



Specification for Embraco Scroll Compressor

MODEL: EAF81H-G1-NABA

RECORD OF REVISIONS

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EAF81H-G1-NABA Technical Specifications

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1. Specifications

Model	EAF81H-G1-NABA	Power	7HP
Displacement(m ³ /h)	12.9	Refrigerant	R410A
Cooling Cap.(W) ^(a)	19689	Input Power(W) ^(a)	6150
Rated Load Amps(A) ^(a)	21.7	COP ^(a)	3.20
Max. Vibration(mm) ^(a)	<0.10	Sound Level (dBA) ^(a)	74
Test Power Source ^(a)	50Hz-220V	Rated Speed (RPM) ^(a)	2900
Max. Moisture (mg)	< 500	Max. Impurity (mg)	< 100
Oil Circulation (%) ^(a)	<1%	Weight (kg, With Oil)	35
Electrical Specification	Power Source	200V-220V 3~50Hz	
	Run Capacitor	/	
	Min. Operation Voltage(V) ^(b)	180	
	Max. Operation Voltage(V)	242	
	Min. Starting Voltage(V) ^(c)	170	
	Lock Rotor Amps(A)	176.00	
	Max. Operation Current ^(d)	29.1 (A)	
	Motor Insulation Temp.(°C)	130	
Terminal Resistance (Ω) (± 10%) At 25 °C	T1(C)-T2(S)	0.61	
	T2(S)-T3(R)	0.63	
	T3(R)-T1(C)	0.63	
Lubrication	Oil Type	POE	
	Initial Charge(L)	1.7	
	Recharge(L)	1.45	
Electrical Safety	Insulation Voltage(V)	2500	
	Leakage Current(mA)	≤5	
	Insulation Resistance(MΩ)	>20	
	Ground Resistance(Ω)	<0.1	
Max. Operation Pressure	High Side(MPa)	4.3	
	Low Side(MPa)	2	

Notes:

- a) Test Condition: Based On Test Power Voltage, First Rated Condition
- b) Test Condition: ET 13°C, CT 65°C, SH 11.1K
- c) Test Condition: Discharge/Suction Pressure Set To Refrigeration Saturation Pressure At 40°C
- d) Test Condition: ET 13°C, CT 65°C, SH11.1K, 90% Min. Rated Voltage

2. Configuration

Suction/Discharge	Injection	Sight Glass	Thermal Tube
Welded Fittings	NONE	NONE	NONE

3. Certifications

Certifications	Report N.O.
CB	/
CE	/
CCC	/
PED	/
UL	/

4. First Test Condition (°C)

Cooling Cap. and COP No Less Than 95% of Nominal Value, Power and Current No More Than 105% of Nominal Value (Performance And Sound Power Need 24hrs Break In At High Load Running Condition).

