* YH292C7 100Specification

Specification		Notes
Standard Model	YH292C7-100	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	YH292C7-100(Including Extended Model)
Type	Low Side Shell Design Scroll Compressor
Application	Air conditioning
Refrigerant	R410A
Displacement(cc/rev)	107.5
Cooling Capacity(W)[a]	35624
Input Power(W)[a]	10970
RLA(A)[a]	33
Cooling COP(W/W)[a]	3.25
Power Supply	208-230V/3~/60Hz
Min. Operating Voltage(V)	187
Max. Operating Voltage(V)	253
LRA(A)	290
Max. Operating Current(A)[b]	49.32
Rated Speed(r/min)[a]	3500
Compressor Weight(With Oil)(kg)	54
Oil Type	POE
Oil Kinematic Viscosity(cSt, 40℃)	32
Oil Density(kg/L, 20℃)	0.977
Primary Charge(L)	2.7
Recharge(L)	2.55
Oil Circulation Rate[a]	≤1%
Rated Sound(Sound Power)(dBA)[c]	75
Max. Operating Sound in Running Envelope (Sound Power)(dBA)	80
Vibration Displacement Peak-Peak(mm)[d]	≤0.12
Moisture(mg)	≤1500
Impurity(mg)	≤180
LVS(V)[e]	177
MOV (V)[f]	187
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(℃)	130(B Class)
Line to Line Resistance UV(CS)(Ω, 25℃)	0.22(±10%)
Line to Line Resistance UW(CR)(Ω, 25℃)	0.22(±10%)
Line to Line Resistance VW(SR)(Ω, 25℃)	0.22(±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)	H0.9/L6.3
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	UP9NY0506-XX	
		Open Temp.(℃)	135±5	
		Close Temp. (℃)	60±9	
		Short Time Trip	174A	A
			3-10s	s
Internal Pressure Relieve Valve	With	3.97-4.31MPa		

4   Accessory

YH292C7-100			
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
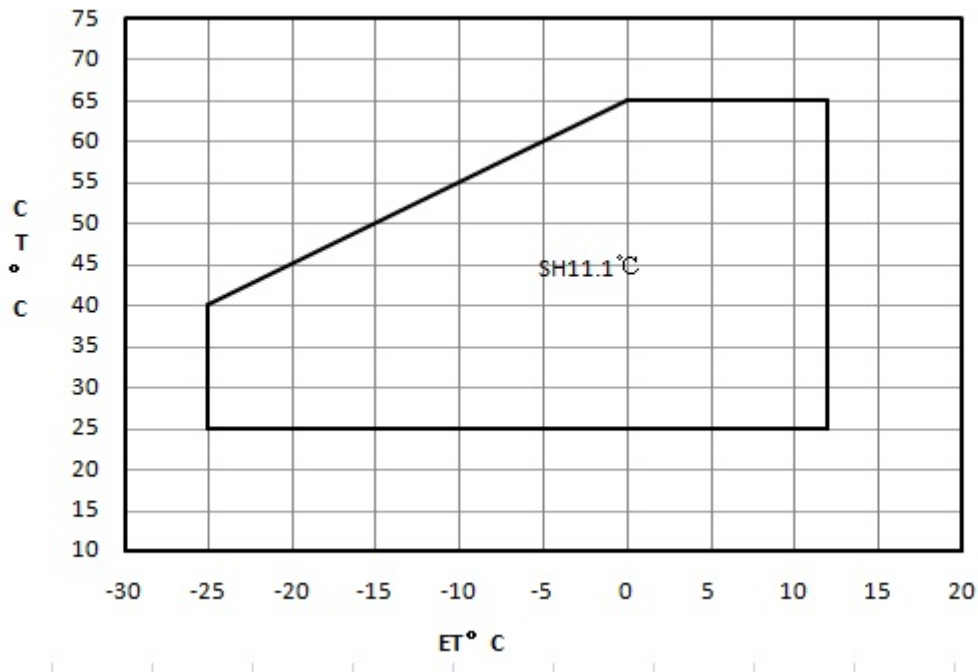
5.2   EVI control logic(only for the compressors with EVI module)
   - Recommend system subcooling 5K
   - DLT≤95℃,control superheat of injection line=5K
   - DLT＞95℃,control DLT=95℃
   - Max injection pressure≤2.0MPa

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

Type	E.T.(℃) / C.T.(℃)	-25	-20	-15	-10	-5	0	5	10
Cap (W)	65						21801	26698	32328
	60					20060	24577	29705	35634
	55				18037	22252	26957	32341	38592
	50			15773	19766	24126	29042	34705	41302
	45		13313	17160	21253	25781	30932	36897	43863
	40	10698	14478	18382	22599	27318	32728	39018	46377
	35	11762	15556	19540	23904	28837	34529	41167	48942
	30	12815	16645	20733	25267	30439	36435	43446	51660
	25	13957	17847	22061	26790	32222	38547	45953	54630
Power (W)	65						14645	14495	14385
	60					12988	12826	12694	12603
	55				11581	11419	11275	11164	11096
	50			10375	10224	10080	9958	9869	9827
	45		9319	9189	9057	8936	8837	8774	8760
	40	8362	8266	8157	8047	7950	7878	7844	7861
	35	7403	7328	7242	7157	7087	7045	7043	7093
	30	6521	6469	6408	6352	6312	6302	6334	6421
	25	5678	5653	5621	5595	5589	5613	5683	5810

