

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | NT 2180GK       |
| Nominal Voltage/Frequency | 208-230 V 60 Hz |
| Engineering Number        | 923HD04         |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|                                    |                                   |                                   |           |
|------------------------------------|-----------------------------------|-----------------------------------|-----------|
| 1 Type                             | Hermetic reciprocating compressor |                                   |           |
| 2 Refrigerant                      | R-404A                            |                                   |           |
| 3 Nominal voltage and frequency    | 208-230 / 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 - 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                | 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            | 450           | [ml] (15.22 fl.oz.)              |
| 3.1 Lubricants approved       |               |                                  |
| 3.2 Lubricants type/viscosity | ESTER / ISO22 |                                  |
| 4 Weight (with oil charge)    | 17.14         | [kg] (37.79 lb.)                 |
| 5 Nitrogen charge             | -             | [kgf/cm <sup>2</sup> ]           |

### C - ELECTRICAL DATA

|  |                                   |                                    |
|--|-----------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 208-230 V 60 Hz 1~ (Single phase) |                                    |
| 2 Starting device type                       | Voltage Relay                     |                                    |
| 2.1 Starting device                          | RVA2L3C                           |                                    |
| 3 Start capacitor                            | 130-156(330)                      | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 10(400)                           | [µF(VAC minimum)]                  |
| 5 Motor protection                           | T0590/G9                          |                                    |
| 6 Start winding resistance                   | 5.62                              | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 2.07                              | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (60 Hz)        | 40.00                             | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz)     | -                                 | [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:<br>@208V60Hz   |          |      | ASHRAELBP32<br>Fan         |                            | Evaporating temperature<br>(Condensing temperature |                                | -23.3°C (-9.94°F)<br>54.4°C (129.92°F) |       |
| Cooling capacity (Qe)<br>+/- 5% |          |      | Input power (We)<br>+/- 5% | Electric current<br>+/- 5% | Mass flow rate<br>+/- 5%                           | Efficiency EER & COP<br>+/- 7% |  |       |
| [Btu/h]                         | [kcal/h] | [W]  | [W]                        | [A]                        | [kg/h]   | [Btu/Wh]                       | [kcal/Wh]                              | [W/W] |
| 3962                            | 998      | 1161 | 880                        | 4.50                       | 26.86  | 4.50                           | 1.13                                   | 1.32  |

### E - PERFORMANCE - CURVES

|                               |       |                                 |                 |      |                                       |                            |                          |                                |           |       |
|-------------------------------|-------|---------------------------------|-----------------|------|---------------------------------------|----------------------------|--------------------------|--------------------------------|-----------|-------|
| TEST CONDITIONS:<br>@208V60Hz |       |                                 | ASHRAE32<br>Fan |      | (Condensing temperature 35°C (+95°F)) |                            |                          |                                |           |       |
| Evaporating temperature       |       | Cooling capacity (Qe)<br>+/- 5% |                 |      | Input power (We)<br>+/- 5%            | Electric current<br>+/- 5% | Mass flow rate<br>+/- 5% | Efficiency EER & COP<br>+/- 7% |           |       |
| °C                            | (°F)  | [Btu/h]                         | [kcal/h]        | [W]  | [W]                                   | [A]                        | [kg/h]                   | [Btu/Wh]                       | [kcal/Wh] | [W/W] |
| -40                           | (-40) | 1824                            | 460             | 535  | 481                                   | 2.21                       | 12.27                    | 3.76                           | 0.95      | 1.10  |
| -35                           | (-31) | 2467                            | 622             | 723  | 584                                   | 2.77                       | 16.64                    | 4.25                           | 1.07      | 1.24  |
| -30                           | (-22) | 3281                            | 827             | 961  | 685                                   | 3.28                       | 22.19                    | 4.81                           | 1.21      | 1.41  |
| -25                           | (-13) | 4276                            | 1077            | 1253 | 783                                   | 3.76                       | 29.05                    | 5.47                           | 1.38      | 1.60  |
| -20                           | (- 4) | 5464                            | 1377            | 1601 | 878                                   | 4.24                       | 37.32                    | 6.21                           | 1.56      | 1.82  |
| -15                           | (+ 5) | 6859                            | 1728            | 2010 | 972                                   | 4.73                       | 47.13                    | 7.04                           | 1.77      | 2.06  |
| -10                           | (+14) | 8470                            | 2135            | 2482 | 1065                                  | 5.24                       | 58.59                    | 7.96                           | 2.01      | 2.33  |

