

PANASONIC SCROLL COMPRESSORS

Code : 809 103 88

Model : C-SCN753H8K

Aproved for R407C, R448A, R449A, R134a, R513A, R404A



Panasonic Appliances Compressor (Dalian) Co.,Ltd.

Section 1. General Specifications

Model	<u>C-SCN753H8K</u>
Refrigerant	<u>R407C</u>

Electrical	<u>380-415 Volts 3 Phase 50Hz</u>
	<u>440-460 Volts 3 Phase 60Hz</u>

Nominal Performance at ARI

Power Source	<u>50Hz-380V</u>	<u>60Hz-440V</u>
Capacity (W)	<u>29900</u>	<u>35900</u>
Power (W)	<u>9350</u>	<u>11500</u>
Current (A)	<u>15.9</u>	<u>16.7</u>
COP (W/W)	<u>3.20</u>	<u>3.12</u>
Mass Flow (kg/h)	<u>719</u>	<u>859</u>

Rating Conditions (MID Point)

Condensing Temperature(°C)	<u>54.4</u>
Evaporating Temperature(°C)	<u>7.2</u>
Return Gas temperature(°C)	<u>18.3</u>
Liquid Temperature(°C)	<u>43.8</u>
Ambient Temperature(°C)	<u>35</u>

Motor

	50Hz	60Hz
Voltage Range(V)	<u>342-456</u>	<u>396-506</u>
RLA (A)	<u>19.1</u>	
MCC (A)	<u>26.7</u>	
LRA (A)	<u>96</u>	<u>101</u>
RPM (min ⁻¹)	<u>2900</u>	<u>3450</u>

Compressor

Maximum Discharge Temp(°C)	<u>135</u>
Displacement (cm ³ /rev)	<u>171.2</u>
Weight (with oil kg)	<u>69.5</u>

Oil

Oil Type	<u>FV68S</u>
Initial Charge (ml)	<u>2800</u>
Re-charge (ml)	<u>2600</u>

Electrical Components

Motor Protector Type	<u>Internal</u>
Run Capacitor Rating (MFD/Volts)	<u>n/a</u>

Winding Resistance at 25°C

	<u>1.308</u>
U-V	<u>1.373</u>
U-W	
V-W	<u>1.351</u>

Sound level

	50Hz/380V	60Hz/440V
(db)	<u>72Max</u>	<u>74Max</u>

Nominal performance values +/-5% with 1 hr run-in.

Ratings with air over compressor.

Sound level is an average sound pressure level in four directions. MIC location is the distance of 1m from the compressor Specifications subject to change without notice.

Minimum Starting Voltage

Power Source (3PH)	Hz	50	60
Minimum Starting Voltage	V	304	352

Conditions

Compressor Temp.	°C (°F)	10~60(50~140)
Ambient Temp.	°C (°F)	10~40(50~105)
High Pressure	MPa(G)/psig	2(290)
Low Pressure	MPa(G)/psig	0.5(72)

Inernal Motor Protector (in compressor)

Parts Name	Specification	
Inernal Motor Protector	TripTemp.	165±5°C
	Reset Temp.	70±10°C
	Trip Current	66A / 3~10s

Others

Content		Unit	Specification
Design Pressure	L.P. S.	MPa(G)/psig	1.6(232)
	H. P. S.	MPa(G)/psig	3.2(464)
Insulation Resistance		MΩ	100 (without refrigerant)
Dielectric Strength		V	2400 (1 second)
Residual Moisture		mg	400
Note:			
1. The insulation resistance be measured with a DC500V megohm test			

Accessories List

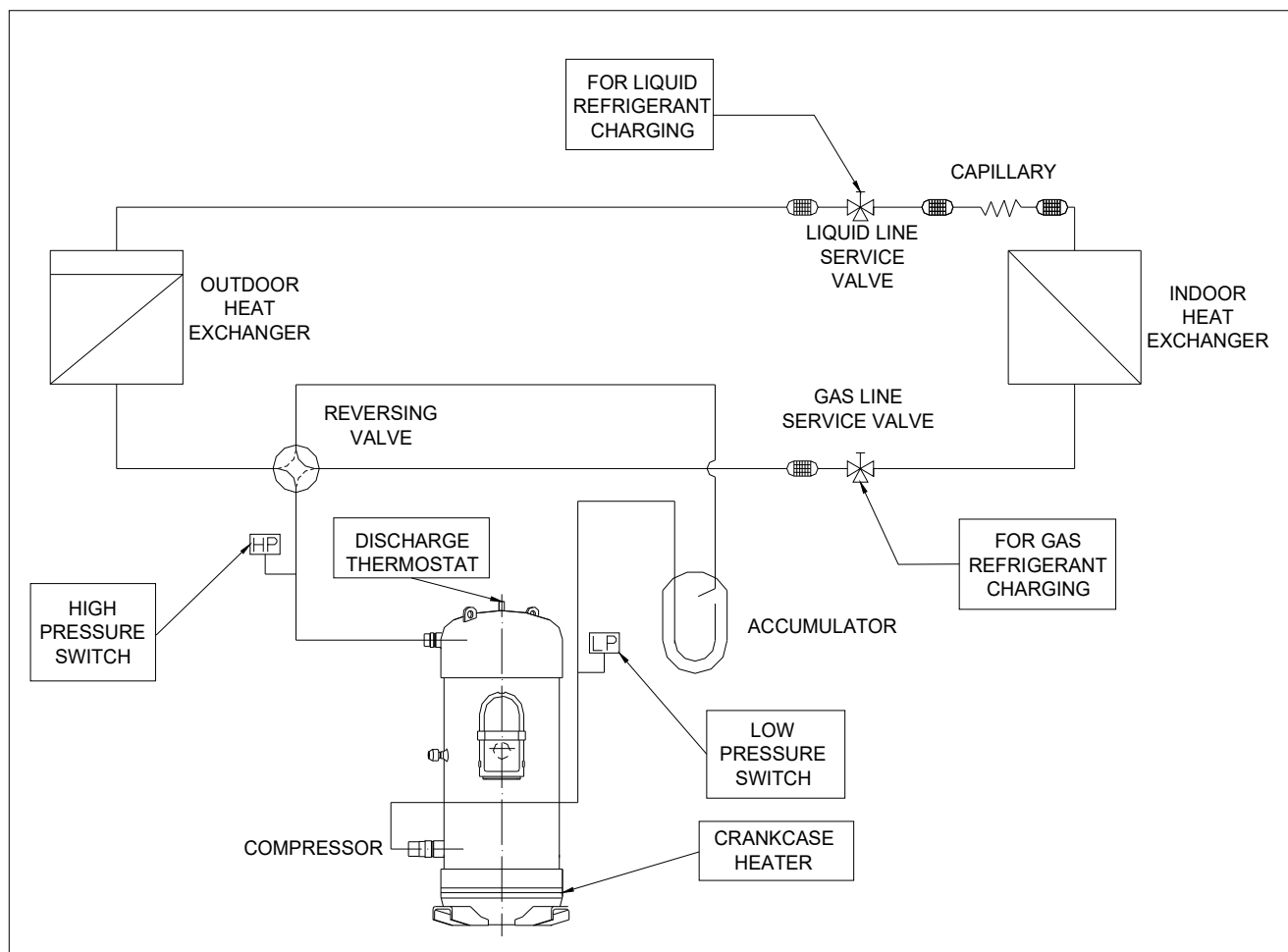
Parts Name	Qty	Parts code	Revision No.	Note
Terminal Box Cover	1	A-0101-DSC	0	Installed on Compressor
Terminal Box Clip	1	A-0201-DSC	0	Installed on Compressor
Insulating Grommet	1	A-0301-DSC	0	Installed on Compressor
Gasket Terminal	1	A-0401-DSC	0	Installed on Compressor
Mounting Grommet	4	M-0101-DSC	0	Included with Compressor
Mounting Sleeve	4	M-0201-DSC	0	Included with Compressor

