

*** 50Hz YH880C1G-100 Specification**

Specification		Notes
Standard Model	YH880C1G-100	Basic Model
Extended Model	YH880C1-100	
Extended Model		

Revision Record			
Version	Reviser	Description	Date

Checked by

Date

Approved by

Date

1 Specification

1.1 Basic Specification

Model	YH880C1G-100
Type	Low Side Shell Design Scroll Compressor
Application	Air conditioning
Refrigerant	R410A
Displacement(cc/rev)	332.8
Cooling Capacity(W) ^(a)	88000
Input Power(W) ^(a)	26800
RLA(A) ^(a)	55
COP(W/W) ^(a)	3.3
Power Supply	380-420V/3~/50Hz or 460V/3~/60Hz
Min. Operating Voltage(V)	342
Max. Operating Voltage(V)	462
LRA(A)	348
Max. Operating Current(A) ^(b)	66
Rated Speed(r/min) ^(a)	2900
Compressor Weight(With Oil)(kg)	108
Oil Type	POE
Oil Kinematic Viscosity(cSt, 40°C)	32
Oil Density(kg/L, 20°C)	0.977
Primary Charge(L)	5.5
Recharge(L)	5.3
Oil Circulation Rate ^(a)	<1
Rated Sound(Sound Power)(dBA) ^(c)	78
Max. Operating Sound in Running Envelope (Sound Power)(dBA)	85
Vibration Displacement Peak-Peak(mm) ^(d)	≤0.12
Moisture(mg)	≤4000
Impurity(mg)	≤380
LVS(V) ^(e)	323
MOV (V) ^(f)	342
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)	0.3 (± 10%)
Line to Line Resistance UW(CR)(Ω, 25°C)	0.3 (± 10%)
Line to Line Resistance VW(SR)(Ω, 25°C)	0.3 (± 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)	H4.3/L2.0
Low Side(MPa)	
Compressor FreeSpace(Without Oil)	
High Side(L)	H1.75/L14.7
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

1.4 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)	7.2/54.4/11.1/8.3/35	11.9/65.5/11.9/8.3/46.1
Heating Capacity Deviation	≥95.0%	/
Power Deviation	≤105.0%	/
COP Deviation	≥95.0%	/

