

Data Sheet

Check and stop valves
SCA-X and **CHV-X**

Designed to open at very low differential pressures



SCA-X are check valves with a built-in stop valve function. CHV-X are check valves only. SCA-X/ CHV-X are available in angleway and straightway versions. The valves are designed to open at very low differential pressures, allow favourable flow conditions and are easy to disassemble for inspection and service.

The SCA-X is equipped with vented cap and has internal backseating enabling the spindle seal to be replaced whilst the valve still under pressure. Laser cut V-ports provide excellent opening characteristics (SCA-X/CHV-X 50-125).

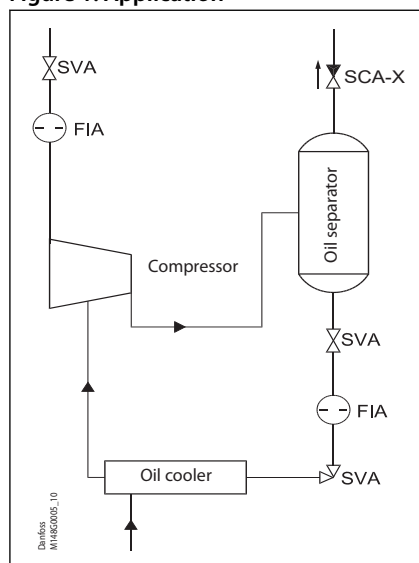
The valve cone has a built-in flexibility to ensure a precise and tight closing towards the valve seat. A well balanced dampening effect between the piston and the cylinder gives an optimal protection during low loads and against pulsations.

Features

- Modular Concept:
 - Each valve housing is available with DIN and ANSI butt weld connection and in several different sizes.
 - Possible to convert SCA-X or CHV-X to any other product in the Flexline™ SVL family (regulating valve, shut-off valve or strainer) just by replacing the complete top part.
- Fast and easy valve overhaul service. It is easy to replace the top part and no welding is needed.
- Designed to open at a very low differential pressure of 0.04 bar (0.58 psig).
- Designed with a built-in damping chamber preventing valve flutter in case of low refrigerant velocity and/or low density.
- Each valve is clearly marked with type, size and performance range. At replacement of the O-ring for special application, an additional ID ring is fixed to the valve.
- Easy to disassemble for inspection and service.
- Internal backseating enables replacement of the spindle seal whilst the valve is active, i.e. under pressure.
- Optimal flow characteristics ensuring quick opening to the fully open position.
- Protection against pulsation by built-in damping facility.
- Housing and bonnet material is low temperature steel according to requirements of the Pressure Equipment Directive and other international classification authorities.
- Equipped with 42CrMo4 bolts to withstand high pressure.
- Classification: DNV, CRN, BV, EAC etc. To get an updated list of certification on the products please contact your local Danfoss Sales Company.
- Service kits with replacement O-rings for R717 Heat Pump and R1270 Propylene include separate ID-ring for ID of application.

Application

Figure 1: Application



The above shows the check & stop valve SCA-X in the discharge line of a screw compressor unit. The SCA-X valve in the discharge line prevents “back condensation” in the oil separator as well as pressure equalising through the compressor.

Compared to an ordinary stop and check valve arrangement the combined stop/check valve solution, as shown, is easier to install and has lower flow resistance. **Installation of the SCA-X/CHV-X in the economizer line is not recommended.**

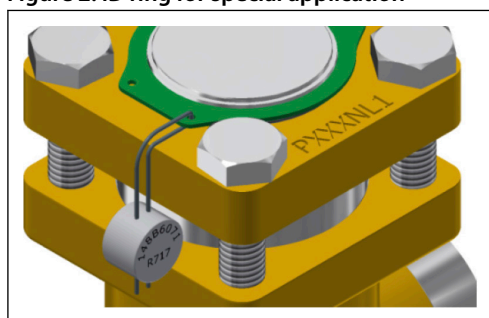
For horizontal installation of the function module, please contact Danfoss.

ID ring for special application

After converting a SCA or CHV valve for Heat Pump/Propylene applications (replacing O-ring) the color marked ID tag included in the service kit must be fixed to the valve as shown in figure to the right.

The ID tag indicates the special application and identifies the installed O-ring.

Figure 2: ID ring for special application



Media

Refrigerants

Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO₂) and flammable refrigerants. For further information please see the installation guide for SCA-X/CHV-X.

New refrigerants

Danfoss products are continually evaluated for use with new refrigerants depending on market requirements.

When a refrigerant is approved for use by Danfoss, it is added to the relevant portfolio, and the R number of the refrigerant (e.g. R513A) will be added to the technical data of the code number. Therefore, products for specific refrigerants are best checked at store.danfoss.com/en/, or by contacting your local Danfoss representative.

Product specification

Pressure and temperature data

Table 1: Pressure and temperature data

| Features | Description |
|------------------------------------|--|
| Temperature range | -60 °C/+150 °C (-76 °F/+302 °F). |
| Max. working pressure | 65 bar (943 psig) |
| With O-ring replaced (Service kit) | Heat pump configuration: R717 - 65 bar(g) (943 psig) @ +100 °C to +150 °C (+212 °F to +302 °F) continuous. |
| Propylene configuration: | R1270 - 65 bar(g) (943 psig) @ -60 °C to 150 °C (-76 °F to 302 °F) |

Connections

Figure 3: DIN

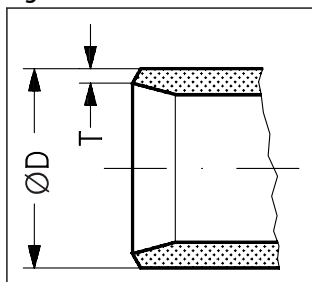


Table 2: Butt-weld DIN (EN 10220)

