

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | NT 2178GK       |
| Nominal Voltage/Frequency | 220-240 V 50 Hz |
| Engineering Number        | 922EA04         |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|  |                                   |                                   |           |
|--|-----------------------------------|-----------------------------------|-----------|
| 1 Type                                     | Hermetic reciprocating compressor |                                   |           |
| 2 Refrigerant                              | R-404A                            |                                   |           |
| 3 Nominal voltage and frequency            | 220-240 / 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 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                | 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 | 220-240 V 50 Hz 1 ~ (Single phase) |                                    |
| 2 Starting device type                       | Voltage Relay                      |                                    |
| 2.1 Starting device                          | RVA4M3C-109                        |                                    |
| 3 Start capacitor                            | 88-108(330)                        | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 15(440)                            | [µF(VAC minimum)]                  |
| 5 Motor protection                           | T0834/G9                           |                                    |
| 6 Start winding resistance                   | 10.40                              | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 2.40                               | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (50 Hz)        | -                                  | [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             | IMQ - IRAM                         |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                               |          |     |                                |                                  |  |                           |  |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS:<br>@220V50Hz |          |     | ASHRAELBP32<br>Fan             |                                  | Evaporating temperature<br>(Condensing temperature |                           | -23.3°C (-9.94°F)<br>54.4°C (129.92°F) |       |
| Cooling capacity<br>+/- 5%    |          |     | Power<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5% | Gas flow<br>rate<br>+/- 5%                         | EFFICIENCY RATE<br>+/- 7% |  |       |
| [Btu/h]                       | [kcal/h] | [W] | [W]                            | [A]                              | [kg/h]   | [Btu/Wh]                  | [kcal/Wh]                              | [W/W] |
| 2738                          | 690      | 802 | 564                            | 2.56                             | 18.56  | 4.85                      | 1.22                                   | 1.42  |

### E - PERFORMANCE - CURVES

|                               |       |                            |                 |      |                                       |                                  |                            |                           |           |       |
|-------------------------------|-------|----------------------------|-----------------|------|---------------------------------------|----------------------------------|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |       |                            | ASHRAE32<br>Fan |      | (Condensing temperature 35°C (+95°F)) |                                  |                            |                           |           |       |
| Evaporating<br>temperature    |       | Cooling capacity<br>+/- 5% |                 |      | Power<br>consumption<br>+/- 5%        | Current<br>consumption<br>+/- 5% | Gas flow<br>rate<br>+/- 5% | EFFICIENCY RATE<br>+/- 7% |           |       |
| °C                            | (°F)  | [Btu/h]                    | [kcal/h]        | [W]  | [W]                                   | [A]                              | [kg/h]                     | [Btu/Wh]                  | [kcal/Wh] | [W/W] |
| -40                           | (-40) | 1203                       | 303             | 353  | 355                                   | 1.67                             | 8.09                       | 3.39                      | 0.85      | 0.99  |
| -35                           | (-31) | 1710                       | 431             | 501  | 410                                   | 1.89                             | 11.53                      | 4.17                      | 1.05      | 1.22  |
| -30                           | (-22) | 2305                       | 581             | 676  | 465                                   | 2.12                             | 15.60                      | 4.96                      | 1.25      | 1.45  |
| -25                           | (-13) | 2989                       | 753             | 876  | 520                                   | 2.37                             | 20.31                      | 5.75                      | 1.45      | 1.68  |
| -20                           | (- 4) | 3763                       | 948             | 1103 | 575                                   | 2.62                             | 25.70                      | 6.55                      | 1.65      | 1.92  |
| -15                           | (+ 5) | 4627                       | 1166            | 1356 | 629                                   | 2.89                             | 31.79                      | 7.36                      | 1.85      | 2.16  |
| -10                           | (+14) | 5581                       | 1406            | 1635 | 682                                   | 3.17                             | 38.61                      | 8.18                      | 2.06      | 2.40  |

