Selection: Compact Screw Compressors CS // CSV

Input Values

Compressor model	CSH7693-90Y	Operating mode	Standard
Refrigerant	R134a	Power supply	400V-3-50Hz
Reference temperature	Dew point temp.	Capacity control	100%
Liq. subc. (in condenser)	0 K	Additional cooling	Automatic
Suct. gas superheat	10/00 K	Max. discharge gas temp.	110/0 °C
Useful superheat	100%		

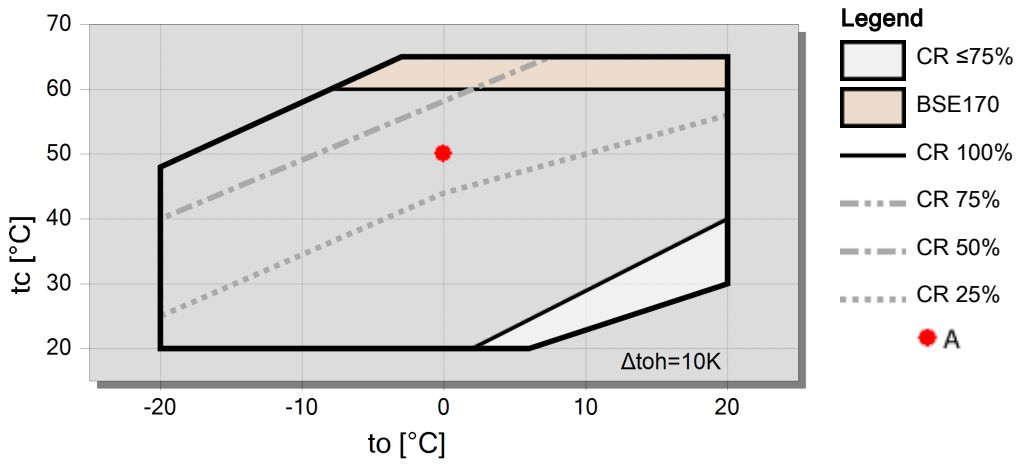
Result

Q [W]	Cooling capacity	mHP [kg/h]	Mass flow HP
P [kW]	Power input	Qac [kW]	Additional cooling
I [A]	Current	tcu [°C]	Liquid temp.
COP [-]	COP/EER	pm [bar(a)]	ECO pressure
mLP [kg/h]	Mass flow LP	Qsc [kW]	sub cooler capacity (ECO)

tc	to	0°C	-5°C	-10°C	-15°C	-20°C	-25°C	-30°C	-35°C
30°C	Q [W]	202478	166140	135251	109161	87280	--	--	--
	P [kW]	35/7	34/2	33/4	33/2	33/9			
	I [A]	64/4	62/5	61/4	61/3	62/0			
	COP [-]	5/67	4/86	4/05	3/29	2/58			
	mLP [kg/h]	4411	3691	3066	2527	2064			
	mHP [kg/h]	4411	3691	3066	2527	2064			
	Qac [kW]	--	--	--	--	--			
	tcu [°C]	30/0	30/0	30/0	30/0	30/0			
	pm [bar(a)]	--	--	--	--	--			
	Qsc [kW]	--	--	--	--	--			
40°C	Q [W]	184139	150438	121836	97715	77515	--	--	--
	P [kW]	44/6	43/0	41/8	41/1	41/0			
	I [A]	76/4	74/2	72/6	71/6	71/4			
	COP [-]	4/13	3/50	2/91	2/38	1/89			
	mLP [kg/h]	4407	3679	3047	2501	2031			
	mHP [kg/h]	4407	3679	3047	2501	2031			
	Qac [kW]	--	--	--	--	--			
	tcu [°C]	40/0	40/0	40/0	40/0	40/0			
	pm [bar(a)]	--	--	--	--	--			
	Qsc [kW]	--	--	--	--	--			
50°C	Q [W]	162795	131772	105457	83268	--	--	--	--
	P [kW]	54/8	53/2	51/7	50/5				
	I [A]	91/0	88/6	86/4	84/7				
	COP [-]	2/97	2/48	2/04	1/65				
	mLP [kg/h]	4338	3597	2951	2391				
	mHP [kg/h]	4338	3597	2951	2391				
	Qac [kW]	--	--	--	--				
	tcu [°C]	50/0	50/0	50/0	50/0				
	pm [bar(a)]	--	--	--	--				
	Qsc [kW]	--	--	--	--				

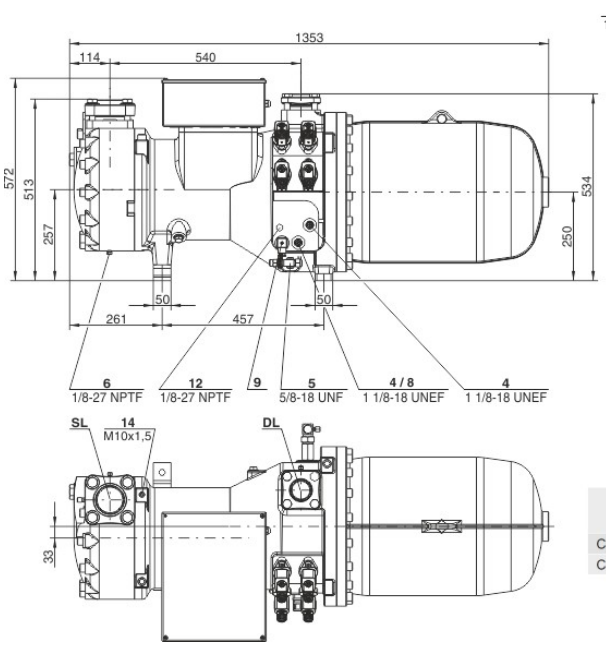
-- No calculation possible (see message in single point selection)
*According to EN12900 (10K suction gas superheat, 0K liquid subcooling, see tech. data/ notes)

