*** 50Hz YM37P1100Specification**

Specification		Notes
Standard Model	YM37P1-100	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	YM37P1-100(Including Extended Models)
Type	Low Side Shell Design Scroll Compressor
Application	Medium Temp.Refrigeration
Refrigerant	R290
Displacement(cc/rev)	42
Cooling Capacity(W)[a]	3759
Input Power(W)[a]	1827
RLA(A)[a]	3.2
Cooling COP(W/W)[a]	2.06
Power Supply	380-420V/3~/50Hz or 460V/3~/60Hz
Min. Operating Voltage(V)	342
Max. Operating Voltage(V)	462
LRA(A)	22
Max. Operating Current(A)[b]	4.5
Rated Speed(r/min)[a]	2900
Compressor Weight(With Oil)(kg)	30
Oil Type	PAG
Oil Kinematic Viscosity(cSt, 40℃)	68
Oil Density(kg/L, 20℃)	0.999
Primary Charge(L)	1.4
Recharge(L)	1.25
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]	≤0.09
Moisture(mg)	≤500
Impurity(mg)	≤100
LVS(V)[e]	323
MOV (V)[f]	342
Start Capacitor(μF/V)	/
Start Relay	/
Run Capacitor(μF/V)	/
IP Class of Terminal Box	IP67
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℃)	7.501(±10%)
Line to Line Resistance UW(CR)(Ω, 25℃)	7.741(±10%)
Line to Line Resistance VW(SR)(Ω, 25℃)	7.418(±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)	H2.1/L1.7
Compressor FreeSpace(Without Oil)	
High Side(L) Low Side(L)	H1.0/L4.1
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.(℃)	-6.7/48.9/11.1/0/35	10/60/11.9/0/46.1
Cooling Capacity Deviation	≥92.5%	-
Power Deviation	≤107.5%	-
COP Deviation	≥92.5%	-

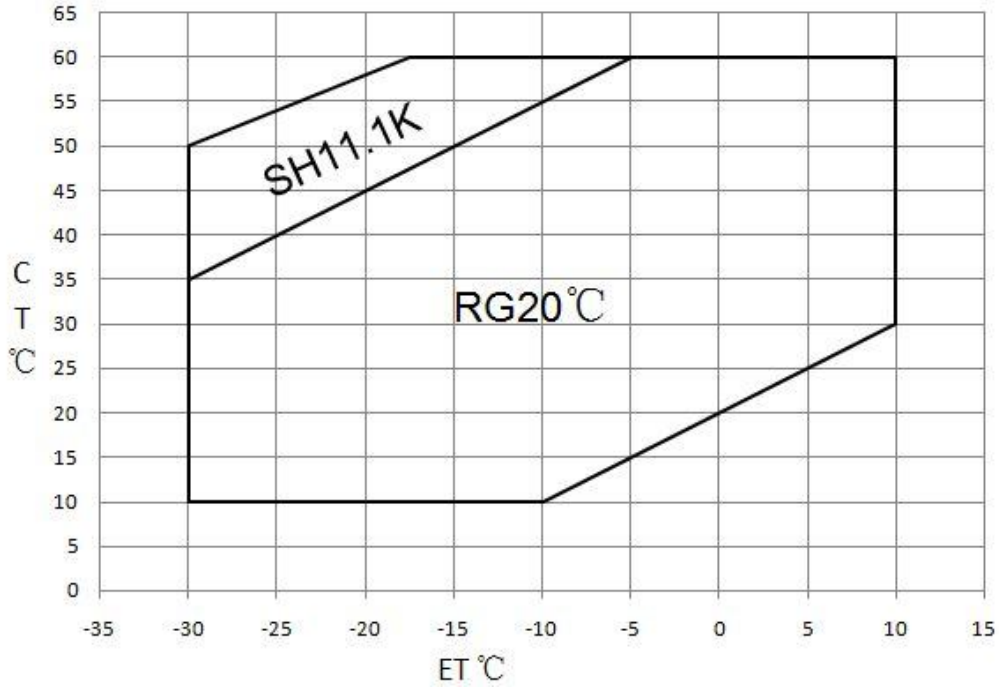
3 Internal Protector

Protection Method	Config	Parameter		
Internal Overload Protector	With	Vendor	Vendor1	Vendor2
		Model	37HM223-XX	
		Open Temp.(℃)	115±5	
		Close Temp. (℃)	60±9	
		Short Time Trip	25A 3-10s	A s
Internal Pressure Relieve Valve	With	2.76-3.10MPa		

4 Accessory

YM37P1-100			
Item	Name	P.N.	PCS
1	Grommet	070-0003-00	4
2	Sleeve	010-0014-00	4
3			
4			
5			

