

Basic Specification	
Model	YS15E3G-100
Type	Low Side Scroll Compressor
Application	Medium Temp. Refrigeration
Power	2 HP
Refrigerant	R404
Displacement (CC/Rev)	34.07
Compressor Weight With Oil (Kg)	23
Oil Type	POE
Oil Kinematic Viscosity (cSt,40°F)	32
Oil Primary Charge (L)	0.85
Oil Recharge (L)	0.75
Rated Speed (r/min)	3520
IP Class Of Terminal Box	IP21
Compressor Colour	Black

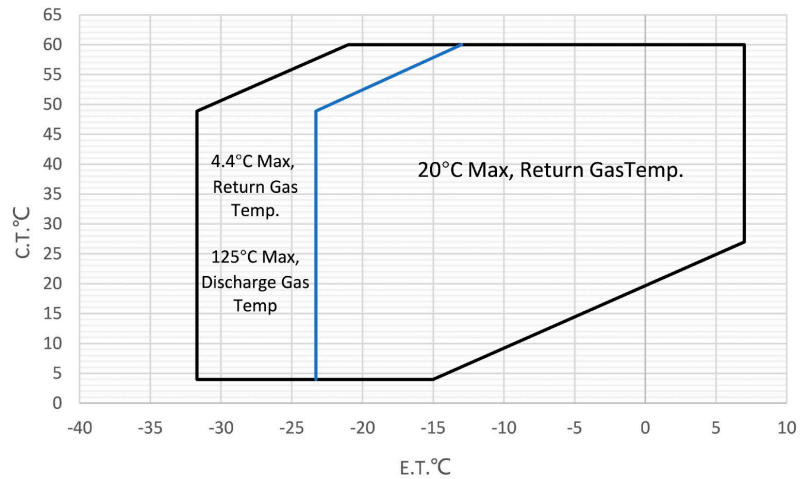
Performance Specifications	
Cooling Capacity (W)	4480±5%
Cooling Capacity (Btu/h)	15290±5%
Input Power (W)	2225±5%
Cooling COP (W/W)	2.01±5%
Cooling EER (BTU/Wh)	6.86±5%
Rated Operating Current (A)	9.7
Oil Circulation Rate(%)	≤1%
Rated Sound Power (dBA)	68
Max. Sound Power (dBA)	70
Max. Vibration Displacement (mm)	0.09

Test Condition	Rated Cooling	Oil Circulation	Sound & Vibration
Evaporating Temp. (°C)	-6.7	-6.7	-6.7
Condensing Temp. (°C)	48.9	48.9	48.9
Suction Superheat (K)	25	25	25
Liquid Subcooling (K)	0	0	0
Ambient Temp. (°C)	35	35	35
Voltage (V)	230	230	230

Electric Parameters	
Motor Type	Single Phase Motor
Motor Poles	2
Power Supply	208~230V/1~/60Hz
Starting capacitor (µ F/V)	NO
Run capacitor (µ F/V)	45/450
Locked Rotor Current (A)	66
Max. Operating Current (A)	17.5
Motor Insulation Class	B
Line to Line Resistance (Ω,25°C)	main winding 0.995±7% secondary winding 1.121±7%
Lowest Starting Voltage (V)	187
Dielectric Strength	2000VAC / 1s / 50Hz or 60Hz leakage current≤2.5mA
Insulation Resistance (MΩ)	≥20
Ground Resistance (Ω)	≤0.1

Safety Operating Limitation	
Tightness Test Pressure (MPa)	3.8-4.0
High Side Max Running Pressure (MPa)	3.2
Low Side Max Running Pressure (MPa)	2.0
Discharge Temp. Limit (°C)	≤125 120mm to Compressor Discharge Connection And Well Insulated

Operating Envelope



Performance Data Sheet

- » The performance parameters are based on the suction superheat of 11.1K and the condensation superheat of 0K within the operating range.
- » The performance parameters for polynomial coefficient calculation are only applicable within the operating range.
- » The heating capacity, cooling capacity, and power of the compressor can be calculated using polynomials.