Item	Parameter	Value
1	Evaporating Temp.	7.2
2	Condensing Temp.	54.4

NIDEC-R&D-

3	Ambient Temp.	35.0
4	Super Heat	11.1
5	Sub Cooling	8.3

5. Compressor Protection Parts

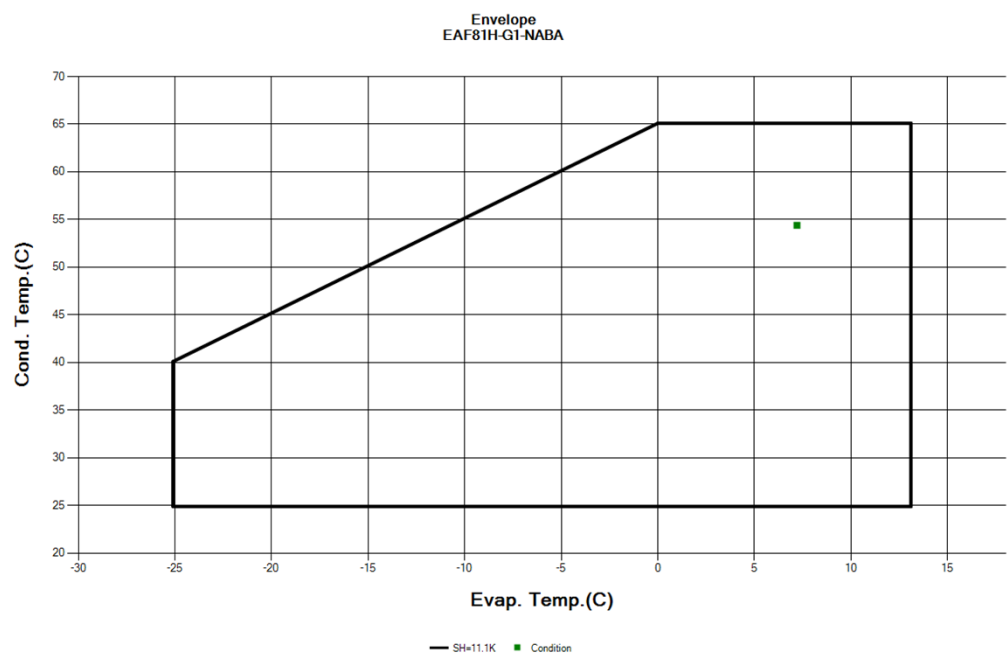
- a) Thermal Protection Inside;
b) Internal Pressure Release Valve, Open Range (Pressure Difference Between Discharge And Suction) : 3.96~4.31Mpa

6. Performance Data- EAF81H-G1-NABA

kW	Temp. Cond. (°C)	Temp. Evap. (°C)								
		-25	-20	-15	-10	-5	0	5	10	13
Cooling Cap.	65						12.25	14.88	17.97	20.11
	60					11.24	13.73	16.56	19.87	22.19
	55				10.06	12.41	15.04	18.04	21.57	24.05
	50			8.77	11.00	13.46	16.21	19.36	23.09	25.73
	45		7.42	9.53	11.84	14.39	17.26	20.56	24.50	27.30
	40	6.09	8.05	10.23	12.62	15.26	18.24	21.70	25.86	28.85
	35	6.62	8.65	10.90	13.37	16.11	19.22	22.85	27.28	30.47
	30	7.15	9.25	11.57	14.13	16.99	20.25	24.11	28.85	32.29
	25	7.70	9.88	12.30	14.97	17.97	21.43	25.56	30.69	34.44
Input Power	65						8.24	8.14	8.07	8.05
	60					7.30	7.20	7.12	7.07	7.05
	55				6.51	6.41	6.32	6.26	6.23	6.22
	50			5.84	5.74	5.65	5.59	5.54	5.52	5.51
	45		5.25	5.16	5.08	5.01	4.96	4.93	4.92	4.92
	40	4.72	4.64	4.57	4.51	4.46	4.43	4.41	4.41	4.42
	35	4.17	4.11	4.06	4.02	3.98	3.97	3.96	3.97	3.99
	30	3.66	3.62	3.59	3.57	3.55	3.55	3.55	3.57	3.59
	25	3.18	3.17	3.15	3.15	3.14	3.15	3.17	3.20	3.22