5 Compressor OperatingEnvelope



6 Compressor Performance Sheet

- Performance Based on Superheat is within the OperatingEnvelope, 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.T.(℃)	-30	-25	-20	-15	-10	-5	0	5	10
Cooling Cap. (W)	60				2505	3008	3589	4255	5010	5862
	55		1826	2222	2688	3231	3856	4570	5379	6288
	50	1596	1951	2376	2875	3456	4123	4884	5744	6709
	45	1701	2079	2530	3061	3677	4385	5191	6100	7119
	40	1806	2205	2681	3242	3892	4639	5487	6444	7515
	35	1908	2325	2824	3412	4095	4879	5769	6771	7893
	30	2000	2434	2955	3569	4282	5101	6030	7077	8247
	25	2080	2529	3069	3707	4449	5301	6268	7357	
	20	2142	2604	3162	3823	4591	5474	6477		
	15	2182	2656	3230	3911	4704	5617			
	10	2196	2679	3268	3967	4784				
Power(W)	60				1981	2086	2179	2260	2330	2391
	55		1635	1749	1851	1941	2021	2092	2153	2207
	50	1439	1547	1644	1731	1808	1877	1938	1993	2043
	45	1372	1462	1544	1617	1683	1743	1797	1847	1894
	40	1302	1377	1445	1507	1564	1617	1666	1713	1759
	35	1228	1289	1345	1398	1447	1495	1541	1587	1634
	30	1145	1195	1242	1287	1331	1375	1420	1467	1517
	25	1052	1092	1131	1171	1211	1254	1300	1349	
	20	946	978	1011	1047	1086	1129	1177		
	15	823	849	878	912	951	997			
	10	680	702	730	764	806				

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	6943.7561	p0	610.2398
p1	239.8581592	p1	17.05132249
p2	-5.576695604	p2	33.37940419
p3	2.885949396	p3	0.290493
p4	-1.196060879	p4	-0.49325955
p5	-1.004451374	p5	-0.327817088
p6	0.008031703	p6	0.00124845
p7	-0.018073077	p7	-0.008411813
p8	-0.007285055	p8	0.007688625
p9	0.005840604	p9	0.003829088

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.

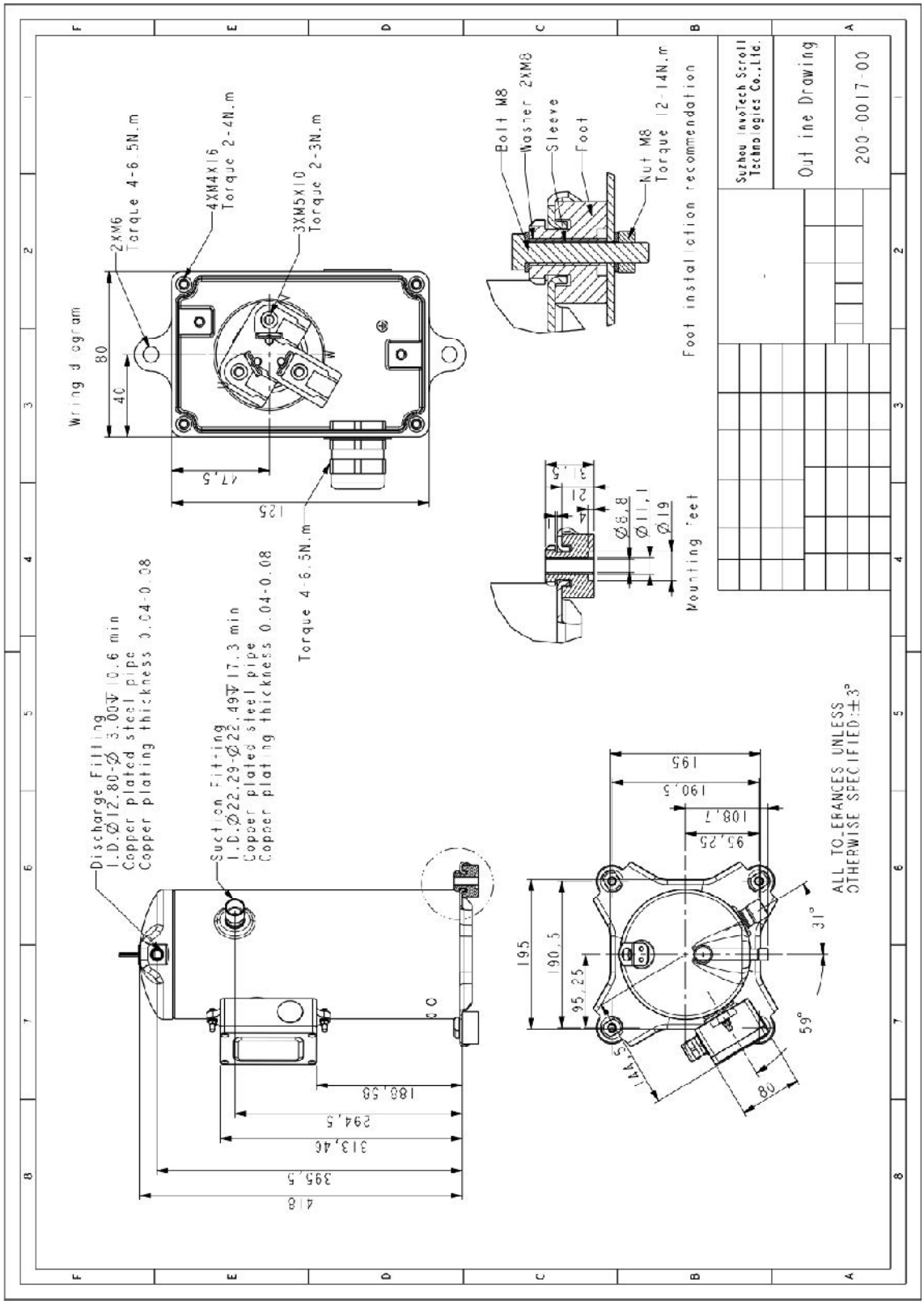
7.10 A 70W crankcase heater is recommended to avoid the refrigerant migration during the off circle and flood start. The crankcase heater should be power on 12 hours earlier than the first start or restart after long duration off.

