

## Data sheet

# Check & stop valves, type SCA-X SS

## Check valves, type CHV-X SS



In certain specific areas such as outdoor applications and corrosive atmospheres, such as coastal installations, there is a need for high surface protection to prevent failure due to corrosion.

Today's food safety standards often call for daily treatment with detergents to protect against bacteria growth, again producing a need for high surface protection.

SCA-X SS are check valves with a built-in stop valve function. CHV-X SS are check valves only.

The valves are designed to open at very low differential pressures, allow favourable flow conditions and are easy to disassemble for inspection and service.

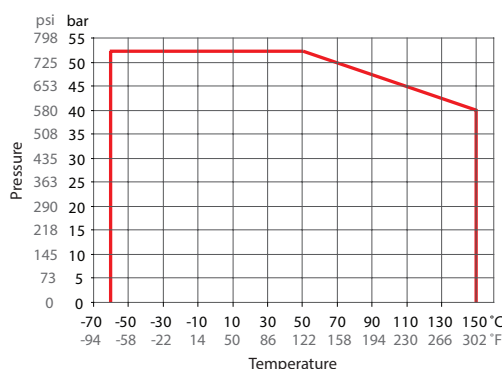
The valve cone has a built-in flexibility to ensure a precise and tight closing towards the valve seat.

A well balanced dampening effect between the piston and the cylinder gives an optimal protection during low loads and against pulsations.

## Features

- Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO<sub>2</sub>), Propane, Butane, Iso-Butane and Ethane.
- Designed to give favourable flow conditions.
- Internal backseating enables replacement of the spindle seal whilst the valve is active, i.e. under pressure (SCA-SS)
- Housing is made of special cold resistant stainless steel approved for low temperature operations.
- Easy to disassemble for inspection and service.
- Butt-weld DIN and ANSI connections.
- Max. operating pressure: 52 bar g (754 psig)
- Temperature range: -60/+150°C (-76 +302°F).
- Compact and light valves for easy handling and installation.
- Classification: DNV, CRN, BV, EAC etc. To get an updated list of certification on the products please contact your local Danfoss Sales Company.

### Pressure and temperature range



— SCA-X SS/CHV-X SS DN15-DN40

## Design

### Connections

Available with the following connections:

- Butt-weld DIN (EN 10220)  
DN 15 - 40 (½ - 1½ in.)
- Butt-weld ANSI (B 36.19M)  
DN 20 - 40 (¾ - 1½ in.)

### Housing

Made of stainless steel approved for low temperature operations.

### 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 SS)

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

### Packing Gland (SCA-X SS)

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).

### Pressure Equipment Directive (PED)

The SCA-X SS/CHV-X SS valves are approved according to the European standard specified in the Pressure Equipment Directive and are CE marked.

For further details / restrictions - see the product instruction.

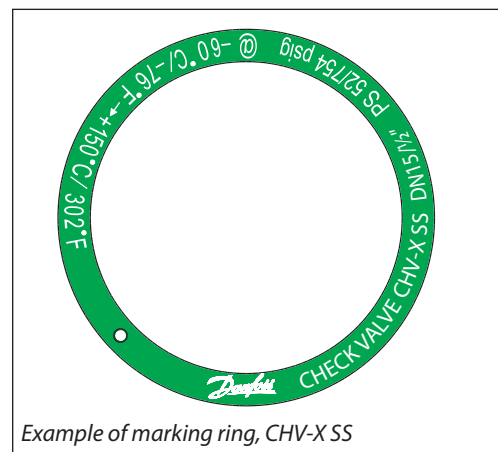
### Installation

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 instructions for SCA-X SS/CHV-X SS.

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.



Example of marking ring, CHV-X SS



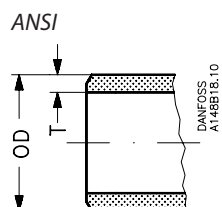
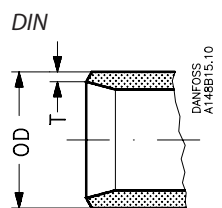
SCA-X SS/CHV-X SS valves		
Nominal bore	DN = < 25 mm (1 in.)	DN32-40 mm (1¼ - 1½ in.)
Classified for	Fluid group I	
Category	Article 3, paragraph 3	II

## Technical data

- **Refrigerants**  
Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO<sub>2</sub>), Propane, Butane, Iso-Butane and Ethane.  
For further information refer to the product instruction for SCA-X SS/CHV-X SS.

