ENGINEERING TOMORROW

Data sheet

SVL Parts Program and Complete Valves
65 bar (943 psi) series



The new 65 bar SVL range for Industrial Refrigeration is based on the successful modular Standard SVL platform. The same flexibility, simplicity and efficiency are features offered in this new series.

The valves are available from a parts program consisting of:
- Valve housing with DIN or ANSI butt-weld connections and DIN or ASME hard soldering (brazing) connections in angle or straightway and in a variety of sizes.
- Five different types of function modules:
  Shut-off (SVA-S and SVA-L)
  Hand regulating (REG-SA and REG-SB),
  Check & stop (SCA-X),
  Check (CHV-X)
  Strainer (FIA).

Further, SVA-S is available as complete valves with ANSI butt-weld connection.

Modules with O-rings (CHV and SCA - all sizes, REG - up to DN40) are delivered in a standard configuration with O-rings for generic R717 and R744 refrigeration application.

New Service-kits of O-rings in alternative materials for R717 Heat Pump and R1270 (Propylene) applications are available for easy replacement.

Features

- One common housing specification makes it easy to select the right valve for your application and timesaving switch between the functions.
- Approved for:
  HCFC, HFC, R717, R744 and flammable refrigerants - 65 bar (943 psi) @ -60 °C to +150 °C (-76 °F to +302 °F).
  Heat pump configuration (O-ring replaced):
  R717 - 65 bar (943 psi) @ +100 °C to +150 °C (+212 °F to +302 °F) continuous.
  Propylene configuration (O-ring replaced):
  R1270 - 65 bar (943 psi) @ -60 °C to 150 °C (-76 °F to 302 °F).
- Applicable for sub-critical CO_2 and heat pump systems.
- The new packing gland features static and dynamic sealing components ensuring a unique, tight and secure seal throughout the operating conditions and covering all approved refrigerants and temperatures in the specification. As a result, the SVL products deliver a smooth opening and closing operation, along with very high reliability.
- The service kit setup makes selection of spare parts very easy.
- The SVL 65 bar products features coloured seal caps for easy identification of valve function and application.
  - Red caps for SVA-S/L shut-off valves
  - Yellow caps for REG-SA/SB regulating valves
  - Green caps for SCA-X check & stop valves and CHV-X check valves
  - Gray caps for FIA strainers.
- Service kits with replacement O-rings for R717 Heat Pump and R1270 Propylene include separate ID tag for ID of application.
- Matching colour of laser engraved aluminium name tag mounted on valve bonnet.
- Shared spare parts and modular design reduces complexity and stocking costs while allowing for fast and easy service.
- With multiple applications for a given spare part code number, spare parts inventories will be more flexible, and useful.

Contents **Page**

Features 1
Connections 3
Available SVL products for 65 bar (943 psi) 3

Shut-off valves SVA-S and SVA-L:
Features 5
SVA-S and SVA-L 5
Technical data 5
Design 6
Material specification 7
Dimensions and weights 13

Check & stop valves, SCA-X / Check valves, CHV-X:
Features 19
Technical data 19
Design 20
Computation and selection 21
Material specification 23
Application 25
Dimensions and weights 26

FIA strainer:
Features 29
Technical data 29
Design 30
Selection of strainer size 31
Material specification 33
Dimensions and weights 35

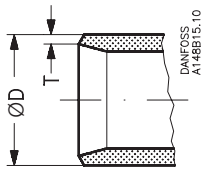
Hand regulating valve REG-SA and REG-SB:
Features 38
Technical data 38
Design 39
Computation and selection 40
Material specification 48
Dimensions and weights 49

Ordering from the entire SVL 65 bar (943 psi) series 51

© Danfoss | DCS (ms) | 2020.05

Connections

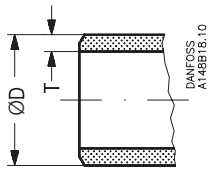
DIN



Butt-weld DIN (EN 10220)

Size mm	Size in.	OD mm	T mm	OD in.	T in.			k_v-angle m^3/h	k_v-straight m^3/h	C_v-angle USgal/min	C_v-straight USgal/min
6	¼	13.5	2.3	0.531	0.091			2.9	2.0	3.4	2.4
10	⅜	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

ANSI



Size mm	Size in.	OD mm	T mm	OD in.	T in.			k_v-angle m^3/h	k_v-straight m^3/h	C_v-angle USgal/min	C_v-straight USgal/min

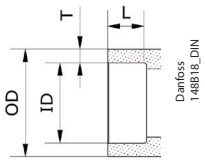
Butt-weld ANSI (B 36.10 Schedule 80)

6	¼	13.5	3.0	0.531	0.118			2.9	2.03	3.4	2.4
10	⅜	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
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

Butt-weld ANSI (B 36.10 Schedule 40)

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

SD (DIN)

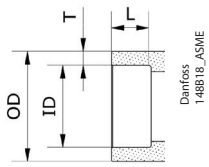


Size mm	Size in.	ID mm	L mm	OD mm	T mm			k_v-angle m^3/h	k_v-straight m^3/h	C_v-angle USgal/min	C_v-straight USgal/min

Socket-Brazing DIN (EN 1254-5)

6	¼	6	7.7	12.7	3.35			2.9	2.0	3.4	2.4
10	⅜	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

SA (ASME)



Socket-Brazing ASME (ASME B16.50)

¼	6.35	7.7	12.7	3.18			2.9	2.0	3.4	2.4
⅜	9.53	8	15.88	3.18			4.5	3.2	5.2	3.6
⅝	15.88	8	21.3	2.71			7.0	4.9	8.1	5.7
⅞	22.23	11	26.9	2.34			14.6	10.2	16.9	11.8
1⅛	28.58	11	33.7	2.56			24.8	17.4	28.8	20.2
1⅜	34.93	15	42.4	3.74			42.6	29.8	49.4	34.6
1⅝	41.28	15	48.3	3.51			45.2	31.6	52.4	36.7
2⅛	54	13.5	60.3	3.15			80	65	93	76
2⅝	66.7	13.5	76.1	4.70			120	97	140	113
3⅛	79.38	15	88.9	4.76			182	152	211	176
4⅛	104.78	17.5	114.3	4.76			313	278	363	323

The design fits with all copper pipes having following tolerance to the nominal diameter.

Copper pipe diameter	Tolerance
≥3mm up to ≤18 mm	±0,04 mm
Over 18 mm up to ≤28 mm	±0,05 mm
Over 28 mm up to ≤54 mm	±0,06 mm
Over 54 mm up to ≤76,1 mm	±0,07 mm
Over 76,1 mm up to ≤88,9 mm	±0,07 mm
Over 88,9 mm up to ≤108 mm	±0,07 mm

Available SVL products for 65 bar (943 psi)

Size [DN]	Parts program															Service kit*		Complete valve							
	Housing								Top complete							O-ring kit for		SVA (cap)				FIA			
	ANG				STR				SVA-S (cap)	SVA-L (cap)	SCA-X	CHV-X	REG-SA	REG-SB	FIA	R717 Heat Pump	R1270 Propy-lene	ANG		STR		ANG		STR	
	DIN	ANSI	SD	SA	DIN	ANSI	SD	SA										DIN	ANSI	DIN	ANSI	DIN	ANSI	DIN	ANSI
6	x	x	x	x	x	x	x	x	x										x		x				
10	x	x	x	x	x	x	x	x	x				x	x		x	x		x		x				
15	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x		x				
20	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x		x				
25	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x		x				
32	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x		x				
40	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x		x				
50	x	x	x	x	x	x	x	x	x		x	x		x	x	x	x		x		x				
65	x	x	x	x	x	x	x	x	x		x	x		x	x	x	x		x		x				
80	x	x	x	x	x	x	x	x	x		x	x			x	x	x		x		x				
100	x	x	x	x	x	x	x	x	x		x	x			x	x	x		x		x				
125	x	x			x	x			x		x	x			x	x	x		x		x				
150																		x	x	x	x	x	x	x	x
200																		x	x	x	x	x	x	x	x

* To be used for SCA-X, CHV-X (all sizes) and REG-SA/SB (sizes 10 to 40).
x = Available

Pressure Equipment Directive (PED)
SVL valves are approved according to the European standard specified in the Pressure Equipment Directive and are CE marked.

For further details / restrictions - see Installation guide.

	SVL		
Nominal bore	DN≤ 25 mm (1 in.)	DN32-80 mm (1¼ - 3 in.)	DN100 - 200 mm (4-8 in.)
Classified for	Fluid group I		
Category	Article 3, paragraph 3	II	III

© Danfoss | DCS (ms) | 2020.05

Shut-off valves SVA-S and SVA-L

SVA shut-off valves are available in angleway and straightway versions and with Standard neck (SVA-S) and Long neck (SVA-L)

The shut-off valves are designed to meet all industrial refrigeration and ammonia heat pump application requirements and are designed to give favourable
flow characteristics and are easy to dismantle and repair when necessary.

The valve cone is designed to ensure perfect closing and withstand a high system pulsation and vibration, which can be present specifically in the discharge line.



Features SVA-S and SVA-L

- Modular Concept:
  - Each valve housing is available with DIN and ANSI butt weld connection and in several different sizes.
  - Possible to convert SVA-S or SVA-L to any other product in the Flexline™ SVL family (regulating valve, check & stop valve, check 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.
- Optional accessories:
  - Heavy duty industrial hand wheel for frequent operation.
  - Cap for infrequent operation.
- Available in angleway and straightway versions with Standard neck or Long neck (DN 15 to DN 40) for insulated systems.
- Each valve type is clearly marked with type, size and performance range.
- The valves and caps are prepared for sealing, to prevent operation by unauthorized persons, using a seal wire.
- Internal metal backseating:
  - DN 6 - 65 (¼ - 2½ in.)
- Internal PTFE backseating:
  - DN 80 - 200 (3 - 8 in.)
- Can accept flow in both directions.
- Housing and bonnet material is low temperature steel according to requirements of the Pressure Equipment Directive and other international classification authorities.
- Equipped with 42CrMo5 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.

Technical data

- *Refrigerants*
  Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2) and flammable refrigerants.
  For further information please see installation guide for SVA.
- *Temperature range*
  –60/+150 °C (–76/+302 °F).
- *Max. working pressure*
  65 bar (943 psi)

Design

Housing
Made of special, cold resistant steel.

Valve cone
The valve cone can be turned on the spindle, thus there will be no friction between the cone and the seat when the valve is opened and closed and the special design will avoid cone spin due to pulsation and vibration when the valve is in open position. A teflon tightening ring provides perfect sealing with minimum closing force.

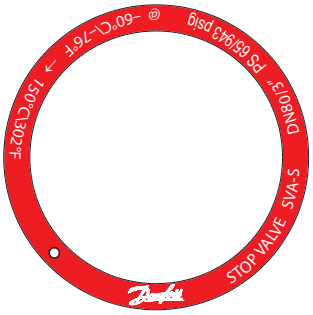
Spindle
Made of polished stainless steel, ideal for leap seal sealing.

Packing gland
The low temperature packing gland ensures a perfect tightness in the range: –60/+150 °C (–76/+302 °F). The packing glands are equipped with a scraper ring to prevent penetration of dirt and ice into the packing gland.

Installation
It is recommended that the valves be installed in the direction of flow indicated by the arrow on the valve body. The valve can be installed in the opposite direction but this slightly reduces the k_v-value (C_v-value).

The valve is designed to withstand 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 SVA.

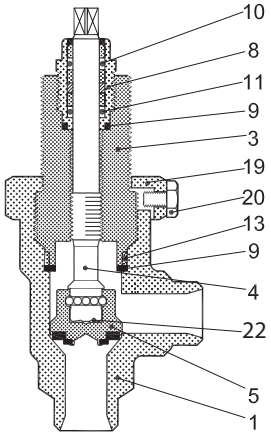


Example of Marking Ring

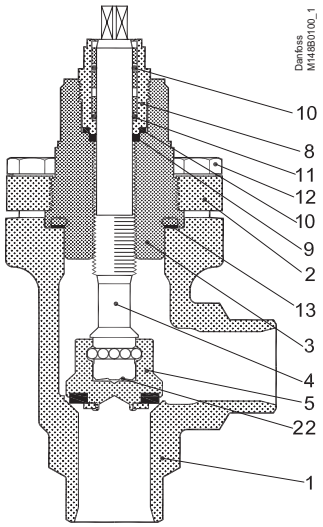
© Danfoss | DCS (ms) | 2020.05

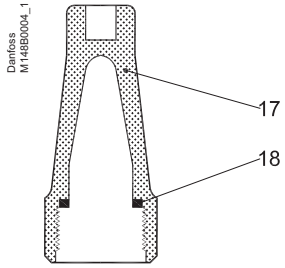
Material specification

SVA-S 6-10 (1/4 - 3/8 in.)



SVA-S 15-20 (1/2 - 3/4 in.)

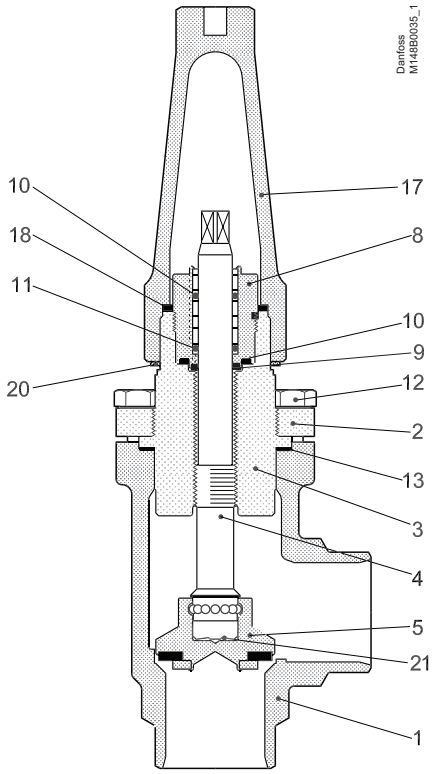




No.	Part	Material	EN	ISO	ASTM
1	Housing	Steel	G20Mn5QT, 10213-3 --- P285QH+QT, 10222-4		LCC, A352 --- LF2, A350
2	Bonnet, Flange	Steel	G20Mn5QT, 10213-3 --- P285QH+QT, 10222-4 --- P275NL, 10028-3		LCC, A352 --- LF2, A350
3	Bonnet, Insert	Steel	11SMn30 10087	Type 2 R 683/9	AISI 1213
4	Spindle	Stainless steel	X8CrNiS18-9 10088	Type 17 683/13	AISI 303
5	Cone	Steel	11SMn30 10087	Type 2 R 683/9	AISI 1213
8	Packing gland	Stainless steel	X8CrNiS18-9 10088	Type 17 683/13	AISI 303
9	Packing washer	Aluminium			
10	O-ring	Cloroprene (Neoprene)			
11	Spring loaded Teflon ring	PTFE			
12	Bolts	High temperature steel	42CrMo5 10269		A193
13	Gasket	Fiber, Non-asbestos			
17	Cap	Aluminium			
18	Gasket for cap	Nylon			
19	Locking nut	Steel			
20	Screw	Steel			
22	Disk spring	Steel			

Material specification

SVA-S 25-40 (1 - 1½ in.)

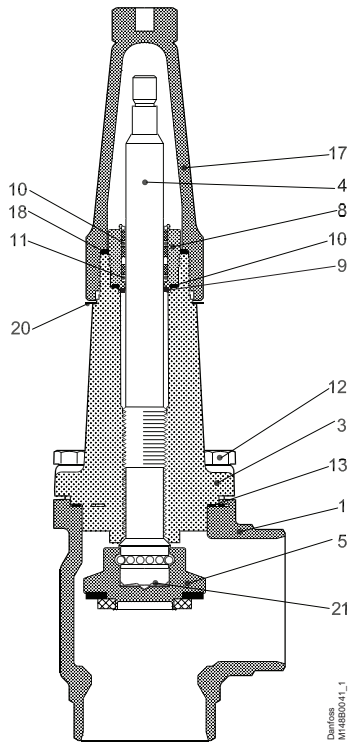


No.	Part	Material	EN	ISO	ASTM
1	Housing	Steel	G20Mn5QT, 10213-3 --- P285QH+QT, 10222-4		LCC, A352 --- LF2, A350
2	Bonnet, Flange	Steel	G20Mn5QT, 10213-3 --- P285QH+QT, 10222-4 --- P275NL, 10028-3		LCC, A352 --- LF2, A350
3	Bonnet, Insert	Steel	11SMn30 10087	Type 2 R 683/9	AISI 1213
4	Spindle	Stainless steel	X8CrNiS18-9 10088	Type 17 683/13	AISI 303
5	Cone	Steel	11SMn30 10087	Type 2 R 683/9	AISI 1213
8	Packing gland	Stainless steel	X8CrNiS18-9 10088	Type 17 683/13	AISI 303
9	Packing washer	Aluminium			
10	O-ring	Cloroprene (Neoprene)			
11	Spring loaded Teflon ring	PTFE			
12	Bolts	High temperature steel	42CrMo5 10269		A193
13	Gasket	Fiber, Non-asbestos			
17	Cap	Aluminium			
18	Gasket for cap	Nylon			
20	Identification ring	Stainless steel			
21	Disk spring	Steel			

© Danfoss | DCS (ms) | 2020.05

Material specification

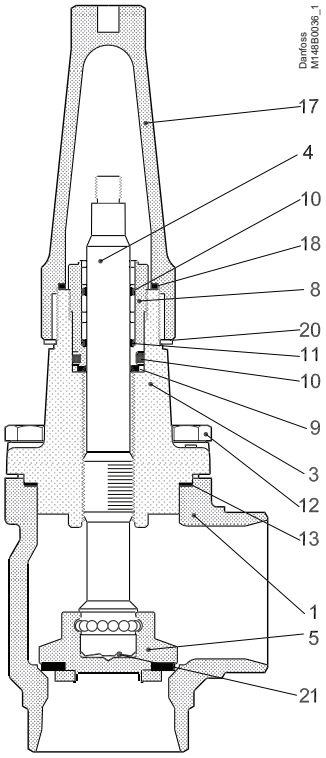
SVA-L 15 - 40 (½ - 1½ in.)



