ICS pilot-operated servo valves belong to the ICV (Industrial Control Valve) family.

The valve comprises three main components: valve body, function module and top cover.

ICS pilot-operated servo valves are pilot operated valves for regulating pressure, temperature and ON/OFF function in refrigeration systems. ICS valves are designed for low and high-pressure refrigerants.

ICS valves can be used on the high and low-pressure sides, in wet and dry suction lines and in liquid lines without phase change (i.e. where no expansion takes place in the valve).

The function of ICS valves is dependent on the pilot pressure applied from either a pilot valve or external pilot pressure source.

ICS 1 pilot has one pilot pressure connection and ICS 3 pilot has three pilot pressure connections.

**Features**

- Designed for industrial refrigeration applications for a maximum working pressure of 52 bar g / 754 psi g.
- Applicable to HCFC, HFC, R717 (Ammonia) and R744 (CO₂).
- Direct coupled connections.
- Connection types include butt weld, socket weld, solder and threaded connections.
- Low temperature steel body.
- Low weight and compact design.
- V-port regulating cone ensures optimum regulating accuracy particularly at part load.
- Function module has a QPQ surface treated insert and a steel piston ring ensuring precise control accuracy.
- ICV 4 in., 5 in. and 6 in. ANSI with NPT threaded pressure outlet in the outlet of the valve.
- Replaceable Teflon valve seat for ICS 25-80.
- Maintenance spare part kit available for ICS 100-150.
- Modular Concept:
  - Each valve body is available with several different connection types and sizes.
  - Valve overhaul on ICS 25-80 is done by replacing the function module.
  - Possible to convert ICS pilot-operated servo valve to ICM motor operated valve.
- The ICS valve is a multifunction valve where several pilot valves can be mounted into the pilot ports.
- The standard range of pilot valves can be used on all sizes of ICS valves. Pilot valves can be either screwed directly into the ICS valve, thus eliminating the need for solder / weld connections or external pilot lines.
- Pressure gauge connection port to measure valve inlet pressure.
- The top cover can be rotated into any possible position without affecting the operation of the valve.
- Classification: DNV, CRN, BV, EAC etc. To get an updated list of certification on the products please contact your local Danfoss Sales Company.
<table>
<thead>
<tr>
<th>Contents</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Features</td>
<td>1</td>
</tr>
<tr>
<td>Design</td>
<td>3</td>
</tr>
<tr>
<td>Technical data</td>
<td>3</td>
</tr>
<tr>
<td>The ICS Concept</td>
<td>4</td>
</tr>
<tr>
<td>Function</td>
<td>6</td>
</tr>
<tr>
<td>Material specification</td>
<td>8</td>
</tr>
<tr>
<td>Configuration examples</td>
<td>10</td>
</tr>
<tr>
<td>Nominal capacities</td>
<td>19</td>
</tr>
<tr>
<td>Ordering</td>
<td>53</td>
</tr>
<tr>
<td>Spare parts</td>
<td>58</td>
</tr>
<tr>
<td>Accessories</td>
<td>58</td>
</tr>
<tr>
<td>Dimensions and weights</td>
<td>62</td>
</tr>
<tr>
<td>Connections</td>
<td>70</td>
</tr>
</tbody>
</table>
Data sheet | Pilot-operated servo valve, type ICS

Design
ICS valves are designed as pilot operated valves requiring minimal pressure differential to open. If the pressure difference is 0 bar/0 psi, the ICS valve will be closed. If the pressure difference is 0.2 bar / 3 psi or more, the ICS valve will be fully open. At pressure differences between 0.07 bar / 1 psi and 0.2 bar /3 psi, the opening degree will be correspondingly proportional.

The ICS is available for use with either one or three pilot valves.

Two of the three pilot pressure connections (S1 and S2) are connected in series whilst the third (P) is connected in parallel to S1 and S2. This allows different combinations of pilot valves to be used, thus providing numerous variations in control functions.

Connections
There is a very wide range of connection types available with ICS valves:

- D: Butt weld, DIN (2448)
- A: Butt weld, ANSI (B 36.10)
- J: Butt weld, JIS (B S 602)
- SOC: Socket weld, ANSI (B 16.11)
- SD: Solder connection, DIN (2856)
- SA: Solder connection, ANSI (B 16.22)
- FPT: Female pipe thread (ANSI/ASME B 1.20.1)

Approvals
The ICS valve concept is designed to fulfill global refrigeration requirements.

For specific approval information, please contact Danfoss.

The ICS valves are approved in accordance with the European standard specified in the Pressure Equipment Directive and are CE marked.

For further details / restrictions - see Installation Instruction

Valve body and top cover material
Low temperature steel

Technical data

<table>
<thead>
<tr>
<th>Nominal bore</th>
<th>Classified for</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN ≤ 25 (1 in.)</td>
<td>Fluid group I</td>
<td>Article 3, paragraph 3</td>
</tr>
<tr>
<td>DN 32-65 (1 1/4 - 2 1/2 in.)</td>
<td></td>
<td>II</td>
</tr>
<tr>
<td>DN 80-125 (3 - 5 in.)</td>
<td></td>
<td>III</td>
</tr>
</tbody>
</table>

- Refrigerants
  Applicable to HCFC, HFC, R717(Ammonia) and R744 (CO₂).
  Use with flammable hydrocarbons cannot be recommended; please contact Danfoss.

- Temperature range
  -60 – 120 °C / -76 – 248 °F.

- Surface protection
  ICS 25-150:
  The external surface is zinc-chromated to provide good corrosion protection.

- Pressure range
  The valve is designed for:
  Max. working pressure: 52 bar g / 754 psig
  
  Opening differential pressure:
  Fully open: Min. 0.2 bar g (min. 3 psig)
  Max. Opening Pressure Differential (MOPD), solenoid valves only - at nominal conditions.
  - 10 W a.c. up to 21 bar / 305 psi
  - 20 W a.c. up to 40 bar / 580 psi
The ICS Concept

The ICS concept is developed around a modular principle. This gives the possibility of combining function modules and top covers with special valve body size that is available in a variety of connection possibilities.

- There are eight valve bodies available.

<table>
<thead>
<tr>
<th>ICV 25</th>
<th>ICV 32</th>
<th>ICV 40</th>
<th>ICV 50</th>
<th>ICV 65</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Valve bodies in the sizes ICV 20-ICV65 are available with a range of undersizes through oversized connection sizes and types. ICV 100 - ICV 150 are available in butt-weld DIN and butt-weld ANSI nominal sizes.

<table>
<thead>
<tr>
<th>D</th>
<th>A</th>
<th>J</th>
<th>SOC</th>
<th>SD</th>
<th>SA</th>
<th>FPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butt-weld DIN</td>
<td>Butt-weld ANSI</td>
<td>Butt-weld JIS</td>
<td>Socket weld ANSI</td>
<td>Solder DIN</td>
<td>Solder ANSI</td>
<td>Female Pipe Thread</td>
</tr>
</tbody>
</table>

- Each valve body may be fitted with a 1 pilot or 3 pilot top cover.
In ICS, multiple inserts (function modules) are available to give different capacities.

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>( K_v ) (m(^3)/h)</th>
<th>( C_v ) (USgal/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS 25-5</td>
<td>25</td>
<td>1.7</td>
<td>2.0</td>
</tr>
<tr>
<td>ICS 25-10</td>
<td>25</td>
<td>3.5</td>
<td>4.1</td>
</tr>
<tr>
<td>ICS 25-15</td>
<td>25</td>
<td>6.0</td>
<td>7.0</td>
</tr>
<tr>
<td>ICS 25-20</td>
<td>25</td>
<td>8.0</td>
<td>9.3</td>
</tr>
<tr>
<td>ICS 25-25</td>
<td>25</td>
<td>11.5</td>
<td>13.3</td>
</tr>
<tr>
<td>ICS 32</td>
<td>32</td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td>ICS 40</td>
<td>40</td>
<td>27</td>
<td>31</td>
</tr>
<tr>
<td>ICS 50</td>
<td>50</td>
<td>44</td>
<td>51</td>
</tr>
<tr>
<td>ICS 65</td>
<td>65</td>
<td>70</td>
<td>81</td>
</tr>
<tr>
<td>ICS 80</td>
<td>80</td>
<td>85</td>
<td>98</td>
</tr>
<tr>
<td>ICS 100</td>
<td>100</td>
<td>142</td>
<td>165</td>
</tr>
<tr>
<td>ICS 125</td>
<td>125</td>
<td>207</td>
<td>240</td>
</tr>
<tr>
<td>ICS 150</td>
<td>150</td>
<td>354</td>
<td>410</td>
</tr>
</tbody>
</table>
### Function

The ICS main valve is a pilot operated valve. The types of pilot valves used determine the function. The ICS main valve with pilot valve(s) controls refrigerant flow by modulation or on/off in accordance with the pilot valve and main valve status. The manual spindle can be used to open the valve plate.

The opening degree of the main valve is determined by the pressure difference (differential pressure) between pressure $p_2$, which acts on top of the servo piston (3b), and pressure $p_3$, which acts on the underside of the servo piston.

If this pressure difference is 0, the main valve will be fully closed.

If the pressure difference is 0.2 bar / 3 psi or greater, the main valve will be fully open.

At pressure differences ($p_2 - p_3$) between 0.07 bar / 1 psi and 0.2 bar / 3 psi, the degree of opening will be correspondingly proportional.

The port of the throttle cone (3e) is V-shaped, which provide good regulation characteristic to pilot operated main valves even at low loads. $P_1$ pressure is equal to the valve outlet pressure ($P_4$), due to a clearance between the piston rod (3g) and the function module. The opening degree of the ICS valve is therefore controlled by the application of $P_2$, pressure acting on top of the servo piston, which is equal to or greater than valve outlet pressure ($P_4$).

- $p_2 = p_4 \Leftrightarrow$ closed
- $p_2 = p_4 + 0.2 \text{ bar} / 3 \text{ psi} \Leftrightarrow$ fully open
- $p_2 \leq p_4 \leq p_4 + 0.2 \text{ bar} / 3 \text{ psi} \Leftrightarrow$ proportional degree of opening.

The maximum pressure ($p_2$) can act on the top of the servo piston (3b). $P_1$ normally corresponds to the pressure, $P_1$ - ICS main valve inlet pressure. Inlet pressure $P_1$ is led, via the drilled channels (1a, 1b, 2f, 2b (pilot), 2a, 2d) in the valve body (1) and cover (2) through the individual pilot valves and onto the top of the servo piston (3b).

The degree of opening of the individual pilot valves determines the magnitude of pressure $P_2$ and thus the degree of opening of the main valve. The equalisation hole (3f) in the servo piston (3b) ensures that pressure $P_2$ is balanced in accordance with the degree of opening of the pilot valve.

**Note:**
When ICS valves with 3 pilot ports are used with external pressure connector (fig. 2, pos. 61), the valve port inlet pressure will be isolated.

The ICS can be fitted with just a single screwed-in pilot valve or external pilot connection. The degree of opening of the main valve will be in accordance with the control status of the pilot valve or external pilot flow control.

ICS main valve with one pilot connection is fully closed when the pilot valve is fully closed and fully open when the pilot valve is fully open. Otherwise the degree of opening of the main valve is proportional to the degree of opening of the pilot valve.

The ICS 3 pilot version can be fitted with one, two, or three pilot valves so that up to three regulating functions are possible. If the external pilot connection is used, more functions can be added.
In the ICS three pilot version, the pilot ports are related as follows:

- The pilot valves fitted in ports SI and SII are connected in series. The ICS 3 pilot operated main valve will be fully closed if just one of the series-connected pilot valves is closed. The main valve can only open if both pilot valves are open at the same time.

- The pilot valve fitted in port P is connected in parallel to the pilot valves in ports SI and SII. The ICS valve will be fully open if the pilot valve in P is fully open, irrespective of the degree of opening of the pilot valves SI and SII. The ICS valve will be fully closed if the pilot valve in P is fully closed and at least one of the valves in SI or SII is fully closed at the same time. The relation between the pilot valves in ports SI, SII, and P is shown in the table on the next page.

If the ICS is not fitted with three pilot valves, the unused port(s) must be sealed with a blanking plug. If the blanking plug is fitted as an assembled unit, A + B, the channels from the specific port will be closed. (See illustration below)

If only the top part, A, of the plug is fitted, the channels from the ports in question will be open. If the degree of opening of the ICS main valve is not to be a function of the main valve inlet pressure, or if more than three regulating functions are required, ports SI, SII, or P can be fitted with a nipple for the connection of external pilot pressure. This applies to all ICS versions.

The pressure to which the external pilot line is connected will then determine pressure $p_2$ on top of the servo piston. The pilot valves fitted in that external pilot line will determine the main valve function. Pilot valves installed in external lines must be mounted in a type CVH housing.

Depending on the function of the pilot valves, the ICS regulating characteristic becomes:

- on / off
- proportional
- integral or
- cascade.

ICS main valves are therefore especially suitable for all forms of temperature and pressure regulating systems.

An overview of the types of pilot valves available can be found in the literature "Pilot valves for operated main valves" (AI248786497190).

On the following pages, a number of configuration examples can be found. These are only for explanatory purpose. However, by using the literature regarding pilot valves these examples are easier to comprehend.

<table>
<thead>
<tr>
<th>Pilot valve port</th>
<th>ICS valve</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI</td>
<td>SII</td>
</tr>
<tr>
<td>Open</td>
<td>Open</td>
</tr>
<tr>
<td>Open</td>
<td>Open</td>
</tr>
<tr>
<td>Open</td>
<td>Closed</td>
</tr>
<tr>
<td>Open</td>
<td>Closed</td>
</tr>
<tr>
<td>Closed</td>
<td>Open</td>
</tr>
<tr>
<td>Closed</td>
<td>Open</td>
</tr>
<tr>
<td>Closed</td>
<td>Closed</td>
</tr>
<tr>
<td>Closed</td>
<td>Closed</td>
</tr>
</tbody>
</table>

Example (ICS with 3 pilot valves)
## Material specification - ICS 25, 32, 40, 50, 65

<table>
<thead>
<tr>
<th>No.</th>
<th>Part</th>
<th>Material</th>
<th>EN</th>
<th>ASTM</th>
<th>JIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Low temperature steel</td>
<td>G20Mn5QT, EN 10213-3</td>
<td>LCC A352</td>
<td>SCPL1 G5151</td>
</tr>
<tr>
<td>2</td>
<td>Top cover</td>
<td>Low temperature steel</td>
<td>G20Mn5QT, EN 10213-3</td>
<td>P285QH+QT 10222-4</td>
<td>LCC A352  LF2, A350</td>
</tr>
<tr>
<td>3</td>
<td>Function module</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(assembled)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3a</td>
<td>o-ring</td>
<td>Cloroprene (Neoprene)</td>
<td>G20Mn5QT, EN 10213-3</td>
<td>LCC A352</td>
<td>SCPL1 G5151</td>
</tr>
<tr>
<td>3b</td>
<td>o-ring</td>
<td>Cloroprene (Neoprene)</td>
<td>G20Mn5QT, EN 10213-3</td>
<td>P285QH+QT 10222-4</td>
<td>LCC A352  LF2, A350</td>
</tr>
<tr>
<td>3c</td>
<td>Washer plate</td>
<td>Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valve plate</td>
<td>PTFE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Cone</td>
<td>Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Gasket</td>
<td>Fiber, non-asbestos</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Bolts</td>
<td>Stainless steel</td>
<td>A2-70, EN 1515-1</td>
<td>Grade B8 A320</td>
<td>A2-70, B 1054</td>
</tr>
</tbody>
</table>
Material specification - ICS 100, 125, 150

<table>
<thead>
<tr>
<th>No.</th>
<th>Part</th>
<th>Material</th>
<th>EN</th>
<th>ASTM</th>
<th>JIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Low temperature steel</td>
<td>G20Mn5QT, EN 10213-3</td>
<td>LCC A352</td>
<td>SCPL1 G5151</td>
</tr>
<tr>
<td>2</td>
<td>Top cover</td>
<td>Low temperature steel</td>
<td>G20Mn5QT, EN 10213-3</td>
<td>LCC A352</td>
<td>SCPL1 G5151</td>
</tr>
<tr>
<td>3</td>
<td>Function module (assembled)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3a</td>
<td>Piston/rod</td>
<td>Stainless steel / steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3b</td>
<td>Piston ring</td>
<td>Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3c</td>
<td>Insert</td>
<td>Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3d</td>
<td>Spring</td>
<td>Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3e</td>
<td>Cone</td>
<td>Stainless steel / steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3f</td>
<td>Teflon plate</td>
<td>Teflon unfilled</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3g</td>
<td>Washer plate</td>
<td>PTFE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3h</td>
<td>o-ring</td>
<td>Cloroprene (Neoprene)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Gasket</td>
<td>Fiber, non-asbestos</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Bolts</td>
<td>Stainless steel</td>
<td>A2-70, EN 1515-1</td>
<td>Grade BB A320</td>
<td>A2-70, B 1054</td>
</tr>
<tr>
<td>6</td>
<td>Plug</td>
<td>Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Eye bolt</td>
<td>Galvanized steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Manual operating spindle</td>
<td>Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Type and size of Bolt (pos. 5)

<table>
<thead>
<tr>
<th>Type</th>
<th>Screw</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS 100</td>
<td>M20 × 60 A2-70 DIN 933</td>
</tr>
<tr>
<td>ICS 125</td>
<td>M20 × 60 A2-70 DIN 933</td>
</tr>
<tr>
<td>ICS 150</td>
<td>M20 × 70 A2-70 DIN 933</td>
</tr>
</tbody>
</table>
Configuration examples

Example no. 1-1

- **Constant pressure regulation**
  - CVP-L (-0.66 – 7 bar g)
    - (19.5 in. Hg to 102 psig)
  - CVP-M 4 – 28 bar g / 58 – 406 psig
  - CVP-H 25 – 52 bar g / 363 – 754 psig

Example no. 1-2

- **Differential pressure regulation**
  - CVPP-L (0.66 – 7 bar g)
    - (19.5 in. Hg to 102 psig)
  - CVPP-M 4 – 28 bar g / 58 – 406 psig

Example no. 1-3

- **On / off regulation (solenoid valve)**
  - 1 × ICS 1 Pilot
  - 1 × CVPP-L/M
  - 1 × Blanking plugs

Example no. 1-4

- **Regulation with external control pressure**
  - 1 × ICS 1 Pilot
  - 1 × nipple for external control pressure
  - 2 × Blanking plugs

Example no. 1-5

- **On / off regulation (solenoid valve)**
  - 1 × ICS 1 Pilot
  - 1 × EVM-NO (12 W coil)
  - 2 × Blanking plugs
Configuration examples (continued)

Example no. 1-6
Crankcase pressure regulation.
(Max. suction pressure regulation)
-0.45 – 7 bar g
(13.3 in. Hg to 102 psig)

<table>
<thead>
<tr>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 × ICS 1 Pilot</td>
</tr>
<tr>
<td>1 × CVC-L</td>
</tr>
</tbody>
</table>

Example no. 1-7
Electronically controlled media temperature regulation
-0.66 – 8 bar g
(19.5 in. Hg to 116 psig)

<table>
<thead>
<tr>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 × ICS 1 Pilot</td>
</tr>
<tr>
<td>1 × CVE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 × ICS 3 Pilots</td>
</tr>
<tr>
<td>1 × CVC-L</td>
</tr>
<tr>
<td>2 × Blanking plugs</td>
</tr>
<tr>
<td>SI: A + B</td>
</tr>
<tr>
<td>SII: A</td>
</tr>
</tbody>
</table>
Configuration examples (continued)

Example no. 2-1
Constant pressure regulation combined with electrical shut off
-0.66 – 7 bar g
(19.5 in. Hg to 102 psig)

Products
1 × ICS 3 Pilots
1 × blanking plug (A + B)
1 × CVP-L
1 × EVM
1 × coil

Example no. 2-2
Constant pressure regulation combined with electrical wide open
-0.66 – 7 bar g
(19.5 in. Hg to 102 psig)

Products
1 × ICS 3 Pilots
1 × blanking plug (A)
1 × CVP-L
1 × EVM

Example no. 2-3
Constant pressure regulation combined with electrical shut off and wide open
-0.66 – 7 bar g
(19.5 in. Hg to 102 psig)

Products
1 × ICS 3 Pilots
1 × CVP-L
2 × EVM
2 × coils

Example no. 2-4
Constant pressure regulation with change-over between two preset evaporating pressures
-0.66 – 7 bar g
(19.5 in. Hg to 102 psig)

Products
1 × ICS 3 Pilots
2 × CVP-L
1 × EVM
1 × coil

Example no. 2-5
External control pressure with electrical shut off combined with constant pressure regulation
-0.66 – 7 bar g
(19.5 in. Hg to 102 psig)

Products
1 × ICS 3 Pilots
1 × nipple for external control pressure
1 × CVP-L
1 × EVM
1 × coil
## Configuration examples (continued)

<table>
<thead>
<tr>
<th>Example no. 2-6</th>
<th>Products</th>
</tr>
</thead>
</table>
| Constant pressure regulation with external control pressure combined with electrical wide open | 1 × ICS 3 Pilots  
1 × nipple for external control pressure  
1 × CVP-L  
1 × EVM  
1 × coil |

<table>
<thead>
<tr>
<th>Example no. 2-7</th>
<th>Products</th>
</tr>
</thead>
</table>
| Constant pressure regulation with electrical shut off combined with external control pressure | 1 × ICS 3 Pilots  
1 × nipple for external control pressure  
1 × CVP-L  
1 × EVM  
1 × coil |

<table>
<thead>
<tr>
<th>Example no. 2-8</th>
<th>Products</th>
</tr>
</thead>
</table>
| Solenoid valve with external control pressure for small pressure drops | 1 × ICS 3  
1 × blanking plug (A + B)  
1 × nipple for external control pressure  
1 × EVM  
1 × coil |

<table>
<thead>
<tr>
<th>Example no. 2-9</th>
<th>Products</th>
</tr>
</thead>
</table>
| Differential pressure regulation combined with electrical shut off | 1 × ICS 3  
1 × blanking plug (A + B)  
1 × CVP-L  
1 × EVM  
1 × coil |
Configuration examples (continued)

**Example no. 2-10**
Differential pressure regulation combined with electrical wide open

- CVPP-L (0.66 – 7 bar g) (19.5 in. Hg to 102 psig)

**Products**
1 × ICS 3 Pilots
1 × blanking plug (A)
1 × CVPP-L
1 × EVM
1 × coil

**Example no. 2-11**
Differential pressure regulation combined with electrical wide open and shut off

- CVPP-L (0.66 – 7 bar g) (19.5 in. Hg to 102 psig)

**Products**
1 × ICS 3 Pilots
1 × CVPP-L
2 × EVM
2 × coils

**Example no. 2-12**
Constant pressure regulation combined with electrical shut off

- CVP-L (-0.66 – 7 bar g) (19.5 in. Hg to 102 psig)
- CVP-M 4 – 28 bar g / 58 – 406 psig
- CVP-H 25 – 52 bar g / 363 – 754 psig

**Products**
1 × ICS 3 Pilots
1 × blanking plug (A + B)
1 × CVP-L/M/H
1 × EVM
1 × coil

**Example no. 2-13**
Constant pressure regulation combined with electrical shut off and wide open

- CVP-L (-0.66 – 7 bar g) (19.5 in. Hg to 102 psig)
- CVP-M 4 – 28 bar g / 58 – 406 psig
- CVP-H 25 – 52 bar g / 363 – 754 psig

**Products**
1 × ICS 3 Pilots
1 × blanking plug (A)
1 × CVP-L/M/H
1 × EVM
1 × coil

**Example no. 2-14**
Constant pressure regulation combined with electrical shut off and wide open

- CVP-L (-0.66 – 7 bar g) (19.5 in. Hg to 102 psig)
- CVP-M 4 – 28 bar g / 58 – 406 psig
- CVP-H 25 – 52 bar g / 363 – 754 psig

**Products**
1 × ICS 3 Pilots
1 × CVP-L/M/H
2 × EVM
2 × coils
Configuration examples (continued)

**Example no. 2-15**

Constant pressure regulation with change-over between two preset evaporating pressures

