INVOTECH
CENTRO DE DISTRIBUCIÓN MÉXICO
INNOVATION HVAC/R SOLUTION

# SCROLL COMPRESSOR
## TECHNICAL DATASHEET: YS42U7G-100

ISO 9001:2015

| Basic Specification | |
|---|---|
| Model | YS42U7G-100 |
| Type | Low Side Scroll Compressor |
| Application | Medium Temp. Refrigeration |
| Power | 7 HP |
| Capacity (BTU/Hr) | 41845 |
| Refrigerant | R454C |
| Displacement ($in^3$/Rev) | 6.59 |
| 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 |

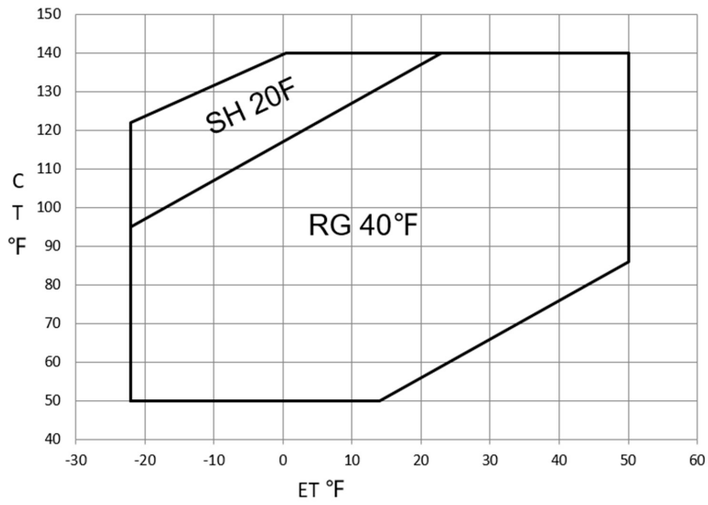
| Performance Specifications | |
|---|---|
| Cooling Capacity (BTU/hr) | 41845±7.5% |
| Input Power (W) | 5424±7.5% |
| EER (BTU/Wh) | 7.71±7.5% |
| Rated Operating Current (A) | 17.6 |
| Oil Circulation Rate(%) | ≤1% |
| Rated Sound Power (dBA) | 76 |
| Max. Sound Power (dBA) | 81 |
| Max. Vibration 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/3~/60Hz |
| Locked Rotor Current (A) | 180.0 |
| Max. Operating Current (A) | 25.5 |
| Motor Insulation Class | B |
| Line to Line Resistance (Ω,77°F) | 0.436±10% |
| Lowest Starting Voltage (V) | 177 |
| 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<br>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 | | | 18504 | 25835 | 33772 | 42744 | 53173 | 65480 |
| | 130 | | 16297 | 23138 | 30372 | 38400 | 47654 | 58555 | 71523 |
| | 120 | 13276 | 19811 | 26483 | 33738 | 41976 | 51628 | 63117 | 76862 |
| | 110 | 15954 | 22249 | 28869 | 36261 | 44827 | 54996 | 67191 | 81832 |
| | 100 | 17745 | 23915 | 30602 | 38249 | 47259 | 58061 | 71078 | 86731 |
| | 90 | 18970 | 25134 | 32004 | 40024 | 49596 | 61151 | 75110 | 91893 |
| | 80 | 19940 | 26216 | 33386 | 41896 | 52147 | 64570 | 79585 | 97616 |
| | 70 | 20976 | 27481 | 35069 | 44188 | 55236 | 68646 | 84838 | 104234 |
| | 60 | 22389 | 29240 | 37362 | 47206 | 59168 | 73680 | 91164 | 112041 |
| | 50 | 24500 | 31816 | 40591 | 51279 | 64273 | 80007 | 98903 | 121381 |
| Power (W) | 140 | | | 6075 | 6357 | 6612 | 6846 | 7062 | 7265 |
| | 130 | | 5260 | 5530 | 5775 | 5999 | 6206 | 6400 | 6585 |
| | 120 | 4564 | 4824 | 5058 | 5272 | 5469 | 5654 | 5831 | 6003 |
| | 110 | 4219 | 4443 | 4646 | 4833 | 5008 | 5176 | 5340 | 5504 |
| | 100 | 3914 | 4106 | 4283 | 4448 | 4606 | 4761 | 4916 | 5077 |
| | 90 | 3635 | 3800 | 3955 | 4103 | 4248 | 4395 | 4547 | 4709 |
| | 80 | 3370 | 3514 | 3652 | 3787 | 3924 | 4068 | 4221 | 4389 |
| | 70 | 3108 | 3235 | 3360 | 3487 | 3621 | 3766 | 3925 | 4104 |
| | 60 | 2837 | 2951 | 3068 | 3193 | 3328 | 3479 | 3649 | 3842 |
| | 50 | 2544 | 2650 | 2764 | 2890 | 3031 | 3192 | 3378 | 3591 |