No.	Part	Material	EN	ISO	ASTM
1	Housing	Steel	G20Mn5QT, 10213-3 --- P285QH+QT, 10222-4		LCC, A352 --- LF2, A350
3	Valve bonnet	Steel	G20Mn5QT, 10213-3 --- P285QH+QT, 10222-4		LCC, A352 --- LF2, A350
4	Spindle	Stainless steel	X8CrNiS18-9 10088	Type 17 683/13	AISI 303
5	Cone	Steel	11SMn30 10087	Type 2 R 683/9	AISI 1213
8	Packing gland	Stainless steel	X8CrNiS18-9 10088	Type 17 683/13	AISI 303
9	Packing washer	Aluminium			
10	O-ring	Cloroprene (Neoprene)			
11	Spring loaded Teflon ring	PTFE			
12	Bolts	High temperature steel	42CrMo5 10269		A193
13	Gasket	Fiber, Non-asbestos			
17	Cap	Aluminium			
18	Gasket for cap	Nylon (PA6)			
20	Identification ring	Stainless steel			
21	Disk spring	Steel			

Material specification

SVA-S 50-65 (2 - 2½ in.)

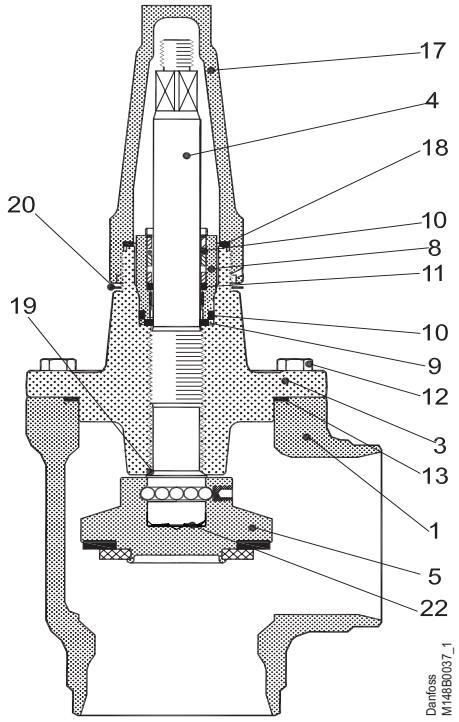


No.	Part	Material	EN	ISO	ASTM
1	Housing	Steel	G20Mn5QT, 10213-3 --- P285QH+QT, 10222-4		LCC, A352 --- LF2, A350
3	Valve bonnet	Steel	G20Mn5QT, 10213-3 --- P285QH+QT, 10222-4		LCC, A352 --- LF2, A350
4	Spindle	Stainless steel	X8CrNiS18-9 10088	Type 17 683/13	AISI 303
5	Cone	Steel	11SMn30 10087	Type 2 R 683/9	AISI 1213
8	Packing gland	Stainless steel	X8CrNiS18-9 10088	Type 17 683/13	AISI 303
9	Packing washer	Aluminium			
10	O-ring	Cloroprene (Neoprene)			
11	Spring loaded Teflon ring	PTFE			
12	Bolts	High temperature steel	42CrMo5 10269		A193
13	Gasket	Fiber, Non-asbestos			
17	Cap	Aluminium			
18	Gasket for cap	Nylon			
19	Locking nut	Steel			
20	Identification ring	Stainless steel			
21	Disk spring	Steel			

© Danfoss | DCS (ms) | 2020.05

Material specification

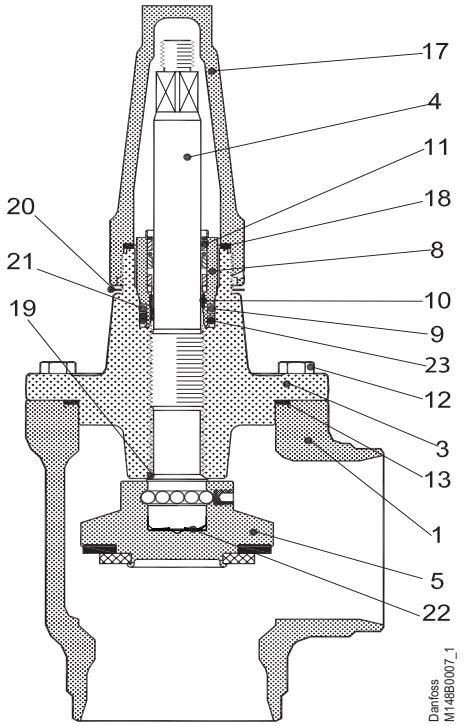
SVA-S 80 - 150 (3 - 6 in.)



No.	Part	Material	EN	ISO	ASTM
1	Housing	Steel	G20Mn5QT 10213-3		LCC A352
3	Valve bonnet	Steel	G20Mn5QT, 10213-3 --- P285QH+QT, 10222-4		LCC, A352 --- LF2, A350
4	Spindle	Stainless steel	X5CrNi18-10 10088	Type 11, R 683/13	AISI 304, A276
5	Cone Cone seal	Steel Teflon (PTFE)	11SMn30 10087	Type 2, R 683/9	AISI 1213
8	Packing gland	Stainless steel	X8CrNiS18-9 10088	Type 17 R 683/13	AISI 303
9	Packing washer	Aluminium			
10	O-ring	Cloroprene (Neoprene)			
11	Spring loaded Teflon ring	PTFE			
12	Bolts	High temperature steel	42CrMo5 10269		A193
13	Gasket	Fiber, Non-asbestos			
17	Cap	Aluminium			
18	Gasket for cap	Nylon (PA 6)			
19	Soft backseat	Teflon (PTFE)			
20	Identification ring	Stainless steel			
22	Disk spring	Steel			

Material specification

SVA-S 200 (8 in.)



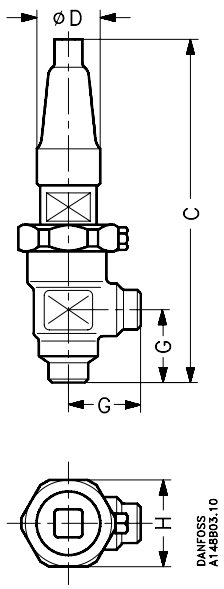
No.	Part	Material	EN	ISO	ASTM
1	Housing	Steel	G20Mn5QT 10213-3		LCC A352
3	Valve bonnet	Steel	G20Mn5QT, 10213-3 ---------- P285QH+QT, 10222-4		LCC, A352 ---------- LF2, A350
4	Spindle	Stainless steel	X5CrNi18-10 10088	Type 11, R 683/13	AISI 304, A276
5	Cone Cone seal	Steel Teflon (PTFE)	11SMn30 10087	Type 2, R 683/9	AISI 1213
8	Packing gland	Stainless steel	X8CrNiS18-9 10088	Type 17 R 683/13	AISI 303
9	O-ring	Cloroprene (Neoprene)			
10	Spring loaded Teflon ring	PTFE			
11	O-ring	Cloroprene (Neoprene)			
12	Bolts	High temperature steel	42CrMo5 10269		A193
13	Gasket	Fiber, Non-asbestos			
15	Washer	Stainless steel			
16	Nut	Stainless steel			
17	Cap	Aluminium			
18	Gasket for cap	Nylon (PA 6)			
19	Soft backseat	Teflon (PTFE)			
20	Identification ring	Stainless steel			
21	Wear ring	Teflon (PTFE)			
22	Disk spring	Steel			
23	O-ring	PTFE/Cloroprene (Neoprene)			

© Danfoss | DCS (ms) | 2020.05

Dimensions and weights

SVA 6 - 10 in angle execution with cap

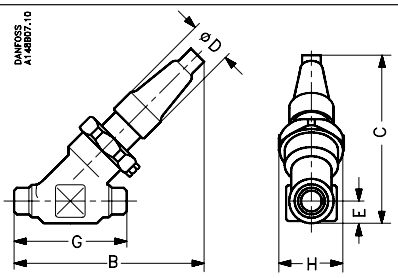
SVA 6-10



Valve size			C		G		∅D		□H		Weight
SVA 6	mm in.		139 5.47		30 1.18		30 1.18		48 1.89		0.8 kg
SVA 10	mm in.		182 7.17		45 1.77		38 1.50		60 2.36		1.4 kg

Specified weights are approximate values only.

SVA 6-10



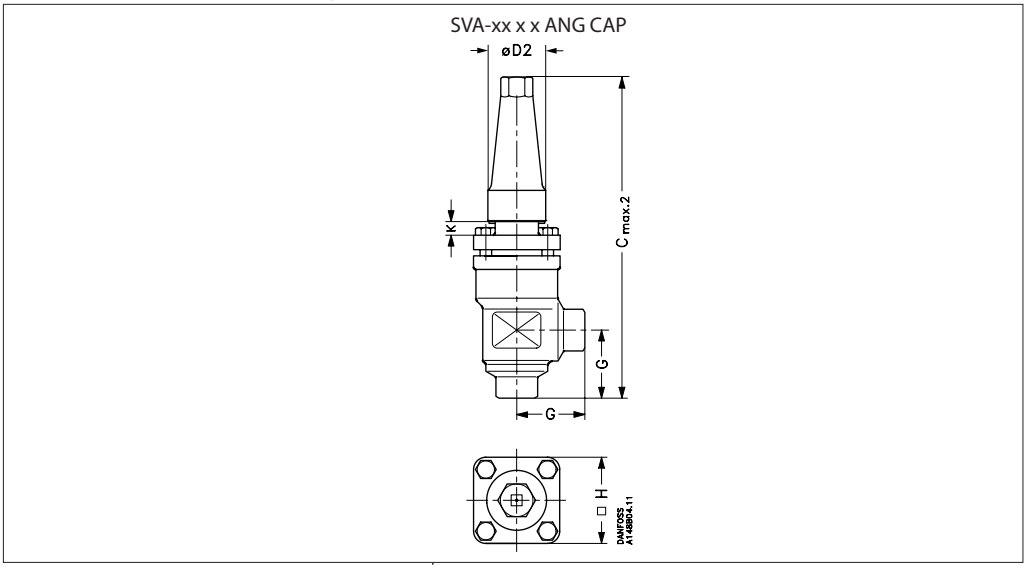
SVA 6 - 10 in straight-way execution with cap

Valve size			C	B	E	G	∅D		□H		Weight
SVA 6	mm in.		110 4.33	120 4.72	13 0.49	70 2.76	30 1.16		48 1.89		0.8 kg
SVA 10	mm in.		145 5.71	155 6.10	20 0.79	120 4.72	38 1.50		60 2.36		2.0 kg

Specified weights are approximate values only.

Dimensions and weights

SVA 15 - 40 (½ - 1½ in.) in angleway version with cap



Valve size		K			$C_{max.2}$	G			$∅D_2$	□H		Weight
SVA-S												
SVA 15 - 20	mm	4			189	45			38	60		1.4 kg
SVA (½ - ¾)	in.	0.16			7.44	1.77			1.5	2.36		3.1 lb
SVA 25 - 40	mm	12			268	55			50	70		2.4 kg
SVA (1 - 1½)	in.	0.47			10.55	2.17			1.97	2.76		5.3 lb
SVA-L												
SVA 15 - 20	mm	63			248	45			38	60		1.4 kg
SVA (½ - ¾)	in.	2.48			9.76	1.77			1.5	2.36		3.1 lb
SVA 25 - 40	mm	74			330	55			50	70		2.4 kg
SVA (1 - 1½)	in.	2.91			12.99	2.17			1.97	2.76		5.3 lb

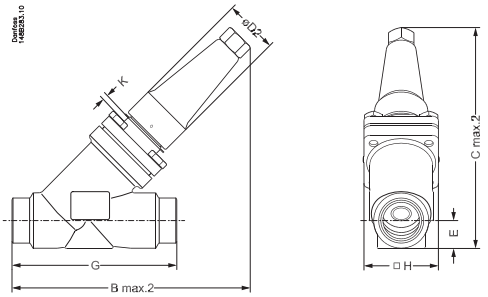
Specified weights are approximate values only.

© Danfoss | DCS (ms) | 2020.05

Dimensions and weights

SVA 15 - 40 (½ - 1½ in.) straightway version with cap

SVA-xx x x STR CAP



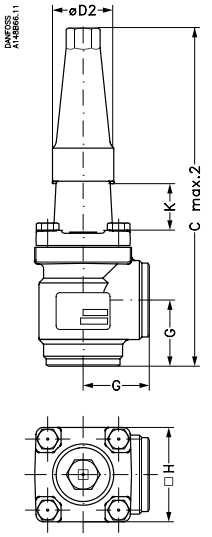
Valve size		K		$C_{max.2}$		$B_{max.2}$	E	G		$\varnothing D_2$	□H	Weight
SVA-S												
SVA 15 - 20	mm	4		141		156	20	120		38	60	2.0 kg
SVA (½ - ¾)	in.	0.16		5.55		6.14	0.79	4.72		1.50	2.36	4.4 lb
SVA 25 - 40	mm	12		208		222	26	155		50	70	3.0 kg
SVA (1 - 1½)	in.	0.47		8.19		8.74	1.02	6.10		1.97	2.76	6.6 lb
SVA-L												
SVA 15 - 20	mm	63		184		198	20	120		38	60	2.0 kg
SVA (½ - ¾)	in.	2.48		7.24		7.80	0.79	4.72		1.50	2.36	4.4 lb
SVA 25 - 40	mm	74		252		265	26	155		50	70	3.0 kg
SVA (1 - 1½)	in.	2.91		9.92		10.43	1.02	6.10		1.97	2.76	6.6 lb

Specified weights are approximate values only.

Dimensions and weights

SVA 50 - 65 (2 - 2½ in.) in angleway version with cap

SVA-xx x x ANG CAP

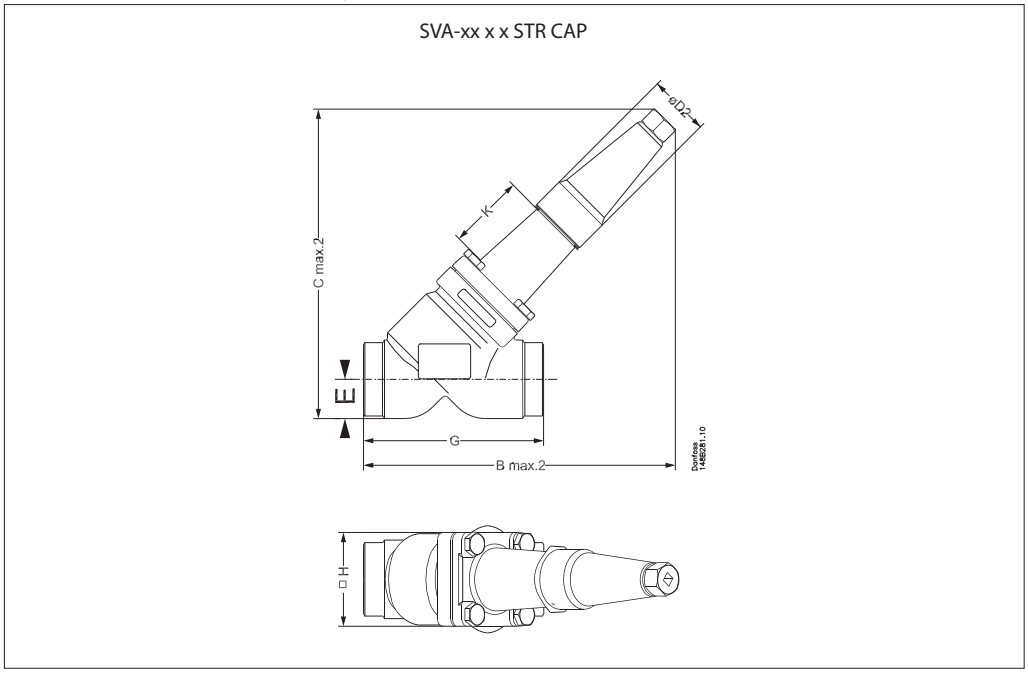


Valve size		K			$C_{max.2}$		G		$\varnothing D_2$	□H		Weight
SVA-S												
SVA 50	mm	70			315		60		50	77		3.2 kg
SVA (2)	in.	2.76			12.40		2.36		1.97	3.03		7.1 lb
SVA 65	mm	70			335		70		50	90		4.8 kg
SVA (2½)	in.	2.76			13.19		2.76		1.97	3.54		10.6 lb

Specified weights are approximate values only.

