF/V)	100/450
IP Class of Terminal Box	IP21
Compressor Color	Black

1.2 Motor Parameters

Motor Type	Single-phase asynchronous motor
Motor Pole	2
Motor Insulation Class(℃)	130(B Class)
Line to Line Resistance UV(CS)(Ω, 25℃)	0.777(±10%)
Line to Line Resistance UW(CR)(Ω, 25℃)	0.395(±10%)
Line to Line Resistance VW(SR)(Ω, 25℃)	1.172(±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/L3.7
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

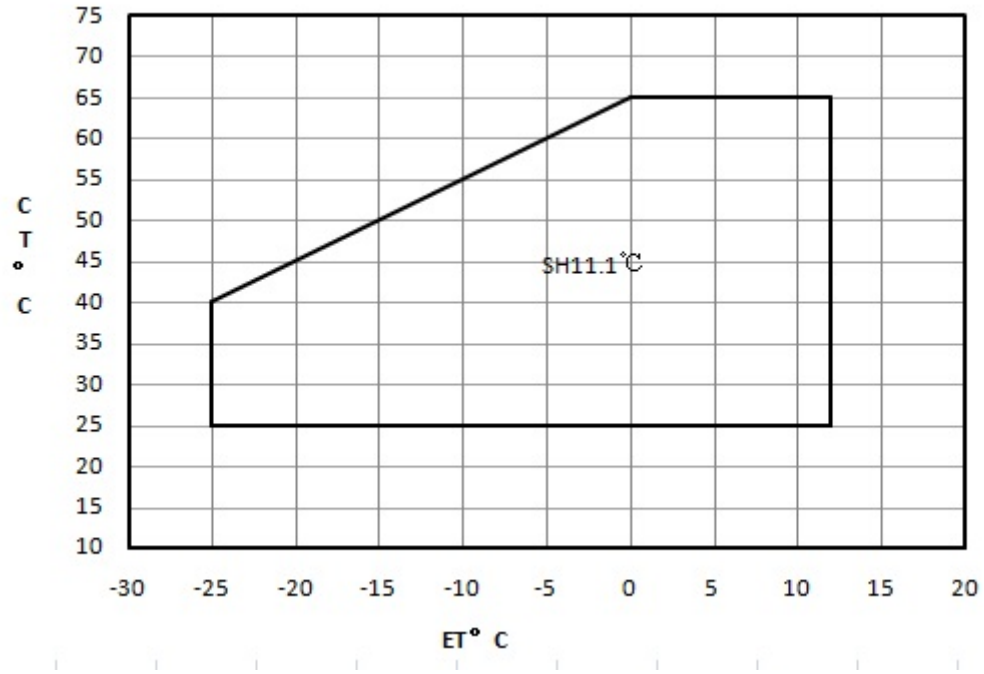
Protection Method	Config	Parameter		
Internal Overload Protector	With	Vendor	Vendor1	Vendor2
		Model	UP16QC051A-XX	
		Open Temp.(℃)	150±5	
		Close Temp. (℃)	80±9	
		Short Time Trip	155A 3-10s	A s
Internal Pressure Relieve Valve	With	-MPa		

4 Accessory

YH150C3-100			
Item	Name	P.N.	PCS
1	Grommet	070-0003-00	4
2	Sleeve	010-0014-00	4
3	StartBox	110-0076-10	1
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						7938	7859	7800
	60					7063	6977	6907	6859
	55				6320	6234	6158	6098	6062
	50			5682	5602	5526	5461	5414	5391
	45		5124	5055	4985	4921	4868	4835	4827
	40	4618	4567	4509	4451	4399	4361	4343	4351
	35	4111	4071	4025	3980	3943	3920	3919	3945
	30	3644	3616	3584	3554	3533	3527	3544	3589
	25	3199	3185	3168	3154	3150	3163	3199	3266

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	1121.458649
p1	928.632583	p1	28.234499
p2	-519.346989	p2	107.827089
p3	14.634491	p3	0.583488
p4	-10.125147	p4	-1.089568
p5	8.32976	p5	-1.672014
p6	0.130167	p6	0.008986
p7	-0.138674	p7	-0.004569
p8	0.048219	p8	0.005917
p9	-0.068952	p9	0.025025

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.