- **Temperature range**  
–60/+150°C (–76/+302°F).
- **Max. working pressure**  
52 bar g (754 psig).

## Connections



Size	OD	T
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### Butt-weld DIN (EN 10220)

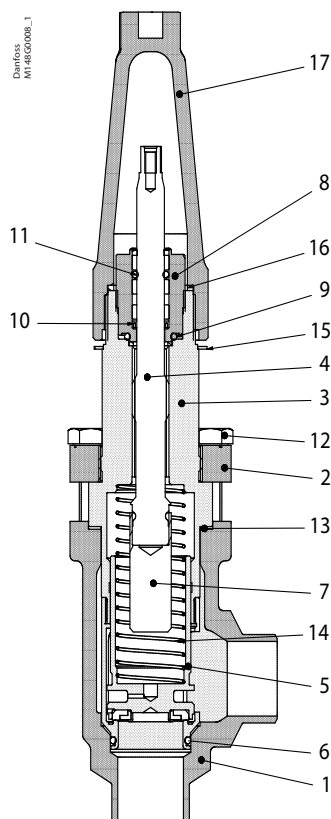
15	mm	21.3	2.3
½	in.	0.839	0.091
20	mm	26.9	2.3
¾	in.	1.059	0.091
25	mm	33.7	2.6
1	in.	1.327	0.103
32	mm	42.4	2.6
1¼	in.	1.669	0.102
40	mm	48.3	2.6
1½	in.	1.902	0.103

Size	OD	T
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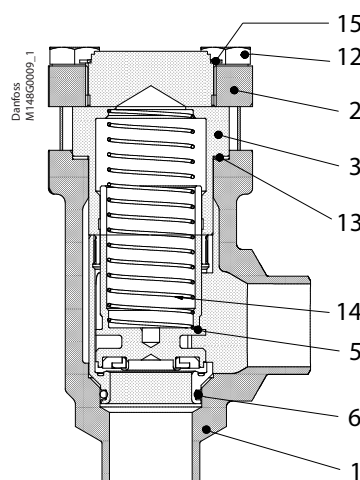
### Butt-weld ANSI (B 36.19M, SCHEDULE 40)

20	mm	26.9	2.9
¾	in.	1.06	0.11
25	mm	33.7	3.5
1	in.	1.33	0.14
32	mm	42.4	3.6
1¼	in.	1.67	0.14
40	mm	48.3	3.7
1½	in.	1.9	0.15