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

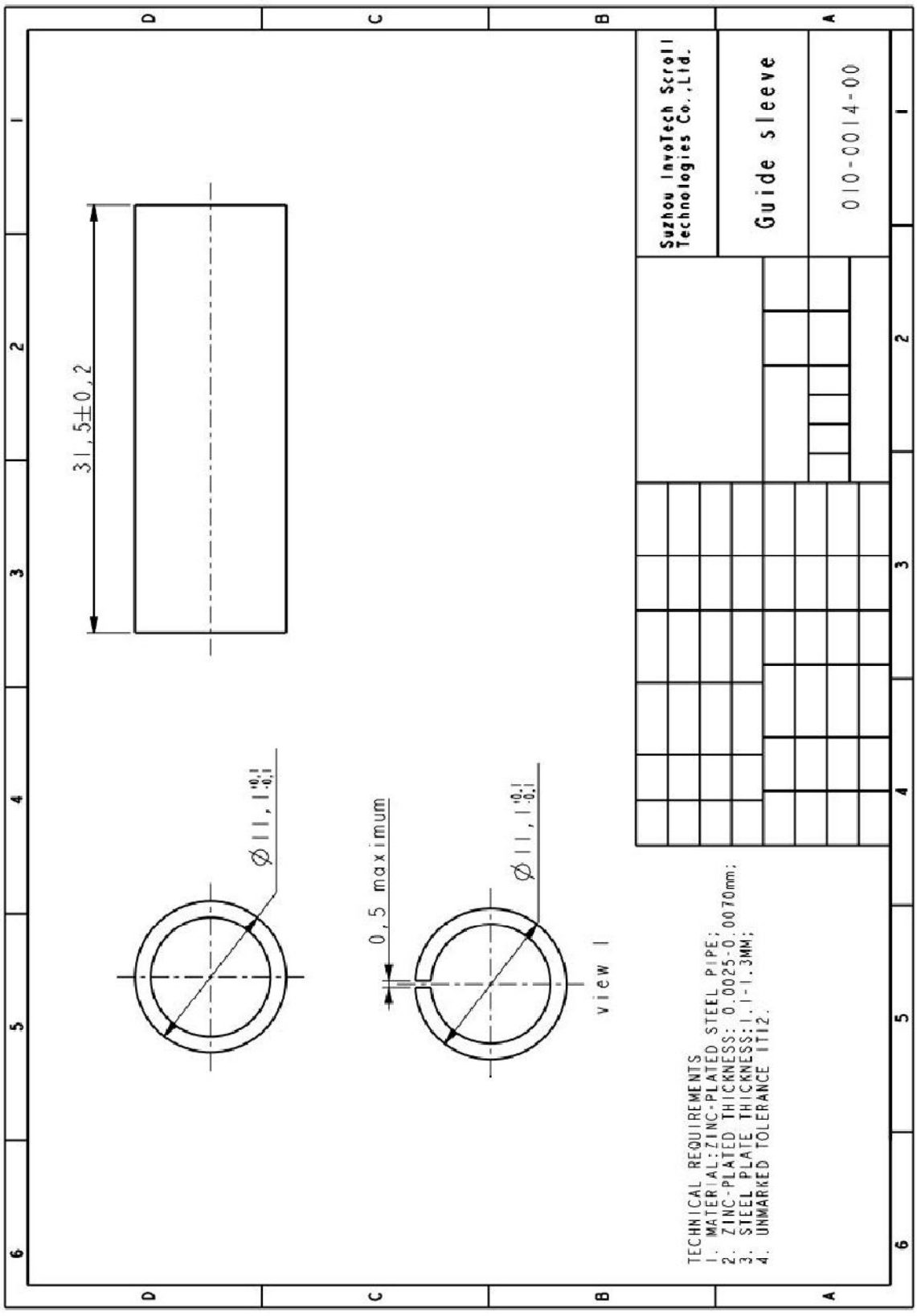
7.12 The compressor is not allowed to lay down or place upside down during transportation, stock and installation. The maximum inclination is 15° when the compressor is running.