- CVP-L (-0.66 – 7 bar g) (19.5 in. Hg to 102 psig)
- CVP-M 4 – 28 bar g / 58 to 406 psig
- CVP-H 25 – 52 bar g / 363 – 754 psig

**Products**

1 × ICS 3 Pilots
2 × CVP-L/M
1 × EVM
1 × coil

**Example no. 2-16**

Differential pressure regulation combined with electrical shut off

- CVPP-L (-0.66 – 7 bar g) (19.5 in. Hg to 102 psig)
- CVPP-M 4 – 28 bar g / 58 – 406 psig

**Products**

1 × ICS 3 Pilots
1 × blanking plug (A + B)
1 × CVPP-L/M
1 × EVM
1 × coil

**Example no. 2-17**

Differential pressure regulation combined with electrical wide open

- CVPP-L (-0.66 – 7 bar g) (19.5 in. Hg to 102 psig)
- CVPP-M 4 – 28 bar g / 58 – 406 psig

**Products**

1 × ICS 3 Pilots
1 × blanking plug (A)
1 × CVPP-L/M
1 × EVM
1 × coil

**Example no. 2-18**

Differential pressure regulation combined with electrical wide open and shut off

- CVPP-L (-0.66 – 7 bar g) (19.5 in. Hg to 102 psig)
- CVPP-M 4 – 28 bar g / 58 – 406 psig

**Products**

1 × ICS 3 Pilots
1 × CVPP-L/M
2 × EVM
2 × coils

**Example no. 2-19**

Constant pressure regulation combined with electrical wide open and shut off

- CVP-L (-0.66 – 7 bar g) (19.5 in. Hg to 102 psig)
- CVP-M 4 – 28 bar g / 58 – 406 psig
- CVP-H 25 – 52 bar g / 363 – 754 psig

**Products**

1 × ICS 3 Pilots
1 × CVP-L/M
1 × EVM
1 × EVM-NO (12 W coil)
2 × coils
Configuration examples (continued)

Example no. 2-20
Crankcase pressure regulation (max. suction pressure regulation) combined with shut off

-0.45 – 7 bar g
(13.3 in. Hg to 102 psig)

<table>
<thead>
<tr>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 × ICS 3 Pilots</td>
</tr>
<tr>
<td>1 × blanking plug (A + B)</td>
</tr>
<tr>
<td>1 × CVC-L</td>
</tr>
<tr>
<td>1 × EVM</td>
</tr>
<tr>
<td>1 × coil</td>
</tr>
</tbody>
</table>

Example no. 2-21
Crankcase pressure regulation (max. suction pressure regulation) combined with evaporating pressure regulation

-0.66 – 28 bar g
(19.5 in. Hg to 406 psig)

<table>
<thead>
<tr>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 × ICS 3 Pilots</td>
</tr>
<tr>
<td>1 × blanking plug (A + B)</td>
</tr>
<tr>
<td>1 × CVC-L/M</td>
</tr>
<tr>
<td>1 × CVP-L/M</td>
</tr>
</tbody>
</table>

Example no. 2-22
Crankcase pressure regulation (max. suction pressure regulation) at low pressure drops across the valve

-0.45 – 7 bar g
(13.3 in. Hg to 102 psig)

<table>
<thead>
<tr>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 × ICS 3 Pilots</td>
</tr>
<tr>
<td>1 × blanking plug (A + B)</td>
</tr>
<tr>
<td>1 × nipple for external control pressure</td>
</tr>
<tr>
<td>1 × CVC-L</td>
</tr>
</tbody>
</table>

Example no. 2-23
Crankcase pressure regulation (max. suction pressure regulation) combined with constant pressure regulation and electrical shut off.

-0.66 – 7 bar g
(19.5 in. Hg to 102 psig)

<table>
<thead>
<tr>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 × ICS 3 Pilots</td>
</tr>
<tr>
<td>1 × blanking plug (A + B)</td>
</tr>
<tr>
<td>1 × nipple for external control pressure</td>
</tr>
<tr>
<td>1 × CVP-L</td>
</tr>
<tr>
<td>1 × EVM</td>
</tr>
<tr>
<td>1 × coil</td>
</tr>
<tr>
<td>2 × CVH</td>
</tr>
<tr>
<td>1 × CVC-L</td>
</tr>
</tbody>
</table>

Example no. 2-24
Hot gas bypass regulation combined with electrical shut off

-0.45 – 7 bar g
(13.3 in. Hg to 102 psig)

<table>
<thead>
<tr>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 × ICS 3 Pilots</td>
</tr>
<tr>
<td>1 × blanking plug (A + B)</td>
</tr>
<tr>
<td>1 × CVC-L</td>
</tr>
<tr>
<td>1 × EVM</td>
</tr>
<tr>
<td>1 × coil</td>
</tr>
</tbody>
</table>
**Configuration examples (continued)**

**Example no. 2-25**
Constant pressure regulation with electrical shut off and protection against high pressure when suction line is closed
-0.66 – 28 bar g (19.5 in. Hg to 406 psig).

**Products**
- 1 x ICS 3 Pilots
- 1 x CVP-L
- 1 x EVM
- 1 x coil
- 1 x CVP-M

**Example no. 2-26**
Electronically controlled media temperature regulation combined with electrical shut off
-1 – 8 bar g (0 in. Hg to 116 psig).

**Products**
- 1 x ICS 3 Pilots
- 1 x blanking plug (A + B)
- 1 x CVE
- 1 x EVM
- 1 x coil

**Example no. 2-27**
Electronically controlled media temperature regulation combined with electrical shut off and wide open
-1 – 8 bar g (0 in. Hg to 116 psig).

**Products**
- 1 x ICS 3 Pilots
- 1 x CVE
- 2 x EVM
- 2 x coils

**Example no. 2-28**
Electronically controlled media temperature regulation combined with electrical shut off and change-over to constant pressure regulation
-1 – 8 bar g (0 in. Hg to 116 psig).

**Products**
- 1 x ICS 3 Pilots
- 1 x CVQ
- 1 x CVP-L
- 1 x EVM
- 1 x coil

**Example no. 2-29**
Electronically controlled media temperature regulation with low evaporating pressure protection combined with wide open
-1 – 8 bar g (0 in. Hg to 116 psig).

**Products**
- 1 x ICS 3 Pilots
- 1 x CVE
- 1 x CVP-L
- 1 x EVM
- 1 x coil
### Configuration examples (continued)

<table>
<thead>
<tr>
<th>Example no. 2-30</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electronically controlled media temperature regulation with low evaporating pressure protection combined with changeover to constant pressure regulation</strong></td>
<td><strong>1 × ICS 3 Pilots</strong>&lt;br&gt;<strong>1 × CVE</strong>&lt;br&gt;<strong>2 × CVP-L</strong></td>
</tr>
<tr>
<td><img src="image.png" alt="Diagram" /></td>
<td><img src="image.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

-1 – 8 bar g (0 in. Hg to 116 psig).
Nominal capacities

Liquid line with / without phase change

Location of valve in system (marked with grey)

Pump

Gravity

DX

Liquid line without phase change
Liquid line with or without phase change
Liquid line with / without phase change

Nominal capacities

Calculation example (R 717 capacities):

**SI units**

Running conditions in a plant are as follows:
- \( T_a = -20 \, ^\circ C \)
- \( Q_a = 250 \, kW \)
- \( T_{\text{liq}} = 10 \, ^\circ C \)
- Max. \( \Delta p = 0.3 \, \text{bar} \)

The capacity table is based on nominal condition
(pressure drop \( \Delta p = 0.2 \, \text{bar}, T_{\text{liq}} = 30 \, ^\circ C \))

Therefore the actual capacity must be corrected to
nominal condition by means of correction factors.

Correction factor for \( \Delta p \) 0.3 bar \( f_{\Delta p} = 0.82 \)

**US units**

Running conditions in a plant are as follows:
- \( T_a = -20 \, ^\circ F \)
- \( Q_a = 130 \, \text{TR} \)
- Liquid temperature = 50 °F
- Max. \( \Delta p = 4 \, \text{psi} \)

The capacity table is based on nominal condition
(pressure drop \( \Delta p = 3 \, \text{psi}, T_{\text{liq}} = 90 \, ^\circ F \))

Therefore the actual capacity must be corrected to
nominal condition by means of correction factors.

**Calculation example (R 717 capacities):**

**Correction factor for liquid temperature \( f_{T_{\text{liq}}} = 0.92 \)**

\[
Q_n = Q_o \times f_{\Delta p} \times f_{T_{\text{liq}}} = 250 \times 0.82 \times 0.92 = 189 \, \text{kW}
\]

From the capacity table a ICS 25-10 with \( Q_n \) capacity 366 kW is selected.
### Nominal capacities

#### LIQUID LINE WITH / WITHOUT PHASE CHANGE

#### SI units

Capacity table for nominal conditions, $Q_N$ [kW], $T_{liq} = 30 \, ^\circ C$, $\Delta P = 0.2$ bar

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$K_v$</th>
<th>Evaporating temperature ($^\circ C$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>-50</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>25</td>
<td>3.5</td>
<td>-40</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>6</td>
<td>6</td>
<td>-30</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>8</td>
<td>8</td>
<td>-20</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>11.5</td>
<td>11.5</td>
<td>-10</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>10</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44</td>
<td>20</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70</td>
<td>30</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>85</td>
<td>40</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142</td>
<td>50</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>207</td>
<td>60</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>-20</td>
</tr>
</tbody>
</table>

#### Correction factor for liquid temperature ($T_{liq}$)

<table>
<thead>
<tr>
<th>$T_{liq}$ [°C]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20</td>
<td>0.82</td>
</tr>
<tr>
<td>-10</td>
<td>0.86</td>
</tr>
<tr>
<td>0</td>
<td>0.88</td>
</tr>
<tr>
<td>10</td>
<td>0.92</td>
</tr>
<tr>
<td>20</td>
<td>0.96</td>
</tr>
<tr>
<td>30</td>
<td>1.00</td>
</tr>
<tr>
<td>40</td>
<td>1.04</td>
</tr>
<tr>
<td>50</td>
<td>1.09</td>
</tr>
</tbody>
</table>

#### Correction factor for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ [bar]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

---

#### US units

Capacity table for nominal conditions, $Q_N$ [Tons of Refrigeration], $T_{liq} = 90 \, ^\circ F$, $\Delta P = 3$ psi

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$C_v$</th>
<th>Evaporating temperature [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>41</td>
<td>4.1</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>7</td>
<td>7</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>9.3</td>
<td>9.3</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>13.3</td>
<td>13.3</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS32</td>
<td>20</td>
<td>20</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>40</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>50</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>65</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>80</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>100</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>125</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>150</td>
<td>-60°F</td>
</tr>
</tbody>
</table>

#### Correction factor for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ [psi]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

#### Correction factor for liquid temperature ($T_{liq}$)

<table>
<thead>
<tr>
<th>$T_{liq}$ [°F]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td>0.82</td>
</tr>
<tr>
<td>10</td>
<td>0.85</td>
</tr>
<tr>
<td>20</td>
<td>0.88</td>
</tr>
<tr>
<td>30</td>
<td>0.92</td>
</tr>
<tr>
<td>40</td>
<td>0.96</td>
</tr>
<tr>
<td>50</td>
<td>1.00</td>
</tr>
<tr>
<td>60</td>
<td>1.04</td>
</tr>
<tr>
<td>70</td>
<td>1.09</td>
</tr>
</tbody>
</table>
Nominal capacities

**SI units**

Capacity table for nominal conditions, $Q_n$ [kW], $T_{liq} = 10 ^\circ C$, $\Delta P = 0.2$ bar

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$K_v$ (m$^3$/h)</th>
<th>Evaporating temperature ($^\circ C$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>-40</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>3.5</td>
<td>84.0</td>
<td>-30</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>6</td>
<td>144</td>
<td>-20</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>8</td>
<td>193</td>
<td>0</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>11.5</td>
<td>277</td>
<td>10</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>0</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44</td>
<td>10</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70</td>
<td>20</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>85</td>
<td>30</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142</td>
<td>40</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>207</td>
<td>50</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>60</td>
</tr>
</tbody>
</table>

**US units**

Capacity table for nominal conditions, $Q_n$ [Tons of Refrigeration], $T_{liq} = 50 ^\circ F$, $\Delta P = 3$ psi

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$C_v$ (USgal/min)</th>
<th>Evaporating temperature [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>4.1</td>
<td>24.2</td>
<td>-40°F</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>7</td>
<td>41.5</td>
<td>-20°F</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>9.3</td>
<td>55.3</td>
<td>0°F</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>13.3</td>
<td>79.5</td>
<td>20°F</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>40°F</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>60°F</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td></td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td></td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td></td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td></td>
</tr>
</tbody>
</table>

**Correction factor for $\Delta P$ ($f_{\Delta P}$)**

<table>
<thead>
<tr>
<th>$\Delta P$ (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

**Correction factor for liquid temperature ($T_{liq}$)**

<table>
<thead>
<tr>
<th>Liquid temperature [°C]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20</td>
<td>0.52</td>
</tr>
<tr>
<td>-10</td>
<td>0.67</td>
</tr>
<tr>
<td>0</td>
<td>0.91</td>
</tr>
<tr>
<td>10</td>
<td>1.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Liquid temperature [°F]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20</td>
<td>0.48</td>
</tr>
<tr>
<td>-10</td>
<td>0.64</td>
</tr>
<tr>
<td>0</td>
<td>0.88</td>
</tr>
<tr>
<td>50</td>
<td>1.00</td>
</tr>
</tbody>
</table>
Nominal capacities

### SI units

Capacity table for nominal conditions, $Q_N$ [kW], $T_{\text{liq}} = 30 \, ^{\circ}\text{C}$, $\Delta P = 0.2$ bar

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$K_v$ [m³/h]</th>
<th>$E$ [kW]</th>
<th>$T_{\text{liq}} = 30 , ^{\circ}\text{C}$, $\Delta P = 0.2$ bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>30.0</td>
<td>32.0</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>3.5</td>
<td>62.0</td>
<td>65.0</td>
<td>68.0</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>6</td>
<td>107</td>
<td>112</td>
<td>117</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>8</td>
<td>142</td>
<td>149</td>
<td>156</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>11.5</td>
<td>205</td>
<td>214</td>
<td>224</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>303</td>
<td>317</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>481</td>
<td>503</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44</td>
<td>783</td>
<td>820</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70</td>
<td>124</td>
<td>1305</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>85</td>
<td>151</td>
<td>1585</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142</td>
<td>2525</td>
<td>2648</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>207</td>
<td>3680</td>
<td>3861</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>6294</td>
<td>6602</td>
</tr>
</tbody>
</table>

**Correction factor for $\Delta P$ ($f_{\Delta P}$)**

<table>
<thead>
<tr>
<th>$\Delta P$ (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

**Correction factor for liquid temperature ($T_{\text{liq}}$)**

<table>
<thead>
<tr>
<th>Liquid temperature [°C]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20</td>
<td>0.66</td>
</tr>
<tr>
<td>-10</td>
<td>0.70</td>
</tr>
<tr>
<td>0</td>
<td>0.76</td>
</tr>
<tr>
<td>10</td>
<td>0.82</td>
</tr>
<tr>
<td>20</td>
<td>0.90</td>
</tr>
<tr>
<td>30</td>
<td>1.00</td>
</tr>
<tr>
<td>40</td>
<td>1.13</td>
</tr>
<tr>
<td>50</td>
<td>1.29</td>
</tr>
</tbody>
</table>

### US units

Capacity table for nominal conditions, $Q_N$ [Tons of Refrigeration], $T_{\text{liq}} = 90$ °F, $\Delta P = 3$ psi

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$C_v$ [USgal/min]</th>
<th>$E$ [Ton]</th>
<th>Evaporating temperature [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>3.1</td>
<td>-40°F</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>4.1</td>
<td>17.5</td>
<td>18.4</td>
<td>-20°F</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>7</td>
<td>30.0</td>
<td>31.6</td>
<td>0°F</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>9.3</td>
<td>40.0</td>
<td>42.1</td>
<td>20°F</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>13.3</td>
<td>57.4</td>
<td>60.6</td>
<td>40°F</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>85</td>
<td>60°F</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>135</td>
<td>80°F</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>220</td>
<td>-10°F</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>350</td>
<td>0°F</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>421</td>
<td>10°F</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>709</td>
<td>20°F</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>1031</td>
<td>30°F</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>1761</td>
<td>40°F</td>
</tr>
</tbody>
</table>

**Correction factor for $\Delta P$ ($f_{\Delta P}$)**

<table>
<thead>
<tr>
<th>$\Delta P$ (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

**Correction factor for liquid temperature ($T_{\text{liq}}$)**

<table>
<thead>
<tr>
<th>Liquid temperature [°F]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td>0.66</td>
</tr>
<tr>
<td>10</td>
<td>0.68</td>
</tr>
<tr>
<td>30</td>
<td>0.74</td>
</tr>
<tr>
<td>50</td>
<td>0.81</td>
</tr>
<tr>
<td>70</td>
<td>0.89</td>
</tr>
<tr>
<td>90</td>
<td>1.00</td>
</tr>
<tr>
<td>110</td>
<td>1.15</td>
</tr>
<tr>
<td>130</td>
<td>1.35</td>
</tr>
</tbody>
</table>
## Nominal capacities

### SI units

Capacity table for nominal conditions, $Q_n$ [kW], $T_{liq} = 30 ^\circ C$, $\Delta P = 0.2$ bar

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$K_v$ (m³/h)</th>
<th>Evaporating temperature [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>19.6 21.0 22.3 23.7 25.0 26.1 27.3</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>10</td>
<td>3.5</td>
<td>40.3 43.0 46.0 49.0 51.3 54.0 56.0</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>15</td>
<td>6</td>
<td>69.0 74.0 79.0 84.0 88.0 92.0 96.0</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>20</td>
<td>8</td>
<td>92.0 99.0 105 111 117 123 128</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>25</td>
<td>11.5</td>
<td>133 142 151 160 169 177 185</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>196 210 223 237 249 261 274</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>311 333 354 375 396 415 432</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44</td>
<td>507 542 577 612 645 676 705</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70</td>
<td>806 863 918 973 1025 1077 1120</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>85</td>
<td>979 1049 1116 1184 1246 1307 1363</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142</td>
<td>1636 1752 1864 1978 2082 2183 2277</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>207</td>
<td>2385 2554 2717 2883 3035 3182 3319</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>4079 4367 4647 4931 5191 5442 5675</td>
</tr>
</tbody>
</table>

### Correction factor for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

### Correction factor for liquid temperature ($T_{liq}$)

<table>
<thead>
<tr>
<th>Liquid temperature [°C]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20</td>
<td>0.55</td>
</tr>
<tr>
<td>-10</td>
<td>0.60</td>
</tr>
<tr>
<td>0</td>
<td>0.66</td>
</tr>
<tr>
<td>10</td>
<td>0.74</td>
</tr>
<tr>
<td>20</td>
<td>0.85</td>
</tr>
<tr>
<td>30</td>
<td>1.00</td>
</tr>
<tr>
<td>40</td>
<td>1.23</td>
</tr>
<tr>
<td>50</td>
<td>1.68</td>
</tr>
</tbody>
</table>

## US units

Capacity table for nominal conditions, $Q_n$ [Tons of Refrigeration], $T_{liq} = 90 ^\circ F$, $\Delta P = 3$ psi

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$C_v$ (USgal/min)</th>
<th>Evaporating temperature [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>5</td>
<td>2</td>
<td>5.4 5.8 6.2 6.6 7.0 7.4 7.8</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>10</td>
<td>4.1</td>
<td>11.0 11.9 12.8 13.7 14.5 15.3 16.0</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>15</td>
<td>7</td>
<td>18.9 20.4 22.0 23.4 24.9 26.2 27.4</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>20</td>
<td>9.3</td>
<td>25.2 27.2 29.2 31.3 33.0 35.0 36.5</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>25</td>
<td>13.3</td>
<td>36.1 39.1 42.0 45.0 47.6 50.0 52.5</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>53.5 57.8 62.0 66.4 70.4 74.0 77.6</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>85.0 92.0 99.0 106 112 118 123</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>138 150 161 172 182 192 201</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>220 238 256 274 290 306 320</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>265 287 308 329 348 367 385</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>446 483 518 554 587 619 648</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>649 702 754 806 853 900 942</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>1109 1199 1288 1377 1458 1537 1609</td>
</tr>
</tbody>
</table>

### Correction factor for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

### Correction factor for liquid temperature ($T_{liq}$)

<table>
<thead>
<tr>
<th>Liquid temperature [°F]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td>0.52</td>
</tr>
<tr>
<td>10</td>
<td>0.57</td>
</tr>
<tr>
<td>30</td>
<td>0.63</td>
</tr>
<tr>
<td>50</td>
<td>0.72</td>
</tr>
<tr>
<td>70</td>
<td>0.83</td>
</tr>
<tr>
<td>90</td>
<td>1.00</td>
</tr>
<tr>
<td>110</td>
<td>1.29</td>
</tr>
<tr>
<td>130</td>
<td>1.92</td>
</tr>
</tbody>
</table>

© Danfoss | DCS (mwa) | 2018.10
### SL units

**Capacity table for nominal conditions, Qₙ [kW], Tₑₙ = 30°C, ΔP = 0.2 bar**

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>Kᵥ (m³/h)</th>
<th>-50</th>
<th>-40</th>
<th>-30</th>
<th>-20</th>
<th>-10</th>
<th>0</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>33.7</td>
<td>34.8</td>
<td>35.8</td>
<td>36.8</td>
<td>37.8</td>
<td>38.6</td>
<td>39.4</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>3.5</td>
<td>69.3</td>
<td>71.7</td>
<td>73.8</td>
<td>75.8</td>
<td>77.8</td>
<td>79.6</td>
<td>81.2</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>6</td>
<td>119</td>
<td>123</td>
<td>127</td>
<td>130</td>
<td>133</td>
<td>136</td>
<td>139</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>8</td>
<td>158</td>
<td>164</td>
<td>169</td>
<td>173</td>
<td>178</td>
<td>182</td>
<td>186</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>11.5</td>
<td>228</td>
<td>235</td>
<td>242</td>
<td>249</td>
<td>255</td>
<td>261</td>
<td>267</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>337</td>
<td>348</td>
<td>358</td>
<td>368</td>
<td>378</td>
<td>386</td>
<td>394</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>535</td>
<td>553</td>
<td>569</td>
<td>585</td>
<td>600</td>
<td>614</td>
<td>626</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44</td>
<td>871</td>
<td>901</td>
<td>928</td>
<td>953</td>
<td>977</td>
<td>1000</td>
<td>1021</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70</td>
<td>1386</td>
<td>1433</td>
<td>1476</td>
<td>1516</td>
<td>1555</td>
<td>1591</td>
<td>1624</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>85</td>
<td>1684</td>
<td>1741</td>
<td>1792</td>
<td>1841</td>
<td>1888</td>
<td>1931</td>
<td>1972</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142</td>
<td>2813</td>
<td>2908</td>
<td>2994</td>
<td>3075</td>
<td>3154</td>
<td>3226</td>
<td>3294</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>207</td>
<td>4100</td>
<td>4239</td>
<td>4365</td>
<td>4482</td>
<td>4598</td>
<td>4703</td>
<td>4802</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>7012</td>
<td>7249</td>
<td>7465</td>
<td>7665</td>
<td>7864</td>
<td>8042</td>
<td>8212</td>
</tr>
</tbody>
</table>

**Correction factor for ΔP (f₁ΔP)**

<table>
<thead>
<tr>
<th>ΔP (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

### US units

**Capacity table for nominal conditions, Qₙ [Tons of Refrigeration], Tₑₙ = 90°F, ΔP = 3 psi**

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>Cᵥ (USgal/min)</th>
<th>-60°F</th>
<th>-40°F</th>
<th>-20°F</th>
<th>0°F</th>
<th>20°F</th>
<th>40°F</th>
<th>60°F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>9.5</td>
<td>9.8</td>
<td>10.1</td>
<td>10.5</td>
<td>10.7</td>
<td>11.0</td>
<td>11.3</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>4.1</td>
<td>19.5</td>
<td>20.2</td>
<td>20.9</td>
<td>21.5</td>
<td>22.1</td>
<td>22.7</td>
<td>23.2</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>7</td>
<td>33.5</td>
<td>34.6</td>
<td>35.9</td>
<td>37.0</td>
<td>38.0</td>
<td>39.0</td>
<td>39.8</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>9.3</td>
<td>44.5</td>
<td>46.2</td>
<td>47.8</td>
<td>49.2</td>
<td>50.6</td>
<td>52.0</td>
<td>53.0</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>13.3</td>
<td>64.0</td>
<td>66.4</td>
<td>68.6</td>
<td>71.0</td>
<td>73.0</td>
<td>75.0</td>
<td>76.0</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>95.0</td>
<td>98.0</td>
<td>101</td>
<td>105</td>
<td>108</td>
<td>110</td>
<td>112</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>151</td>
<td>156</td>
<td>161</td>
<td>166</td>
<td>171</td>
<td>175</td>
<td>179</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>245</td>
<td>254</td>
<td>263</td>
<td>271</td>
<td>279</td>
<td>285</td>
<td>291</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>390</td>
<td>404</td>
<td>418</td>
<td>431</td>
<td>443</td>
<td>454</td>
<td>464</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>470</td>
<td>486</td>
<td>502</td>
<td>519</td>
<td>533</td>
<td>546</td>
<td>558</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>791</td>
<td>818</td>
<td>846</td>
<td>874</td>
<td>897</td>
<td>920</td>
<td>939</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>1150</td>
<td>1190</td>
<td>1230</td>
<td>1271</td>
<td>1305</td>
<td>1338</td>
<td>1366</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>1965</td>
<td>2033</td>
<td>2102</td>
<td>2171</td>
<td>2230</td>
<td>2286</td>
<td>2333</td>
</tr>
</tbody>
</table>

**Correction factor for ΔP (f₂ΔP)**

<table>
<thead>
<tr>
<th>ΔP (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

**Correction factor for liquid temperature (Tₑₙ)**

<table>
<thead>
<tr>
<th>Liquid temperature [°F]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td>0.73</td>
</tr>
<tr>
<td>10</td>
<td>0.77</td>
</tr>
<tr>
<td>30</td>
<td>0.82</td>
</tr>
<tr>
<td>50</td>
<td>0.87</td>
</tr>
<tr>
<td>70</td>
<td>0.93</td>
</tr>
<tr>
<td>90</td>
<td>1.00</td>
</tr>
<tr>
<td>110</td>
<td>1.09</td>
</tr>
<tr>
<td>130</td>
<td>1.20</td>
</tr>
</tbody>
</table>
Nominal capacities

Liquid line without phase change

Calculation example (R 717 capacities):
Running conditions in a plant are as follows:

\[
\begin{align*}
T_e &= -20 \, ^\circ C \\
Q_o &= 180 \, kW \\
\text{Circulation rate} &= 3 \\
\text{Max. } \Delta p &= 0.3 \, \text{bar}
\end{align*}
\]

The capacity table is based on nominal condition (pressure drop $\Delta p = 0.2 \, \text{bar}$, circulation rate $= 4$)

Therefore the actual capacity must be corrected to nominal condition by means of correction factors.

