



### Selection: Compact Screw Compressors CS // CSV

#### Input Values

|                           |                 |                          |             |
|---------------------------|-----------------|--------------------------|-------------|
| Compressor model          | (CSH7571-90Y)   | 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

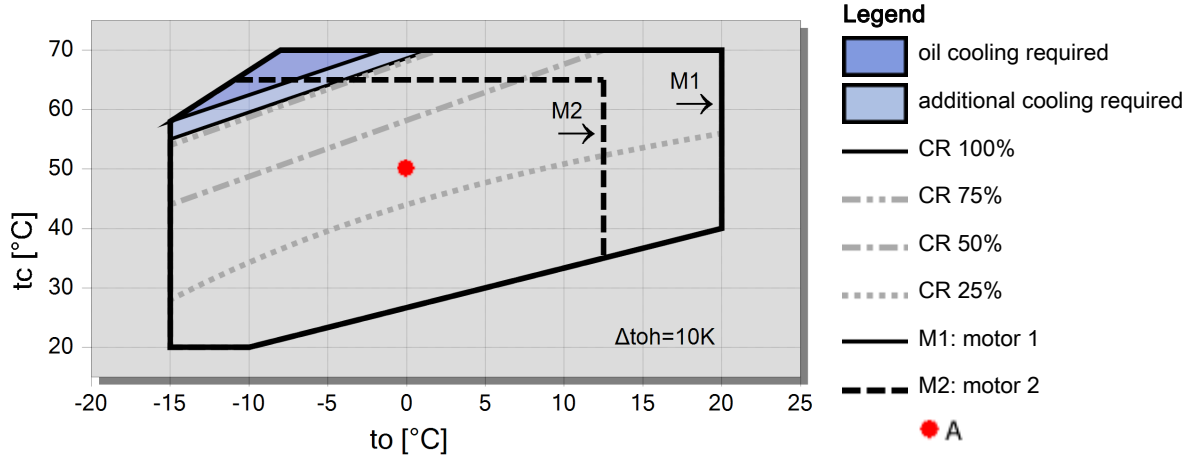
|            |                  |             |                           |
|------------|------------------|-------------|---------------------------|
| Q [W]      | Cooling capacity | mHP [kg/h]  | Mass flow HP              |
| P [kW]     | Power input      | Qac [kW]    | Additional cooling        |
| 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          | 10°C   | 5°C    | 0°C    | -5°C   | -10°C | -15°C | -20°C | -25°C |
|-------------|-------------|--------|--------|--------|--------|-------|-------|-------|-------|
| <b>30°C</b> | Q [W]       | --     | 185997 | 152596 | 124005 | 99664 | 79061 | --    | --    |
|             | P [kW]      |        | 31,9   | 30,4   | 29,2   | 28,3  | 27,8  |       |       |
|             | I [A]       |        | 59,6   | 57,8   | 56,4   | 55,3  | 54,6  |       |       |
|             | COP [-]     |        | 5,82   | 5,01   | 4,24   | 3,52  | 2,85  |       |       |
|             | mLP [kg/h]  |        | 3975   | 3324   | 2755   | 2259  | 1830  |       |       |
|             | mHP [kg/h]  |        | 3975   | 3324   | 2755   | 2259  | 1830  |       |       |
|             | Qac [kW]    |        | --     | --     | --     | --    | --    |       |       |
|             | tcu [°C]    |        | 30,0   | 30,0   | 30,0   | 30,0  | 30,0  |       |       |
|             | pm [bar(a)] |        | --     | --     | --     | --    | --    |       |       |
|             | Qsc [kW]    |        | --     | --     | --     | --    | --    |       |       |
| <b>40°C</b> | Q [W]       | 201751 | 166103 | 135445 | 109204 | 86853 | 67916 | --    | --    |
|             | P [kW]      | 39,4   | 37,6   | 36,0   | 34,7   | 33,6  | 32,8  |       |       |
|             | I [A]       | 69,3   | 66,8   | 64,8   | 63,1   | 61,7  | 60,7  |       |       |
|             | COP [-]     | 5,12   | 4,42   | 3,76   | 3,15   | 2,59  | 2,07  |       |       |
|             | mLP [kg/h]  | 4635   | 3893   | 3242   | 2671   | 2172  | 1738  |       |       |
|             | mHP [kg/h]  | 4635   | 3893   | 3242   | 2671   | 2172  | 1738  |       |       |
|             | Qac [kW]    | --     | --     | --     | --     | --    | --    |       |       |
|             | tcu [°C]    | 40,0   | 40,0   | 40,0   | 40,0   | 40,0  | 40,0  |       |       |
|             | pm [bar(a)] | --     | --     | --     | --     | --    | --    |       |       |
|             | Qsc [kW]    | --     | --     | --     | --     | --    | --    |       |       |
| <b>50°C</b> | Q [W]       | 176302 | 144169 | 116544 | 92897  | 72742 | 55637 | --    | --    |
|             | P [kW]      | 46,0   | 44,4   | 43,0   | 41,7   | 40,7  | 39,9  |       |       |
|             | I [A]       | 78,4   | 76,1   | 74,1   | 72,4   | 71,0  | 69,9  |       |       |
|             | COP [-]     | 3,83   | 3,25   | 2,71   | 2,23   | 1,79  | 1,40  |       |       |
|             | mLP [kg/h]  | 4489   | 3754   | 3106   | 2536   | 2036  | 1598  |       |       |
|             | mHP [kg/h]  | 4489   | 3754   | 3106   | 2536   | 2036  | 1598  |       |       |
|             | Qac [kW]    | --     | --     | --     | --     | --    | --    |       |       |
|             | tcu [°C]    | 50,0   | 50,0   | 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)

