

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | J 2212GK        |
| Nominal Voltage/Frequency | 208-230 V 60 Hz |
| Engineering Number        | 963BD01         |

### 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 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 1/2         | [hp]                                       |
| 2 Displacement                | 34.38         | [cm <sup>3</sup> ] (2.098 cu.in)           |
| 2.1 Bore [mm]                 | 42.850        |  |
| 2.2 Stroke [mm]               | 23.850        |  |
| 3 Lubricant charge            | 890           | [ml] (30.10 fl.oz.)                        |
| 3.1 Lubricants approved       |               |  |
| 3.2 Lubricants type/viscosity | ESTER / ISO22 |  |
| 4 Weight (with oil charge)    | 21.77         | [kg] (47.99 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 | 208-230 V 60 Hz 1~ (Single phase) |                                    |
| 2 Starting device type                       | Voltage Relay                     |                                    |
| 2.1 Starting device                          | 3ARR3B3AV3                        |                                    |
| 3 Start capacitor                            | 88-108(330)                       | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 20(450)                           | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 3HM198-105                        |                                    |
| 6 Start winding resistance                   | 5.66                              | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 1.21                              | [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)     | 6.20                              | [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>@200V50Hz |          |      | 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] |
| 5053                          | 1273     | 1481 | 986                            | 5.32                             | 34.26  | 5.12                      | 1.29                                   | 1.50  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@200V50Hz |       | 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) | 1980                       | 499      | 580  | 429                            | 2.50                                  | 13.31                      | 4.54                      | 1.14      | 1.33  |
| -35                           | (-31) | 3017                       | 760      | 884  | 603                            | 3.42                                  | 20.34                      | 5.06                      | 1.28      | 1.48  |
| -30                           | (-22) | 4230                       | 1066     | 1239 | 775                            | 4.34                                  | 28.61                      | 5.52                      | 1.39      | 1.62  |
| -25                           | (-13) | 5657                       | 1426     | 1658 | 949                            | 5.27                                  | 38.43                      | 5.97                      | 1.50      | 1.75  |
| -20                           | (- 4) | 7340                       | 1850     | 2151 | 1125                           | 6.21                                  | 50.13                      | 6.46                      | 1.63      | 1.89  |
| -15                           | (+ 5) | 9317                       | 2348     | 2730 | 1306                           | 7.18                                  | 64.02                      | 7.07                      | 1.78      | 2.07  |
| -10                           | (+14) | 11628                      | 2930     | 3407 | 1491                           | 8.18                                  | 80.43                      | 7.86                      | 1.98      | 2.30  |

| TEST CONDITIONS:<br>@200V50Hz |       | 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) | 1461                       | 368      | 428  | 372                            | 2.08                                   | 9.80                       | 3.89                      | 0.98      | 1.14  |
| -35                           | (-31) | 2532                       | 638      | 742  | 553                            | 3.05                                   | 17.05                      | 4.57                      | 1.15      | 1.34  |
| -30                           | (-22) | 3734                       | 941      | 1094 | 739                            | 4.05                                   | 25.21                      | 5.09                      | 1.28      | 1.49  |
| -25                           | (-13) | 5105                       | 1287     | 1496 | 931                            | 5.09                                   | 34.61                      | 5.51                      | 1.39      | 1.61  |
| -20                           | (- 4) | 6687                       | 1685     | 1959 | 1131                           | 6.19                                   | 45.57                      | 5.90                      | 1.49      | 1.73  |
| -15                           | (+ 5) | 8517                       | 2146     | 2496 | 1341                           | 7.36                                   | 58.41                      | 6.32                      | 1.59      | 1.85  |
| -10                           | (+14) | 10638                      | 2681     | 3117 | 1562                           | 8.60                                   | 73.44                      | 6.82                      | 1.72      | 2.00  |

| TEST CONDITIONS:<br>@200V50Hz |       | 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) | 957                        | 241      | 281  | 318                            | 1.70                                   | 6.40                       | 3.10                      | 0.78      | 0.91  |
| -35                           | (-31) | 2065                       | 520      | 605  | 506                            | 2.69                                   | 13.88                      | 3.97                      | 1.00      | 1.16  |
| -30                           | (-22) | 3259                       | 821      | 955  | 704                            | 3.76                                   | 21.97                      | 4.60                      | 1.16      | 1.35  |
| -25                           | (-13) | 4578                       | 1154     | 1341 | 913                            | 4.92                                   | 30.97                      | 5.05                      | 1.27      | 1.48  |
| -20                           | (- 4) | 6061                       | 1527     | 1776 | 1137                           | 6.17                                   | 41.22                      | 5.37                      | 1.35      | 1.57  |
| -15                           | (+ 5) | 7749                       | 1953     | 2271 | 1375                           | 7.53                                   | 53.02                      | 5.64                      | 1.42      | 1.65  |
| -10                           | (+14) | 9682                       | 2440     | 2837 | 1630                           | 9.00                                   | 66.71                      | 5.91                      | 1.49      | 1.73  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@200V60Hz |                            | ASHRAE32<br>Fan |          |                             | (Condensing temperature 35°C (+95°F) ) |                         |                           |          |           |       |
|-------------------------------|----------------------------|-----------------|----------|-----------------------------|--|-------------------------|---------------------------|----------|-----------|-------|
| Evaporating temperature       | Cooling capacity<br>+/- 5% |                 |          | Power consumption<br>+/- 5% | Current consumption<br>+/- 5%          | Gas flow 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)                     | 2312                       | 583             | 678      | 502                         | 2.55                                   | 15.55                   | 4.53                      | 1.14     | 1.33      |       |
| -35 (-31)                     | 3526                       | 889             | 1033     | 705                         | 3.49                                   | 23.78                   | 5.06                      | 1.28     | 1.48      |       |
| -30 (-22)                     | 4946                       | 1246            | 1449     | 907                         | 4.43                                   | 33.45                   | 5.52                      | 1.39     | 1.62      |       |
| -25 (-13)                     | 6617                       | 1667            | 1939     | 1110                        | 5.37                                   | 44.95                   | 5.96                      | 1.50     | 1.75      |       |
| -20 (- 4)                     | 8586                       | 2164            | 2516     | 1317                        | 6.33                                   | 58.64                   | 6.46                      | 1.63     | 1.89      |       |
| -15 (+ 5)                     | 10900                      | 2747            | 3194     | 1528                        | 7.32                                   | 74.90                   | 7.07                      | 1.78     | 2.07      |       |
| -10 (+14)                     | 13604                      | 3428            | 3986     | 1745                        | 8.35                                   | 94.10                   | 7.86                      | 1.98     | 2.30      |       |

