

Data Sheet

Stop/Check valve & Check valve
Type **SCA-X** and **CHV-X**

Designed to open at very low differential pressures, allow favourable flow conditions and are easy to disassemble for inspection and service



SCA-X are check valves with a built-in shut-off valve function. SCA-X valves are available in angleway versions.

CHV-X are check valves only. CHV-X are available in both 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 several different connection types and sizes
 - Possible to convert SCA-X or CHV-X to any other product in the Flexline™ SVL family (Hand operated 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. Additional ID ring to be installed when preparing for Ammonia Heat Pump or Propylene application
- 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 Stainless steel bolts
- Classification: DNV, CRN, BV, EAC etc. To get an updated list of certification on the products please contact your local Danfoss Sales Company

Applications

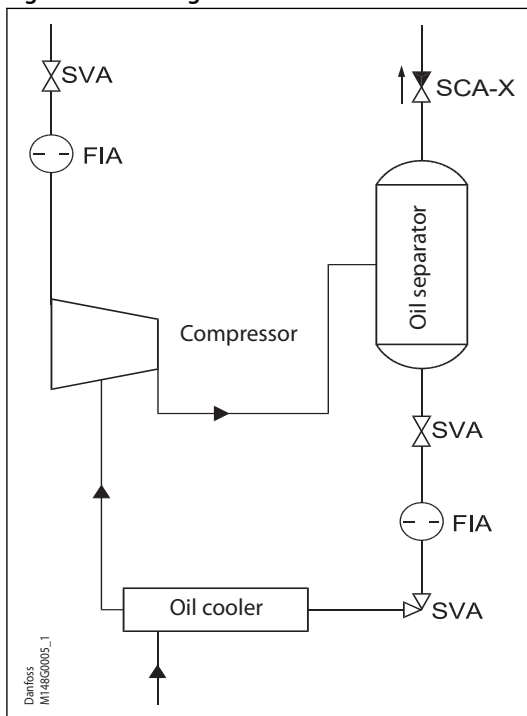
Below diagram shows the check & stop valve SCA-X in the discharge line of a screw compressor unit. The SCA-X valve in the discharge line prevents “back condensation” in the oil separator as well as pressure equalising through the compressor.

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.

Figure 1: Flow diagram



Media

Refrigerants

Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO₂), Propane, Butane, Iso-Butane and Ethane.

R717 Heat Pump and Propylene applications with replaced O-ring.

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 | 52 bar (754 psi) |

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.

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)

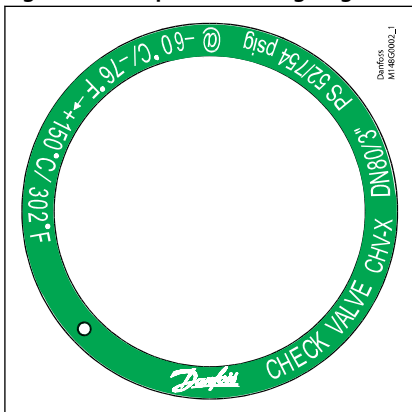
The “full temperature range” packing gland is the standard for the entire SVL platform.

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

Figure 2: Example of marking ring, CHV-X



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.

Material specification

SCA-X 15 - 40, CHV-X 15 - 40 and CHV-X 15 - 40

Table 2: SCA-X 15 - 40 and CHV-X 15 - 40

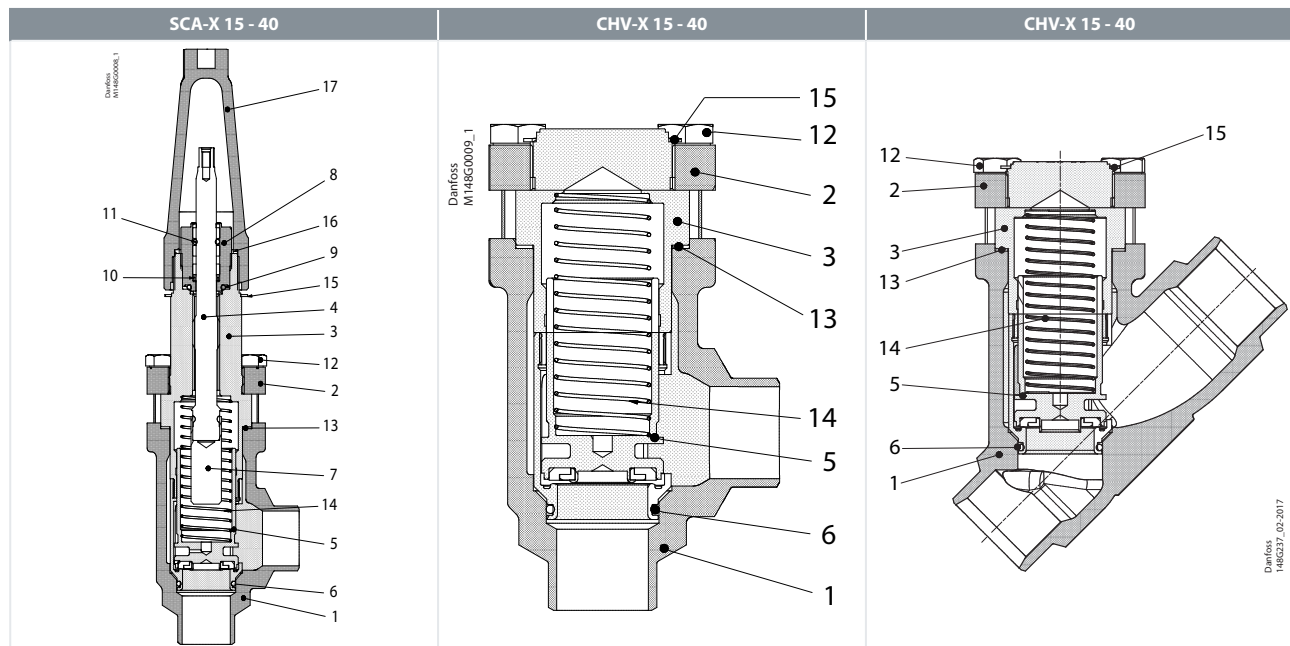
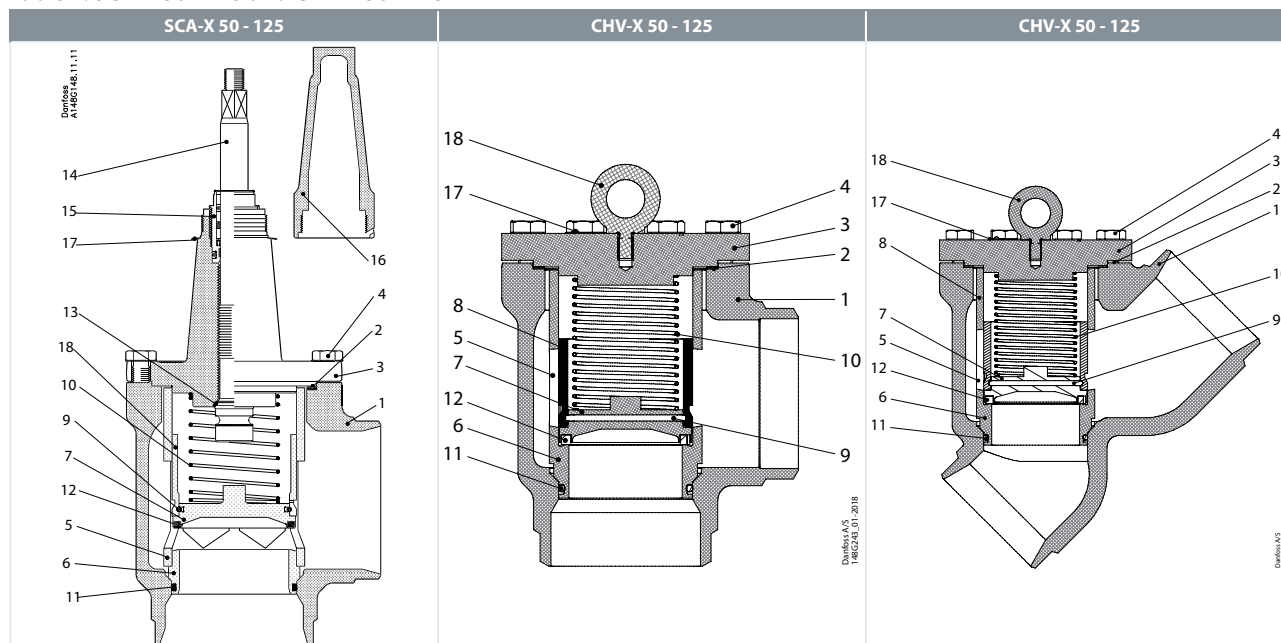