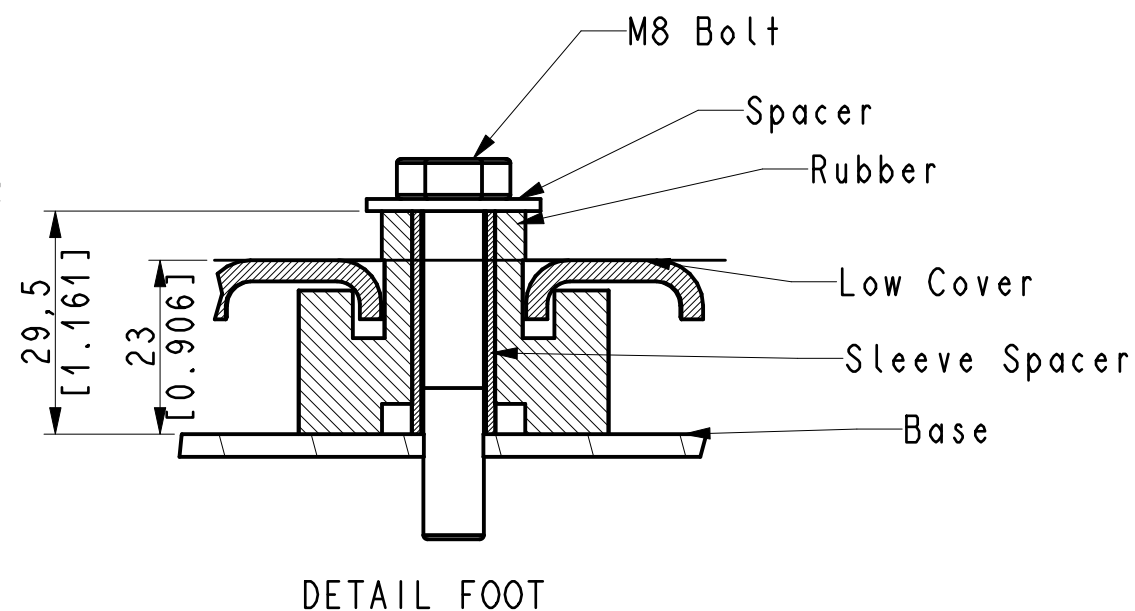
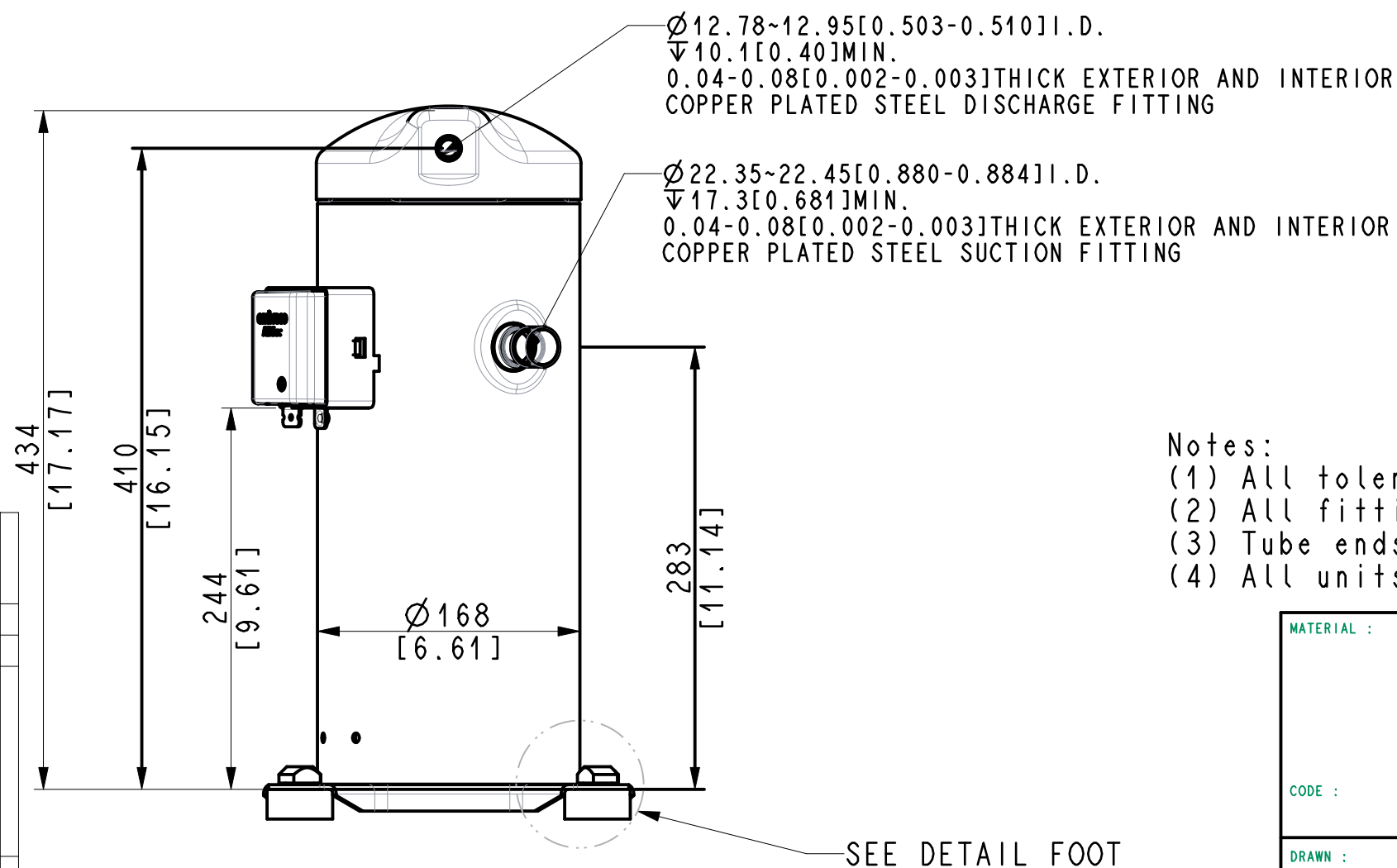