Correction factor for $\Delta p$ 0.3 bar $f_{\Delta p} = 0.82$
Correction factor for circulation rate $f_{rec} = 0.75$

\[
Q_n = Q_o \times f_{\Delta p} \times f_{rec} = 180 \times 0.82 \times 0.75 = 111 \, kW
\]

From the capacity table a ICS 25-10 with $Q_n$ capacity 117 kW is selected.

Calculation example (R 717 capacities):
Running conditions in a plant are as follows:

\[
\begin{align*}
T_e &= -20 \, ^\circ F \\
Q_o &= 130 \, \text{TR} \\
\text{Circulation rate} &= 3 \\
\text{Max. } \Delta p &= 4 \, \text{psi}
\end{align*}
\]

The capacity table is based on nominal condition (pressure drop $\Delta p = 3 \, \text{psi}$, circulation rate $= 4$)

Therefore the actual capacity must be corrected to nominal condition by means of correction factors.

Correction factor for $\Delta p$ 4 psi $f_{\Delta p} = 0.87$
Correction factor for circulation rate $f_{rec} = 0.75$

\[
Q_n = Q_o \times f_{\Delta p} \times f_{rec} = 130 \times 0.87 \times 0.75 = 85 \, \text{TR}
\]

From the capacity table a ICS 25 with $Q_n$ capacity 114 TR is selected.
## Nominal capacities

### SI units

Capacity table for nominal conditions, $Q_n$ [kW], circulation rate = 4, $\Delta P = 0.2$ bar

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$K_v$ ((m^3/h))</th>
<th>-50</th>
<th>-40</th>
<th>-30</th>
<th>-20</th>
<th>-10</th>
<th>0</th>
<th>10</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>63.0</td>
<td>61.0</td>
<td>59.0</td>
<td>56.6</td>
<td>55.0</td>
<td>52.5</td>
<td>50.3</td>
<td>48.0</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>3.5</td>
<td>128</td>
<td>124</td>
<td>121</td>
<td>117</td>
<td>112</td>
<td>108</td>
<td>104</td>
<td>99.0</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>6</td>
<td>219</td>
<td>213</td>
<td>207</td>
<td>200</td>
<td>193</td>
<td>185</td>
<td>178</td>
<td>169</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>8</td>
<td>292</td>
<td>284</td>
<td>276</td>
<td>266</td>
<td>257</td>
<td>247</td>
<td>237</td>
<td>226</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>11.5</td>
<td>419</td>
<td>408</td>
<td>396</td>
<td>383</td>
<td>369</td>
<td>355</td>
<td>340</td>
<td>325</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>620</td>
<td>603</td>
<td>585</td>
<td>566</td>
<td>546</td>
<td>525</td>
<td>503</td>
<td>480</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>985</td>
<td>959</td>
<td>930</td>
<td>900</td>
<td>868</td>
<td>833</td>
<td>798</td>
<td>761</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44</td>
<td>1605</td>
<td>1560</td>
<td>1515</td>
<td>1465</td>
<td>1413</td>
<td>1360</td>
<td>1300</td>
<td>1242</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70</td>
<td>2550</td>
<td>2485</td>
<td>2410</td>
<td>2330</td>
<td>2248</td>
<td>2160</td>
<td>2070</td>
<td>1976</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>85</td>
<td>3106</td>
<td>3020</td>
<td>2932</td>
<td>2832</td>
<td>2732</td>
<td>2624</td>
<td>2516</td>
<td>2400</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142</td>
<td>5190</td>
<td>5045</td>
<td>4898</td>
<td>4730</td>
<td>4563</td>
<td>4383</td>
<td>4204</td>
<td>4009</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>207</td>
<td>7565</td>
<td>7354</td>
<td>7140</td>
<td>6896</td>
<td>6652</td>
<td>6390</td>
<td>6128</td>
<td>5844</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>12938</td>
<td>12576</td>
<td>12210</td>
<td>11793</td>
<td>11376</td>
<td>10928</td>
<td>10479</td>
<td>9994</td>
</tr>
</tbody>
</table>

###液相线无相变

---

## US units

Capacity table for nominal conditions, $Q_n$ [Tons of Refrigeration], circulation rate = 4, $\Delta P = 3$ psi

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$C_v$ ((USgal/min))</th>
<th>-60°F</th>
<th>-40°F</th>
<th>-20°F</th>
<th>0°F</th>
<th>20°F</th>
<th>40°F</th>
<th>60°F</th>
<th>80°F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>18.0</td>
<td>17.4</td>
<td>16.9</td>
<td>16.2</td>
<td>15.6</td>
<td>14.9</td>
<td>14.2</td>
<td>13.4</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>4.1</td>
<td>37.0</td>
<td>35.9</td>
<td>34.7</td>
<td>33.4</td>
<td>32.0</td>
<td>30.6</td>
<td>29.6</td>
<td>27.6</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>7</td>
<td>63.4</td>
<td>61.3</td>
<td>59.4</td>
<td>57.3</td>
<td>55.0</td>
<td>52.3</td>
<td>50.0</td>
<td>47.3</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>9.3</td>
<td>84.5</td>
<td>82.0</td>
<td>79.3</td>
<td>76.3</td>
<td>73.3</td>
<td>70.0</td>
<td>66.6</td>
<td>63.0</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>13.3</td>
<td>122</td>
<td>118</td>
<td>114</td>
<td>110</td>
<td>105</td>
<td>102</td>
<td>95.7</td>
<td>91.0</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>180</td>
<td>174</td>
<td>169</td>
<td>162</td>
<td>156</td>
<td>149</td>
<td>142</td>
<td>134</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>285</td>
<td>276</td>
<td>267</td>
<td>258</td>
<td>247</td>
<td>236</td>
<td>225</td>
<td>213</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>465</td>
<td>451</td>
<td>436</td>
<td>420</td>
<td>403</td>
<td>385</td>
<td>366</td>
<td>347</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>740</td>
<td>717</td>
<td>709</td>
<td>694</td>
<td>681</td>
<td>641</td>
<td>613</td>
<td>583</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>891</td>
<td>863</td>
<td>835</td>
<td>804</td>
<td>771</td>
<td>738</td>
<td>703</td>
<td>664</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>1499</td>
<td>1453</td>
<td>1406</td>
<td>1353</td>
<td>1298</td>
<td>1243</td>
<td>1183</td>
<td>1118</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>2181</td>
<td>2113</td>
<td>2045</td>
<td>1968</td>
<td>1889</td>
<td>1808</td>
<td>1721</td>
<td>1627</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>3726</td>
<td>3609</td>
<td>3493</td>
<td>3363</td>
<td>3226</td>
<td>3088</td>
<td>2941</td>
<td>2779</td>
</tr>
</tbody>
</table>

### Correction factor for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

### Correction factor for circulation rate ($f_{rec}$)

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>3</td>
<td>0.75</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>1.5</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>2.5</td>
</tr>
</tbody>
</table>
### Nominal capacities

#### SI units

Capacity table for nominal conditions, $Q_n$ [kW], circulation rate = 4, $\Delta P = 0.2$ bar

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$K_v$ (m³/h)</th>
<th>Evaporating temperature [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>19.0  18.0  16.6  15.2  13.6  12.0  9.8  7.1</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>3.5</td>
<td>39.3  37.0  34.2  31.3  28.0  24.4  20.0  14.7</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>6.0</td>
<td>68.0  63.0  59.0  54.0  48.0  42.0  36.0  25.0</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>8.0</td>
<td>90.0  85.0  78.0  72.0  64.0  56.0  46.0  34.0</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>11.5</td>
<td>129   121   112   103   92.0  80.0  66.0  48.0</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>191   179   166   152   136   120   98    72</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>303   285   264   241   216   188   155   113</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44</td>
<td>494   464   430   393   352   306   252   185</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70</td>
<td>787   738   685   626   560   487   401   294</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>85</td>
<td>955   897   831   761   680   593   490   357</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142</td>
<td>1596  1499  1388  1271  1136  991   819   596</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>207</td>
<td>2326  2185  2023  1853  1656  1444  1194  869</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>3978  3736  3460  3170  2832  2470  2043  1486</td>
</tr>
</tbody>
</table>

#### Correction factors for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.96</td>
</tr>
<tr>
<td>0.3</td>
<td>0.92</td>
</tr>
<tr>
<td>0.4</td>
<td>0.86</td>
</tr>
<tr>
<td>0.5</td>
<td>0.80</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

#### Correction factor for circulation rate ($f_{\text{circ}}$)

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>3</td>
<td>0.75</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>1.5</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>2.5</td>
</tr>
</tbody>
</table>

#### US units

Capacity table for nominal conditions, $Q_n$ [Tons of Refrigeration], circulation rate = 4, $\Delta P = 3$ psi

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$C_v$ (UGal/min)</th>
<th>Evaporating temperature [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>5.6  5.8  4.8  4.3  3.8  3.2  2.4  1.4</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>4.1</td>
<td>11.4 10.7 9.8  8.8  7.8  6.5  5.0  2.8</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>7</td>
<td>19.6 18.3 16.8 15.2 13.3 11.2 8.6  4.8</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>9.3</td>
<td>26.1 24.4 22.4 20.2 17.7 14.9 11.4 6.3</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>13.3</td>
<td>37.6 35.0 32.2 29.0 25.5 21.4 16.4 9.1</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>55.5 51.8 47.6 43.0 37.7 31.6 24.2 13.5</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>88.0 82.0 75.5 68.0 60.0 50.2 38.5 21.4</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>144  134 123  111  98.0 82.0 62.7 35.0</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>229  213 196  177  155 130 100  55.4</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>275  260 236  213 187 157 120  67.0</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>463  438 397  358 315 264 202 113</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>674  637 578  521 458 384 294 164</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>1152 1087 987  889 783 656 502 281</td>
</tr>
</tbody>
</table>

#### Correction factors for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

#### Correction factor for circulation rate ($f_{\text{circ}}$)

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>3</td>
<td>0.75</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>1.5</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>2.5</td>
</tr>
</tbody>
</table>
### Nominal capacities

#### SI units

Capacity table for nominal conditions, \( Q_N \) [\( \text{kW} \)], circulation rate = 4, \( \Delta P = 0.2 \text{ bar} \)

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>( K_v ) (( \text{m}^3/\text{h} ))</th>
<th>Liquid line without phase change</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>14.0 13.5 13.0 12.4 11.9 11.2 10.6</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>3.5</td>
<td>28.9 27.8 26.8 25.6 24.4 23.2 21.8</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>6</td>
<td>49.5 47.7 45.9 43.9 41.8 39.7 37.4</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>8</td>
<td>65.9 63.5 61.1 58.5 55.8 52.9 49.8</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>11.5</td>
<td>94.8 91.3 87.9 84.1 80.2 76.1 71.6</td>
</tr>
<tr>
<td>ICS32</td>
<td></td>
<td>32</td>
<td>17 140 135 130 124 119 112 106</td>
</tr>
<tr>
<td>ICS40</td>
<td></td>
<td>40</td>
<td>27 223 214 206 197 188 179 168</td>
</tr>
<tr>
<td>ICS50</td>
<td></td>
<td>50</td>
<td>44 363 349 336 322 307 291 274</td>
</tr>
<tr>
<td>ICS65</td>
<td></td>
<td>65</td>
<td>70 577 556 535 512 488 463 436</td>
</tr>
<tr>
<td>ICS80</td>
<td></td>
<td>80</td>
<td>85 701 675 650 621 593 562 529</td>
</tr>
<tr>
<td>ICS100</td>
<td></td>
<td>100</td>
<td>1171 1127 1085 1038 991 939 885</td>
</tr>
<tr>
<td>ICS125</td>
<td></td>
<td>125</td>
<td>207 1707 1643 1582 1513 1444 1369 1289</td>
</tr>
<tr>
<td>ICS150</td>
<td></td>
<td>150</td>
<td>354 2919 2810 2706 2587 2470 2341 2205</td>
</tr>
</tbody>
</table>

#### Correction factor for \( \Delta P \) (\( f_{\Delta P} \))

<table>
<thead>
<tr>
<th>( \Delta P ) (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

#### Correction factor for circulation rate (\( f_{\text{circ}} \))

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>3</td>
<td>0.75</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>1.5</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>2.5</td>
</tr>
</tbody>
</table>

### US units

Capacity table for nominal conditions, \( Q_N \) [\( \text{Tons of Refrigeration} \)], circulation rate = 4, \( \Delta P = 3 \text{ psi} \)

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>( C_v ) (USgal/min)</th>
<th>Evaporating temperature [( \text{°F} )]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>4.1 4.0 3.8 3.6 3.4 3.2 3.0</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>4.1</td>
<td>8.5 8.1 7.7 7.4 7.0 6.6 6.1</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>7</td>
<td>14.4 13.8 13.2 12.6 11.9 11.2 10.4</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>9.3</td>
<td>19.2 18.4 17.6 16.7 15.8 14.9 13.8</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>13.3</td>
<td>27.4 26.3 25.1 23.9 22.7 21.3 19.8</td>
</tr>
<tr>
<td>ICS32</td>
<td></td>
<td>32</td>
<td>20 39.5 35.9 37.8 35.9 34.1 32.0 29.8</td>
</tr>
<tr>
<td>ICS40</td>
<td></td>
<td>40</td>
<td>31 63.9 61.2 58.6 55.7 52.8 49.6 46.1</td>
</tr>
<tr>
<td>ICS50</td>
<td></td>
<td>50</td>
<td>54 101 96.3 91.6 86.9 81.5 75.9</td>
</tr>
<tr>
<td>ICS65</td>
<td></td>
<td>65</td>
<td>81 167 160 153 146 138 130 121</td>
</tr>
<tr>
<td>ICS80</td>
<td></td>
<td>80</td>
<td>86 194 185 176 167 157 146 136</td>
</tr>
<tr>
<td>ICS100</td>
<td></td>
<td>100</td>
<td>165 326 312 297 281 264 246 229</td>
</tr>
<tr>
<td>ICS125</td>
<td></td>
<td>125</td>
<td>240 475 453 432 409 384 357 332</td>
</tr>
<tr>
<td>ICS150</td>
<td></td>
<td>150</td>
<td>410 811 774 737 698 657 611 580</td>
</tr>
</tbody>
</table>

#### Correction factor for \( \Delta P \) (\( f_{\Delta P} \))

<table>
<thead>
<tr>
<th>( \Delta P ) (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

#### Correction factor for circulation rate (\( f_{\text{circ}} \))

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>3</td>
<td>0.75</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>1.5</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>2.5</td>
</tr>
</tbody>
</table>
### Nominal capacities

#### SI units

Capacity table for nominal conditions, $Q$, [kW], circulation rate = 4, $\Delta P = 0.2$ bar

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$K_v$ (m³/h)</th>
<th>Evaporating temperature [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>-50</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>10</td>
<td>3.5</td>
<td>12.4</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>15</td>
<td>6</td>
<td>44.0</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>20</td>
<td>8</td>
<td>58.0</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>25</td>
<td>11.5</td>
<td>84.0</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>124</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>196</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44</td>
<td>320</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70</td>
<td>509</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>85</td>
<td>619</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142</td>
<td>1034</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>207</td>
<td>1507</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>2578</td>
</tr>
</tbody>
</table>

#### Correction factor for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

#### Correction factor for circulation rate ($f_{rec}$)

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>3</td>
<td>0.75</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>1.5</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>2.5</td>
</tr>
</tbody>
</table>

### US units

Capacity table for nominal conditions, $Q$, [Tons of Refrigeration], circulation rate = 4, $\Delta P = 3$ psi

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$C_v$ (USgal/min)</th>
<th>Evaporating temperature [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>10</td>
<td>4.1</td>
<td>3.6</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>15</td>
<td>7</td>
<td>7.5</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>20</td>
<td>9.3</td>
<td>12.5</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>25</td>
<td>13.3</td>
<td>16.9</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>35.8</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>57.0</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>93.0</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>147</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>177</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>299</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>435</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>742</td>
</tr>
</tbody>
</table>

#### Correction factor for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

#### Correction factor for circulation rate ($f_{rec}$)

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>3</td>
<td>0.75</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>1.5</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>2.5</td>
</tr>
</tbody>
</table>
### Nominal capacities

#### SI units

Capacity table for nominal conditions, $Q_n$ [kW], circulation rate = 4, $\Delta P = 0.2$ bar

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$K_v$ (m³/h)</th>
<th>$Q_n$ [kW]</th>
<th>Evaporating temperature [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>15.1</td>
<td>-50</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>3.5</td>
<td>31.2</td>
<td>30.1</td>
<td>-40</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>6</td>
<td>53.4</td>
<td>49.7</td>
<td>-30</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>8</td>
<td>71.2</td>
<td>68.8</td>
<td>-20</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>11.5</td>
<td>102</td>
<td>98.9</td>
<td>-10</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>151</td>
<td>0</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>240</td>
<td>232</td>
<td>10</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>392</td>
<td>378</td>
<td>20</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>623</td>
<td>602</td>
<td>30</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>756</td>
<td>731</td>
<td>40</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>1263</td>
<td>1221</td>
<td>50</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>1841</td>
<td>1779</td>
<td>60</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>3148</td>
<td>70</td>
</tr>
</tbody>
</table>

#### Liquid line without phase change

Correction factor for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.90</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

Correction factor for circulation rate ($f_{circ}$)

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>3</td>
<td>0.75</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>1.5</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>2.5</td>
</tr>
</tbody>
</table>

#### US units

Capacity table for nominal conditions, $Q_n$ [Tons of Refrigeration], circulation rate = 4, $\Delta P = 3$ psi

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$C_v$ (USgal/min)</th>
<th>$Q_n$ [Tons of Refrigeration]</th>
<th>Evaporating temperature [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>4.4</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>4.1</td>
<td>9.0</td>
<td>4.2</td>
<td>-40°F</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>7</td>
<td>15.5</td>
<td>4.1</td>
<td>-20°F</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>9.3</td>
<td>20.6</td>
<td>4.1</td>
<td>0°F</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>13.3</td>
<td>29.7</td>
<td>4.1</td>
<td>10°F</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>44.0</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>70.0</td>
<td>-40°F</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>114</td>
<td>-20°F</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>181</td>
<td>0°F</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>218</td>
<td>10°F</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>366</td>
<td>20°F</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>533</td>
<td>30°F</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>910</td>
<td>40°F</td>
</tr>
</tbody>
</table>

Correction factor for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

Correction factor for circulation rate ($f_{circ}$)

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>3</td>
<td>0.75</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>1.5</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>2.5</td>
</tr>
</tbody>
</table>
Nominal capacities

Wet suction line

Location of valve in system (marked with grey)

Hot gas bypass & defrost line

Dry suction line

Discharge line

Gravity

Location of valve in system (marked with grey)

Hot gas bypass & defrost line

Dry suction line

Discharge line

Gravity

Liquid line without phase change

Liquid line with or without phase change
**Nominal capacities**

**SI units**

Calculation example (R 717 capacities):

An application has following running conditions:

\[ T_e = -20 \, ^\circ C \]
\[ Q_o = 80 \, kW \]
\[ \text{Circulation rate} = 3 \]
\[ \text{Max. } \Delta p = 0.3 \, \text{bar} \]

The capacity table is based on nominal condition (pressure drop \( \Delta p = 0.2 \, \text{bar} \), circulation rate = 4)

Therefore the actual capacity must be corrected to nominal condition by means of correction factors.

**US units**

Calculation example (R 717 capacities):

An application has following running conditions:

\[ T_e = -20 \, ^\circ F \]
\[ Q_o = 8 \, \text{TR} \]
\[ \text{Circulation rate} = 3 \]
\[ \text{Max. } \Delta p = 4 \, \text{psi} \]

The capacity table is based on nominal condition (pressure drop \( \Delta p = 3 \, \text{psi} \), circulation rate = 4)

Therefore the actual capacity must be corrected to nominal condition by means of correction factors.

**Wet suction line**

Correction factor for \( \Delta p \) 0.3 bar \( f_{\Delta p} = 0.82 \)
Correction factor for circulation rate \( f_{\text{rec}} = 0.9 \)

\[ Q_n = Q_o \times f_{\Delta p} \times f_{\text{rec}} = 80 \times 0.82 \times 0.9 = 59 \, kW \]

From the capacity table a ICS 32 with \( Q_n \) capacity 60 kW is selected.