Section 2. Compressor Protection

2.1 Protection Required but not Included with compressor

Protection Device	Items	Specifications
Reversal Defensible Relay	Features	To protect the compressor from reverse rotation
	Rated Voltage	AC380V
Crankcase Heater	Rated Power	88 Watts
Discharge Thermostat	Mounting Position	Located in the well pipe of top shell
	Trip Temperature	$135\pm 5^{\circ}\text{C}$ ($275 \pm 10^{\circ}\text{F}$)
	Reset Temperature	$86\pm 15^{\circ}\text{C}$ ($187 \pm 27^{\circ}\text{F}$)
High Pressure Switch	Setting	Cut-out seting no higher than 3.2MPa(G)
Low Pressure Switch	Setting	Cut-out seting no lower than 0.05MPa(G)

2.2 Position of the Protection and Refrigerant Charging



Section 3. Performance data

PERFORMANCE DATA

Compressor Model(Code)	C-SCN753H8K (809 103 88)
Power Source	3PH 50Hz 380-415V
Suction Gas Superheat(K)	9
Sub Cooling(K)	8.3
Compressor Cooling	Natural Cooling
Refrigerant	R407C

CAPACITY(W)

Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7.2	10	12
35.0	16,240	19,880	22,720	29,790	35,590	39,860	44,640	48,400
40.5	15,030	18,390	21,000	27,510	32,850	36,770	41,160	44,620
45.0	14,100	17,240	19,680	25,760	30,740	34,400	38,500	41,720
50.0	13,130	16,030	18,300	23,930	28,540	31,930	35,720	38,700
54.4		15,050	17,160	22,430	26,740	29,900	33,440	36,220
60.0			15,820	20,660	24,610	27,510	30,750	33,300
65.0				19,210	22,870	25,550	28,550	30,910

POWER(W)

Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7.2	10	12
35.0	6,070	6,200	6,260	6,330	6,320	6,300	6,270	6,230
40.5	6,740	6,880	6,950	7,030	7,040	7,020	7,000	6,970
45.0	7,360	7,510	7,580	7,680	7,700	7,700	7,690	7,670
50.0	8,130	8,280	8,360	8,480	8,520	8,540	8,540	8,530
54.4		9,030	9,120	9,260	9,320	9,350	9,370	9,380
60.0			10,180	10,340	10,440	10,490	10,540	10,570
65.0				11,400	11,530	11,600	11,680	11,730

CURRENT(A)

@380V

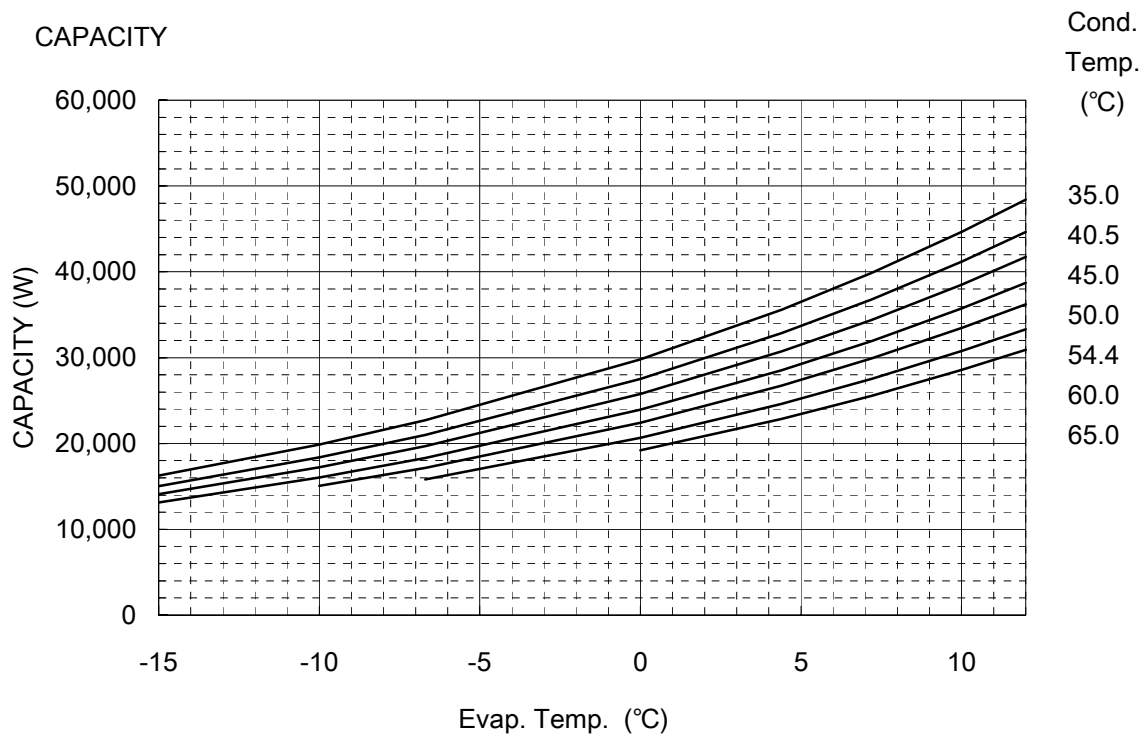
Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7.2	10	12
35.0	10.9	11.1	11.3	11.4	11.4	11.4	11.3	11.2
40.5	11.9	12.2	12.3	12.5	12.5	12.5	12.4	12.4
45.0	12.9	13.2	13.3	13.4	13.5	13.5	13.5	13.4
50.0	14.1	14.3	14.5	14.6	14.7	14.7	14.7	14.7
54.4		15.5	15.6	15.8	15.9	15.9	15.9	15.9
60.0			17.1	17.3	17.5	17.5	17.6	17.6
65.0				18.8	19.0	19.1	19.2	19.3

