*** 50Hz YF35E1G V100Specification**

Specification		Notes
Standard Model	YF35E1G-V100	Basic Model
Extended Model		
Extended Model		
Extended Model		
Extended Model		
Extended Model		

Revision Record			
Version	Reviser	Description	Date
A	Xue PeiDong	Final Released	2023/4/13

Rachel chen
Checked by

4/27/2023
Date

Huaping Zhu
Approved by

Apr. 27, 2023
Date

1 Specification

1.1 Basic Specification

Model	YF35E1G-V100(Including Extended Model)
Type	Low Side Shell Design Scroll Compressor
Application	Low Temp. Refrigeration
Refrigerant	R404A
Displacement(cc/rev)	83.3
Cooling Capacity(W)[a]	5260
Input Power(W)[a]	3480
RLA(A)[a]	7.4
Cooling COP(W/W)[a]	1.51
Power Supply	380-420V/3~/50Hz or 460V/3~/60Hz
Min. Operating Voltage(V)	342
Max. Operating Voltage(V)	462
LRA(A)	60
Max. Operating Current(A)[b]	10.3
Rated Speed(r/min)[a]	2900
Compressor Weight(With Oil)(kg)	31.8
Oil Type	POE
Oil Kinematic Viscosity(cSt, 40℃)	32
Oil Density(kg/L, 20℃)	0.977
Primary Charge(L) Recharge(L)	1.4 1.25
Oil Circulation Rate[a]	≤1%
Rated Sound(Sound Power)(dBA)[c]	73
Max. Operating Sound in Running Envelope (Sound Power)(dBA)	78
Vibration Displacement Peak-Peak(mm)[d]	≤0.1
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	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℃)	2.62(±10%)
Line to Line Resistance UW(CR)(Ω, 25℃)	2.62(±10%)
Line to Line Resistance VW(SR)(Ω, 25℃)	2.62(±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)	H3.2/L2.0
Compressor FreeSpace(Without Oil)	
High Side(L) Low Side(L)	H1.0/L4.6
Max. Refrigerant Charge(kg)	See Notes
Discharge Temperature Limit(℃)	≤120 (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.(℃)	-31.6/40.6/36/0/35	0/60/20/0/46.1
Cooling Capacity Deviation	≥90.0%	-
Power Deviation	≤110.0%	-
COP Deviation	≥90.0%	-

3 Internal Protector

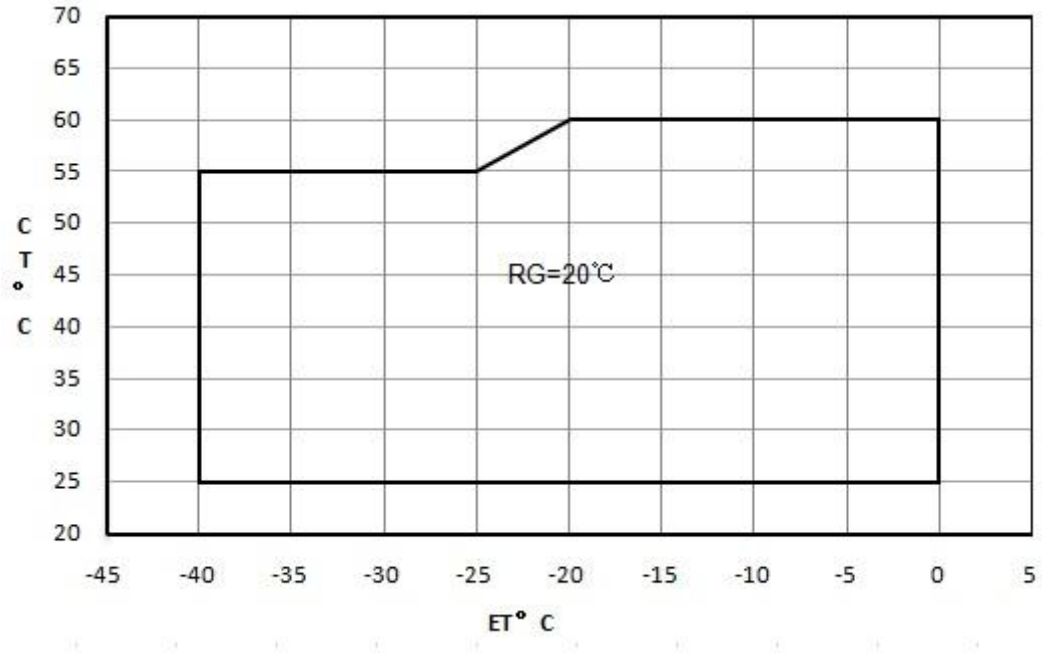
Protection Method	Config	Parameter		
Internal Overload Protector	With	Vendor	Vendor1	Vendor2
		Model	37HM544-XX	3HPD-XX
		Open Temp.(℃)	145±5	145±5
		Close Temp. (℃)	60±9	60±9
		Short Time Trip	41A 3-10s	41A 3-10s
Internal Pressure Relieve Valve	With	2.76-3.10MPa		