Table 3: Material specification

| No. | Part | Material | DIN/EN | ISO | ASTM |
|-----|--------------------------|------------------------|----------------------|----------------|------------------|
| 1 | Housing | Steel | P285QH EN10222-4 | | LF2, A350 |
| 2 | Bonnet, Flange | Steel | P275NL1 EN10028-3 | | |
| 3 | Bonnet, Insert | Steel | | | |
| 4 | Spindle | Stainless steel | X 10CrNiS18-9 | Type 17, 17440 | AISI 303, 683/13 |
| 5 | Cone | Steel | | | |
| | | Teflon (PTFE) | | | |
| 6 | O-ring | Chloroprene (Neoprene) | | | |
| 7 | Spindle extension | Steel | | | |
| 8 | Packing gland O-rings | Stainless steel | | | |
| | | Chloroprene (Neoprene) | | | |
| 9 | Packing washer | Aluminium | | | |
| 10 | Spring loaded seal | Teflon (PTFE) | | | |
| 11 | O-ring | Chloroprene (Neoprene) | | | |
| 12 | Bolts | Stainless steel | A2-70 | A2-70 | Type 308 |
| 13 | Gasket | Fiber, non-asbestos | | | |
| 14 | Spring | Steel | | | |
| 15 | Identification ring | Stainless steel | | | |
| 16 | Seal cap gasket | Nylon | | | |
| 17 | Spindle seal cap | Aluminium | | | |

SCA-X 50 - 125 and CHV-X 50 - 125

Table 4: SCA-X 50 - 125 and CHV-X 50 - 125



| No. | Part | Material | DIN/EN | ISO | ASTM |
|-----|---|---------------------------|-----------------------|---------------------|-------------------|
| 1 | Housing DN 50-65 | Steel | P285 QH EN 10222-4 | | LF2, A350 |
| | | | G20Mn5 QT SEW 685 | | LCC, A352 |
| | 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 |
| 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) | | | |
| 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 | 9Mn28, 1651 | Type 2 R 683/9 | 1213, SAE J403 |
| 16 | Spindle seal cap and gasket | Aluminium | | | |
| 17 | Marking label | Stainless steel | | | |
| 18 | Eye bolt DIN 580 | Steel | | | |

Computation and selection

Introduction

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.

Please refer to [Coolselector®2](#) for calculation and selection of the right SCA-X/CHV-X.

Connections

Available with the following connections:

- Butt-weld DIN (EN 10220)
 - DN 15 - 125 (½ - 5 in.)
- Butt-weld ANSI (B 36.10 Schedule 80),
 - DN 15 - 40 (½ - 1½ in.)
- Butt-weld ANSI (B 36.10 Schedule 40),
 - DN 50 - 125 (2 - 5 in.)
- Butt-weld GOST, (8734-75 and 8732-78)
 - DN 15 - 125 (½ - 5 in.)
- Socket-weld ANSI (B 16.11),
 - DN 50 (2 in.)

Figure 3: DIN

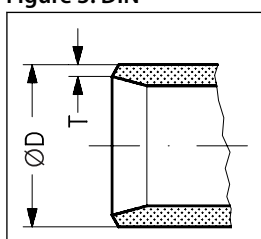


Table 5: Butt-weld DIN (EN 10220)

| Size | | ØD | T | ØD | T | k _v Angleway | C _v Angleway | k _v Straightway | C _v Straightway |
|------|-----|-------|-----|-------|-------|-------------------------|-------------------------|----------------------------|----------------------------|
| mm | in. | mm | mm | in. | in. | m ³ /h | US _{gal} /min | m ³ /h | US _{gal} /min |
| 15 | ½ | 21.3 | 2.3 | 0.839 | 0.091 | 8 | 9.3 | 4 | 4.6 |
| 20 | ¾ | 26.9 | 2.3 | 1.059 | 0.091 | 10 | 11.6 | 7 | 8.1 |
| 25 | 1 | 33.7 | 2.6 | 1.327 | 0.102 | 24 | 27.8 | 16 | 18.6 |
| 32 | 1¼ | 42.4 | 2.6 | 1.669 | 0.102 | 30 | 34.8 | 21 | 24.4 |
| 40 | 1½ | 48.3 | 2.6 | 1.902 | 0.102 | 30 | 34.8 | 21 | 24.4 |
| 50 | 2 | 60.3 | 2.9 | 2.37 | 0.11 | 45 | 53 | 28 | 34 |
| 65 | 2½ | 76.1 | 2.9 | 3.00 | 0.11 | 72 | 85 | 41 | 48 |
| 80 | 3 | 88.9 | 3.2 | 3.50 | 0.13 | 103 | 129 | 81 | 94 |
| 100 | 4 | 114.3 | 3.6 | 4.50 | 0.14 | 196 | 232 | 157 | 182 |
| 125 | 5 | 139.7 | 4.0 | 5.50 | 0.16 | 301 | 356 | 250 | 290 |

Figure 4: ANSI

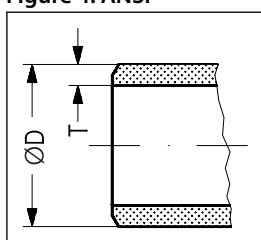


Table 6: Butt-weld ANSI (B 36.10 Schedule 80)

| Size | | ØD | T | ØD | T | k _v Angleway | C _v Angleway | k _v Straightway | C _v Straightway |
|------|-----|------|-----|-------|-------|-------------------------|-------------------------|----------------------------|----------------------------|
| mm | in. | mm | mm | in. | in. | m ³ /h | US _{gal} /min | m ³ /h | US _{gal} /min |
| 15 | ½ | 21.3 | 3.7 | 0.839 | 0.146 | 8 | 9.3 | 4 | 4.6 |
| 20 | ¾ | 26.9 | 4.0 | 1.059 | 0.158 | 10 | 11.6 | 7 | 8.1 |
| 25 | 1 | 33.7 | 4.6 | 1.327 | 0.181 | 24 | 27.8 | 16 | 18.6 |
| 32 | 1¼ | 42.4 | 4.9 | 1.669 | 0.193 | 30 | 34.8 | 21 | 24.4 |
| 40 | 1½ | 48.3 | 5.1 | 1.902 | 0.201 | 30 | 34.8 | 21 | 24.4 |

Stop/Check valve & and Check valve, type SCA-X and CHV-X

Table 7: Butt-weld ANSI (B 36.10 Schedule 40)

| Size | | ØD | T | ØD | T | k _v Angleway | C _v Angleway | k _v Straight-way | C _v Straight-way |
|------|-----|-------|-----|------|------|-------------------------|-------------------------|-----------------------------|-----------------------------|
| mm | in. | mm | mm | in. | in. | m ³ /h | US _{gal/min} | m ³ /h | US _{gal/min} |
| 50 | 2 | 60.3 | 3.9 | 2.37 | 0.15 | 45 | 53 | 28 | 34 |
| 65 | 2½ | 76.1 | 5.2 | 2.87 | 0.20 | 72 | 85 | 41 | 48 |
| 80 | 3 | 88.9 | 5.5 | 3.50 | 0.22 | 103 | 129 | 81 | 94 |
| 100 | 4 | 114.3 | 6.0 | 4.50 | 0.24 | 196 | 232 | 157 | 182 |
| 125 | 5 | 141.3 | 6.6 | 5.56 | 0.26 | 301 | 356 | 250 | 290 |