NOTE:

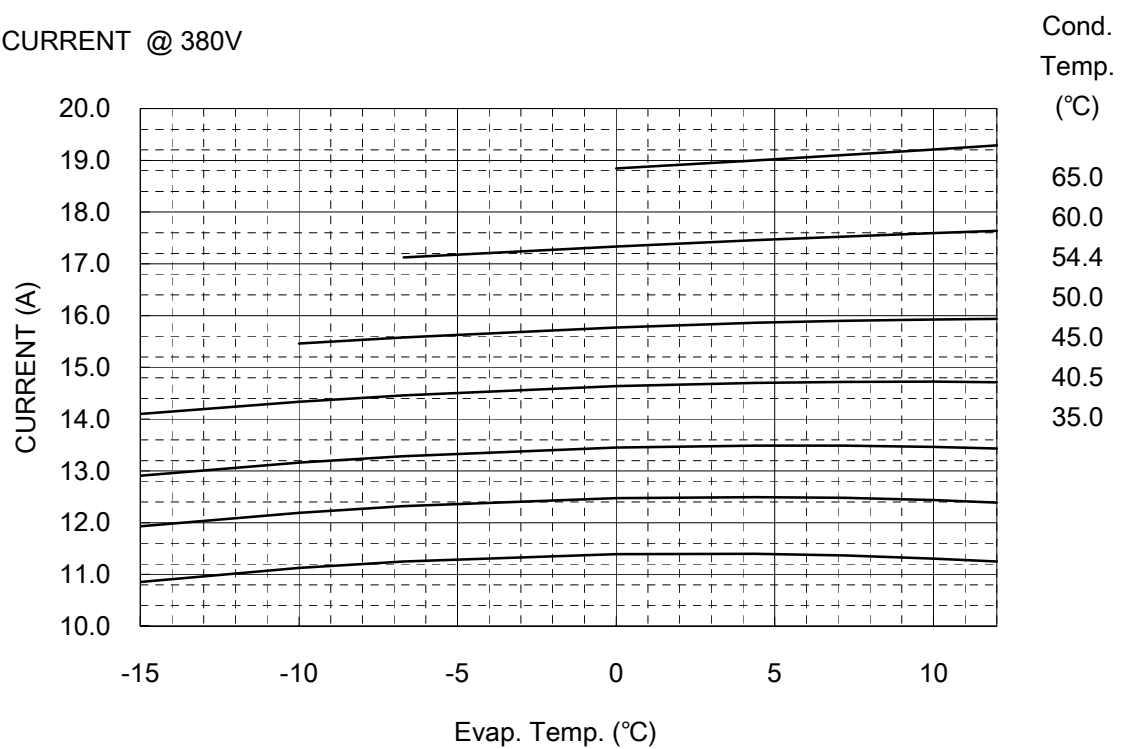
- * The performance values are based on MID point method.
- * The performance values subject to change without notice.

Compressor Model(Code)
Power Source

C-SCN753H8K (809 103 88)
3PH 50Hz 380-415V



CURRENT @ 380V



COEFFICIENTS OF PERFORMANCE CURVES

Compressor Model C-SCN753H8K (809 103 88)
Power Source 3PH 50Hz 380-415V
Suction Gas Superheat (K) 9
Sub Cooling (K) 8.3
Compressor Cooling Natural Cooling
Refrigerant R407C

$X=C1+C2*(S)+C3*D+C4*(S2)+C5*(S*D)+C6*(D2)+C7*(S3)+C8*(D*S2)+C9*(S*D2) +C10*(D3)$

X—CAPACITY(W) OR POWER(W) OR CURRENT(A) OR FLOW(kg/h)

S—EVAPORATING TEMP, °C

D—CONDENSING TEMP, °C

380V-50Hz	CAPACITY (W)	POWER (W)	CURRENT (A)
C1	4.797932E+04	4.371793E+03	7.691082E+00
C2	2.033853E+03	8.551055E+00	1.293557E-02
C3	-6.104432E+02	-5.003705E+00	2.919796E-02
C4	3.653768E+01	-1.754224E+00	-3.808981E-03
C5	-2.800579E+01	-7.345515E-01	-6.935101E-04
C6	2.585029E+00	1.742379E+00	2.192700E-03
C7	2.740031E-01	2.134075E-03	3.887831E-06
C8	-3.367704E-01	2.199234E-02	5.571838E-05
C9	1.291170E-01	1.635757E-02	1.631642E-05
C10	-4.195312E-08	-1.460408E-08	-2.199720E-11

Note:The polynomial coefficients subject to change without notice.

PERFORMANCE DATA

Compressor Model(Code)	C-SCN753H8K (809 103 88)
Power Source	3PH 60Hz 440-460V
Suction Gas Superheat(K)	9
Sub Cooling(K)	8.3
Compressor Cooling	Natural Cooling
Refrigerant	R407C

CAPACITY(W)

Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7.2	10	12
35.0	19,680	24,240	27,810	36,750	44,140	49,600	55,740	60,580
40.5	18,130	22,280	25,530	33,660	40,370	45,310	50,860	55,240
45.0	16,930	20,780	23,790	31,300	37,480	42,040	47,150	51,170
50.0	15,680	19,220	21,980	28,850	34,500	38,660	43,310	46,980
54.4		17,940	20,490	26,850	32,070	35,900	40,190	43,570
60.0			18,750	24,510	29,230	32,690	36,560	39,600
65.0				22,620	26,930	30,090	33,620	36,400

POWER(W)

Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7.2	10	12
35.0	7,210	7,450	7,580	7,740	7,780	7,780	7,760	7,730
40.5	8,050	8,300	8,420	8,600	8,650	8,660	8,660	8,640
45.0	8,840	9,080	9,210	9,390	9,460	9,490	9,500	9,490
50.0	9,820	10,050	10,180	10,380	10,470	10,510	10,540	10,550
54.4		10,990	11,120	11,330	11,440	11,500	11,550	11,580
60.0			12,430	12,660	12,800	12,890	12,970	13,030
65.0				13,960	14,130	14,240	14,360	14,440

CURRENT(A)