Correction factor for \( \Delta p \) 4 psi, \( f_{\Delta p} = 0.87 \)
Correction factor for circulation rate \( f_{\text{rec}} = 0.9 \)

\[ Q_n = Q_o \times f_{\Delta p} \times f_{\text{rec}} = 8 \times 0.87 \times 0.9 = 6.3 \, \text{TR} \]

From the capacity table a ICS 25-20 with \( Q_n \) capacity 6.8 TR is selected.
### Nominal capacities

#### SI units

Capacity table for nominal conditions, $Q_n$ [kW], circulation rate = 4, $\Delta P = 0.2$ bar

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$K_v$ (m³/h)</th>
<th>Evaporating temperature (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>-50</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>3.3</td>
<td>-40</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>6</td>
<td>-30</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>8</td>
<td>-20</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>11.5</td>
<td>-10</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>10</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44</td>
<td>20</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70</td>
<td>30</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>85</td>
<td>40</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142</td>
<td>50</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>207</td>
<td>60</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>70</td>
</tr>
</tbody>
</table>

#### Correction factor for $\Delta P (f_{\Delta P})$

<table>
<thead>
<tr>
<th>$\Delta P$ (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

#### Correction factor for circulation rate ($f_{rec}$)

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.77</td>
</tr>
<tr>
<td>3</td>
<td>0.90</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>1.13</td>
</tr>
<tr>
<td>8</td>
<td>1.20</td>
</tr>
<tr>
<td>10</td>
<td>1.25</td>
</tr>
</tbody>
</table>

#### US units

Capacity table for nominal conditions, $Q_n$ [Tons of Refrigeration], circulation rate = 4, $\Delta P = 3$ psi

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$C_v$ (USgal/min)</th>
<th>Evaporating temperature [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>4.1</td>
<td>-50°F</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>7</td>
<td>-40°F</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>9.3</td>
<td>-30°F</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>13.3</td>
<td>-20°F</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>-10°F</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>0°F</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>10°F</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>20°F</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>30°F</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>40°F</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>50°F</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>60°F</td>
</tr>
</tbody>
</table>

#### Correction factor for $\Delta P (f_{\Delta P})$

<table>
<thead>
<tr>
<th>$\Delta P$ (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

#### Correction factor for circulation rate ($f_{rec}$)

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.77</td>
</tr>
<tr>
<td>3</td>
<td>0.90</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>1.13</td>
</tr>
<tr>
<td>8</td>
<td>1.20</td>
</tr>
<tr>
<td>10</td>
<td>1.25</td>
</tr>
</tbody>
</table>
## Nominal capacities

### Wet suction line

**R 744**

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$K_v$ (m³/h)</th>
<th>Evaporating temperature [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>6.7</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>20</td>
<td>3.5</td>
<td>10.7</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>15</td>
<td>6</td>
<td>18.3</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>10</td>
<td>8</td>
<td>24.4</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>5</td>
<td>11.5</td>
<td>35.0</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>52.0</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>82.0</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44</td>
<td>134</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70</td>
<td>213</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>85</td>
<td>259</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142</td>
<td>433</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>207</td>
<td>631</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>1079</td>
</tr>
</tbody>
</table>

**Correction factor for $\Delta P$ ($f_{\Delta P}$)**

<table>
<thead>
<tr>
<th>$\Delta P$ (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

**Correction factor for circulation rate ($f_{rec}$)**

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.77</td>
</tr>
<tr>
<td>3</td>
<td>0.90</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>1.13</td>
</tr>
<tr>
<td>8</td>
<td>1.20</td>
</tr>
<tr>
<td>10</td>
<td>1.25</td>
</tr>
</tbody>
</table>

**R 744**

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$K_v$ (USgal/min)</th>
<th>Evaporating temperature [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>10</td>
<td>4.1</td>
<td>-40°F</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>15</td>
<td>7</td>
<td>-20°F</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>20</td>
<td>9.3</td>
<td>0°F</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>25</td>
<td>13.3</td>
<td>20°F</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>60°F</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>80°F</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>100°F</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>51</td>
<td>120°F</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>81</td>
<td>140°F</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>98</td>
<td>160°F</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>145</td>
<td>180°F</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>200°F</td>
</tr>
</tbody>
</table>

**Correction factor for $\Delta P$ ($f_{\Delta P}$)**

<table>
<thead>
<tr>
<th>$\Delta P$ (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

**Correction factor for circulation rate ($f_{rec}$)**

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.77</td>
</tr>
<tr>
<td>3</td>
<td>0.90</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>1.13</td>
</tr>
<tr>
<td>8</td>
<td>1.20</td>
</tr>
<tr>
<td>10</td>
<td>1.25</td>
</tr>
</tbody>
</table>
### Nominal capacities

#### SI units

Capacity table for nominal conditions, $Q_n$ [kW], circulation rate = 4, $\Delta P = 0.2$ bar

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$K_v$</th>
<th>$Q_n$ [kW]</th>
<th>$\Delta P$ (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>1.1</td>
<td>-40</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>3.5</td>
<td>2.3</td>
<td>-30</td>
<td>1.1</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>6.0</td>
<td>5.5</td>
<td>-20</td>
<td>1.6</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>8.0</td>
<td>7.3</td>
<td>-10</td>
<td>1.9</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>11.5</td>
<td>7.7</td>
<td>0</td>
<td>2.0</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17.0</td>
<td>11.4</td>
<td>20</td>
<td>1.3</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>18.1</td>
<td>30</td>
<td>1.5</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44</td>
<td>29.5</td>
<td>40</td>
<td>1.7</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70</td>
<td>47.0</td>
<td>50</td>
<td>1.9</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>85</td>
<td>57</td>
<td>60</td>
<td>2.0</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142</td>
<td>95</td>
<td>70</td>
<td>2.2</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>207</td>
<td>138</td>
<td>80</td>
<td>2.4</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>236</td>
<td>100</td>
<td>2.6</td>
</tr>
</tbody>
</table>

#### Correction factor for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

#### Correction factor for circulation rate ($f_{rec}$)

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.77</td>
</tr>
<tr>
<td>3</td>
<td>0.90</td>
</tr>
<tr>
<td>4</td>
<td>1.00</td>
</tr>
<tr>
<td>6</td>
<td>1.13</td>
</tr>
<tr>
<td>8</td>
<td>1.20</td>
</tr>
<tr>
<td>10</td>
<td>1.25</td>
</tr>
</tbody>
</table>

### Wet suction line

#### R 134a

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$K_v$</th>
<th>$Q_n$ [USgal/min]</th>
<th>$\Delta P$ (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2.0</td>
<td>0.3</td>
<td>2</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>4.1</td>
<td>0.8</td>
<td>4</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>7.0</td>
<td>1.6</td>
<td>6</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>9.3</td>
<td>2.2</td>
<td>8</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>13.3</td>
<td>3.1</td>
<td>10</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>3.0</td>
<td>12</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>4.6</td>
<td>14</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>7.6</td>
<td>16</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>12.1</td>
<td>18</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>15</td>
<td>20</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>25</td>
<td>22</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>36</td>
<td>24</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>61</td>
<td>26</td>
<td>1.00</td>
</tr>
</tbody>
</table>

#### Correction factor for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

#### Correction factor for circulation rate ($f_{rec}$)

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.77</td>
</tr>
<tr>
<td>3</td>
<td>0.90</td>
</tr>
<tr>
<td>4</td>
<td>1.00</td>
</tr>
<tr>
<td>6</td>
<td>1.13</td>
</tr>
<tr>
<td>8</td>
<td>1.20</td>
</tr>
<tr>
<td>10</td>
<td>1.25</td>
</tr>
</tbody>
</table>

#### R 134a

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$K_v$</th>
<th>$Q_n$ [USgal/min]</th>
<th>$\Delta P$ (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2.0</td>
<td>0.3</td>
<td>2</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>4.1</td>
<td>0.8</td>
<td>4</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>7.0</td>
<td>1.6</td>
<td>6</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>9.3</td>
<td>2.2</td>
<td>8</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>13.3</td>
<td>3.1</td>
<td>10</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>3.0</td>
<td>12</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>4.6</td>
<td>14</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>7.6</td>
<td>16</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>12.1</td>
<td>18</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>15</td>
<td>20</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>25</td>
<td>22</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>36</td>
<td>24</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>61</td>
<td>26</td>
<td>1.00</td>
</tr>
</tbody>
</table>

#### Correction factor for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

#### Correction factor for circulation rate ($f_{rec}$)

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.77</td>
</tr>
<tr>
<td>3</td>
<td>0.90</td>
</tr>
<tr>
<td>4</td>
<td>1.00</td>
</tr>
<tr>
<td>6</td>
<td>1.13</td>
</tr>
<tr>
<td>8</td>
<td>1.20</td>
</tr>
<tr>
<td>10</td>
<td>1.25</td>
</tr>
</tbody>
</table>
## Nominal capacities

### SI units

Capacity table for nominal conditions, $Q_n$ [kW], circulation rate = 4, $\Delta P = 0.2$ bar

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$K_v$ (m³/h)</th>
<th>$P = 0.2$ bar</th>
<th>$0.5$</th>
<th>$0.6$</th>
<th>$0.7$</th>
<th>$0.8$</th>
<th>$0.9$</th>
<th>$1.0$</th>
<th>$1.1$</th>
<th>$1.2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>1.5</td>
<td>1.9</td>
<td>2.2</td>
<td>2.6</td>
<td>3.0</td>
<td>3.3</td>
<td>3.7</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>ICS25-10</td>
<td>25</td>
<td>3.5</td>
<td>3.0</td>
<td>3.8</td>
<td>4.5</td>
<td>5.3</td>
<td>6.1</td>
<td>6.9</td>
<td>7.8</td>
<td>8.2</td>
<td></td>
</tr>
<tr>
<td>ICS25-15</td>
<td>25</td>
<td>6.0</td>
<td>5.2</td>
<td>6.5</td>
<td>7.8</td>
<td>9.1</td>
<td>10.4</td>
<td>11.7</td>
<td>13.0</td>
<td>14.0</td>
<td></td>
</tr>
<tr>
<td>ICS25-20</td>
<td>25</td>
<td>8.0</td>
<td>6.9</td>
<td>8.7</td>
<td>10.4</td>
<td>12.2</td>
<td>14.0</td>
<td>15.7</td>
<td>17.3</td>
<td>18.8</td>
<td></td>
</tr>
<tr>
<td>ICS25-25</td>
<td>25</td>
<td>11.5</td>
<td>10.0</td>
<td>12.5</td>
<td>15.0</td>
<td>17.5</td>
<td>20.0</td>
<td>22.6</td>
<td>25.0</td>
<td>27.0</td>
<td></td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>14.7</td>
<td>18.5</td>
<td>22.0</td>
<td>26.0</td>
<td>29.7</td>
<td>33.2</td>
<td>37.0</td>
<td>40.0</td>
<td></td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>23.3</td>
<td>29.3</td>
<td>35.0</td>
<td>41.0</td>
<td>47.0</td>
<td>53.0</td>
<td>59.0</td>
<td>63.0</td>
<td></td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44</td>
<td>38.0</td>
<td>48.0</td>
<td>57.0</td>
<td>67.0</td>
<td>77.0</td>
<td>86.0</td>
<td>95.0</td>
<td>103.0</td>
<td></td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70</td>
<td>60.0</td>
<td>76.0</td>
<td>91.0</td>
<td>106</td>
<td>122</td>
<td>137</td>
<td>152</td>
<td>164.0</td>
<td></td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>85</td>
<td>74</td>
<td>93</td>
<td>110</td>
<td>129</td>
<td>148</td>
<td>166</td>
<td>185</td>
<td>199.0</td>
<td></td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142</td>
<td>123</td>
<td>155</td>
<td>184</td>
<td>216</td>
<td>248</td>
<td>278</td>
<td>308</td>
<td>333.0</td>
<td></td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>207</td>
<td>179</td>
<td>226</td>
<td>268</td>
<td>315</td>
<td>361</td>
<td>405</td>
<td>449</td>
<td>485.0</td>
<td></td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>306</td>
<td>386</td>
<td>459</td>
<td>539</td>
<td>618</td>
<td>693</td>
<td>769</td>
<td>830.0</td>
<td></td>
</tr>
</tbody>
</table>

### Correction factor for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

### Correction factor for circulation rate ($f_{circ}$)

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.77</td>
</tr>
<tr>
<td>3</td>
<td>0.90</td>
</tr>
<tr>
<td>4</td>
<td>1.00</td>
</tr>
</tbody>
</table>

### US units

Capacity table for nominal conditions, $Q_n$ [Tons of Refrigeration], circulation rate = 4, $\Delta P = 3$ psi

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$C_v$ (USgal/min)</th>
<th>$P = 3$ psi</th>
<th>$0$ °F</th>
<th>$10$ °F</th>
<th>$20$ °F</th>
<th>$30$ °F</th>
<th>$40$ °F</th>
<th>$50$ °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>0.4</td>
<td>0.5</td>
<td>0.7</td>
<td>0.9</td>
<td>1.0</td>
<td>1.1</td>
<td>1.2</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>25</td>
<td>4.1</td>
<td>0.8</td>
<td>1.1</td>
<td>1.3</td>
<td>1.6</td>
<td>1.8</td>
<td>2.1</td>
<td>2.3</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>25</td>
<td>7</td>
<td>1.4</td>
<td>1.9</td>
<td>2.3</td>
<td>2.7</td>
<td>3.2</td>
<td>3.6</td>
<td>3.9</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>25</td>
<td>9.3</td>
<td>1.9</td>
<td>2.5</td>
<td>3.1</td>
<td>3.6</td>
<td>4.2</td>
<td>4.8</td>
<td>5.3</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>25</td>
<td>13.3</td>
<td>2.8</td>
<td>3.6</td>
<td>4.4</td>
<td>5.2</td>
<td>6.0</td>
<td>6.8</td>
<td>7.5</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>4.1</td>
<td>5.3</td>
<td>6.5</td>
<td>7.7</td>
<td>8.9</td>
<td>10.1</td>
<td>11.1</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>6.5</td>
<td>8.5</td>
<td>10.3</td>
<td>12.2</td>
<td>14.2</td>
<td>16.0</td>
<td>17.7</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>10.6</td>
<td>13.8</td>
<td>16.8</td>
<td>19.9</td>
<td>23.0</td>
<td>26.0</td>
<td>29.0</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>16.9</td>
<td>22.0</td>
<td>26.7</td>
<td>31.7</td>
<td>36.7</td>
<td>41.5</td>
<td>46.0</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>20</td>
<td>26</td>
<td>32</td>
<td>38</td>
<td>44</td>
<td>50</td>
<td>55</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>34</td>
<td>44</td>
<td>55</td>
<td>64</td>
<td>74</td>
<td>84</td>
<td>93</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>49</td>
<td>64</td>
<td>79</td>
<td>94</td>
<td>108</td>
<td>123</td>
<td>135</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>84</td>
<td>110</td>
<td>136</td>
<td>160</td>
<td>185</td>
<td>209</td>
<td>231</td>
</tr>
</tbody>
</table>

### Correction factor for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

### Correction factor for circulation rate ($f_{circ}$)

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.77</td>
</tr>
<tr>
<td>3</td>
<td>0.90</td>
</tr>
<tr>
<td>4</td>
<td>1.00</td>
</tr>
<tr>
<td>6</td>
<td>1.13</td>
</tr>
<tr>
<td>8</td>
<td>1.20</td>
</tr>
<tr>
<td>10</td>
<td>1.25</td>
</tr>
</tbody>
</table>
## Nominal capacities

### SI units

Capacity table for nominal conditions, $Q$, [kW], circulation rate = 4, $\Delta P = 0.2$ bar

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$K_v$ (m³/h)</th>
<th>Evaporating temperature [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>-50 2.2 2.6 3.0 3.4 3.8 4.2</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>20</td>
<td>3.5</td>
<td>-40 3.7 4.6 5.4 6.2 7.0 7.9 8.7</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>15</td>
<td>6</td>
<td>-30 4.3 5.2 6.2 7.2 8.2 9.2 10.6 12.0 13.5 14.8</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>20</td>
<td>8</td>
<td>-20 4.8 5.8 6.8 7.8 8.8 9.8 10.6 11.6 12.6 13.6</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>25</td>
<td>11.5</td>
<td>-10 6.4 7.4 8.4 9.4 10.4 11.4 12.4 13.4 14.4 15.4</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>0 7.2 8.2 9.2 10.2 11.2 12.2 13.2 14.2 15.2 16.2</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>10 9.2 10.2 11.2 12.2 13.2 14.2 15.2 16.2 17.2 18.2</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44</td>
<td>15 13.6 14.6 15.6 16.6 17.6 18.6 19.6 20.6 21.6 22.6</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70</td>
<td>20 13.6 14.6 15.6 16.6 17.6 18.6 19.6 20.6 21.6 22.6</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>85</td>
<td>25 13.6 14.6 15.6 16.6 17.6 18.6 19.6 20.6 21.6 22.6</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142</td>
<td>30 13.6 14.6 15.6 16.6 17.6 18.6 19.6 20.6 21.6 22.6</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>207</td>
<td>35 13.6 14.6 15.6 16.6 17.6 18.6 19.6 20.6 21.6 22.6</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>40 13.6 14.6 15.6 16.6 17.6 18.6 19.6 20.6 21.6 22.6</td>
</tr>
</tbody>
</table>

### Correction factor for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

### Correction factor for circulation rate ($f_{circ}$)

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.77</td>
</tr>
<tr>
<td>3</td>
<td>0.90</td>
</tr>
<tr>
<td>4</td>
<td>1.13</td>
</tr>
<tr>
<td>6</td>
<td>1.20</td>
</tr>
<tr>
<td>8</td>
<td>1.25</td>
</tr>
</tbody>
</table>

## Wet suction line

### R 22

#### Capacity table for nominal conditions, $Q$, [Tons of Refrigeration], circulation rate = 4, $\Delta P = 3$ psi

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$C_r$ (USgal/min)</th>
<th>Evaporating temperature [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>-60°F 2.0 2.5 3.0 3.5 4.0 4.5</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>20</td>
<td>4.1</td>
<td>-50°F 2.5 3.0 3.5 4.0 4.5 5.0</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>15</td>
<td>7</td>
<td>-40°F 2.8 3.3 3.8 4.3 4.8 5.3</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>20</td>
<td>9.3</td>
<td>-30°F 2.4 2.9 3.4 3.9 4.4 4.9</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>25</td>
<td>13.3</td>
<td>-20°F 2.1 2.6 3.1 3.6 4.1 4.6</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>-10°F 1.8 2.3 2.8 3.3 3.8 4.3</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>0°F 1.5 2.0 2.5 3.0 3.5 4.0</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>10°F 1.2 1.7 2.2 2.7 3.2 3.7</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>20°F 1.0 1.5 2.0 2.5 3.0 3.5</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>30°F 0.8 1.3 1.8 2.3 2.8 3.3</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>40°F 0.6 1.1 1.6 2.1 2.6 3.1</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>50°F 0.4 0.9 1.4 1.9 2.4 2.9</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>60°F 0.2 0.7 1.2 1.7 2.2 2.7</td>
</tr>
</tbody>
</table>

### Correction factor for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

### Correction factor for circulation rate ($f_{circ}$)

<table>
<thead>
<tr>
<th>Circulation rate</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.77</td>
</tr>
<tr>
<td>3</td>
<td>0.90</td>
</tr>
<tr>
<td>4</td>
<td>1.13</td>
</tr>
<tr>
<td>6</td>
<td>1.20</td>
</tr>
<tr>
<td>8</td>
<td>1.25</td>
</tr>
</tbody>
</table>
Nominal capacities

Dry suction line

- Location of valve in system (marked with grey)
- Wet suction line
- Liquid line without phase change
- Liquid line with or without phase change

Pump

- Hot gas bypass & defrost line
- Discharge line
- Dry suction line

Gravity

- Hot gas bypass & defrost line
- Discharge line
- Liquid line without phase change
- Liquid line with or without phase change

DX

- Hot gas bypass & defrost line
- Discharge line
- Liquid line with or without phase change
**Nominal capacities**

### SI units

Calculation example (R 717 capacities):

An application has following running conditions:

\[
\begin{align*}
T_e &= -20 \, ^\circ\text{C} \\
Q_o &= 90 \, \text{kW} \\
T_{liq} &= 10 \, ^\circ\text{C} \\
\text{Max.} \, \Delta p &= 0.3 \, \text{bar}
\end{align*}
\]

The capacity table is based on nominal condition (pressure drop \( \Delta p = 0.2 \, \text{bar}, T_{liq} = 30 \, ^\circ\text{C} \))

Therefore the actual capacity must be corrected to nominal condition by means of correction factors.

### US units

Calculation example (R 717 capacities):

An application has following running conditions:

\[
\begin{align*}
T_e &= 0 \, ^\circ\text{F} \\
Q_o &= 20 \, \text{TR} \\
T_{liq} &= 50 \, ^\circ\text{F} \\
\text{Max.} \, \Delta p &= 4 \, \text{psi}
\end{align*}
\]

The capacity table is based on nominal condition (pressure drop \( \Delta p = 3 \, \text{psi}, T_{liq} = 90 \, ^\circ\text{F} \))

Therefore the actual capacity must be corrected to nominal condition by means of correction factors.
### Nominal capacities

#### SI units

Capacity table for nominal conditions, \( Q_n \) [kW], \( T_{in} = 30^\circ C \),
\( \Delta P = 0.2 \) bar
Superheating = 8°C

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>( K_s ) (m³/h)</th>
<th>Evaporating temperature [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>-50</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>3.5</td>
<td>-40</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>6</td>
<td>-30</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>8</td>
<td>-20</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>11.5</td>
<td>-10</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>10</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44</td>
<td>20</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70</td>
<td>30</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>85</td>
<td>40</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142</td>
<td>50</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>207</td>
<td>60</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>70</td>
</tr>
</tbody>
</table>

#### Correction factor for \( \Delta P \) (\( f_{\Delta P} \))

<table>
<thead>
<tr>
<th>( \Delta P ) (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

#### US units

Capacity table for nominal conditions, \( Q_n \) [Tons of Refrigeration],
\( T_{in} = 90^\circ F \),
\( \Delta P = 3 \) psi
Superheating = 12°F

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>( C_s ) (USgal/min)</th>
<th>Evaporating temperature [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>4.1</td>
<td>-40°F</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>7</td>
<td>-30°F</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>9.3</td>
<td>-20°F</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>13.3</td>
<td>-10°F</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>0°F</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>10°F</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>20°F</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>30°F</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>40°F</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>50°F</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>60°F</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>70°F</td>
</tr>
</tbody>
</table>

#### Correction factor for liquid temperature (\( T_{in} \))

<table>
<thead>
<tr>
<th>Liquid temperature [°F]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td>0.82</td>
</tr>
<tr>
<td>-10</td>
<td>0.86</td>
</tr>
<tr>
<td>0</td>
<td>0.88</td>
</tr>
<tr>
<td>10</td>
<td>0.92</td>
</tr>
<tr>
<td>20</td>
<td>0.96</td>
</tr>
<tr>
<td>30</td>
<td>1.00</td>
</tr>
<tr>
<td>40</td>
<td>1.04</td>
</tr>
<tr>
<td>50</td>
<td>1.09</td>
</tr>
</tbody>
</table>

#### Correction factor for \( \Delta P \) (\( f_{\Delta P} \))

<table>
<thead>
<tr>
<th>( \Delta P ) (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

#### Correction factor for superheat (\( T_s \))

<table>
<thead>
<tr>
<th>Liquid temperature [°F]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>0.82</td>
</tr>
<tr>
<td>20</td>
<td>0.85</td>
</tr>
<tr>
<td>30</td>
<td>0.88</td>
</tr>
<tr>
<td>40</td>
<td>0.92</td>
</tr>
<tr>
<td>50</td>
<td>0.96</td>
</tr>
<tr>
<td>60</td>
<td>1.00</td>
</tr>
<tr>
<td>70</td>
<td>1.04</td>
</tr>
<tr>
<td>80</td>
<td>1.09</td>
</tr>
</tbody>
</table>
### Nominal Capacities

#### SI Units

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve Body size</th>
<th>$K_v$ (m$^3$/h)</th>
<th>Evaporating temperature [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICS25-10</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICS25-15</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICS25-20</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICS25-25</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Dry Suction Line

<table>
<thead>
<tr>
<th>$\Delta P$ (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

#### Correction Factor for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

#### Correction Factor for Liquid Temperature ($T_{liq}$)

<table>
<thead>
<tr>
<th>$T_{liq}$</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20</td>
<td>0.52</td>
</tr>
<tr>
<td>-10</td>
<td>0.67</td>
</tr>
<tr>
<td>0</td>
<td>0.91</td>
</tr>
<tr>
<td>10</td>
<td>1.00</td>
</tr>
<tr>
<td>15</td>
<td>1.09</td>
</tr>
</tbody>
</table>