» 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) | 266±9 |
| Close Temp.(°F) | 158±18 |
| Short Time Trip | 112A<br>3-10s |

High Pressure Relieve

| Internal Pressure Protection | |
|---|---|
| Internal Pressure Relieve Valve Opening Pressure Difference (psi) | 575.7-625.0 |

# SCROLL COMPRESSOR
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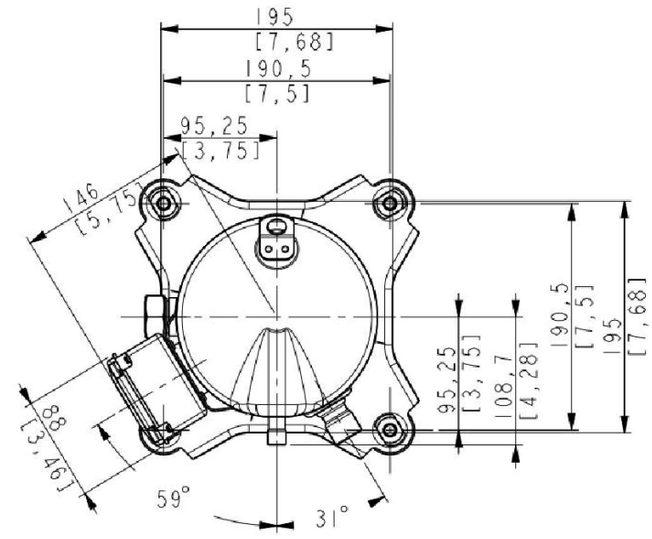
Accessory

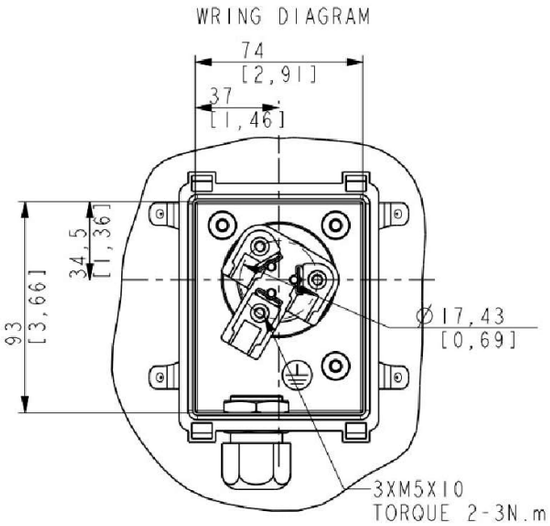
| Item | Drawing/Standard No. | Quantity |
|---|---|---|
| Grommet | 070-0003-00 | 4 |
| Sleeve | 010-0014-00 | 4 |