@440V

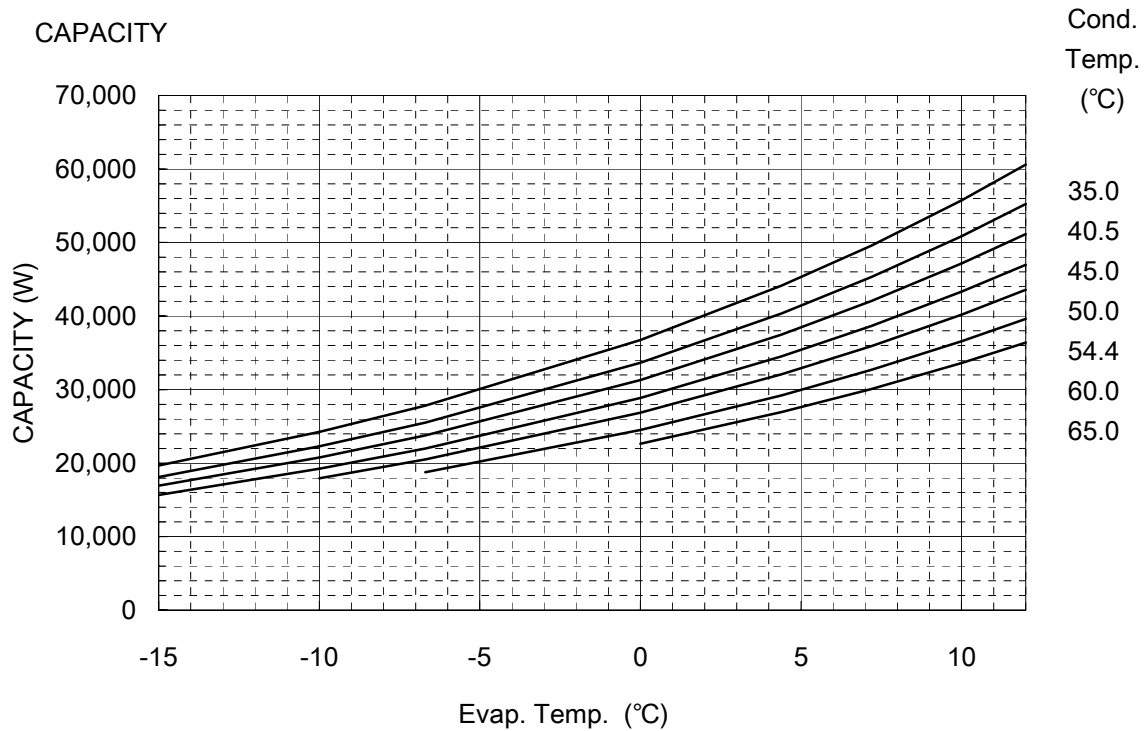
Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7.2	10	12
35.0	10.5	10.9	11.0	11.3	11.3	11.3	11.2	11.2
40.5	11.7	12.1	12.3	12.5	12.6	12.6	12.5	12.5
45.0	12.8	13.2	13.4	13.7	13.7	13.8	13.8	13.7
50.0	14.2	14.6	14.8	15.1	15.2	15.3	15.3	15.3
54.4		15.9	16.1	16.5	16.6	16.7	16.8	16.8
60.0			18.0	18.4	18.6	18.7	18.8	18.9
65.0				20.3	20.5	20.7	20.9	21.0

NOTE:

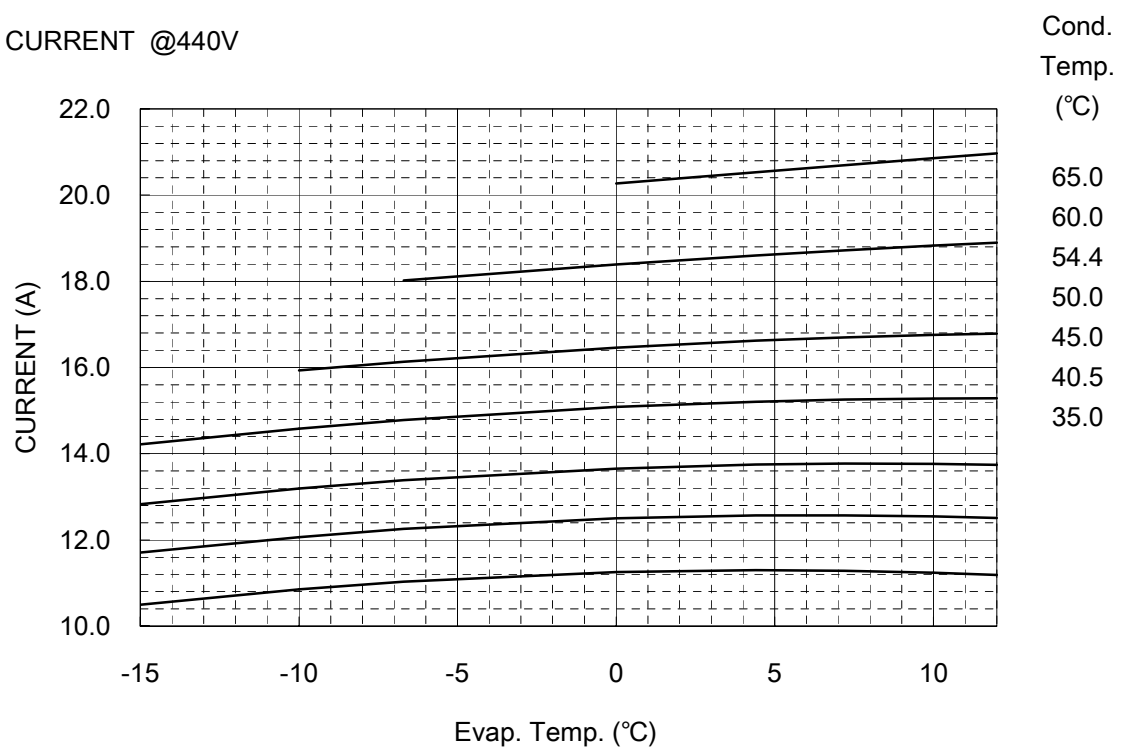
- * The performance values are based on MID point method
- * The performance values subject to change without notice

Compressor Model(Code)
Power Source

C-SCN753H8K (809 103 88)
3PH 60Hz 440-460V



CURRENT @440V



COEFFICIENTS OF PERFORMANCE CURVES

Compressor Model **C-SCN753H8K (809 103 88)**

Power Source **3PH 60Hz 440-460V**

Suction Gas Superheat (K) **9**

Sub Cooling (K) **8.3**

Compressor Cooling **Natural Cooling**

Refrigerant **R407C**

$$X = C1 + C2*(S) + C3*D + C4*(S^2) + C5*(S*D) + C6*(D^2) + C7*(S^3) + C8*(D*S^2) + C9*(S*D^2) + C10*(D^3)$$

X——CAPACITY(W) OR POWER(W) OR CURRENT(A) OR FLOW(kg/h)