Dimensions and weights

SVA 50 - 65 (2 - 2½ in.) in straightway version with cap



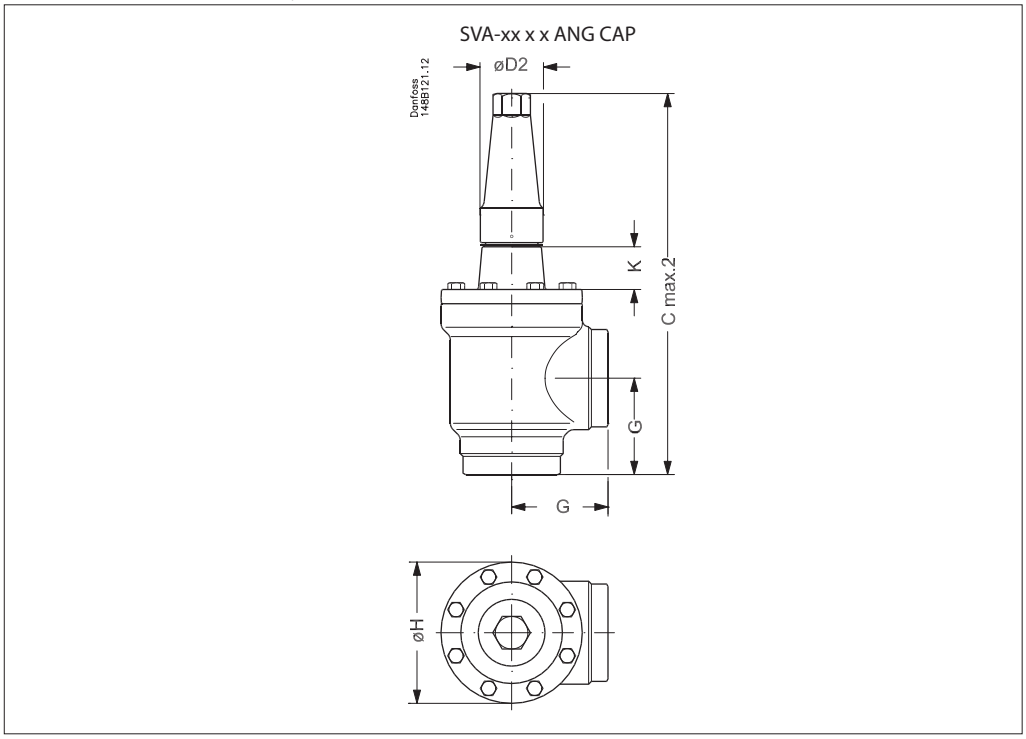
Valve size		K		$B_{max.2}$		$C_{max.2}$	E	G		$\varnothing D_2$	□H	Weight
SVA-S												
SVA 50	mm	70		259		257	32	148		50	77	4.2 kg
SVA (2)	in.	2.76		10.20		10.12	1.26	5.83		1.97	3.03	9.3 lb
SVA 65	mm	70		280		280	40	176		50	90	6.3 kg
SVA (2½)	in.	2.76		11.02		11.02	1.57	6.93		1.97	3.54	13.9 lb

Specified weights are approximate values only.

© Danfoss | DCS (ms) | 2020.05

Dimensions and weights

SVA 80 - 200 (3 - 8 in.) angleway version with cap

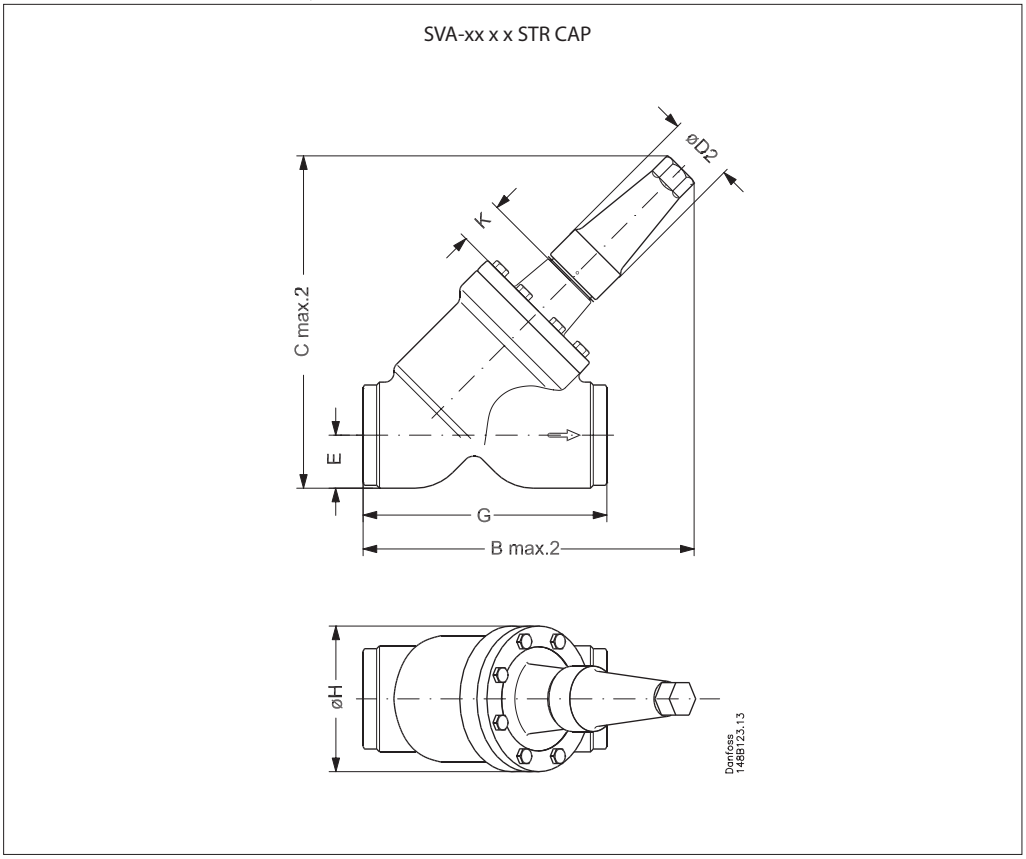


Valve size		K		$C_{max.2}$	G	$\varnothing D_2$	ØH	Weight
SVA-S								
SVA 80	mm	76		388	90	58	129	9.7 kg
SVA (3)	in.	3.00		15.28	3.54	2.28	5.08	21.4 lb
SVA 100	mm	90		437	106	58	156	15.3 kg
SVA (4)	in.	3.54		17.20	4.17	2.28	6.14	33.7 lb
SVA 125	mm	90		533	128	74	193	28.1 kg
SVA (5)	in.	3.54		20.98	5.04	2.91	7.60	61.9 lb
SVA 150	mm	90		568	145	74	219	39.7 kg
SVA (6)	in.	3.54		22.36	5.71	2.91	8.62	87.5 lb
SVA 200	mm	90		678	180	86	276	79.5 kg
SVA (8)	in.	3.54		26.69	7.09	3.39	10.87	175.3 lb

Specified weights are approximate values only.

Dimensions and weights

SVA 80 - 200 (3 - 8 in.) straightway version with cap



Valve size		K		$B_{max.2}$		$C_{max.2}$	E	G		$∅D_2$	∅H	Weight
SVA-S												
SVA 80	mm	76		321		322	48	216		58	129	10.9 kg
SVA (3)	in.	3.00		12.64		12.72	1.89	8.50		2.28	5.08	24.0 lb
SVA 100	mm	90		367		375	60	264		58	156	18.2 kg
SVA (4)	in.	3.54		14.45		14.76	2.36	10.39		2.28	6.14	40.1 lb
SVA 125	mm	90		444		456	74	322		74	193	32.8 kg
SVA (5)	in.	3.54		17.48		17.95	2.91	12.68		2.91	7.60	72.3 lb
SVA 150	mm	90		483		505	91	370		74	219	60.0 kg
SVA (6)	in.	3.54		19.02		19.88	3.58	14.57		2.91	8.62	132.3 lb
SVA 200	mm	90		579		613	117	464		86	276	111.5 kg
SVA (8)	in.	3.54		22.80		24.13	4.61	18.27		3.39	10.87	245.8 lb

Specified weights are approximate values only.

© Danfoss | DCS (ms) | 2020.05

Check & stop valves, SCA-X
Check valves, CHV-X

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 SCA-X and CHV-X

- 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 42 CrMo5 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.

Technical data

- *Refrigerants*
  Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2) and flammable refrigerants.
  For further information please see the installation guide for SCA-X/CHV-X.
- *Temperature range*
  –60/+150 °C (–76/+302 °F).
- *Max. working pressure*
  65 bar (943 psig)

  With O-ring replaced (Service kit):
  Heat pump configuration: R717 - 65 bar (943 psi) @ +100 °C to +150 °C (+212 °F to +302 °F) continuous.

  Propylene configuration: R1270 - 65 bar (943 psi) @ -60 °C to 150 °C (-76 °F to 302 °F)

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.

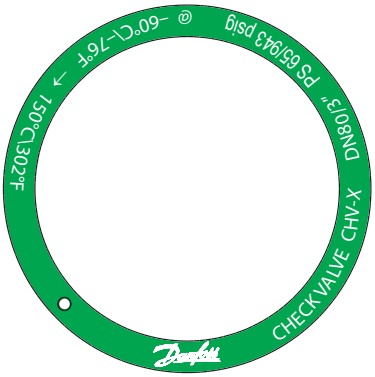
This ensures perfect tightness throughout the whole temperature range:
–60/+150 °C (–76/+302 °F).

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.

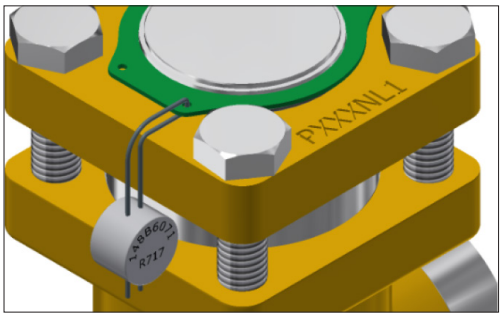
If cold refrigeration oil having low viscosity enters and settles in the damping chamber, problems with the check valve may arise. Consequently, it may be necessary to modify the valve for more viscous liquids by enlarging the hole to the damping chamber.



Example of marking ring, CHV-X

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.



© Danfoss | DCS (ms) | 2020.05

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.

The SCA-X/CHV-X valve can be calculated in two ways:
– Using the tables below.
– Using Coolselector™

Example

SI-Units

Assumed working conditions:
Maximum flow $\dot{V}$ = 1000 m³/h
Density ρ = 3.0 kg/m³
Minimum part load = 33%

Used expressions:
Recommended velocity - C_{rec} [m/s]
Minimum recommended velocity - $C_{min, rec}$ [m/s]
Maximum velocity - C_{max} [m/s]
Part load velocity - C_{part} [m/s]

We know the density ρ ≈ 3.0 kg/m³, consequently C_{rec} as well as $C_{min, rec}$ can be found in the figure below (standard valve).

C_{rec} ≈14 m/s
$C_{min, rec}$ ≈ 3 m/s

US-Units

Assumed working conditions:
Maximum flow $\dot{V}$ = 1160 gpm
Density ρ = 0.187 lb/feet³
Minimum part load = 33%

Used expressions:
Recommended velocity - C_{rec} [ft/min]
Minimum recommended velocity - $C_{min, rec}$ [ft/min]
Maximum velocity - C_{max} [ft/min]
Part load velocity - C_{part} [ft/min]

We know the density ρ ≈ 0.187 lb/feet³, consequently C_{rec} as well as $C_{min, rec}$ can be found in the figure (standard valve).

C_{rec} ≈ 2756 ft/min
$C_{min, rec}$ ≈ 591 ft/min

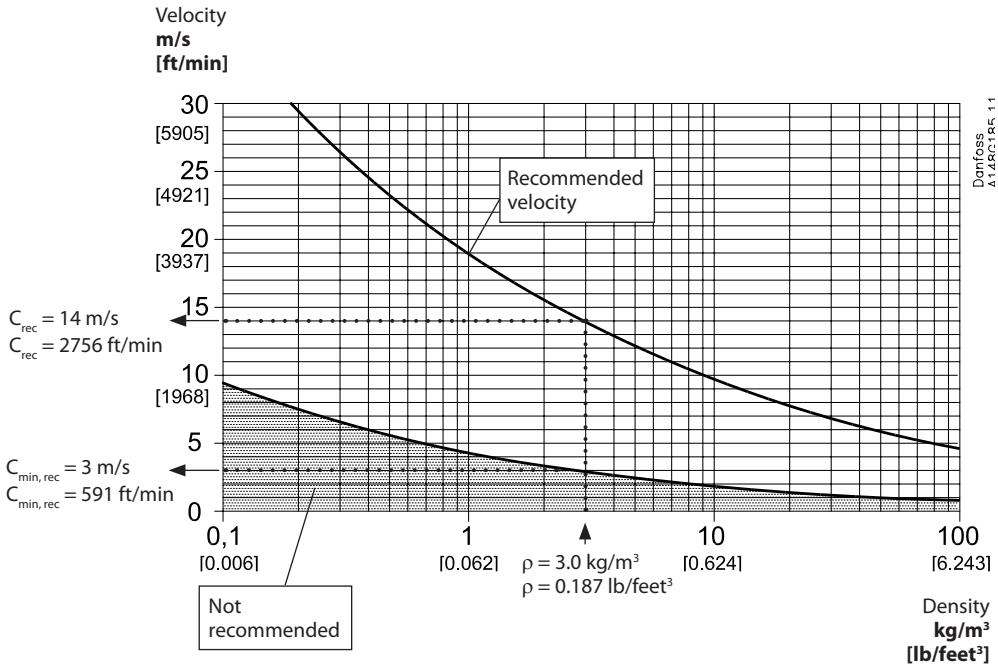


Fig. 1

Selection example continued on following page.

Computation and selection
(continued)

Knowing that $\dot{V}$ = 1000 m³/h (1160 gpm) fig. 2 gives the following choices:

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

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

We know that $C_{max} \approx$ 20 m/s (3900 ft/min) and that minimum part load is 33%. It follows that $C_{part} \approx$ 6.5 m/s (1290 ft/min). Thus, C_{part} (6.5 m/s) > $C_{min, rec}$ (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 $C_{min, rec}$ the valve might start hammering and become noisy. As a result the valve may wear prematurely.

