

### COMPRESSOR DEFINITION

Designation	NT 2178GK
Nominal Voltage/Frequency	200-240 V 50 Hz / 230 V 60 Hz
Engineering Number	922EN04

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-404A		
3 Nominal voltage and frequency	200-240 / 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 <sup>2</sup> ] (358 psig)	/ °C - °F
9.2 Peak	28.3	[kgf/cm <sup>2</sup> ] (402 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1-	[hp]
2 Displacement	17.39	[cm <sup>3</sup> ] (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	[kg] (37.48 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm <sup>2</sup> ] (2.84 to 4.27 psig)

### C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	200-240 V 50 Hz / 230 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Voltage Relay	
2.1 Starting device	RVA3N3C-122	
3 Start capacitor	88-108(330)	[µF(VAC minimum)]
4 Run capacitor	15(440)	[µF(VAC minimum)]
5 Motor protection	MRA38168-3261	
6 Start winding resistance	8.80	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	2.30	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	26.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CCC - IMQ - IRAM - UL	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @230V60Hz			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	708	3.09	23.18	4.83	1.22	1.42

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @230V50Hz			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)	1297	327	380	319	1.69	8.72	4.06	1.02	1.19
-35	(-31)	1745	440	511	380	1.99	11.77	4.62	1.16	1.35
-30	(-22)	2332	588	683	439	2.28	15.77	5.33	1.34	1.56
-25	(-13)	3056	770	896	495	2.56	20.77	6.16	1.55	1.81
-20	(- 4)	3919	988	1148	551	2.84	26.77	7.10	1.79	2.08
-15	(+ 5)	4921	1240	1442	605	3.12	33.81	8.13	2.05	2.38
-10	(+14)	6061	1527	1776	658	3.39	41.92	9.21	2.32	2.70

TEST CONDITIONS: @230V50Hz			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)	1148	289	336	323	1.72	7.70	3.54	0.89	1.04
-35	(-31)	1587	400	465	391	2.05	10.68	4.05	1.02	1.19
-30	(-22)	2144	540	628	458	2.39	14.48	4.67	1.18	1.37
-25	(-13)	2818	710	826	525	2.71	19.11	5.37	1.35	1.57
-20	(- 4)	3611	910	1058	590	3.04	24.61	6.12	1.54	1.79
-15	(+ 5)	4521	1139	1325	656	3.37	31.00	6.90	1.74	2.02
-10	(+14)	5550	1399	1626	722	3.70	38.32	7.69	1.94	2.25

TEST CONDITIONS: @230V50Hz			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)	974	246	286	325	1.72	6.52	3.02	0.76	0.89
-35	(-31)	1428	360	418	400	2.09	9.60	3.56	0.90	1.04
-30	(-22)	1979	499	580	475	2.47	13.34	4.15	1.05	1.22
-25	(-13)	2627	662	770	551	2.85	17.78	4.77	1.20	1.40
-20	(- 4)	3373	850	988	627	3.23	22.94	5.40	1.36	1.58
-15	(+ 5)	4216	1062	1235	704	3.62	28.85	6.01	1.51	1.76
-10	(+14)	5157	1299	1511	782	4.01	35.53	6.58	1.66	1.93

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @230V60Hz		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)	1576	397	462	428	1.96	10.59	3.69	0.93	1.08	
-35 (-31)	2189	552	641	501	2.24	14.76	4.36	1.10	1.28	
-30 (-22)	2932	739	859	573	2.52	19.84	5.11	1.29	1.50	
-25 (-13)	3805	959	1115	643	2.81	25.85	5.92	1.49	1.73	
-20 (- 4)	4808	1212	1409	711	3.10	32.84	6.78	1.71	1.99	
-15 (+ 5)	5941	1497	1741	776	3.39	40.82	7.66	1.93	2.24	
-10 (+14)	7203	1815	2111	840	3.68	49.83	8.57	2.16	2.51	

TEST CONDITIONS: @230V60Hz		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)	1371	346	402	429	1.97	9.20	3.21	0.81	0.94	
-35 (-31)	1944	490	570	506	2.26	13.08	3.85	0.97	1.13	
-30 (-22)	2655	669	778	584	2.57	17.93	4.54	1.14	1.33	
-25 (-13)	3506	884	1027	665	2.91	23.77	5.26	1.33	1.54	
-20 (- 4)	4497	1133	1318	747	3.26	30.65	6.01	1.51	1.76	
-15 (+ 5)	5626	1418	1648	832	3.62	38.58	6.77	1.70	1.98	
-10 (+14)	6894	1737	2020	918	4.00	47.59	7.52	1.89	2.20	

TEST CONDITIONS: @230V60Hz		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)	1146	289	336	436	1.97	7.67	2.62	0.66	0.77	
-35 (-31)	1662	419	487	513	2.28	11.16	3.25	0.82	0.95	
-30 (-22)	2327	586	682	596	2.62	15.68	3.91	0.99	1.15	
-25 (-13)	3140	791	920	684	3.00	21.25	4.59	1.16	1.34	
-20 (- 4)	4102	1034	1202	779	3.41	27.90	5.26	1.33	1.54	
-15 (+ 5)	5213	1314	1528	880	3.85	35.67	5.92	1.49	1.73	
-10 (+14)	6472	1631	1896	988	4.31	44.59	6.55	1.65	1.92	

### 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		