

HGX6/1410-4 S

Engine: 380-420V Y/YY -3- 50Hz PW

Refrigerant: R404A, R507

BOCK

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Subject:

Performance data

Application: Refrigeration & AC

| | | | |
|------------------------------------|------------------|--------------------------------------|-----------------------|
| Refrigerant | R404A, R507 | Compressor refrigeration capacity | 96.30 kW |
| Reference temperature | DewPoint | Evaporator refrigeration capacity | 96.30 kW |
| Power supply | 50 Hz, 400 V | Power consumption | 33.70 kW |
| Supply frequency | 50 Hz | Current draw (400 V) | 62.10 A |
| Evaporating temperature | 0.0 °C | Coefficient of performance (COP/EER) | 2.86 |
| <i>Evaporating pressure (abs.)</i> | <i>6.04 bar</i> | Condensing capacity | 130.00 kW |
| Condensing temperature | 40.0 °C | Mass flow | 0.767 kg/s |
| <i>Condensing pressure (abs.)</i> | <i>18.17 bar</i> | Discharge end temperature | 78.9 °C ¹⁾ |
| Suction gas temperature | 20 °C | | |
| Subcooling (outside cond.) | 0 K | | |
| Usable superheat | 100% | | |

Certifications



ASERCOM certified performance data

The performance data of compressors bearing this label has been certified to the strict requirements of ASERCOM.

ASERCOM is the Association of European Refrigeration Compressors and Controls Manufacturers. Information about the Association and the constantly updated overview of certified GEA compressors can be found at www.asercom.org.

This certification is based on EN 12900. This signifies: 20 °C suction gas temperature without liquid subcooling at 50 Hz power supply frequency.

1) The stated value of the discharge end temperature is a mere calculated value. Additional cooling and heat dissipation are not considered. Deviations (particularly in deep freezing applications) from the real measured discharge temperature during operation are possible.

Subject to change without notice

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VAP 11.6.0

HGX6/1410-4 S

Engine: 380-420V Y/YY -3- 50Hz PW

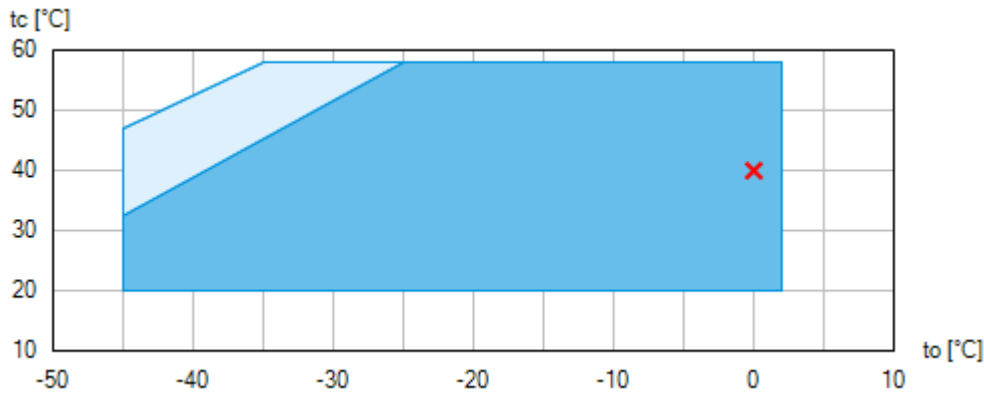
Refrigerant: R404A, R507



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Subject:

Operating limits



-  Unlimited application range
-  Supplementary cooling or reduced suction gas temperature ($\Delta t_{oh} < 20K$)

Compressor operation is possible within the limits shown on the diagrams of application. Please note the coloured areas. Compressor application limits should not be chosen for design purposes or continuous operation. Axis values refer to dew point (saturated vapour line).