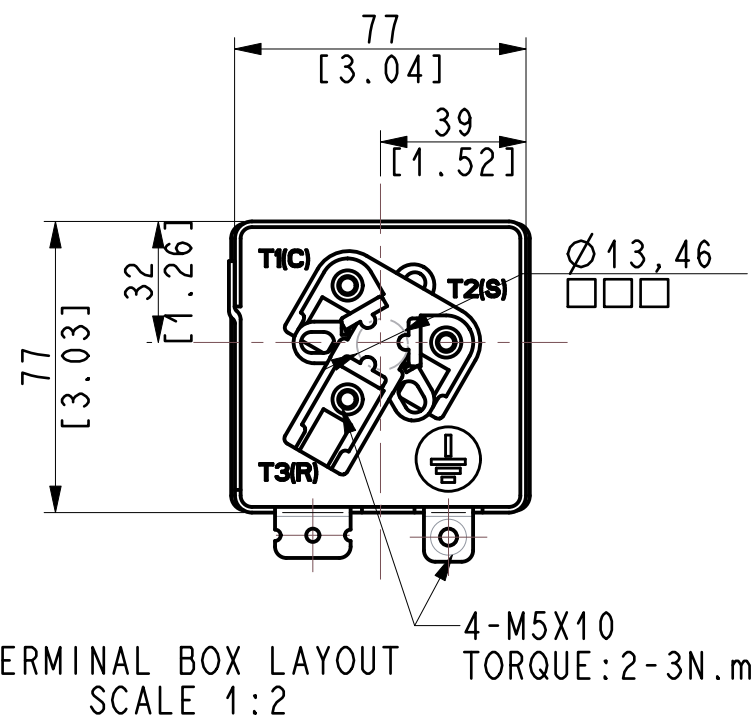
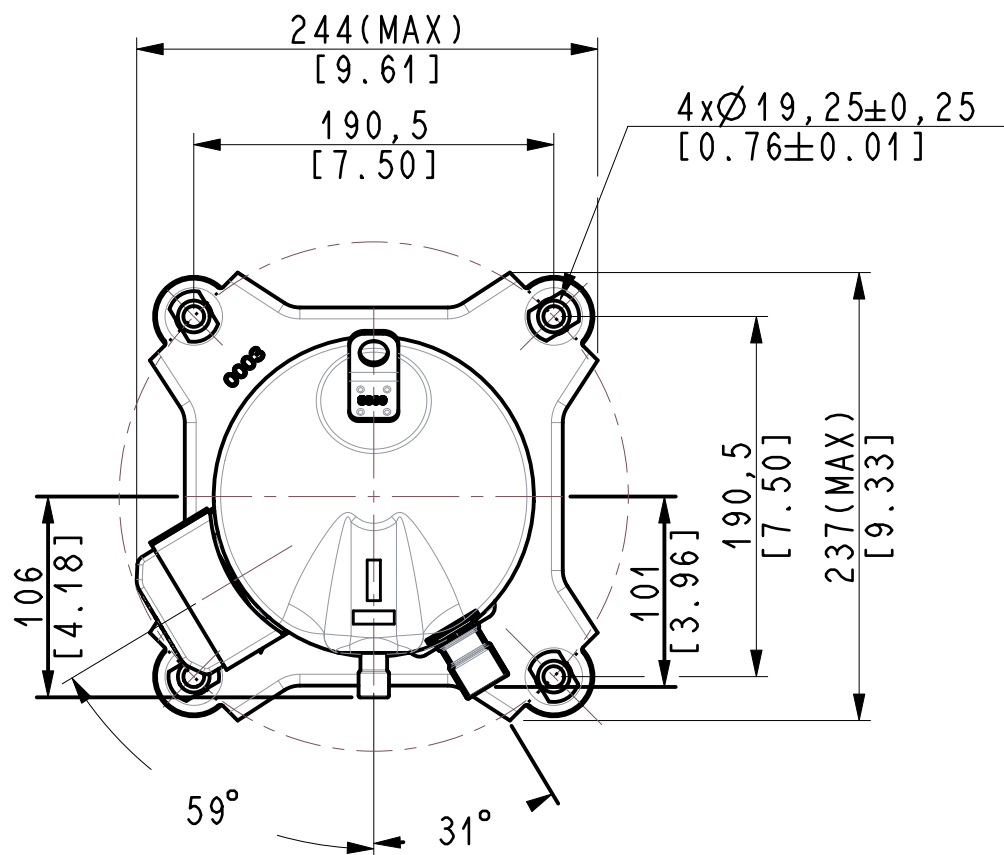
Notes: Capacity Calculation Based On SH=11.1K,SC=8.3K

