INVOTECH
CENTRO DE DISTRIBUCIÓN MÉXICO
INNOVATION HVAC/R SOLUTION

SCROLL COMPRESSOR
TECHNICAL DATASHEET: YH720C1G-100

ISO 9001:2015

Basic Specification	
Model	YH720C1G-100
Type	Low Side Shell Design Scroll Compressor
Application	Air conditioning
Power	25 HP
Capacity (BTU/Hr)	283276
Refrigerant	R410A
Displacement(cc/rev)	269.0
Cooling Capacity(W)[a]	83520
Input Power(W)[a]	25800
RLA(A)[a]	38.5
Cooling COP(W/W)[a]	3.24
Power Supply	380-420V/3~/50Hz or 460V/3~/60Hz
Min. Operating Voltage(V)	414
Max. Operating Voltage(V)	506
LRA(A)	266.0
Max. Operating Current(A)[b]	53.0
Rated Speed(r/min)[a]	3500
Compressor Weight (With Oil)(kg)	104
Oil Type	POE
Oil Kinematic Viscosity(cSt, 40°C)	32
Oil Density(kg/L, 20°C)	0.977
Primary Charge(L) Recharge(L)	5.5 5.3
Oil Circulation Rate[a]	≤3.5%
Rated Sound(Sound Power)(dBA)[c]	80
Max. Operating Sound in Running Envelope (Sound Power)(dBA)	87
Vibration Displacement Peak-Peak(mm)[d]	≤0.12
Moisture(mg)	≤4000
Impurity(mg)	≤380
LVS(V)[e]	391
MOV (V)[f]	414
Start Capacitor(μF/V)	/
Start Relay	/
Run Capacitor(μF/V)	/
IP Class of Terminal Box	IP54
Compressor Color	Black

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)	0.46 (±10%)
Line to Line Resistance UW(CR)(Ω, 25°C)	0.46 (±10%)
Line to Line Resistance VW(SR)(Ω, 25°C)	0.46 (±10%)
Dielectric Strength	2000VAC / 1s / 50Hz or 60Hz, Leakage Current≤5mA
Insulation Resistance(MΩ)	≥20
Ground Resistance(Ω)	≤0.1

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)	H1.75/L14.4
Max. Refrigerant Charge(kg)	See Notes
Discharge Temperature Limit(°C)	≤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°C
f	Max. Load Condition

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	20/65/11.9/8.3/46.1
Cooling Capacity Deviation	≥95.0%	-
Power Deviation	≤105.0%	-
COP Deviation	≥95.0%	-

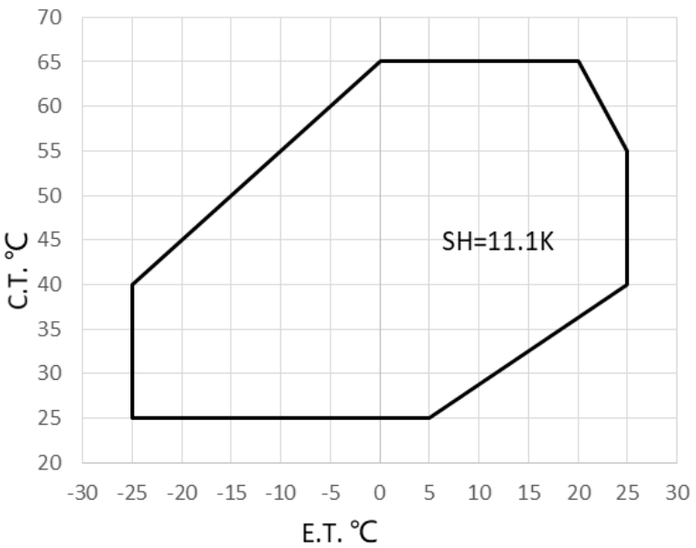
Internal Protector

Protection Method	Config	Parameter		
External Overload Protector	With	Model	INT69-E1	SE-E1
		Open Temp.(°C)	150±5	150±5
		Supply Voltage (°C)	115-230	208-240
		Reset Method	Restart after power off	Restart after power off
Internal Pressure Relieve Valve	Without	3.97-4.31MPa		