Figure 5: GOST

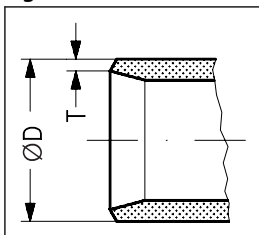


Table 8: Butt-weld GOST (8734-75 and 8732-78)

| Size | | ØD | T | ØD | T | k _v Angleway | C _v Angleway | k _v Straight-way | C _v Straight-way |
|------|-----|------|-----|-------|-------|-------------------------|-------------------------|-----------------------------|-----------------------------|
| mm | in. | mm | mm | in. | in. | m ³ /h | US _{gal/min} | m ³ /h | US _{gal/min} |
| 15 | ½ | 18 | 2 | 0.709 | 0.079 | 8 | 9.3 | 4 | 4.6 |
| 20 | ¾ | 25 | 2.5 | 0.984 | 0.098 | 10 | 11.6 | 7 | 8.1 |
| 25 | 1 | 32 | 3 | 1.260 | 0.118 | 24 | 28.8 | 16 | 18.6 |
| 32 | 1¼ | 38 | 3 | 1.496 | 0.118 | 30 | 49.4 | 21 | 24.4 |
| 40 | 1½ | 45 | 3 | 1.772 | 0.118 | 30 | 52.4 | 21 | 24.4 |
| 50 | 2 | 57 | 3.5 | 2.244 | 0.138 | 45 | 53 | 28 | 34 |
| 65 | 2½ | 76.1 | 2.9 | 3 | 0.11 | 72 | 85 | 41 | 48 |
| 80 | 3 | 88.9 | 3.2 | 3.50 | 0.13 | 103 | 129 | 81 | 94 |
| 100 | 4 | 108 | 4 | 4.252 | 0.157 | 196 | 232 | 157 | 182 |
| 125 | 5 | 133 | 4 | 5.236 | 0.157 | 301 | 356 | 250 | 290 |

Figure 6: SOC

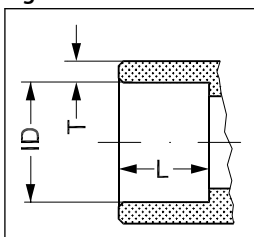


Table 9: Socket welding ANSI (B 16.11)

| Size | | ID | T | ID | T | L | L |
|------|-----|------|-----|-------|-------|----|------|
| mm | in. | mm | mm | in. | in. | mm | in. |
| 15 | ½ | 21.8 | 6 | 0.858 | 0.235 | 10 | 0.39 |
| 20 | ¾ | 27.2 | 4.6 | 1.071 | 0.181 | 13 | 0.51 |
| 25 | 1 | 33.9 | 7.2 | 1.335 | 0.284 | 13 | 0.51 |
| 32 | 1¼ | 42.7 | 6.1 | 1.743 | 0.240 | 13 | 0.51 |
| 40 | 1½ | 48.8 | 6.6 | 1.921 | 0.260 | 13 | 0.51 |
| 50 | 2 | 61.2 | 6.2 | 2.41 | 0.24 | 16 | 0.63 |

Dimensions and weights

SCA-X/CHV-X 15-40 (½-1½ in.)

Table 10: SCA-X /CHV-X 15-40 (½-1½ in.)

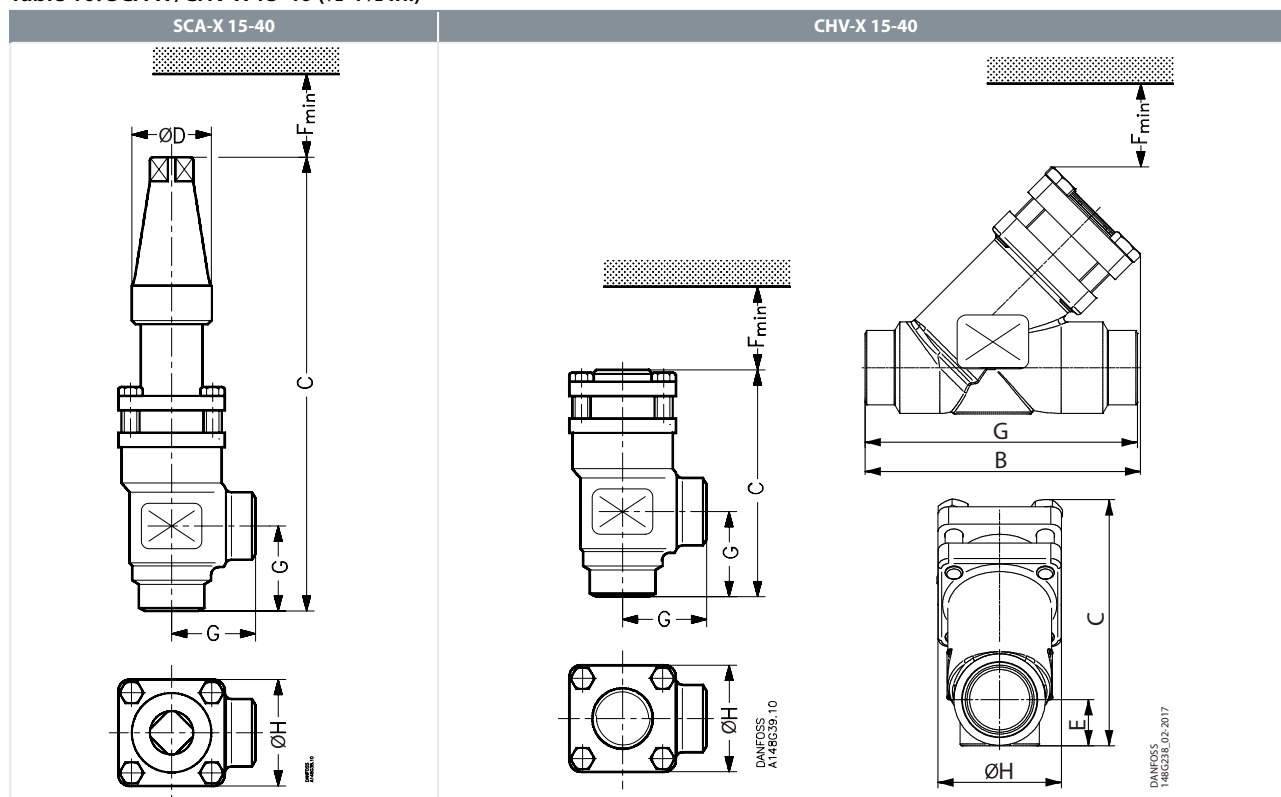


Table 11: SCA-X 15-40

| Valve size | C | | G | | ØD | | F _{min} | | ØH | | Weight | |
|-------------------|-----|-------|----|------|----|------|------------------|------|----|------|--------|------|
| | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | kg | lb |
| SCA-X 15 (½ in.) | 212 | 8.35 | 45 | 1.77 | 38 | 1.50 | 60 | 2.36 | 60 | 2.36 | 1.6 | 3.53 |
| SCA-X 20 (¾ in.) | 212 | 8.35 | 45 | 1.77 | 38 | 1.50 | 60 | 2.36 | 60 | 2.36 | 1.6 | 3.53 |
| SCA-X 25 (1 in.) | 295 | 11.61 | 55 | 2.17 | 50 | 1.97 | 85 | 3.35 | 70 | 2.76 | 3.2 | 7.05 |
| SCA-X 32 (1¼ in.) | 295 | 11.61 | 55 | 2.17 | 50 | 1.97 | 85 | 3.35 | 70 | 2.76 | 3.2 | 7.05 |
| SCA-X 40 (1½ in.) | 295 | 11.61 | 55 | 2.17 | 50 | 1.97 | 85 | 3.35 | 70 | 2.76 | 3.2 | 7.05 |

Table 12: CHV-X 15-40 Angleway

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

Table 13: CHV-X 15-40 Straightway

| Valve size | C | | B | | E | | G | | F _{min} | | ØH | | Weight | |
|-------------------|-----|------|-----|------|----|------|-----|------|------------------|------|----|------|--------|------|
| | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | kg | lb |
| CHV-X 15 (½ in.) | 99 | 3.90 | 114 | 4.49 | 19 | 0.75 | 120 | 4.72 | 60 | 2.36 | 60 | 2.36 | 1.3 | 2.87 |
| CHV-X 20 (¾ in.) | 99 | 3.90 | 114 | 4.49 | 19 | 0.75 | 120 | 4.72 | 60 | 2.36 | 60 | 2.36 | 1.3 | 2.87 |
| CHV-X 25 (1 in.) | 141 | 5.55 | 157 | 6.18 | 26 | 1.02 | 155 | 6.10 | 85 | 3.35 | 70 | 2.76 | 2.6 | 5.73 |
| CHV-X 32 (1¼ in.) | 141 | 5.55 | 157 | 6.18 | 26 | 1.02 | 155 | 6.10 | 85 | 3.35 | 70 | 2.76 | 2.6 | 5.73 |
| CHV-X 40 (1½ in.) | 141 | 5.55 | 157 | 6.18 | 26 | 1.02 | 155 | 6.10 | 85 | 3.35 | 70 | 2.76 | 2.6 | 5.73 |

