

## 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.

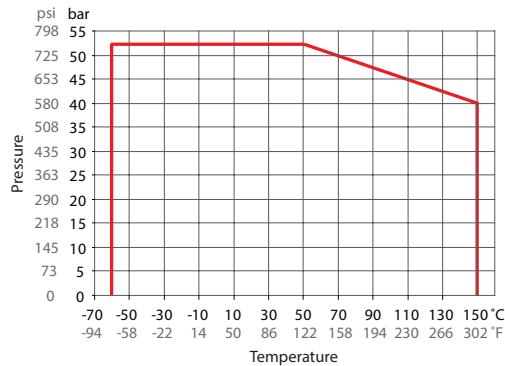
## Features

- 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 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.)

### 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.

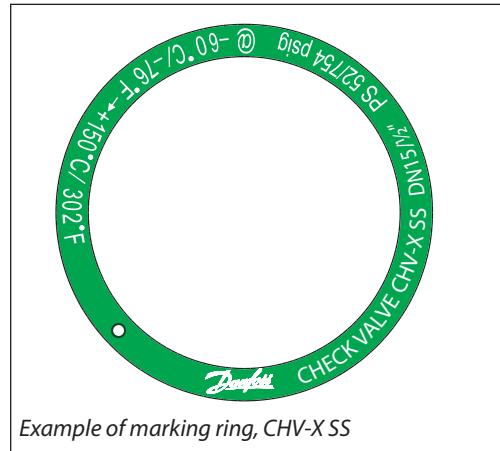
### Installation

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 (1½ - 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.

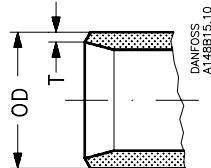
For further information refer to the product instruction for SCA-X SS/CHV-X SS.

### Temperature range

-60/+150°C (-76/+302°F).

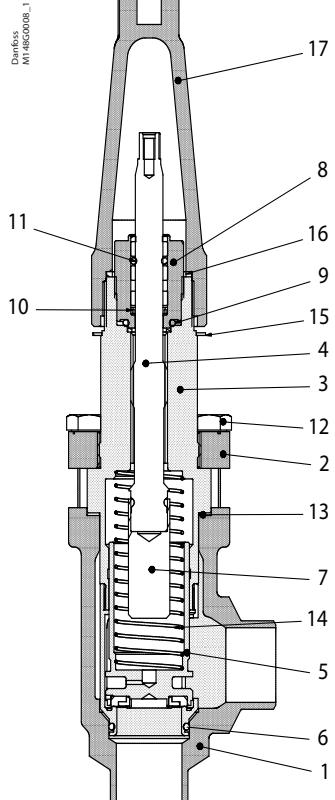
### Max. working pressure

52 bar g (754 psig).

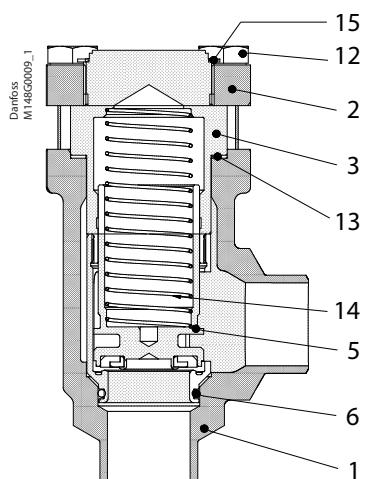
**Connections**
**DIN**

*Welding DIN (EN 10220)*

Size mm	Size in.	OD mm	T mm	OD in.	T in.			$k_v$ -angle $m^3/h$		$C_v$ -angle USgal/min	
15	1/2	21.3	2.3	0.839	0.091			8.0		9.3	
20	3/4	26.9	2.3	1.059	0.091			10.0		11.6	
25	1	33.7	2.6	1.327	0.102			24.0		27.8	
32	1 1/4	42.4	2.6	1.669	0.102			30.0		34.8	
40	1 1/2	48.3	2.6	1.902	0.102			30.0		34.8	