### US Units

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve Body size</th>
<th>$C_v$ (USgal/min)</th>
<th>Evaporating temperature [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>-60°F 2.1 21.1 2.6 3.1 3.7 4.2 4.9 5.4</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>25</td>
<td>4.1</td>
<td>-40°F 3.4 43 5.3 6.4 7.5 8.7 10.0 11.2</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>25</td>
<td>7</td>
<td>-20°F 7.9 9.9 12.1 14.5 17.2 20.0 22.8 25.5</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>25</td>
<td>9.3</td>
<td>0°F 13.3 11.3 14.2 17.4 21.0 24.7 28.6 32.8 36.7</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>25</td>
<td>13.3</td>
<td>10°F 20.7 21.0 25.7 30.0 36.5 42.4 48.5 54.3</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>20°F 26.6 33.3 41.0 49.0 58.0 67.0 77.0 86.0</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>40°F 43.3 54.3 66.5 80.0 94.0 110 125 141</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>60°F 69.0 86.5 106 127 150 174 199 223</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>80°F 83 104 128 153 181 210 240 269</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>100°F 140 175 215 258 305 353 404 453</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>125°F 203 255 313 375 443 513 588 658</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>150°F 347 435 534 641 757 877 1005 1124</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>175°F 347 435 534 641 757 877 1005 1124</td>
</tr>
</tbody>
</table>

#### Correction Factor for $\Delta P$ ($f_{\Delta P}$)

<table>
<thead>
<tr>
<th>$\Delta P$ (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

#### Correction Factor for Superheat ($T_s$)

<table>
<thead>
<tr>
<th>$T_s$ [°F]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>1.00</td>
</tr>
<tr>
<td>14</td>
<td>1.00</td>
</tr>
<tr>
<td>18</td>
<td>1.00</td>
</tr>
<tr>
<td>20</td>
<td>1.00</td>
</tr>
</tbody>
</table>

#### Correction Factor for Liquid Temperature ($T_{liq}$)

<table>
<thead>
<tr>
<th>$T_{liq}$</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td>0.48</td>
</tr>
<tr>
<td>-10</td>
<td>0.64</td>
</tr>
<tr>
<td>30</td>
<td>0.88</td>
</tr>
<tr>
<td>50</td>
<td>1.00</td>
</tr>
</tbody>
</table>
## Nominal capacities

### SI units

Capacity table for nominal conditions, \( Q_n \) [kW],
\( T_{in} = 30^\circ C \),
\( \Delta P = 0.2 \) bar
Superheating = 8°C

<table>
<thead>
<tr>
<th>R 134a</th>
<th>Dry suction line</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>( K_v ) (( m^3/)h)</th>
<th>Evaporating temperature [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>-40</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>3.5</td>
<td>-3.0</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>6</td>
<td>-5.2</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>8</td>
<td>-6.9</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>11.5</td>
<td>-9.9</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>-14.7</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>-23.0</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44</td>
<td>-38.0</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70</td>
<td>-60.0</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>85</td>
<td>-73</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142</td>
<td>-123</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>207</td>
<td>-179</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>-305</td>
</tr>
</tbody>
</table>

### Correction factor for \( \Delta P \) (\( f_{\Delta P} \))

<table>
<thead>
<tr>
<th>( \Delta P ) (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

### Correction factor for liquid temperature (\( T_{liq} \))

<table>
<thead>
<tr>
<th>Liquid temperature [°C]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20</td>
<td>0.66</td>
</tr>
<tr>
<td>-10</td>
<td>0.70</td>
</tr>
<tr>
<td>0</td>
<td>0.76</td>
</tr>
<tr>
<td>10</td>
<td>0.82</td>
</tr>
<tr>
<td>20</td>
<td>0.90</td>
</tr>
<tr>
<td>30</td>
<td>1.00</td>
</tr>
<tr>
<td>40</td>
<td>1.13</td>
</tr>
<tr>
<td>50</td>
<td>1.29</td>
</tr>
</tbody>
</table>

### US units

Capacity table for nominal conditions, \( Q_n \) [Tons of Refrigeration],
\( T_{in} = 90^\circ F \),
\( \Delta P = 3 \) psi
Superheating=12°F

<table>
<thead>
<tr>
<th>R 134a</th>
<th>Dry suction line</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>( C_v ) (USgal/min)</th>
<th>Evaporating temperature [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>-40°F</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>4.1</td>
<td>-20°F</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>7</td>
<td>1.5</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>9.3</td>
<td>2.0</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>13.3</td>
<td>2.9</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>4.2</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>6.7</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>11.0</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>17.4</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>21</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>36</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>53</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>90</td>
</tr>
</tbody>
</table>

### Correction factor for \( \Delta P \) (\( f_{\Delta P} \))

<table>
<thead>
<tr>
<th>( \Delta P ) (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

### Correction factor for superheat (\( T_s \))

<table>
<thead>
<tr>
<th>( T_s ) [°F]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>1.00</td>
</tr>
<tr>
<td>14</td>
<td>1.00</td>
</tr>
<tr>
<td>18</td>
<td>1.00</td>
</tr>
<tr>
<td>20</td>
<td>1.00</td>
</tr>
</tbody>
</table>

### Correction factor for liquid temperature (\( T_{liq} \))

<table>
<thead>
<tr>
<th>Liquid temperature [°F]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td>0.64</td>
</tr>
<tr>
<td>-30</td>
<td>0.74</td>
</tr>
<tr>
<td>-50</td>
<td>0.81</td>
</tr>
<tr>
<td>-70</td>
<td>0.89</td>
</tr>
<tr>
<td>-90</td>
<td>1.00</td>
</tr>
<tr>
<td>-110</td>
<td>1.15</td>
</tr>
<tr>
<td>-130</td>
<td>1.35</td>
</tr>
</tbody>
</table>
## Nominal capacities

### SI units

Capacity table for nominal conditions, \( Q_n \) [kW], \( T_{in} = 30^\circ C \), \( \Delta P = 0.2 \) bar
Superheat = 8°C

### Dry suction line

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>( K_v )</th>
<th>Evaporating temperature [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(m³/h)</td>
<td>-50</td>
</tr>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>1.4</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>3.5</td>
<td>2.8</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>6</td>
<td>4.8</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>8</td>
<td>6.4</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>11.5</td>
<td>9.1</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>13.5</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>21.5</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44</td>
<td>35.0</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70</td>
<td>55.0</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>88</td>
<td>68</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142</td>
<td>113</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>200</td>
<td>165</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>283</td>
</tr>
</tbody>
</table>

### Correction factor for liquid temperature (\( T_{in} \))

<table>
<thead>
<tr>
<th>Liquid temperature [°C]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20</td>
<td>0.55</td>
</tr>
<tr>
<td>-10</td>
<td>0.60</td>
</tr>
<tr>
<td>0</td>
<td>0.66</td>
</tr>
<tr>
<td>10</td>
<td>0.74</td>
</tr>
<tr>
<td>20</td>
<td>0.85</td>
</tr>
<tr>
<td>30</td>
<td>1.00</td>
</tr>
<tr>
<td>40</td>
<td>1.23</td>
</tr>
<tr>
<td>50</td>
<td>1.68</td>
</tr>
</tbody>
</table>

### US units

Capacity table for nominal conditions, \( Q_n \) [Tons of Refrigeration], \( T_{in} = 90^\circ F \), \( \Delta P = 3 \) psi
Superheat = 12°F

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>( C_v )</th>
<th>Evaporating temperature [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(USgal/min)</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>0.4</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>4.1</td>
<td>0.7</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>7</td>
<td>1.3</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>9.3</td>
<td>1.7</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>13.3</td>
<td>2.4</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>3.6</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>5.7</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>9.3</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>14.8</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>18</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>30</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>44</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>75</td>
</tr>
</tbody>
</table>

### Correction factor for liquid temperature (\( T_{in} \))

<table>
<thead>
<tr>
<th>Liquid temperature [°F]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td>0.52</td>
</tr>
<tr>
<td>-10</td>
<td>0.57</td>
</tr>
<tr>
<td>0</td>
<td>0.63</td>
</tr>
<tr>
<td>10</td>
<td>0.72</td>
</tr>
<tr>
<td>20</td>
<td>0.83</td>
</tr>
<tr>
<td>30</td>
<td>1.00</td>
</tr>
<tr>
<td>40</td>
<td>1.29</td>
</tr>
<tr>
<td>50</td>
<td>1.92</td>
</tr>
</tbody>
</table>

### Correction factor for superheat (\( T_{s} \))

<table>
<thead>
<tr>
<th>( T_{s} ) [°F]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>1.00</td>
</tr>
<tr>
<td>14</td>
<td>1.00</td>
</tr>
<tr>
<td>18</td>
<td>1.00</td>
</tr>
<tr>
<td>20</td>
<td>1.00</td>
</tr>
</tbody>
</table>

### Correction factor for \( \Delta P \) (\( f_{\Delta P} \))

<table>
<thead>
<tr>
<th>( \Delta P ) [bar]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

### Correction factor for \( \Delta P \) (\( f_{\Delta P} \))

<table>
<thead>
<tr>
<th>( \Delta P ) [psi]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>
### Nominal capacities

#### SI units

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>( K_v ) ((\text{m}^3/\text{h}))</th>
<th>Evaporating temperature ([^\circ\text{C}])</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>-50</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>10</td>
<td>3.5</td>
<td>-40</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>15</td>
<td>6</td>
<td>-30</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>20</td>
<td>8</td>
<td>-20</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>25</td>
<td>11.5</td>
<td>-10</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>10</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44</td>
<td>20</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70</td>
<td>30</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>85</td>
<td>40</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142</td>
<td>50</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>207</td>
<td>60</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>70</td>
</tr>
</tbody>
</table>
Nominal capacities

Discharge line

Location of valve in system (marked with grey)

Hot gas bypass & defrost line

Dry suction line

Discharge line

Wet suction line

Liquid line without phase change

Liquid line with or without phase change

Pump

Gravity

DX

Location of valve in system (marked with grey)

Hot gas bypass & defrost line

Dry suction line

Discharge line

Wet suction line

Liquid line without phase change

Liquid line with or without phase change

© Danfoss | DCS (mwa) | 2018.10

AI241186442033en-US1003 | DKRCLPD.HS2.B5.22 | 46
Calculation example (R 717 capacities):

An application has following running conditions:

\[ T_e = -20 \, ^\circ C \]
\[ Q_o = 90 \, kW \]
\[ T_{liq} = 10 \, ^\circ C \]
Max. \( \Delta p = 0.4 \, \text{bar} \)
\[ T_{disch} = 60 \, ^\circ C \]

The capacity table is based on nominal condition
\( (\Delta p = 0.2 \, \text{bar}, \, T_{liq} = 30 \, ^\circ C, \, P_{disch} = 12 \, \text{bar}, \, T_{disch} = 80 \, ^\circ C) \)

Therefore the actual capacity must be corrected to nominal condition by means of correction factors.

\[ Q_n = Q_o \times f_{\Delta p} \times f_{T_{liq}} \times f_{T_{disch}} \]
\[ 90 \times 0.71 \times 0.92 \times 0.97 = 57 \, kW \]

From the capacity table a ICS 25-15 with \( Q_n \) capacity 73 kW is selected.

Calculation example (R 717 capacities):

An application has following running conditions:

\[ T_e = 0 \, ^\circ F \]
\[ Q_o = 18 \, TR \]
\[ T_{liq} = 50 \, ^\circ F \]
Max. \( \Delta p = 5.8 \, \text{psi} \)
\[ T_{disch} = 120 \, ^\circ F \]

The capacity table is based on nominal conditions
\( (\Delta p = 3 \, \text{psi}, \, T_{liq} = 90 \, ^\circ F, \, P_{disch} = 185 \, \text{psi}, \, T_{disch} = 180 \, ^\circ F) \)

Therefore the actual capacity must be corrected to nominal condition by means of correction factors.

\[ Q_n = Q_o \times f_{\Delta p} \times f_{T_{liq}} \times f_{T_{disch}} \]
\[ 18 \times 0.72 \times 0.92 \times 0.95 = 11.3 \, TR \]

From the capacity table a ICS 25-10 with \( Q_n \) capacity 12.0 TR is selected.
### Nominal capacities

#### SI units

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>V.C. (%/h)</th>
<th>Evaporating temperature [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>-50</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>25</td>
<td>3.5</td>
<td>-40</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>25</td>
<td>6.0</td>
<td>-30</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>25</td>
<td>8.0</td>
<td>-20</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>25</td>
<td>11.5</td>
<td>-10</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17.0</td>
<td>0</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27.0</td>
<td>10</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44.0</td>
<td>20</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70.0</td>
<td>30</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>85.0</td>
<td>40</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142.0</td>
<td>50</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>207.0</td>
<td>60</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354.0</td>
<td>70</td>
</tr>
</tbody>
</table>

#### Correction factor for liquid temperature

<table>
<thead>
<tr>
<th>Liquid temperature [°C]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20</td>
<td>0.82</td>
</tr>
<tr>
<td>-10</td>
<td>0.86</td>
</tr>
<tr>
<td>0</td>
<td>0.88</td>
</tr>
<tr>
<td>20</td>
<td>0.96</td>
</tr>
<tr>
<td>30</td>
<td><strong>1.00</strong></td>
</tr>
<tr>
<td>40</td>
<td>1.04</td>
</tr>
<tr>
<td>50</td>
<td>1.09</td>
</tr>
</tbody>
</table>

#### Correction factor for discharge temperature

<table>
<thead>
<tr>
<th>Discharge temperature [°C]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>0.96</td>
</tr>
<tr>
<td>60</td>
<td>0.97</td>
</tr>
<tr>
<td>80</td>
<td><strong>1.00</strong></td>
</tr>
<tr>
<td>90</td>
<td>1.01</td>
</tr>
<tr>
<td>100</td>
<td>1.03</td>
</tr>
<tr>
<td>110</td>
<td>1.04</td>
</tr>
<tr>
<td>120</td>
<td>1.06</td>
</tr>
</tbody>
</table>

### US units

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>V.C. [USgal/min]</th>
<th>Evaporating temperature [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>-60°F</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>25</td>
<td>4.1</td>
<td>-40°F</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>25</td>
<td>7</td>
<td>-30°F</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>25</td>
<td>9.3</td>
<td>-20°F</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>25</td>
<td>13.3</td>
<td>0°F</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>10°F</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>20°F</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>30°F</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>40°F</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>50°F</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>60°F</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>70°F</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>80°F</td>
</tr>
</tbody>
</table>

#### Correction factor for liquid temperature

<table>
<thead>
<tr>
<th>Liquid temperature [°F]</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td>0.82</td>
</tr>
<tr>
<td>0</td>
<td>0.85</td>
</tr>
<tr>
<td>30</td>
<td>0.88</td>
</tr>
<tr>
<td>50</td>
<td>0.92</td>
</tr>
<tr>
<td>70</td>
<td>0.96</td>
</tr>
<tr>
<td>90</td>
<td>1.00</td>
</tr>
<tr>
<td>110</td>
<td>1.04</td>
</tr>
<tr>
<td>130°F</td>
<td>1.09</td>
</tr>
</tbody>
</table>
### Nominal capacities

#### SI units

**Discharge line**

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$K_v$ (m³/h)</th>
<th>$\Delta P$ (bar)</th>
<th>$T_{disch}$ (°C)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>-50</td>
<td>12.5</td>
<td>0.96</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>3.3</td>
<td>-40</td>
<td>12.7</td>
<td>0.97</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>6</td>
<td>-30</td>
<td>12.8</td>
<td>0.98</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>8</td>
<td>-20</td>
<td>12.9</td>
<td>0.99</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>11.5</td>
<td>-10</td>
<td>12.9</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>0</td>
<td>12.9</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>10</td>
<td>12.9</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>44</td>
<td>20</td>
<td>12.9</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>70</td>
<td>30</td>
<td>12.9</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>85</td>
<td>40</td>
<td>12.9</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>142</td>
<td>50</td>
<td>12.9</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>207</td>
<td>60</td>
<td>12.9</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>354</td>
<td>70</td>
<td>12.9</td>
<td>1.00</td>
</tr>
</tbody>
</table>

**Correction factor for discharge temperature ($T_{disch}$).**

<table>
<thead>
<tr>
<th>$\Delta P$ (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

**Correction factor for liquid temperature ($T_{liq}$).**

<table>
<thead>
<tr>
<th>Liquid temperature (°C)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>0.52</td>
</tr>
<tr>
<td>10</td>
<td>0.67</td>
</tr>
<tr>
<td>0</td>
<td>0.91</td>
</tr>
<tr>
<td>10</td>
<td>1.00</td>
</tr>
<tr>
<td>15</td>
<td>1.09</td>
</tr>
</tbody>
</table>

#### US units

**Capacity table for nominal conditions, $Q_N$ [kW], $T_{in} = 10$ °C, $P_{in} = 10$ bar, $\Delta P = 0.2$ bar, $T_{disch} = 80$ °C**

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>$C_v$ (USgal/min)</th>
<th>$\Delta P$ (psi)</th>
<th>$T_{disch}$ (°F)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>3</td>
<td>87.0</td>
<td>0.96</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>4.1</td>
<td>6</td>
<td>87.0</td>
<td>0.97</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>7</td>
<td>11</td>
<td>87.0</td>
<td>0.98</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>9.3</td>
<td>15</td>
<td>87.0</td>
<td>0.99</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>13.3</td>
<td>22</td>
<td>87.0</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>33.7</td>
<td>87.0</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>53.4</td>
<td>87.0</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>87.0</td>
<td>87.0</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>138</td>
<td>87.0</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>167</td>
<td>87.0</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>281</td>
<td>87.0</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>408</td>
<td>87.0</td>
<td>1.00</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>698</td>
<td>87.0</td>
<td>1.00</td>
</tr>
</tbody>
</table>

**Correction factor for discharge temperature ($T_{disch}$).**

<table>
<thead>
<tr>
<th>$\Delta P$ (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

**Correction factor for liquid temperature ($T_{liq}$).**

<table>
<thead>
<tr>
<th>Liquid temperature (°F)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td>0.48</td>
</tr>
<tr>
<td>0</td>
<td>0.64</td>
</tr>
<tr>
<td>30</td>
<td>0.88</td>
</tr>
<tr>
<td>50</td>
<td>1.00</td>
</tr>
</tbody>
</table>
### Nominal capacities

**SI units**

Capacity table for nominal conditions, \( Q \) [kW], 
\( T_{\text{liq}} = 30 \, ^{\circ}\text{C} \), 
\( P_{\text{disch}} = 8 \, \text{bar} \), 
\( \Delta P = 0.2 \, \text{bar} \), 
\( T_{\text{disch}} = 80 \, ^{\circ}\text{C} \), 
Superheat = 8 \, ^{\circ}\text{C}

**US units**

Capacity table for nominal conditions, \( Q \) [Tons of Refrigeration], 
\( T_{\text{liq}} = 90 \, ^{\circ}\text{F} \), 
\( \Delta P = 3 \, \text{psi} \), 
\( P_{\text{disch}} = 120 \, \text{psi} \), 
\( T_{\text{disch}} = 180 \, ^{\circ}\text{F} \), 
Superheat = 12 \, ^{\circ}\text{F}

### Correction factor for discharge temperature \( (T_{\text{disch}}) \)

<table>
<thead>
<tr>
<th>Correction factor for ( \Delta P ) (f( \Delta P ))</th>
<th>( \Delta P ) (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
<td></td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
<td></td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
<td></td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
<td></td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Correction factor for discharge temperature ( (T_{\text{disch}}) )</th>
<th>Discharge temperature ( (T_{\text{disch}}) )</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>0.96</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>0.97</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>1.01</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>1.03</td>
<td></td>
</tr>
<tr>
<td>110</td>
<td>1.04</td>
<td></td>
</tr>
<tr>
<td>120</td>
<td>1.06</td>
<td></td>
</tr>
</tbody>
</table>

### Correction factor for liquid temperature \( (T_{\text{liq}}) \)

<table>
<thead>
<tr>
<th>Correction factor for liquid temperature ( (T_{\text{liq}}) )</th>
<th>Liquid temperature ( (T_{\text{liq}}) )</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20</td>
<td>0.66</td>
<td></td>
</tr>
<tr>
<td>-10</td>
<td>0.70</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0.76</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>0.82</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>0.90</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>1.13</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>1.29</td>
<td></td>
</tr>
</tbody>
</table>

### R 134a

#### SI units

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>( K_v ) (m(^3)/h)</th>
<th>Evaporating temperature ( (T_{\text{liq}}) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>(-40)</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>25</td>
<td>6</td>
<td>(-30)</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>25</td>
<td>28</td>
<td>(-20)</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>25</td>
<td>115.5</td>
<td>(-10)</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>25</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>10</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>20</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>70</td>
<td>30</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>133</td>
<td>40</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>211</td>
<td>50</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>428</td>
<td>60</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>624</td>
<td>70</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>1068</td>
<td>80</td>
</tr>
</tbody>
</table>

#### US units

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>( C_v ) (USgal/min)</th>
<th>Evaporating temperature ( (T_{\text{liq}}) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>(-40)</td>
</tr>
<tr>
<td>ICS25-10</td>
<td>25</td>
<td>6</td>
<td>(-30)</td>
</tr>
<tr>
<td>ICS25-15</td>
<td>25</td>
<td>28</td>
<td>(-20)</td>
</tr>
<tr>
<td>ICS25-20</td>
<td>25</td>
<td>115.5</td>
<td>(-10)</td>
</tr>
<tr>
<td>ICS25-25</td>
<td>25</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>17</td>
<td>10</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>27</td>
<td>20</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>70</td>
<td>30</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>133</td>
<td>40</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>211</td>
<td>50</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>428</td>
<td>60</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>624</td>
<td>70</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>1068</td>
<td>80</td>
</tr>
</tbody>
</table>

### Correction factor for \( \Delta P \) (f\( \Delta P \))

<table>
<thead>
<tr>
<th>( \Delta P ) (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>( \Delta P ) (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

### Correction factor for liquid temperature \( (T_{\text{liq}}) \)

<table>
<thead>
<tr>
<th>Correction factor for liquid temperature ( (T_{\text{liq}}) )</th>
<th>Liquid temperature ( (T_{\text{liq}}) )</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20</td>
<td>0.66</td>
<td></td>
</tr>
<tr>
<td>-10</td>
<td>0.70</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0.76</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>0.82</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>0.90</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>1.13</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>1.29</td>
<td></td>
</tr>
</tbody>
</table>

© Danfoss | DCS (mwa) | 2018.10

AI241186442033en-US1003 | DKRC1.PD.HS2.B5.22 | 50
### Nominal capacities

#### SI units

Capacity table for nominal conditions, \( Q \) [kW], \( T_{\text{liq}} = 30 ^\circ \text{C} \), \( P_{\text{disch}} = 12 \text{ bar} \), \( \Delta P = 0.2 \text{ bar} \), \( T_{\text{disch}} = 80 ^\circ \text{C} \), Superheat = 8 \(^\circ\)C

<table>
<thead>
<tr>
<th>R 404A</th>
<th>Type</th>
<th>Valve body size</th>
<th>( K_v ) (m³/h)</th>
<th>Evaporating temperature (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IC25-5</td>
<td>25</td>
<td>1.7</td>
<td>-50</td>
</tr>
<tr>
<td></td>
<td>IC25-10</td>
<td>25</td>
<td>3.5</td>
<td>-40</td>
</tr>
<tr>
<td></td>
<td>IC25-15</td>
<td>25</td>
<td>6</td>
<td>-30</td>
</tr>
<tr>
<td></td>
<td>IC25-20</td>
<td>25</td>
<td>8</td>
<td>-20</td>
</tr>
<tr>
<td></td>
<td>IC25-25</td>
<td>25</td>
<td>11.5</td>
<td>-10</td>
</tr>
<tr>
<td></td>
<td>IC32</td>
<td>32</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>IC340</td>
<td>40</td>
<td>27</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>IC500</td>
<td>50</td>
<td>44</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>IC65</td>
<td>65</td>
<td>70</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>IC800</td>
<td>80</td>
<td>85</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>IC1000</td>
<td>100</td>
<td>142</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>IC125</td>
<td>125</td>
<td>207</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>IC150</td>
<td>150</td>
<td>354</td>
<td>70</td>
</tr>
</tbody>
</table>