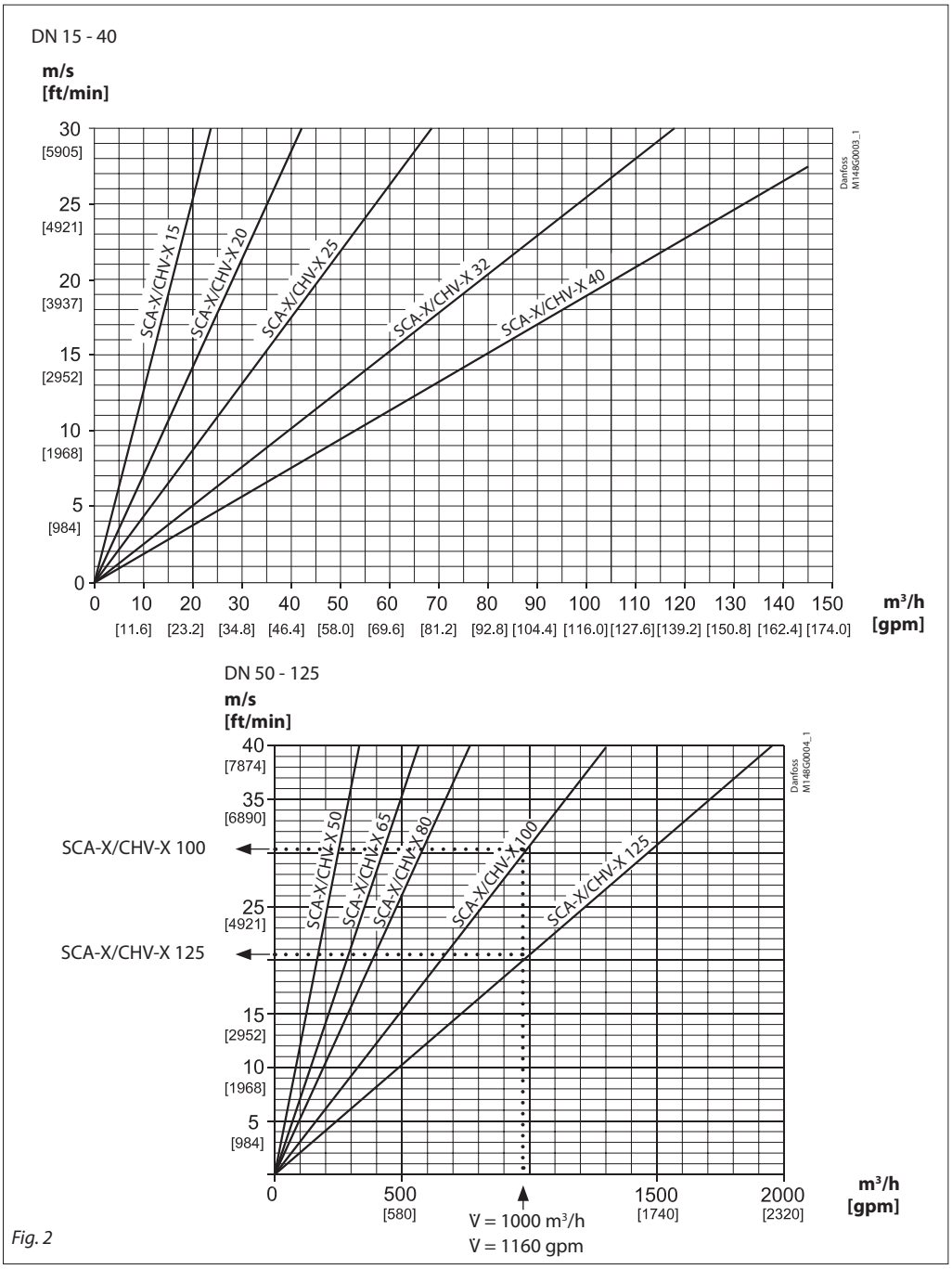
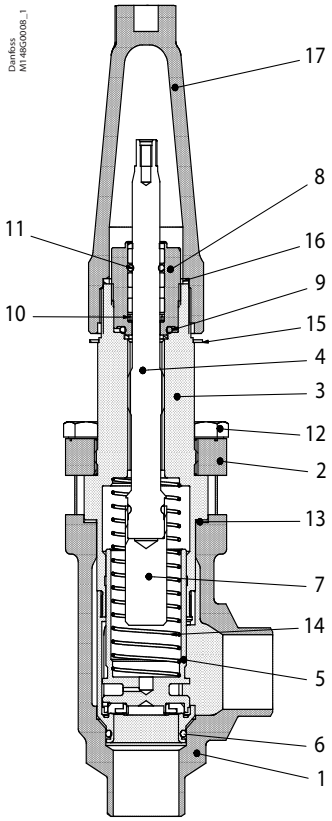


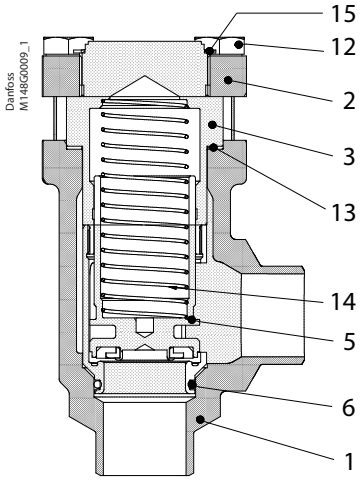
Fig. 2

© Danfoss | DCS (ms) | 2020.05

Material specification



SCA-X 15 - 40

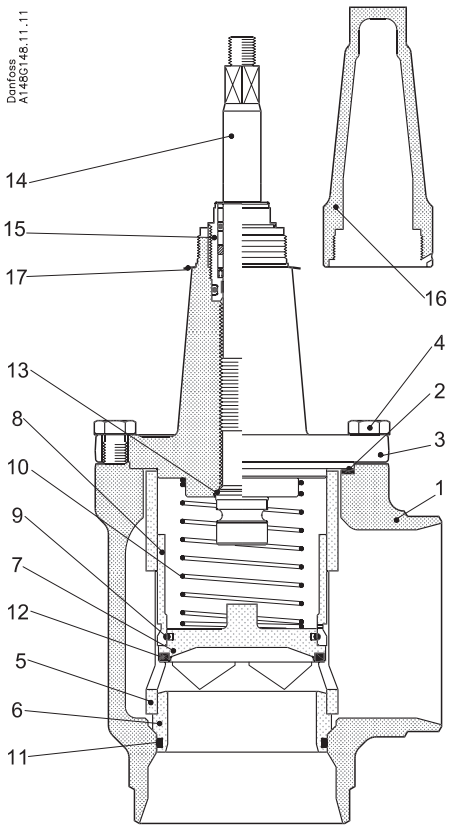


CHV-X 15 - 40

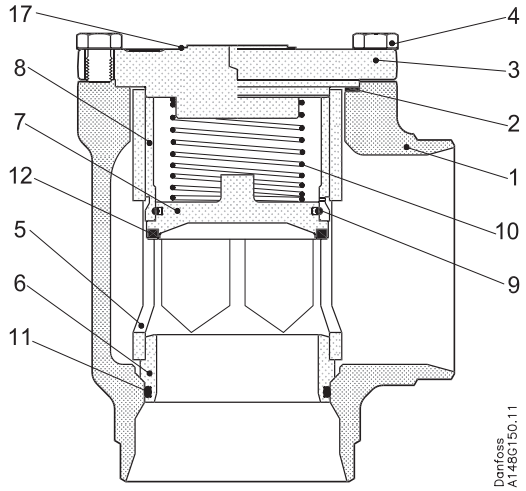
No.	Part	Material	DIN/EN	ISO	ASTM
1	Housing	Steel	G20Mn5QT, 10213-3 --- P285QH+QT, 10222-4		LCC, A352 --- LF2, A350
2	Bonnet, Flange	Steel	P275NL1 EN10028-3		LF2, A350
3	Bonnet, Insert	Steel	11SMn30 10087	Type 2 R 683/9	AISI 1213
4	Spindle	Stainless steel	X8CrNiS18-9, EN 10088-3	Type 17 683/13	AISI 303
5	Cone	Steel Teflon (PTFE)			
6	O-ring	Cloroprene (Neoprene)*			
7	Spindle extension	Steel			
8	Packing gland O-rings	Stainless steel Cloroprene (Neoprene)	X8CrNiS18-9 10088	Type 17 683/13	AISI 303
9	Packing washer	Aluminium			
10	Spring loaded seal	Teflon (PTFE)			
11	O-ring	Cloroprene (Neoprene)			
12	Bolts	High temperature steel	42CrMo5 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			

*To be replaced in R717 Heat Pump and R1270 Propylene applications.

Material specification



SCA-X 50 - 125



CHV-X 50 - 125

No.	Part	Material	DIN/EN	ISO	ASTM
1	Housing DN 50-65	Steel	G20Mn5QT, 10213-3 --- P285QH+QT, 10222-4		LCC, A352 --- 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 --- P275NL1 or 2 EN10028-3		LF2, A350 --- A, A662
4	Bolts	High temperature steel	42CrMo5 10269		A193
5	Tube	Steel			
6	Seat	Steel			
7	Valve plate	Steel			
8	Guide sleeve	Steel			
9	Spring ring	Steel			
10	Spring	Steel			
11	O-ring	Cloroprene (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	X8CrNiS18-9, EN 10088-3,	Type 17 R 683/13	AISI 303
16	Spindle seal cap and gasket	Aluminium			
17	Marking label	Stainless steel			

*To be replaced in R717 Heat Pump and R1270 Propylene applications.

© Danfoss | DCS (ms) | 2020.05

Application

Figure 3 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.

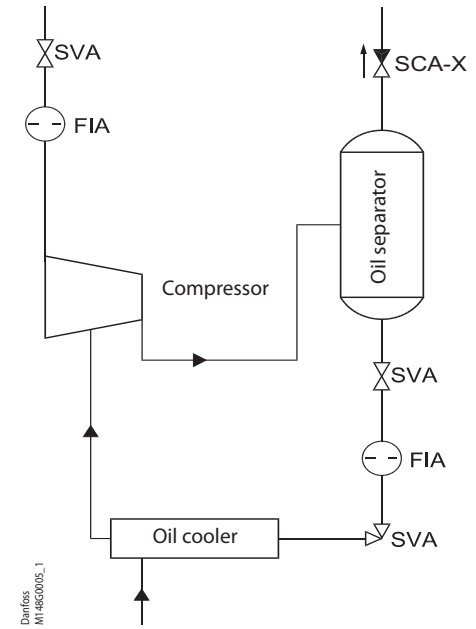
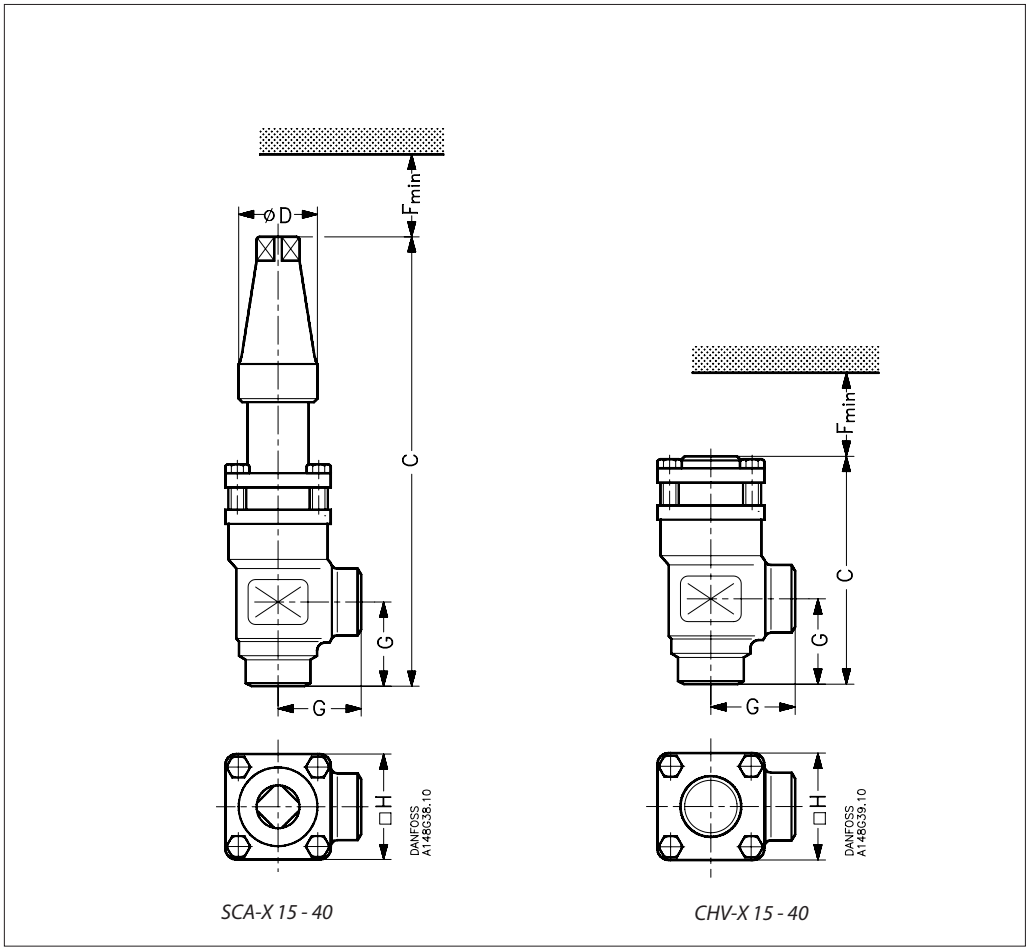


Fig. 3

Dimensions and weights

SCA-X/CHV-X 15 - 40 (½- 1½ in.)



SCA-X 15 - 40 *CHV-X 15 - 40*

Valve size		C		G		∅D		F_{min}		□H	Weight
SCA-X 15 - 40											
SCA-X 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 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 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 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 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

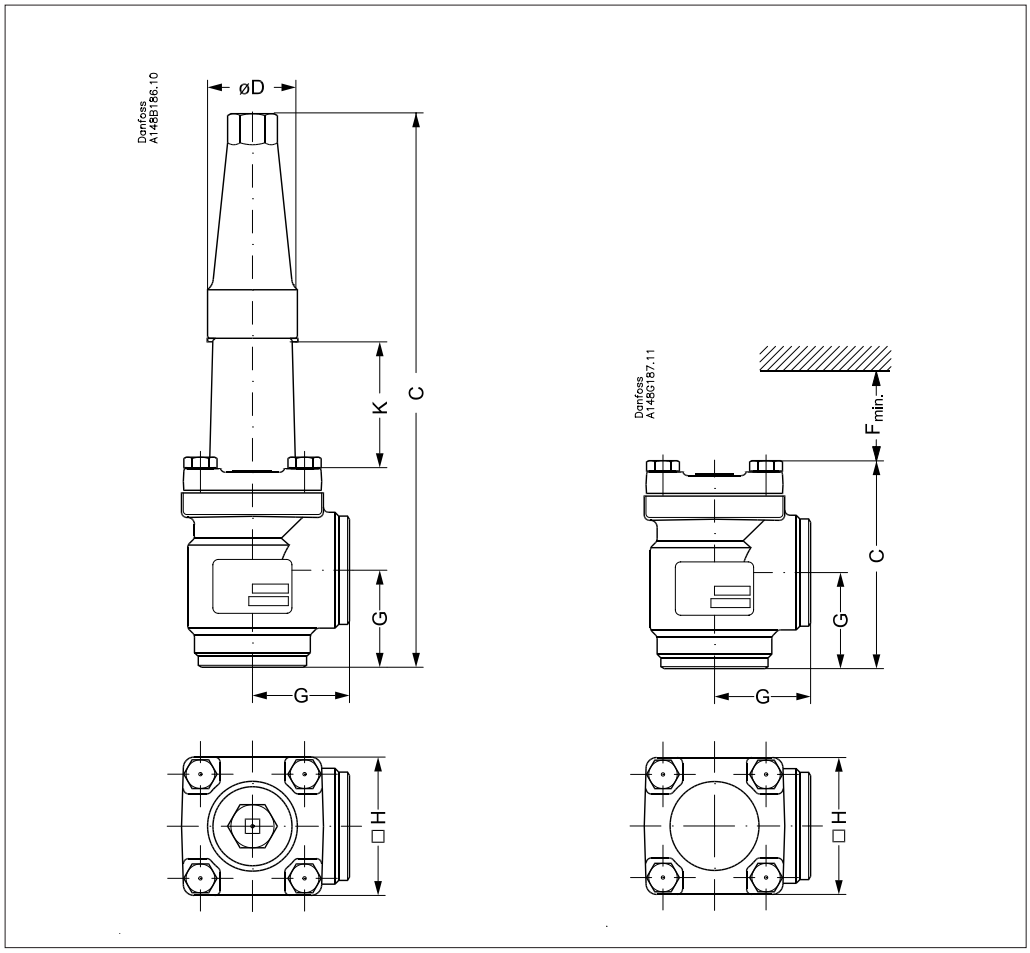
Valve size		C		G				F_{min}		□H	Weight
CHV-X 15 - 40											
CHV-X 15 (½ in.)	mm in.	103 4.06		45 1.77				60 2.36		60 2.36	1.2 kg 2.65 lb
CHV-X 20 (¾ in.)	mm in.	103 4.06		45 1.77				60 2.36		60 2.36	1.2 kg 2.65 lb
CHV-X 25 (1 in.)	mm in.	143 5.63		55 2.17				85 3.35		70 2.76	2.3 kg 5.07 lb
CHV-X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

© Danfoss | DCS (ms) | 2020.05

Dimensions and weights

SCA-X/CHV-X 50 - 65 (2 - 2½ in.)