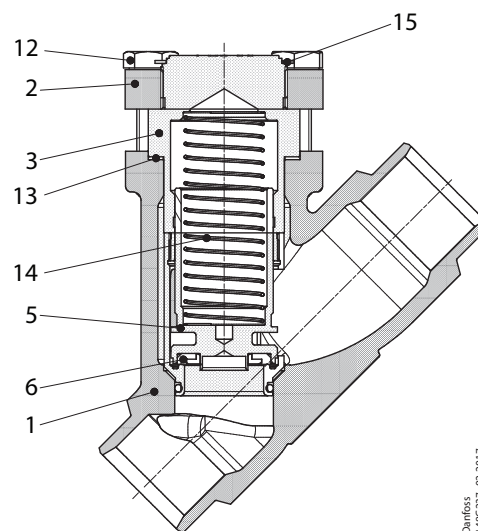
## Material specification



SCA-X SS 15 - 40



CHV-X SS 15 - 40

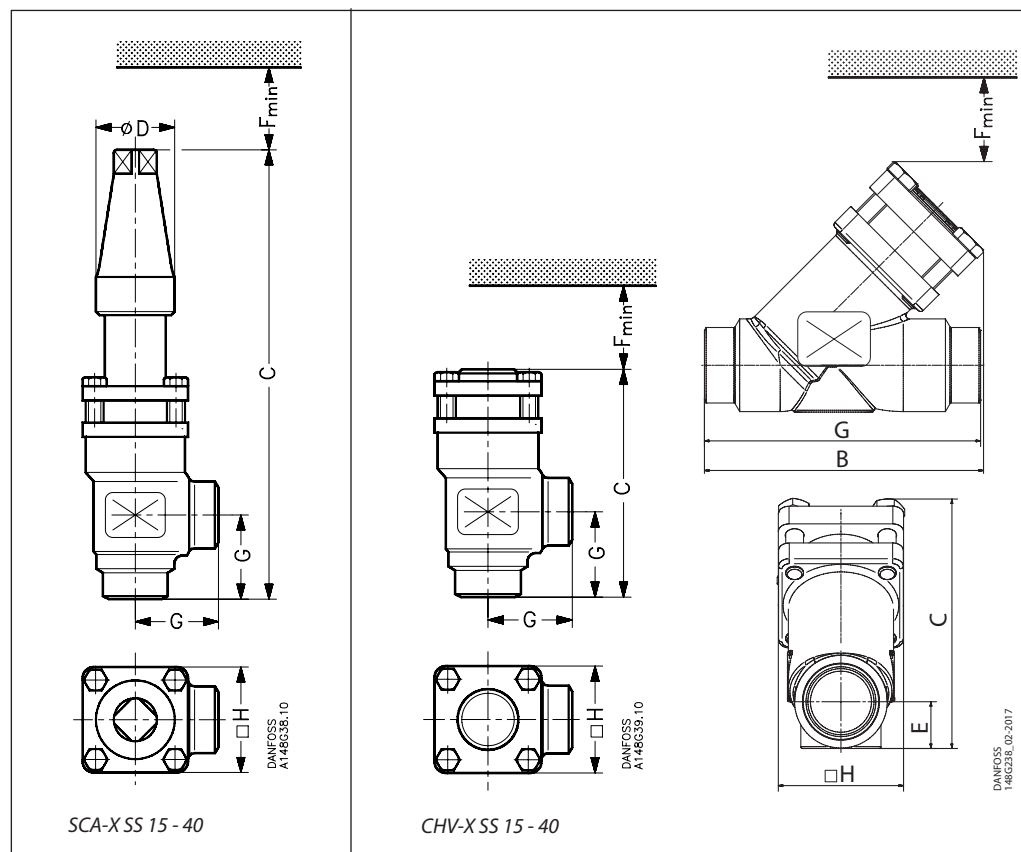


CHV-X SS 15 - 40

No.	Part	Material	DIN/EN	ISO	ASTM
1	Housing	Stainless steel	GX5CrNi19-10 EN10213-4		AISI 304
2	Bonnet, Flange	Stainless steel	X5CrNi18-10 EN10088		AISI 304
3	Bonnet, Insert	Stainless steel	X8CrNiS18-9 DIN 17440		
4	Spindle	Stainless steel	X8CrNiS18-9 DIN 17440	Type 17, 17440	AISI 303
5	Cone	Steel Teflon (PTFE)			
6	O-ring	Cloroprene (Neoprene)			
7	Spindle extension	Steel			
8	Packing gland O-rings	Stainless steel Cloroprene (Neoprene)			
9	Packing washer	Aluminium			
10	Spring loaded seal	Teflon (PTFE)			
11	O-ring	Cloroprene (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			

# Dimensions and weights

## SCA-X SS/CHV-X SS 15 - 40 (½- 1½ in.)



Valve size		C		G		ØD		F <sub>min</sub>		H	Weight
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### SCA-X SS 15 - 40

SCA-X SS 15 (½ in.)	mm in.	212 8.35		45 1.77		38 1.50		60 2.36		60 2.36	1.6 kg 3.53 lb
SCA-X SS 20 (¾ in.)	mm in.	212 8.35		45 1.77		38 1.50		60 2.36		60 2.36	1.6 kg 3.53 lb
SCA-X SS 25 (1 in.)	mm in.	295 11.61		55 2.17		50 1.97		85 3.35		70 2.76	3.2 kg 7.05 lb
SCA-X SS 32 (1¼ in.)	mm in.	295 11.61		55 2.17		50 1.97		85 3.35		70 2.76	3.2 kg 7.05 lb
SCA-X SS 40 (1½ in.)	mm in.	295 11.61		55 2.17		50 1.97		85 3.35		70 2.76	3.2 kg 7.05 lb

### CHV-X SS 15 - 40 Angleway

CHV-X SS 15 (½ in.)	mm in.	103 4.06		45 1.77				60 2.36		60 2.36	1.2 kg 2.65 lb
CHV-X SS 20 (¾ in.)	mm in.	103 4.06		45 1.77				60 2.36		60 2.36	1.2 kg 2.65 lb
CHV-X SS 25 (1 in.)	mm in.	143 5.63		55 2.17				85 3.35		70 2.76	2.3 kg 5.07 lb
CHV-X SS 32 (1¼ in.)	mm in.	143 5.63		55 2.17				85 3.35		70 2.76	2.3 kg 5.07 lb
CHV-X SS 40 (1½ in.)	mm in.	143 5.63		55 2.17				85 3.35		70 2.76	2.3 kg 5.07 lb