#### Correction factor for \( \Delta P \) (\( \Delta f_{\Delta P} \))

<table>
<thead>
<tr>
<th>( \Delta P ) (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

#### Correction factor for liquid temperature (\( T_{\text{liq}} \))

<table>
<thead>
<tr>
<th>Liquid temperature (°C)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20</td>
<td>0.55</td>
</tr>
<tr>
<td>-10</td>
<td>0.60</td>
</tr>
<tr>
<td>0</td>
<td>0.66</td>
</tr>
<tr>
<td>10</td>
<td>0.74</td>
</tr>
<tr>
<td>20</td>
<td>0.85</td>
</tr>
<tr>
<td>30</td>
<td>1.00</td>
</tr>
<tr>
<td>40</td>
<td>1.23</td>
</tr>
<tr>
<td>50</td>
<td>1.68</td>
</tr>
</tbody>
</table>

### Discharge line

#### R 404A

Capacity table for nominal conditions, \( Q \) [Tons of Refrigeration], \( T_{\text{liq}} = 90 ^\circ \text{F} \), \( \Delta P = 3 \text{ psi} \), \( P_{\text{disch}} = 120 \text{ psi} \), \( T_{\text{disch}} = 180 ^\circ \text{F} \), Superheat = 12 \(^\circ\)F

<table>
<thead>
<tr>
<th>R 404A</th>
<th>Type</th>
<th>Valve body size</th>
<th>( C_v ) (USgal/min)</th>
<th>Evaporating temperature (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IC25-5</td>
<td>25</td>
<td>2</td>
<td>-60°F</td>
</tr>
<tr>
<td></td>
<td>IC25-10</td>
<td>25</td>
<td>4.1</td>
<td>-40°F</td>
</tr>
<tr>
<td></td>
<td>IC25-15</td>
<td>25</td>
<td>7</td>
<td>-20°F</td>
</tr>
<tr>
<td></td>
<td>IC25-20</td>
<td>25</td>
<td>9.3</td>
<td>0°F</td>
</tr>
<tr>
<td></td>
<td>IC25-25</td>
<td>25</td>
<td>13.3</td>
<td>20°F</td>
</tr>
<tr>
<td></td>
<td>IC32</td>
<td>32</td>
<td>20</td>
<td>40°F</td>
</tr>
<tr>
<td></td>
<td>IC40</td>
<td>40</td>
<td>31</td>
<td>60°F</td>
</tr>
<tr>
<td></td>
<td>IC50</td>
<td>50</td>
<td>51</td>
<td>80°F</td>
</tr>
<tr>
<td></td>
<td>IC65</td>
<td>65</td>
<td>81</td>
<td>100°F</td>
</tr>
<tr>
<td></td>
<td>IC800</td>
<td>80</td>
<td>98</td>
<td>120°F</td>
</tr>
<tr>
<td></td>
<td>IC1000</td>
<td>100</td>
<td>165</td>
<td>140°F</td>
</tr>
<tr>
<td></td>
<td>IC125</td>
<td>125</td>
<td>240</td>
<td>160°F</td>
</tr>
<tr>
<td></td>
<td>IC150</td>
<td>150</td>
<td>410</td>
<td>180°F</td>
</tr>
</tbody>
</table>

#### Correction factor for \( \Delta P \) (\( \Delta f_{\Delta P} \))

<table>
<thead>
<tr>
<th>( \Delta P ) (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

#### Correction factor for liquid temperature (\( T_{\text{liq}} \))

<table>
<thead>
<tr>
<th>Liquid temperature (°F)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td>0.52</td>
</tr>
<tr>
<td>10</td>
<td>0.57</td>
</tr>
<tr>
<td>30</td>
<td>0.63</td>
</tr>
<tr>
<td>50</td>
<td>0.72</td>
</tr>
<tr>
<td>70</td>
<td>0.83</td>
</tr>
<tr>
<td>90</td>
<td>1.00</td>
</tr>
<tr>
<td>110</td>
<td>1.29</td>
</tr>
<tr>
<td>130</td>
<td>1.92</td>
</tr>
</tbody>
</table>
### Nominal capacities

**SI units**

Capacity table for nominal conditions, \( Q_n \) [kW], \( T_{eq} = 30 \, ^\circ C \), \( P_{disch} = 12 \) bar, \( \Delta P = 0.2 \) bar, \( T_{disch} = 80 \, ^\circ C \)

Superheat = 8 °C

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>( K_v ) (m³/h)</th>
<th>-50</th>
<th>-40</th>
<th>-30</th>
<th>-20</th>
<th>-10</th>
<th>0</th>
<th>10</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>1.7</td>
<td>6.4</td>
<td>6.6</td>
<td>6.8</td>
<td>7.0</td>
<td>7.2</td>
<td>7.4</td>
<td>7.5</td>
<td>7.7</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>3.5</td>
<td>13.2</td>
<td>13.7</td>
<td>14.1</td>
<td>14.5</td>
<td>14.8</td>
<td>15.2</td>
<td>15.5</td>
<td>15.8</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>6</td>
<td>22.6</td>
<td>23.4</td>
<td>24.1</td>
<td>24.8</td>
<td>25.4</td>
<td>26.0</td>
<td>26.6</td>
<td>27.1</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>8</td>
<td>30.2</td>
<td>31.2</td>
<td>32.1</td>
<td>33.0</td>
<td>33.8</td>
<td>34.6</td>
<td>35.4</td>
<td>36.1</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>11.5</td>
<td>43.4</td>
<td>44.9</td>
<td>46.2</td>
<td>47.5</td>
<td>48.6</td>
<td>49.8</td>
<td>50.9</td>
<td>51.9</td>
</tr>
</tbody>
</table>

### Discharge line

**Correction factor for \( \Delta P \) (\( f_{\Delta P} \))**

<table>
<thead>
<tr>
<th>( \Delta P ) (bar)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>1.00</td>
</tr>
<tr>
<td>0.25</td>
<td>0.89</td>
</tr>
<tr>
<td>0.3</td>
<td>0.82</td>
</tr>
<tr>
<td>0.4</td>
<td>0.71</td>
</tr>
<tr>
<td>0.5</td>
<td>0.63</td>
</tr>
<tr>
<td>0.6</td>
<td>0.58</td>
</tr>
</tbody>
</table>

**Correction factor for discharge temperature \( T_{disch} \)**

<table>
<thead>
<tr>
<th>Discharge temperature ( T_{disch} ) (°C)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>0.96</td>
</tr>
<tr>
<td>60</td>
<td>0.97</td>
</tr>
<tr>
<td>80</td>
<td>1.00</td>
</tr>
<tr>
<td>90</td>
<td>1.01</td>
</tr>
<tr>
<td>100</td>
<td>1.03</td>
</tr>
<tr>
<td>110</td>
<td>1.04</td>
</tr>
<tr>
<td>120</td>
<td>1.06</td>
</tr>
</tbody>
</table>

**Correction factor for liquid temperature \( T_{eq} \)**

<table>
<thead>
<tr>
<th>Liquid temperature ( T_{eq} ) (°C)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20</td>
<td>0.71</td>
</tr>
<tr>
<td>-10</td>
<td>0.75</td>
</tr>
<tr>
<td>0</td>
<td>0.80</td>
</tr>
<tr>
<td>10</td>
<td>0.86</td>
</tr>
<tr>
<td>20</td>
<td>0.92</td>
</tr>
<tr>
<td>30</td>
<td>1.00</td>
</tr>
<tr>
<td>40</td>
<td>1.09</td>
</tr>
<tr>
<td>50</td>
<td>1.22</td>
</tr>
</tbody>
</table>

### US units

Capacity table for nominal conditions, \( Q_n \) [Tons of Refrigeration], \( T_{eq} = 90 \, ^\circ F \), \( \Delta P = 3 \) psi, \( P_{disch} = 120 \) psi, \( T_{disch} = 180 \, ^\circ F \)

Superheat = 12 °F

<table>
<thead>
<tr>
<th>Type</th>
<th>Valve body size</th>
<th>( C_v ) (USgal/min)</th>
<th>-60°F</th>
<th>-40°F</th>
<th>-20°F</th>
<th>0°F</th>
<th>20°F</th>
<th>40°F</th>
<th>60°F</th>
<th>80°F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS25-5</td>
<td>25</td>
<td>2</td>
<td>1.8</td>
<td>1.9</td>
<td>2.0</td>
<td>2.0</td>
<td>2.1</td>
<td>2.1</td>
<td>2.2</td>
<td>2.2</td>
</tr>
<tr>
<td>ICS25-10</td>
<td></td>
<td>4.1</td>
<td>3.7</td>
<td>3.9</td>
<td>4.0</td>
<td>4.1</td>
<td>4.3</td>
<td>4.4</td>
<td>4.5</td>
<td>4.6</td>
</tr>
<tr>
<td>ICS25-15</td>
<td></td>
<td>7</td>
<td>6.4</td>
<td>6.6</td>
<td>6.8</td>
<td>7.1</td>
<td>7.3</td>
<td>7.4</td>
<td>7.6</td>
<td>7.8</td>
</tr>
<tr>
<td>ICS25-20</td>
<td></td>
<td>9.3</td>
<td>8.5</td>
<td>8.8</td>
<td>9.1</td>
<td>9.4</td>
<td>9.6</td>
<td>9.9</td>
<td>10.1</td>
<td>10.3</td>
</tr>
<tr>
<td>ICS25-25</td>
<td></td>
<td>13.3</td>
<td>12.1</td>
<td>12.6</td>
<td>13.0</td>
<td>13.4</td>
<td>13.8</td>
<td>14.2</td>
<td>14.5</td>
<td>14.8</td>
</tr>
<tr>
<td>ICS32</td>
<td>32</td>
<td>20</td>
<td>18.2</td>
<td>18.9</td>
<td>19.6</td>
<td>20.2</td>
<td>20.7</td>
<td>21.3</td>
<td>21.8</td>
<td>22.2</td>
</tr>
<tr>
<td>ICS40</td>
<td>40</td>
<td>31</td>
<td>28.3</td>
<td>29.3</td>
<td>30.3</td>
<td>31.3</td>
<td>32.1</td>
<td>33.0</td>
<td>33.8</td>
<td>34.4</td>
</tr>
<tr>
<td>ICS50</td>
<td>50</td>
<td>51</td>
<td>46.5</td>
<td>48.2</td>
<td>49.9</td>
<td>51.4</td>
<td>52.9</td>
<td>54.3</td>
<td>55.5</td>
<td>56.7</td>
</tr>
<tr>
<td>ICS65</td>
<td>65</td>
<td>81</td>
<td>73.9</td>
<td>76.6</td>
<td>79.2</td>
<td>81.7</td>
<td>84.0</td>
<td>86.2</td>
<td>88.2</td>
<td>90.0</td>
</tr>
<tr>
<td>ICS80</td>
<td>80</td>
<td>98</td>
<td>89</td>
<td>93</td>
<td>96</td>
<td>99</td>
<td>102</td>
<td>104</td>
<td>107</td>
<td>109</td>
</tr>
<tr>
<td>ICS100</td>
<td>100</td>
<td>165</td>
<td>150</td>
<td>156</td>
<td>162</td>
<td>166</td>
<td>172</td>
<td>175</td>
<td>180</td>
<td>183</td>
</tr>
<tr>
<td>ICS125</td>
<td>125</td>
<td>240</td>
<td>218</td>
<td>227</td>
<td>235</td>
<td>242</td>
<td>250</td>
<td>255</td>
<td>262</td>
<td>267</td>
</tr>
<tr>
<td>ICS150</td>
<td>150</td>
<td>410</td>
<td>373</td>
<td>388</td>
<td>402</td>
<td>413</td>
<td>426</td>
<td>436</td>
<td>447</td>
<td>456</td>
</tr>
</tbody>
</table>

**Correction factor for \( \Delta P \) (\( f_{\Delta P} \))**

<table>
<thead>
<tr>
<th>( \Delta P ) (psi)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
</tr>
<tr>
<td>6</td>
<td>0.72</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.62</td>
</tr>
</tbody>
</table>

**Correction factor for discharge temperature \( T_{disch} \)**

<table>
<thead>
<tr>
<th>Discharge temperature ( T_{disch} ) (°F)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>0.95</td>
</tr>
<tr>
<td>140</td>
<td>0.97</td>
</tr>
<tr>
<td>180</td>
<td>1.00</td>
</tr>
<tr>
<td>200</td>
<td>1.02</td>
</tr>
<tr>
<td>210</td>
<td>1.02</td>
</tr>
<tr>
<td>230</td>
<td>1.04</td>
</tr>
<tr>
<td>250</td>
<td>1.05</td>
</tr>
</tbody>
</table>

**Correction factor for liquid temperature \( T_{eq} \)**

<table>
<thead>
<tr>
<th>Liquid temperature ( T_{eq} ) (°F)</th>
<th>Correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td>0.73</td>
</tr>
<tr>
<td>10</td>
<td>0.77</td>
</tr>
<tr>
<td>30</td>
<td>0.82</td>
</tr>
<tr>
<td>50</td>
<td>0.87</td>
</tr>
<tr>
<td>70</td>
<td>0.93</td>
</tr>
<tr>
<td>90</td>
<td>1.00</td>
</tr>
<tr>
<td>110</td>
<td>1.09</td>
</tr>
<tr>
<td>130</td>
<td>1.20</td>
</tr>
</tbody>
</table>
ICS 25

Ordering from the parts programme

Example (select from table I, II and III)

<table>
<thead>
<tr>
<th>Description</th>
<th>Code Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS 25-5</td>
<td>027H2201</td>
</tr>
<tr>
<td>ICS 25-10</td>
<td>027H2202</td>
</tr>
<tr>
<td>ICS 25-15</td>
<td>027H2203</td>
</tr>
<tr>
<td>ICS 25-20</td>
<td>027H2204</td>
</tr>
<tr>
<td>ICS 25-25</td>
<td>027H2200</td>
</tr>
</tbody>
</table>

*) Including gasket and O-rings

Available connections

<table>
<thead>
<tr>
<th>20 D (¾ in.)</th>
<th>25 D (1 in.)</th>
<th>32 D (1 ¼ in.)</th>
<th>40 D (1 ½ in.)</th>
<th>22 A (¾ in.)</th>
<th>25 A (1 in.)</th>
<th>32 A (1 ¼ in.)</th>
<th>40 A (1 ½ in.)</th>
<th>25 SOC (1 in.)</th>
<th>25 SOC (1 in.)</th>
<th>25 FPT (½ in.)</th>
<th>25 FPT (1 in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>027H2128</td>
<td>027H2120</td>
<td>027H2129</td>
<td>027H2135</td>
<td>027H2142</td>
<td>027H2143</td>
<td>027H2144</td>
<td>027H2145</td>
<td>027H2146</td>
<td>027H2147</td>
<td>027H2148</td>
<td>027H2149</td>
</tr>
</tbody>
</table>

Ordering complete factory assembled valve

(body, function module and top cover)

<table>
<thead>
<tr>
<th>1 Pilot</th>
<th>3 Pilots</th>
</tr>
</thead>
<tbody>
<tr>
<td>027H2028</td>
<td>027H2020</td>
</tr>
<tr>
<td>027H2078</td>
<td>027H2070</td>
</tr>
<tr>
<td>027H2129</td>
<td>027H2135</td>
</tr>
</tbody>
</table>

*) Including one blanking plug (A+B)
ICS 32

Ordering from the parts programme

Example (select from table I, II and III)

Valve body 32 D (1 1/4 in.)
027H3120
Table I

Function module ICS 32
027H3200
Table II

Top cover 3 pilots
027H3173
Table III

ICV 32 valve body w/different connections  Table I

<table>
<thead>
<tr>
<th>Description</th>
<th>Code Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>32 D (1 1/4 in.)</td>
<td>027H3120</td>
</tr>
<tr>
<td>40 D (1 1/2 in.)</td>
<td>027H3125</td>
</tr>
<tr>
<td>42 SA (1 5/8 in.)</td>
<td>027H3127</td>
</tr>
<tr>
<td>42 SD (1 5/8 in.)</td>
<td>027H3128</td>
</tr>
<tr>
<td>35 SD (1 3/8 in. SA)</td>
<td>027H3123</td>
</tr>
<tr>
<td>32 A (1 1/4 in.)</td>
<td>027H3121</td>
</tr>
<tr>
<td>32 SOC (1 1/4 in.)</td>
<td>027H3122</td>
</tr>
<tr>
<td>40 A (1 1/2 in.)</td>
<td>027H3126</td>
</tr>
</tbody>
</table>

D = Butt-weld DIN; A = Butt-weld ANSI; J = Butt-weld JIS; SOC = Socket weld ANSI; SD = Solder DIN; SA = Solder ANSI; FPT = Female Pipe Thread

ICS 32 function module  Table II

Description | Code Number
-------------|-------------
ICS 32      | 027H3200 *)

*) Including gasket and O-rings

ICS 32 top cover  Table III

<table>
<thead>
<tr>
<th>Description</th>
<th>Code Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top cover 1 Pilot</td>
<td>027H3172 *)</td>
</tr>
<tr>
<td>Top cover 3 Pilots</td>
<td>027H3173 **)</td>
</tr>
</tbody>
</table>

*) Including bolts
**) including bolts and one blanking plug

Ordering complete factory assembled valve (body, function module and top cover)  Table A

<table>
<thead>
<tr>
<th>Available connections</th>
<th>1 pilot</th>
<th>3 pilots</th>
</tr>
</thead>
<tbody>
<tr>
<td>32 D (1 1/4 in.)</td>
<td>027H3020</td>
<td>027H3020</td>
</tr>
<tr>
<td>40 D (1 1/2 in.)</td>
<td>027H3023</td>
<td>027H3021</td>
</tr>
<tr>
<td>42 SA (1 5/8 in.)</td>
<td>027H3022</td>
<td>027H3031</td>
</tr>
<tr>
<td>42 SD (1 5/8 in.)</td>
<td>027H3023</td>
<td>027H3022</td>
</tr>
<tr>
<td>35 SD (1 3/8 in. SA)</td>
<td>027H3032</td>
<td>027H3022</td>
</tr>
<tr>
<td>32 A (1 1/4 in.)</td>
<td>027H3031</td>
<td>027H3031</td>
</tr>
<tr>
<td>32 SOC (1 1/4 in.)</td>
<td>027H3032</td>
<td>027H3032</td>
</tr>
<tr>
<td>40 A (1 1/2 in.)</td>
<td>027H3032</td>
<td>027H3032</td>
</tr>
</tbody>
</table>

Select from parts programme

*) Including one blanking plug (A+B)
ICS 40

Ordering from the parts programme

Example (select from table I, II and III)

Valve body 50 D (2 in.)
027H4126
*Table I*

Function module ICS 40
027H4200
*Table II*

Top cover 1 pilot
027H4172
*Table III*

ICS 40 valve body w/different connections  
*Table I*

<table>
<thead>
<tr>
<th>Description</th>
<th>Code Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 D (1 ½ in.)</td>
<td>027H4120</td>
</tr>
<tr>
<td>50 D (2 in.)</td>
<td>027H4126</td>
</tr>
<tr>
<td>42 SA (1 ½ in.)</td>
<td>027H4124</td>
</tr>
<tr>
<td>42 SD (1 ½ in.)</td>
<td>027H4123</td>
</tr>
</tbody>
</table>

ICS 40 function module  
*Table II*

<table>
<thead>
<tr>
<th>Description</th>
<th>Code Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS 40</td>
<td>027H4200 (*)</td>
</tr>
</tbody>
</table>

*) Including gasket and O-rings

D = Butt-weld DIN; A = Butt-weld ANSI; J = Butt-weld JIS; SOC = Socket weld ANSI; SD = Solder DIN; SA = Solder ANSI; FPT = Female Pipe Thread

ICS 40 top cover  
*Table III*

<table>
<thead>
<tr>
<th>Description</th>
<th>Code Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top cover 1 Pilot</td>
<td>027H4172 (*)</td>
</tr>
<tr>
<td>Top cover 3 Pilots</td>
<td>027H4173 **)</td>
</tr>
</tbody>
</table>

*) Including bolts  
**) Including bolts and one blanking plug

Ordering complete factory assembled valve  
(body, function module and top cover)  
*Table A*

<table>
<thead>
<tr>
<th>Available connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 D (1 ½ in.)</td>
</tr>
<tr>
<td>1 Pilot</td>
</tr>
<tr>
<td>3 Pilots (*)</td>
</tr>
</tbody>
</table>

*) Including one blanking plug (A+B)
ICS 50
Ordering from the parts programme

Example (select from table I, II and III)

Valve body 65 D (2 1/2 in.)
027H5124
Table I

Function module ICS 40
027H5200
Table II

Top cover 1 pilot
027H5172
Table III

ICV 50 valve body w/different connections
Table I

<table>
<thead>
<tr>
<th>Connection</th>
<th>Code Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 D</td>
<td>027H5124</td>
</tr>
<tr>
<td>65 D</td>
<td>027H5124</td>
</tr>
<tr>
<td>54 SD</td>
<td>027H5123</td>
</tr>
<tr>
<td>50 A</td>
<td>027H5121</td>
</tr>
</tbody>
</table>

ICS 50 function module
Table II

<table>
<thead>
<tr>
<th>Description</th>
<th>Code Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS 50</td>
<td>027H5200 (*)</td>
</tr>
</tbody>
</table>

ICS 50 top cover
Table III

<table>
<thead>
<tr>
<th>Description</th>
<th>Code Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top cover 1 Pilot</td>
<td>027H5172 (*)</td>
</tr>
<tr>
<td>Top cover 3 Pilots</td>
<td>027H5173 **)</td>
</tr>
</tbody>
</table>

*) Including gasket and O-rings
**) including bolts and one blanking plug

D = Butt-weld DIN ; A = Butt-weld ANSI ; J = Butt-weld JIS ; SOC = Socket weld ANSI ; SD = Solder DIN ; SA = Solder ANSI ; FPT = Female Pipe Thread

Ordering complete factory assembled valve
(body, function module and top cover)
Table A

<table>
<thead>
<tr>
<th>Available connections</th>
<th>1 Pilot</th>
<th>3 Pilots (*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 D (2 in.)</td>
<td>027H5020</td>
<td>027H5023</td>
</tr>
<tr>
<td>65 D (2 1/2 in.)</td>
<td>027H5023</td>
<td>027H5021</td>
</tr>
<tr>
<td>54 SD (2 1/8 in. SA)</td>
<td>027H5023</td>
<td>027H5033</td>
</tr>
<tr>
<td>65 A (2 1/2 in.)</td>
<td>027H5022</td>
<td>027H5031</td>
</tr>
<tr>
<td>50 A (2 in.)</td>
<td></td>
<td>027H5032</td>
</tr>
<tr>
<td>50 SOC (2 in.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Select from parts programme

*) Including one blanking plug (A+B)
ICS 65 and ICS 80
Ordering from the parts programme

Example (select from table I, II and III)

Valve body 76 SD (2 5/8 in.)
027H6124

Function module
ICS 65 027H6200
ICS 80 027H8200

Top cover 3 pilots
027H6173

ICS 65 and ICS 80
Table II

<table>
<thead>
<tr>
<th>Description</th>
<th>Code Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS 65</td>
<td>027H6200 *</td>
</tr>
<tr>
<td>ICS 80</td>
<td>027H8200 *</td>
</tr>
</tbody>
</table>

*) Including gasket and O-rings

ICS 65 and ICS 80
Table III

Valve body
65 D (2 ¼ in.) 027H6120
65 A (2 ¼ in.) 027H6121
65 J (2 ½ in.) 027H6122
80 D (3 in.) 027H6126
80 A (3 in.) 027H6127
67 SA (2 5/8 in.) 027H6125
76 SD (3 in.) 027H6124
65 SOC (2 ½ in.) 027H6123

D = Butt-weld DIN ; A = Butt-weld ANSI ; J = Butt-weld JIS ; SOC = Socket weld ANSI ;
SD = Solder DIN ; SA = Solder ANSI ; FPT = Female Pipe Thread

Note:
The capacity of the ICS 80 module can only be achieved when using the valve body with 80 D or A (3 in) connections.
If any other ICV 65 valve body is used the capacity of the complete valve will be reduced by approximately 6%.