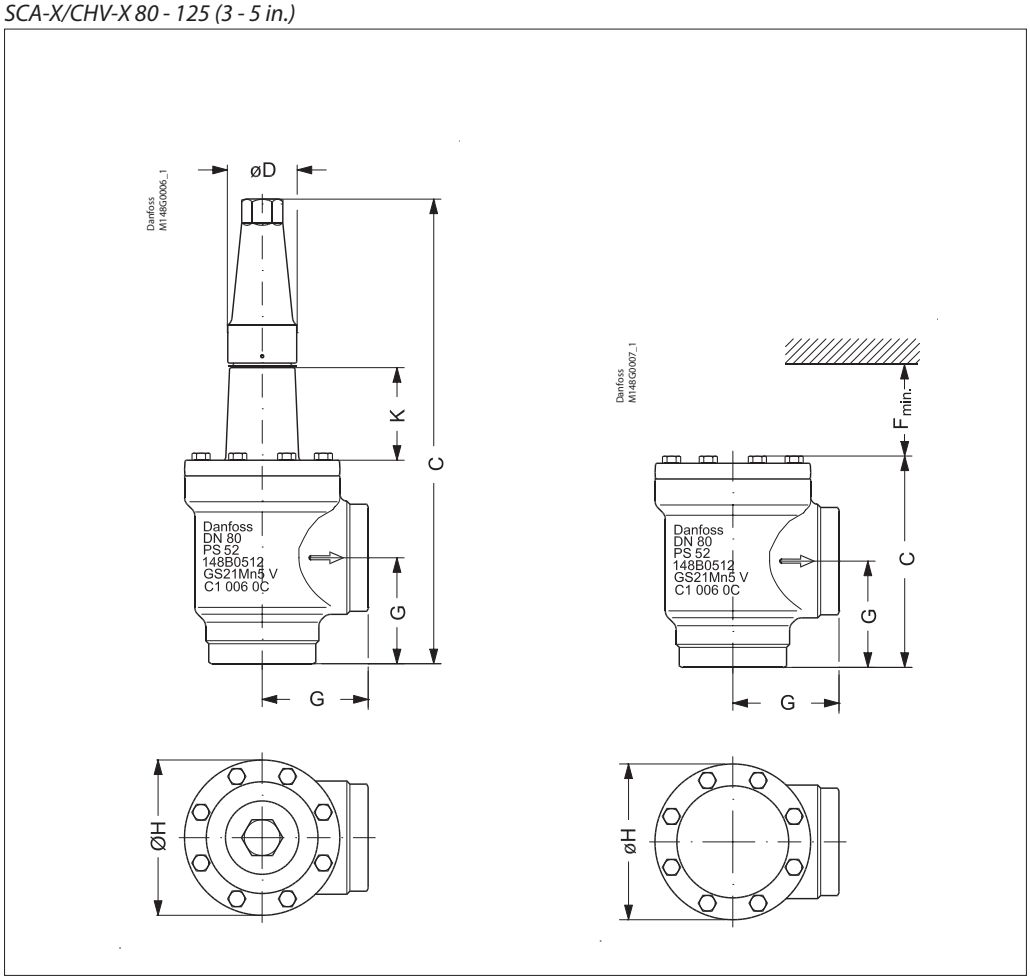
Valve size	K			C		G		∅D	□H		Weight
SCA-X											
SCA-X 50 mm SCA-X (2) in.	70 2.76			315 12.40		60 2.36		50 1.97	77 3.03		3.8 kg 8.40 lb
SCA-X 65 mm SCA-X (2½) in.	70 2.76		12.20	335 13.19		70 2.76	3.94	50 1.97	90 3.54		5.5 kg 12.16 lb

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

Specified weights are approximate values only.

Dimensions and weights

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



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

Valve size					C		G			$F_{min.}$	ØH	Weight
CHV-X												
CHV-X 80 CHV-X (3)	mm in.				189 7.44		90 3.54			133 5.24	129 5.08	8.7 kg 19.23 lb
CHV-X 100 CHV-X (4)	mm in.				223 8.78		106 4.17			163 6.43	156 6.14	14.3 kg 31.60 lb
CHV-X 125 CHV-X (5)	mm in.				268 10.55		128 5.04			190 7.48	193 7.60	25.6 kg 56.58 lb

Specified weights are approximate values only.

© Danfoss | DCS (ms) | 2020.05

FIA strainers

FIA strainers are a range of angleway and straightway strainers, which are carefully designed to give favourable flow conditions. The design makes the strainer easy to install, and ensures quick strainer inspection and cleaning.

FIA strainers are used ahead of automatic controls, pumps, compressors etc., for initial plant start-up and where permanent filtration of the refrigerant is required. The strainer reduces the risk of undesirable system breakdowns and reduces wear and tear on plant components.

FIA strainers are equipped with a screen mesh of stainless steel, available in sizes 100, 150, 250 and 500µ (microns*), (US 150, 100, 72, 38 mesh*).

* Mesh is the number of threads per inch.
µ (microns) is the distance between two threads
(1µ = 1 /1000 mm).



Features FIA

- Modular Concept:
  - Each valve housing is available with DIN and ANSI butt weld connection and in several different sizes.
  - Possible to convert FIA strainers to any other product in the SVL family (Shut-off valve, regulating valve, check & stop valve or check valve) just by replacing the complete top part.
- Fast and easy overhaul service. It is easy to replace the top part and no welding is needed.
- Filter net of stainless steel mounted direct without extra gaskets means easy servicing.
- Two types of strainer inserts are available:
  - A plain insert of stainless steel.
  - A pleated insert (DN 15-200) with extra large surface, which ensures long intervals between cleaning and low pressure drop.
- FIA 15-40 (½ – 1 ½ in.):
  A special insert (50µ) can be used in combination with a standard version when cleaning a plant during commissioning.
- FIA 50-200 (2 - 8 in.):
  A large capacity filter bag (50µ) can be inserted for cleaning plant during commissioning.
- FIA 65-200 (2½ - 8 in.) can be equipped with a magnetic insert for detention of iron particles and other magnetic particles.
- Each strainer clearly marked with type, size and performance range
- Housing and bonnet of low temperature steel in accordance with the requirements of the Pressure Equipment Directive and those of other international classification authorities
- Classification: DNV, CRN, BV, EAC etc.
  To get an updated list of certification on the products please contact your local Danfoss Sales Company.
- Equipped with 42CrMo5 bolts to withstand high pressure.

Technical data

- *Refrigerants*
  Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2) and flammable refrigerants.
  For further information refer to the product instruction for FIA.
- *Temperature range*
  –60/+150 °C (–76/+302 °F).
- *Max. working pressure*
  65 bar (943 psig)

Design

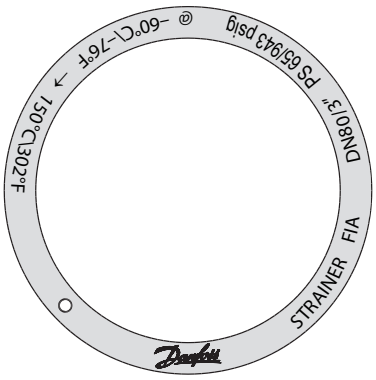
Strainer Insert
A filter grid and filter net of stainless steel ensure long element life. The filter net offers a very high degree of cleanability.

Housing
The strainer housing is made of special, cold resistant steel.

Installation/Maintenance
The strainer is designed to resist high internal pressures. However, the piping system in general should be designed to avoid liquid traps and reduce the risk of hydraulic pressure caused by thermal expansion.
Install the strainer with the cover in downward position.

Danfoss recommends replacement/cleaning of the strainer when the differential pressure loss >0.5 bar (7.3 psi) in the liquid line and >0.05 bar (0.7 psi) in the suction line. The max. permissible differential pressure is 1 bar (15 psi).

For further information refer to installation instruction for FIA.



Example of marking ring, FIA

© Danfoss | DCS (ms) | 2020.05

Selection of strainer size

The mesh aperture size of the strainer must satisfy the requirements stated by the suppliers of the equipment to be protected.

The following recommendations of aperture size apply in general to refrigeration installations:

All lines
First start up: **50**µ
(Use strainer element with removable insert for FIA DN15-40 or separate filter bag for FIA DN 50-200. 50µ insert should normally be removed after the first 24 hours of operation)

Liquid Lines
Ahead of pumps: ..... **500**µ [38 mesh]
After pumps: ..... **150**µ [100 mesh] / 250µ [72 mesh]
In front of AKVA valves ..... **100**µ [150 mesh]

Protection of automatic regulation equipment
Generally ..... **150**µ [100 mesh] / 250µ [72 mesh]
Sensitive equipment, e.g.
suction regulators with low temperature ..... **250**µ [72 mesh]

Definition
Mesh is the number of threads per inch. µ (microns) is the distance between two threads (1µ = 1 /1000 mm).

Suction Lines
Ahead of screw compressor ..... **250**µ [72 mesh]
Ahead of piston compressor ..... **150**µ [100 mesh]

Flow coefficient (DIN/ANSI)

Connection size (DN) FIA	µ	mesh	wire mm	wire in.	free space %	screen area			
						Plain elements		Pleated elements	
						cm²	in²	cm²	in²
15 - 20 (1/2" - 3/4")	100		0.068	0.003	35	25	3.9	45	7.0
	150	100	0.10	0.004	36	25	3.9	45	7.0
	250	72	0.10	0.004	51	25	3.9	45	7.0
	500	38	0.16	0.006	57.6	25	3.9	45	7.0
25 - 40 (1" - 1 1/2")	100		0.068	0.003	35	71	11	160	25.0
	150	100	0.10	0.004	36	71	11	160	25.0
	250	72	0.10	0.004	51	71	11	160	25.0
	500	38	0.16	0.006	57.6	71	11	160	25.0
50 (2")	100		0.068	0.003	35	71	11	200	31.2
	150	100	0.10	0.004	36	87	13.5	200	31.2
	250	72	0.10	0.004	51	87	13.5	200	31.2
	500	38	0.16	0.006	57.6	87	13.5	200	31.2
65 (2 1/2")	150	100	0.10	0.004	36	127	19.7	305	47.6
	250	72	0.10	0.004	51	127	19.7	305	47.6
	500	38	0.16	0.006	57.6	127	19.7	305	47.6
80 (3")	150	100	0.10	0.004	36	205	31.8	450	70.2
	250	72	0.10	0.004	51	205	31.8	450	70.2
	500	38	0.16	0.006	57.6	205	31.8	450	70.2
100 (4")	150	100	0.10	0.004	36	370	57.4	790	123.2
	250	72	0.10	0.004	51	370	57.4	790	123.2
	500	38	0.16	0.006	57.6	370	57.4	790	123.2
125 (5")	150	100	0.10	0.004	36	510	79.1	1105	172.4
	250	72	0.10	0.004	51	510	79.1	1105	172.4
	500	38	0.16	0.006	57.6	510	79.1	1105	172.4
150 (6")	150	100	0.10	0.004	36	726	112.5	1600	249.6
	250	72	0.10	0.004	51	726	112.5	1600	249.6
	500	38	0.16	0.006	57.6	726	112.5	1600	249.6
200 (8")	150	100	0.10	0.004	36	1315	203.8	2900	453.1
	250	72	0.10	0.004	51	1315	203.8	2900	453.1
	500	38	0.16	0.006	57.6	1315	203.8	2900	453.1

Selection of strainer size
(Continued)

K_v values

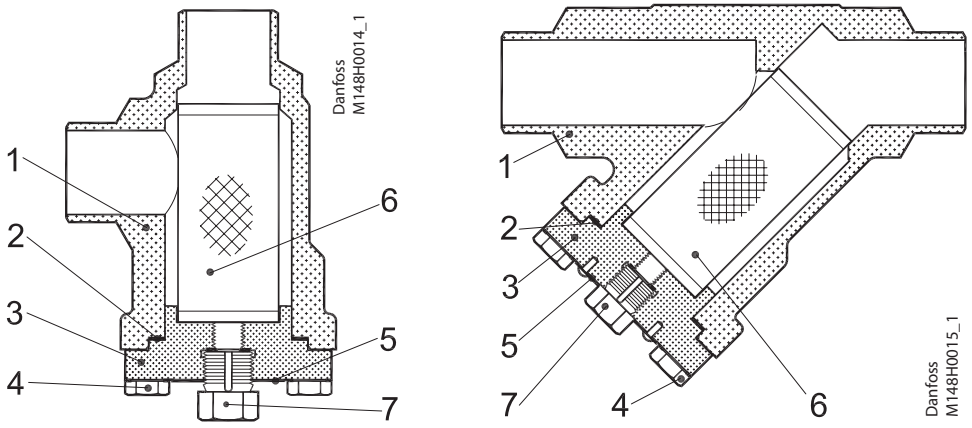
DN	FIA angle - plain filter net				FIA angle - pleated filter net		
	µ100	µ150	µ250	µ500	µ150	µ250	µ500
15	3.3	3.4	3.5	3.7	4.2		
20	6.9	7.1	7.3	7.7	8.8		
25	13.8	14.0	14.5	15.2	17.2	17.9	
32	23.0	23.8	24.7	25.5	29.2	30.5	
40	25.1	25.5	26.4	28.1	31.4	32.6	
50	45.1	45.9	47.6	50.2	56.7	58.8	62.0
65		56.1	57.8	60.4	69.3	71.4	74.6
80		104.6	108.0	113.1	129.2	133.4	139.7
100		162.4	167.5	176.0	200.6	206.9	217.4
125		275.4	283.9	298.4	340.2	350.7	368.6
150		362.1	373.2	391.9	447.3	462.9	
200		572.9	590.8	620.5	704.9	730.0	

DN	FIA straight - plain filter net				FIA straight - pleated filter net		
	µ100	µ150	µ250	µ500	µ150	µ250	µ500
15	2.5	2.6	2.7	2.8	3.3		
20	5.3	5.4	5.6	5.9	6.9		
25	10.5	10.7	11.1	11.6	13.8	14.5	
32	17.6	18.2	18.9	19.5	23.9	24.7	
40	19.2	19.5	20.2	21.5	25.5	26.4	
50	34.5	35.1	36.4	38.4	45.9	47.6	50.2
65		42.9	44.2	46.2	56.1	57.8	60.4
80		80.0	82.6	86.5	104.6	108.0	113.1
100		124.2	128.1	134.6	162.4	167.5	176.0
125		210.6	217.1	228.2	275.4	283.9	298.4
150		276.9	285.4	299.7	362.1	374.0	
200		438.1	451.8	474.5	570.8	587.3	

© Danfoss | DCS (ms) | 2020.05

Material specification

FIA 15 - 40 ($^1/_2$ in. - 1 $^1/_2$ in.)

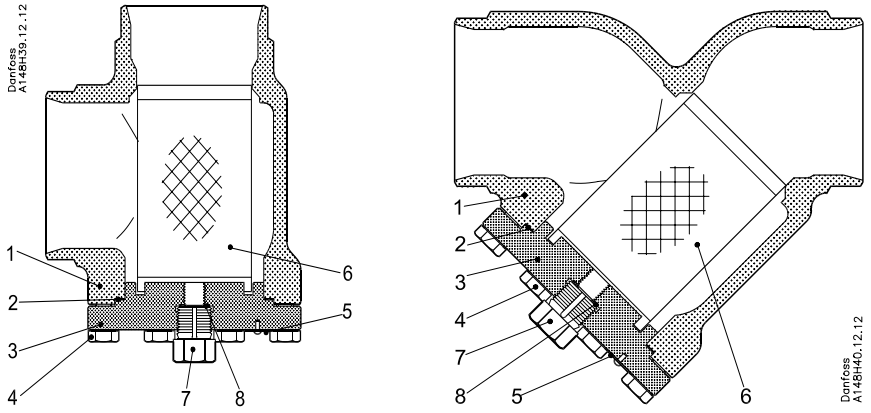


FIA 15-40 ($^1/_2$ in. - 1$^1/_2$ in.)

No.	Part	Material	DIN	ISO	ASTM
1	Housing	Steel	G20Mn5QT, 10213-3 --- P285QH+QT, 10222-4		LCC, A352 --- LF2, A350
2	Gasket	Fibre, Non-asbestos			
3	Cover	Steel	P285QH EN10222-4 --- P275NL1 or 2 EN10028-3		LF2, A350 --- A, A662
4	Bolts	High temperature steel	42CrMo5 10269		A193
5	Marking label	Aluminium			
6	Strainer element	Stainless steel			
7	Pressure relief (screw)	Stainless steel			

Material specification

FIA 50 - 200 (2 in. - 8 in.)



FIA 50-200 (2 in. - 8 in.)