| TEST CONDITIONS:<br>@200V60Hz |                            | ASHRAE32<br>Fan |          |                             | (Condensing temperature 45°C (+113°F) ) |                         |                           |          |           |       |
|-------------------------------|----------------------------|-----------------|----------|-----------------------------|---|-------------------------|---------------------------|----------|-----------|-------|
| Evaporating temperature       | Cooling capacity<br>+/- 5% |                 |          | Power consumption<br>+/- 5% | Current consumption<br>+/- 5%           | Gas flow 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)                     | 1705                       | 430             | 500      | 436                         | 2.12                                    | 11.44                   | 3.89                      | 0.98     | 1.14      |       |
| -35 (-31)                     | 2959                       | 746             | 867      | 647                         | 3.11                                    | 19.92                   | 4.56                      | 1.15     | 1.34      |       |
| -30 (-22)                     | 4366                       | 1100            | 1279     | 864                         | 4.13                                    | 29.48                   | 5.09                      | 1.28     | 1.49      |       |
| -25 (-13)                     | 5971                       | 1505            | 1750     | 1089                        | 5.19                                    | 40.48                   | 5.51                      | 1.39     | 1.61      |       |
| -20 (- 4)                     | 7822                       | 1971            | 2292     | 1323                        | 6.32                                    | 53.31                   | 5.90                      | 1.49     | 1.73      |       |
| -15 (+ 5)                     | 9965                       | 2511            | 2920     | 1569                        | 7.50                                    | 68.33                   | 6.32                      | 1.59     | 1.85      |       |
| -10 (+14)                     | 12446                      | 3136            | 3647     | 1828                        | 8.77                                    | 85.93                   | 6.82                      | 1.72     | 2.00      |       |

| TEST CONDITIONS:<br>@200V60Hz |                            | ASHRAE32<br>Fan |          |                             | (Condensing temperature 55°C (+131°F) ) |                         |                           |          |           |       |
|-------------------------------|----------------------------|-----------------|----------|-----------------------------|---|-------------------------|---------------------------|----------|-----------|-------|
| Evaporating temperature       | Cooling capacity<br>+/- 5% |                 |          | Power consumption<br>+/- 5% | Current consumption<br>+/- 5%           | Gas flow 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)                     | 1117                       | 282             | 327      | 373                         | 1.72                                    | 7.47                    | 3.09                      | 0.78     | 0.90      |       |
| -35 (-31)                     | 2414                       | 608             | 707      | 592                         | 2.75                                    | 16.23                   | 3.96                      | 1.00     | 1.16      |       |
| -30 (-22)                     | 3811                       | 960             | 1117     | 823                         | 3.84                                    | 25.69                   | 4.60                      | 1.16     | 1.35      |       |
| -25 (-13)                     | 5354                       | 1349            | 1569     | 1069                        | 5.02                                    | 36.23                   | 5.05                      | 1.27     | 1.48      |       |
| -20 (- 4)                     | 7091                       | 1787            | 2078     | 1330                        | 6.30                                    | 48.22                   | 5.37                      | 1.35     | 1.57      |       |
| -15 (+ 5)                     | 9066                       | 2285            | 2657     | 1609                        | 7.68                                    | 62.04                   | 5.64                      | 1.42     | 1.65      |       |
| -10 (+14)                     | 11327                      | 2854            | 3319     | 1907                        | 9.19                                    | 78.05                   | 5.92                      | 1.49     | 1.73      |       |

### F - EXTERNAL CHARACTERISTICS

|                         |                   |      |                          |
|-------------------------|-------------------|------|--------------------------|
| 1 Base plate            | American Standard |      |                          |
| 2 Tray holder           | No                |      |                          |
| 3 Connectors            |                   |      |                          |
| 3.1 SUCTION             | 12.77 +0.08/+0.00 | [mm] | (0.503" +0.003"/+0.000") |
| 3.1.1 Material          | Copper            |      |                          |
| 3.1.2 Shape             | Vertical          |      |                          |
| 3.2 DISCHARGE           | 8 +0.07/+0.00     | [mm] | (0.315" +0.003"/+0.000") |
| 3.2.1 Material          | Copper            |      |                          |
| 3.2.2 Shape             | Slanted J         |      |                          |
| 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      |      |                          |