		Performance Table								
Item	C.T.(°C) \ E.T.(°C)	-30	-25	-20	-15	-10	-5	0	5	
		Refrigeration capacity (W)	60			1691	2155	2723	3403	4204
55			1566	2000	2535	3178	3937	4820	5834	
50	1395		1796	2294	2896	3609	4442	5402	6498	
45	1561		2017	2574	3237	4017	4919	5952	7124	
40	1723		2230	2841	3562	4403	5370	6472	7715	
35	1885		2438	3098	3872	4770	5797	6962	8274	
30	2048		2642	3346	4169	5119	6202	7426	8800	
25	2213		2844	3588	4455	5452	6586	7865	9297	
20	2382		3045	3826	4732	5771	6952	8281		
15	2558		3248	4060	5001	6078	7301			
Power (W)	60			2363	2478	2593	2704	2807	2899	
	55		2061	2163	2266	2367	2461	2546	2618	
	50	1808	1899	1991	2081	2167	2245	2311	2363	
	45	1677	1758	1840	1918	1989	2051	2099	2131	
	40	1562	1635	1706	1772	1829	1874	1905	1916	
	35	1459	1524	1585	1638	1681	1710	1723	1714	
	30	1363	1420	1471	1512	1541	1554	1549	1520	
	25	1271	1319	1360	1389	1404	1402	1378	1330	
	20	1176	1217	1247	1265	1266	1247	1206		
	15	1075	1108	1128	1134	1121	1087			
10	963	987	998	992	965					
5	834	851	852	834						

Ten term coefficient			
Expressio Polynomial expression	$z = p_0 + p_1 \cdot x + p_2 \cdot y + p_3 \cdot x^2 + p_4 \cdot x \cdot y + p_5 \cdot y^2 + p_6 \cdot x^3 + p_7 \cdot x^2 \cdot y + p_8 \cdot x \cdot y^2 + p_9 \cdot y^3$		
Explanation of physical quantities	z: Cooling capacity (W) or Power (W); W = W + W Special note: Heating capacity = Cooling capacity + Power x: Evaporating Temp. °C y: Condensing Temp. °C p0~p9: Polynomial coefficients		
Cooling	Value	Power	Value
p0	9749.993	p0	408.8012
p1	313.5291	p1	-25.6358
p2	-66.9371	p2	47.33895
p3	3.419316	p3	-0.67895
p4	-1.2466	p4	0.734134
p5	-0.27645	p5	-0.50025
p6	0.010348	p6	-0.00435
p7	-0.01438	p7	0.007759
p8	-0.01837	p8	0.000353
p9	-0.00248	p9	0.00629

- » Explanation: The coefficients of the polynomial are based on the fitting results of a certain sample data, which can be used as a reference for compressor selection, but cannot completely replace user testing.
- » Performance Data Sheet Is Based On Limited Compressor Tests and Data Treatment, It Is Only a Reference for Compressor Selection.
- » Superheating of return gas temperature within Envelope is 11.1 K, and Liquid Subcooling is 0 K;

Compressor Protection Motor Protector

Internal Protector For Motor Protection	
Open Temp.(°C)	115
Close Temp.(°C)	70
Short Time Trip (A)	50