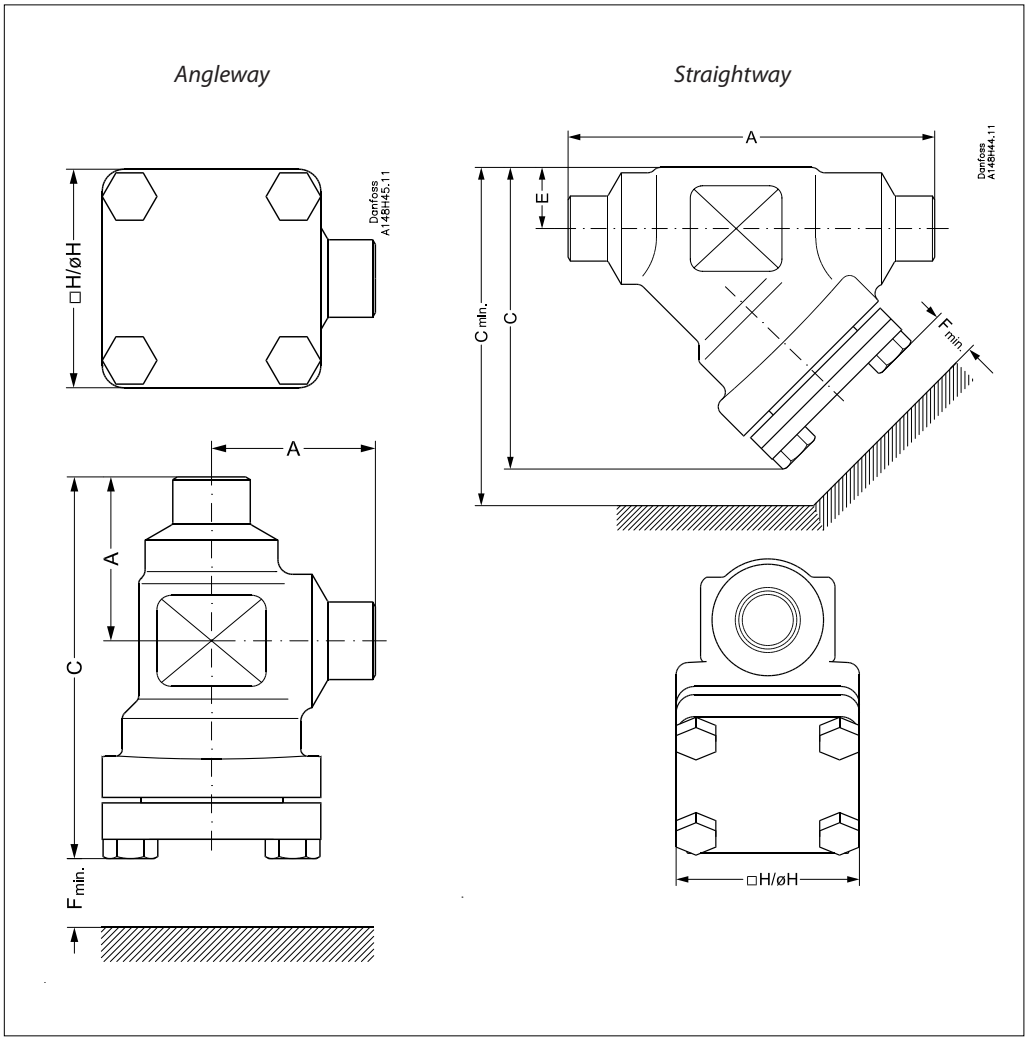
No.	Part	Material	DIN	ISO	ASTM
1	Housing	Steel	G20Mn5QT, 10213-3 --- P285QH+QT, 10222-4		LCC, A352 --- LF2, A350
2	Gasket	Fibre, Non-asbestos			
3	Cover	Steel	P285QH EN10222-4 --- P275NL1 or 2 EN10028-3		LF2, A350 --- A, A662
4	Bolts	High temperature steel	42CrMo5 10269		A193
5	Marking label	Aluminium			
6	Strainer element	Stainless steel			
7	Pressure relief (screw)	Stainless steel			
8*	Packing washer	Aluminium			

* pos 8 used in FIA 50-200

© Danfoss | DCS (ms) | 2020.05

Dimensions and weights

FIA 15 - 65



Angleway

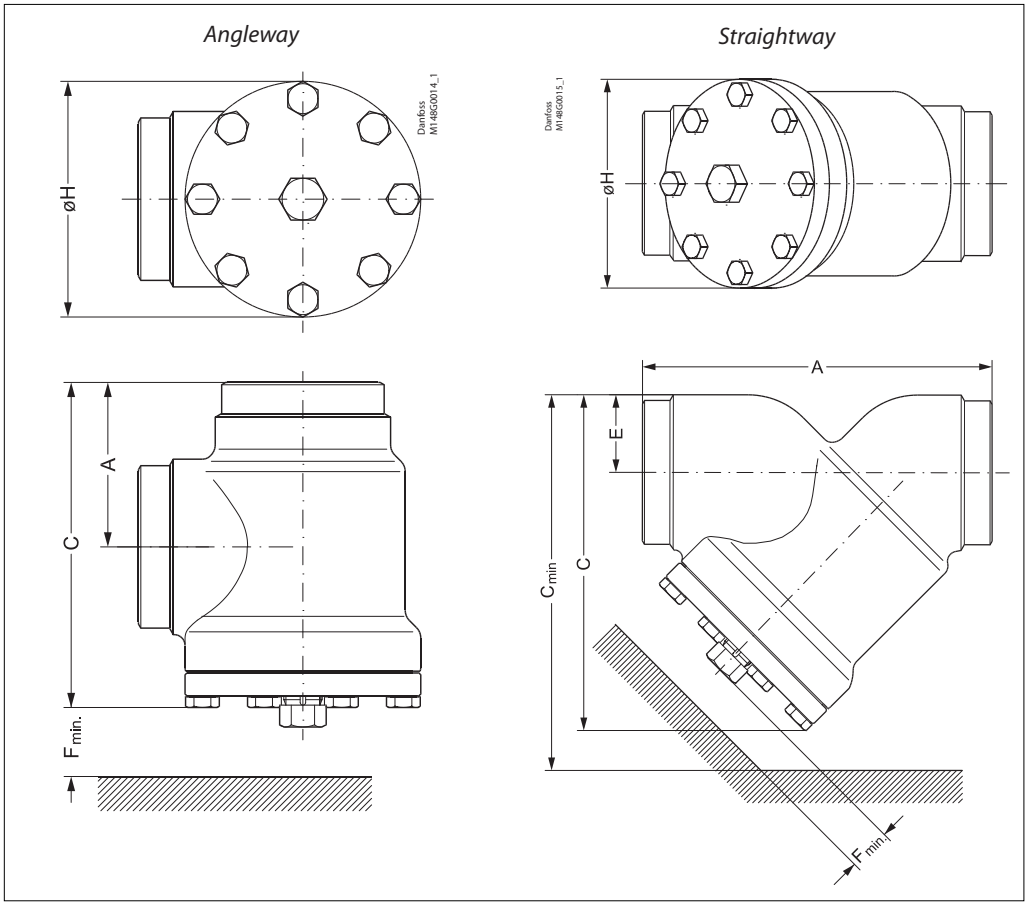
Strainer size		A	C	H	$F_{min.}$	Weight
FIA 15-20	mm	45	105	60	68	1.1 kg
(1/2" - 3/4")	in.	1.77	4.13	2.36	2.68	2.4 lbs
FIA 25-40	mm	55	132	70	95	1.7 kg
(1" - 1 1/2")	in.	2.17	5.20	2.76	3.74	3.7 lbs
FIA 50	mm	60	132	77	92	2.8 kg
(2")	in.	2.36	5.20	3.03	3.62	6.2 lbs
FIA 65	mm	70	152	90	107	3.8 kg
(2 1/2")	in.	2.76	5.98	3.54	4.21	8.4 lbs

Straightway

Strainer size		A	C	$C_{min.}$	H	E	$F_{min.}$	Weight
FIA 15-20	mm	120	99	133	60	20	68	1.4 kg
(1/2" - 3/4")	in.	4.72	3.90	5.24	2.36	0.79	2.68	3.1 lbs
FIA 25-40	mm	155	129	177	70	26	95	2.4 kg
(1" - 1 1/2")	in.	6.10	5.08	6.97	2.76	1.02	3.74	5.3 lbs
FIA 50	mm	148	138	184	77	32	92	3.5 kg
(2")	in.	5.83	5.43	7.24	3.03	1.26	3.62	7.7 lbs
FIA 65	mm	176	165	219	90	40	107	5.3 kg
(2 1/2")	in.	6.93	6.50	8.62	3.54	1.57	4.21	11.7 lbs

Dimensions and weights

FIA 80 - 200



Angleway

Strainer size		A	C	H	$F_{min.}$	Weight
FIA 80	mm	90	189	129	133	7.3 kg
(3")	in.	3.54	7.44	5.08	5.24	16.1 lbs
FIA 100	mm	106	223	156	163	11.9 kg
(4")	in.	4.17	8.78	6.14	6.42	26.2 lbs
FIA 125	mm	128	268	192	190	21.2 kg
(5")	in.	5.04	10.6	7.56	7.48	46.7 lbs
FIA 150	mm	145	303	219	223	30.5 kg
(6")	in.	5.71	11.93	8.62	8.78	67.2 lbs
FIA 200	mm	180	372	276	280	68 kg
(8")	in.	7.09	14.65	10.87	11.02	150 lbs

Straightway

Strainer size		A	C	$C_{min.}$	H	E	$F_{min.}$	Weight
FIA 80	mm	216	204	271	129	48	133	8.6 kg
(3")	in.	8.50	8.03	10.67	5.08	1.89	5.24	19 lbs
FIA 100	mm	264	256	337	156	60	163	14.9 kg
(4")	in.	10.39	10.08	13.27	6.14	2.36	6.42	32.8 lbs
FIA 125	mm	322	313	408	192	74	190	26.9 kg
(5")	in.	12.68	12.32	16.06	7.56	2.91	7.48	59.3 lbs
FIA 150	mm	370	370	482	219	91	223	51 kg
(6")	in.	14.57	14.57	18.98	8.62	3.58	8.78	112 lbs
FIA 200	mm	464	465	605	276	117	280	95 kg
(8")	in.	18.27	18.31	23.82	10.87	4.61	11.02	209 lbs

© Danfoss | DCS (ms) | 2020.05

Strainer element

Please note that you have to order **FIA strainer without element, a strainer element** and **accessories.**

FIA size		Strainer insert 100µ 150 mesh	Strainer insert 150µ 100 mesh	Strainer insert 250µ 72 mesh	Strainer insert 500µ 38 mesh	Pleated Strainer insert 150µ 100 mesh	Pleated Strainer insert 250µ 72 mesh	Pleated Strainer insert 500µ 38 mesh
mm	in.							
15	½	**148H3122**	**148H3124**	**148H3126**	**148H3128**	**148H3303**	**148H3363**	-
20	¾							
25	1	**148H3123**	**148H3125**	**148H3127**	**148H3129**	**148H3304**	**148H3269**	-
32	1¼							
40	1½							
50	2	**148H3157**	**148H3130**	**148H3138**	**148H3144**	**148H3179**	**148H3184**	**148H3189**
65	2½	-	**148H3131**	**148H3139**	**148H3145**	**148H3180**	**148H3185**	**148H3190**
80	3	-	**148H3119**	**148H3120**	**148H3121**	**148H3181**	**148H3186**	**148H3191**
100	4	-	**148H3132**	**148H3140**	**148H3146**	**148H3182**	**148H3187**	**148H3192**
125	5	-	**148H3133**	**148H3141**	**148H3147**	**148H3183**	**148H3188**	**148H3193**
150	6	-	**148H3134**	**148H3142**	**148H3148**	**148H3226**	**148H3293***	-
200	8	-	**148H3135**	**148H3143**	**148H3149**	**148H3297**	**148H3294***	-

* 60 mesh

Accessories

Part	Accessory for	**Code number**
Magnet insert	FIA 65-100	**148H3447**
	FIA 125-200	**148H3448**

Part	Accessory for	**Code number**
Strainer element µ150 with removable element µ50 for the first start up	FIA 15-20	**148H3301**
	FIA 25-40	**148H3302**

Part	Accessory for	**Code number**
Filter bag	FIA 50	**148H3150**
	FIA 65	**148H3151**
	FIA 80	**148H3152**
	FIA 100	**148H3153**
	FIA 125	**148H3154**
	FIA 150	**148H3155**
	FIA 200	**148H3156**

Part	Accessory for	**Code number**
Purge valve complete	FIA 50 - 300	**148B3745**
Blind nut with gasket		**148H3450**

Hand regulating valves REG-SA and REG-SB

REG-SA and REG-SB are angleway and straightway hand regulating valves, which act as normal stop valves in closed position.

The valves are available in two different versions – REG-SA and REG-SB designed for regulation purposes in liquid and expansion lines.

The valves are designed to meet the strict quality requirements on refrigerating/heat pump installations specified by the international classification societies and are carefully designed to present favourable flow conditions and accurate linear characteristics.

REG-SA and REG-SB are equipped with vented cap and internal backseating enables replacement of the spindle seal whilst the valve is active, i.e. under pressure.



Features REG-SA and REG-SB

- Modular Concept:
  - Each valve housing is available with DIN and ANSI butt weld connection and in several different sizes.
  - Possible to convert REG-SA or REG-SB to any other product in the FlexlineTM SVL family (shut-off valve, check & stop valve, check 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 ensure perfect regulation
- Internal backseating enables replacement of the spindle seal whilst the valve is active, i.e. under pressure.
- Easy to disassemble for inspection and possible repair.
- Acts as a normal stop valve in closed position.
- Housing and bonnet material is low temperature steel according to requirements of the Pressure Equipment Directive and other international classification authorities.
- Exact capacity and setting of the valve can be calculated for all refrigerants by means of Coolselector™.
- Classification: DNV, CRN, BV, EAC etc.
  To get an updated list of certification on the products please contact your local Danfoss Sales Company.
- Equipped with 42CrMo5 bolts to withstand high pressure.
- Service kits with replacement O-rings for R717 Heat Pump and R1270 Propylene include separate ID-ring for ID of application

Technical data

- *Refrigerants*
  Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2) and flammable refrigerants.
  For further information refer to the product instruction for REG-SA and REG-SB.
- *Temperature range*
  –60/+150 °C (–76/+302 °F).
- *Max. working pressure*
  65 bar (943 psig).

  With O-ring replaced for valves up to DN40 (Service kit):

  Heat pump configuration: R717 - 65 bar (943 psi) @ +100 °C to +150 °C (+212 °F to +302 °F) continuous.

  Propylene configuration: R1270 - 65 bar (943 psi) @ -60 °C to 150 °C (-76 °F to 302 °F).

© Danfoss | DCS (ms) | 2020.05

Design

Housing
Housing is Standard SVA angleway or straightway housing allowing other inserts from the SVL platform to be installed.
Material is special, cold resistant steel

The cone
The valves are available in two different versions – REG-SA with an A cone and REG-SB with a B cone. The A cone is designed for expansion lines, while the B cone is designed for regulating purposes e.g. liquid lines.

The valve cone is designed to ensure perfect regulation and provide an extensive regulating area. Irrespective of the refrigerant used, it is easy to obtain the correct capacity. A cone seal ring provides perfect sealing at a minimum closing momentum.

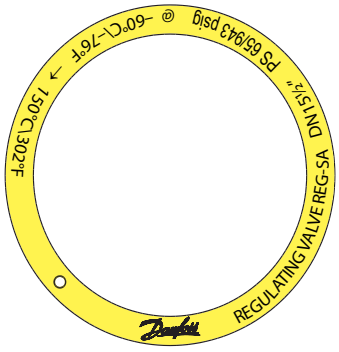
The valve cone can be turned on the spindle, thus there will be no friction between the cone and the seat when the valve is opened and closed.
Spindle
The spindle is made of polished stainless steel, which is ideal for O-ring sealing.

Packing gland - REG-SA and REG-SB
The "full temperature range" packing gland ensures perfect tightness in the whole range: –60/+150 °C (–76/+302 °F). The packing glands are equipped with a scraper ring to prevent penetration of dirt and ice.

Installation
Install the valve with the spindle up or in horizontal position. The flow must be directed towards the cone.

The valve is designed to withstand 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.

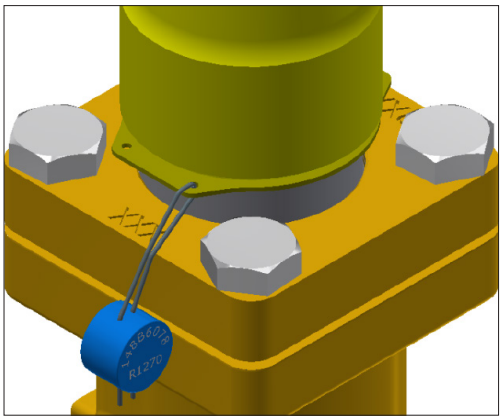
For further information refer to product instruction for REG-SA and REG-SB.



Example of marking ring, REG-SA

ID ring for special application
After converting a REG-SA/SB (DN 10-40) 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.



Computation and selection

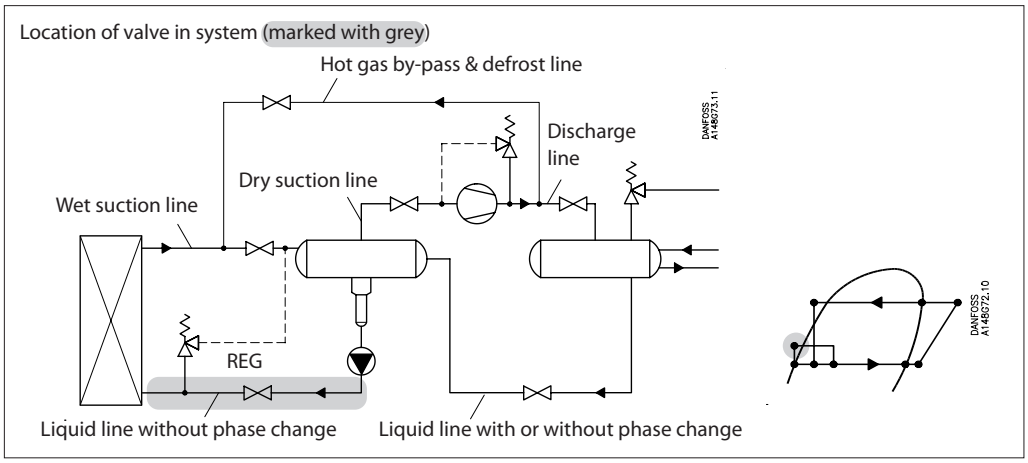
Introduction
In refrigeration plants, regulating valves are primarily used in liquid lines in order to regulate the flow of refrigerant. The valves can, however, also be used as expansion valves. From a calculation point of view the two fields of application are very different.