4 Accessory

YF35E1G-V100			
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≤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 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.（℃）	-40	-35	-30	-25	-20	-15	-10	-5	0
Cooling Cap(w)	60					5540	6530	7638	8884	10291
	55	2626	3396	4209	5087	6051	7124	8327	9683	11214
	50	2909	3707	4561	5494	6527	7682	8981	10447	12101
	45	3163	3989	4884	5871	6973	8210	9605	11180	12957
	40	3393	4246	5182	6224	7393	8712	10203	11887	13787
	35	3605	4484	5461	6557	7794	9194	10780	12573	14595
	30	3803	4709	5725	6875	8180	9661	11341	13243	15387
	25	3991	4923	5980	7183	8555	10117	11892	13902	16168
Power(W)	60					5189	5400	5655	5954	6302
	55	4317	4373	4457	4571	4718	4900	5119	5378	5680
	50	3876	3929	4005	4106	4233	4390	4580	4803	5064
	45	3432	3488	3561	3652	3766	3904	4068	4261	4486
	40	3017	3080	3154	3243	3347	3471	3615	3783	3977
	35	2661	2736	2818	2908	3008	3122	3252	3399	3568
	30	2395	2488	2582	2679	2780	2890	3010	3142	3290
	25	2252	2367	2478	2586	2694	2805	2920	3042	3174

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	20076.842117	p0	6122.269069
p1	608.078791	p1	24.456598
p2	-161.526485	p2	-266.608889
p3	6.937341	p3	-0.304331
p4	-5.080404	p4	-0.385361
p5	0.372759	p5	6.985958
p6	0.02934	p6	0.003243
p7	-0.054634	p7	0.021817
p8	-0.001187	p8	0.020311
p9	-0.00665	p9	-0.041543

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 alowed 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.