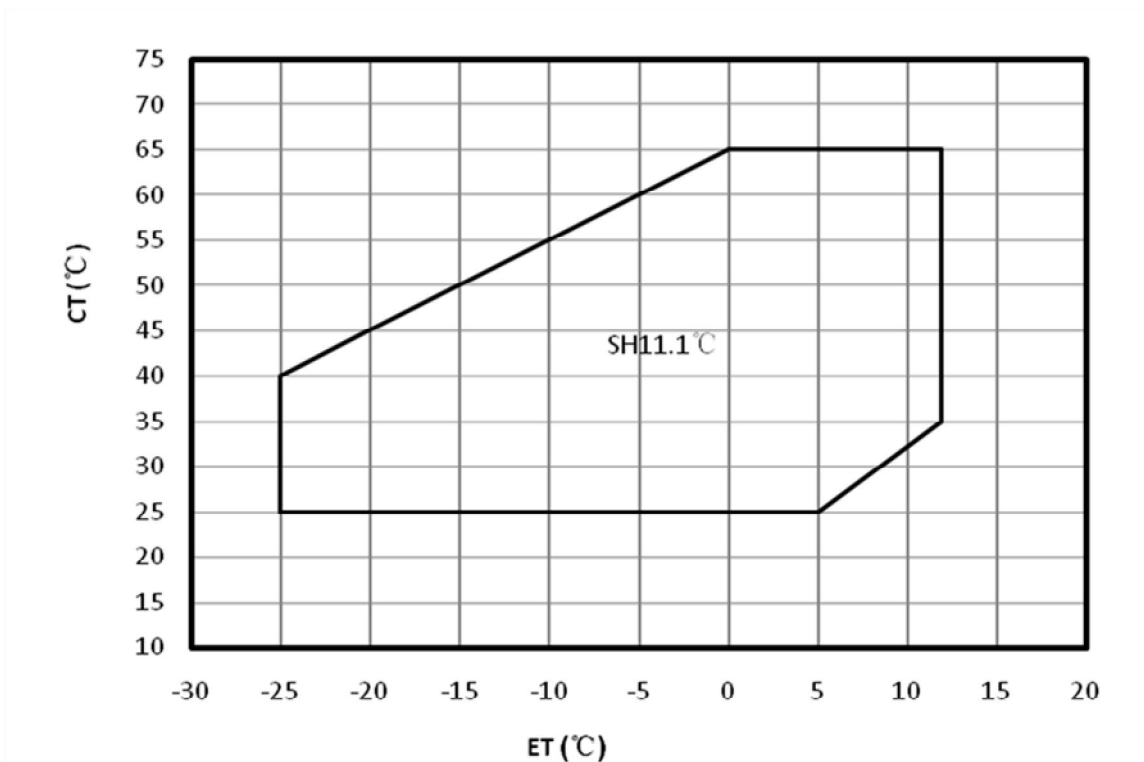
3 Protector

Protection Method	Config	Parameter		
External Overload Protector	With	Model	INT69-E1	SE-E1
		Open Temp.(°C)	150±5	150±5
		Supply Voltage(V)	115-230	208-240
		Reset Method	Restart after power off	Restart after power off
Internal Pressure Relieve Valve	With	3.97-4.31MPa		

4 Accessory

Item	Name	P.N.	PCS
1	Grommet	070-3016-00	4
2	Sleeve	010-3036-00	4
3	Grommet Screw	GB/T5783-2000	4
	Grommet Nut	GB/T6170-2000	4
4	Grommet Washer	GB/T96.1-2002	8

5 Compressor Operating Envelope



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)		-25	-20	-15	-10	-5	0	5	10
	C.T. (°C)									
Cooling Cap. (W)	65							52551	64429	78107
	60						50095	61118	73798	88547
	55					45629	55762	67407	80978	96886
	50				40147	49354	59930	72286	86836	103991
	45			34644	42890	52360	63467	76623	92240	110731
	40		30114	37363	45692	55513	67240	81284	98057	117971
	35		33768	40920	49421	59683	72117	87137	105154	126580
	30		39039	46184	54945	65735	78965	95049	114398	
	25		46796	54021	63130	74537	88652	105888	126658	
Power(W)	65							33104	33548	33822
	60						29375	29843	30170	30367
	55					25984	26446	26796	27045	27202
	50				22976	23402	23745	24016	24223	24379
	45			20396	20757	21063	21324	21552	21757	21949
	40		18289	18554	18793	19016	19234	19458	19697	19964
	35		16839	16981	17136	17314	17526	17783	18096	18474
	30		15672	15728	15836	16007	16252	16580	17003	
	25		14837	14846	14946	15148	15463	15900	16472	

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	Value	Power Factor	Value
p0	281204.0	p0	26572.98
p1	6405.733	p1	411.8813
p2	-10176.47	p2	-747.113
p3	116.963	p3	7.923550
p4	-85.0504	p4	-16.1929
p5	195.1297	p5	19.95230
p6	0.659501	p6	0.017003
p7	-1.28648	p7	-0.18841
p8	0.423632	p8	0.181864
p9	-1.38769	p9	-0.08224