Valve size		C	B	E		G		F <sub>min</sub>		H	Weight
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### CHV-X SS 15 - 40 Straightway

CHV-X SS 15 (½ in.)	mm in.	99 3.90	114 4.49	19 0.75		120 4.72		60 2.36		60 2.36	1.3kg 2.87lb
CHV-X SS 20 (¾ in.)	mm in.	99 3.90	114 4.49	19 0.75		120 4.72		60 2.36		60 2.36	1.3kg 2.87lb
CHV-X SS 25 (1 in.)	mm in.	141 5.55	157 6.18	26 1.02		155 6.10		85 3.35		70 2.76	2.6kg 5.73lb
CHV-X SS 32 (1¼ in.)	mm in.	141 5.55	157 6.18	26 1.02		155 6.10		85 3.35		70 2.76	2.6kg 5.73lb
CHV-X SS 40 (1½ in.)	mm in.	141 5.55	157 6.18	26 1.02		155 6.10		85 3.35		70 2.76	2.6kg 5.73lb

Specified weights are approximate values only.

## Ordering complete valves

### How to order

The table below is used to identify the valve required.

For further information please contact your local Danfoss Sales Company.

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

Valve type	SCA-X SS CHV-X SS	Stop Check Valve Check Valve
(valve size measured on the connection diameter)	<b>15</b> <b>20</b> <b>25</b> <b>32</b> <b>40</b>	<b>D</b> <b>A</b> DN 15 DN 20 DN 25 DN 32 DN 40
Connections	<b>D</b> <b>A</b>	Butt-weld connection: DIN EN 10220 Butt-weld connection: ANSI B 36.19M
Valve housing	<b>ANG</b> <b>STR</b>	Angle flow Straight flow

### Important!

Where products need to be certified according to specific certification societies, or where higher pressures are required, the relevant information should be included at the time of order.

## SCA-X SS Angleway

### Butt-weld DIN (EN 10220)

Size		Type	Code No.
mm	in.		
15	½	SCA-X SS 15 D ANG	148B5293
20	¾	SCA-X SS 20 D ANG	148B5381
25	1	SCA-X SS 25 D ANG	148B5490
32	1¼	SCA-X SS 32 D ANG	148B5585
40	1½	SCA-X SS 40 D ANG	148B5664

### Butt-weld ANSI (B 36.19M SCHEDULE 40)

Size		Type	Code No.
mm	in.		
20	¾	SCA-X SS 20 A40 ANG	148B6489
25	1	SCA-X SS 25 A40 ANG	148B6480
32	1¼	SCA-X SS 32 A40 ANG	148B6490
40	1½	SCA-X SS 40 A40 ANG	148B5687

## CHV-X SS Angleway

### Butt-weld DIN (EN 10220)

Size		Type	Code No.
mm	in.		
15	½	CHV-X SS 15 D ANG	148B5294
20	¾	CHV-X SS 20 D ANG	148B5382
25	1	CHV-X SS 25 D ANG	148B5491
32	1¼	CHV-X SS 32 D ANG	148B5586
40	1½	CHV-X SS 40 D ANG	148B5665

### Butt-weld ANSI (B 36.19M SCHEDULE 40)

Size		Type	Code No.
mm	in.		
20	¾	CHV-X SS 20 A40 ANG	148B6491
25	1	CHV-X SS 25 A40 ANG	148B6481
32	1¼	CHV-X SS 32 A40 ANG	148B6492
40	1½	CHV-X SS 40 A40 ANG	148B5688

ANG = Angleway  
STR = Straightway

## CHV-X SS Straightway

### Butt-weld DIN (EN 10220)

Size		Type	Code No.
mm	in.		
15	½	CHV-X SS 15 D STR	148B5678
20	¾	CHV-X SS 20 D STR	148B5679
25	1	CHV-X SS 25 D STR	148B5680
32	1¼	CHV-X SS 32 D STR	148B6544
40	1½	CHV-X SS 40 D STR	148B6566

### Butt-weld ANSI (B 36.19M SCHEDULE 40)

Size		Type	Code No.
mm	in.		
20	¾	CHV-X SS 20 A40 STR	148B6608
25	1	CHV-X SS 25 A40 STR	148B6609
32	1¼	CHV-X SS 32 A40 STR	148B6610
40	1½	CHV-X SS 40 A40 STR	148B6611