Normal flow is the term used to describe the general case where the flow through the valve is proportional to the square root of the pressure drop across it and inversely proportional to the density of the refrigerant (Bernouillis equation).

This relationship between mass flow, pressure drop and density satisfies the majority of all valve applications with refrigerants and brines.

Normal flow is characterised by turbulent flow through the valve without any phase change. The following capacity curves are based on the above mentioned assumption.

Application of the regulating valves outside the normal flow area will reduce the capacity of the valve considerably. In such cases it is recommended to use Coolselector®2.



Sizing regulating valve for liquid flow
Liquid refrigerants: Use the liquid tables, fig. 6 - 10. For other refrigerants and brines, "Normal flow" (Turbulent flow); see below and use the flow coefficient tables (fig. 1 - 5).

SI-units

Mass flow:

$$k_v = \frac{G}{\sqrt{\rho \times 1000 \times \Delta p}} = G \times C_A \, [m^3/h]$$

Volume flow:

$$k_v = \frac{\dot{V}}{\sqrt{\frac{1000 \times \Delta p}{\rho}}} \, [m^3/h]$$

Imperial units

Mass flow:

$$C_v = \frac{0.95 \times G}{\sqrt{\rho \times \Delta p}} = 31.6 \times G \times C_A \, [USgal/min.]$$

Volume flow:

$$C_v = \frac{0.127 \times \dot{V}}{\sqrt{\frac{\Delta p}{\rho}}} \, [USgal/min.]$$

k_v	[m³/h]	Quantity [m³/h] of water flowing through a valve at a pressure loss of 1 bar (according to VDE/VDI Norm 2173).
P_1	[bar]	Pressure before the valve (upstream).
P_2	[bar]	Pressure after the valve (downstream).
Δp	[bar]	Actual pressure loss across the valve (P_1–P_2).
G	[kg/h]	Mass flow through the valve.
$\dot{V}$	[m³/h]	Volume flow through the valve.
ρ	[kg/m³]	Density of the refrigerant before the valve.
C_A		Calculation factor (fig. 11).

C_v	[US gal/min]	Quantity [US gal/min] of water flowing through a valve at a pressure loss of 1 psi.
P_1	[psi]	Pressure before the valve (upstream).
P_2	[psi]	Pressure after the valve (downstream).
Δp	[psi]	Actual pressure loss across the valve (P_1–P_2).
G	[lb/min]	Mass flow through the valve.
$\dot{V}$	[US gal/min]	Volume flow through the valve.
ρ	[lb/ft³]	Density of the refrigerant before the valve
C_A		Calculation factor (fig. 11).

© Danfoss | DCS (ms) | 2020.05

Computation and selection

Flow coefficient

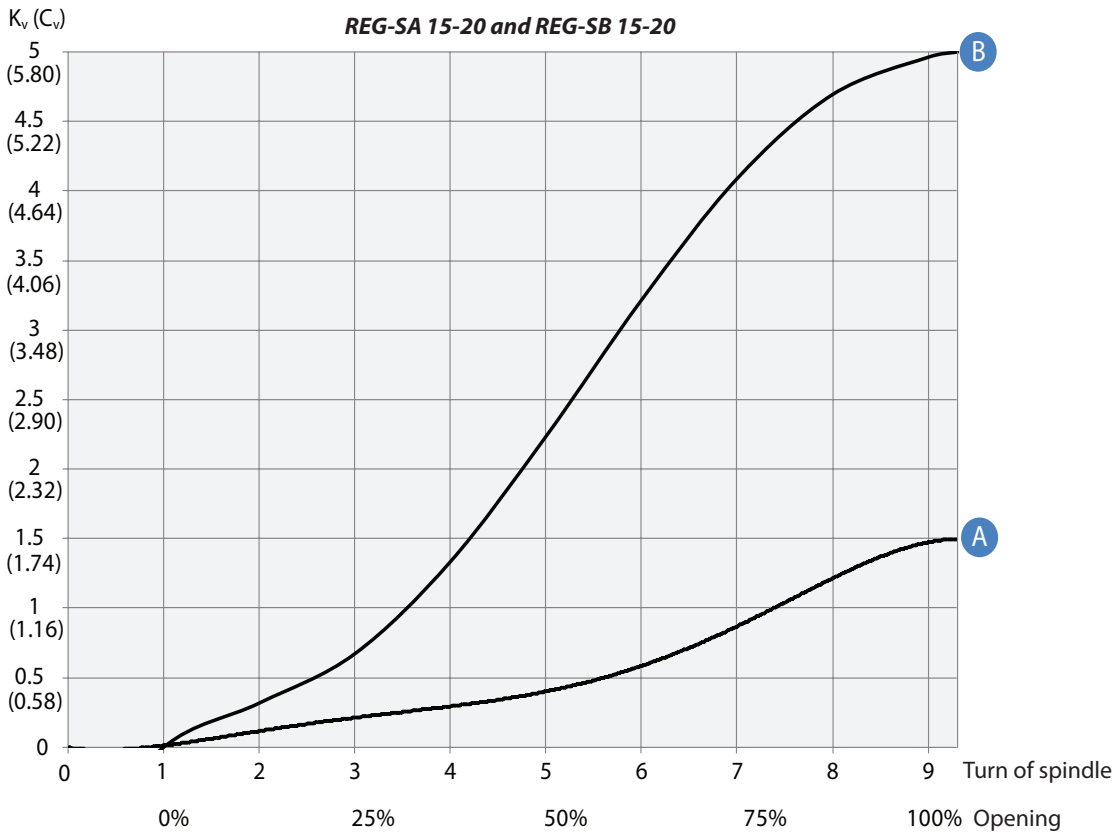


Fig. 1

Flow coefficient

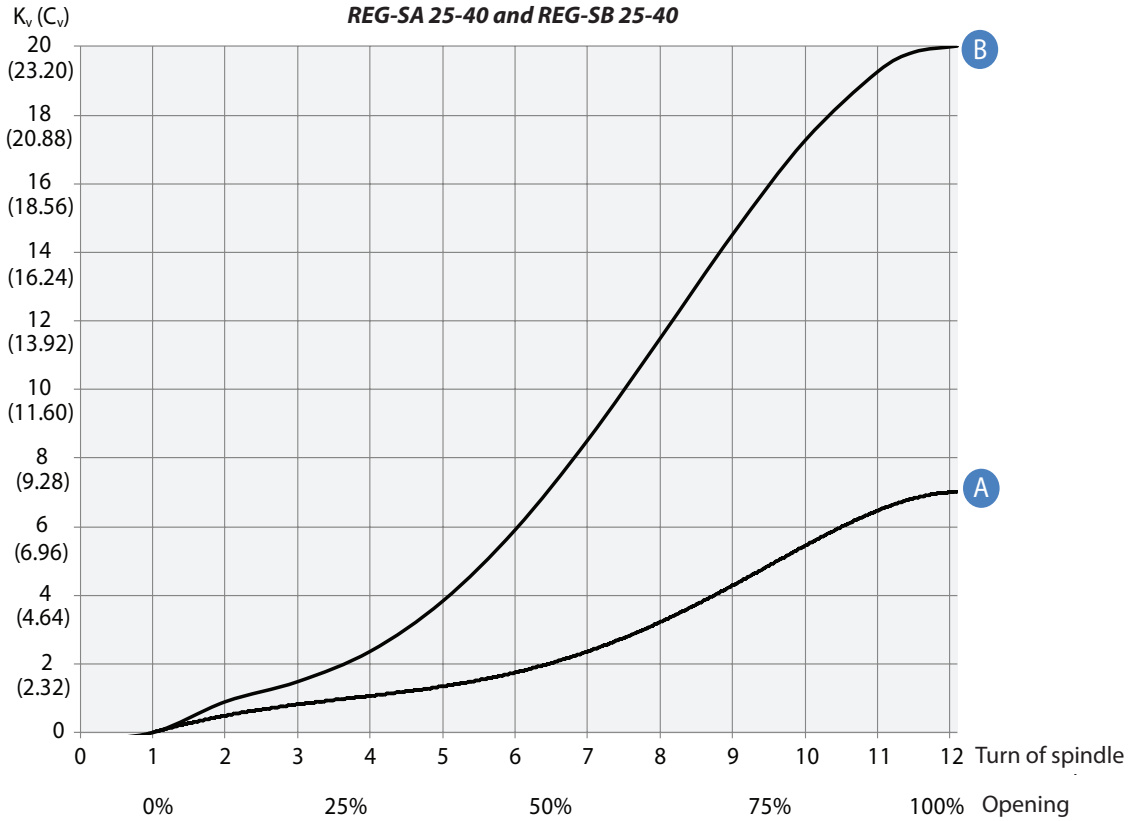


Fig. 2

Computation and selection *(Continued)*

Flow coefficient

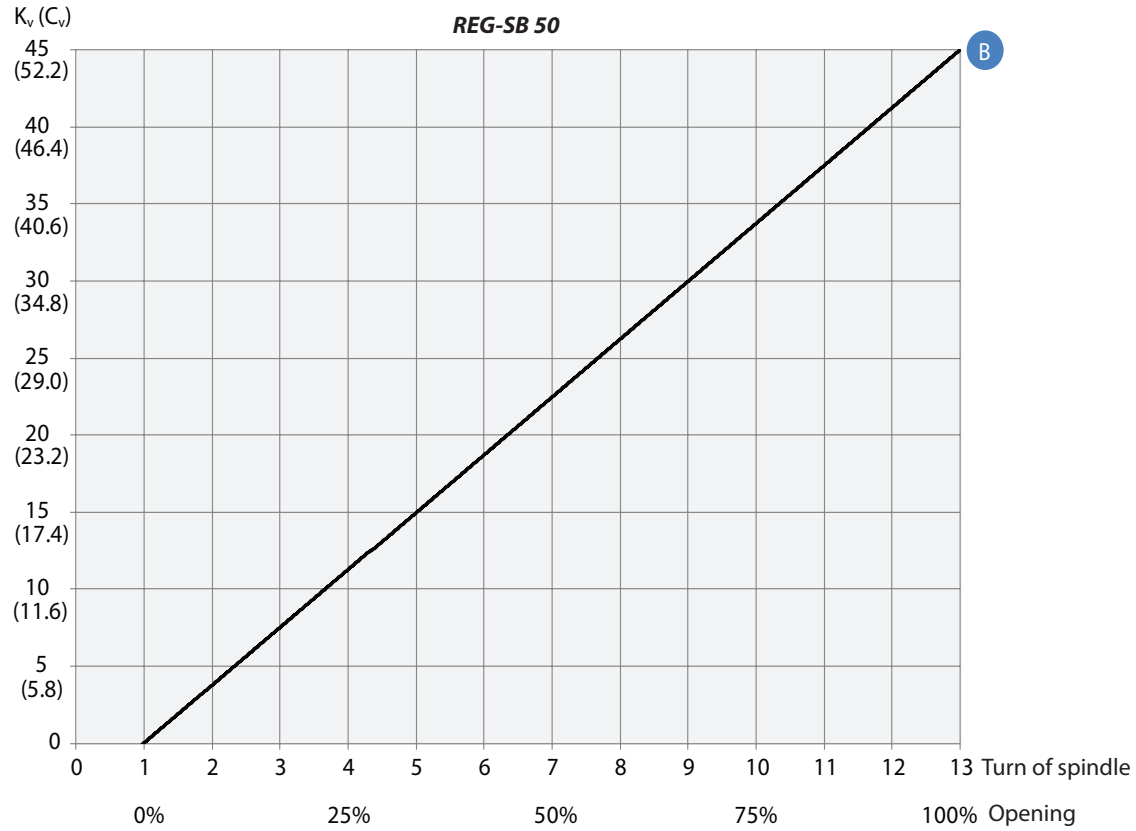


Fig. 3

Flow coefficient

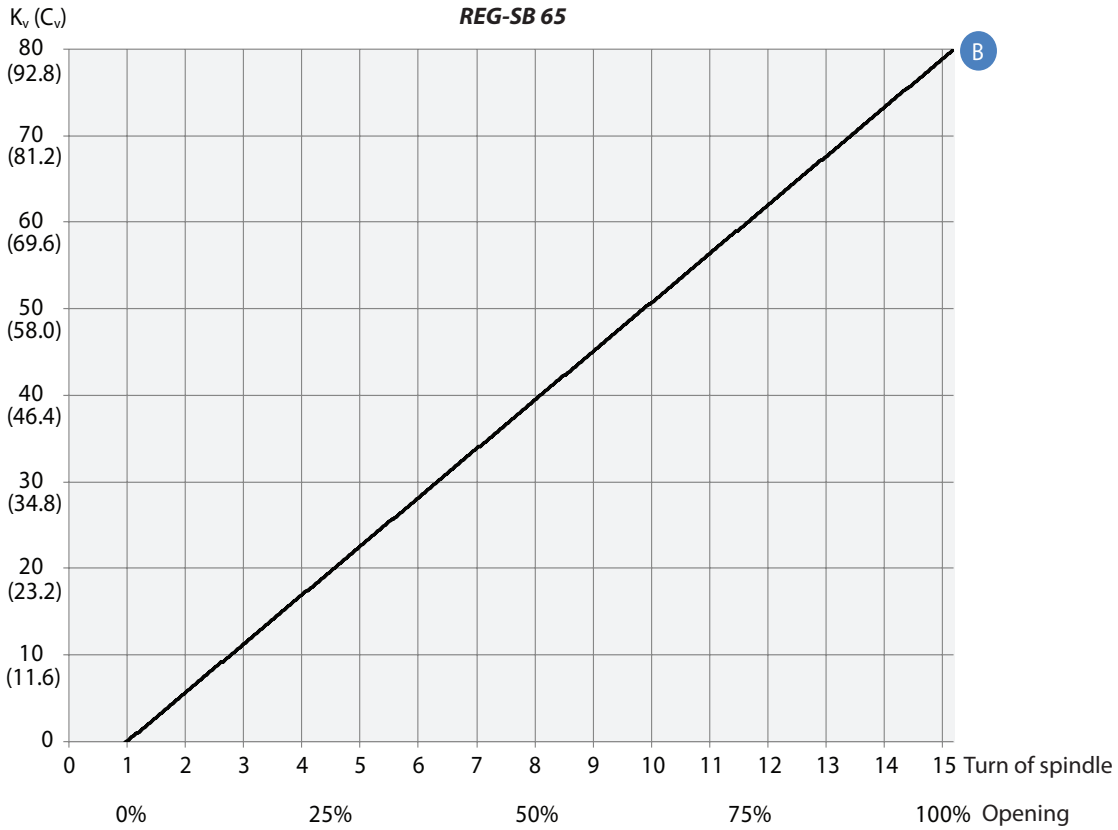


Fig. 4

© Danfoss | DCS (ms) | 2020.05

Computation and selection
(Continued)

Liquid R 717, density: 670 kg/m³ [42 lb/ft³]