|                               |       |                                 |                 |      |  |                            |                          |                                |           |       |
|-------------------------------|-------|---------------------------------|-----------------|------|--|----------------------------|--------------------------|--------------------------------|-----------|-------|
| TEST CONDITIONS:<br>@208V60Hz |       |                                 | ASHRAE32<br>Fan |      | (Condensing temperature 45°C (+113°F)) |                            |                          |                                |           |       |
| Evaporating temperature       |       | Cooling capacity (Qe)<br>+/- 5% |                 |      | Input power (We)<br>+/- 5%             | Electric current<br>+/- 5% | Mass flow rate<br>+/- 5% | Efficiency EER & COP<br>+/- 7% |           |       |
| °C                            | (°F)  | [Btu/h]                         | [kcal/h]        | [W]  | [W]                                    | [A]                        | [kg/h]                   | [Btu/Wh]                       | [kcal/Wh] | [W/W] |
| -40                           | (-40) | 1426                            | 359             | 418  | 458                                    | 2.17                       | 9.56                     | 3.14                           | 0.79      | 0.92  |
| -35                           | (-31) | 2123                            | 535             | 622  | 575                                    | 2.75                       | 14.29                    | 3.69                           | 0.93      | 1.08  |
| -30                           | (-22) | 2956                            | 745             | 866  | 692                                    | 3.32                       | 19.96                    | 4.26                           | 1.07      | 1.25  |
| -25                           | (-13) | 3934                            | 991             | 1153 | 809                                    | 3.88                       | 26.68                    | 4.85                           | 1.22      | 1.42  |
| -20                           | (- 4) | 5072                            | 1278            | 1486 | 926                                    | 4.46                       | 34.57                    | 5.47                           | 1.38      | 1.60  |
| -15                           | (+ 5) | 6379                            | 1608            | 1869 | 1044                                   | 5.07                       | 43.74                    | 6.11                           | 1.54      | 1.79  |
| -10                           | (+14) | 7869                            | 1983            | 2306 | 1164                                   | 5.73                       | 54.33                    | 6.78                           | 1.71      | 1.99  |

|                               |       |                                 |                 |      |  |                            |                          |                                |           |       |
|-------------------------------|-------|---------------------------------|-----------------|------|--|----------------------------|--------------------------|--------------------------------|-----------|-------|
| TEST CONDITIONS:<br>@208V60Hz |       |                                 | ASHRAE32<br>Fan |      | (Condensing temperature 55°C (+131°F)) |                            |                          |                                |           |       |
| Evaporating temperature       |       | Cooling capacity (Qe)<br>+/- 5% |                 |      | Input power (We)<br>+/- 5%             | Electric current<br>+/- 5% | Mass flow rate<br>+/- 5% | Efficiency EER & COP<br>+/- 7% |           |       |
| °C                            | (°F)  | [Btu/h]                         | [kcal/h]        | [W]  | [W]                                    | [A]                        | [kg/h]                   | [Btu/Wh]                       | [kcal/Wh] | [W/W] |
| -40                           | (-40) | 1148                            | 289             | 336  | 435                                    | 2.12                       | 7.68                     | 2.65                           | 0.67      | 0.78  |
| -35                           | (-31) | 1851                            | 466             | 542  | 562                                    | 2.72                       | 12.44                    | 3.26                           | 0.82      | 0.95  |
| -30                           | (-22) | 2653                            | 669             | 777  | 692                                    | 3.33                       | 17.88                    | 3.82                           | 0.96      | 1.12  |
| -25                           | (-13) | 3567                            | 899             | 1045 | 824                                    | 3.96                       | 24.13                    | 4.35                           | 1.10      | 1.27  |
| -20                           | (- 4) | 4604                            | 1160            | 1349 | 959                                    | 4.64                       | 31.31                    | 4.83                           | 1.22      | 1.41  |
| -15                           | (+ 5) | 5776                            | 1455            | 1692 | 1098                                   | 5.37                       | 39.52                    | 5.28                           | 1.33      | 1.55  |
| -10                           | (+14) | 7094                            | 1788            | 2079 | 1241                                   | 6.18                       | 48.89                    | 5.69                           | 1.43      | 1.67  |

### 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     |      |                          |