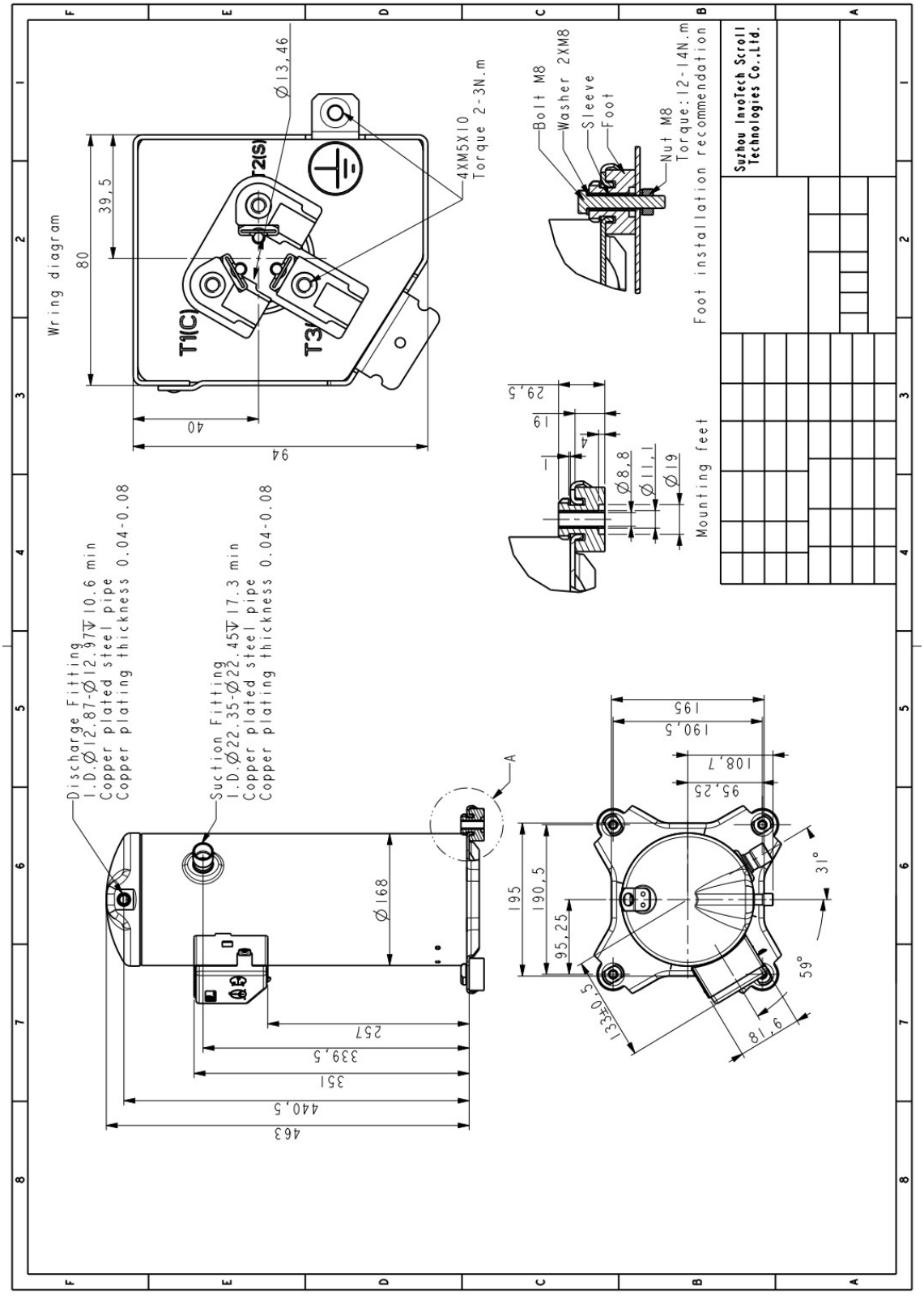
7.10 A 70W crankcase heater is recommended to avoid the refrigerant migration during the off circle and flood start. The crankcase heater should be power on 12 hours earlier than the first start or restart after long duration off.