|                               |       |                            |                 |      |  |                                  |                            |                           |           |       |
|-------------------------------|-------|----------------------------|-----------------|------|--|----------------------------------|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |       |                            | ASHRAE32<br>Fan |      | (Condensing temperature 45°C (+113°F)) |                                  |                            |                           |           |       |
| Evaporating<br>temperature    |       | Cooling capacity<br>+/- 5% |                 |      | Power<br>consumption<br>+/- 5%         | Current<br>consumption<br>+/- 5% | Gas flow<br>rate<br>+/- 5% | EFFICIENCY RATE<br>+/- 7% |           |       |
| °C                            | (°F)  | [Btu/h]                    | [kcal/h]        | [W]  | [W]                                    | [A]                              | [kg/h]                     | [Btu/Wh]                  | [kcal/Wh] | [W/W] |
| -40                           | (-40) | 1022                       | 258             | 300  | 339                                    | 1.62                             | 6.85                       | 3.02                      | 0.76      | 0.88  |
| -35                           | (-31) | 1505                       | 379             | 441  | 401                                    | 1.86                             | 10.13                      | 3.75                      | 0.94      | 1.10  |
| -30                           | (-22) | 2082                       | 525             | 610  | 465                                    | 2.13                             | 14.06                      | 4.47                      | 1.13      | 1.31  |
| -25                           | (-13) | 2754                       | 694             | 807  | 530                                    | 2.41                             | 18.67                      | 5.19                      | 1.31      | 1.52  |
| -20                           | (- 4) | 3521                       | 887             | 1032 | 596                                    | 2.71                             | 23.99                      | 5.90                      | 1.49      | 1.73  |
| -15                           | (+ 5) | 4383                       | 1105            | 1284 | 664                                    | 3.02                             | 30.05                      | 6.60                      | 1.66      | 1.94  |
| -10                           | (+14) | 5342                       | 1346            | 1565 | 732                                    | 3.35                             | 36.88                      | 7.31                      | 1.84      | 2.14  |

|                               |       |                            |                 |      |  |                                  |                            |                           |           |       |
|-------------------------------|-------|----------------------------|-----------------|------|--|----------------------------------|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |       |                            | ASHRAE32<br>Fan |      | (Condensing temperature 55°C (+131°F)) |                                  |                            |                           |           |       |
| Evaporating<br>temperature    |       | Cooling capacity<br>+/- 5% |                 |      | Power<br>consumption<br>+/- 5%         | Current<br>consumption<br>+/- 5% | Gas flow<br>rate<br>+/- 5% | EFFICIENCY RATE<br>+/- 7% |           |       |
| °C                            | (°F)  | [Btu/h]                    | [kcal/h]        | [W]  | [W]                                    | [A]                              | [kg/h]                     | [Btu/Wh]                  | [kcal/Wh] | [W/W] |
| -40                           | (-40) | 840                        | 212             | 246  | 320                                    | 1.56                             | 5.63                       | 2.62                      | 0.66      | 0.77  |
| -35                           | (-31) | 1291                       | 325             | 378  | 390                                    | 1.84                             | 8.67                       | 3.32                      | 0.84      | 0.97  |
| -30                           | (-22) | 1841                       | 464             | 540  | 462                                    | 2.13                             | 12.41                      | 3.99                      | 1.00      | 1.17  |
| -25                           | (-13) | 2492                       | 628             | 730  | 538                                    | 2.45                             | 16.86                      | 4.64                      | 1.17      | 1.36  |
| -20                           | (- 4) | 3244                       | 817             | 951  | 616                                    | 2.79                             | 22.06                      | 5.27                      | 1.33      | 1.54  |
| -15                           | (+ 5) | 4097                       | 1032            | 1201 | 697                                    | 3.15                             | 28.04                      | 5.88                      | 1.48      | 1.72  |
| -10                           | (+14) | 5052                       | 1273            | 1480 | 780                                    | 3.52                             | 34.81                      | 6.47                      | 1.63      | 1.90  |

### 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     |      |                          |