INVOTECH
CENTRO DE DISTRIBUCIÓN MÉXICO
INNOVATION HVAC/R SOLUTION

SCROLL COMPRESSOR
TECHNICAL DATASHEET: YS34U3G-100

ISO 9001:2015

Basic Specification	
Model	YS34U3G-100
Type	Low Side Scroll Compressor
Application	Medium Temp. Refrigeration
Power	5 HP
Capacity (BTU/Hr)	32909
Refrigerant	R454C
Displacement (in^3/Rev)	5.08
Compressor Weight With Oil (lbs)	83.8
Oil Type	POE
Oil Kinematic Viscosity (cSt,104°F)	32
Oil Primary Charge (oz)	54.1
Oil Recharge (oz)	49.0
Rated Speed (r/min)	3500
IP Class Of Terminal Box	IP54
Compressor Colour	Black

Performance Specifications	
Cooling Capacity (BTU/hr)	32909±7.5%
Input Power (W)	4265±7.5%
EER (BTU/Wh)	7.72±7.5%
Rated Operating Current (A)	19.8
Oil Circulation Rate(%)	≤1%
Rated Sound Power (dBA)	74
Max. Sound Power (dBA)	79
Max. Vibration Displacement (mil)	≤3.9

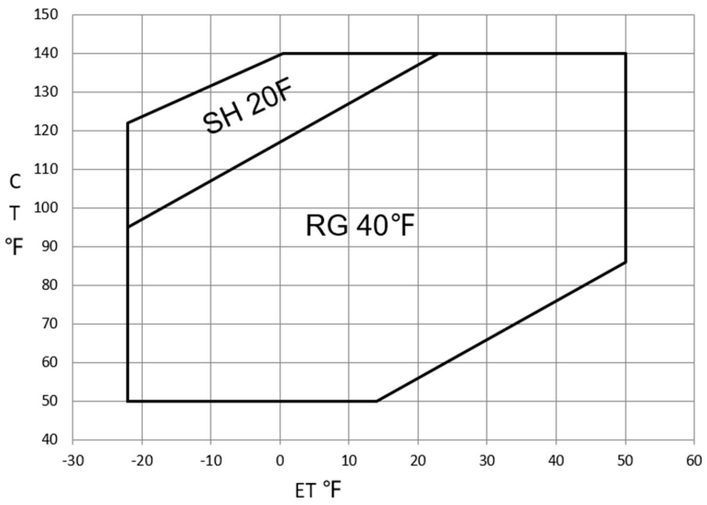
Test Condition	Rated Cooling	Oil Cirulation	Sound & Vibration
Evaporating Temp. (°F)	20	20	20
Condensing Temp. (°F)	120	120	120
Return Gas Temp. (°F)	40	40	40
Liquid Temp. (°F)	120	120	120
Ambient Temp. (°F)	95	95	95

Electric Parameters		
Motor Type		Three Phase Induction Motor
Motor Poles		2
Power Supply		208-230V/1~/60Hz
Locked Rotor Current (A)		140
Max. Operating Current (A)		32.7
Motor Insulation Class		B
Line to Line Resistance (Ω,77°F)	UW(RC)	0.414± 10%
	UV(SC)	0.849± 10%
	VW(RS)	1.255± 10%
Lowest Starting Voltage (V)		177
Start Capacitor (μF/V)		250/330

Start Relay	HLR3800-3F3C
Run Capacitor(μF/V)	100/450
Dielectric Strength	2000VAC / 1s / 60Hz ≤5mA
Insulation Resistance (MΩ)	≥20
Ground Resistance(Ω)	≤0.1

Safety Operating Limitation	
Tightness Test Pressure (psig)	551-580
High Side Max Running Pressure(psig)	328.8
Low Side Max Running Pressure(psig)	76.3
Discharge Temp. Limit (°F)	≤257 4.72in to Compressor Discharge Connection And Well Insulated