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

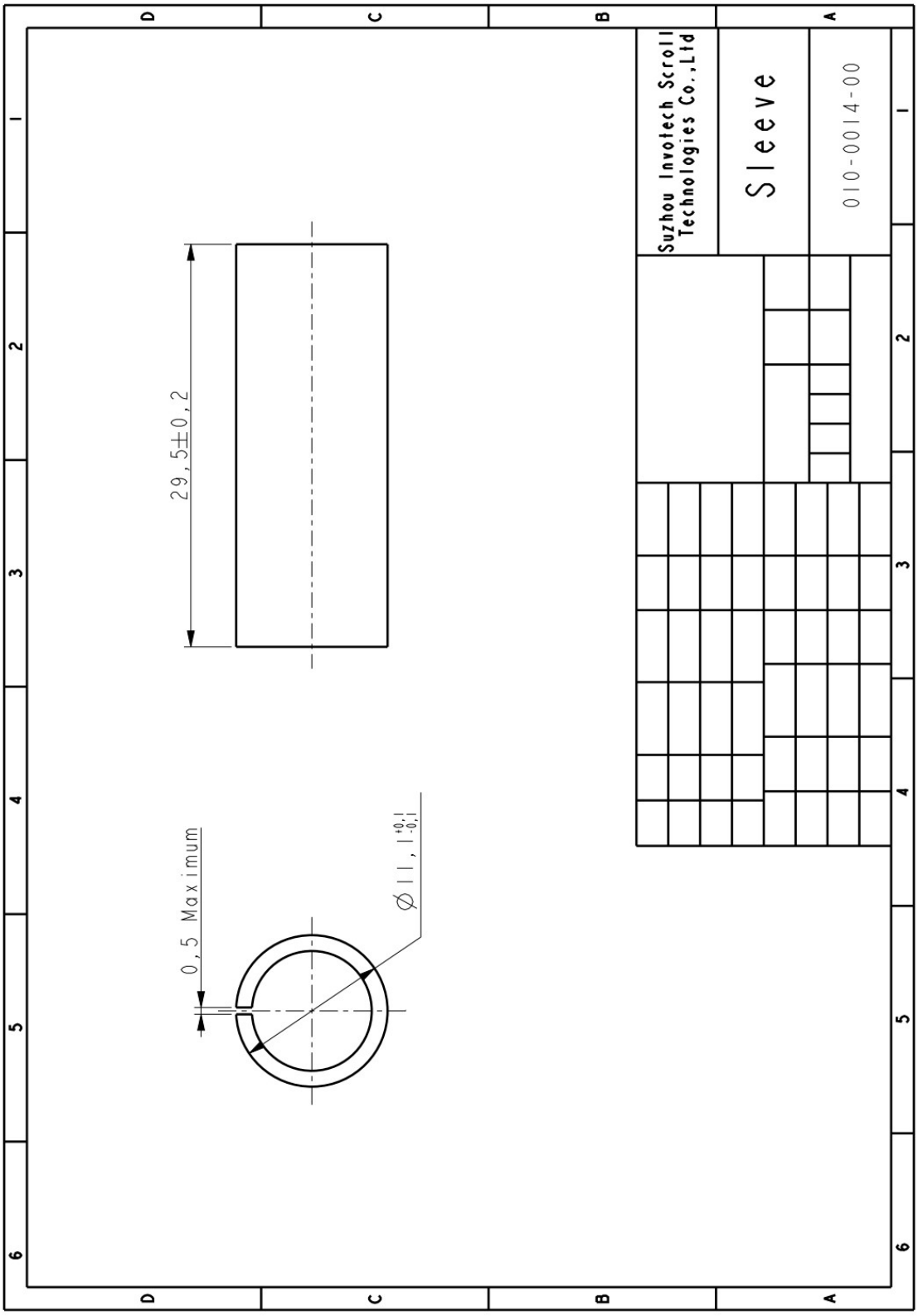
7.12 The compressor is not allowed to lay down or place upside down during transportation, stock and installation. The maximum inclination is 15° when the compressor is running.