Stop/Check valve & and Check valve, type SCA-X and CHV-X

Table 14: CHV-X 32-40 Straightway, Socket weld

| Valve size | C | | B | | E | | G | | F _{min} | | ØH | | Weight | |
|--------------------------------|-----|------|-----|------|----|------|-----|------|------------------|------|----|------|--------|------|
| | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | kg | lb |
| CHV-X 32-40 (1¼-1½ in.) | 132 | 5.20 | 156 | 6.14 | 26 | 1.02 | 155 | 6.10 | 85 | 3.35 | 70 | 2.76 | 2.8 | 6.11 |

NOTE:

Specified weights are approximate values only.

SCA-X/CHV-X 50-65 (2-2½ in.)

Table 15: SCA-X/CHV-X 50-65 (½- 1½ in.)

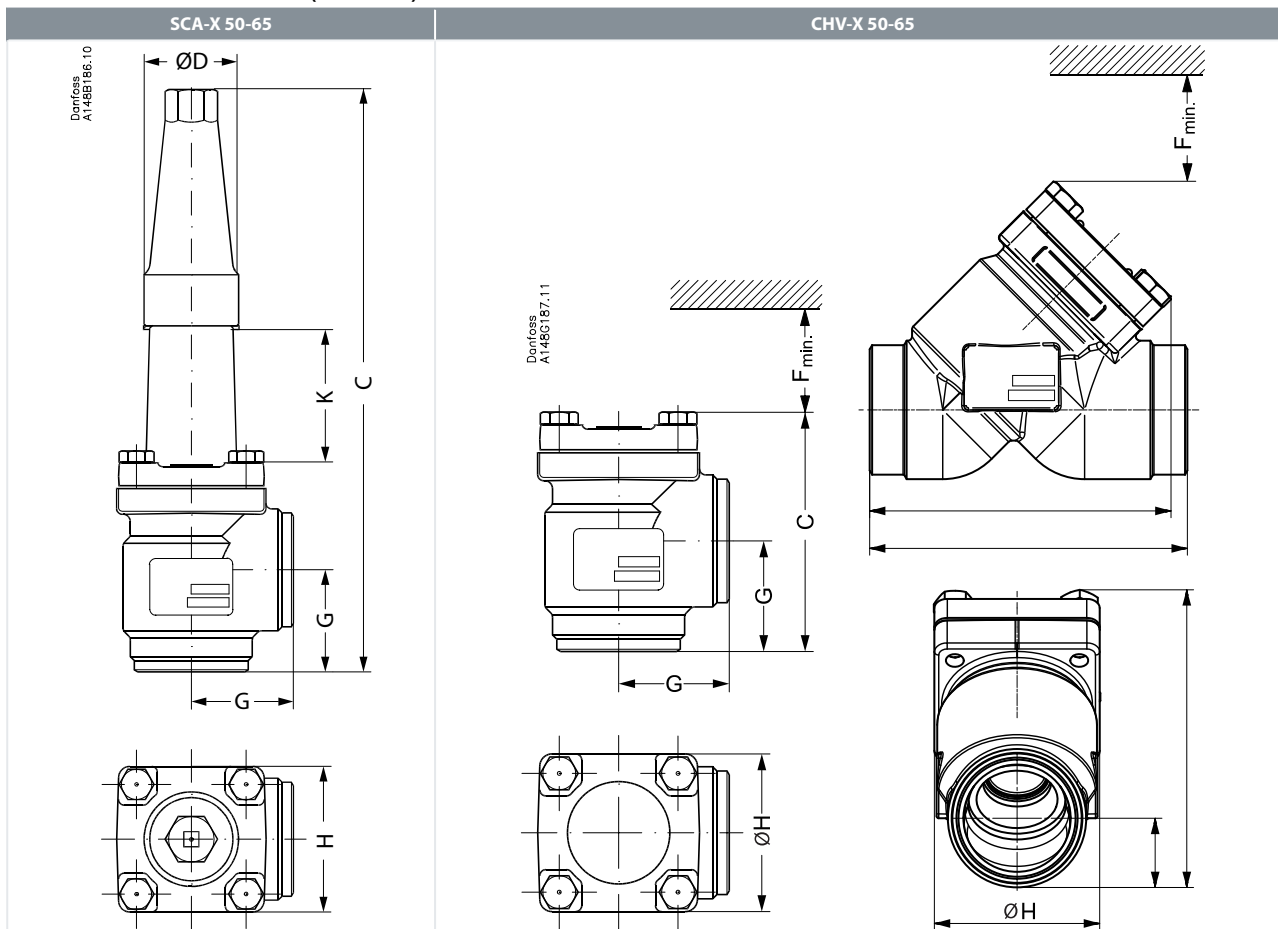


Table 16: SCA-X

| Valve size | K | | C | | G | | ØD | | ØH | | Weight | |
|-------------------|----|------|-----|-------|----|------|----|------|----|------|--------|-------|
| | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | kg | lb |
| SCA-X 50 | 70 | 2.76 | 315 | 12.40 | 60 | 2.36 | 50 | 1.97 | 77 | 3.03 | 3.8 | 8.40 |
| SCA-X (2) | 70 | 2.76 | 315 | 12.40 | 60 | 2.36 | 50 | 1.97 | 77 | 3.03 | 3.8 | 8.40 |
| SCA-X 65 | 70 | 2.76 | 335 | 13.19 | 70 | 2.76 | 50 | 1.97 | 90 | 3.54 | 5.5 | 12.16 |
| SCA-X (2½) | 70 | 2.76 | 335 | 13.19 | 70 | 2.76 | 50 | 1.97 | 90 | 3.54 | 5.5 | 12.16 |

Table 17: CHV-X Angleway

| Valve size | C | | G | | F _{min} | | ØH | | Weight | |
|-------------------|-----|------|----|------|------------------|------|----|------|--------|------|
| | mm | in. | mm | in. | mm | in. | mm | in. | kg | lb |
| CHV-X 50 | 132 | 5.20 | 60 | 2.36 | 92 | 3.62 | 77 | 3.03 | 3.2 | 7.10 |
| CHV-X (2) | 132 | 5.20 | 60 | 2.36 | 92 | 3.62 | 77 | 3.03 | 3.2 | 7.10 |
| CHV-X 65 | 152 | 5.98 | 70 | 2.76 | 107 | 4.21 | 90 | 3.54 | 4.5 | 9.95 |
| CHV-X (2½) | 152 | 5.98 | 70 | 2.76 | 107 | 4.21 | 90 | 3.54 | 4.5 | 9.95 |

Stop/Check valve & and Check valve, type SCA-X and CHV-X

Table 18: CHV-X Straightway

| Valve size | C | | B | | E | | G | | F _{min} | | ØH | | Weight | |
|------------|-----|------|-----|------|----|------|-----|------|------------------|------|----|------|--------|------|
| | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | kg | lb |
| CHV-X 50 | 139 | 5.47 | 140 | 5.51 | 32 | 1.26 | 148 | 5.83 | 92 | 3.62 | 77 | 3.03 | 3 | 6.72 |
| CHV-X (2) | 139 | 5.47 | 140 | 5.51 | 32 | 1.26 | 148 | 5.83 | 92 | 3.62 | 77 | 3.03 | 3 | 6.72 |
| CHV-X 65 | 163 | 6.4 | 164 | 6.4 | 40 | 1.6 | 176 | 6.9 | 107 | 4.21 | 90 | 3.54 | 4.3 | 9.44 |
| CHV-X (2½) | 163 | 6.4 | 164 | 6.4 | 40 | 1.6 | 176 | 6.9 | 107 | 4.21 | 90 | 3.54 | 4.3 | 9.44 |

Table 19: CHV-X Straightway, Socket weld

| Valve size | C | | B | | E | | G | | F _{min} | | ØH | | Weight | |
|------------|-----|------|-----|------|----|------|-----|------|------------------|------|----|------|--------|------|
| | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | kg | lb |
| CHV-X 50 | 142 | 5.59 | 147 | 5.79 | 37 | 1.46 | 162 | 6.38 | 92 | 3.62 | 77 | 3.03 | 3.8 | 8.33 |
| CHV-X (2) | 142 | 5.59 | 147 | 5.79 | 37 | 1.46 | 162 | 6.38 | 92 | 3.62 | 77 | 3.03 | 3.8 | 8.33 |

NOTE:

Specified weights are approximate values only.