Ordering complete factory assembled valve
(body, function module and top cover)

Table A

<table>
<thead>
<tr>
<th>Description</th>
<th>Code Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top cover 1 Pilot (65)</td>
<td>027H6172 *</td>
</tr>
<tr>
<td>Top cover 3 Pilots (65)</td>
<td>027H6173 **</td>
</tr>
<tr>
<td>Top cover 1 Pilot (80)</td>
<td>027H8192 *</td>
</tr>
<tr>
<td>Top cover 3 Pilots (80)</td>
<td>027H8193 **</td>
</tr>
</tbody>
</table>

*) Including bolts
**) Including bolts and one blanking plug

Select from parts programme

*) Including one blanking plug (A+B)

Note:
The capacity of the ICS 80 module can only be achieved when using the valve body with 80 D or A (3 in) connections.
If any other ICV 65 valve body is used the capacity of the complete valve will be reduced by approximately 6%.

© Danfoss | DCS (mwa) | 2018.10

AI241186442033en-US1003 | DKRCI.PD.HS2.B5.22 | 57
**ICS 100 - 150**

Ordering complete factory assembled valve
(body, function module and top cover)

### Connections

**ICS 100 ***)

<table>
<thead>
<tr>
<th>100 D (4 in.)</th>
<th>100 A (4 in.)</th>
<th>100 A (4 in.) with 3/8 in. NPT pressure outlet</th>
</tr>
</thead>
<tbody>
<tr>
<td>027H7120</td>
<td>027H7121</td>
<td>027H7122</td>
</tr>
</tbody>
</table>

**ICS 150 ***)

<table>
<thead>
<tr>
<th>150 D (6 in.)</th>
<th>150 A (6 in.)</th>
<th>150 A (6 in.) with 3/8 in. NPT pressure outlet</th>
</tr>
</thead>
<tbody>
<tr>
<td>027H7160</td>
<td>027H7161</td>
<td>027H7162</td>
</tr>
</tbody>
</table>

*) Including two blanking plugs (A) and one sealing plug (B)

**Spare parts:** Please see AI245486497115

### Accessories

**ICV PM flanged valve housings**

ICV PM flanged valve housings can replace the PM valves on already installed refrigeration systems.

**Pressure range**

The ICV PM valve housing is designed for a max. working pressure of 28 bar g / 406 psig and therefore a suitable replacement for PM valves in the service market. They also offer the same drop-in dimensions as the PM valves.

<table>
<thead>
<tr>
<th>Description</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICV 25 PM Valve housing</td>
<td>027H2119</td>
</tr>
<tr>
<td>ICV 32 PM Valve housing</td>
<td>027H3129</td>
</tr>
<tr>
<td>ICV 40 PM Valve housing</td>
<td>027H4128</td>
</tr>
<tr>
<td>ICV 50 PM Valve housing</td>
<td>027H5127</td>
</tr>
<tr>
<td>ICV 65 PM Valve housing</td>
<td>027H6128</td>
</tr>
</tbody>
</table>

*) Includes ICV PM valve housing, flange gaskets and flange bolts.

**) Includes ICV PM valve housing, flange gaskets, flange bolts and flange nuts.

Function modules and top covers must be ordered separately (see the section “Ordering”).
Accessories

ICV (H)A4A flanged valve housings
ICV (H)A4A flanged valve housings can replace the (H)A4A valves on already installed refrigeration systems.

Pressure range
The ICV (H)A4A valve housing is designed for a max. working pressure of 28 bar g / 406 psig and therefore a suitable replacement for (H)A4A valves in the service market. They also offer the same drop-in dimensions as the (H)A4A valves.

<table>
<thead>
<tr>
<th>Description</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICV 25 (H)A4A Valve housing</td>
<td>027H2304 *)</td>
</tr>
<tr>
<td>ICV 32 A4A Valve housing</td>
<td>027H3130 *)</td>
</tr>
<tr>
<td>ICV 32 HA4A Valve housing</td>
<td>027H3131 *)</td>
</tr>
<tr>
<td>ICV 40 (H)A4A Valve housing</td>
<td>027H4129 *)</td>
</tr>
<tr>
<td>ICV 50 (H)A4A Valve housing</td>
<td>027H5128 *)</td>
</tr>
<tr>
<td>ICV 65 (H)A4A Valve housing</td>
<td>027H6129 *)</td>
</tr>
</tbody>
</table>

*) Includes ICV (H)A4A valve housing, flange gaskets, flange bolts and flange nuts.

Function modules and top covers must be ordered separately (see the section “Ordering”).

Pressure gauge connection (weld / solder).

<table>
<thead>
<tr>
<th>Description</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>∅6.5 mm / ∅10 mm (∅0.26 in. / ∅0.39 in.) weld / solder</td>
<td>027B2035</td>
</tr>
</tbody>
</table>

Pressure gauge connection (weld / solder)

<table>
<thead>
<tr>
<th>mm/ in.</th>
<th>66/2.60</th>
<th>54/2.13</th>
<th>AF 19</th>
<th>AF 22</th>
<th>G 1/4 A</th>
<th>G 3/8 A</th>
<th>6.5/10</th>
</tr>
</thead>
</table>
Accessories (continued)

**Pressure gauge connection, 1/4 in. flare (self-closing)**
Must not be used in R 717 plant.

<table>
<thead>
<tr>
<th>Description</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 in. flare</td>
<td>027B2041</td>
</tr>
</tbody>
</table>

Accessories

<table>
<thead>
<tr>
<th>Accessories</th>
<th>B</th>
<th>B₁</th>
<th>B₂</th>
</tr>
</thead>
</table>

**Pressure gauge connection (cutting ring)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutting ring connection, 6 mm</td>
<td>027B2063</td>
</tr>
<tr>
<td>Cutting ring connection, 10 mm</td>
<td>027B2064</td>
</tr>
</tbody>
</table>

Accessories

<table>
<thead>
<tr>
<th>Accessories</th>
<th>L</th>
<th>L₁</th>
<th>B</th>
<th>B₁</th>
<th>B₂</th>
</tr>
</thead>
</table>

**Pressure gauge connection (cutting ring)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 mm</td>
<td>mm in.</td>
</tr>
<tr>
<td></td>
<td>27 1.06</td>
</tr>
<tr>
<td>10 mm</td>
<td>mm in.</td>
</tr>
<tr>
<td></td>
<td>29 1.14</td>
</tr>
</tbody>
</table>

**Multi-function tool**

The multi-funktion tool can be used for:
- Removing the ICS function module
- Operating the manual spindle

For further information please see the instruction PIHU0A.

**Pressure gauge connection**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 FPT</td>
<td>027B2062</td>
</tr>
</tbody>
</table>

Accessories

<table>
<thead>
<tr>
<th>Accessories</th>
<th>L</th>
<th>L₁</th>
<th>B</th>
<th>B₁</th>
<th>B₂</th>
</tr>
</thead>
</table>

**Pressure gauge connection**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm in.</td>
<td>23 0.91</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>G 1/4 A</th>
<th>AF 22</th>
<th>1/4 FPT</th>
</tr>
</thead>
</table>
Accessories

(continued)

External pilot connection.

<table>
<thead>
<tr>
<th>ICS</th>
<th>Description</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 - 80</td>
<td>External pilot connection (incl. damping orifice, D: 1.0 mm)</td>
<td>027F1048</td>
</tr>
<tr>
<td>5 - 150</td>
<td>Accessory bag with seal and O-ring for pilot valve</td>
<td>027F0666</td>
</tr>
<tr>
<td>100 - 150</td>
<td>External pilot connection (incl. damping orifice, D: 1.8 mm)</td>
<td>027F1049</td>
</tr>
</tbody>
</table>

External pilot connection

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>H₁</td>
<td>OD</td>
<td>B</td>
<td>B₁</td>
<td>B₂</td>
</tr>
</tbody>
</table>

Blanking plug for pilot valves

<table>
<thead>
<tr>
<th>Description</th>
<th>Code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blanking plug</td>
<td>027F1046</td>
</tr>
</tbody>
</table>

Recommended filters

<table>
<thead>
<tr>
<th>Filter Type</th>
<th>Size</th>
<th>D</th>
<th>A</th>
<th>FPT</th>
<th>SOC</th>
<th>100 my</th>
<th>150 my</th>
<th>250 my</th>
<th>500 my</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIA Straightway</td>
<td>25 (1 in.)</td>
<td>148B5443</td>
<td>148B5447</td>
<td>148B5449</td>
<td>148B5448</td>
<td>148H3123</td>
<td>148H3125</td>
<td>148H3127</td>
<td>148H3129</td>
</tr>
<tr>
<td>FIA Straightway</td>
<td>32 (1¼ in.)</td>
<td>148B5544</td>
<td>148B5552</td>
<td>148B5554</td>
<td>148B5558</td>
<td>148H3124</td>
<td>148H3125</td>
<td>148H3127</td>
<td>148H3129</td>
</tr>
<tr>
<td>FIA Straightway</td>
<td>50 (2 in.)</td>
<td>148B5713</td>
<td>148B5716</td>
<td>148B5717</td>
<td>148H3157</td>
<td>148H3130</td>
<td>148H3138</td>
<td>148H3144</td>
<td></td>
</tr>
<tr>
<td>FIA Straightway</td>
<td>65 (2½ in.)</td>
<td>148B5813</td>
<td>148B5815</td>
<td>148B5817</td>
<td>148H3131</td>
<td>148H3139</td>
<td>148H3145</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIA Straightway</td>
<td>80 (3 in.)</td>
<td>148B5906</td>
<td>148B5908</td>
<td>148B5910</td>
<td>148H3132</td>
<td>148H3120</td>
<td>148H3121</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIA Straightway</td>
<td>100 (4 in.)</td>
<td>148B6007</td>
<td>148B6009</td>
<td>148B6011</td>
<td>148H3133</td>
<td>148H3134</td>
<td>148H3140</td>
<td>148H3146</td>
<td></td>
</tr>
<tr>
<td>FIA Straightway</td>
<td>125 (5 in.)</td>
<td>148B6106</td>
<td>148B6108</td>
<td>148B6110</td>
<td>148H3133</td>
<td>148H3134</td>
<td>148H3141</td>
<td>148H3147</td>
<td></td>
</tr>
<tr>
<td>FIA Straightway</td>
<td>150 (6 in.)</td>
<td>148B6203</td>
<td>148B6205</td>
<td>148B6207</td>
<td>148H3134</td>
<td>148H3142</td>
<td>148H3148</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Dimensions and weights - ICS 25-5 to ICS 25-25

<table>
<thead>
<tr>
<th>Connection</th>
<th>H_1</th>
<th>H_2</th>
<th>H_3</th>
<th>H_4</th>
<th>L</th>
<th>L_1</th>
<th>L_2</th>
<th>B_1</th>
<th>B_2</th>
<th>Weight</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>D = Butt-weld DIN</td>
<td>A = Butt-weld ANSI</td>
<td>J = Butt-weld JIS</td>
<td>SOC = Socket weld ANSI</td>
<td>SD = Solder DIN</td>
<td>SA = Solder ANSI</td>
<td>FPT = Female Pipe Thread</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 D (¼ in.)</td>
<td>mm</td>
<td>37</td>
<td>145</td>
<td>86</td>
<td>60</td>
<td>135</td>
<td>42</td>
<td>15</td>
<td>42</td>
<td>87</td>
<td>3 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.46</td>
<td>5.71</td>
<td>3.39</td>
<td>2.36</td>
<td>5.31</td>
<td>1.65</td>
<td>0.59</td>
<td>1.65</td>
<td>3.43</td>
<td>6.6 lb</td>
</tr>
<tr>
<td>25 D (1 in.)</td>
<td>mm</td>
<td>37</td>
<td>145</td>
<td>86</td>
<td>60</td>
<td>135</td>
<td>42</td>
<td>15</td>
<td>42</td>
<td>87</td>
<td>3 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.46</td>
<td>5.71</td>
<td>3.39</td>
<td>2.36</td>
<td>5.31</td>
<td>1.65</td>
<td>0.59</td>
<td>1.65</td>
<td>3.43</td>
<td>6.6 lb</td>
</tr>
<tr>
<td>32 D (1 ¼ in.)</td>
<td>mm</td>
<td>37</td>
<td>145</td>
<td>86</td>
<td>60</td>
<td>135</td>
<td>42</td>
<td>15</td>
<td>42</td>
<td>87</td>
<td>3 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.46</td>
<td>5.71</td>
<td>3.39</td>
<td>2.36</td>
<td>5.31</td>
<td>1.65</td>
<td>0.59</td>
<td>1.65</td>
<td>3.43</td>
<td>6.6 lb</td>
</tr>
<tr>
<td>40 D (1 ½ in.)</td>
<td>mm</td>
<td>37</td>
<td>145</td>
<td>86</td>
<td>60</td>
<td>135</td>
<td>42</td>
<td>15</td>
<td>42</td>
<td>87</td>
<td>3 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.46</td>
<td>5.71</td>
<td>3.39</td>
<td>2.36</td>
<td>5.31</td>
<td>1.65</td>
<td>0.59</td>
<td>1.65</td>
<td>3.43</td>
<td>6.6 lb</td>
</tr>
<tr>
<td>20 A (¼ in.)</td>
<td>mm</td>
<td>37</td>
<td>145</td>
<td>86</td>
<td>60</td>
<td>135</td>
<td>42</td>
<td>15</td>
<td>42</td>
<td>87</td>
<td>3 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.46</td>
<td>5.71</td>
<td>3.39</td>
<td>2.36</td>
<td>5.31</td>
<td>1.65</td>
<td>0.59</td>
<td>1.65</td>
<td>3.43</td>
<td>6.6 lb</td>
</tr>
<tr>
<td>25 A (1 in.)</td>
<td>mm</td>
<td>37</td>
<td>145</td>
<td>86</td>
<td>60</td>
<td>135</td>
<td>42</td>
<td>15</td>
<td>42</td>
<td>87</td>
<td>3 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.46</td>
<td>5.71</td>
<td>3.39</td>
<td>2.36</td>
<td>5.31</td>
<td>1.65</td>
<td>0.59</td>
<td>1.65</td>
<td>3.43</td>
<td>6.6 lb</td>
</tr>
<tr>
<td>32 A (1 ¼ in.)</td>
<td>mm</td>
<td>37</td>
<td>145</td>
<td>86</td>
<td>60</td>
<td>135</td>
<td>42</td>
<td>15</td>
<td>42</td>
<td>87</td>
<td>3 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.46</td>
<td>5.71</td>
<td>3.39</td>
<td>2.36</td>
<td>5.31</td>
<td>1.65</td>
<td>0.59</td>
<td>1.65</td>
<td>3.43</td>
<td>6.6 lb</td>
</tr>
<tr>
<td>20 SOC (¼ in.)</td>
<td>mm</td>
<td>37</td>
<td>145</td>
<td>86</td>
<td>60</td>
<td>135</td>
<td>42</td>
<td>15</td>
<td>42</td>
<td>87</td>
<td>3 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.46</td>
<td>5.71</td>
<td>3.39</td>
<td>2.36</td>
<td>5.31</td>
<td>1.65</td>
<td>0.59</td>
<td>1.65</td>
<td>3.43</td>
<td>6.6 lb</td>
</tr>
<tr>
<td>25 SOC (1 in.)</td>
<td>mm</td>
<td>37</td>
<td>145</td>
<td>86</td>
<td>60</td>
<td>135</td>
<td>42</td>
<td>15</td>
<td>42</td>
<td>87</td>
<td>3 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.46</td>
<td>5.71</td>
<td>3.39</td>
<td>2.36</td>
<td>5.31</td>
<td>1.65</td>
<td>0.59</td>
<td>1.65</td>
<td>3.43</td>
<td>6.6 lb</td>
</tr>
<tr>
<td>22 SD (½ in.)</td>
<td>mm</td>
<td>37</td>
<td>145</td>
<td>86</td>
<td>60</td>
<td>135</td>
<td>42</td>
<td>15</td>
<td>42</td>
<td>87</td>
<td>3 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.46</td>
<td>5.71</td>
<td>3.39</td>
<td>2.36</td>
<td>5.31</td>
<td>1.65</td>
<td>0.59</td>
<td>1.65</td>
<td>3.43</td>
<td>6.6 lb</td>
</tr>
<tr>
<td>28 SD (1 ½ in.)</td>
<td>mm</td>
<td>37</td>
<td>145</td>
<td>86</td>
<td>60</td>
<td>135</td>
<td>42</td>
<td>15</td>
<td>42</td>
<td>87</td>
<td>3 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.46</td>
<td>5.71</td>
<td>3.39</td>
<td>2.36</td>
<td>5.31</td>
<td>1.65</td>
<td>0.59</td>
<td>1.65</td>
<td>3.43</td>
<td>6.6 lb</td>
</tr>
<tr>
<td>22 SA (½ in.)</td>
<td>mm</td>
<td>37</td>
<td>145</td>
<td>86</td>
<td>60</td>
<td>135</td>
<td>42</td>
<td>15</td>
<td>42</td>
<td>87</td>
<td>3 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.46</td>
<td>5.71</td>
<td>3.39</td>
<td>2.36</td>
<td>5.31</td>
<td>1.65</td>
<td>0.59</td>
<td>1.65</td>
<td>3.43</td>
<td>6.6 lb</td>
</tr>
<tr>
<td>28 SA (1 ¼ in.)</td>
<td>mm</td>
<td>37</td>
<td>145</td>
<td>86</td>
<td>60</td>
<td>135</td>
<td>42</td>
<td>15</td>
<td>42</td>
<td>87</td>
<td>3 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.46</td>
<td>5.71</td>
<td>3.39</td>
<td>2.36</td>
<td>5.31</td>
<td>1.65</td>
<td>0.59</td>
<td>1.65</td>
<td>3.43</td>
<td>6.6 lb</td>
</tr>
<tr>
<td>35 SA (1 3/8 in.)</td>
<td>mm</td>
<td>37</td>
<td>145</td>
<td>86</td>
<td>60</td>
<td>135</td>
<td>42</td>
<td>15</td>
<td>42</td>
<td>87</td>
<td>3 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.46</td>
<td>5.71</td>
<td>3.39</td>
<td>2.36</td>
<td>5.31</td>
<td>1.65</td>
<td>0.59</td>
<td>1.65</td>
<td>3.43</td>
<td>6.6 lb</td>
</tr>
<tr>
<td>20 FPT (¾ in.)</td>
<td>mm</td>
<td>37</td>
<td>145</td>
<td>86</td>
<td>60</td>
<td>135</td>
<td>42</td>
<td>15</td>
<td>42</td>
<td>87</td>
<td>3 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.46</td>
<td>5.71</td>
<td>3.39</td>
<td>2.36</td>
<td>5.31</td>
<td>1.65</td>
<td>0.59</td>
<td>1.65</td>
<td>3.43</td>
<td>6.6 lb</td>
</tr>
<tr>
<td>25 FPT (1 in.)</td>
<td>mm</td>
<td>37</td>
<td>145</td>
<td>86</td>
<td>60</td>
<td>135</td>
<td>42</td>
<td>15</td>
<td>42</td>
<td>87</td>
<td>3 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.46</td>
<td>5.71</td>
<td>3.39</td>
<td>2.36</td>
<td>5.31</td>
<td>1.65</td>
<td>0.59</td>
<td>1.65</td>
<td>3.43</td>
<td>6.6 lb</td>
</tr>
</tbody>
</table>

© Danfoss | DCS (mwa) | 2018.10

AI241186442033en-US1003 | DKRCLPD.HS2.B5.22 | 62
## Dimensions and weights - ICS 32

<table>
<thead>
<tr>
<th>Connection</th>
<th>H_x</th>
<th>H_y</th>
<th>H_z</th>
<th>H_4</th>
<th>L</th>
<th>L_1</th>
<th>L_2</th>
<th>B_x</th>
<th>B_y</th>
<th>Weight ICS 1 Pilot</th>
<th>Weight ICS 3 Pilots</th>
</tr>
</thead>
<tbody>
<tr>
<td>32 D (1 1/4 in.)</td>
<td>mm</td>
<td>40</td>
<td>160</td>
<td>100</td>
<td>74</td>
<td>145</td>
<td>51</td>
<td>15</td>
<td>51</td>
<td>87</td>
<td>4.5 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.57</td>
<td>6.30</td>
<td>3.93</td>
<td>2.91</td>
<td>5.71</td>
<td>2.00</td>
<td>0.59</td>
<td>2.00</td>
<td>3.43</td>
<td>9.9 lb.</td>
</tr>
<tr>
<td>40 D (1 1/2 in.)</td>
<td>mm</td>
<td>40</td>
<td>160</td>
<td>100</td>
<td>74</td>
<td>145</td>
<td>51</td>
<td>15</td>
<td>51</td>
<td>87</td>
<td>4.5 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.57</td>
<td>6.30</td>
<td>3.93</td>
<td>2.91</td>
<td>5.71</td>
<td>2.00</td>
<td>0.59</td>
<td>2.00</td>
<td>3.43</td>
<td>9.9 lb.</td>
</tr>
<tr>
<td>32 A (1 1/4 in.)</td>
<td>mm</td>
<td>40</td>
<td>160</td>
<td>100</td>
<td>74</td>
<td>145</td>
<td>51</td>
<td>15</td>
<td>51</td>
<td>87</td>
<td>4.5 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.57</td>
<td>6.30</td>
<td>3.93</td>
<td>2.91</td>
<td>5.71</td>
<td>2.00</td>
<td>0.59</td>
<td>2.00</td>
<td>3.43</td>
<td>9.9 lb.</td>
</tr>
<tr>
<td>40 A (1 1/2 in.)</td>
<td>mm</td>
<td>40</td>
<td>160</td>
<td>100</td>
<td>74</td>
<td>145</td>
<td>51</td>
<td>15</td>
<td>51</td>
<td>87</td>
<td>4.5 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.57</td>
<td>6.30</td>
<td>3.93</td>
<td>2.91</td>
<td>5.71</td>
<td>2.00</td>
<td>0.59</td>
<td>2.00</td>
<td>3.43</td>
<td>9.9 lb.</td>
</tr>
<tr>
<td>32 SOC (1 1/4 in.)</td>
<td>mm</td>
<td>40</td>
<td>160</td>
<td>100</td>
<td>74</td>
<td>148</td>
<td>51</td>
<td>15</td>
<td>51</td>
<td>87</td>
<td>4.5 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.57</td>
<td>6.30</td>
<td>3.93</td>
<td>2.91</td>
<td>5.83</td>
<td>2.00</td>
<td>0.59</td>
<td>2.00</td>
<td>3.43</td>
<td>9.9 lb.</td>
</tr>
<tr>
<td>35 SD (1 3/8 in. SA)</td>
<td>mm</td>
<td>40</td>
<td>160</td>
<td>100</td>
<td>74</td>
<td>148</td>
<td>51</td>
<td>15</td>
<td>51</td>
<td>87</td>
<td>4.5 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.57</td>
<td>6.30</td>
<td>3.93</td>
<td>2.91</td>
<td>5.83</td>
<td>2.00</td>
<td>0.59</td>
<td>2.00</td>
<td>3.43</td>
<td>11 lb.</td>
</tr>
<tr>
<td>42 SD (1 5/8 in.)</td>
<td>mm</td>
<td>40</td>
<td>160</td>
<td>100</td>
<td>74</td>
<td>148</td>
<td>51</td>
<td>15</td>
<td>51</td>
<td>87</td>
<td>4.5 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.57</td>
<td>6.30</td>
<td>3.93</td>
<td>2.91</td>
<td>5.83</td>
<td>2.00</td>
<td>0.59</td>
<td>2.00</td>
<td>3.43</td>
<td>9.9 lb.</td>
</tr>
<tr>
<td>42 SA (1 3/4 in.)</td>
<td>mm</td>
<td>40</td>
<td>160</td>
<td>100</td>
<td>74</td>
<td>148</td>
<td>51</td>
<td>15</td>
<td>51</td>
<td>87</td>
<td>4.5 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>1.57</td>
<td>6.30</td>
<td>3.93</td>
<td>2.91</td>
<td>5.83</td>
<td>2.00</td>
<td>0.59</td>
<td>2.00</td>
<td>3.43</td>
<td>9.9 lb.</td>
</tr>
</tbody>
</table>