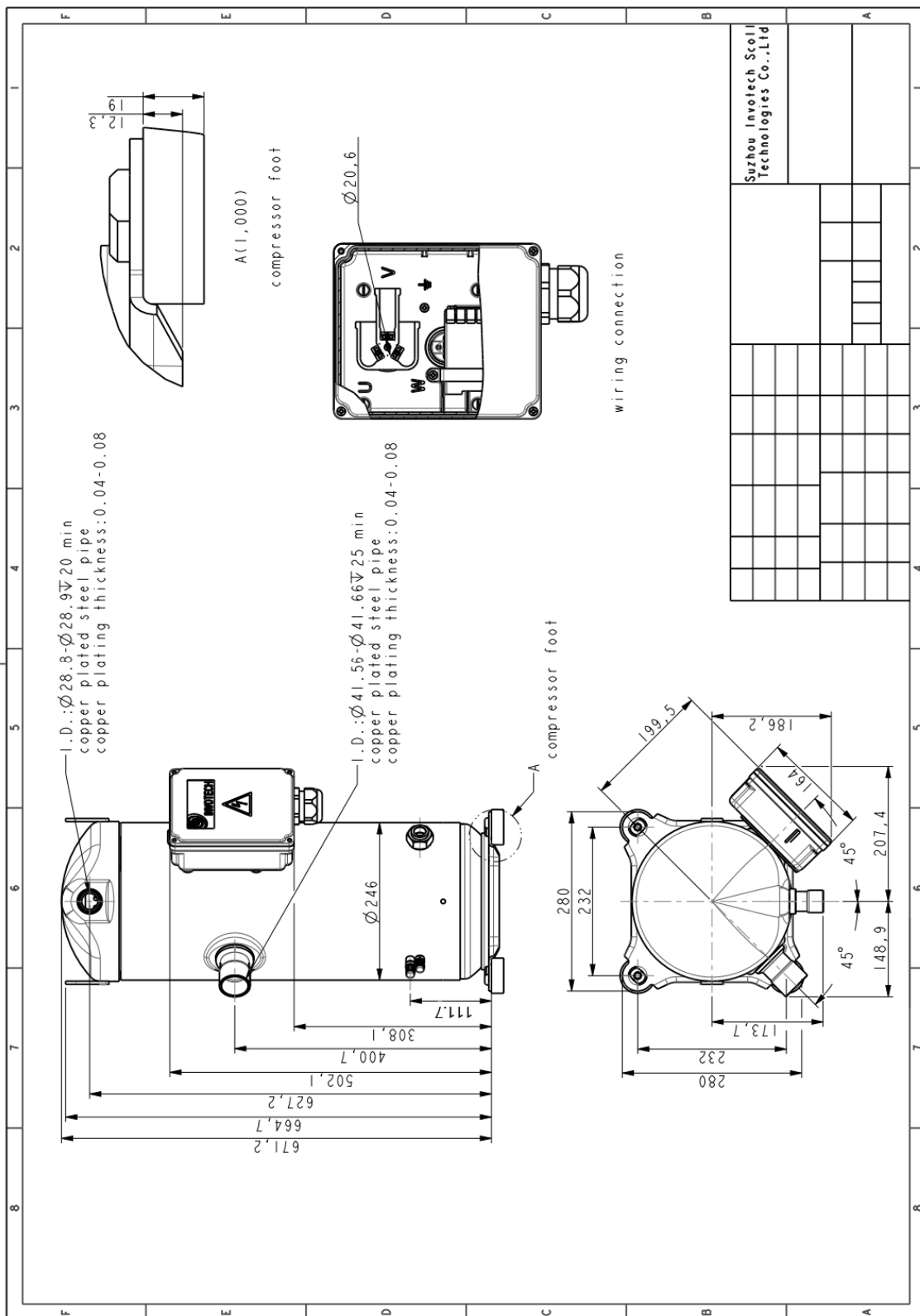
Notes: Coefficients of polynomial are based on the fitting results of some sample data, which can be used as a reference of compressor selection, but cannot completely eliminate customer's test.