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HGX6/1410-4 S

Engine: 380-420V Y/YY -3- 50Hz PW

Refrigerant: R404A, R507

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Subject:

Technical data

| | |
|--|--|
| Number of cylinders / Bore / Stroke | 4 / 80 mm / 70 mm |
| Displacement 50/60 Hz (1450/1740 1/min) | 122,40 / 146,90 m ³ /h |
| Voltage ¹⁾ | 380-420V Y/YY -3- 50Hz PW 440-480V Y/YY -3- 60Hz PW |
| Winding divided into | 66% / 33% |
| Max. working current ²⁾ | 76.0 A |
| Max. power consumption ²⁾ | 42.3 kW |
| Starting current (rotor blocked) ²⁾ | 204.0 / 250.0 A |
| Motor protection | MP10 |
| Protection terminal box | IP 65 |
| Weight | 222 kg |
| Max. permissible pressure (LP/HP) ³⁾ | 19 / 28 bar |
| Connection suction line SV | 54 mm - 2 1/8 " |
| Connection discharge line DV | 35 mm - 1 3/8 " |
| Lubrication | Oil pump |
| Oil type R134a, R404A, R407A/C/F, R448A, R449A, R450A, R513A | FUCHS Reniso Triton SE 55 |
| Oil type R22 | FUCHS Reniso SP 46 |
| Oil charge | 3,6 Ltr. |
| Oil sump heater | 230 V - 1 - 50/60 Hz, 140 W |
| Dimensions Length / Width / Height | 850 / 455 / 405 mm |

1) Tolerance ($\pm 10\%$) relates to the mean value of the voltage range. Other voltages and current types on request

All data are based on voltage rms values

PW = part winding, motors for part winding starting
(no start unloaders required)
Designs for Y/D on request

2) - The stated value for the max. power consumption is valid for the adjusted power supply.

- Starting current (rotor blocked):

- Part winding (PW) motors: Winding 1 / Winding 1+2
- Delta/Star (Δ/Y) motors: Δ / Y

- Take account of the max. operating current / max. power consumption for designing fuses, supply lines and safety devices. Fuse: Consumption category AC3.

3) LP = Low pressure
HP = High pressure

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VAP 11.6.0

HGX6/1410-4 S

Engine: 380-420V Y/YY -3- 50Hz PW

Refrigerant: R404A, R507

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Subject:

Performance data table

Application: Refrigeration & AC

Reference temperature: DewPoint

Supply frequency: 50 Hz

Voltage: 400 V

Suction gas temperature: 20 °C

Subcooling (outside cond.): 0 K

| tc [°C] | | to [°C] | | | | | | | | | |
|---------|--------|---------|--------|-------|-------|-------|-------|-------|-------|--|--|
| | | 5.0 | 0.0 | -5.0 | -10.0 | -15.0 | -20.0 | -25.0 | -30.0 | | |
| 30.0 | Q [W] | | 113000 | 94100 | 77800 | 63600 | 51200 | 40600 | 31600 | | |
| | P [kW] | | 28.90 | 27.50 | 25.90 | 23.90 | 21.80 | 19.50 | 17.20 | | |
| | I [A] | | 55.30 | 53.50 | 51.20 | 48.80 | 46.20 | 43.60 | 41.10 | | |
| 35.0 | Q [W] | | 105000 | 87100 | 71900 | 58600 | 47100 | 37300 | 28900 | | |
| | P [kW] | | 31.40 | 29.60 | 27.50 | 25.20 | 22.70 | 20.20 | 17.60 | | |
| | I [A] | | 58.80 | 56.20 | 53.40 | 50.40 | 47.30 | 44.30 | 41.50 | | |
| 40.0 | Q [W] | | 96300 | 80200 | 66000 | 53700 | 43100 | 34000 | 26200 | | |
| | P [kW] | | 33.70 | 31.50 | 29.00 | 26.40 | 23.60 | 20.70 | 17.90 | | |
| | I [A] | | 62.10 | 58.90 | 55.50 | 51.90 | 48.40 | 45.00 | 41.80 | | |
| 45.0 | Q [W] | | 88100 | 73200 | 60200 | 48900 | 39100 | 30700 | 23600 | | |
| | P [kW] | | 35.90 | 33.20 | 30.40 | 27.40 | 24.30 | 21.20 | 18.10 | | |
| | I [A] | | 65.30 | 61.40 | 57.30 | 53.20 | 49.30 | 45.50 | 42.10 | | |
| 50.0 | Q [W] | | 80000 | 66300 | 54300 | 44000 | 35100 | 27500 | 21000 | | |
| | P [kW] | | 37.90 | 34.80 | 31.60 | 28.30 | 24.90 | 21.60 | 18.30 | | |
| | I [A] | | 68.40 | 63.80 | 59.10 | 54.50 | 50.00 | 45.90 | 42.30 | | |
| 55.0 | Q [W] | | 71800 | 59300 | 48500 | 39100 | 31100 | 24300 | 18500 | | |
| | P [kW] | | 39.70 | 36.30 | 32.70 | 29.10 | 25.40 | 21.80 | 18.40 | | |
| | I [A] | | 71.30 | 66.00 | 60.70 | 55.50 | 50.70 | 46.30 | 42.30 | | |