High Pressure Relieve

Internal Pressure Protection	
Open Pressure Of Relieve Valve (MPa)	NO

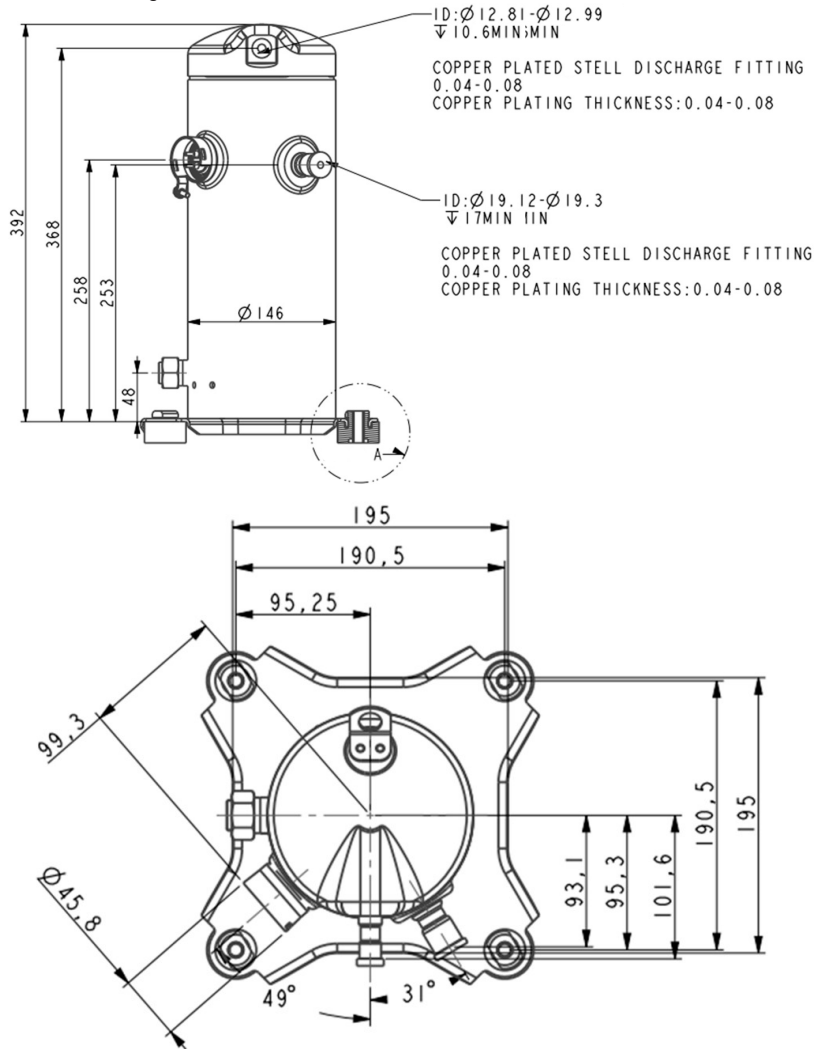
Accessory

Item	Drawing/Standard No.	Quantity
Grommet	070-0003-00	4
Sleeve	010-0014-00	4

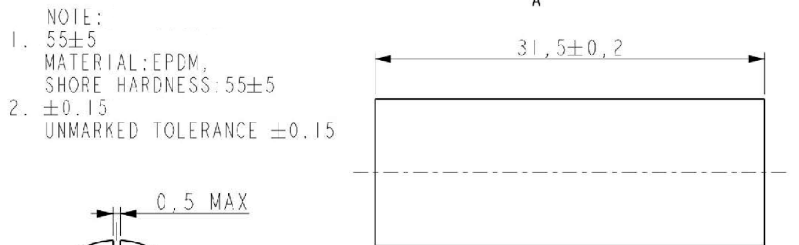
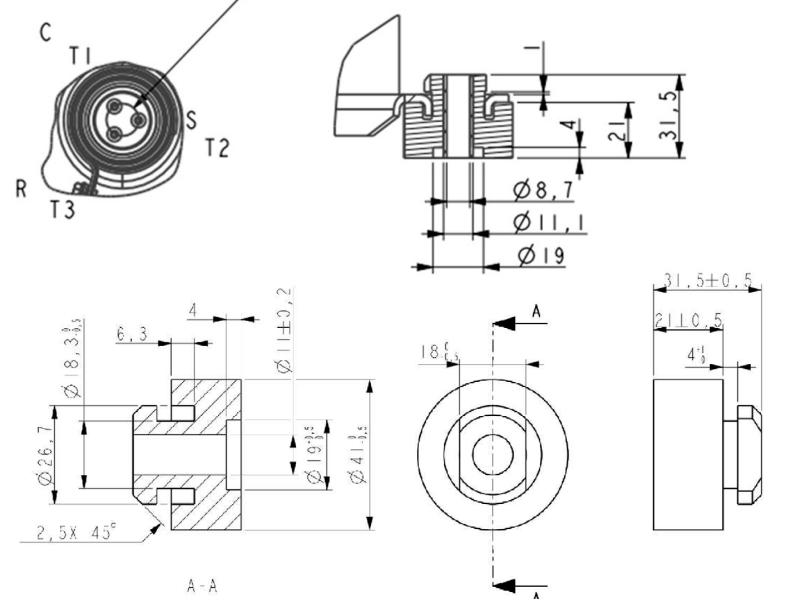
Attentions

- » 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;
- » 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 far away from the compressor, to avoid the liquid refrigerant flooding back;
- » The refrigerant charge amount complies with local regulations;
- » It is not allowed to run compressor in vacuum, not allowed to run compressor without refrigerant, and not allowed to run compressor in the reversed direction for long duration;
- » The compressor can only work with approved refrigerants;
- » The compressor is not allowed to work outside its envelope. System design should guarantee the suction line superheat and avoid the liquid refrigerant flooding back;
- » When the suction and discharge plugs are removed, the assembly and brazing should be done in 15 minutes;
- » The frequently start/stop compressor 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 between start and stop is 3 minutes.
- » A 70W crankcase heater is recommended to avoid the refrigerant migration during the off circle and flooded start. The crankcase heater should be powered on 12 hours earlier before the first start or restart after long duration off;
- » The system should be equipped with necessary protection devices for pressure, temperature, oil return, overcurrent and phase fault, etc.
- » 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.

Drawings Outline Drawing



NOTE
1. UNIT: MM
2. ALL TOLERANCES UNLESS OTHERWISE SPECIFIED: ±3mm ±3°



Application Guideline

- » See Details in the YM serial MBP refrigerant scroll compressor application manual