7 Notes

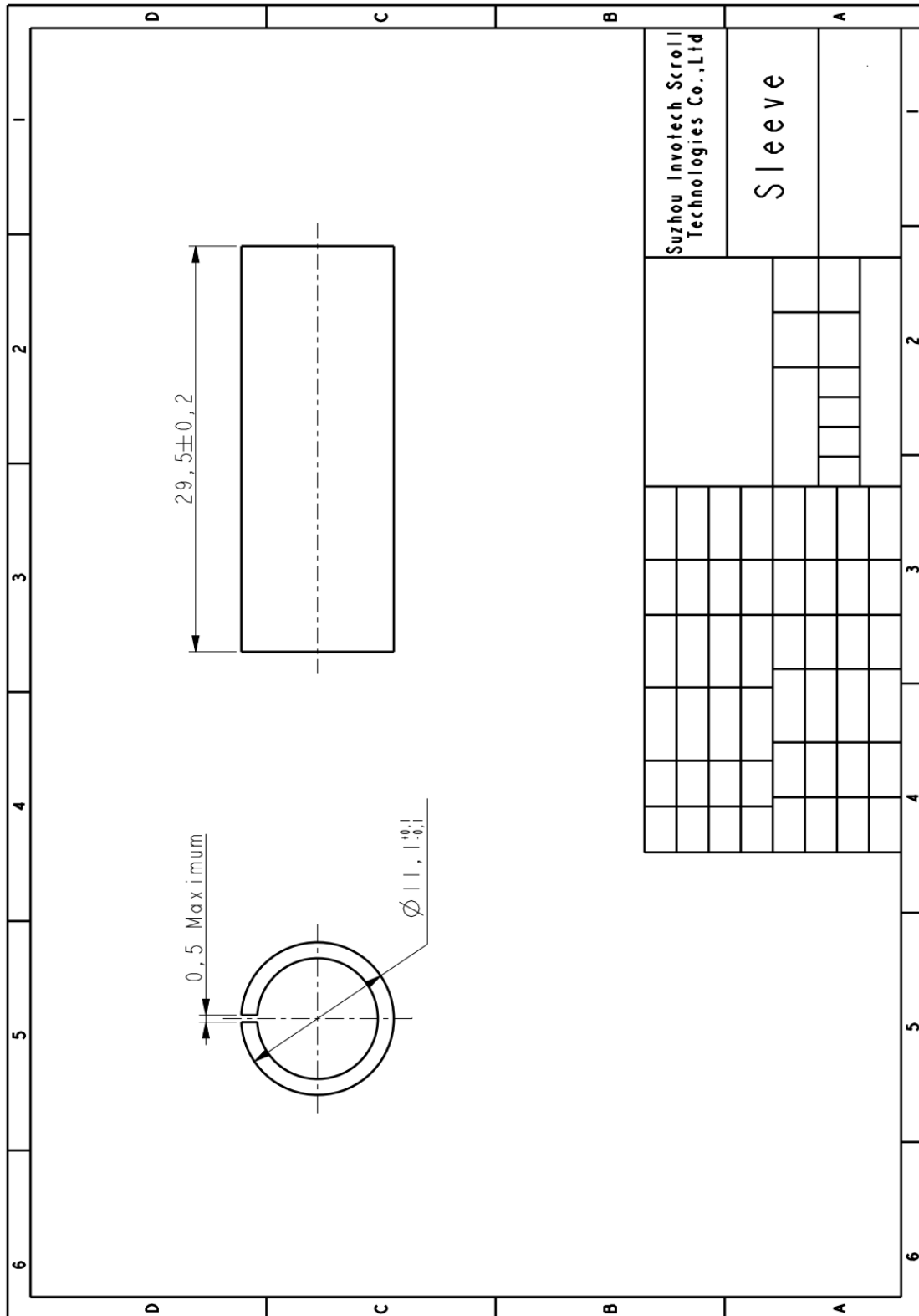
- 7.1 It is not allowed to perform vacuum in the system by using the refrigeration compressor. The compressor can start only after the refrigerant is charged. In some cases, such as on the field site, if it is limited by the situation that can't charge the required volume of refrigerant, 50% of the required 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 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 ($\geq 50\%$ initial charge volume), the suggested minimum interval duration between start and stop is 3 minutes.
- 7.9 Before startup, Discharge pressure-Suction pressure $\leq 0.3\text{Mpa}$.
- 7.10 The deviation of supplied voltage should be less than $\pm 10\%$ of rated voltage.
- 7.11 A 120W 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.
- 7.12 The system should be equipped with necessary protection devices, such as pressure, temperature, oil return, overcurrent and phase fault, etc.
- 7.13 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