Accessory

Item	Name	P.N.	PCS
1	Grommet	070-3033-00	4
2	Sleeve	010-3033-00	4
3	Grommet Screw Grommet Nut	GB/T5783-2000 GB/T6170-2000	4 4
4	Grommet Washer	GB/T96.1 10	8

Compressor Operating Envelope



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

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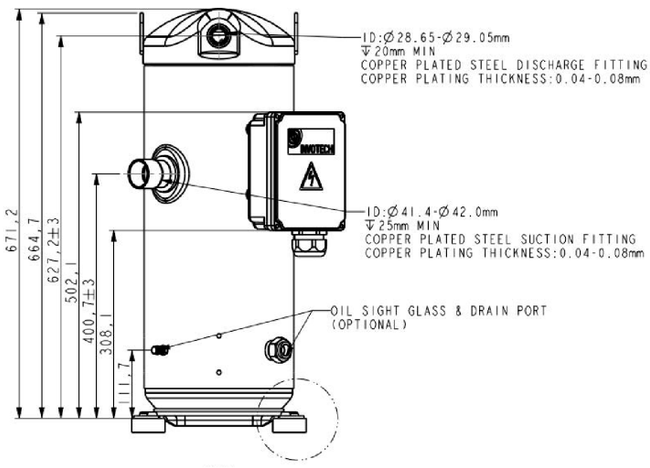
Performance Table													
Item	E.T.(°C) / C.T.(°C)	-30	-25	-20	-15	-10	-5	0	5	10	20	25
Cooling Cap(W)	65						49611	60823	73736	88738	106219	
	60					47292	57697	69667	83591	99857	118855	
	55				43076	52641	63634	76445	91463	109076	129674	153646
	50			37900	46592	56575	68240	81975	98170	117214	139496	165404
	45		32705	40489	49429	59914	72334	87077	104532	125090	149138	177066
	40	28429	35271	43134	52406	63476	76734	92568	111367	133522	159420	189451
	35	31878	38630	46655	56342	68080	82259	99267	119494	143329		
	30	36854	43598	51869	62055	74545	89728	107994	129732			
	25	44176	50997	59596	70364	83689	99960	119567				
Power (W)	65						32081	32508	32844	33109	33322	
	60					28392	28763	29058	29294	29492	29671	
	55				25206	25536	25803	26025	26222	26413	26618	26855
	50			22426	22729	22982	23203	23413	23631	23875	24166	24522
	45		19955	20245	20498	20733	20970	21227	21525	21883	22320	22855
	40	17696	17987	18254	18516	18794	19106	19471	19910	20441	21084	21857
	35	15858	16153	16457	16789	17169	17616	18150	18789	19553		
	30	14099	14458	14859	15321	15863	16505	17267	18166			
	25	12422	12905	13463	14115	14880	15777	16827				

Notes

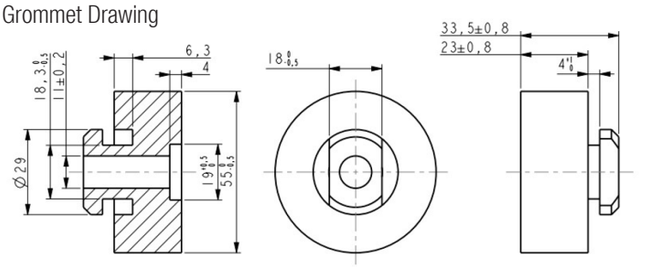
- » It is not allowed to perform vacuum in the system by using the refrigeration compressor.The compressor can start only after the refrigerant charged. In some cases, such as on the field site, if it is limited by the situation that can't charge the required volume of refrigerant, 50% of the required 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.
- » 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..
- » Refrigerant charge limitation: the ratio between the weight of oil and refrigerant should be >=0.4.
- » 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.
- » The compressor can only work with approved refrigerant.
- » 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.
- » When the suction and discharge plugs are removed, the assembly and brazing should be done in 15 minutes.
- » 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.
- » Before startup, Discharge pressure-Suction pressure ≤0.3Mpa.
- » The deviation of supplied voltage should be less than +/-10% of rated voltage.
- » 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.
- » The system should be equipped with necessary protection devices, such as 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.

