

COMPRESSOR DEFINITION

Designation	NT 2178GK
Nominal Voltage/Frequency	100 V 50 Hz 60 Hz
Engineering Number	922EQ02

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-404A		
3 Nominal voltage and frequency	100 / 50	[V / Hz]	
4 Application type	Low Back Pressure R404A		
4.1 Evaporating temperature range	-40°C to -10°C	(-40°F to 14°F)	
5 Motor type	CSCR		
6 Starting torque	HST - Hight starting torque		
7 Expansion device	Capillary tube or Expansion valve		
8 Compressor cooling	Operating voltage range		
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	-	-	-
8.2 LBP (43°C Ambient temperature)	-	-	-
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	25.2	[kgf/cm ²] (358 psig)	/ °C - °F
9.2 Peak	28.3	[kgf/cm ²] (402 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	3/4	[hp]
2 Displacement	17.39	[cm ³] (1.061 cu.in)
2.1 Bore [mm]	34.120	
2.2 Stroke [mm]	19.030	
3 Lubricant charge	450	[ml] (15.22 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	17.1	[kg] (37.70 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm ²] (2.84 to 4.27 psig)

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	100 V 50/60 Hz 1 ~ (Single phase)	
2 Starting device type	Voltage Relay	
2.1 Starting device	3ARR3B5M3	
3 Start capacitor	243-292(165)	[µF(VAC minimum)]
4 Run capacitor	35(420)	[µF(VAC minimum)]
5 Motor protection	T0878/C9	
6 Start winding resistance	2.60	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	0.40	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	-	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	11.08	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification		

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @100V50Hz			ASHRAELBP32 Fan		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
2771	698	812	627	8.51	18.79	4.42	1.11	1.30

TEST CONDITIONS: @100V60Hz			ASHRAELBP32 Fan		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
3419	862	1002	724	7.88	23.18	4.72	1.19	1.38

E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V50Hz		ASHRAE32 Fan			(Condensing temperature 35°C (+95°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40	(-40)	1308	330	383	371	6.88	8.79	3.52	0.89	1.03
-35	(-31)	1743	439	511	429	7.16	11.75	4.08	1.03	1.20
-30	(-22)	2317	584	679	485	7.49	15.68	4.78	1.20	1.40
-25	(-13)	3031	764	888	542	7.84	20.59	5.59	1.41	1.64
-20	(- 4)	3885	979	1138	598	8.24	26.53	6.49	1.64	1.90
-15	(+ 5)	4880	1230	1430	654	8.67	33.53	7.46	1.88	2.19
-10	(+14)	6017	1516	1763	710	9.14	41.62	8.47	2.13	2.48

TEST CONDITIONS: @100V50Hz		ASHRAE32 Fan			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40	(-40)	1162	293	341	375	6.89	7.80	3.09	0.78	0.90
-35	(-31)	1580	398	463	441	7.25	10.64	3.59	0.90	1.05
-30	(-22)	2128	536	624	507	7.65	14.37	4.20	1.06	1.23
-25	(-13)	2807	707	823	573	8.10	19.03	4.89	1.23	1.43
-20	(- 4)	3618	912	1060	640	8.59	24.66	5.66	1.43	1.66
-15	(+ 5)	4560	1149	1336	707	9.12	31.27	6.46	1.63	1.89
-10	(+14)	5635	1420	1651	775	9.69	38.90	7.28	1.83	2.13

E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V50Hz		ASHRAE32 Fan			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40	(-40)	944	238	276	379	6.90	6.31	2.50	0.63	0.73
-35	(-31)	1350	340	395	452	7.33	9.07	2.99	0.75	0.88
-30	(-22)	1877	473	550	526	7.80	12.65	3.56	0.90	1.04
-25	(-13)	2526	637	740	601	8.32	17.10	4.20	1.06	1.23
-20	(- 4)	3298	831	966	677	8.89	22.43	4.88	1.23	1.43
-15	(+ 5)	4193	1057	1229	754	9.51	28.69	5.57	1.40	1.63
-10	(+14)	5211	1313	1527	833	10.19	35.90	6.24	1.57	1.83

TEST CONDITIONS: @100V60Hz		ASHRAE32 Fan			(Condensing temperature 35°C (+95°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40	(-40)	1471	371	431	383	4.59	9.88	3.85	0.97	1.13
-35	(-31)	2092	527	613	475	5.46	14.11	4.39	1.11	1.29
-30	(-22)	2838	715	832	562	6.27	19.20	5.04	1.27	1.48
-25	(-13)	3710	935	1087	642	7.05	25.20	5.77	1.46	1.69
-20	(- 4)	4707	1186	1379	718	7.79	32.14	6.57	1.65	1.92
-15	(+ 5)	5831	1469	1709	790	8.51	40.06	7.40	1.86	2.17
-10	(+14)	7081	1784	2075	857	9.23	48.99	8.24	2.08	2.41

TEST CONDITIONS: @100V60Hz		ASHRAE32 Fan			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40	(-40)	1365	344	400	391	4.61	9.16	3.48	0.88	1.02
-35	(-31)	1902	479	557	486	5.51	12.80	3.92	0.99	1.15
-30	(-22)	2584	651	757	579	6.39	17.45	4.46	1.12	1.31
-25	(-13)	3413	860	1000	670	7.28	23.14	5.08	1.28	1.49
-20	(- 4)	4388	1106	1286	761	8.19	29.91	5.76	1.45	1.69
-15	(+ 5)	5511	1389	1615	852	9.12	37.79	6.47	1.63	1.90
-10	(+14)	6780	1708	1987	944	10.11	46.81	7.19	1.81	2.11

E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V60Hz		ASHRAE32 Fan			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40	(-40)	1149	290	337	400	4.57	7.69	2.86	0.72	0.84
-35	(-31)	1593	401	467	496	5.51	10.70	3.24	0.82	0.95
-30	(-22)	2203	555	646	595	6.49	14.85	3.72	0.94	1.09
-25	(-13)	2981	751	873	697	7.52	20.17	4.27	1.08	1.25
-20	(- 4)	3926	989	1150	803	8.61	26.70	4.88	1.23	1.43
-15	(+ 5)	5038	1270	1476	913	9.79	34.48	5.51	1.39	1.62
-10	(+14)	6318	1592	1851	1027	11.06	43.53	6.16	1.55	1.80

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	9.6 +0.07/+0.00	[mm]	(0.378" +0.003"/+0.000")
3.1.1 Material	Copper		
3.1.2 Shape	Vertical		
3.2 DISCHARGE	6.42 +0.08/+0.00	[mm]	(0.253" +0.003"/+0.000")
3.2.1 Material	Copper		
3.2.2 Shape	Vertical		
3.3 PROCESS	6.42 +0.08/+0.00	[mm]	(0.253" +0.003"/+0.000")
3.3.1 Material	Copper		
3.3.2 Shape	Vertical		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		