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

Table 20: SCA-X/CHV-X 80-125 (2 - 2½ in.)

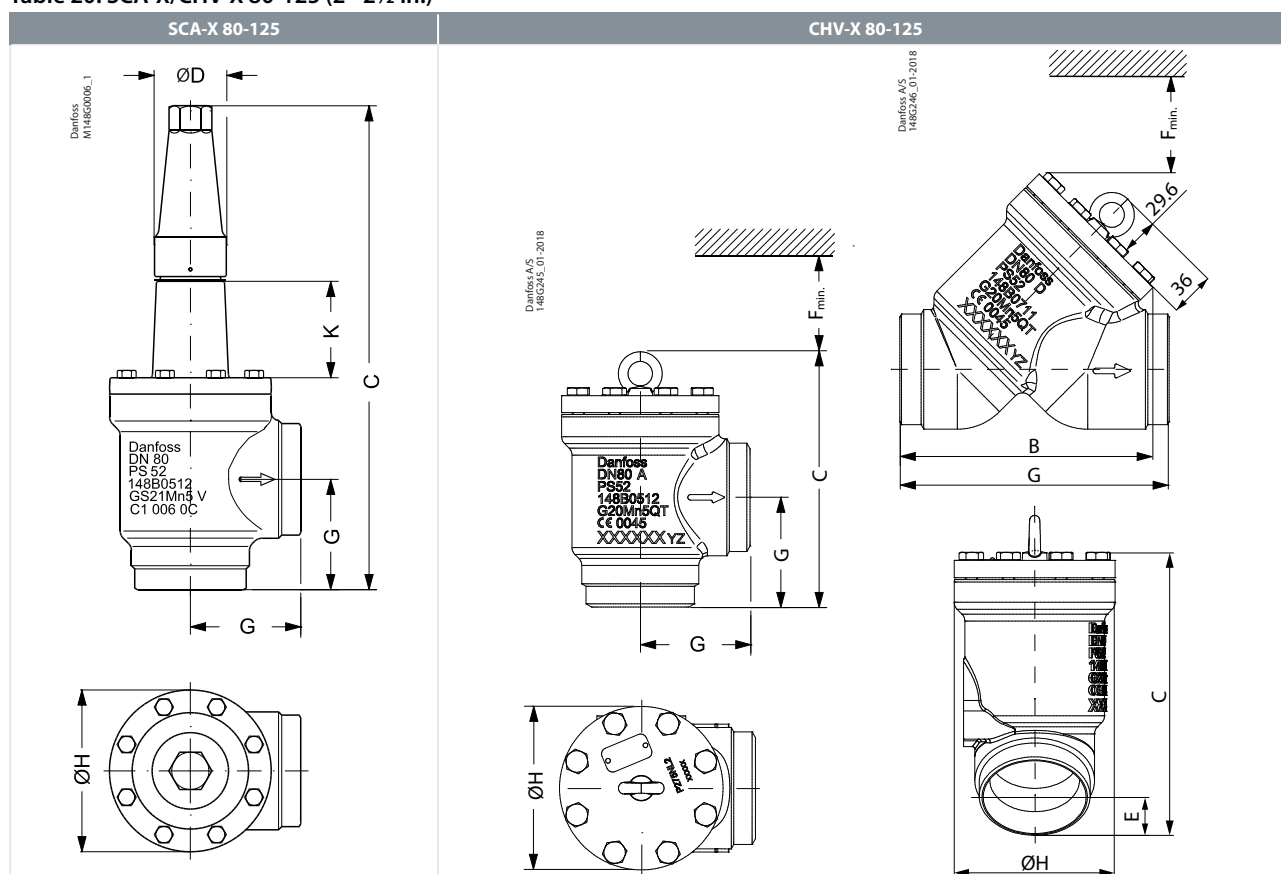


Table 21: SCA-X

| Valve size | K | | C | | G | | ØD | | ØH | | Weight | |
|------------|----|------|-----|-------|-----|------|----|------|-----|------|--------|------|
| | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | kg | lb |
| SCA-X 80 | 76 | 3.00 | 388 | 15.28 | 90 | 3.54 | 58 | 2.28 | 129 | 5.08 | 9.7 | 21.4 |
| SCA-X (3) | 76 | 3.00 | 388 | 15.28 | 90 | 3.54 | 58 | 2.28 | 129 | 5.08 | 9.7 | 21.4 |
| SCA-X 100 | 90 | 3.54 | 437 | 17.20 | 106 | 4.17 | 58 | 2.28 | 156 | 6.14 | 15.3 | 33.7 |
| SCA-X (4) | 90 | 3.54 | 437 | 17.20 | 106 | 4.17 | 58 | 2.28 | 156 | 6.14 | 15.3 | 33.7 |
| SCA-X 125 | 90 | 3.54 | 533 | 20.98 | 128 | 5.04 | 74 | 2.91 | 193 | 7.60 | 28.1 | 61.9 |
| SCA-X (5) | 90 | 3.54 | 533 | 20.98 | 128 | 5.04 | 74 | 2.91 | 193 | 7.60 | 28.1 | 61.9 |

Stop/Check valve & and Check valve, type SCA-X and CHV-X

Table 22: CHV-X Angleyway

| Valve size | C | | G | | F _{min} | | ØH | | Weight | |
|------------------|-------|-------|-----|------|------------------|------|-----|------|--------|-------|
| | mm | in. | mm | in. | mm | in. | mm | in. | kg | lb |
| CHV-X 80 | 218.6 | 8.61 | 90 | 3.54 | 103.4 | 4.07 | 129 | 5.08 | 8.7 | 19.23 |
| CHV-X (3) | 218.6 | 8.61 | 90 | 3.54 | 103.4 | 4.07 | 129 | 5.08 | 8.7 | 19.23 |
| CHV-X 100 | 252.6 | 9.94 | 106 | 4.17 | 133.4 | 5.25 | 156 | 6.14 | 14.3 | 31.60 |
| CHV-X (4) | 252.6 | 9.94 | 106 | 4.17 | 133.4 | 5.25 | 156 | 6.14 | 14.3 | 31.60 |
| CHV-X 125 | 297.6 | 11.72 | 128 | 5.04 | 160.4 | 6.31 | 193 | 7.60 | 25.6 | 56.58 |
| CHV-X (5) | 297.6 | 11.72 | 128 | 5.04 | 160.4 | 6.31 | 193 | 7.60 | 25.6 | 56.58 |

Table 23: CHV-X Straightway

| Valve size | C | | B | | E | | G | | F _{min} | | ØH | | Weight | |
|------------------|-----|-------|-----|-------|----|------|-----|-------|------------------|------|-----|------|--------|-------|
| | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | kg | lb |
| CHV-X 80 | 206 | 8.11 | 204 | 8.03 | 48 | 1.89 | 216 | 8.50 | 133 | 5.24 | 129 | 5.08 | 9.3 | 20.4 |
| CHV-X (3) | 206 | 8.11 | 204 | 8.03 | 48 | 1.89 | 216 | 8.50 | 133 | 5.24 | 129 | 5.08 | 9.3 | 20.4 |
| CHV-X 100 | 256 | 10.08 | 248 | 9.76 | 62 | 2.44 | 264 | 10.39 | 163 | 6.43 | 156 | 6.14 | 14.6 | 32.29 |
| CHV-X (4) | 256 | 10.08 | 248 | 9.76 | 62 | 2.44 | 264 | 10.39 | 163 | 6.43 | 156 | 6.14 | 14.6 | 32.29 |
| CHV-X 125 | 314 | 12.36 | 302 | 11.89 | 74 | 2.91 | 322 | 12.68 | 190 | 7.48 | 193 | 7.60 | 32.5 | 71.65 |
| CHV-X (5) | 314 | 12.36 | 302 | 11.89 | 74 | 2.91 | 322 | 12.68 | 190 | 7.48 | 193 | 7.60 | 32.5 | 71.65 |

NOTE:

Specified weights are approximate values only.