Attentions

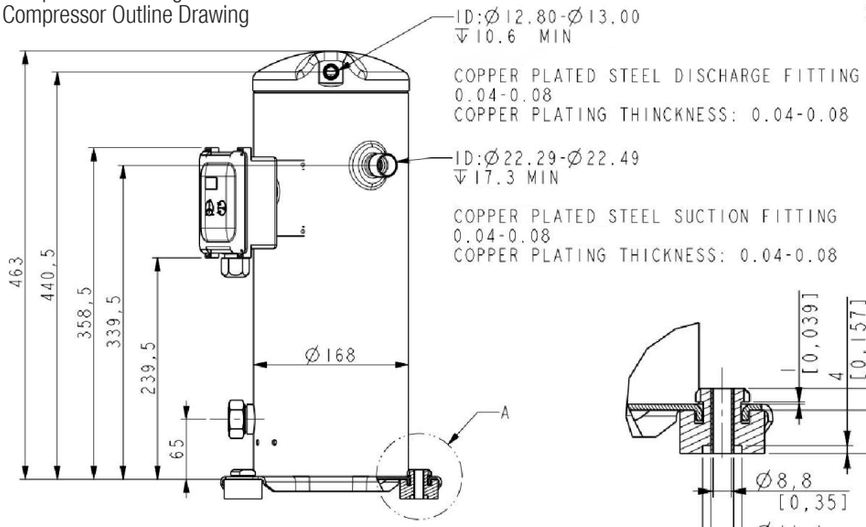
- » It is not allowed to perform vacuum in the system by using the refrigeration compressor. The compressor can start only after the refrigerant is charged;
- » It is not allowed to charge the refrigerant from the suction o discharge line closes to the compressor. The charge port should be arranged on 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.

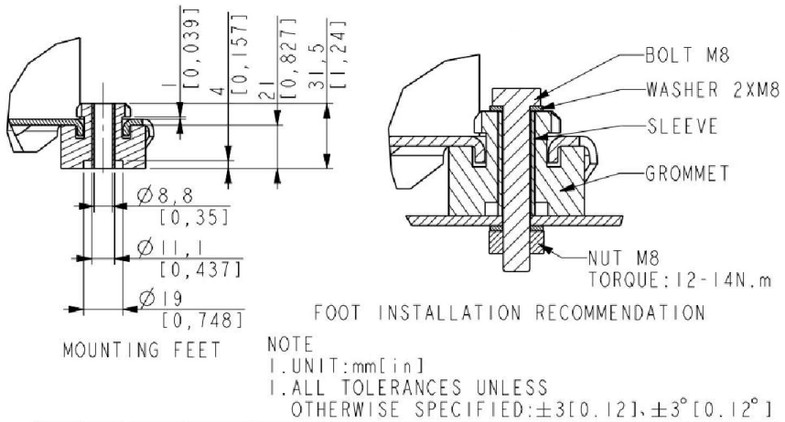
Wring Diagram



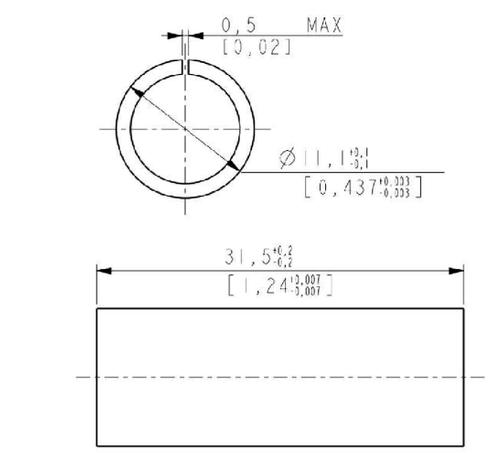

Compressor Drawings

Compressor Outline Drawing

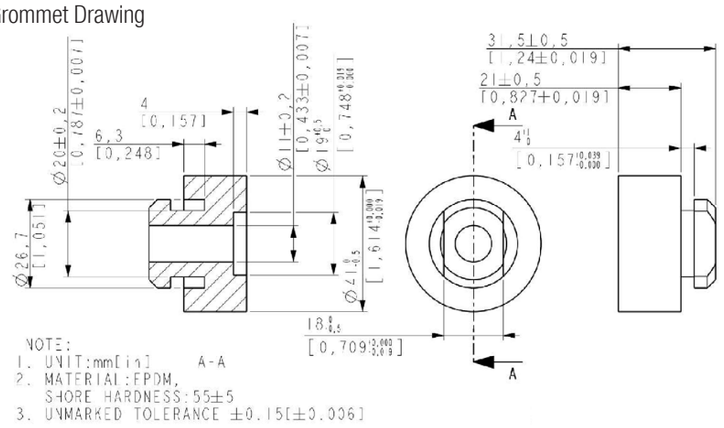



Mounting Sleeve Drawing




Grommet Drawing




Application Guideline

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