**Material specification**

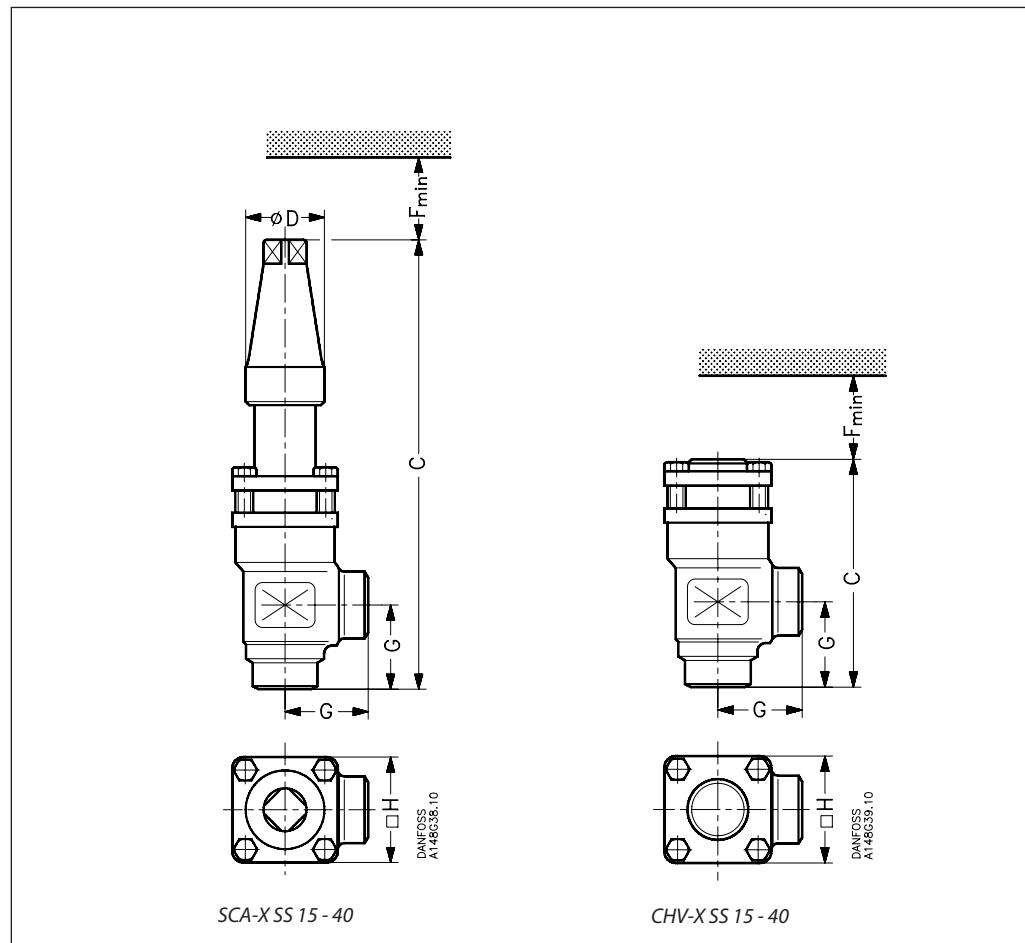
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M148G0058\_1


SCA-X SS 15 - 40

Danfoss  
M148G0099\_1


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 (1/2- 1 1/2 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 (1/2 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 (3/4 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 (1 1/4 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 (1 1/2 in.)	mm in.	295 11.61		55 2.17		50 1.97		85 3.35		70 2.76	3.2 kg 7.05 lb

Valve size		C	G	F <sub>min</sub>	□H	Weight
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**CHV-X SS 15 - 40**

CHV-X SS 15 (1/2 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 (3/4 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 (1 1/4 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 (1 1/2 in.)	mm in.	143 5.63		55 2.17		85 3.35		70 2.76	2.3 kg 5.07 lb

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	DIN
(valve size measured on the connection diameter)	<b>15</b> <b>20</b> <b>25</b> <b>32</b> <b>40</b>	DN 15 DN 20 DN 25 DN 32 DN 40	x x x x x
Connections	<b>D</b>	Welding branches: EN 10220	
Valve housing	<b>ANG</b>	Angle 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 Butt-weld DIN (EN 10220)*

Size		Type	Code No.
mm	in.		
15	1/2	SCA-X SS 15 D ANG	<b>148B5293</b>
20	3/4	SCA-X SS 20 D ANG	<b>148B5381</b>
25	1	SCA-X SS 25 D ANG	<b>148B5490</b>
32	1 1/4	SCA-X SS 32 D ANG	<b>148B5585</b>
40	1 1/2	SCA-X SS 40 D ANG	<b>148B5664</b>

*CHV-X SS Butt-weld DIN (EN 10220)*

Size		Type	Code No.
mm	in.		
15	1/2	CHV-X SS 15 D ANG	<b>148B5294</b>
20	3/4	CHV-X SS 20 D ANG	<b>148B5382</b>
25	1	CHV-X SS 25 D ANG	<b>148B5491</b>
32	1 1/4	CHV-X SS 32 D ANG	<b>148B5586</b>
40	1 1/2	CHV-X SS 40 D ANG	<b>148B5665</b>

ANG = Angleway



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