

COMPRESSOR DEFINITION

Designation	NT 2178GK
Nominal Voltage/Frequency	100 V 50 Hz 60 Hz
Engineering Number	922SQ02

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)	16.7	[kg] (36.82 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

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	RVA9AD3C-121	
3 Start capacitor	243-292(165)	[µF(VAC minimum)]
4 Run capacitor	35(420)	[µF(VAC minimum)]
5 Motor protection	T0865/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)	60.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	-	[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]
2766	697	811	629	8.76	18.75	4.40	1.11	1.29

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]
3456	871	1013	747	8.12	23.43	4.63	1.17	1.36

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)	1307	329	383	387	7.48	8.79	3.37	0.85	0.99
-35	(-31)	1752	442	513	443	7.63	11.81	3.96	1.00	1.16
-30	(-22)	2342	590	686	502	7.88	15.84	4.66	1.18	1.37
-25	(-13)	3076	775	901	564	8.22	20.90	5.45	1.37	1.60
-20	(- 4)	3955	997	1159	630	8.66	27.01	6.29	1.58	1.84
-15	(+ 5)	4978	1254	1459	698	9.19	34.20	7.14	1.80	2.09
-10	(+14)	6146	1549	1801	769	9.82	42.52	7.99	2.01	2.34

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)	1144	288	335	385	7.36	7.67	2.98	0.75	0.87
-35	(-31)	1558	393	457	448	7.64	10.49	3.49	0.88	1.02
-30	(-22)	2118	534	620	515	8.02	14.30	4.10	1.03	1.20
-25	(-13)	2822	711	827	586	8.48	19.13	4.80	1.21	1.41
-20	(- 4)	3671	925	1076	662	9.03	25.02	5.54	1.40	1.62
-15	(+ 5)	4664	1175	1367	742	9.66	31.98	6.29	1.59	1.84
-10	(+14)	5803	1462	1700	825	10.37	40.06	7.03	1.77	2.06

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)	981	247	287	380	7.26	6.57	2.57	0.65	0.75	
-35 (-31)	1335	336	391	448	7.65	8.97	2.99	0.75	0.88	
-30 (-22)	1834	462	538	522	8.11	12.36	3.51	0.89	1.03	
-25 (-13)	2479	625	726	602	8.65	16.77	4.12	1.04	1.21	
-20 (- 4)	3268	824	958	687	9.26	22.23	4.76	1.20	1.40	
-15 (+ 5)	4203	1059	1231	777	9.95	28.76	5.42	1.37	1.59	
-10 (+14)	5282	1331	1548	872	10.71	36.40	6.05	1.53	1.77	

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)	1651	416	484	431	5.13	11.10	3.82	0.96	1.12	
-35 (-31)	2202	555	645	502	5.75	14.85	4.40	1.11	1.29	
-30 (-22)	2901	731	850	576	6.44	19.63	5.04	1.27	1.48	
-25 (-13)	3750	945	1099	655	7.20	25.48	5.71	1.44	1.67	
-20 (- 4)	4746	1196	1391	739	8.03	32.42	6.41	1.62	1.88	
-15 (+ 5)	5892	1485	1726	826	8.92	40.48	7.12	1.80	2.09	
-10 (+14)	7186	1811	2106	919	9.88	49.71	7.83	1.97	2.30	

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)	1419	358	416	426	5.06	9.52	3.32	0.84	0.97	
-35 (-31)	1971	497	578	510	5.80	13.27	3.87	0.98	1.13	
-30 (-22)	2659	670	779	597	6.61	17.96	4.46	1.12	1.31	
-25 (-13)	3484	878	1021	687	7.47	23.62	5.07	1.28	1.49	
-20 (- 4)	4445	1120	1302	781	8.40	30.29	5.69	1.43	1.67	
-15 (+ 5)	5542	1397	1624	879	9.38	38.00	6.31	1.59	1.85	
-10 (+14)	6776	1707	1985	980	10.42	46.78	6.91	1.74	2.02	

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)	1150	290	337	394	4.76	7.70	2.93	0.74	0.86
-35	(-31)	1718	433	504	497	5.71	11.54	3.45	0.87	1.01
-30	(-22)	2411	608	706	603	6.71	16.25	3.98	1.00	1.17
-25	(-13)	3227	813	946	712	7.77	21.84	4.53	1.14	1.33
-20	(- 4)	4168	1050	1221	823	8.88	28.35	5.07	1.28	1.49
-15	(+ 5)	5233	1319	1533	937	10.04	35.81	5.60	1.41	1.64
-10	(+14)	6422	1618	1882	1054	11.25	44.25	6.09	1.53	1.78

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		