7. Application Envelope



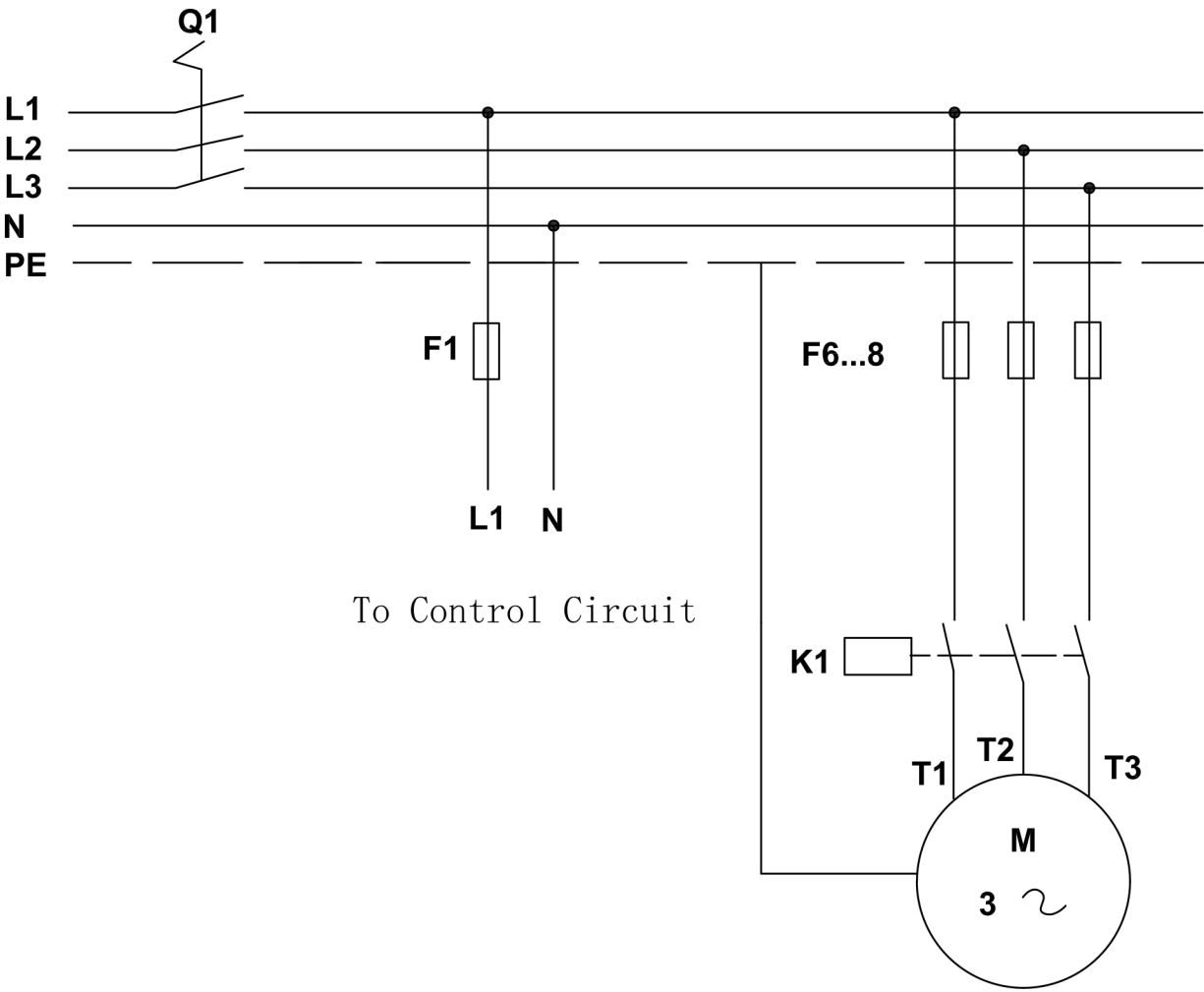
For compressor safety, shutdown compressor when DLT is above 125°C.
Restart compressor when DLT is below 85°C.