S——EVAPORATING TEMP, °C

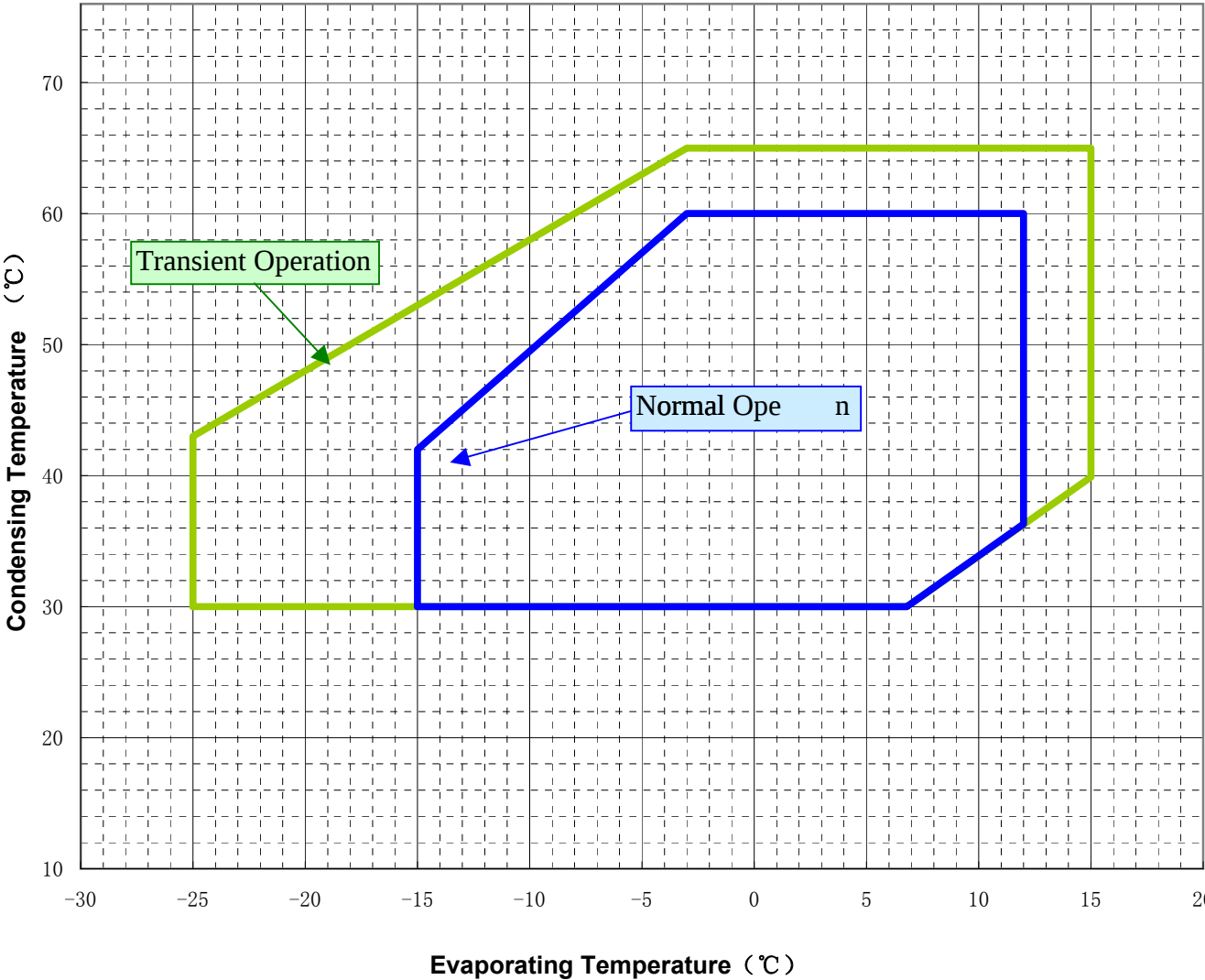
D——CONDENSING TEMP, °C

<u>440V-60Hz</u>	CAPACITY (W)	POWER (W)	CURRENT (A)
C1	6.191389E+04	5.369481E+03	7.794964E+00
C2	2.797610E+03	1.705669E+01	2.620355E-02
C3	-8.533468E+02	-7.271359E+00	-9.246664E-03
C4	5.056453E+01	-2.878179E+00	-4.037198E-03
C5	-4.361163E+01	-5.613271E-01	-1.134040E-03
C6	3.835166E+00	2.146992E+00	3.097420E-03
C7	3.583486E-01	5.546402E-03	4.816531E-06
C8	-5.215309E-01	4.208278E-02	5.252983E-05
C9	2.204579E-01	1.395681E-02	2.604591E-05
C10	-8.761903E-08	-2.070664E-08	-2.449136E-11

Note: The polynomial coefficients subject to change without notice.

Section 4. Operating Envelope

Suction Gas
Superheat :9K
Refrigerant : R407C



Section 5. Application Standard & Limit

The following requirements apply to vertical type hermetic scroll compressors:

Standard: Applicable to ordinary conditions in Japan JIS B8616 or standards relative to JIS B8616, such as standard rating conditions, maximum operating conditions, low temperature conditions, etc.

Limit: Applicable to transitional brief period of time, such as start-up and beginning of defrost mode.

No.	Item	Standard	Limit	Remark
1	Refrigerant	R407C(Refrigerant must meet a criterion)		
2 2	Average Evap. Temp.	-15~12℃(5~54 ° F) 0.20~0.65MPa(G)(29~94psig)	-25~15℃(-13~59 ° F) 0.07~0.73MPa(G)(10~106psig)	Average temp. of evaporator Inlet and outlet.
3	Average Cond.Temp.	30~60℃(86~140 ° F) 1.17~2.56MPa(G)(170~371psig)	65℃(149 ° F) 2.88MPa(G)(418psig)	Average temp. of condensor Inlet and outlet.
4	Compression Ratio	2 ~ 6	10	
5	Winding Temp.	115℃(240 °F) Max.	125℃(257 °F)	
6	Shell Bottom Temp.	90℃(194 °F) Max.		
		Evaporating Temp.+12℃(21 °F) Min.		Operating
		Ambient Temp.+11℃(20 °F) Min.		Not Operating
7	Discharge Gas Temp.	115℃(240 °F) Max.	C-SB:130℃(266°F) Max.	Temp. within 10cm of the discharge fitting.
			C-SC:135℃(275°F) Max.	Temp. inside of the copper pipe on the top of compressor
8	Suction Gas Temp.	Superheat: 5K(10 °F)Min.	No excessive noise.	It should meet the requirement of item 5, 6, 7 and 14 within 30cm of the suction fitting.
9	Running Voltage	Within ±10% of the rated voltage		Voltage at compressor terminals.
10	Starting Voltage	Three Phase Models: 85% of the rated voltage min.		Voltage at compressor terminals.
		Single Phase Models: 90% of the rated voltage min.		
11	On/Off Cycling	On Period: Until the oil level returns to the center of the lower bearing Off Period: Until balance of high and low pressure is obtained		For at least 7 minutes - on/3 minutes-off is recommended.
12	Refrigerant Charge	Oil/Refrigerant(wt.)>0.35.		Specific gravity of the Oil:0.94.
13	Life Time	200,000 cycle		
14	Minimum Oil Level	C-SB:Center of the lower bearing	C-SB:Bottom of the lower bearing	
		C-SC:No less than 70% of the initial oil charge		
15	Abnormal Pressure Rise/Drop	Pressure Rise: 3.20MPa(G) (464psig) Max.		By high pressure switch
		Pressure Drop: 0.05MPa(G) (7.3psig) Min.		By low pressure switch
16	System Moisture Level	200ppm Max.		
17	System Uncondensable Gas Level	1 Vol.% Max.		24 hrs. after vacuuming: 1.01kPa Max.
		Residual Oxygen 0.1 Vol.% Max.		
18	Tilt	5Deg.Max.		