| Size | | ØD | T | ØD | T | k _v -angle | k _v -straight | C _v -angle | C _v -straight |
|------|-----|-------|-----|-------|-------|-----------------------|--------------------------|------------------------|--------------------------|
| mm | in. | mm | mm | in. | in. | m ³ /h | m ³ /h | US _{gal} /min | US _{gal} /min |
| 6 | ¼ | 13.5 | 2.3 | 0.531 | 0.091 | 2.9 | 2.0 | 3.4 | 2.4 |
| 10 | ¾ | 17.2 | 2.3 | 0.677 | 0.091 | 4.5 | 3.2 | 5.2 | 3.6 |
| 15 | ½ | 21.3 | 2.3 | 0.839 | 0.091 | 7.0 | 4.9 | 8.1 | 5.7 |
| 20 | ¾ | 26.9 | 2.3 | 1.059 | 0.091 | 14.6 | 10.2 | 16.9 | 11.8 |
| 25 | 1 | 33.7 | 2.6 | 1.327 | 0.103 | 24.8 | 17.4 | 28.8 | 20.2 |
| 32 | 1¼ | 42.4 | 2.6 | 1.669 | 0.102 | 42.6 | 29.8 | 49.4 | 34.6 |
| 40 | 1½ | 48.3 | 2.6 | 1.902 | 0.103 | 45.2 | 31.6 | 52.4 | 36.7 |
| 50 | 2 | 60.3 | 2.9 | 2.37 | 0.11 | 80 | 65 | 93 | 76 |
| 65 | 2½ | 76.1 | 2.9 | 3 | 0.11 | 120 | 97 | 140 | 113 |
| 80 | 3 | 88.9 | 3.2 | 3.50 | 0.13 | 182 | 152 | 211 | 176 |
| 100 | 4 | 114.3 | 3.6 | 4.50 | 0.14 | 313 | 278 | 363 | 323 |
| 125 | 5 | 139.7 | 4.0 | 5.50 | 0.16 | 514 | 470 | 596 | 545 |
| 150 | 6 | 168.3 | 4.5 | 6.63 | 0.18 | 785 | 597 | 911 | 693 |
| 200 | 8 | 219.1 | 6.3 | 8.63 | 0.25 | 1168 | 1024 | 1355 | 1188 |

Figure 4: ANSI

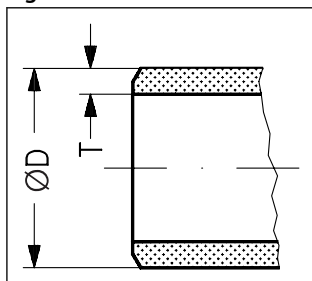


Table 3: Butt-weld ANSI (B 36.10 Schedule 80)

| Size | | ØD | T | ØD | T | k _v -angle | k _v -straight | C _v -angle | C _v -straight |
|------|-----|------|-----|-------|-------|-----------------------|--------------------------|------------------------|--------------------------|
| mm | in. | mm | mm | in. | in. | m ³ /h | m ³ /h | US _{gal} /min | US _{gal} /min |
| 6 | ¼ | 13.5 | 3.0 | 0.531 | 0.118 | 2.9 | 2.03 | 3.4 | 2.4 |
| 10 | ¾ | 17.2 | 3.2 | 0.677 | 0.126 | 4.5 | 3.15 | 5.2 | 3.6 |
| 15 | ½ | 21.3 | 3.7 | 0.839 | 0.146 | 7.0 | 4.9 | 8.1 | 5.7 |
| 20 | ¾ | 26.9 | 4.0 | 1.059 | 0.158 | 14.6 | 10.2 | 16.9 | 11.8 |

Check and stop valves, type SCA-X and CHV-X

| Size | | ØD | T | ØD | T | k _v -angle | k _v -straight | C _v -angle | C _v -straight |
|------|-----|------|-----|-------|-------|-----------------------|--------------------------|------------------------|--------------------------|
| mm | in. | mm | mm | in. | in. | m ³ /h | m ³ /h | US _{gal} /min | US _{gal} /min |
| 25 | 1 | 33.7 | 4.6 | 1.327 | 0.181 | 24.8 | 17.4 | 28.8 | 20.2 |
| 32 | 1¼ | 42.4 | 4.9 | 1.669 | 0.193 | 42.6 | 29.8 | 49.4 | 34.6 |
| 40 | 1½ | 48.3 | 5.1 | 1.902 | 0.201 | 45.2 | 31.6 | 52.4 | 36.7 |

Table 4: Butt-weld ANSI (B 36.10 Schedule 40)

| Size | | ØD | T | ØD | T | k _v -angle | k _v -straight | C _v -angle | C _v -straight |
|------|-----|-------|-----|------|------|-----------------------|--------------------------|------------------------|--------------------------|
| mm | in. | mm | mm | in. | in. | m ³ /h | m ³ /h | US _{gal} /min | US _{gal} /min |
| 50 | 2 | 60.3 | 3.9 | 2.37 | 0.15 | 80 | 65 | 93 | 76 |
| 65 | 2½ | 73.0 | 5.2 | 2.87 | 0.20 | 120 | 97 | 140 | 113 |
| 80 | 3 | 88.9 | 5.5 | 3.50 | 0.22 | 182 | 152 | 211 | 176 |
| 100 | 4 | 114.3 | 6.0 | 4.50 | 0.24 | 313 | 278 | 363 | 323 |
| 125 | 5 | 141.3 | 6.6 | 5.56 | 0.26 | 514 | 470 | 596 | 545 |
| 150 | 6 | 168.3 | 7.1 | 6.63 | 0.28 | 785 | 597 | 911 | 693 |
| 200 | 8 | 219.1 | 8.2 | 8.63 | 0.32 | 1168 | 1024 | 1355 | 1188 |

Figure 5: SD (DIN)

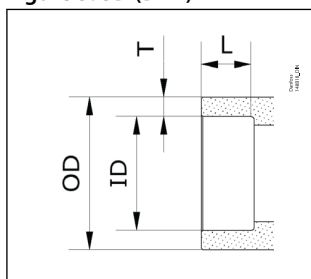


Table 5: Socket-Brazing DIN (EN 1254-5)

| Size | | ID | L | ØD | T | k _v -angle | k _v -straight | C _v -angle | C _v -straight |
|------|-----|------|------|-------|------|-----------------------|--------------------------|------------------------|--------------------------|
| mm | in. | mm | mm | mm | mm | m ³ /h | m ³ /h | US _{gal} /min | US _{gal} /min |
| 6 | ¼ | 6 | 7.7 | 12.7 | 3.35 | 2.9 | 2.0 | 3.4 | 2.4 |
| 10 | ¾ | 10 | 8 | 15.88 | 2.94 | 4.5 | 3.2 | 5.2 | 3.6 |
| 15 | ½ | 16 | 8 | 21.3 | 2.65 | 7.0 | 4.9 | 8.1 | 5.7 |
| 20 | ¾ | 22 | 11 | 26.9 | 2.45 | 14.6 | 10.2 | 16.9 | 11.8 |
| 25 | 1 | 28 | 11 | 33.7 | 2.85 | 24.8 | 17.4 | 28.8 | 20.2 |
| 32 | 1¼ | 35 | 15 | 42.4 | 3.7 | 42.6 | 29.8 | 49.4 | 34.6 |
| 40 | 1½ | 42 | 15 | 48.3 | 3.15 | 45.2 | 31.6 | 52.4 | 36.7 |
| 50 | 2 | 54 | 13.5 | 60.3 | 3.15 | 80 | 65 | 93 | 76 |
| 65 | 2½ | 64 | 13.5 | 73 | 4.5 | 120 | 97 | 140 | 113 |
| 80 | 3 | 76.1 | 15 | 88.9 | 6.4 | 182 | 152 | 211 | 176 |
| 100 | 4 | 108 | 17.5 | 118 | 5 | 313 | 278 | 363 | 323 |