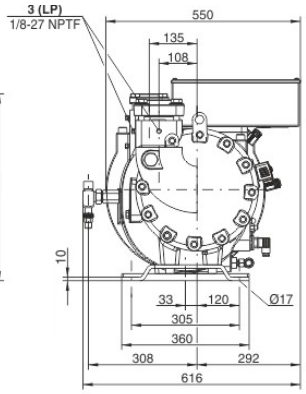
Application Limits Standard CSH7693-90

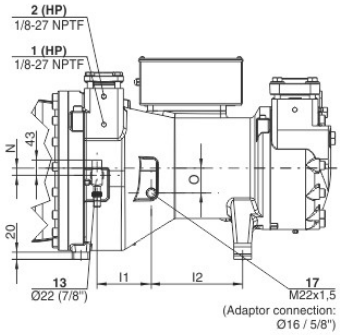

70
60
50
40
30
20
tc [°C]
-20
-10
0
10
20
to [°C]
Δtoh=10K
Legend
CR ≤75%
BSE170
CR 100%
CR 75%
CR 50%
CR 25%
A

Technical Data: CSH7693-90Y

Dimensions and Connections







	I1	I2	N	O
	mm	mm	mm	mm
CSW7573, CSH7673	153	258	20	70
CSW7583, CSW7593, CSH7683, CSH7693	157	261	23	70

Technical Data

Technical Data	
Displacement (2900 RPM 50 Hz)	336 m³/h
Displacement (3500 RPM 60 Hz)	406 m³/h
Weight	535 kg
Max. pressure (LP/HP)	19 / 28 bar
Connection suction line	76 mm - 3 1/8"
Connection discharge line	64 mm - 2 5/8"
Oil type R134a	BSE170L(Standard) / R134a tc>60°C: BSE170 (Option)
Motor data	
Motor voltage (more on request)	380-415V PW-3-50Hz
Max operating current	160.0 A
Winding ratio	50/50
Starting current (Rotor locked)	423.0 A D / 686.0 A DD
Max. Power input	96/0 kW
Extent of delivery (Standard)	
Enclosure class	IP54
Oil heater	200 W (Standard)
Oil separator	Standard
Oil filter	Standard
Discharge gas temperature sensor	Standard
Start unloading	Standard
Capacity Control - 4-step	100-75-50-25% (Standard)
Capacity Control - infinite	100-25% (Standard)
Built-in check valve	Standard
Motor protection	SE-E1 (Standard), SE-E3(Standard for 660-690V)
Oil charge	14,0 dm³
Available Options	
Oil level switch	min / max OLC-D1-S (Option)
Discharge shut-off valve	Option
Suction shut-off valve	Option
Shut-off valve for ECO with muffler	Option
Bridges for DOL start	Option
with sound jacket	Option
Vibration dampers	Option
Motor protection	SE-i1 (200-690V)

Compact Screw Compressors CS

Reference points for evaporating and condensing pressures

Connection positions 1 (HP) and 3 (LP) on the compressor (see dimensions). The pressure drop for shut-off valves and check valves has not been taken into consideration. This is the worldwide state of the art for compact screws, as in factory-produced chillers shut-off valves are often omitted and the check valve can also be arranged as an external com-ponent in the discharge line. For the sake of the international comparability of performance data, this standard has been adopted for the screw compressors of the CSH/CSW/CSVH series.

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 compressors are certified up to 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.

Legend of connection positions according to "Dimensions":

1 High pressure connection (HP)
2 Additional high pressure connection
3 Low pressure connection (LP)
4 Oil sight glass
5 Oil valve for maitenance (standard) / connection for oil equalisation (parallel operation)
6 Oil drain plug (motor housing)
7 CSH only, except CSH6583, CSH6593, CSH95103 and CSH95113: Connection for electro-mechanical oil level switch in case of replacing a CSH.1 by a CSH.3
8 Connection for opto-electronical oil level switch (OLC-D1-S) CSVH: integrated into FI control
CS.105: connected to monitoring module
9 Oil heater with sleeve (standard) CSVH: integrated into FI control
CS.105: connected to monitoring module
10 Oil pressure connection
11 External oil cooler connections (adaptor optional)
11a outlet to oil cooler
11b inlet / return from oil cooler
12 Oil temperature sensor (PTC) CSVH: integrated into FI control
CS.105: connected to monitoring module
13 Economiser connection (ECO) (shut-off valve optional CSH: with pulsation muffler)
14 Threaded bore for pipe support
CS.L line for ECO or LI
CSVH:
14a line for ECO
14b line for FI cooling
15 Liquid injection connection (LI) (CSH: shut-off valve optional)
16 Earth screw for housing
17 Connection for oil and gas return (for systems with flooded evaporator adaptor optional)
18 Oil filter (maitenance connection)
19 FI cooling (liquid refrigerant)
20 Frequency inverter (FI)
21 Oil injection valve (internal)
24 Gas permeable plug
SL Suction gas line
DL Discharge gas line
Dimensions can show tolerances according to EN ISO 13920-B.