6.2 Ten Coefficients of Polynomial

Expression	$z = p_0 + p_1 \cdot x + p_2 \cdot y + p_3 \cdot x^2 + p_4 \cdot x \cdot y + p_5 \cdot y^2 + p_6 \cdot x^3 + p_7 \cdot x^2 \cdot y + p_8 \cdot x \cdot y^2 + p_9 \cdot y^3$		
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	55698.214648	p0	1743.128302
p1	1798.694727	p1	53.605624
p2	-1005.937879	p2	204.716365
p3	28.34596	p3	1.107736
p4	-19.611684	p4	-2.064723
p5	16.134149	p5	-3.183919
p6	0.252123	p6	0.01706
p7	-0.268601	p7	-0.008675
p8	0.093396	p8	0.011234
p9	-0.133555	p9	0.047509

Notes：Coefficients of polynomial are based on the fitting results of some sample data,

which can be used as a reference of compressor selection, butcannot 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 90W 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
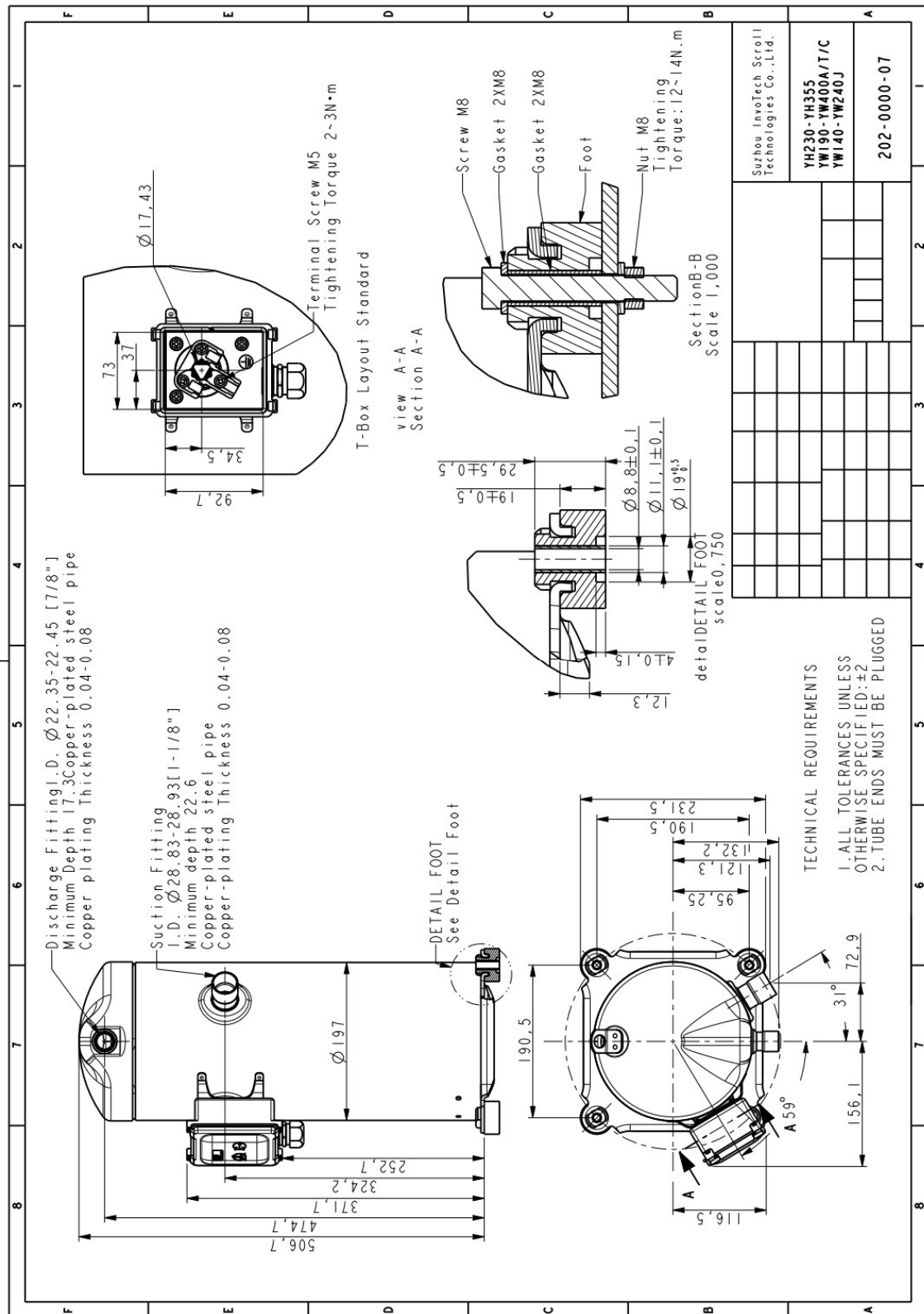
9   Single Phase Compressor Wiring Diagram

Only for single phase