Figure 6: SA (ASME)

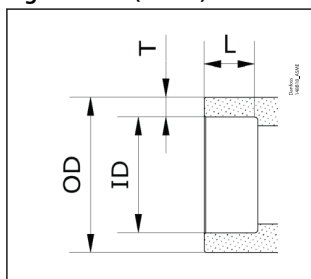


Table 6: Socket-Brazing ASME (ASME B16.50)

| Size | ID | L | ØD | T | k _v -angle | k _v -straight | C _v -angle | C _v -straight |
|------|-------|-----|-------|------|-----------------------|--------------------------|------------------------|--------------------------|
| in. | mm | mm | mm | mm | m ³ /h | m ³ /h | US _{gal} /min | US _{gal} /min |
| ¼ | 6.35 | 7.7 | 12.7 | 3.18 | 2.9 | 2.0 | 3.4 | 2.4 |
| ¾ | 9.53 | 8 | 15.88 | 3.18 | 4.5 | 3.2 | 5.2 | 3.6 |
| ¾ | 15.88 | 8 | 21.3 | 2.71 | 7.0 | 4.9 | 8.1 | 5.7 |

Check and stop valves, type SCA-X and CHV-X

| Size | ID | L | ØD | T | k _v -angle | k _v -straight | C _v -angle | C _v -straight |
|-------|--------|------|-------|------|-----------------------|--------------------------|-----------------------|--------------------------|
| in. | mm | mm | mm | mm | m ³ /h | m ³ /h | US gal/min | US gal/min |
| 7/8 | 22.23 | 11 | 26.9 | 2.34 | 14.6 | 10.2 | 16.9 | 11.8 |
| 1 1/8 | 28.58 | 11 | 33.7 | 2.56 | 24.8 | 17.4 | 28.8 | 20.2 |
| 1 3/8 | 34.93 | 15 | 42.4 | 3.74 | 42.6 | 29.8 | 49.4 | 34.6 |
| 1 5/8 | 41.28 | 15 | 48.3 | 3.51 | 45.2 | 31.6 | 52.4 | 36.7 |
| 2 1/8 | 54 | 13.5 | 60.3 | 3.15 | 80 | 65 | 93 | 76 |
| 2 3/8 | 66.7 | 13.5 | 76.1 | 4.70 | 120 | 97 | 140 | 113 |
| 3 1/8 | 79.38 | 15 | 88.9 | 4.76 | 182 | 152 | 211 | 176 |
| 4 1/8 | 104.78 | 17.5 | 114.3 | 4.76 | 313 | 278 | 363 | 323 |

Design

Housing

The housing is made from special, cold resistant steel.

Valve cone

Valve cone with built in metallic stop - prevents damage to teflon ring in case of overtightening. Teflon ring made of reinforced teflon

Damping chamber

The chamber is filled with refrigerants (gas or liquid), which provides a damping effect when the valve opens and closes.

Spindle (SCA-X)

Made of polished stainless steel, which is ideal for O-ring sealing.

Packing Gland (SCA-X)

The "full temperature range" packing gland is the standard for the entire SVL platform. This ensures perfect tightness throughout the whole temperature range : -60/+150 °C (-76/+302 °F).

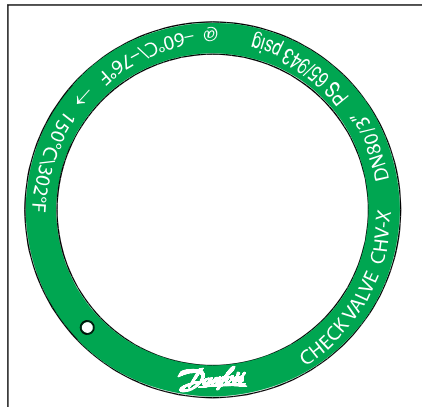
For special and/or high demanding applications/conditions which run with high constant temperatures, it is recommended to replace the packing gland with "HL Packing Gland" as spare part. For more information, please, contact your local Danfoss sales representative.

Installation

The valve must be mounted vertically with the cone downwards. The valve is designed to resist very high internal pressure. However, the piping system in general should be designed to avoid liquid traps and reduce the risk of hydraulic pressure caused by thermal expansion. For further information refer to installation guide for SCA-X/CHV-X.

If cold refrigeration oil having low viscosity enters and settles in the damping chamber, problems with the check valve may arise. Consequently, it may be necessary to modify the valve for more viscous liquids by enlarging the hole to the damping chamber.

Figure 7: Example of marking ring, CHV-X



Computation and selection

When dimensioning SCA-X/CHV-X, it is important to select a valve that is best suited to all operating conditions. Therefore, it is necessary to consider both the nominal and part load working conditions.

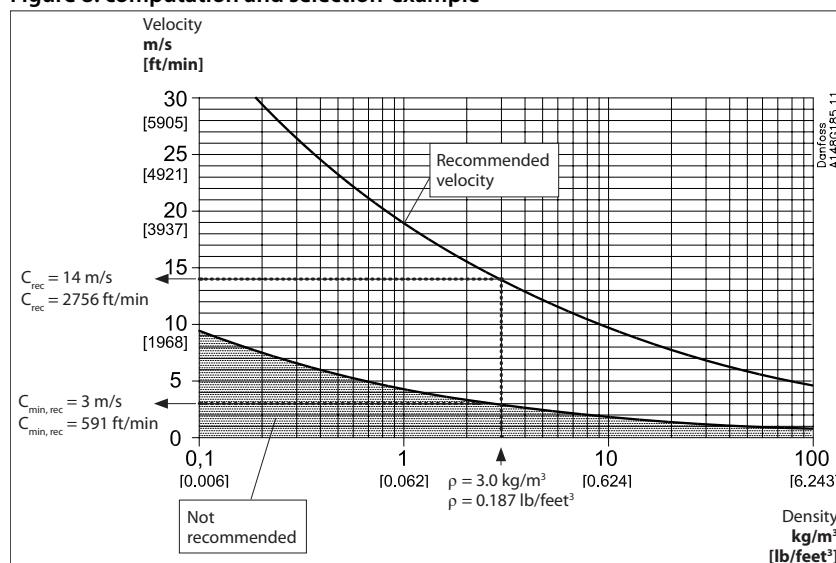
The SCA-X/CHV-X valve can be calculated in two ways:

- Using the tables below.
- Using Coolselector™

Table 7: Example

| SI-Units | US-Units |
|---|---|
| Assumed working conditions: Maximum flow $V = 1000 \text{ m}^3/\text{h}$ Density $\rho = 3.0 \text{ kg}/\text{m}^3$ Minimum part load = 33% | Assumed working conditions: Maximum flow $V = 1160 \text{ gpm}$ Density $\rho = 0.187 \text{ lb}/\text{feet}^3$ Minimum part load = 33% |
| Used expressions: Recommended velocity - C_{rec} [m/s] Minimum recommended velocity - $C_{\text{min, rec}}$ [m/s] Maximum velocity - C_{max} [m/s] Part load velocity - C_{part} [m/s] | Used expressions: Recommended velocity - C_{rec} [ft/min] Minimum recommended velocity - $C_{\text{min, rec}}$ [ft/min] Maximum velocity - C_{max} [ft/min] Part load velocity - C_{part} [ft/min] |
| We know the density $\rho \approx 3.0 \text{ kg}/\text{m}^3$, consequently C_{rec} as well as $C_{\text{min, rec}}$ can be found in the figure below (standard valve). | We know the density $\rho \approx 0.187 \text{ lb}/\text{feet}^3$, consequently C_{rec} as well as $C_{\text{min, rec}}$ can be found in the figure (standard valve). |
| $C_{\text{rec}} \approx 14 \text{ m/s}$ $C_{\text{min, rec}} \approx 3 \text{ m/s}$ | $C_{\text{rec}} \approx 2756 \text{ ft/min}$ $C_{\text{min, rec}} \approx 591 \text{ ft/min}$ |

Figure 8: computation and selection-example



Knowing that $V = 1000 \text{ m}^3/\text{h}$ (1160 gpm) fig. 2 gives the following choices

- For SCA-X/CHV-X in size DN 100 the maximum velocity $C_{\text{max}} \approx 31 \text{ m/s}$ (6100 ft/min)
- For SCA-X/CHV-X in size DN 125 the maximum velocity $C_{\text{max}} \approx 20 \text{ m/s}$ (3900 ft/min)

In conclusion SCA-X in size DN 125 is selected because $C_{\text{max}} \approx 20 \text{ m/s}$ (3900 ft/min) comes nearest to the recommended velocity $C_{\text{rec}} \approx 14 \text{ m/s}$ (2756 ft/min) and at the same time part load conditions fulfil the requirements, as described:

- We know that $C_{\text{max}} \approx 20 \text{ m/s}$ (3900 ft/min) and that minimum part load is 33%. It follows that $C_{\text{part}} \approx 6.5 \text{ m/s}$ (1290 ft/min). Thus, C_{part} (6.5 m/s) $>$ $C_{\text{min, rec}}$ (3.0 m/s) and the selected SCA-X model DN125 is the perfect choice.
- If the valve in question (for instance under part load conditions) provides a velocity less than $C_{\text{min, rec}}$ the valve might start hammering and become noisy. As a result the valve may wear prematurely.

Check and stop valves, type SCA-X and CHV-X

Figure 9: DN 15 - 40

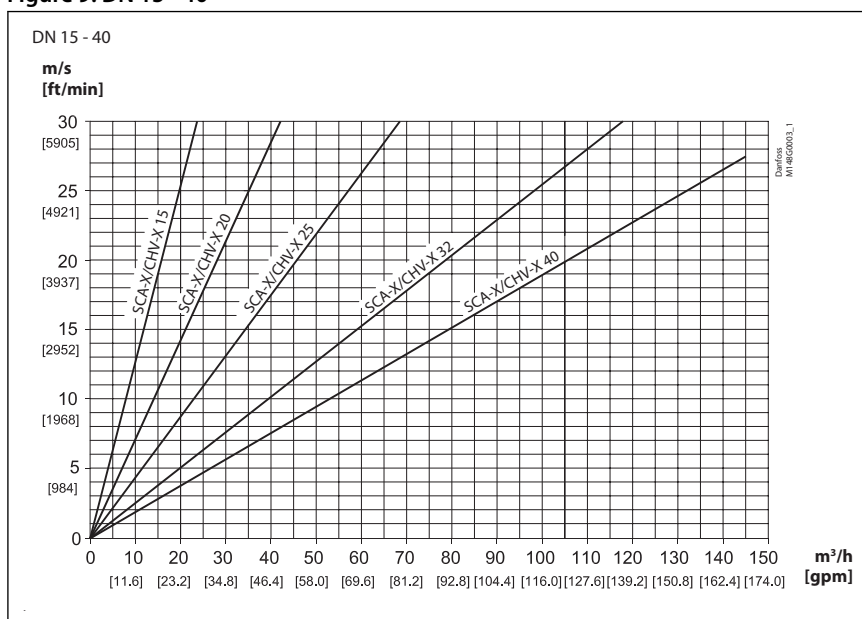
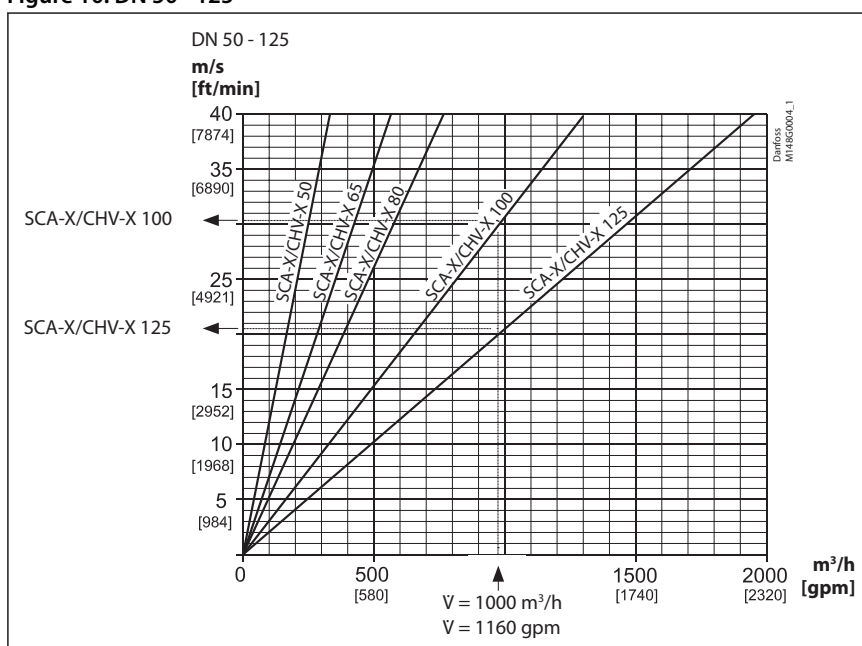