(G): Gauge Pressure

Notes

- 1 Installation should be completed within 15 minutes after removing the rubber plugs.
- 2 Do not use the compressor to compress air.
- 3 Do not energize the compressor under vacuumed condition.
- 4 Evacuation and Refrigerant charge : Evacuate internal section in the refrigeration system from high and low pressure sides and charge liquid refrigerant from condenser outlet side. Additional charge shall be done with gas condition from low side.
- 5 Do not tilt over the compressor while carrying it.
- 6 Do not remove the paint.
- 7 Crankcase heater is required when the oil sump temperature is too low to meet the requirement of item 6 on page 7.
- 8 Voltage fluctuation between compressor terminals, during operation, shall be within 2% of the rated voltage.
- 9 Do not operate compressor in reverse rotational direction.
- 10 Suction strainers are recommended for all applications.
- 11 Copper Piping Stress

Start/Shutdown	34.32 N/mm ² Max.
Run	12.26 N/mm ² Max.

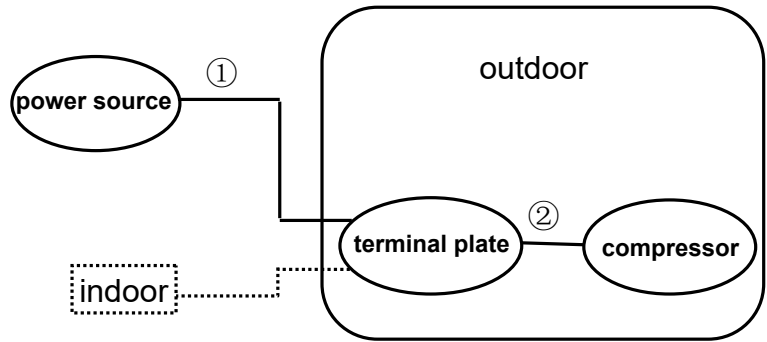
Section 6. Selection of Electrical Wire

Voltage drop may occur due to the large current draw during compressor starting.

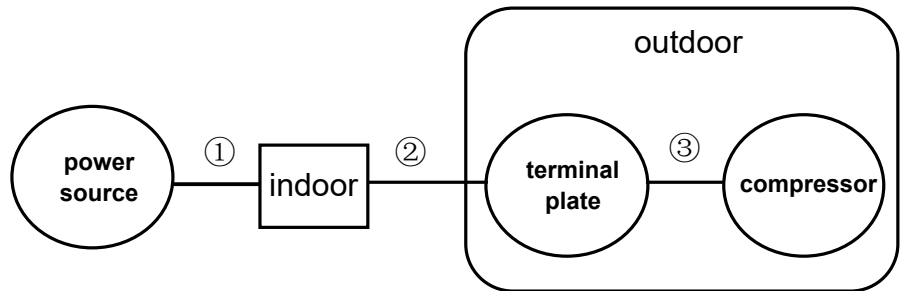
We recommend selecting the wire size from the table below.