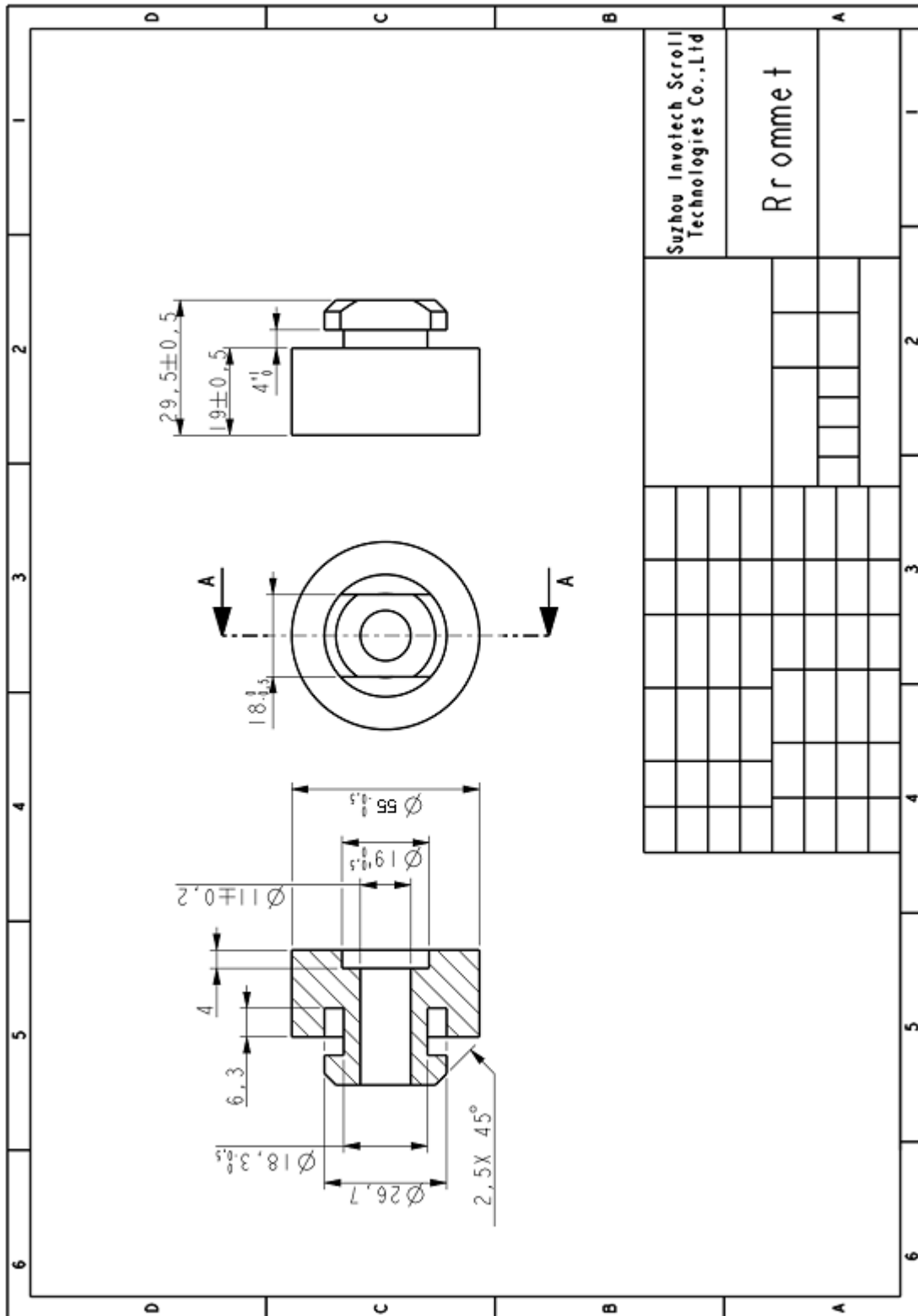
8.1 Outline Drawing



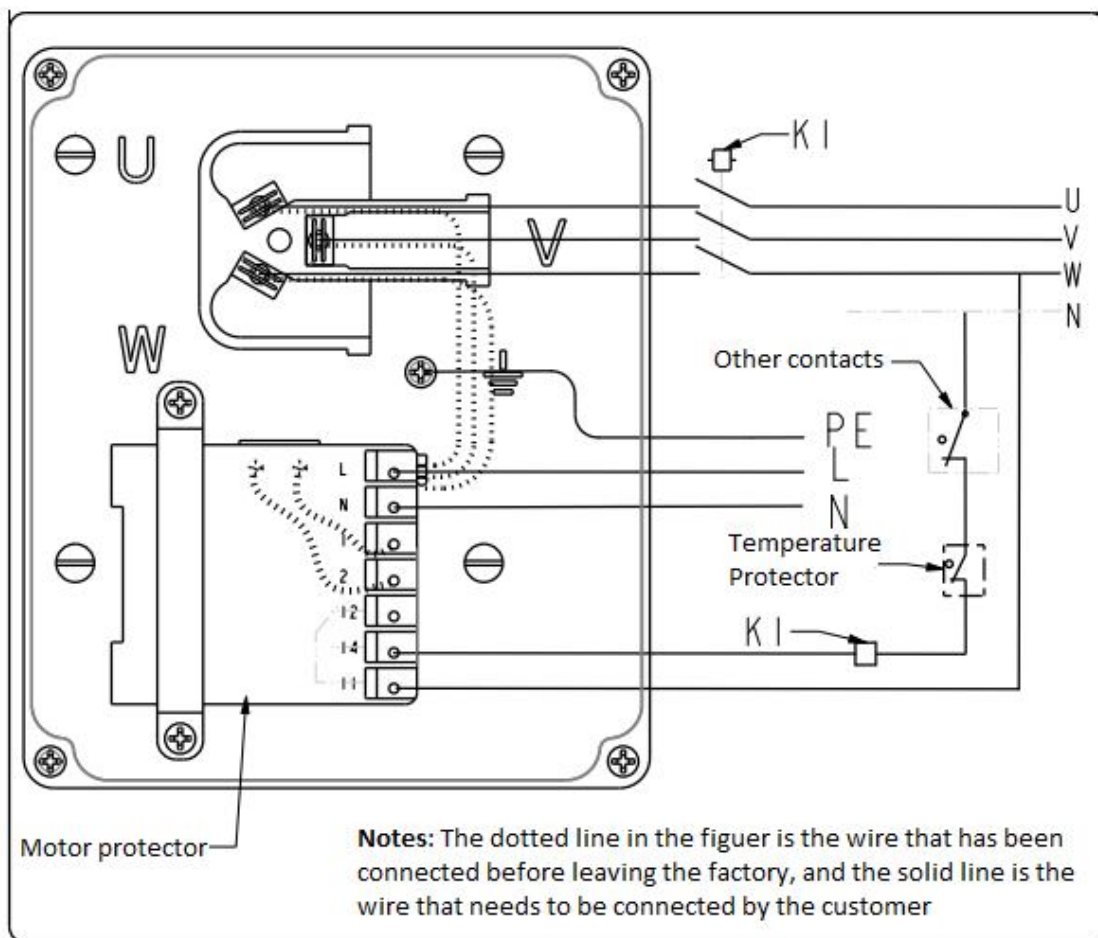
8.2 Sleeve Drawing



8.3 Grommet Drawing



9 Diagram of wiring



10 Application

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