Figure 10: DN 50 - 125



Material specification

Table 8: Material specification

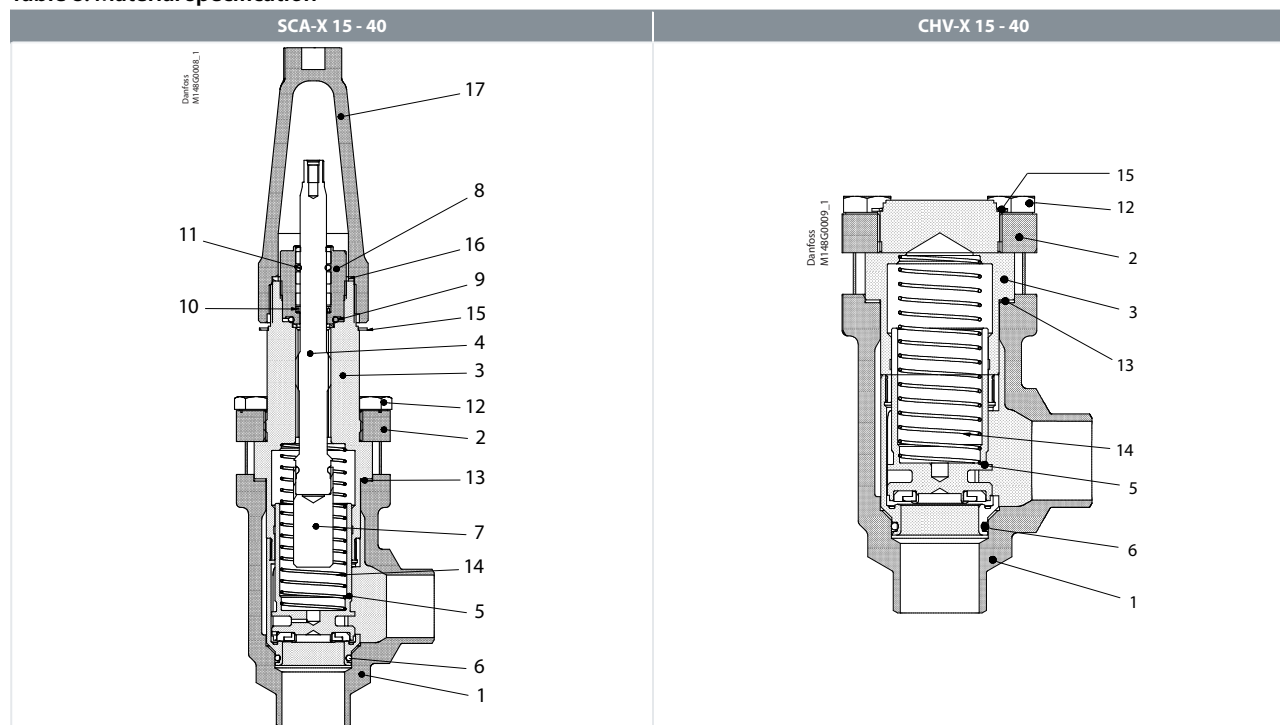


Table 9: Material specification

| No. | Part | Material | DIN/EN | ISO | ASTM |
|-----|--------------------------|---|---|----------------|------------------------|
| 1 | Housing | Steel | G20Mn5QT, 10213-3 P285QH+QT, 10222-4 | | LCC, A352 LF2, A350 |
| 2 | Bonnet, Flange | Steel | P275NL1 EN10028-3 | | LF2, A350 |
| 3 | Bonnet, Insert | Steel | 11SMn30 10087 | Type 2 R 683/9 | AISI 1213 |
| 4 | Spindle | Stainless steel | X8CrNiS18-9, EN 10088-3 | Type 17 683/13 | AISI 303 |
| 5 | Cone | Steel Teflon (PTFE) | | | |
| 6 | O-ring | Chloroprene (Neoprene) | | | |
| 7 | Spindle extension | Steel | | | |
| 8 | Packing gland O-rings | Stainless steel Chloroprene (Neoprene) | X8CrNiS18-9 10088 | Type 17 683/13 | AISI 303 |
| 9 | Packing washer | Aluminium | | | |
| 10 | Spring loaded seal | Teflon (PTFE) | | | |
| 11 | O-ring | Chloroprene (Neoprene) ⁽¹⁾ | | | |
| 12 | Bolts | High temperature steel | 42CrMo4 10269 | | A193 |
| 13 | Gasket | Fiber, non-asbestos | | | |
| 14 | Spring | Steel | | | |
| 15 | Identification ring | Stainless steel | | | |
| 16 | Seal cap gasket | Nylon | | | |
| 17 | Spindle seal cap | Aluminium | | | |

⁽¹⁾ To be replaced in R717 Heat Pump and R1270 Propylene applications.