Ordering

Ordering complete valves

How to order

The table below is used to identify the valve required.

Please note that the type codes only serve to identify the valves, some of which may not form part of the standard product range.

For further information please contact your local Danfoss Sales Company.

Table 24: Ordering complete valves

| Valve type | SCA-X CHV-X | Check & Stop valve | | | | |
|--|--------------------|---|---|---|---|-----|
| | | Check Valve | | | | |
| | | | A | D | G | SOC |
| (valve size measured on the connection diameter) | 15 | DN 15 | X | X | X | X |
| | 20 | DN 20 | X | X | X | X |
| | 25 | DN 25 | X | X | X | X |
| | 32 | DN 32 | X | X | X | X |
| | 40 | DN 40 | X | X | X | X |
| | 50 | DN 50 | X | X | X | X |
| | 65 | DN 65 | X | X | | |
| | 80 | DN 80 | X | X | | |
| | 100 | DN 100 | X | X | X | |
| | 125 | DN 125 | X | X | X | |
| Connections | A D G SOC | Welding branches: ANSI B 31.5 schedule 80 DN 15 - 40 (½ - 1½ in.) Welding branches: ANSI B 31.5 schedule 40 DN 50 - 125 (2 - 5 in.) Welding branches: EN 10220 Butt-weld connection: GOST (8734-75 and 8732-78) Socket weld: ANSI B 16.11 | | | | |
| Valve housing | ANG STR | Angle flow Straight flow | | | | |

❗ IMPORTANT:

Where products need to be certified according to specific certification societies the relevant information should be included at the time of order.

Angleway

SCA-X

Table 25: SCA-X Butt-weld DIN (EN 10220)

| Size | | Type | Code No. |
|------|-----|-----------------|----------|
| mm | in. | | |
| 15 | ½ | SCA-X 15 D ANG | 148B5208 |
| 20 | ¾ | SCA-X 20 D ANG | 148B5308 |
| 25 | 1 | SCA-X 25 D ANG | 148B5408 |
| 32 | 1¼ | SCA-X 32 D ANG | 148B5508 |
| 40 | 1½ | SCA-X 40 D ANG | 148B5608 |
| 50 | 2 | SCA-X 50 D ANG | 148B5702 |
| 65 | 2½ | SCA-X 65 D ANG | 148B5803 |
| 80 | 3 | SCA-X 80 D ANG | 148B5902 |
| 100 | 4 | SCA-X 100 D ANG | 148B6002 |
| 125 | 5 | SCA-X 125 D ANG | 148B6102 |

Stop/Check valve & and Check valve, type SCA-X and CHV-X

Table 26: SCA-X Butt-weld ANSI (B 36.10 Schedule 80)

| Size | | Type | Code No. |
|------|-----|----------------|----------|
| mm | in. | | |
| 15 | ½ | SCA-X 15 A ANG | 148B5209 |
| 20 | ¾ | SCA-X 20 A ANG | 148B5309 |
| 25 | 1 | SCA-X 25 A ANG | 148B5409 |
| 32 | 1¼ | SCA-X 32 A ANG | 148B5509 |
| 40 | 1½ | SCA-X 40 A ANG | 148B5609 |

Table 27: SCA-X Butt-weld ANSI (B 36.10 Schedule 40)

| Size | | Type | Code No. |
|------|-----|-----------------|----------|
| mm | in. | | |
| 50 | 2 | SCA-X 50 A ANG | 148B5703 |
| 65 | 2½ | SCA-X 65 A ANG | 148B5802 |
| 80 | 3 | SCA-X 80 A ANG | 148B5903 |
| 100 | 4 | SCA-X 100 A ANG | 148B6004 |
| 125 | 5 | SCA-X 125 A ANG | 148B6103 |

Table 28: SCA-X Socket welding ANSI (B 16.11)

| Size | | Type | Code No. |
|------|-----|------------------|----------|
| mm | in. | | |
| 50 | 2 | SCA-X 50 SOC ANG | 148B5704 |

ANG = Angleway

CHV-X

Table 29: CHV-X Butt-weld DIN (EN 10220)

| Size | | Type | Code No. |
|------|-----|-----------------|----------|
| mm | in. | | |
| 15 | ½ | CHV-X 15 D ANG | 148B5236 |
| 20 | ¾ | CHV-X 20 D ANG | 148B5336 |
| 25 | 1 | CHV-X 25 D ANG | 148B5436 |
| 32 | 1¼ | CHV-X 32 D ANG | 148B5536 |
| 40 | 1½ | CHV-X 40 D ANG | 148B5636 |
| 50 | 2 | CHV-X 50 D ANG | 148B5736 |
| 65 | 2½ | CHV-X 65 D ANG | 148B5838 |
| 80 | 3 | CHV-X 80 D ANG | 148B5936 |
| 100 | 4 | CHV-X 100 D ANG | 148B6036 |
| 125 | 5 | CHV-X 125 D ANG | 148B6136 |

Table 30: CHV-X Butt-weld ANSI (B 36.10 Schedule 80)

| Size | | Type | Code No. |
|------|-----|----------------|----------|
| mm | in. | | |
| 15 | ½ | CHV-X 15 A ANG | 148B5237 |
| 20 | ¾ | CHV-X 20 A ANG | 148B5337 |
| 25 | 1 | CHV-X 25 A ANG | 148B5437 |
| 32 | 1¼ | CHV-X 32 A ANG | 148B5537 |
| 40 | 1½ | CHV-X 40 A ANG | 148B5637 |

Table 31: CHV-X Butt-weld ANSI (B 36.10 Schedule 40)

| Size | | Type | Code No. |
|------|-----|-----------------|----------|
| mm | in. | | |
| 50 | 2 | CHV-X 50 A ANG | 148B5737 |
| 65 | 2½ | CHV-X 65 A ANG | 148B5837 |
| 80 | 3 | CHV-X 80 A ANG | 148B5937 |
| 100 | 4 | CHV-X 100 A ANG | 148B6037 |
| 125 | 5 | CHV-X 125 A ANG | 148B6137 |

Table 32: CHV-X Socket welding ANSI (B 16.11)

| Size | | Type | Code No. |
|------|-----|----------------|----------|
| mm | in. | | |
| 32 | 1¼ | CHV 32 SOC ANG | 148B5539 |
| 50 | 2 | CHV 50 SOC ANG | 148B5740 |

Straightway

CHV-X

Table 33: CHV-X Butt-weld DIN (EN 10220)

| Size | | Type | Code No. |
|------|-----|-----------------|----------|
| mm | in. | | |
| 15 | ½ | CHV-X 15 D STR | 148B6581 |
| 20 | ¾ | CHV-X 20 D STR | 148B6583 |
| 25 | 1 | CHV-X 25 D STR | 148B6585 |
| 32 | 1¼ | CHV-X 32 D STR | 148B6587 |
| 40 | 1½ | CHV-X 40 D STR | 148B6589 |
| 50 | 2 | CHV-X 50 D STR | 148B6591 |
| 65 | 2½ | CHV-X 65 D STR | 148B6593 |
| 80 | 3 | CHV-X 80 D STR | 148B6595 |
| 100 | 4 | CHV-X 100 D STR | 148B6597 |
| 125 | 5 | CHV-X 125 D STR | 148B6599 |

Table 34: CHV-X Butt-weld ANSI (B 36.10 Schedule 80)

| Size | | Type | Code No. |
|------|-----|----------------|----------|
| mm | in. | | |
| 15 | ½ | CHV-X 15 A STR | 148B6582 |
| 20 | ¾ | CHV-X 20 A STR | 148B6584 |
| 25 | 1 | CHV-X 25 A STR | 148B6586 |
| 32 | 1¼ | CHV-X 32 A STR | 148B6588 |
| 40 | 1½ | CHV-X 40 A STR | 148B6590 |