8 Drawings

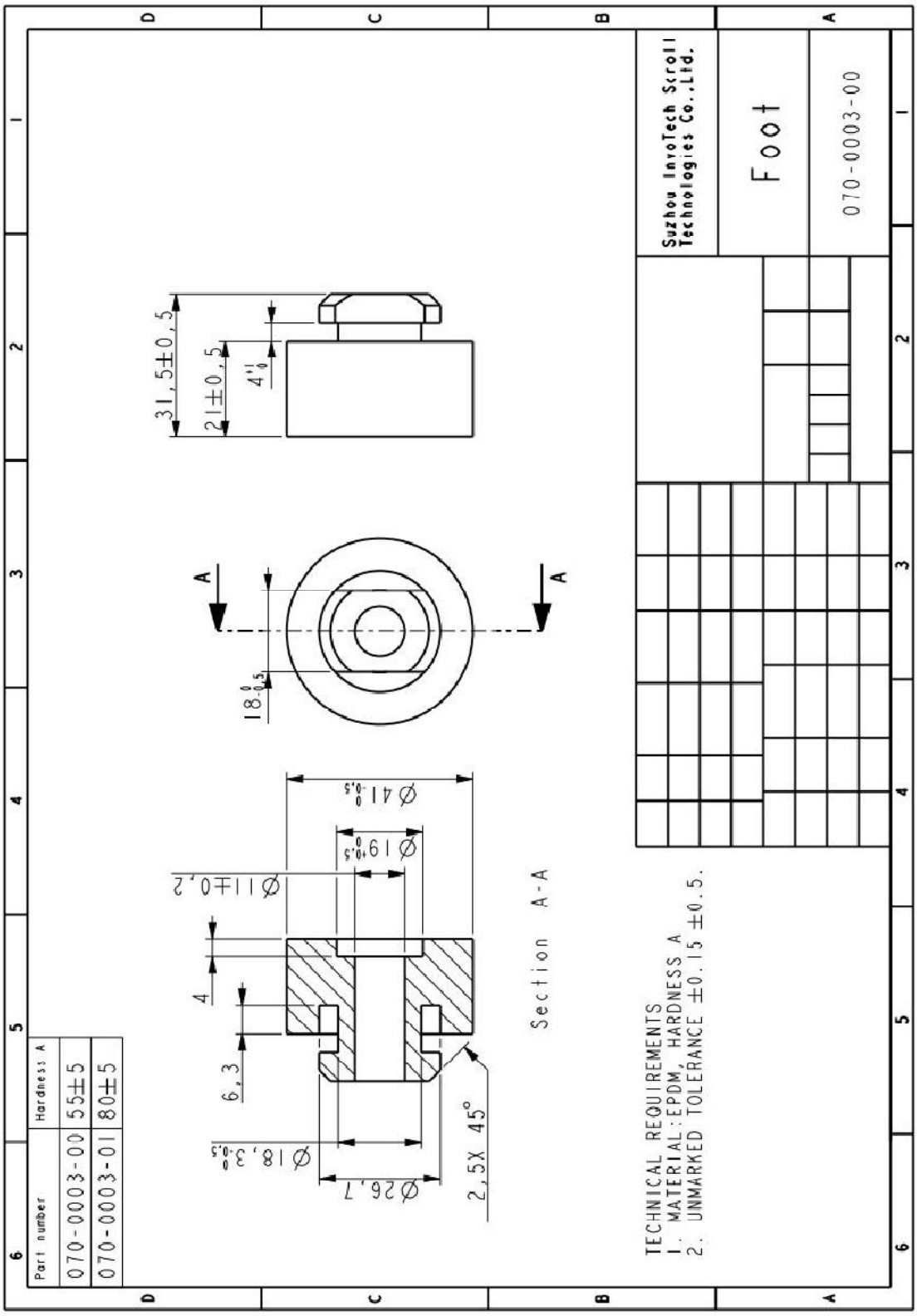
8.1 Outline Drawing



8.2 Sleeve Drawing



8.3 Grommet Drawing



9 Single Phase Compressor Wiring Diagram

Only for single phase

10 Application

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