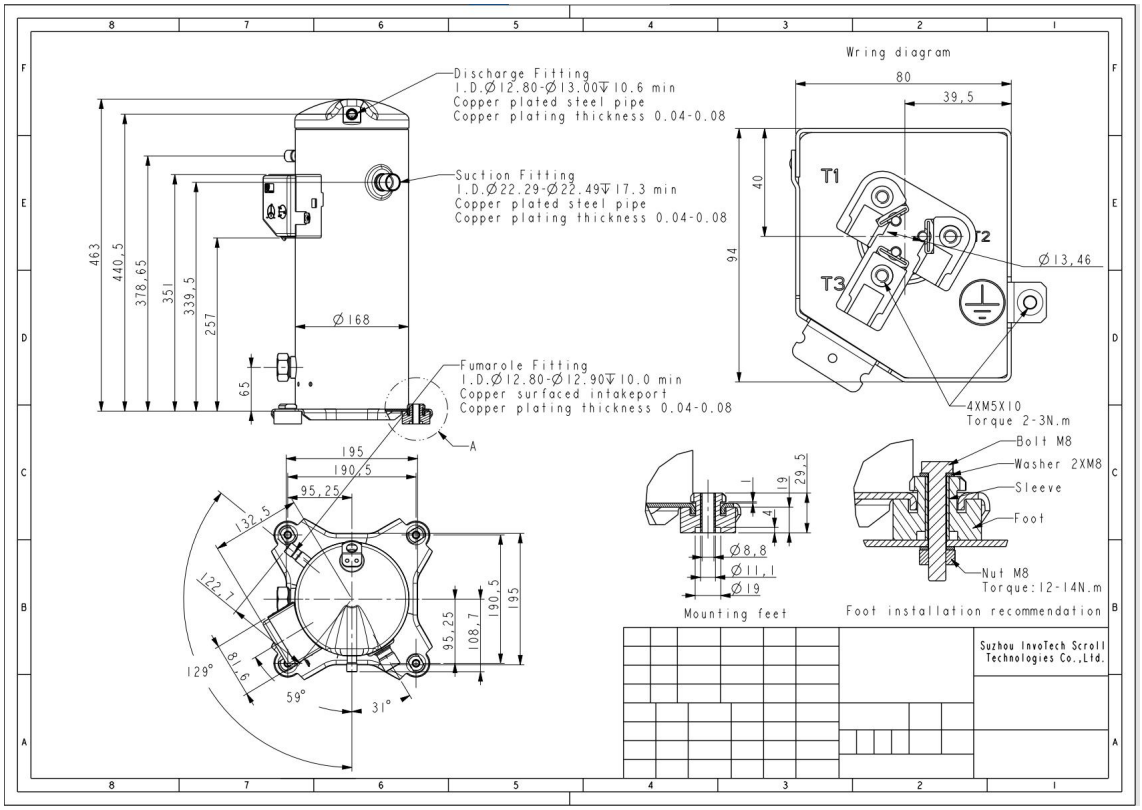
7.10 A 70W crankcase heater is recommended to avoid the refrigerant migration during the off circle and flood start. The crankcase heater should be power on 12 hours earlier than the first start or restart after long duration off.

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

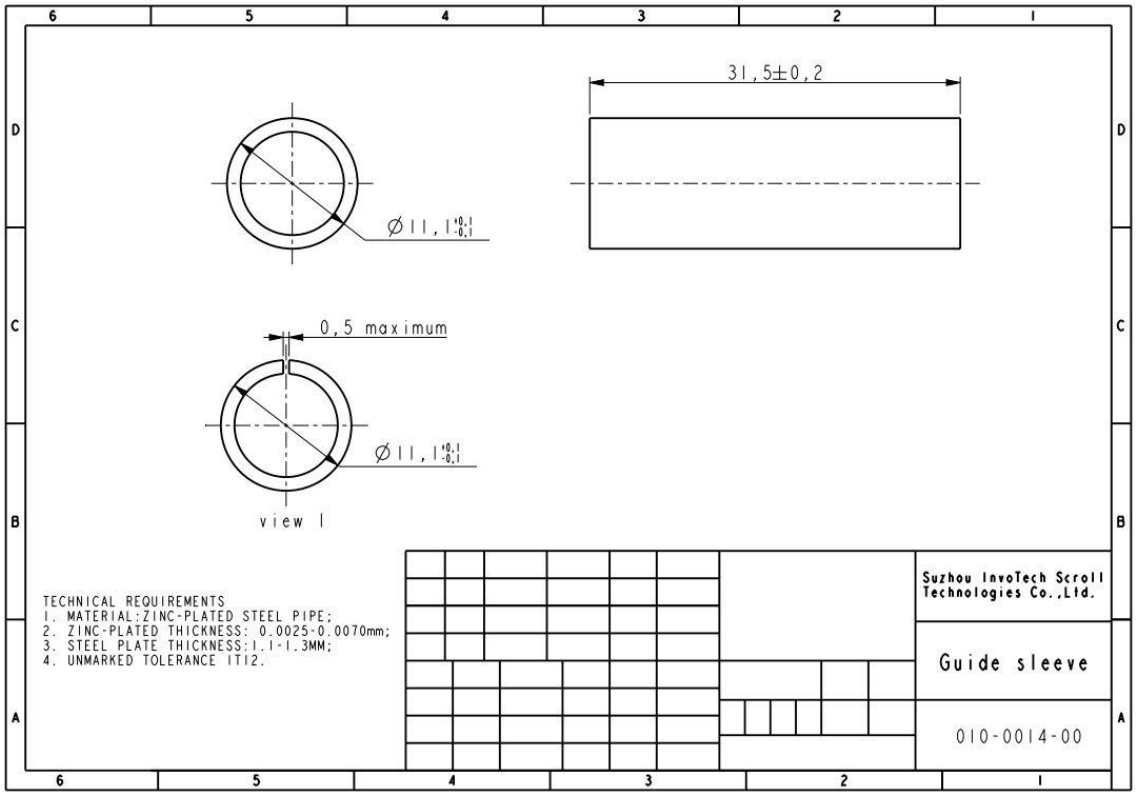
7.12 The compressor is not allowed to lay down or place upside down during transportation, stock and installation. The maximum inclination is 15° when the compressor is running.