8. Drawing



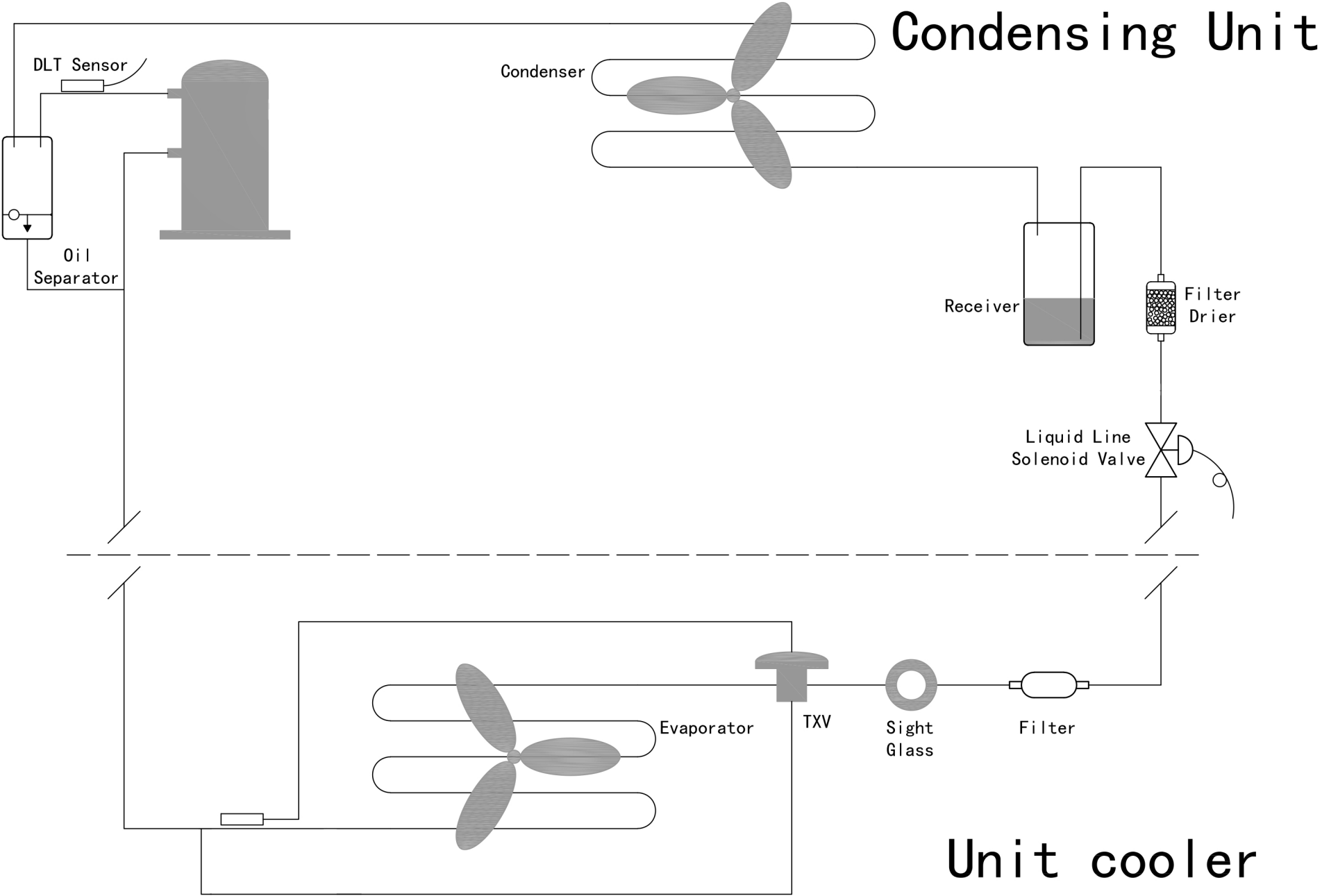
- Notes:
- (1) All tolerances 1.5mm [0.06in] unless otherwise specified
 - (2) All fittings: + 3.0mm [0.12in]
 - (3) Tube ends must be plugged
 - (4) All units are in mm[inch]

MATERIAL :		embraco Nidec	GEN. TOL. :	
			ANG. TOL. :	
			SCALE : 0,125	
			UNIT: mm	A3
CODE :		TITLE, DOCUMENT TYPE	REPLACE:	
			V0	
			No.	
DRAWN :		163 (EAF, EWF, EDF)	801-0001-00	
APP.:				
ECM :	DATE :	THIS MATERIAL IS CONFIDENTIAL AND PROPRIETARY TO EMBRACO, AND MAY NOT BE REPRODUCED, DISCLOSED, DISTRIBUTED OR USED WITHOUT PERMISSION		SHEET NUMBER: 1 OF 1



- Electrical Schematics
- L1/L2/L3/N/PE: 3 Phase Lines(line/neutral/ground)
- Q1: Manual Switch
- F1/F6...8: Fuse
- K1: Compressor Contactor
- M: Compressor Motor
- T1/T2/T3: Compressor Terminal

General System Schematic



Accessories List

Part N.O.	Specification	Part Name	Description	Qty	Type	Picture
020-0001-00		Terminal Seal		1	Standard	
019-0002-00	11.1*29.5	Sleeve Spacer		4	Standard	
200-0001-00		Rubber		4	Standard	

Accessories List

100-0006-00	M5x8,GB/T5789	Bolt		4	Standard	
017-0000-00	IP21	Terminal Cover		1	Standard	
016-0001-00		T-Box		1	Standard	
034-0001-03		Sound Jacket		1	Optional	

Accessories List

028-0001-00	OD:165, 70W, 220V, L:518.1	Crank Heater		1	Optional	
031-0019-00	1"-14UN 2A	RotaLock Connector		1	Optional	
031-0017-00	1-1/4"-12UNF-A	RotaLock Connector		1	Optional	