Supplementary cooling or reduced suction gas temperature ($\Delta t_{oh} < 20K$)

to Evaporating temperature

tc Condensing temperature

Q Compressor refrigeration capacity

P Power consumption

I Current draw

Subject to change without notice

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HGX6/1410-4 S

Engine: 380-420V Y/YY -3- 50Hz PW

Refrigerant: R404A, R507

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Subject:

Scope of supply

Semi-hermetic four-cylinder reciprocating compressor with drive motor
Motor unit flanged onto the compressor housing

Oil pump

Winding protection with PTC resistor sensors and electronic trigger unit MP 10

Oil pump cover with screw-in option for oil differential pressure sensor DELTA-P II

Possibility of connection of oil level controllers ESK, AC+R or CARLY

Possibility of connection of oil level controllers Traxoil ¹⁾

Possibility for connection of oil pressure safety switch MP54

Oil charge:

HG: FUCHS Reniso SP 46

HGX: FUCHS Reniso Triton SE 55

Sight glass

Prepared for capacity regulator (1 cylinder cover)

Pressure relief valve

Suction and discharge line valve

Inert gas charge

4 anti-vibration pads enclosed

Accessories

Start unloader 230 V - 1 - 50/60 Hz, IP65, less check valve,
including thermal protection thermostat (posistor tracer)

Start unloader by means of a ESS (Electronic Soft Start), 400 V - 3 - 50/60 Hz, IP20 (Connection clamps IP00) for
installation in switch cabinet ²⁾

Capacity regulator 230 V - 1 - 50/60 Hz, IP65

1 capacity regulator = 50% residual capacity

Oil sump heater 230 V - 1 - 50/60 Hz, 140 W

Oil pressure safety switch MP54 230 V - 1 - 50/60 Hz, IP20 ²⁾

Oil differential pressure sensor DELTA-P II 220-240 V - 1 - 50/60 Hz ²⁾

Oil service valve

Thermal protection thermostat per cylinder cover ³⁾

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VAP 11.6.0

HGX7/1620-4 S

Engine: 380-420V Y/YY -3- 50Hz PW

Refrigerant: R404A, R507

BOCK

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Subject:

Performance data

Application: Refrigeration & AC

| | | | |
|------------------------------------|------------------|--------------------------------------|-----------------------|
| Refrigerant | R404A, R507 | Compressor refrigeration capacity | 129.00 kW |
| Reference temperature | DewPoint | Evaporator refrigeration capacity | 129.00 kW |
| Power supply | 50 Hz, 400 V | Power consumption | 37.30 kW |
| Supply frequency | 50 Hz | Current draw (400 V) | 65.50 A |
| Evaporating temperature | 5.0 °C | Coefficient of performance (COP/EER) | 3.44 |
| <i>Evaporating pressure (abs.)</i> | <i>7.06 bar</i> | Condensing capacity | 166.00 kW |
| Condensing temperature | 40.0 °C | Mass flow | 1.041 kg/s |
| <i>Condensing pressure (abs.)</i> | <i>18.17 bar</i> | Discharge end temperature | 70.2 °C ¹⁾ |
| Suction gas temperature | 20 °C | | |
| Subcooling (outside cond.) | 0 K | | |
| Usable superheat | 100% | | |

Certifications



ASERCOM certified performance data

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This certification is based on EN 12900. This signifies: 20 °C suction gas temperature without liquid subcooling at 50 Hz power supply frequency.

1) The stated value of the discharge end temperature is a mere calculated value. Additional cooling and heat dissipation are not considered. Deviations (particularly in deep freezing applications) from the real measured discharge temperature during operation are possible.

