

### COMPRESSOR DEFINITION

Designation	<b>T 2178GK</b>
Nominal Voltage/Frequency	<b>115 V 60 Hz</b>
Engineering Number	<b>936EG68</b>

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-404A		
3 Nominal voltage and frequency	115 / 60	[ 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 - 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 pressures/temperature			
9.1 Operating (gauge)	25.7	[kgf/cm <sup>2</sup> ] (365 psig)	/ °C - °F
9.2 Peak (gauge)	28.7	[kgf/cm <sup>2</sup> ] (408 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1-	[hp]
2 Displacement	20.44	[cm <sup>3</sup> ] (1.247 cu.in)
2.1 Bore [mm]	36.990	
2.2 Stroke [mm]	19.030	
3 Lubricant charge	550	[ml] (18.60 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	16.96	[kg] (37.39 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	115 V 60 Hz 1~ (Single phase)	
2 Starting device type	Voltage Relay	
2.1 Starting device	3ARR3B3P3	
3 Start capacitor	145-175(165)	[µF(VAC minimum)]
4 Run capacitor	25(450)	[µF(VAC minimum)]
5 Motor protection	3HM526-105	
6 Start winding resistance	4.15	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	0.60	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	72.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	8.80	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	UL	

### 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]
3112	784	912	697	7.58	21.10	4.46	1.12	1.31

### 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)	1383	348	405	355	4.67	9.29	3.87	0.97	1.13
-35	(-31)	1941	489	569	444	5.19	13.09	4.39	1.11	1.29
-30	(-22)	2584	651	757	534	5.76	17.48	4.87	1.23	1.43
-25	(-13)	3333	840	977	624	6.37	22.64	5.35	1.35	1.57
-20	(- 4)	4210	1061	1234	716	7.02	28.75	5.86	1.48	1.72
-15	(+ 5)	5237	1320	1535	809	7.72	35.98	6.44	1.62	1.89
-10	(+14)	6434	1621	1885	907	8.45	44.51	7.12	1.79	2.09

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)	1082	273	317	354	4.50	7.26	3.05	0.77	0.89
-35	(-31)	1670	421	489	448	5.17	11.24	3.73	0.94	1.09
-30	(-22)	2330	587	683	543	5.85	15.73	4.30	1.08	1.26
-25	(-13)	3081	776	903	642	6.53	20.89	4.80	1.21	1.41
-20	(- 4)	3947	995	1156	746	7.22	26.90	5.29	1.33	1.55
-15	(+ 5)	4947	1247	1450	854	7.92	33.92	5.78	1.46	1.69
-10	(+14)	6104	1538	1788	967	8.62	42.14	6.32	1.59	1.85

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)	792	200	232	353	4.33	5.30	2.27	0.57	0.66
-35	(-31)	1411	356	414	450	5.15	9.48	3.10	0.78	0.91
-30	(-22)	2087	526	612	552	5.94	14.07	3.77	0.95	1.10
-25	(-13)	2841	716	832	660	6.70	19.22	4.32	1.09	1.27
-20	(- 4)	3694	931	1082	774	7.43	25.12	4.79	1.21	1.40
-15	(+ 5)	4668	1176	1368	896	8.13	31.94	5.21	1.31	1.53
-10	(+14)	5784	1458	1695	1026	8.80	39.85	5.63	1.42	1.65

### E - PERFORMANCE - CURVES

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)	1550	391	454	415	5.46	10.42	3.71	0.94	1.09
-35	(-31)	2227	561	653	520	6.07	15.02	4.30	1.08	1.26
-30	(-22)	3000	756	879	625	6.74	20.29	4.83	1.22	1.41
-25	(-13)	3892	981	1140	730	7.45	26.44	5.34	1.35	1.56
-20	(- 4)	4929	1242	1444	837	8.22	33.66	5.87	1.48	1.72
-15	(+ 5)	6137	1546	1798	947	9.03	42.17	6.45	1.63	1.89
-10	(+14)	7539	1900	2209	1061	9.89	52.15	7.13	1.80	2.09

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)	1266	319	371	414	5.26	8.49	3.06	0.77	0.90
-35	(-31)	1955	493	573	523	6.05	13.16	3.73	0.94	1.09
-30	(-22)	2726	687	799	636	6.84	18.41	4.30	1.08	1.26
-25	(-13)	3605	908	1056	751	7.65	24.44	4.81	1.21	1.41
-20	(- 4)	4617	1164	1353	872	8.45	31.47	5.29	1.33	1.55
-15	(+ 5)	5787	1458	1696	998	9.27	39.69	5.78	1.46	1.69
-10	(+14)	7141	1799	2092	1131	10.09	49.30	6.32	1.59	1.85

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)	991	250	291	413	5.07	6.63	2.41	0.61	0.71
-35	(-31)	1692	426	496	527	6.03	11.37	3.18	0.80	0.93
-30	(-22)	2463	621	722	646	6.95	16.60	3.81	0.96	1.12
-25	(-13)	3330	839	976	772	7.84	22.54	4.33	1.09	1.27
-20	(- 4)	4318	1088	1265	905	8.69	29.37	4.78	1.20	1.40
-15	(+ 5)	5452	1374	1598	1048	9.51	37.31	5.20	1.31	1.52
-10	(+14)	6757	1703	1980	1200	10.29	46.55	5.62	1.42	1.65

### 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	9.6 +0.07/+0.00	[mm]	(0.378" +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		