Check and stop valves, type SCA-X and CHV-X

Table 10: Material specification

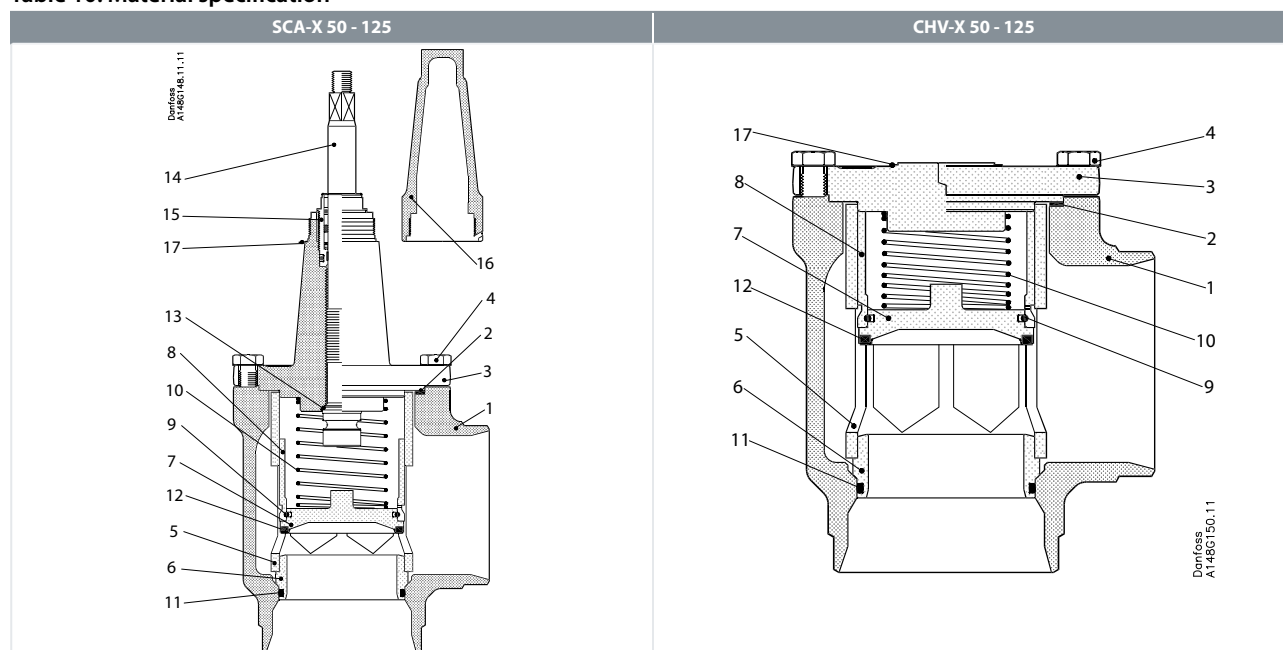


Table 11: Material specification

| No. | Part | Material | DIN/EN | ISO | ASTM |
|-----|---|---------------------------------------|--------------------------|------------------|----------------|
| 1 | Housing DN 50-65 | Steel | G20Mn5QT, 10213-3 | | LCC, A352 |
| | | | P285QH+QT, 10222-4 | | LF2, A350 |
| | Housing DN 80-125 | Steel | G20Mn5 QT SEW 685 | | LCC, A352 |
| 2 | Gasket | Fiber, Non-asbestos | | | |
| 3 | SCA-X: Valve bonnet CHV-X: End cover | Steel | P285 QH EN 10222-4 | | LF2, A350 |
| | | | P275NL1 or 2 EN10028-3 | | A, A662 |
| 4 | Bolts | Stainless steel | A2-70 | A2-70 | A-276 |
| 5 | Tube | Steel | | | |
| 6 | Seat | Steel | | | |
| 7 | Valve plate | Steel | | | |
| 8 | Guide sleeve | Steel | | | |
| 9 | Spring ring | Steel | | | |
| 10 | Spring | Steel | | | |
| 11 | O-ring | Chloroprene (Neoprene) ⁽²⁾ | | | |
| 12 | Teflon ring | Teflon (PTFE) | | | |
| 13 | Soft back seal | Teflon (PTFE) | | | |
| 14 | Spindle DN 50-65 | Stainless steel | X8CrNiS18-9 17440 | Type 17 R 683/13 | AISI 303 |
| | Spindle DN 80-125 | Stainless steel | X5CrNi1810 17440 | Type 11 683/13 | AISI 304 A-276 |
| 15 | Packing gland | Stainless steel | X8CrNiS18-9, EN 10088-3, | Type 17 R 683/13 | AISI 303 |
| 16 | Spindle seal cap and gasket | Aluminium | | | |
| 17 | Marking label | Stainless steel | | | |

⁽²⁾ To be replaced in R717 Heat Pump and R1270 Propylene applications.

Dimensions and weights

Table 12: SCA-X/CHV-X 15 - 40 (½- 1½ in.)

| SCA-X 15 - 40 | CHV-X 15 - 40 |
|---------------|---------------|
| | |

Table 13: SCA-X 15 - 40

| Valve size | | C | G | ØD | F _{min} | H | Weight |
|-------------------|-----|-------|------|------|------------------|------|---------|
| SCA-X 15 (½ in.) | mm | 212 | 45 | 38 | 60 | 60 | 1.6 kg |
| | in. | 8.35 | 1.77 | 1.5 | 2.36 | 2.36 | 3.53 lb |
| SCA-X 20 (¾ in.) | mm | 212 | 45 | 38 | 60 | 60 | 1.6 kg |
| | in. | 8.35 | 1.77 | 1.5 | 2.36 | 2.36 | 3.53 lb |
| SCA-X 25 (1 in.) | mm | 295 | 55 | 50 | 85 | 70 | 3.2 kg |
| | in. | 11.61 | 2.17 | 1.97 | 3.35 | 2.76 | 7.05 lb |
| SCA-X 32 (1¼ in.) | mm | 295 | 55 | 50 | 85 | 70 | 3.2 kg |
| | in. | 11.61 | 2.17 | 1.97 | 3.35 | 2.76 | 7.05 lb |
| SCA-X 40 (1½ in.) | mm | 295 | 55 | 50 | 85 | 70 | 3.2 kg |
| | in. | 11.61 | 2.17 | 1.97 | 3.35 | 2.76 | 7.05 lb |

Table 14: CHV-X 15 - 40

| Valve size | | C | G | F _{min} | H | Weight |
|-------------------|-----|------|------|------------------|------|---------|
| CHV-X 15 (½ in.) | mm | 103 | 45 | 60 | 60 | 1.2 kg |
| | in. | 4.06 | 1.77 | 2.36 | 2.36 | 2.65 lb |
| CHV-X 20 (¾ in.) | mm | 103 | 45 | 60 | 60 | 1.2 kg |
| | in. | 4.06 | 1.77 | 2.36 | 2.36 | 2.65 lb |
| CHV-X 25 (1 in.) | mm | 143 | 55 | 85 | 70 | 2.3 kg |
| | in. | 5.63 | 2.17 | 3.35 | 2.76 | 5.07 lb |
| CHV-X 32 (1¼ in.) | mm | 143 | 55 | 85 | 70 | 2.3 kg |
| | in. | 5.63 | 2.17 | 3.35 | 2.76 | 5.07 lb |
| CHV-X 40 (1½ in.) | mm | 143 | 55 | 85 | 70 | 2.3 kg |
| | in. | 5.63 | 2.17 | 3.35 | 2.76 | 5.07 lb |

Specified weights in tables 8-9 are approximate values only.