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HGX7/1620-4 S

Engine: 380-420V Y/YY -3- 50Hz PW

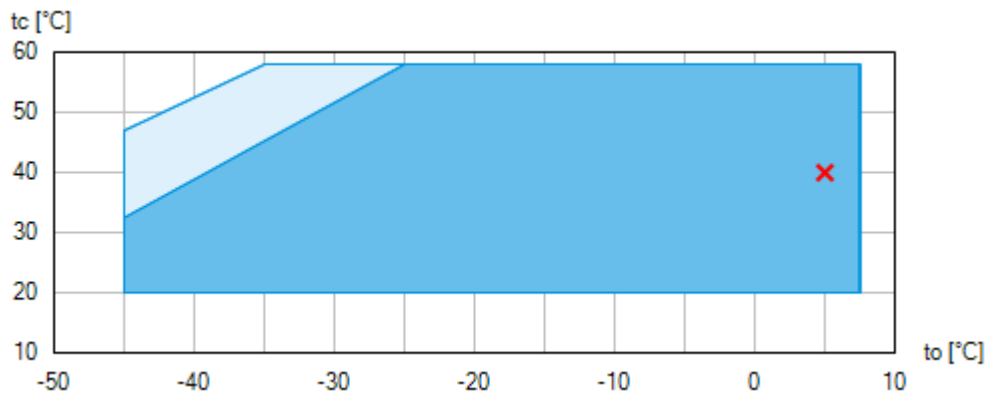
Refrigerant: R404A, R507




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Subject:

Operating limits



-  Unlimited application range
-  Supplementary cooling or reduced suction gas temperature ($\Delta t_{oh} < 20K$)
-  Supplementary cooling and reduced suction gas temperature ($\Delta t_{oh} < 20K$)

Compressor operation is possible within the limits shown on the diagrams of application. Please note the coloured areas. Compressor application limits should not be chosen for design purposes or continuous operation. Axis values refer to dew point (saturated vapour line).

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HGX7/1620-4 S

Engine: 380-420V Y/YY -3- 50Hz PW

Refrigerant: R404A, R507

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Subject:

Technical data

| | |
|--|--|
| Number of cylinders / Bore / Stroke | 6 / 70 mm / 70 mm |
| Displacement 50/60 Hz (1450/1740 1/min) | 140,60 / 168,70 m ³ /h |
| Voltage ¹⁾ | 380-420V Y/YY -3- 50Hz PW 440-480V Y/YY -3- 60Hz PW |
| Winding divided into | 50% / 50% |
| Max. working current ²⁾ | 83.0 A |
| Max. power consumption ²⁾ | 47.4 kW |
| Starting current (rotor blocked) ²⁾ | 268.0 / 373.0 A |
| Motor protection | MP10 |
| Protection terminal box | IP 65 |
| Weight | 299 kg |
| Max. permissible pressure (LP/HP) ³⁾ | 19 / 28 bar |
| Connection suction line SV | 54 mm - 2 1/8 " |
| Connection discharge line DV | 42 mm - 1 5/8 " |
| Lubrication | Oil pump |
| Oil type R134a, R404A, R407A/C/F, R448A, R449A, R450A, R513A | FUCHS Reniso Triton SE 55 |
| Oil type R22 | FUCHS Reniso SP 46 |
| Oil charge | 4,5 Ltr. |
| Oil sump heater | 230 V - 1 - 50/60 Hz, 140 W |
| Dimensions Length / Width / Height | 830 / 510 / 500 mm |

1) Tolerance ($\pm 10\%$) relates to the mean value of the voltage range. Other voltages and current types on request

All data are based on voltage rms values

PW = part winding, motors for part winding starting
(no start unloaders required)
Designs for Y/D on request

2) - The stated value for the max. power consumption is valid for the adjusted power supply.

- Starting current (rotor blocked):

- Part winding (PW) motors: Winding 1 / Winding 1+2
- Delta/Star (Δ/Y) motors: Δ / Y

- Take account of the max. operating current / max. power consumption for designing fuses, supply lines and safety devices. Fuse: Consumption category AC3.

3) LP = Low pressure
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HGX7/1620-4 S

Engine: 380-420V Y/YY -3- 50Hz PW

Refrigerant: R404A, R507

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Subject:

Performance data table

Application: Refrigeration & AC

Reference temperature: DewPoint

Supply frequency: 50 Hz

Voltage: 400 V

Suction gas temperature: 20 °C

Subcooling (outside cond.): 0 K

| tc [°C] | | to [°C] | | | | | | | | | |
|---------|--------|---------|--------|--------|--------|-------|-------|-------|-------|-------|--|
| | | 10.0 | 5.0 | 0.0 | -5.0 | -10.0 | -15.0 | -20.0 | -25.0 | -30.0 | |
| 30.0 | Q [W] | | 151000 | 127000 | 106000 | 86900 | 70500 | 56300 | 44000 | 33600 | |
| | P [kW] | | 32.00 | 30.90 | 29.40 | 27.60 | 25.40 | 23.10 | 20.50 | 17.90 | |
| | I [A] | | 57.90 | 56.50 | 54.50 | 52.20 | 49.70 | 47.00 | 44.30 | 41.80 | |
| 35.0 | Q [W] | | 140000 | 118000 | 97700 | 80300 | 65000 | 51700 | 40300 | 30600 | |
| | P [kW] | | 34.70 | 33.20 | 31.40 | 29.10 | 26.70 | 24.00 | 21.10 | 18.20 | |
| | I [A] | | 61.60 | 59.60 | 57.00 | 54.10 | 51.10 | 48.00 | 45.00 | 42.10 | |
| 40.0 | Q [W] | | 129000 | 108000 | 89700 | 73500 | 59400 | 47100 | 36600 | 27600 | |
| | P [kW] | | 37.30 | 35.40 | 33.10 | 30.60 | 27.70 | 24.70 | 21.60 | 18.40 | |
| | I [A] | | 65.50 | 62.70 | 59.40 | 56.00 | 52.40 | 48.90 | 45.50 | 42.30 | |
| 45.0 | Q [W] | | 118000 | 98500 | 81600 | 66800 | 53800 | 42500 | 32800 | 24600 | |
| | P [kW] | | 39.80 | 37.50 | 34.80 | 31.80 | 28.60 | 25.30 | 21.90 | 18.50 | |
| | I [A] | | 69.30 | 65.70 | 61.80 | 57.60 | 53.50 | 49.50 | 45.80 | 42.30 | |
| 50.0 | Q [W] | | 107000 | 88900 | 73400 | 59900 | | 37800 | 29100 | 21600 | |
| | P [kW] | | 42.20 | 39.40 | 36.30 | 33.00 | | 25.70 | 22.00 | 18.30 | |
| | I [A] | | 73.10 | 68.70 | 64.00 | 59.20 | | 50.00 | 45.90 | 42.20 | |
| 55.0 | Q [W] | | 95000 | 79100 | 65200 | 52900 | 42300 | 33100 | 25200 | 18600 | |
| | P [kW] | | 44.40 | 41.20 | 37.70 | 33.90 | 30.00 | 26.00 | 22.00 | 18.00 | |
| | I [A] | | 76.90 | 71.50 | 66.00 | 60.50 | 55.30 | 50.30 | 45.80 | 41.80 | |



Supplementary cooling or reduced suction gas temperature ($\Delta t_{oh} < 20K$)



Supplementary cooling and reduced suction gas temperature ($\Delta t_{oh} < 20K$)

to Evaporating temperature

tc Condensing temperature

Q Compressor refrigeration capacity

P Power consumption

I Current draw

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HGX7/1620-4 S

Engine: 380-420V Y/YY -3- 50Hz PW

Refrigerant: R404A, R507

BOCK

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Subject:

Scope of supply

Semi-hermetic six-cylinder reciprocating compressor with drive motor
Single-section compressor housing with hermetically integrated electric motor

Oil pump

Winding protection with PTC resistor sensors and electronic trigger unit MP 10

Oil pump cover with screw-in option for oil differential pressure sensor DELTA-P II

Possibility of connection of oil level controllers ESK, AC+R or CARLY

Possibility of connection of oil level controllers Traxoil ¹⁾

Possibility for connection of oil pressure safety switch MP54

Oil charge:

HG: FUCHS Reniso SP 46

HGX: FUCHS Reniso Triton SE 55

Two sight glasses

Prepared for capacity regulator (2 cylinder covers)

Pressure relief valve

Suction and discharge line valve

Inert gas charge

4 anti-vibration pads enclosed

Accessories

Start unloader 230 V - 1 - 50/60 Hz, IP65, less check valve,
including thermal protection thermostat (posistor tracer)

Start unloader by means of a ESS (Electronic Soft Start), 400 V - 3 - 50/60 Hz, IP20 (Connection clamps IP00) for
installation in switch cabinet ²⁾

Capacity regulator 230 V - 1 - 50/60 Hz, IP65
1-2 capacity regulator = 66/33% residual capacity

Oil sump heater 230 V - 1 - 50/60 Hz, 140 W

Oil pressure safety switch MP54 230 V - 1 - 50/60 Hz, IP20 ²⁾

Oil differential pressure sensor DELTA-P II 220-240 V - 1 - 50/60 Hz ²⁾

Oil service valve

Thermal protection thermostat per cylinder cover ³⁾

Subject to change without notice

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