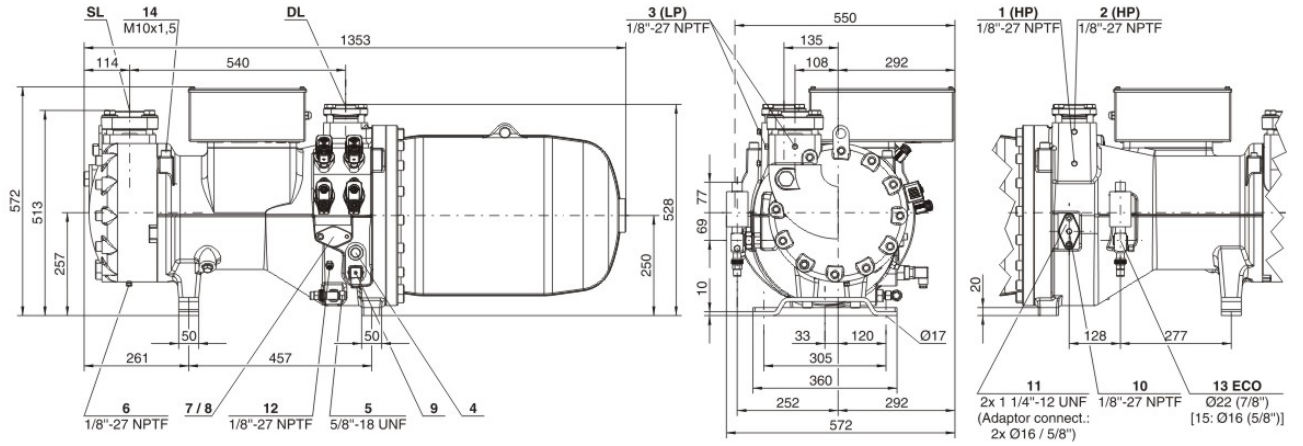
### Application Limits Standard CSH7571-90





## Technical Data: (CSH7571-90Y)

### Dimensions and Connections





## Technical Data

### Technical Data

|  |                       |
|--|-----------------------|
| Displacement (2900 RPM 50 Hz)                | 258 m <sup>3</sup> /h |
| Displacement (3500 RPM 60 Hz)                | 311 m <sup>3</sup> /h |
| Weight                                       | 530 kg                |
| Max. pressure (LP/HP)                        | 19 / 28 bar           |
| Connection suction line                      | 76 mm - 3 1/8"        |
| Connection discharge line                    | 54 mm - 2 1/8"        |
| Oil type R134a/R407C/R404A/R507A/R407A/R407F | BSE170 (Option)       |
| Oil type R22                                 | B320SH (Standard)     |

### Motor data

|                                 |                        |
|---------------------------------|------------------------|
| Motor version                   | 1                      |
| Motor voltage (more on request) | 380-415V PW-3-50Hz     |
| Max operating current           | 162.0 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), INT69VSY-II(Standard for 660-690V) |
| Oil charge                       | 15,0 dm <sup>3</sup>                                 |

### Available Options

|   |        |
|---|--------|
| Oil level switch                        | Option |
| Discharge shut-off valve                | Option |
| Suction shut-off valve                  | Option |
| Shut-off valve for ECO with muffler     | Option |
| Liquid injection with integrated nozzle | Option |
| Bridges for DOL start                   | Option |
| Vibration dampers                       | Option |



## 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 component 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 maintenance (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 (maintenance 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.