Operating Envelope



Performance Table									
Item	E.T.(°C) / C.T.(°C)	-20	-10	0	10	20	30	40	50
Cooling Cap. (BTU/hr)	140			14850	20734	27103	34304	42674	52551
	130		13079	18569	24375	30818	38245	46993	57400
	120	10654	15900	21254	27076	33687	41434	50654	61685
	110	12804	17856	23169	29101	35975	44137	53924	65674
	100	14241	19193	24559	30697	37927	46597	57044	69606
	90	15224	20171	25684	32121	39803	49076	60279	73749
	80	16003	21040	26793	33624	41850	51820	63871	78341
	70	16834	22055	28144	35463	44329	55091	68086	83653
	60	17968	23466	29985	37885	47485	59131	73163	89918
	50	19662	25534	32576	41154	51582	64209	79374	97414
Power (W)	140			4736	4955	5154	5336	5505	5663
	130		4100	4311	4502	4677	4838	4989	5133
	120	3558	3760	3943	4110	4264	4408	4545	4680
	110	3289	3463	3622	3768	3904	4035	4162	4290
	100	3051	3201	3338	3467	3590	3711	3832	3958
	90	2833	2962	3083	3198	3312	3426	3544	3671
	80	2627	2739	2847	2952	3059	3171	3290	3421
	70	2423	2522	2619	2718	2823	2936	3060	3199
	60	2212	2301	2392	2489	2594	2712	2844	2995
	50	1983	2066	2155	2253	2363	2489	2633	2800

» Performance Data Sheet Is Based On Limited Compressor Tests and Data Treatment, It Is Only a Reference for Compressor Selection.

» Return gas temperature within Envelope is 40°F, and Liquid Subcooling is 0F;

Compressor Protection
Motor Protector

Internal Protector For Motor Protection	
Open Temp.(°F)	302±9
Close Temp.(°F)	176±16
Short Time Trip	155A 3-10s

Accessory

Item	Drawing/Standard No.	Quantity
Grommet	070-0003-00	4
Sleeve	010-0014-00	4
StartBox	110-0076-10	1

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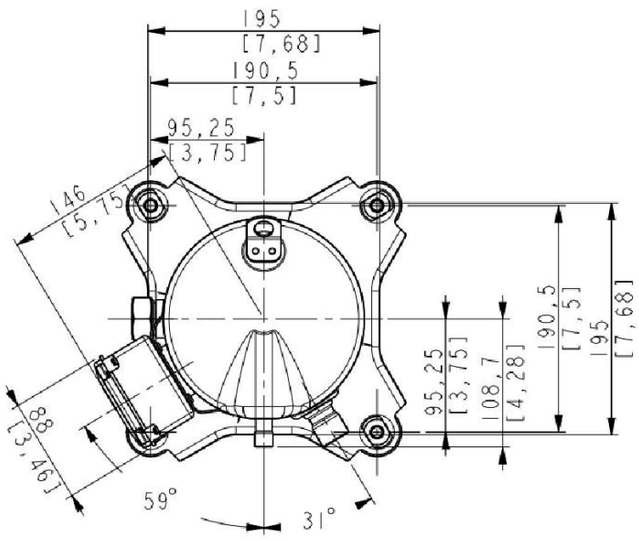
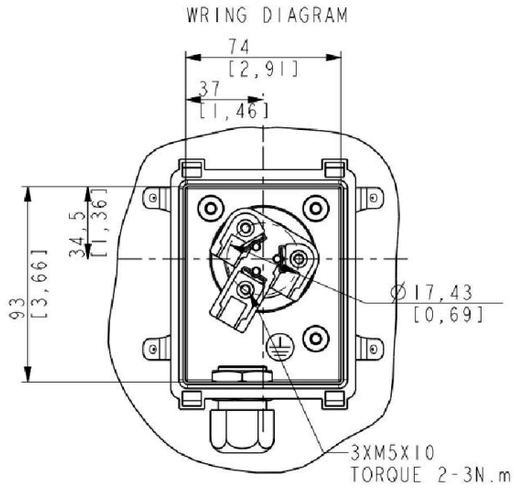
Attentions

- » 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 o 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.