6.1 Type of Unit

6.1.1 Window & Commercial Type Unit



6.1.2 Split Type(Separate Type)



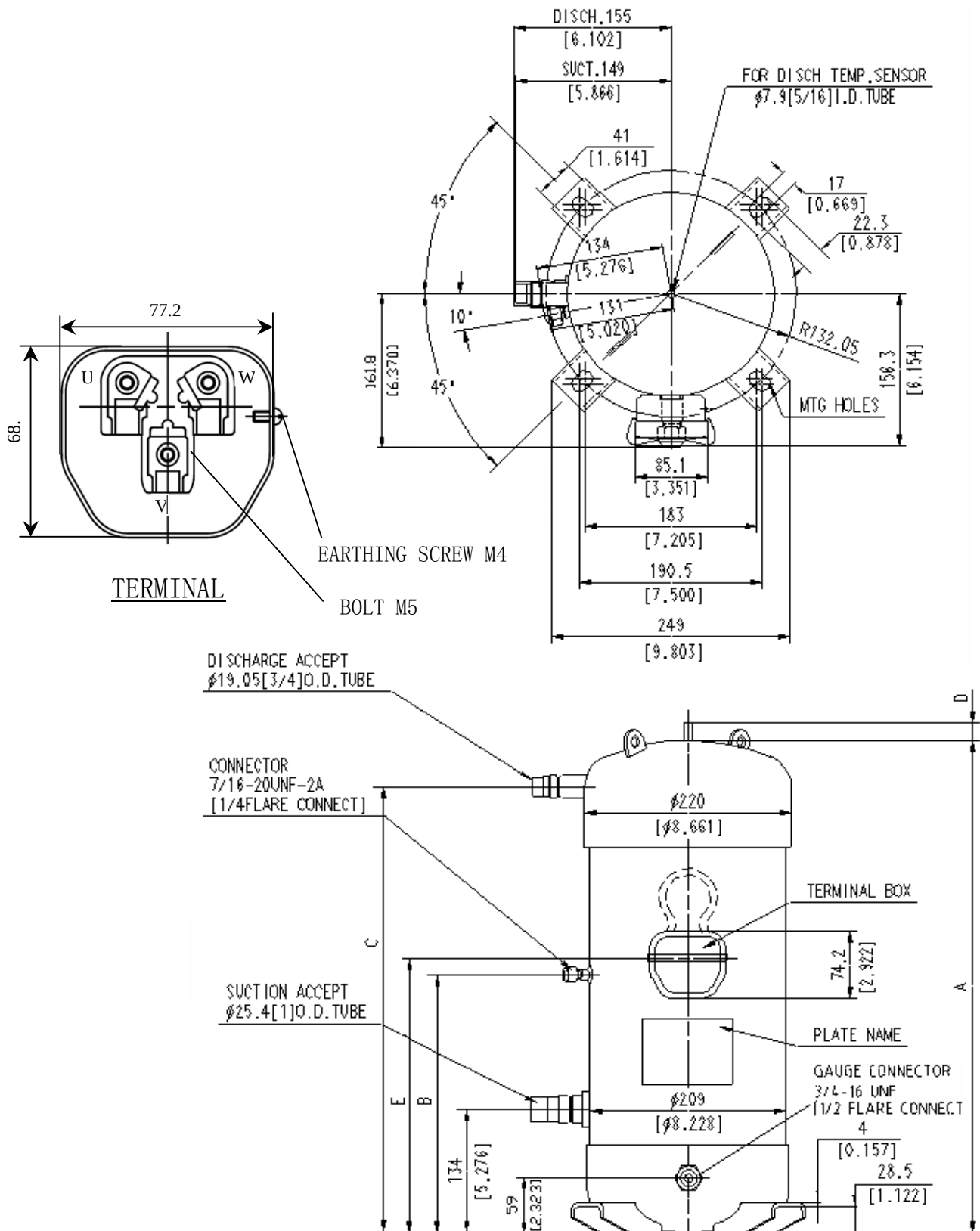
6.2 Size Table of Electrical Wire

Starting current (A)	Size of electrical wire (mm ²)						
	Remark ① or Remark ①+② (heat-resistance Temperature: 60°C(140°F) min.)						Remark③ (heat-resistance Temperature: 120°C(248°F) min.)
	5m max.	10m max.	15m max.	20m max.	30m max.	50m max.	1m max.
20max.	2.0	2.0	2.0	3.5	5.5	8.0	2.0
30max.	↑	↑	3.5	5.5	↑	14.0	↑
40max.	↑	3.5	5.5	↑	8.0	↑	↑
50max.	↑	↑		8.0	14.0	22.0	↑
60max.	↑	5.5	↑	↑			↑
70max.	3.5	↑	8.0	14.0	↑	↑	3.5
80max.	↑	↑			22.0	30.0	↑
90max.	↑	↑	14.0	↑	↑		↑
100max.	↑	8.0	↑	↑		38.0	↑
110max.	↑	↑					↑
120max.	5.5	↑	↑	22.0	30.0	↑	↑
140max.	↑	14.0	↑	↑		50.0	5.5
160max.	↑	↑	22.0	↑	↑		↑
180max.	↑	↑			38.0	60.0	8.0
200max.	8.0	↑	↑	30.0	↑	↑	↑
220max.	↑	↑			50.0	80.0	↑
240max.	↑	↑					14.0

The internal motor protector does not protect the compressor against all possible conditions.

Please be sure that the system utilizes the ground connection when installed in the field.

C-SC Series

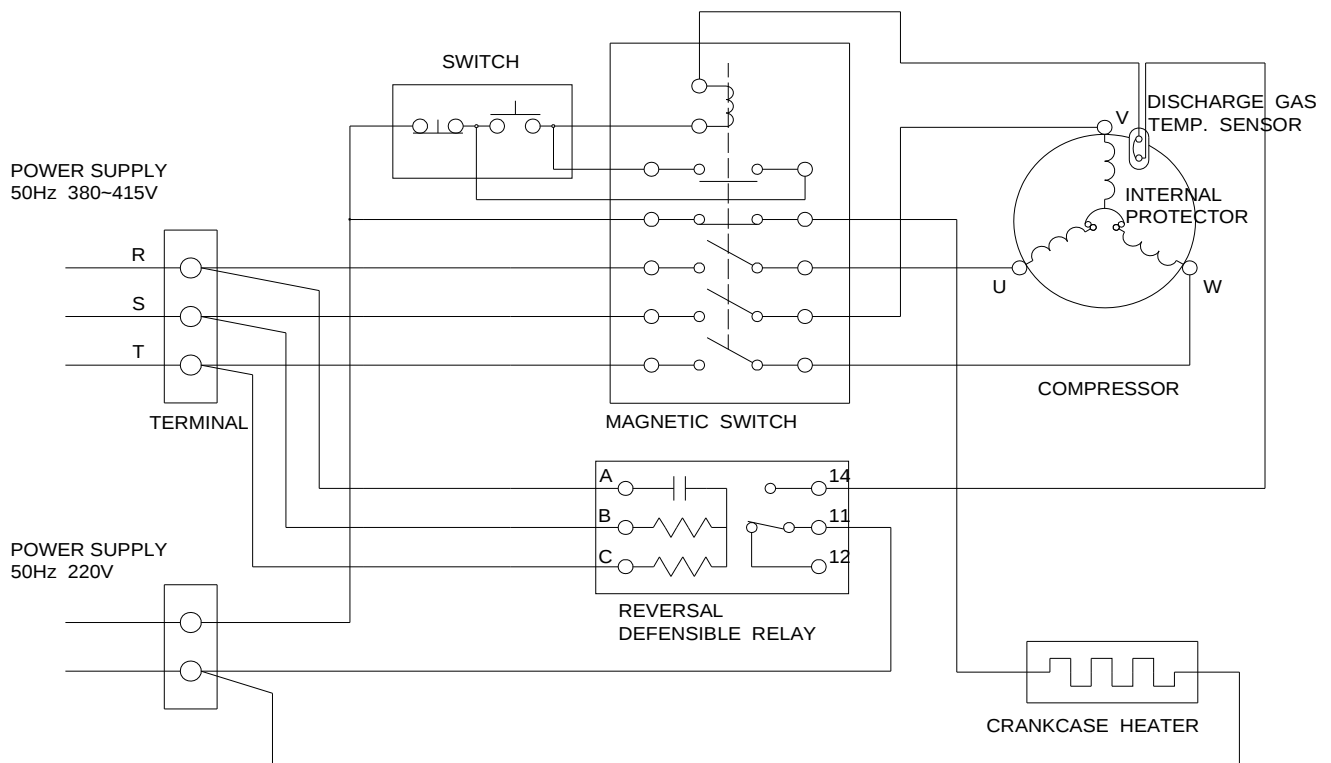


Compressor Code	A	B	C	D
809*8* 8* (8HP)	538	284	486	8
809*9* 8* (9HP)				
809*0* 8*(10HP)	553	299	501	9
809*2* 8*(12HP)				