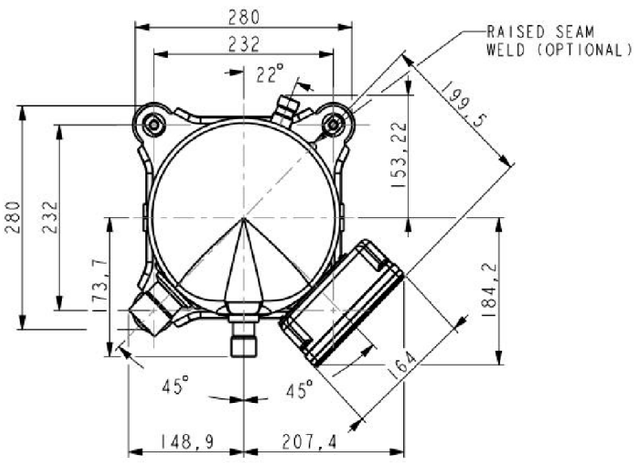
Drawings

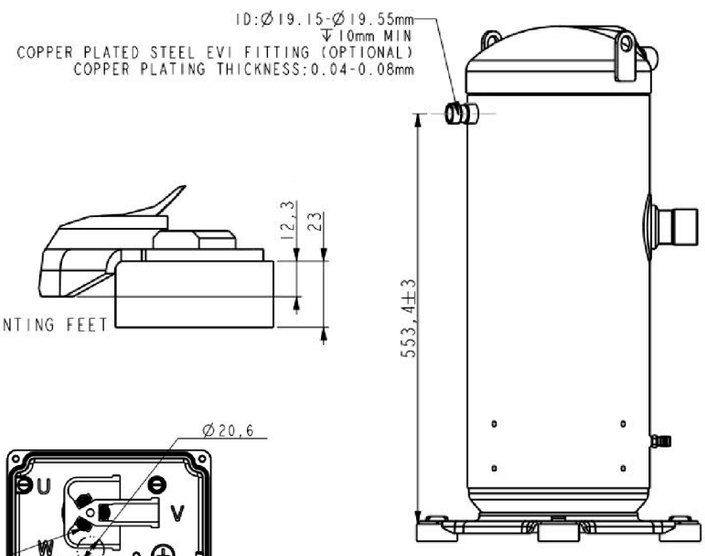
Outline Drawing



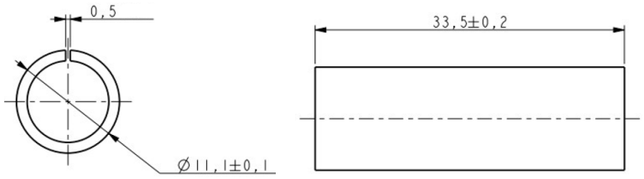
Grommet Drawing



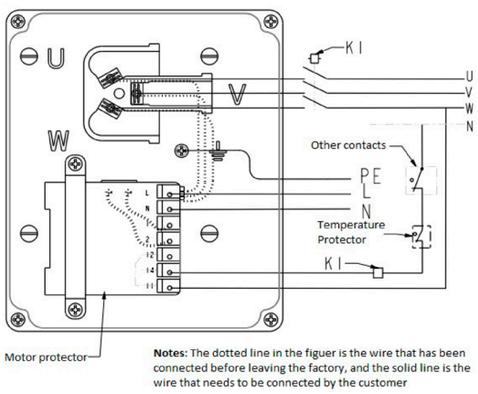




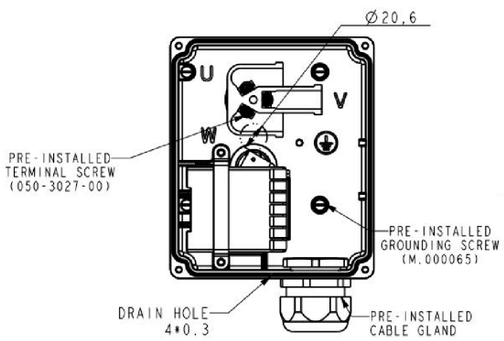
Sleeve Drawing



Wiring Connection



Notes: The dotted line in the figuer is the wire that has been connected before leaving the factory, and the solid line is the wire that needs to be connected by the customer



Application

- » See Details in the YH serial air-condition scroll compressor application manual.