D = Butt-weld DIN ; A = Butt-weld ANSI ; J = Butt-weld JIS ; SOC = Socket weld ANSI ; SD = Solder DIN ; SA = Solder ANSI ; FPT = Female Pipe Thread
Dimensions and weights - ICS 40

Connection | $H_1$ | $H_2$ | $H_3$ | $H_4$ | $L$ | $L_1$ | $L_2$ | $B_1$ | $B_2$ | Weight ICS 1 Pilot | Weight ICS 3 Pilots
---|---|---|---|---|---|---|---|---|---|---|---
40 D (1 ½ in.) | mm | 49 | 166 | 105 | 78 | 160 | 51 | 15 | 54 | 87 | 5.9 kg | 6.3 kg
     | in. | 1.93 | 6.54 | 4.13 | 3.07 | 6.30 | 2.00 | 0.59 | 2.13 | 3.43 | 13.0 lb. | 13.9 lb.
50 D (2 in.) | mm | 49 | 166 | 105 | 78 | 180 | 51 | 15 | 54 | 87 | 5.9 kg | 6.3 kg
     | in. | 1.93 | 6.54 | 4.13 | 3.07 | 7.09 | 2.00 | 0.59 | 2.13 | 3.43 | 13.0 lb. | 13.9 lb.
40 A (1 ½ in.) | mm | 49 | 166 | 105 | 78 | 160 | 51 | 15 | 54 | 87 | 5.9 kg | 6.3 kg
     | in. | 1.93 | 6.54 | 4.13 | 3.07 | 6.30 | 2.00 | 0.59 | 2.13 | 3.43 | 13.0 lb. | 13.9 lb.
50 A (2 in.) | mm | 49 | 166 | 105 | 78 | 180 | 51 | 15 | 54 | 87 | 5.9 kg | 6.3 kg
     | in. | 1.93 | 6.54 | 4.13 | 3.07 | 7.09 | 2.00 | 0.59 | 2.13 | 3.43 | 13.0 lb. | 13.9 lb.
40 SOC (1 ½ in.) | mm | 49 | 166 | 105 | 78 | 180 | 51 | 15 | 54 | 87 | 5.9 kg | 6.3 kg
     | in. | 1.93 | 6.54 | 4.13 | 3.07 | 7.09 | 2.00 | 0.59 | 2.13 | 3.43 | 13.0 lb. | 13.9 lb.
42 SD (1 ½ in.) | mm | 49 | 166 | 105 | 78 | 180 | 51 | 15 | 54 | 87 | 5.9 kg | 6.3 kg
     | in. | 1.93 | 6.54 | 4.13 | 3.07 | 7.09 | 2.00 | 0.59 | 2.13 | 3.43 | 13.0 lb. | 13.9 lb.
42 SA (1 ½ in.) | mm | 49 | 166 | 105 | 78 | 180 | 51 | 15 | 54 | 87 | 5.9 kg | 6.3 kg
     | in. | 1.93 | 6.54 | 4.13 | 3.07 | 7.09 | 2.00 | 0.59 | 2.13 | 3.43 | 13.0 lb. | 13.9 lb.

$D =$ Butt-weld DIN ; $A =$ Butt-weld ANSI ; $J =$ Butt-weld JIS ; $SOC =$ Socket weld ANSI ; $SD =$ Solder DIN ; $SA =$ Solder ANSI ; $FPT =$ Female Pipe Thread
### Dimensions and weights - ICS 50

<table>
<thead>
<tr>
<th>Connection</th>
<th>H₁</th>
<th>H₂</th>
<th>H₃</th>
<th>H₄</th>
<th>L</th>
<th>L₁</th>
<th>L₂</th>
<th>B₁</th>
<th>B₂</th>
<th>Weight ICS 1 Pilot</th>
<th>Weight ICS 3 Pilots</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 D (2 in.)</td>
<td>mm</td>
<td>59</td>
<td>181</td>
<td>120</td>
<td>93</td>
<td>200</td>
<td>51</td>
<td>15</td>
<td>63</td>
<td>91</td>
<td>8.9 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>2.32</td>
<td>7.13</td>
<td>4.72</td>
<td>3.66</td>
<td>7.87</td>
<td>2.00</td>
<td>0.59</td>
<td>2.48</td>
<td>3.58</td>
<td>19.6 lb.</td>
</tr>
<tr>
<td>65 D (2 ½ in.)</td>
<td>mm</td>
<td>59</td>
<td>181</td>
<td>120</td>
<td>93</td>
<td>210</td>
<td>51</td>
<td>15</td>
<td>63</td>
<td>91</td>
<td>8.9 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>2.32</td>
<td>7.13</td>
<td>4.72</td>
<td>3.66</td>
<td>8.27</td>
<td>2.00</td>
<td>0.59</td>
<td>2.48</td>
<td>3.58</td>
<td>19.6 lb.</td>
</tr>
<tr>
<td>50 A (2 in.)</td>
<td>mm</td>
<td>59</td>
<td>181</td>
<td>120</td>
<td>93</td>
<td>200</td>
<td>51</td>
<td>15</td>
<td>63</td>
<td>91</td>
<td>8.9 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>2.32</td>
<td>7.13</td>
<td>4.72</td>
<td>3.66</td>
<td>7.87</td>
<td>2.00</td>
<td>0.59</td>
<td>2.48</td>
<td>3.58</td>
<td>19.6 lb.</td>
</tr>
<tr>
<td>65 A (2 ½ in.)</td>
<td>mm</td>
<td>59</td>
<td>181</td>
<td>120</td>
<td>93</td>
<td>210</td>
<td>51</td>
<td>15</td>
<td>63</td>
<td>91</td>
<td>8.9 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>2.32</td>
<td>7.13</td>
<td>4.72</td>
<td>3.66</td>
<td>8.27</td>
<td>2.00</td>
<td>0.59</td>
<td>2.48</td>
<td>3.58</td>
<td>19.6 lb.</td>
</tr>
<tr>
<td>50 SOC (2 in.)</td>
<td>mm</td>
<td>59</td>
<td>181</td>
<td>120</td>
<td>93</td>
<td>216</td>
<td>51</td>
<td>15</td>
<td>63</td>
<td>91</td>
<td>8.9 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>2.32</td>
<td>7.13</td>
<td>4.72</td>
<td>3.66</td>
<td>8.50</td>
<td>2.00</td>
<td>0.59</td>
<td>2.48</td>
<td>3.58</td>
<td>19.6 lb.</td>
</tr>
<tr>
<td>54 SD (2 ½ in. SA)</td>
<td>mm</td>
<td>59</td>
<td>181</td>
<td>120</td>
<td>93</td>
<td>216</td>
<td>51</td>
<td>15</td>
<td>63</td>
<td>91</td>
<td>8.9 kg</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>2.32</td>
<td>7.13</td>
<td>4.72</td>
<td>3.66</td>
<td>8.50</td>
<td>2.00</td>
<td>0.59</td>
<td>2.48</td>
<td>3.58</td>
<td>19.6 lb.</td>
</tr>
</tbody>
</table>

D = Butt-weld DIN; A = Butt-weld ANSI; J = Butt-weld JIS; SOC = Socket weld ANSI; SD = Solder DIN; SA = Solder ANSI; FPT = Female Pipe Thread
## Dimensions and weights - ICS 65/ICS 80

<table>
<thead>
<tr>
<th>Connection</th>
<th>H₁</th>
<th>H₂</th>
<th>H₃</th>
<th>H₄</th>
<th>L</th>
<th>L₁</th>
<th>L₂</th>
<th>B₁</th>
<th>B₂</th>
<th>Weight ICS 1 Pilot</th>
<th>Weight ICS 3 Pilots</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 D (2 ½ in.)</td>
<td>mm</td>
<td>65</td>
<td>202</td>
<td>140</td>
<td>115</td>
<td>230</td>
<td>51</td>
<td>15</td>
<td>70</td>
<td>91</td>
<td>13.4 kg</td>
</tr>
<tr>
<td></td>
<td>in</td>
<td>2.56</td>
<td>7.95</td>
<td>5.51</td>
<td>4.53</td>
<td>9.06</td>
<td>2.00</td>
<td>0.59</td>
<td>2.76</td>
<td>3.58</td>
<td>13.5 kg</td>
</tr>
<tr>
<td>80 D (3 in.)</td>
<td>mm</td>
<td>65</td>
<td>202</td>
<td>140</td>
<td>115</td>
<td>245</td>
<td>51</td>
<td>15</td>
<td>70</td>
<td>91</td>
<td>13.4 kg</td>
</tr>
<tr>
<td></td>
<td>in</td>
<td>2.56</td>
<td>7.95</td>
<td>5.51</td>
<td>4.53</td>
<td>9.65</td>
<td>2.00</td>
<td>0.59</td>
<td>2.76</td>
<td>3.58</td>
<td>13.5 kg</td>
</tr>
<tr>
<td>65 A (2 ½ in.)</td>
<td>mm</td>
<td>65</td>
<td>202</td>
<td>140</td>
<td>115</td>
<td>230</td>
<td>51</td>
<td>15</td>
<td>70</td>
<td>91</td>
<td>13.4 kg</td>
</tr>
<tr>
<td></td>
<td>in</td>
<td>2.56</td>
<td>7.95</td>
<td>5.51</td>
<td>4.53</td>
<td>9.06</td>
<td>2.00</td>
<td>0.59</td>
<td>2.76</td>
<td>3.58</td>
<td>13.5 kg</td>
</tr>
<tr>
<td>80 A (3 in.)</td>
<td>mm</td>
<td>65</td>
<td>202</td>
<td>140</td>
<td>115</td>
<td>245</td>
<td>51</td>
<td>15</td>
<td>70</td>
<td>91</td>
<td>13.4 kg</td>
</tr>
<tr>
<td></td>
<td>in</td>
<td>2.56</td>
<td>7.95</td>
<td>5.51</td>
<td>4.53</td>
<td>9.65</td>
<td>2.00</td>
<td>0.59</td>
<td>2.76</td>
<td>3.58</td>
<td>13.5 kg</td>
</tr>
<tr>
<td>65 J (2 ½ in.)</td>
<td>mm</td>
<td>65</td>
<td>202</td>
<td>140</td>
<td>115</td>
<td>230</td>
<td>51</td>
<td>15</td>
<td>70</td>
<td>91</td>
<td>13.4 kg</td>
</tr>
<tr>
<td></td>
<td>in</td>
<td>2.56</td>
<td>7.95</td>
<td>5.51</td>
<td>4.53</td>
<td>9.06</td>
<td>2.00</td>
<td>0.59</td>
<td>2.76</td>
<td>3.58</td>
<td>13.5 kg</td>
</tr>
<tr>
<td>65 SOC (2 ½ in.)</td>
<td>mm</td>
<td>65</td>
<td>202</td>
<td>140</td>
<td>115</td>
<td>230</td>
<td>51</td>
<td>15</td>
<td>70</td>
<td>91</td>
<td>13.4 kg</td>
</tr>
<tr>
<td></td>
<td>in</td>
<td>2.56</td>
<td>7.95</td>
<td>5.51</td>
<td>4.53</td>
<td>9.06</td>
<td>2.00</td>
<td>0.59</td>
<td>2.76</td>
<td>3.58</td>
<td>13.5 kg</td>
</tr>
<tr>
<td>76 SD (3 in.)</td>
<td>mm</td>
<td>65</td>
<td>202</td>
<td>140</td>
<td>115</td>
<td>245</td>
<td>51</td>
<td>15</td>
<td>70</td>
<td>91</td>
<td>13.4 kg</td>
</tr>
<tr>
<td></td>
<td>in</td>
<td>2.56</td>
<td>7.95</td>
<td>5.51</td>
<td>4.53</td>
<td>9.65</td>
<td>2.00</td>
<td>0.59</td>
<td>2.76</td>
<td>3.58</td>
<td>13.5 kg</td>
</tr>
<tr>
<td>67 SA (2 ½ in.)</td>
<td>mm</td>
<td>65</td>
<td>202</td>
<td>140</td>
<td>115</td>
<td>245</td>
<td>51</td>
<td>15</td>
<td>70</td>
<td>91</td>
<td>13.4 kg</td>
</tr>
<tr>
<td></td>
<td>in</td>
<td>2.56</td>
<td>7.95</td>
<td>5.51</td>
<td>4.53</td>
<td>9.65</td>
<td>2.00</td>
<td>0.59</td>
<td>2.76</td>
<td>3.58</td>
<td>13.5 kg</td>
</tr>
</tbody>
</table>

D = Butt-weld DIN; A = Butt-weld ANSI; J = Butt-weld JIS; SOC = Socket weld ANSI; SD = Solder DIN; SA = Solder ANSI; FPT = Female Pipe Thread
Dimensions and weights - ICS 100

<table>
<thead>
<tr>
<th>Connection</th>
<th>H1</th>
<th>H2</th>
<th>H3</th>
<th>H4</th>
<th>L</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 D or A (4 in.)</td>
<td>mm</td>
<td>109</td>
<td>372</td>
<td>237</td>
<td>196</td>
<td>295</td>
<td>60</td>
<td>51</td>
<td>50</td>
<td>109</td>
<td>38</td>
<td>52</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>4.3</td>
<td>14.7</td>
<td>9.3</td>
<td>7.7</td>
<td>11.6</td>
<td>2.4</td>
<td>2.0</td>
<td>2.0</td>
<td>4.3</td>
<td>1.5</td>
<td>2.1</td>
<td>1.3</td>
</tr>
</tbody>
</table>

D = Butt-weld DIN ; A = Butt-weld ANSI

© Danfoss | DCS (mwa) | 2018.10
### Dimensions and weights - ICS 125

<table>
<thead>
<tr>
<th>Connection</th>
<th>H1</th>
<th>H2</th>
<th>H3</th>
<th>H4</th>
<th>L</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm</td>
<td>139</td>
<td>386</td>
<td>246</td>
<td>212</td>
<td>350</td>
<td>84</td>
<td>56</td>
<td>55</td>
<td>85</td>
<td>130</td>
<td>45</td>
<td>50</td>
<td>47</td>
<td>68 kg</td>
</tr>
<tr>
<td>in.</td>
<td>5.5</td>
<td>15.2</td>
<td>9.7</td>
<td>8.4</td>
<td>13.8</td>
<td>3.3</td>
<td>2.2</td>
<td>2.2</td>
<td>3.4</td>
<td>5.1</td>
<td>1.8</td>
<td>2.0</td>
<td>1.9</td>
<td>149.9 lb.</td>
</tr>
</tbody>
</table>

D = Butt-weld DIN ; A = Butt-weld ANSI
Dimensions and weights - ICS 150

<table>
<thead>
<tr>
<th>Connection</th>
<th>H1 (mm)</th>
<th>H2 (mm)</th>
<th>H3 (mm)</th>
<th>H4 (mm)</th>
<th>L (mm)</th>
<th>L1 (mm)</th>
<th>L2 (mm)</th>
<th>L3 (mm)</th>
<th>L4 (mm)</th>
<th>B1 (mm)</th>
<th>B2 (mm)</th>
<th>B3 (mm)</th>
<th>B4 (mm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 D or A (6 in.)</td>
<td>168</td>
<td>425</td>
<td>297</td>
<td>256</td>
<td>445</td>
<td>107</td>
<td>58</td>
<td>69</td>
<td>96</td>
<td>150</td>
<td>48</td>
<td>52</td>
<td>50</td>
<td>115</td>
</tr>
</tbody>
</table>

D = Butt-weld DIN ; A = Butt-weld ANSI
# Data sheet | Pilot-operated servo valve, type ICS

## Connections

### D: Butt-weld DIN (2448)

<table>
<thead>
<tr>
<th>Size (mm)</th>
<th>Size (in.)</th>
<th>OD (mm)</th>
<th>T (mm)</th>
<th>OD (in.)</th>
<th>T (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>¾</td>
<td>26.9</td>
<td>2.3</td>
<td>1.059</td>
<td>0.091</td>
</tr>
<tr>
<td>25</td>
<td>1</td>
<td>33.7</td>
<td>2.6</td>
<td>1.327</td>
<td>0.103</td>
</tr>
<tr>
<td>32</td>
<td>1¼</td>
<td>42.4</td>
<td>2.6</td>
<td>1.669</td>
<td>0.102</td>
</tr>
<tr>
<td>40</td>
<td>1½</td>
<td>48.3</td>
<td>2.6</td>
<td>1.902</td>
<td>0.103</td>
</tr>
<tr>
<td>50</td>
<td>2</td>
<td>60.3</td>
<td>2.9</td>
<td>2.37</td>
<td>0.11</td>
</tr>
<tr>
<td>65</td>
<td>2½</td>
<td>76.1</td>
<td>2.9</td>
<td>3</td>
<td>0.11</td>
</tr>
<tr>
<td>80</td>
<td>3</td>
<td>88.9</td>
<td>3.2</td>
<td>3.50</td>
<td>0.13</td>
</tr>
<tr>
<td>100</td>
<td>4</td>
<td>114.3</td>
<td>3.6</td>
<td>4.5</td>
<td>0.14</td>
</tr>
<tr>
<td>125</td>
<td>5</td>
<td>140.7</td>
<td>4</td>
<td>5.5</td>
<td>0.16</td>
</tr>
<tr>
<td>150</td>
<td>6</td>
<td>168.3</td>
<td>6.3</td>
<td>6.6</td>
<td>0.25</td>
</tr>
</tbody>
</table>

### A: Butt-weld ANSI (B 36.10)

<table>
<thead>
<tr>
<th>Size (mm)</th>
<th>Size (in.)</th>
<th>OD (mm)</th>
<th>T (mm)</th>
<th>OD (in.)</th>
<th>T (in.)</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>¾</td>
<td>26.9</td>
<td>4.0</td>
<td>1.059</td>
<td>0.158</td>
<td>80</td>
</tr>
<tr>
<td>25</td>
<td>1</td>
<td>33.7</td>
<td>4.6</td>
<td>1.327</td>
<td>0.181</td>
<td>80</td>
</tr>
<tr>
<td>32</td>
<td>1¼</td>
<td>42.4</td>
<td>4.9</td>
<td>1.669</td>
<td>0.193</td>
<td>80</td>
</tr>
<tr>
<td>40</td>
<td>1½</td>
<td>48.3</td>
<td>5.1</td>
<td>1.902</td>
<td>0.201</td>
<td>80</td>
</tr>
<tr>
<td>50</td>
<td>2</td>
<td>60.3</td>
<td>3.9</td>
<td>2.37</td>
<td>0.15</td>
<td>40</td>
</tr>
<tr>
<td>65</td>
<td>2½</td>
<td>73.0</td>
<td>5.2</td>
<td>2.87</td>
<td>0.20</td>
<td>40</td>
</tr>
<tr>
<td>80</td>
<td>3</td>
<td>88.9</td>
<td>5.5</td>
<td>3.50</td>
<td>0.22</td>
<td>40</td>
</tr>
<tr>
<td>100</td>
<td>4</td>
<td>114.3</td>
<td>6</td>
<td>4.5</td>
<td>0.24</td>
<td></td>
</tr>
<tr>
<td>125</td>
<td>5</td>
<td>140.7</td>
<td>6.5</td>
<td>5.5</td>
<td>0.26</td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>6</td>
<td>168.3</td>
<td>7.1</td>
<td>6.6</td>
<td>0.28</td>
<td></td>
</tr>
</tbody>
</table>

### J: Butt-weld JIS

<table>
<thead>
<tr>
<th>Size (mm)</th>
<th>Size (in.)</th>
<th>OD (mm)</th>
<th>T (mm)</th>
<th>OD (in.)</th>
<th>T (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>¾</td>
<td>27.2</td>
<td>4.6</td>
<td>1.071</td>
<td>0.181</td>
</tr>
<tr>
<td>28</td>
<td>1</td>
<td>33.9</td>
<td>7.2</td>
<td>1.335</td>
<td>0.184</td>
</tr>
<tr>
<td>32</td>
<td>1¼</td>
<td>42.7</td>
<td>6.1</td>
<td>1.743</td>
<td>0.240</td>
</tr>
<tr>
<td>40</td>
<td>1½</td>
<td>48.8</td>
<td>6.6</td>
<td>1.921</td>
<td>0.260</td>
</tr>
<tr>
<td>50</td>
<td>2</td>
<td>61.2</td>
<td>6.2</td>
<td>2.41</td>
<td>0.24</td>
</tr>
<tr>
<td>65</td>
<td>2½</td>
<td>74</td>
<td>8.8</td>
<td>2.91</td>
<td>0.344</td>
</tr>
</tbody>
</table>

### SOC: Socket welding ANSI (B 16.11)

<table>
<thead>
<tr>
<th>Size (mm)</th>
<th>Size (in.)</th>
<th>ID (mm)</th>
<th>T (mm)</th>
<th>ID (in.)</th>
<th>T (in.)</th>
<th>L (mm)</th>
<th>L (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>¾</td>
<td>27.2</td>
<td>4.6</td>
<td>1.071</td>
<td>0.181</td>
<td>13</td>
<td>0.51</td>
</tr>
<tr>
<td>25</td>
<td>1</td>
<td>33.9</td>
<td>7.2</td>
<td>1.335</td>
<td>0.284</td>
<td>13</td>
<td>0.51</td>
</tr>
<tr>
<td>32</td>
<td>1¼</td>
<td>42.7</td>
<td>6.1</td>
<td>1.743</td>
<td>0.240</td>
<td>13</td>
<td>0.51</td>
</tr>
<tr>
<td>40</td>
<td>1½</td>
<td>48.8</td>
<td>6.6</td>
<td>1.921</td>
<td>0.260</td>
<td>13</td>
<td>0.51</td>
</tr>
<tr>
<td>50</td>
<td>2</td>
<td>61.2</td>
<td>6.2</td>
<td>2.41</td>
<td>0.24</td>
<td>16</td>
<td>0.63</td>
</tr>
<tr>
<td>65</td>
<td>2½</td>
<td>74</td>
<td>8.8</td>
<td>2.91</td>
<td>0.344</td>
<td>16</td>
<td>0.63</td>
</tr>
</tbody>
</table>

### SD: Soldering (DIN 2856)

<table>
<thead>
<tr>
<th>Size (mm)</th>
<th>Size (in.)</th>
<th>ID (mm)</th>
<th>L (mm)</th>
<th>L (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>¾</td>
<td>22.08</td>
<td>16.5</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>1</td>
<td>28.08</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>1¼</td>
<td>35.07</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>1½</td>
<td>42.07</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>2</td>
<td>54.09</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>76</td>
<td>2½</td>
<td>76.1</td>
<td>33</td>
<td></td>
</tr>
</tbody>
</table>
### Connections (continued)

#### SA: Soldering (ANSI B 16.22)

<table>
<thead>
<tr>
<th>Size mm</th>
<th>Size in.</th>
<th>Inside pipe thread</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>¾</td>
<td>(¾ × 14 NPT)</td>
</tr>
<tr>
<td>25</td>
<td>1</td>
<td>(1 × 11.5 NPT)</td>
</tr>
<tr>
<td>32</td>
<td>1¾</td>
<td>(1 ½ × 11.5 NPT)</td>
</tr>
</tbody>
</table>

#### FPT: Female pipe thread, (ANSI/ASME B 1.20.1)

<table>
<thead>
<tr>
<th>Size mm</th>
<th>Size in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>¾</td>
</tr>
<tr>
<td>25</td>
<td>1</td>
</tr>
<tr>
<td>32</td>
<td>1¾</td>
</tr>
</tbody>
</table>