Check and stop valves, type SCA-X and CHV-X

Table 15: SCA-X/CHV-X 50 - 65 (2 - 2½ in.)

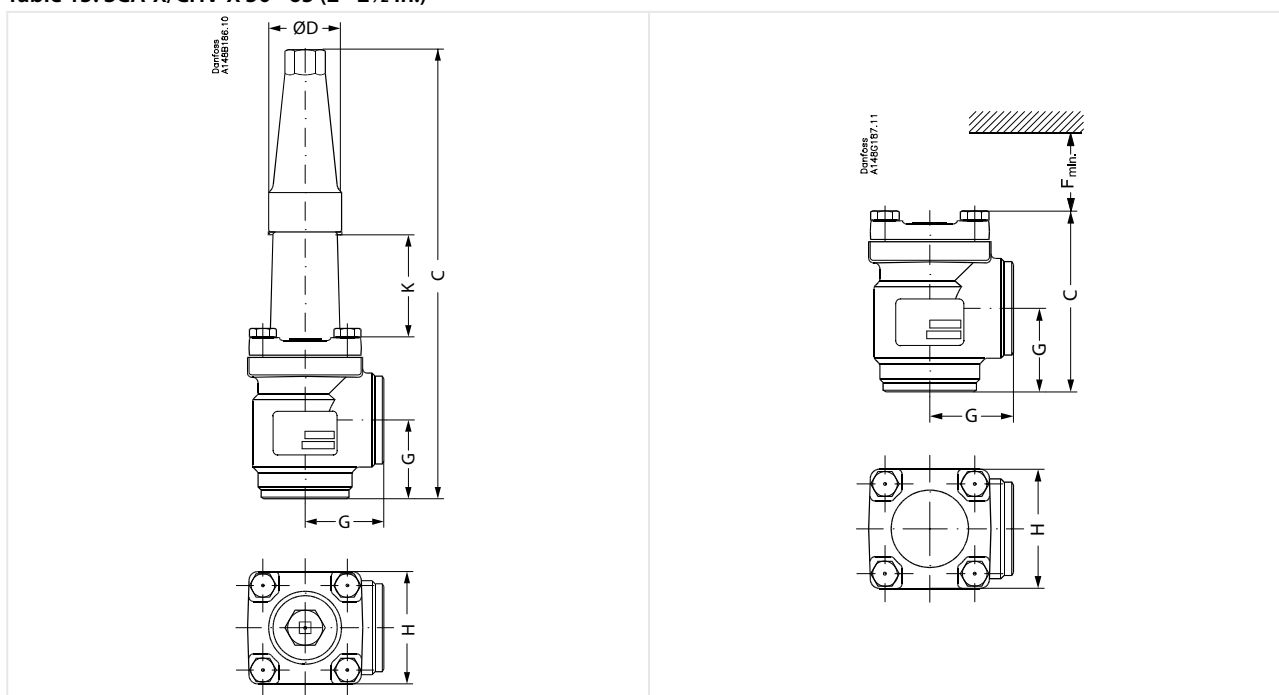


Table 16: SCA-X

| Valve size | | K | C | G | ØD | H | Weight |
|----------------------------|-----|------|-------|------|------|------|----------|
| SCA-X 50 SCA-X (2 in.) | mm | 70 | 315 | 60 | 50 | 77 | 3.8 kg |
| | in. | 2.76 | 12.4 | 2.36 | 1.97 | 3.03 | 8.40 lb |
| SCA-X 65 SCA-X (2½ in.) | mm | 70 | 335 | 70 | 50 | 90 | 5.5 kg |
| | in. | 2.76 | 13.19 | 2.76 | 1.97 | 3.54 | 12.16 lb |

Table 17: CHV-X

| Valve size | | C | G | F _{min.} | H | Weight |
|----------------|-----|------|------|-------------------|------|---------|
| CHV-X 50 | mm | 132 | 60 | 92 | 77 | 3.2 kg |
| CHV-X (2 in.) | in. | 5.2 | 2.36 | 3.62 | 3.03 | 7.10 lb |
| CHV-X 65 | mm | 152 | 70 | 107 | 90 | 4.5 kg |
| CHV-X (2½ in.) | in. | 5.98 | 2.76 | 4.21 | 3.54 | 9.95 lb |

Specified weights in tables 11-12 are approximate values only.

Check and stop valves, type SCA-X and CHV-X

Table 18: SCA-X/CHV-X 80 - 125 (3 - 5 in.)