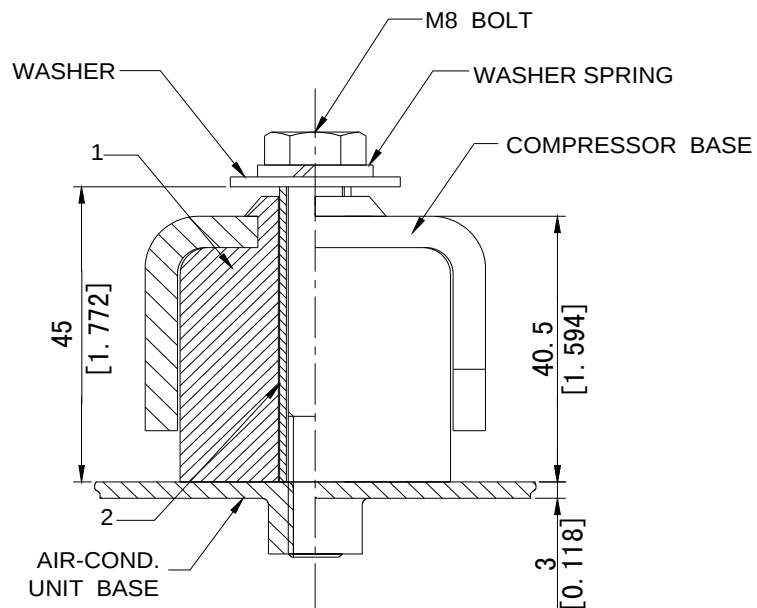
WIRING & MOUNTING SKETCH

WIRING DIAGRAM

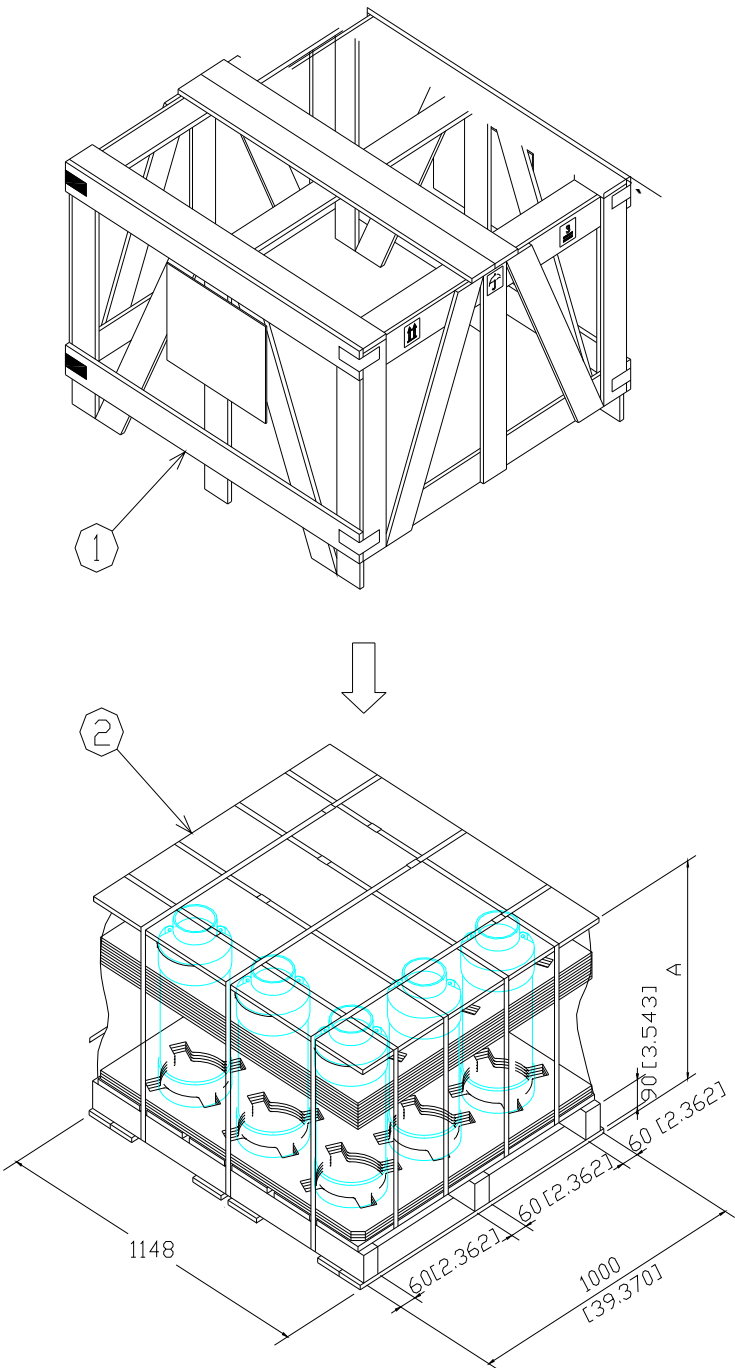
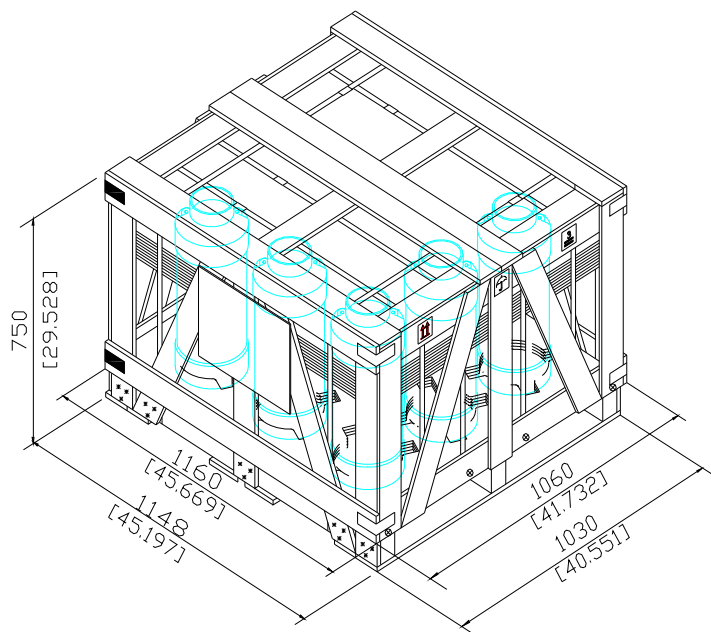
C-SC Series 3phase B8



MOUNTING SKETCH



7.2. Packing dimensios



Compressor Code	A
80928*8*	682 [26.850]
80918*8*	
80929*8*	
80920*8*	697 [27.441]
80910*8*	
80922*8*	
80912*8*	

Part Code
D-0201-DSC
Name
Packing Dimensions