8 Drawings

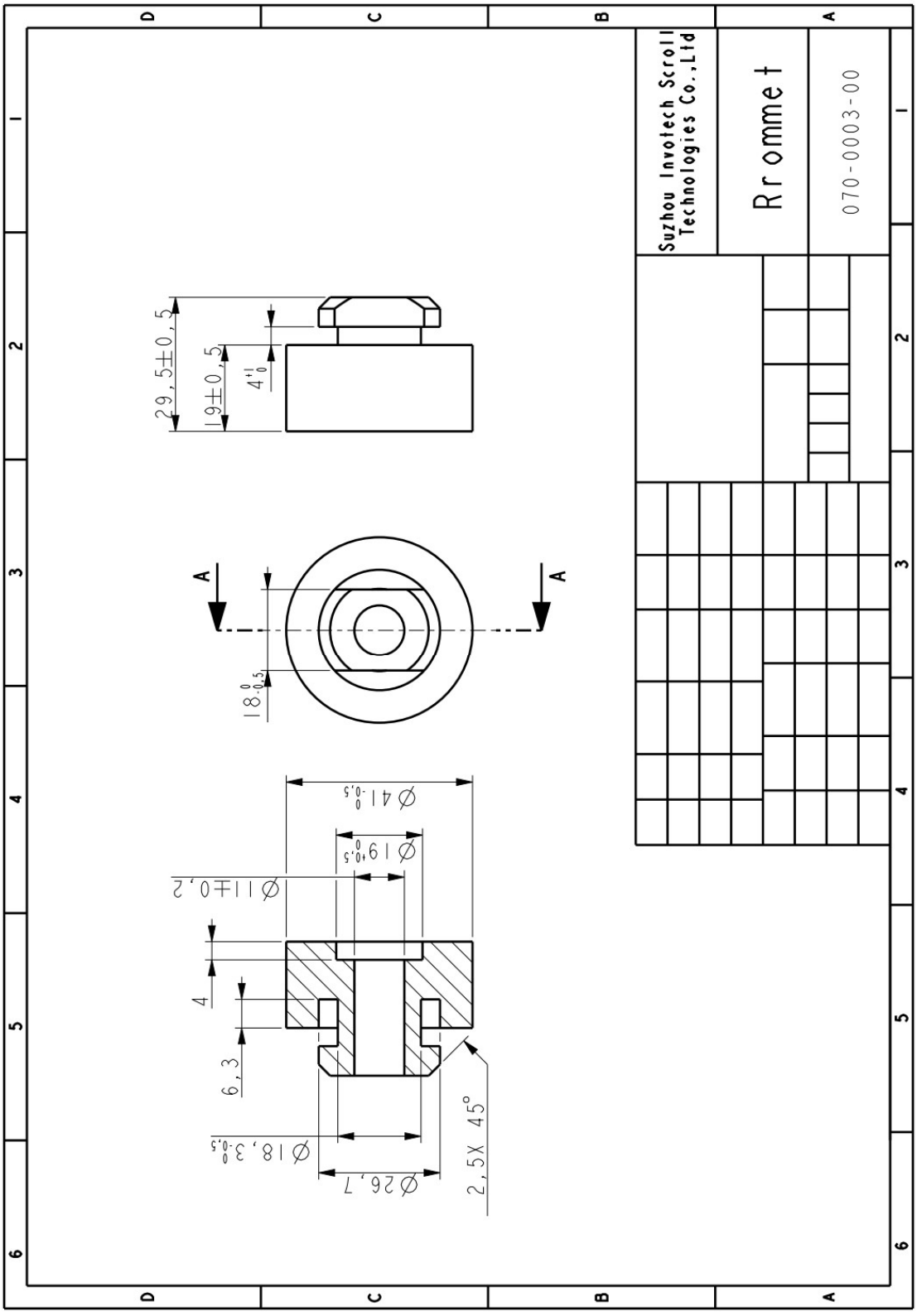
8.1 Outline Drawing



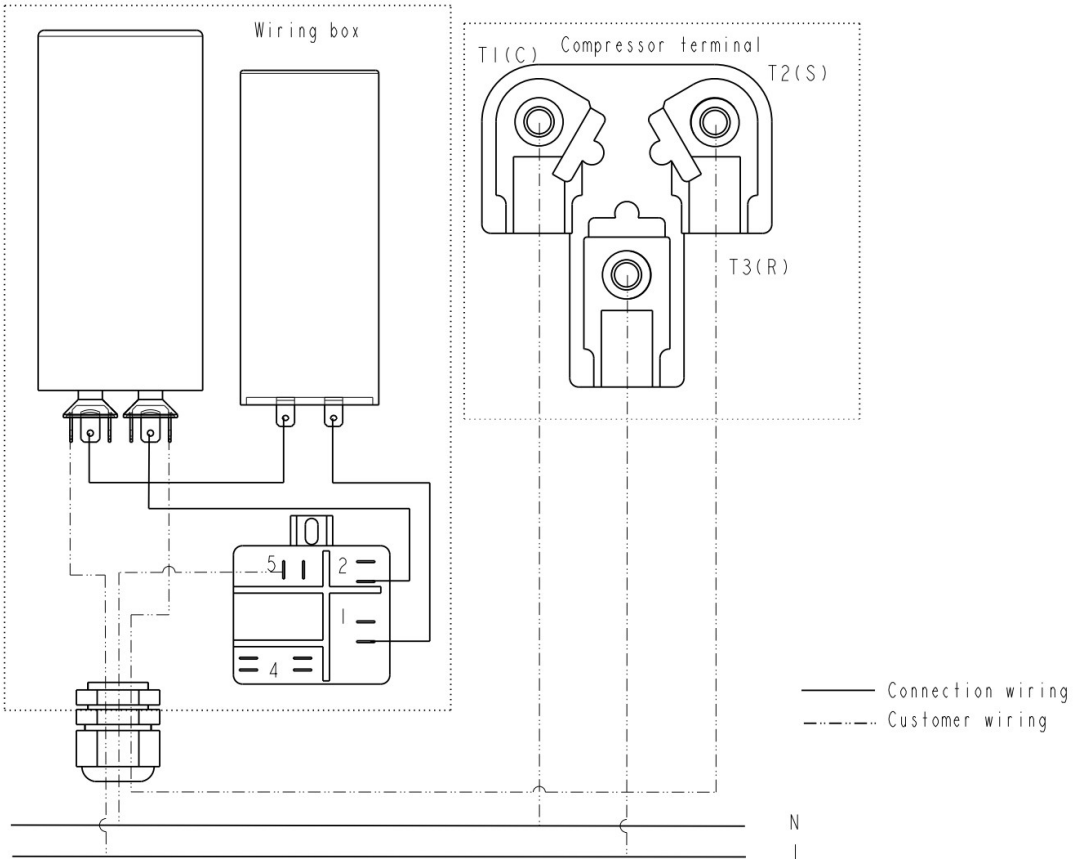
8.2 Sleeve Drawing



8.3 Grommet Drawing



9 Single Phase Compressor Wiring Diagram



10 Application

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