8 Drawings

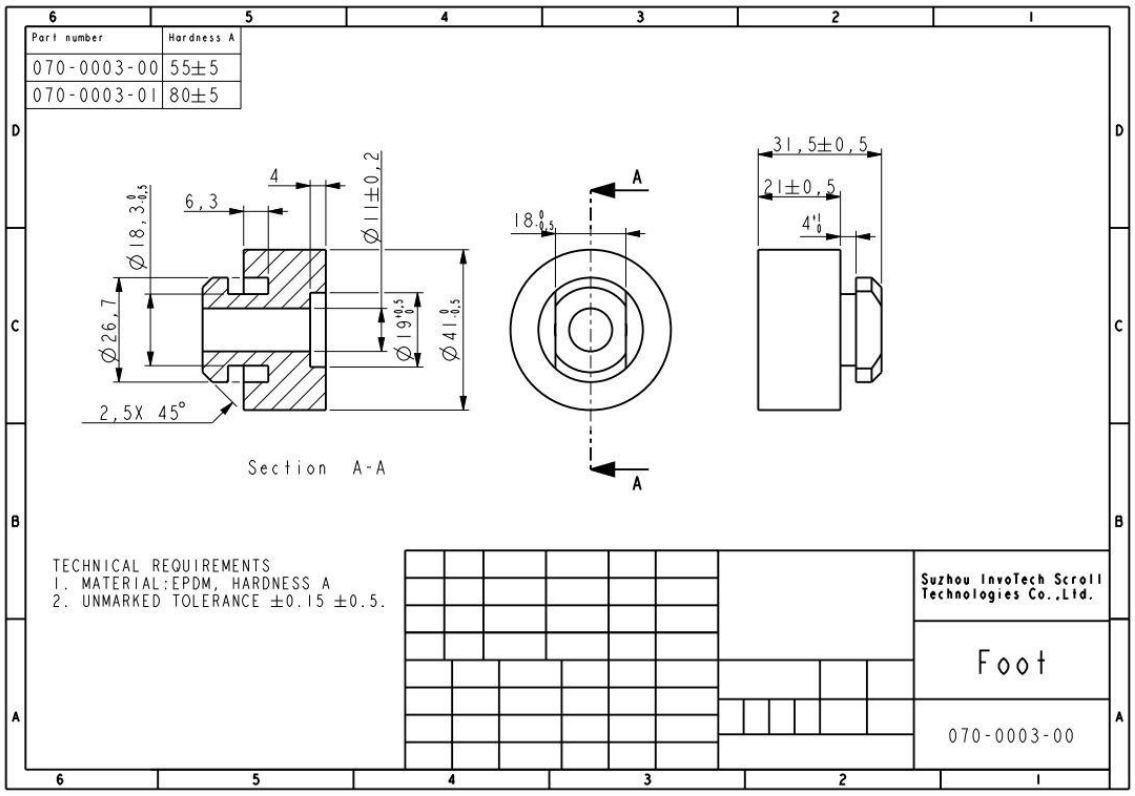
8.1 Outline Drawing



8.2 Sleeve Drawing



8.3 Grommet Drawing



9 Single Phase Compressor Wiring Diagram

Only for single phase

10 Application

See Details in the 《YF serial LBP refrigerant scroll compressor application manual》