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Selection: Semi-hermetic Reciprocating Compressors

Input Values

Compressor model (6H-35.2Y) Suction gas temperature 20,00 °C Mode Refrigeration and Air Operating mode Auto

conditioning R404A

Refrigerant R404A Power supply 400V-3-50Hz
Reference temperature Dew point temp. Capacity control 100%
Liq. subc. (in condenser) 0 K Useful superheat 100%

Result

 Q [W]
 Cooling capacity
 COP [-]
 COP/EER

 Qu* [W]
 Evaporator capacity
 m [kg/h]
 Mass flow

 P [kW]
 Power input
 Op.
 Operating mode

I [A] Current th [°C] Discharge gas temp. w/o cooling Qc [W] Condenser capacity

-20°C -30°C 0°C -10°C -25°C -35°C -5°C -15°C 30°C Q [W] 104510 86914 71642 58418 47007 37204 28829 21717 58418 104510 Qu* [W] 86914 71642 47007 37204 28829 21717 P [kW] 24,1 23,0 21,8 20,3 18,64 16,83 14,91 12,89 I [A] 43,3 41,9 40,1 38,0 35,8 33,4 31.1 28,8 Qc [W] 128582 109955 93414 78713 65646 54038 43736 34606 3,29 COP[-] 2,88 2,52 2,21 1,93 4,34 3.77 1,68 2657 2183 1782 1441 1151 906 698 524 m [kg/h] Op. Standard Standard Standard Standard Standard Standard Standard Standard 64,0 70 4 77,2 84,5 92,4 101,2 122,3 th [°C] 111.0 40°C 89253 74095 60906 49465 39580 31085 23828 17669 Q [W] Qu* [W] 89253 74095 60906 49465 39580 31085 23828 17669 P [kW] 27,8 26,1 24,3 22,3 20,1 17,88 15,53 13,14 48,8 46,4 43,7 40,8 37,8 34,8 31,8 29,1 I [A] Qc [W] 117041 100242 85212 71760 59725 48966 39362 30805 COP[-] 3,21 2,83 2,51 2,22 1,96 1,74 1,53 1,35 2560 2098 1705 1372 1089 850 648 478 m [kg/h] Op. Standard Standard Standard Standard Standard Standard Standard Standard th [°C] 74,6 81,1 88,0 95,5 103,5 112,5 122,6 134,3 50°C Q [W] 74139 61442 50362 40733 32409 25258 19157 13996 Qu* [W] 74139 61442 50362 40733 32409 25258 19157 13996 P [kW] 31,2 29,0 26,6 24,0 21,4 18,71 15,96 13,20 I [A] 53,9 50,5 47,0 43,3 39,6 35,9 32,4 29,1 105333 90404 76929 64774 53821 43968 35121 27197 Qc [W] COP [-] 2.38 2.12 1.90 1.69 1.51 1.35 1.20 1.06 2469 2015 1631 1305 1028 795 599 436 m [kg/h] Op. Standard Standard Standard Standard Standard Standard Standard Standard 106,6 th [°C] 85.5 99,0 114,8 124,0 134,3

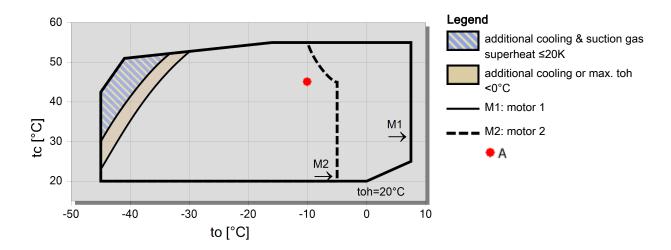
Application Limits 100% 6H-35.2

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⁻⁻ No calculation possible (see message in single point selection)

^{*}According to EN12900 (20°C suction gas temp., 0K liquid subcooling)

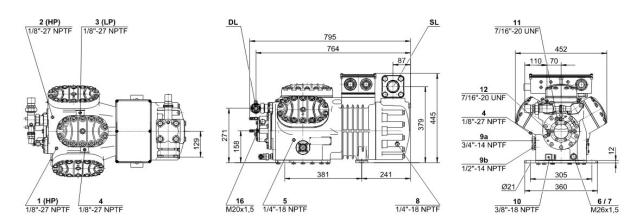






Technical Data: (6H-35.2Y)

Dimensions and Connections



Technical Data

			ata

Displacement (1450 RPM 50Hz) 110,5 m³/h Displacement (1750 RPM 60Hz) 133,4 m³/h

No. of cylinder x bore x stroke 6 x 70 mm x 55 mm

Weight 235 kg

Max. pressure (LP/HP) 19 / 28 bar

Connection suction line 54 mm - 2 1/8"

Connection discharge line 35 mm - 1 3/8"

Connection cooling water R 3/4"

Oil type R134a/R407C/R404A/R507A/R407A/R407F tc<55°C: BSE32 | tc>55°C: BSE55 (Option)

 Oil type R22 (R12/R502)
 B5.2 (Standard)

 Oil type R290/R1270
 SHC226E (Standard)