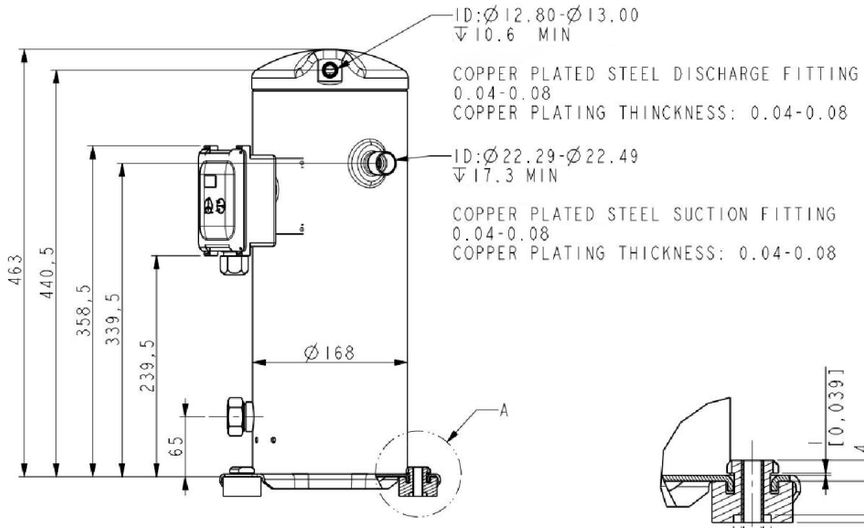


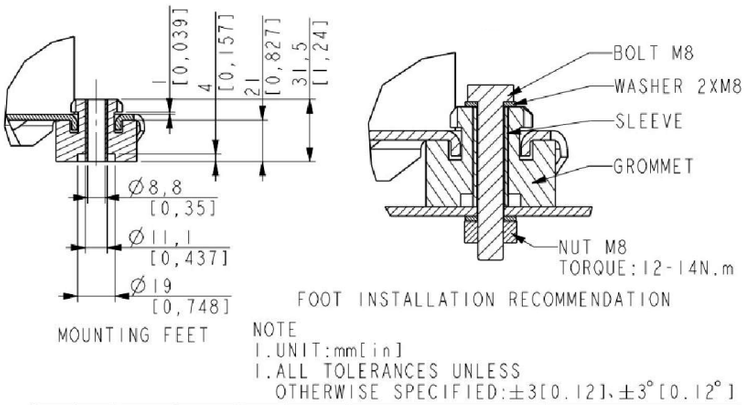
Wring Diagram



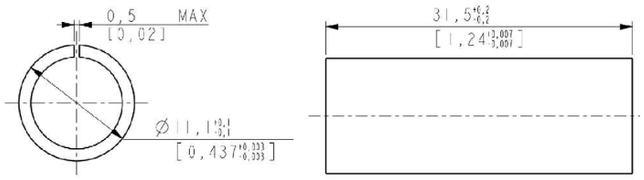
Compressor Drawings

Compressor Outline Drawing

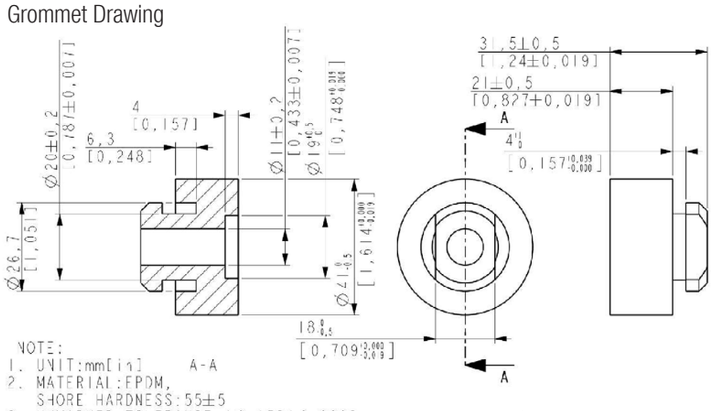




Mounting Sleeve Drawing



Grommet Drawing



Application Guideline

- » See Details in the Application Guidelines for Invotech YS****U***_R454C.

Single Phase Compressor Wiring Diagram

Only for single phase