Table 35: CHV-X Butt-weld ANSI (B 36.10 Schedule 40)

| Size | | Type | Code No. |
|------|-----|-----------------|----------|
| mm | in. | | |
| 50 | 2 | CHV-X 50 A STR | 148B6592 |
| 65 | 2½ | CHV-X 65 A STR | 148B6594 |
| 80 | 3 | CHV-X 80 A STR | 148B6596 |
| 100 | 4 | CHV-X 100 A STR | 148B6598 |
| 125 | 5 | CHV-X 125 A STR | 148B6600 |

Table 36: CHV-X Socket welding ANSI (B 16.11)

| Size | | Type | Code No. |
|------|-----|------------------|----------|
| mm | in. | | |
| 15 | ½ | CHV-X 15 SOC STR | 148B6601 |
| 20 | ¾ | CHV-X 20 SOC STR | 148B6602 |
| 25 | 1 | CHV-X 25 SOC STR | 148B6603 |
| 32 | 1¼ | CHV-X 32 SOC STR | 148B6604 |
| 40 | 1½ | CHV-X 40 SOC STR | 148B6605 |
| 50 | 2 | CHV-X 50 SOC STR | 148B6606 |

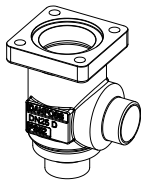
STR = Straightway

Ordering SCA-X from the parts programme

Example (select from table 37 and 38)

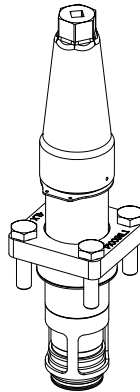
Example

Stop/Check valve & and Check valve, type SCA-X and CHV-X



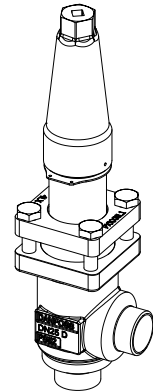
Valve housing, size 25 (1 in.),
DIN butt weld, angleway,
148B5452
Table 37

+



Top part, SCA-X
size 25 (1 in.)
148B5482
Table 38

=



Valve Housing SVL

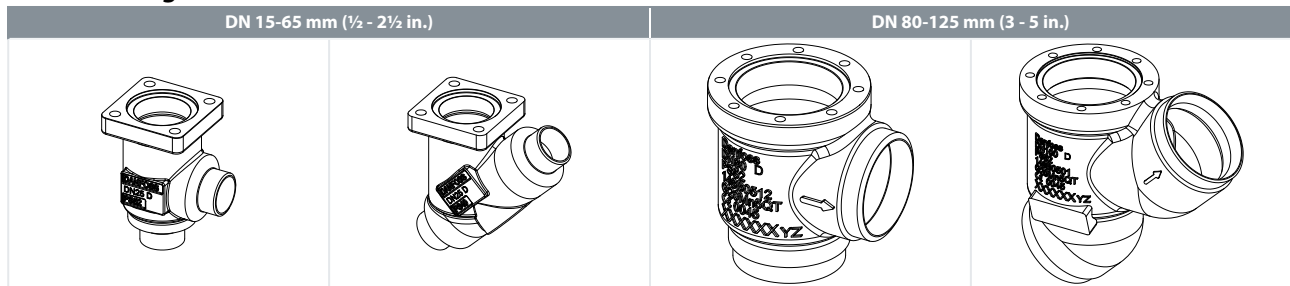


Table 37: SVL valve housings w/different connections

| Sizes [DN] | | Valve Housing SVL | | | | | | | | | | |
|------------|------|-------------------|----------|----------------|----------|----------------|----------|----------|----------|----------|----------|-----|
| | | DIN-Butt weld | | ANSI-Butt weld | | GOST-Butt-weld | | SOC | | FPT | | T |
| [mm] | [in] | ANG | STR | ANG | STR | ANG | STR | ANG | STR | ANG | STR | ANG |
| 15 | ½ | 148B5252 | 148B5253 | 148B5254 | 148B5255 | 148B5391 | 148B5392 | 148B5256 | 148B5257 | 148B5258 | 148B5259 | - |
| 20 | ¾ | 148B5352 | 148B5353 | 148B5354 | 148B5355 | 148B5393 | 148B5394 | 148B5356 | 148B5357 | 148B5358 | 148B5359 | - |
| 25 | 1 | 148B5452 | 148B5453 | 148B5454 | 148B5455 | 148B5498 | 148B5499 | 148B5456 | 148B5457 | 148B5458 | 148B5459 | - |
| 32 | 1¼ | 148B5576 | 148B5577 | 148B5578 | 148B5579 | 148B5593 | 148B5594 | 148B5580 | 148B5581 | 148B5582 | 148B5583 | - |
| 40 | 1½ | 148B5652 | 148B5653 | 148B5654 | 148B5655 | 148B5681 | 148B5682 | 148B5656 | 148B5657 | - | - | - |
| 50 | 2 | 148B5741 | 148B5742 | 148B5743 | 148B5744 | 148B5759 | 148B5760 | 148B5745 | 148B5746 | - | - | - |
| 65 | 2½ | 148B5816 | 148B5817 | 148B5818 | 148B5819 | 148B5816 | 148B5817 | - | - | - | - | - |
| 80 | 3 | 148B5912 | 148B5913 | 148B5914 | 148B5915 | 148B5912 | 148B5913 | - | - | - | - | - |
| 100 | 4 | 148B6014 | 148B6015 | 148B6016 | 148B6017 | 148B6033 | 148B6034 | - | - | - | - | - |
| 125 | 5 | 148B6112 | 148B6113 | 148B6114 | 148B6115 | 148B6133 | 148B6134 | - | - | - | - | - |

Complete top part SCA-X



Stop/Check valve & and Check valve, type SCA-X and CHV-X

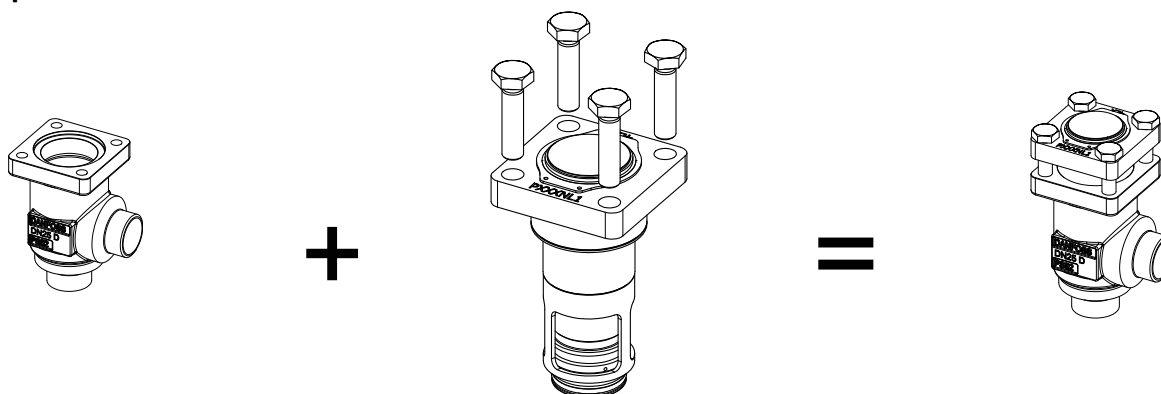
Table 38: SCA-X complete top part including gaskets and bolts

| Sizes [DN] | | Complete top part |
|------------|------|-------------------|
| [mm] | [in] | |
| 15 | ½ | 148B5282 |
| 20 | ¾ | |
| 25 | 1 | |
| 32 | 1¼ | |
| 40 | 1½ | 148B5482 |
| 50 | 2 | |
| 65 | 2½ | 148B5735 |
| 80 | 3 | 148B5825 |
| 100 | 4 | 148B5918 |
| 125 | 5 | 148B6019 |
| | | 148B6118 |

Ordering CHV-X from the parts programme

Example (select from table 40 and 41)