Motor data

Motor voltage (more on request) 380-420V PW-3-50Hz

Max operating current 61.0 A Winding ratio 50/50

Starting current (Rotor locked) 147.0 A Y / 262.0 A YY

Max. Power input 37,4 kW

Extent of delivery (Standard)

Motor protection SE-B2

Enclosure class IP54 (Standard), IP66 (Option)

Vibration dampers Standard
Oil charge 4,75 dm³

Available Options

Connection suction lineOptionDischarge shut-off valveOptionDischarge gas temperature sensorOptionStart unloadingOption

Capacity control 100-66-33% (Option)

Additional fan Option
Water-cooled cylinder heads Option
Oil service valve Option

Crankcase heater 140 W (Option)

Oil pressure monitoring MP54 (Option), Delta-PII (Option, not for R290/R1270)

Sound measurement



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74,0 dB(A) @ 50Hz

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Sound pressure level @ 1m (-10°C / 45°C) Sound pressure level @ 1m (-35°C / 40°C) (82,5) dB(A) @ 50Hz



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Semi-hermetic Reciprocating Compressors

Motor 1 = e.g. 4TES-12 with 12"HP", primary for air-conditioning (e.g. R22,R407C) and air-conditioning with R134a at high ambient temperatures.

Motor 2 = e.g. 4TES-9 with 8"HP", universal Motor for medium and low temperature application (e.g. R404A, R507A, R407A, R407F) and air-conditioning with R134a

Motor 3 = e.g. 4TES-8, for medium temperature applications and R134a

For more information concerning the application range use the "Limits" button.

Operation modes 4VES-7 to 6FE-44 and 44JE-30 to 66FE-88 with R407F/R407A/R22

CIC = liquid injection with low temperature application, suction gas cooled motor.

ASERCOM certified performance data

The Association of European Refrigeration Component Manufacturers has implemented a procedure of certifying performance data. The high standard of these certifications is assured by:

- * plausibility tests of the data performed by experts.
- * regular measurements at independent institutes.

These high efforts result in the fact that only a limited number of compressors can be submitted. Due to this not all BITZER compresors are certified until now. Performance data of compressors which fulfil the strict requirements may carry the label "ASERCOM certified". In this software you will find the label at the respective compressors on the right side below the field "result" or in the print out of the performance data. All certified compressors and further information are listed on the homepage of ASERCOM.

Condensing capacity

The condensing capacity can be calculated with or without heat rejection. This option can be set in the menu Program \square Options. The heat rejection is constantly 5% of the power consumption. The condensing capacity is to be found in the line Condensing cap. (with HR) resp. Condensing capacity.

Data for sound emission

Data based on 50 HZ apllication (IP-units 60 Hz) and R404A if not declared.

Sound pressure level: values based on free field area conditions with hemisperhical sound emission in 1 meter distance.

General remarks regarding sound data

Listed sound data were measured under testing conditions in our laboratory. For this purpose the free-standing test sample is mounted on a solid foundation plate and the pipework is connected vibration-free to the largest extend possible. Suction and discharge lines are fixed in a flexible configuration, such that a transmission of vibrations to the environment can be largely excluded. In real installations considerable differences might be observed, compared to the measurements in the laboratory. The airborne sound emitted by the compressor can be reflected from surfaces of the system and this may increase the airborne sound level measured close to the compressor. Vibrations caused by the compressor are also transferred to the system by the compressor feet and piping depending on the damping ratio of the fixings. Thus, the vibrations can induce other components to such an extent that these components contribute to an increase in airborne sound emission. If required, the transfer of vibrations to the system can be minimized by suitable fixing and damping elements.

Legend of connection positions according to "Dimensions":

- 1 High pressure connection (HP)
- 2 Connection for discharge gas temperature sensor (HP) (for 4VE(S)-6Y .. 4NE(S)-20(Y) connection for CIC sensor as alternative)
- 3 Low pressure connection (LP)
- 4 CIC system: injection nozzle (LP)
- 4b Connection for CIC sensor
- 4c Connection for CIC sensor (MP / operation with liquid subcooler)
- 5 Oil fill plug
- 6 Oil drain
- 7 Oil filter (magnetic screw)
- 8 Oil return (oil separator)
- 8* Oil return with NH3 and insoluble oil
- 9 Connection for oil and gas equalization (parallel operation)
- 9a Connection for gas equalization (parallel operation)



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- 9b Connection for oil equalization (parallel operation)
- 10 Oil heater connection
- 11 Oil pressure connection +
- 12 Oil pressure connection -
- 13 Cooling water connection
- 14 Intermediate pressure connection (MP)
- 15 Liquid injection (operation without liquid subcooler and with thermostatic expansion valve)
- 16 Connection for oil monitoring (opto-electrical oil monitoring "OLC-K1" or differential oil pressure switch "Delta-PII")
- 17 Refrigerant inlet at liquid subcooler
- 18 Referigerant outlet at liquid subcooler
- 19 Clamp space
- 20 Terminal plate
- 21 Maintenance connection for oil valve
- 22 Pressure relief valve to the atmosphere (discharge side)
- 23 Pressure relief valve to the atmosphere (suction side)
- 24 IQ MODULE
- SL Suction gas line
- DL Discharge gas line

Dimensions can show tolerances according to EN ISO 13920-B.