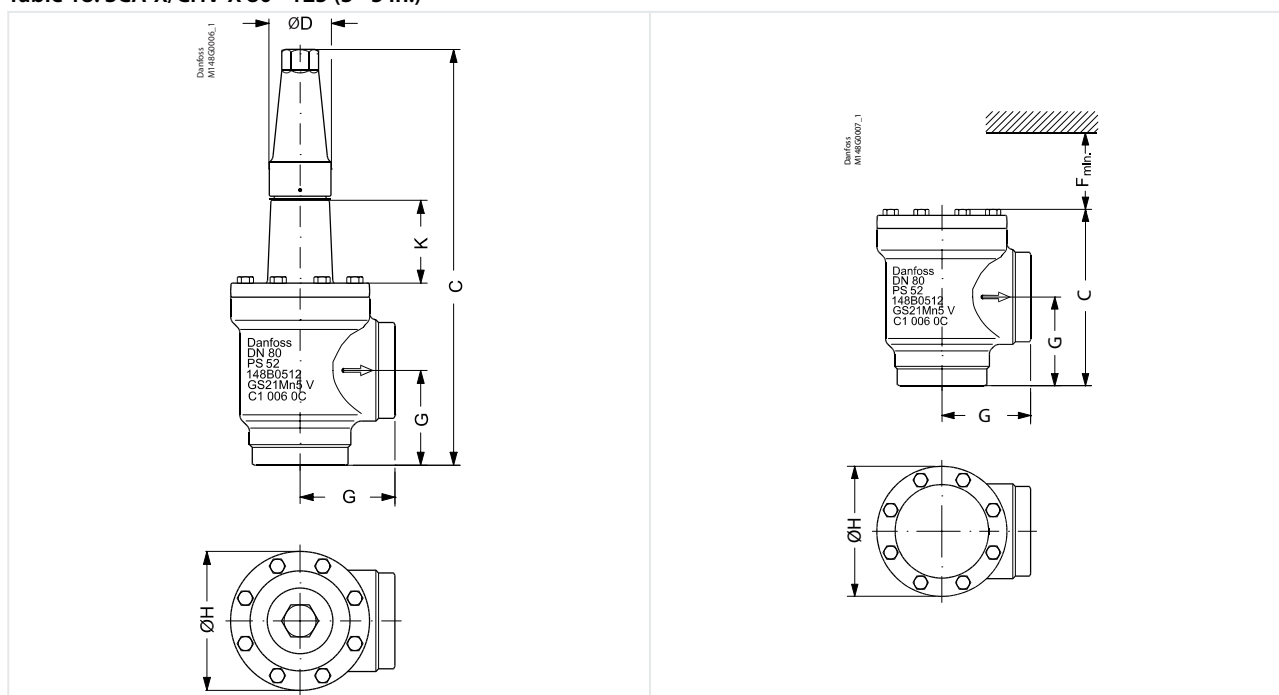


Table 19: SCA-X

| Valve size | | K | C | G | ØD | ØH | Weight |
|---------------|-----|------|-------|------|------|------|---------|
| SCA-X 80 | mm | 76 | 388 | 90 | 58 | 129 | 9.7 kg |
| SCA-X (3 in.) | in. | 3 | 15.28 | 3.54 | 2.28 | 5.08 | 21.4 lb |
| SCA-X 100 | mm | 90 | 437 | 106 | 58 | 156 | 15.3 kg |
| SCA-X (4 in.) | in. | 3.54 | 17.2 | 4.17 | 2.28 | 6.14 | 33.7 lb |
| SCA-X 125 | mm | 90 | 533 | 128 | 74 | 193 | 28.1 kg |
| SCA-X (5 in.) | in. | 3.54 | 20.98 | 5.04 | 2.91 | 7.6 | 61.9 lb |

Table 20: CHV-X

| Valve size | | C | G | F _{min.} | ØH | Weight |
|---------------|-----|-------|------|-------------------|------|----------|
| CHV-X 80 | mm | 189 | 90 | 133 | 129 | 8.7 kg |
| CHV-X (3 in.) | in. | 7.44 | 3.54 | 5.24 | 5.08 | 19.23 lb |
| CHV-X 100 | mm | 223 | 106 | 163 | 156 | 14.3 kg |
| CHV-X (4 in.) | in. | 8.78 | 4.17 | 6.43 | 6.14 | 31.60 lb |
| CHV-X 125 | mm | 268 | 128 | 190 | 193 | 25.6 kg |
| CHV-X (5 in.) | in. | 10.55 | 5.04 | 7.48 | 7.6 | 56.58 lb |

Specified weights in tables 14-15 are approximate values only.

Ordering

Ordering SCA-X/CHV-X from the parts program

Table 21: Ordering SCA-X/CHV-X from the parts program

| Size [DN] | Parts program | | | | | | | | | | | |
|--------------|---------------|----------|----------|----------|----------|----------|----------|----------|--------------|----------|----------------------------|-----------------|
| | Housing | | | | | | | | Top complete | | Service Kit ⁽¹⁾ | |
| | ANG | | | | STR | | | | SCA-X | CHV-X | O-ring kit for | |
| | DIN | ANSI | SD | SA | DIN | ANSI | SD | SA | | | R717 Heat Pump | R1270 Propylene |
| 6 | 148B6689 | 148B6687 | 148B6722 | 148B6711 | 148B6693 | 148B6691 | 148B6743 | 148B6732 | | | | |
| 10 | 148B6690 | 148B6688 | 148B6723 | 148B6712 | 148B6694 | 148B6692 | 148B6744 | 148B6733 | | | 148B6084 | 148B6085 |
| 15 | 148B6622 | 148B6612 | 148B6724 | 148B6713 | 148B6642 | 148B6632 | 148B6745 | 148B6734 | 148B5769 | 148B5776 | 148B6070 | 148B6077 |
| 20 | 148B6623 | 148B6613 | 148B6725 | 148B6714 | 148B6643 | 148B6633 | 148B6746 | 148B6735 | 148B5769 | 148B5776 | | |
| 25 | 148B6624 | 148B6614 | 148B6726 | 148B6715 | 148B6644 | 148B6634 | 148B6747 | 148B6736 | 148B5770 | 148B5777 | | |
| 32 | 148B6625 | 148B6615 | 148B6727 | 148B6716 | 148B6645 | 148B6635 | 148B6748 | 148B6737 | 148B5770 | 148B5777 | 148B6071 ⁽²⁾ | 148B6078 |
| 40 | 148B6626 | 148B6616 | 148B6728 | 148B6717 | 148B6646 | 148B6636 | 148B6749 | 148B6738 | 148B5770 | 148B5777 | 148B6096 ⁽³⁾ | 148B6097 |
| 50 | 148B6627 | 148B6617 | 148B6718 | | 148B6647 | 148B6637 | 148B6739 | | 148B5771 | 148B5778 | 148B6072 | 148B6079 |
| 65 | 148B6628 | 148B6618 | 148B6729 | 148B6719 | 148B6648 | 148B6638 | 148B6750 | 148B6740 | 148B5772 | 148B5779 | 148B6073 | 148B6080 |
| 80 | 148B6629 | 148B6619 | 148B6730 | 148B6720 | 148B6649 | 148B6639 | 148B6751 | 148B6741 | 148B5773 | 148B5780 | 148B6074 | 148B6081 |
| 100 | 148B6630 | 148B6620 | 148B6731 | 148B6721 | 148B6650 | 148B6640 | 148B6752 | 148B6742 | 148B5774 | 148B5781 | 148B6075 | 148B6082 |
| 125 | 148B6631 | 148B6621 | | | 148B6651 | 148B6641 | | | 148B5775 | 148B5782 | 148B6076 | 148B6083 |

⁽¹⁾ to be used for SCA-X, CHV-X and REG SA/SB (all sizes)

⁽²⁾ to be used for SCA-X, CHV-X, 25-40

⁽³⁾ to be used for REG SA/SB, 25-40

Certificates, declarations and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

Some approvals may change over time. You can check the most current status at danfoss.com or contact your local Danfoss representative if you have any questions.

Pressure Equipment Directive (PED)

REG valves are approved according to the European standard specified in the Pressure Equipment Directive and are CE marked.

Table 22: Pressure Equipment Directive (PED)

| REG-SA and REG-SB valves | | |
|--------------------------|------------------------|----------------------------|
| Nominal bore | DN = < 25 mm (1 in.) | DN32 - 65 mm (1¼ - 2½ in.) |
| Classified for | Fluid group I | |
| Category | Article 3, paragraph 3 | II |

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