

### 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	CSIR		
6 Starting torque	HST - High 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	Current Relay	
2.1 Starting device	MTRPH55-59	
3 Start capacitor	88-108(330)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	T0590/G6	
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: @200V50Hz			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]	
2730	688	800	696	4.30	18.51	3.92	0.99	1.15	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @200V50Hz		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)	1353	341	397	402	3.14	9.10	3.35	0.84	0.98
-35	(-31)	1820	459	533	472	3.37	12.27	3.87	0.97	1.13
-30	(-22)	2390	602	700	540	3.60	16.17	4.43	1.12	1.30
-25	(-13)	3065	772	898	606	3.83	20.82	5.07	1.28	1.48
-20	(- 4)	3850	970	1128	668	4.07	26.29	5.76	1.45	1.69
-15	(+ 5)	4746	1196	1391	727	4.32	32.61	6.53	1.64	1.91
-10	(+14)	5758	1451	1687	781	4.59	39.83	7.37	1.86	2.16

TEST CONDITIONS: @200V50Hz		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)	1129	285	331	394	3.11	7.57	2.88	0.72	0.84
-35	(-31)	1586	400	465	476	3.41	10.67	3.34	0.84	0.98
-30	(-22)	2134	538	625	557	3.73	14.41	3.82	0.96	1.12
-25	(-13)	2776	700	813	638	4.05	18.82	4.34	1.09	1.27
-20	(- 4)	3515	886	1030	718	4.39	23.96	4.88	1.23	1.43
-15	(+ 5)	4355	1097	1276	797	4.76	29.86	5.46	1.38	1.60
-10	(+14)	5297	1335	1552	873	5.15	36.57	6.09	1.53	1.78

TEST CONDITIONS: @200V50Hz		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)	961	242	282	386	3.06	6.43	2.49	0.63	0.73
-35	(-31)	1396	352	409	478	3.42	9.38	2.92	0.74	0.85
-30	(-22)	1910	481	560	573	3.80	12.87	3.33	0.84	0.98
-25	(-13)	2506	632	734	670	4.20	16.96	3.75	0.94	1.10
-20	(- 4)	3188	803	934	767	4.63	21.68	4.16	1.05	1.22
-15	(+ 5)	3958	997	1160	865	5.09	27.08	4.57	1.15	1.34
-10	(+14)	4819	1214	1412	963	5.58	33.20	5.00	1.26	1.46

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @200V60Hz		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]
-40	(-40)	1584	399	464	460	3.16	10.64	3.42	0.86	1.00
-35	(-31)	2165	545	634	564	3.47	14.60	3.84	0.97	1.12
-30	(-22)	2865	722	839	660	3.79	19.38	4.34	1.09	1.27
-25	(-13)	3685	929	1080	749	4.12	25.03	4.92	1.24	1.44
-20	(- 4)	4626	1166	1356	833	4.45	31.59	5.56	1.40	1.63
-15	(+ 5)	5690	1434	1667	912	4.80	39.09	6.25	1.57	1.83
-10	(+14)	6877	1733	2015	987	5.16	47.57	6.96	1.75	2.04

TEST CONDITIONS: @200V60Hz		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]
-40	(-40)	1401	353	411	426	2.95	9.40	3.32	0.84	0.97
-35	(-31)	1954	492	572	538	3.34	13.15	3.66	0.92	1.07
-30	(-22)	2625	661	769	649	3.76	17.72	4.05	1.02	1.19
-25	(-13)	3415	861	1001	759	4.19	23.16	4.49	1.13	1.32
-20	(- 4)	4326	1090	1268	871	4.65	29.49	4.96	1.25	1.45
-15	(+ 5)	5359	1351	1570	984	5.14	36.75	5.44	1.37	1.59
-10	(+14)	6515	1642	1909	1101	5.65	44.98	5.91	1.49	1.73

TEST CONDITIONS: @200V60Hz		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]
-40	(-40)	1231	310	361	396	2.87	8.24	3.09	0.78	0.91
-35	(-31)	1751	441	513	510	3.30	11.76	3.43	0.86	1.00
-30	(-22)	2389	602	700	629	3.78	16.10	3.79	0.95	1.11
-25	(-13)	3146	793	922	755	4.29	21.29	4.16	1.05	1.22
-20	(- 4)	4023	1014	1179	889	4.84	27.36	4.53	1.14	1.33
-15	(+ 5)	5021	1265	1471	1032	5.43	34.35	4.88	1.23	1.43
-10	(+14)	6141	1548	1799	1184	6.07	42.31	5.19	1.31	1.52

### 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		