

### Selection: Semi-hermetic Reciprocating Compressors

#### Input Values

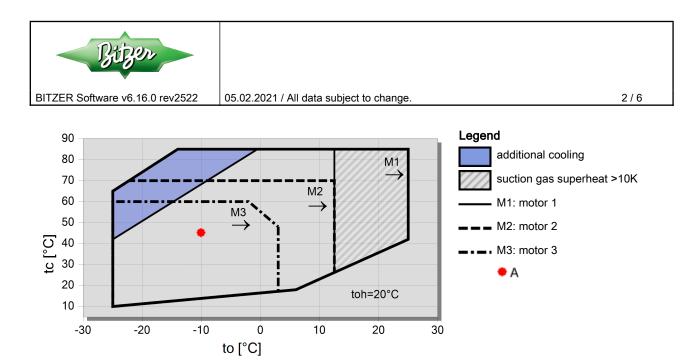
Compressor model Mode		6FE-40Y Refrigeration and Air conditioning	Suction gas temperature Operating mode		20,00 °C Auto
Refrigerant Reference temperature Liq. subc. (in condenser) <b>Result</b>		R134a Dew point temp. 0 K	Power supply Capacity control Useful superheat		400V-3-50Hz 100% 100%
Q [W] Qu* [W] P [kW] I [A] Qc [W]	Cooling capacity Evaporator capacity Power input Current Condenser capacity		COP [ - ] m [kg/h] Op. th [°C]	COP/EER Mass flow Operating mode Discharge gas temp.	w/o cooling

tc	to	5°C	0°C	-5°C	-10°C	-15°C	-20°C	-25°C	-30°C
35°C	Q [W]		83617	67612	54049	42633	33098	25210	
	Qu* [W]		83617	67612	54049	42633	33098	25210	
	P [kW]		19,96	18,64	17,16	15,54	13,83	12,08	
	I [A]		42,0	40,5	38,8	37,0	35,3	33,7	
	Qc [W]		103574	86256	71207	58173	46932	37291	
	COP [ - ]		4,19	3,63	3,15	2,74	2,39	2,09	
	m [kg/h]		1803	1449	1152	905	700	531	
	Op.		Standard	Standard	Standard	Standard	Standard	Standard	
	th [°C]		71,4	78,6	86,4	94,9	104,3	114,8	
40°C	Q [W]		78407	63338	50555	39785	30782	23328	
	Qu* [W]		78407	63338	50555	39785	30782	23328	
	P [kW]		21,5	19,88	18,12	16,25	14,32	12,36	
	I [A]		43,9	42,0	39,9	37,8	35,8	33,9	
	Qc [W]		99906	83222	68675	56034	45098	35691	
	COP [ - ]		3,65	3,19	2,79	2,45	2,15	1,89	
	m [kg/h]		1770	1421	1128	883	681	514	
	Op.		Standard	Standard	Standard	Standard	Standard	Standard	
	th [°C]		76,9	84,1	91,9	100,4	109,8	120,3	
50°C	Q [W] Qu* [W]		67911 67911	54731 54731	43521 43521	34050 34050	26112 26112	19521 19521	
	P [kW]		24,1	22,0	19,69	17,36	15,02	12,71	
	I [A]		47,3	44,5	41,7	39,0	36,5	34,3	
	Qc [W]		92046	76697	63212	51409	41130	32234	
	COP [ - ]		2,81	2,49	2,21	1,96	1,74	1,54	
	m [kg/h]		1696	1357	1073	835	638	475	
	Op.		Standard	Standard	Standard	Standard	Standard	Standard	
	th [°C]		87,7	95,0	102,8	111,4	121,0	131,8	

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

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

### Application Limits 100% 6FE-40



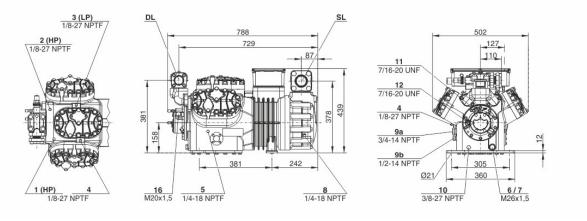


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# **Technical Data: 6FE-40Y**

## **Dimensions and Connections**



### **Technical Data**

Technical Data	
Displacement (1450 RPM 50Hz)	151,6 m³/h
Displacement (1750 RPM 60Hz)	183,0 m³/h
Frequency range	2570 Hz
No. of cylinder x bore x stroke	6 x 82 mm x 55 mm
Weight	244 kg
Max. pressure (LP/HP)	19 / 32 bar
Connection suction line	54 mm - 2 1/8"
Connection discharge line	42 mm - 1 5/8"
Oil type R134a/R407C/R404A/R507A/R407A/R407F	BSE32(Standard)   R134a tc>70°C: BSE55 (Option)
Oil type R1234yf	BSE32 (Standard)   R1234yf tc>70°C : BSE55 (Option)
Oil type R1234ze	BSE55 (Standard)   to>15°C: BSE85K (Option)   tc>70°C:
	BSE85K (Option)
Ölfüllung R454C/R455A	BSE32 (Standard)
Motor data	
Motor version	3
Motor voltage (more on request)	380-420V PW-3-50Hz
Max operating current	51.1 A
Max operating current 70Hz/400V/FI	75,5 A
Winding ratio	50/50
Starting current (Rotor locked)	219.0 A Y / 362.0 A YY
Max. Power input	27,0 kW
Extent of delivery (Standard)	
Motor protection	SE-B2, CM-RC-01(Option)
Enclosure class	IP54 (Standard), IP66 (Option)
Vibration dampers	Standard
Oil charge	4,75 dm³
Discharge shut-off valve	Standard
Suction shut-off valve	Standard
Available Options	
Discharge gas temperature sensor	Option
Start unloading	Option
Capacity control	100-66-33% (Option)
Capacity Control - infinite	100-10% (Option)
Additional fan	Option
Oil service valve	Option
Crankcase heater	140 W (Option)
Oil pressure monitoring	MP54 (Option), Delta-PII
Sound measurement	



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Sound power level (-10°C / 45°C) Sound pressure level @ 1m (-10°C / 45°C) 80,8 dB(A) @50Hz 72,8 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 
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.