Example



Valve housing, size 25 (1 in.),
DIN butt weld, angleway,
148B5452
Table 40

Top part, CHV-X
size 25 (1 in.)
148B5483
Table 41

Valve Housing SVL

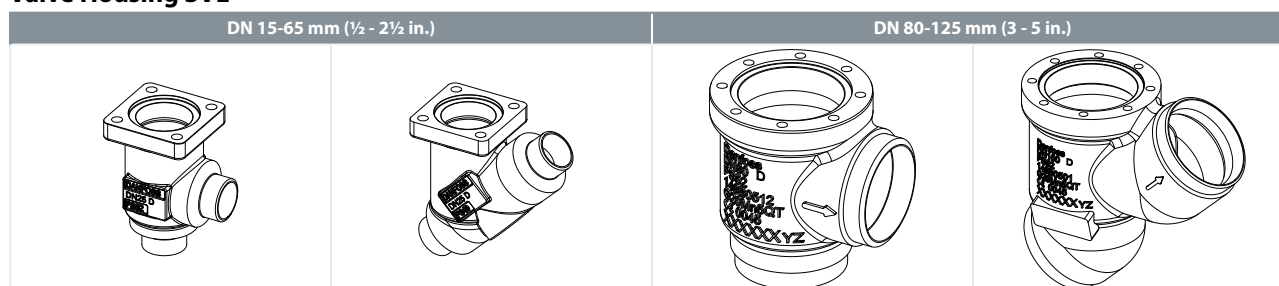


Table 39: SVL valve housings w/different connections

| Sizes [DN] | | Valve Housing SVL | | | | | | | | | | |
|------------|------|-------------------|----------|----------------|----------|----------------|----------|----------|----------|----------|----------|-----|
| | | DIN-Butt weld | | ANSI-Butt weld | | GOST-Butt-weld | | SOC | | FPT | | T |
| [mm] | [in] | ANG | STR | ANG | STR | ANG | STR | ANG | STR | ANG | STR | ANG |
| 15 | ½ | 148B5252 | 148B5253 | 148B5254 | 148B5255 | 148B5391 | 148B5392 | 148B5256 | 148B5257 | 148B5258 | 148B5259 | – |
| 20 | ¾ | 148B5352 | 148B5353 | 148B5354 | 148B5355 | 148B5393 | 148B5394 | 148B5356 | 148B5357 | 148B5358 | 148B5359 | – |
| 25 | 1 | 148B5452 | 148B5453 | 148B5454 | 148B5455 | 148B5498 | 148B5499 | 148B5456 | 148B5457 | 148B5458 | 148B5459 | – |
| 32 | 1¼ | 148B5576 | 148B5577 | 148B5578 | 148B5579 | 148B5593 | 148B5594 | 148B5580 | 148B5581 | 148B5582 | 148B5583 | – |
| 40 | 1½ | 148B5652 | 148B5653 | 148B5654 | 148B5655 | 148B5681 | 148B5682 | 148B5656 | 148B5657 | – | – | – |
| 50 | 2 | 148B5741 | 148B5742 | 148B5743 | 148B5744 | 148B5759 | 148B5760 | 148B5745 | 148B5746 | – | – | – |
| 65 | 2½ | 148B5816 | 148B5817 | 148B5818 | 148B5819 | 148B5816 | 148B5817 | – | – | – | – | – |

Stop/Check valve & and Check valve, type SCA-X and CHV-X

| Sizes [DN] | | Valve Housing SVL | | | | | | | | | | |
|------------|------|-------------------|----------|----------------|----------|----------------|----------|-----|-----|-----|-----|-----|
| | | DIN-Butt weld | | ANSI-Butt weld | | GOST-Butt-weld | | SOC | | FPT | | T |
| [mm] | [in] | ANG | STR | ANG | STR | ANG | STR | ANG | STR | ANG | STR | ANG |
| 80 | 3 | 148B5912 | 148B5913 | 148B5914 | 148B5915 | 148B5912 | 148B5913 | - | - | - | - | - |
| 100 | 4 | 148B6014 | 148B6015 | 148B6016 | 148B6017 | 148B6033 | 148B6034 | - | - | - | - | - |
| 125 | 5 | 148B6112 | 148B6113 | 148B6114 | 148B6115 | 148B6133 | 148B6134 | - | - | - | - | - |

Complete top part CHV-X



Table 40: CHV-X complete top part including gaskets and bolts

| Sizes [DN] | | Complete top part |
|------------|------|-------------------|
| [mm] | [in] | |
| 15 | ½ | 148B5283 |
| 20 | ¾ | |
| 25 | 1 | |
| 32 | 1¼ | |
| 40 | 1½ | 148B5483 |
| 50 | 2 | |
| 65 | 2½ | 148B5747 |
| 80 | 3 | 148B5827 |
| 100 | 4 | 148B5919 |
| 125 | 5 | 148B6022 |
| | | 148B6119 |

Table 41: Replacement kit (O-ring replacement) for R717 Ammonia Heat Pump* and Propylene applications (including ID tag)

| Size (DN) | | O-ring kit for | |
|-----------|-----|----------------|-----------------|
| mm | in. | R717 Heat pump | R1270 Propylene |
| 15 | ½ | 148B6070 | 148B6077 |
| 20 | ¾ | | |
| 25 | 1 | 148B6071 | 148B6078 |
| 32 | 1¼ | | |
| 40 | 1½ | | |
| 50 | 2 | 148B6072 | 148B6079 |
| 65 | 2½ | 148B6073 | 148B6080 |
| 80 | 3 | 148B6074 | 148B6081 |
| 100 | 4 | 148B6075 | 148B6082 |
| 125 | 5 | 148B6076 | 148B6083 |

*Replacement kits for R717 Ammonia Heat Pump is applicable for continuous operating temperature between +100 °C to 150 °C (212 °F to 302 °F)

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 42: 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 |

Online support

Danfoss offers a wide range of support along with our products, including digital product information, software, mobile apps, and expert guidance. See the possibilities below.

The Danfoss Product Store



The Danfoss Product Store is your one-stop shop for everything product related—no matter where you are in the world or what area of the cooling industry you work in. Get quick access to essential information like product specs, code numbers, technical documentation, certifications, accessories, and more.

Start browsing at store.danfoss.com.

Find technical documentation



Find the technical documentation you need to get your project up and running. Get direct access to our official collection of data sheets, certificates and declarations, manuals and guides, 3D models and drawings, case stories, brochures, and much more.

Start searching now at www.danfoss.com/en/service-and-support/documentation.

Get local information and support



Local Danfoss websites are the main sources for help and information about our company and products. Find product availability, get the latest regional news, or connect with a nearby expert—all in your own language.

Find your local Danfoss website here: www.danfoss.com/en/choose-region.

Danfoss Learning



Danfoss Learning is a free online learning platform. It features courses and materials specifically designed to help engineers, installers, service technicians, and wholesalers better understand the products, applications, industry topics, and trends that will help you do your job better.

Create your Danfoss Learning account for free at www.danfoss.com/en/service-and-support/learning.

Spare Parts



Get access to the Danfoss spare parts and service kit catalog right from your smartphone. The app contains a wide range of components for air conditioning and refrigeration applications, such as valves, strainers, pressure switches, and sensors.

Download the Spare Parts app for free at www.danfoss.com/en/service-and-support/downloads.

Coolselector®2 - find the best components for you HVAC/R system



Coolselector®2 makes it easy for engineers, consultants, and designers to find and order the best components for refrigeration and air conditioning systems. Run calculations based on your operating conditions and then choose the best setup for your system design.

Download Coolselector®2 for free at coolselector.danfoss.com.

Danfoss A/S

Climate Solutions • danfoss.com • +45 7488 2222

Any information, including, but not limited to information on selection of product, its application or use, product design, weight, dimensions, capacity or any other technical data in product manuals, catalogues descriptions, advertisements, etc. and whether made available in writing, orally, electronically, online or via download, shall be considered informative, and is only binding if and to the extent, explicit reference is made in a quotation or order confirmation. Danfoss cannot accept any responsibility for possible errors in catalogues, brochures, videos and other material. Danfoss reserves the right to alter its products without notice. This also applies to products ordered but not delivered provided that such alterations can be made without changes to form, fit or function of the product.

All trademarks in this material are property of Danfoss A/S or Danfoss group companies. Danfoss and the Danfoss logo are trademarks of Danfoss A/S. All rights reserved.