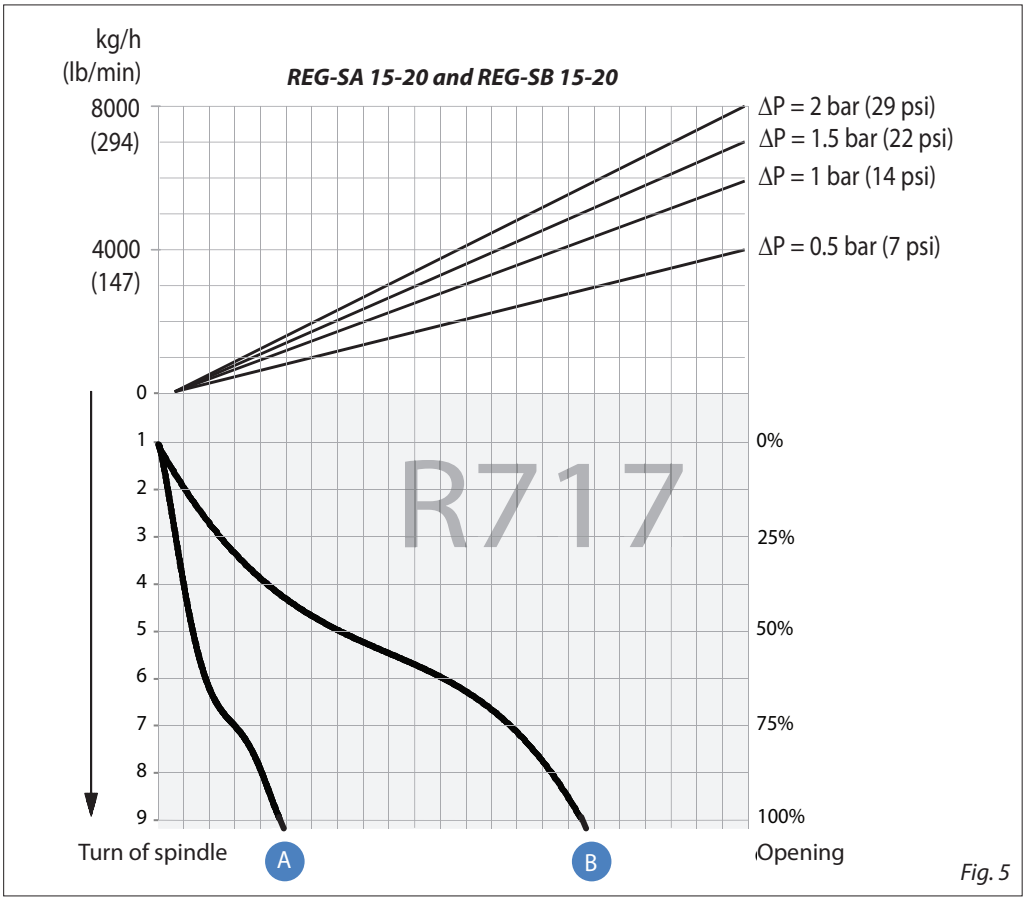


Fig. 5

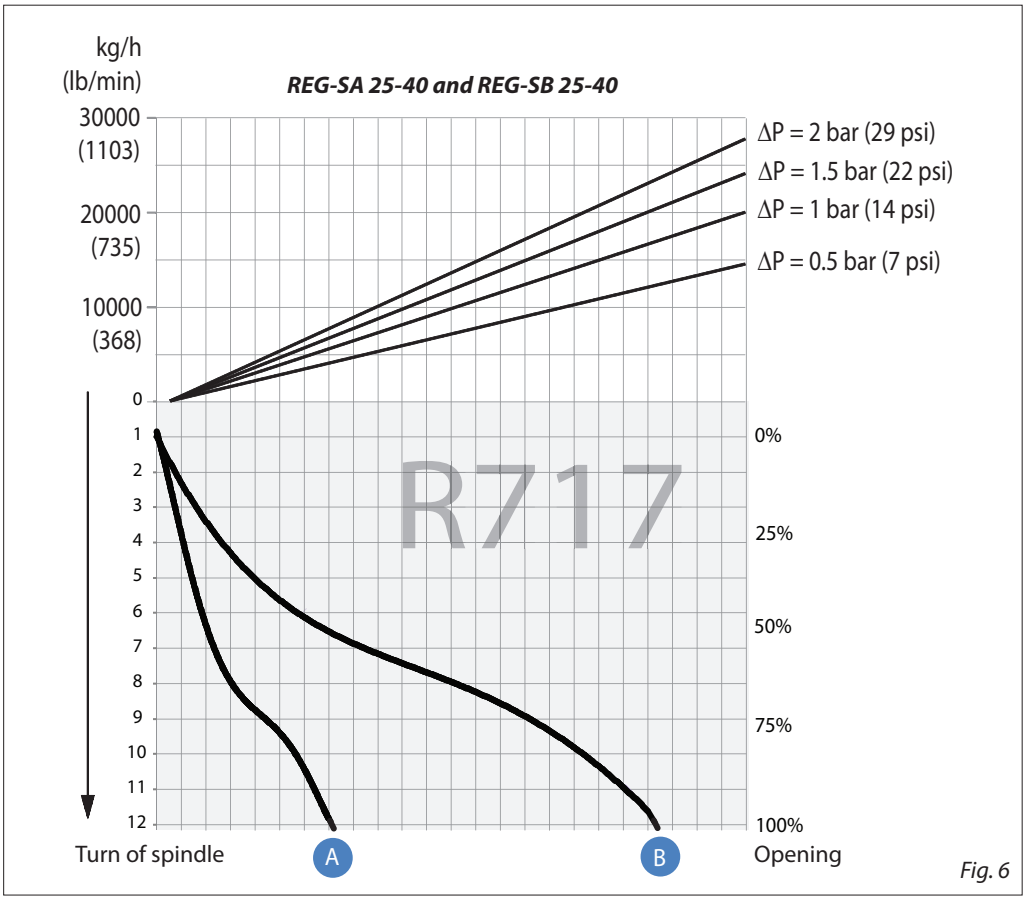


Fig. 6

For choice of valve size and connection see "Connections".

Computation and selection
(Continued)

Liquid R 717, density: 670 kg/m³ [42 lb/ft³]

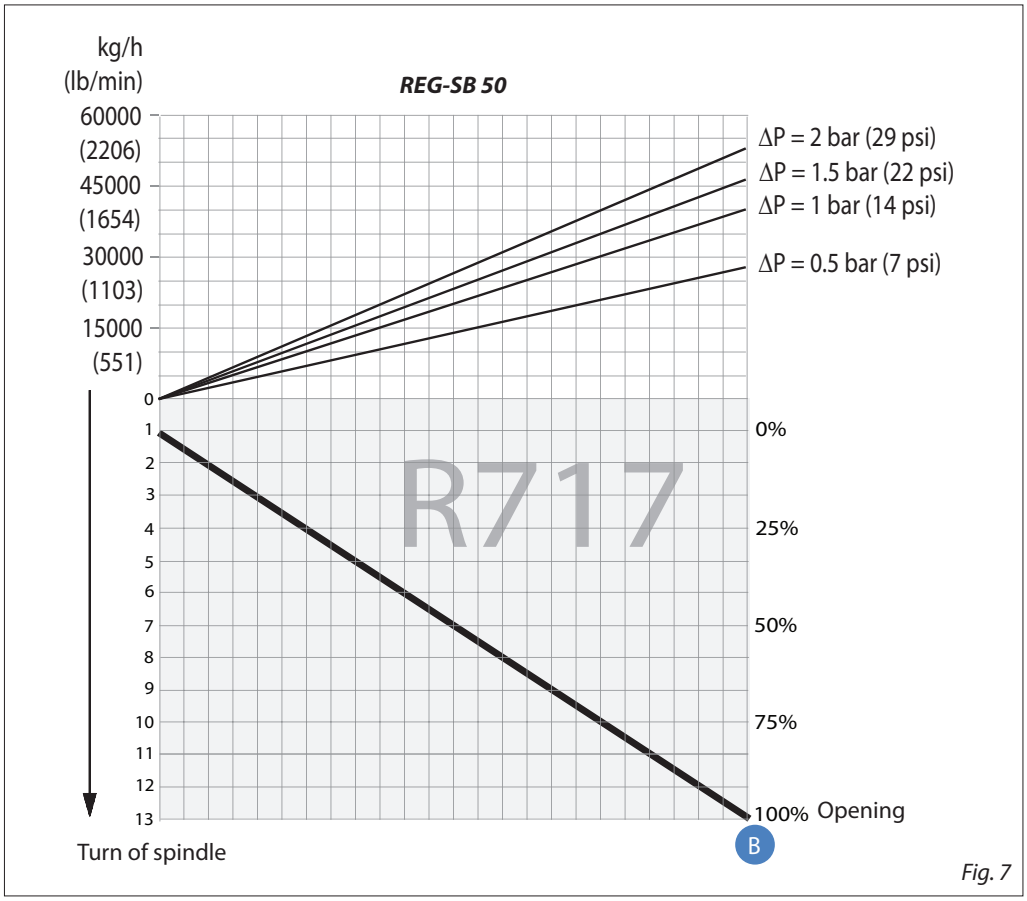


Fig. 7

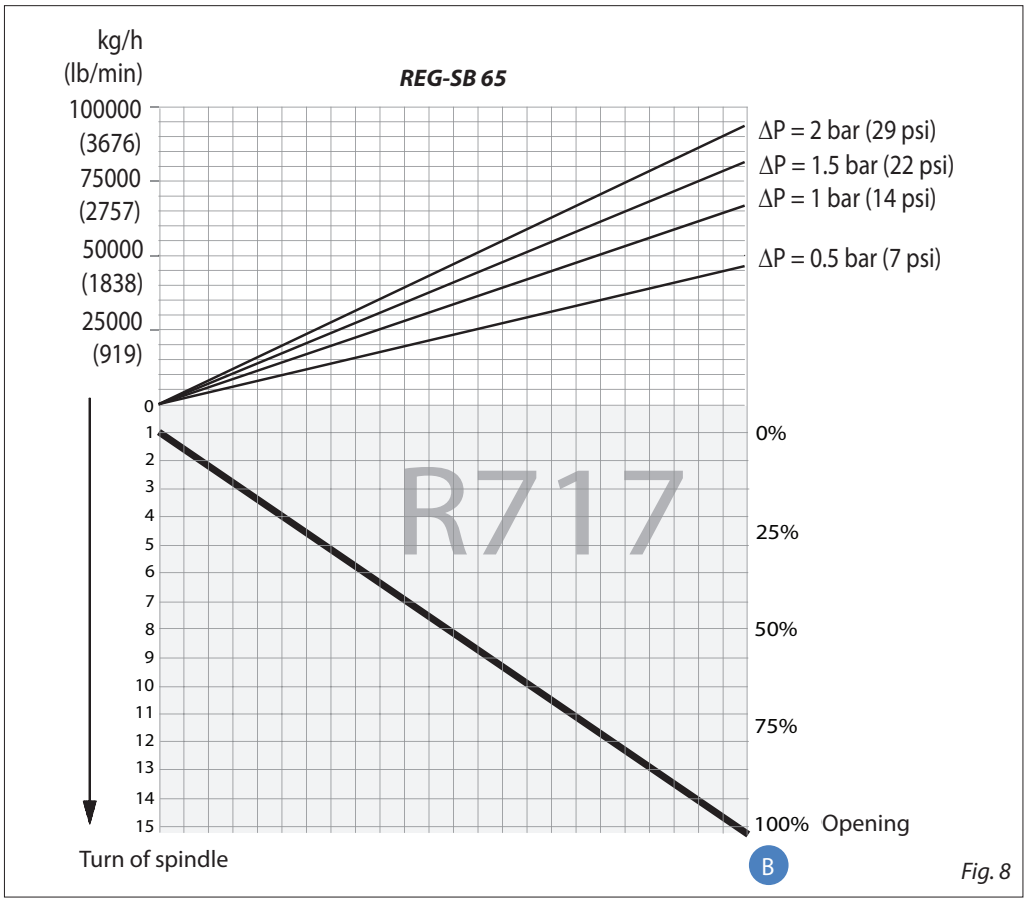


Fig. 8

For choice of valve size and connection see "Connections".

© Danfoss | DCS (ms) | 2020.05

Computation and selection
(Continued)

Liquid R 717, density: 670 kg/m³ [42 lb/ft³]

Calculation factor C_A

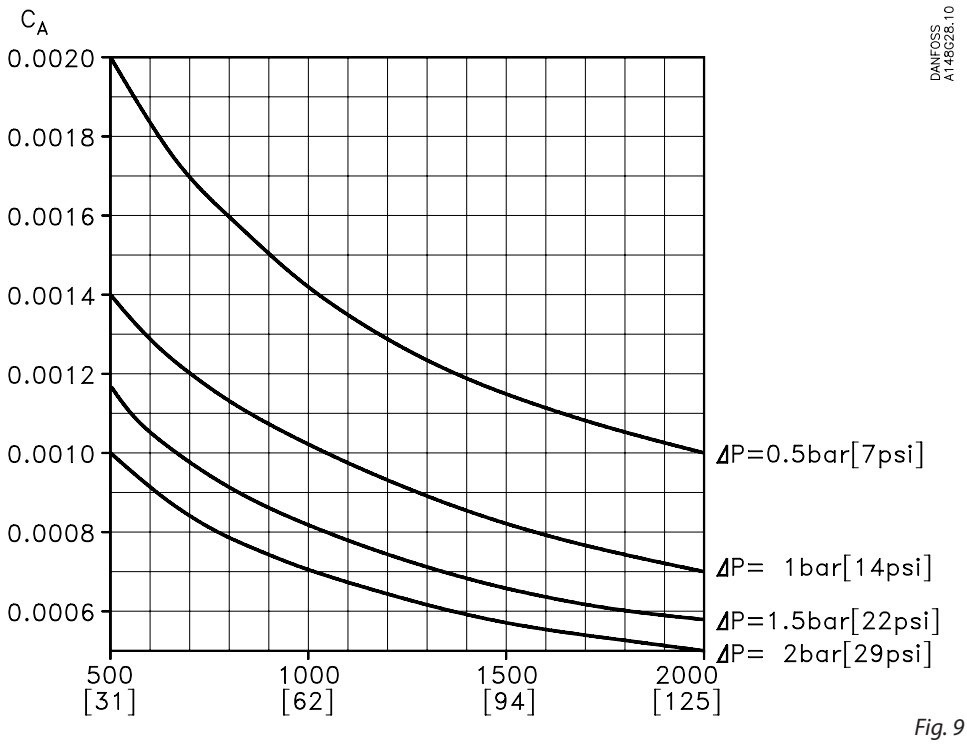


Fig. 9

For choice of valve size and connection see "Connections".

Computation and selection
Example 1.

Refrigerant: R 717
Refrigerant flow: 2200 kg/h
Pressure drop: Δp = 0.5 bar

The above mentioned example is illustrated on the following flow rate diagram and shows that REG-SB 15 and 20 with cone B can be used. The main rule is that nominal regulation range should be below 85% opening degree. If the arrowline is crossing 2 cone curves, the smaller cone should be selected if opening degree < 85%.

The example is only correct if the density of the refrigerant is approx. 670 (kg/m³), and there must be no build-up of flash gas in the valve.

Flow rate diagram

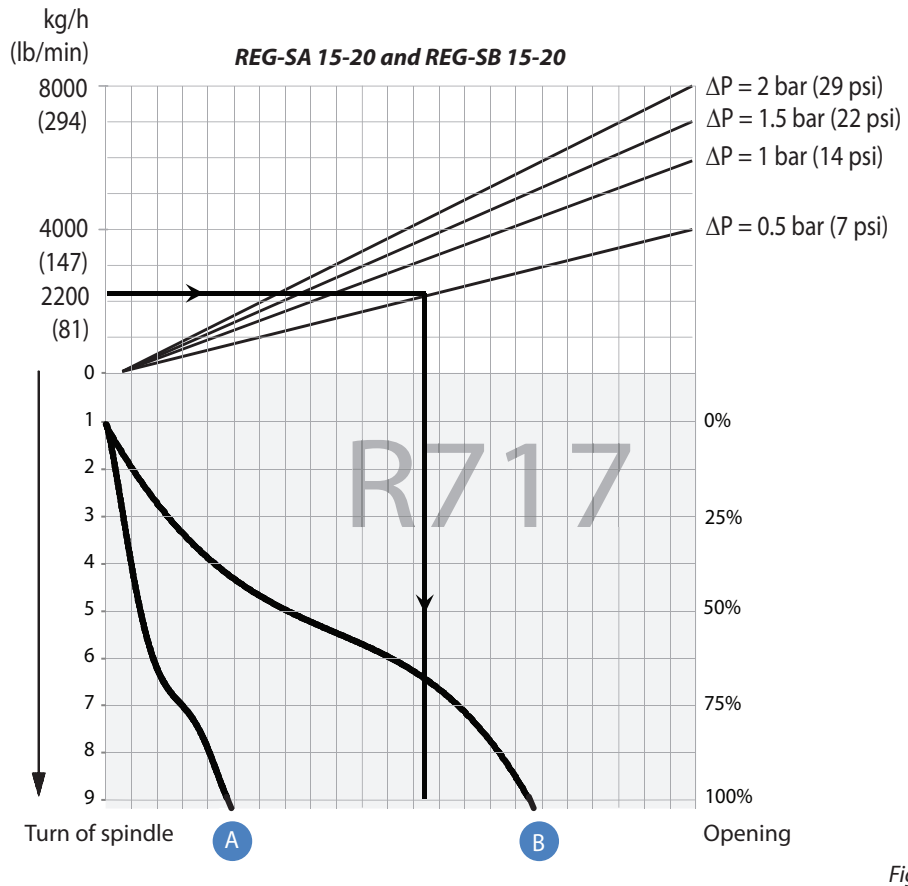


Fig. 10

© Danfoss | DCS (ms) | 2020.05

Computation and selection
Example 2.

Brine, density	ρ:	1150	[kg/m³]
Brine flow	G:	2,700	[kg/h]
Pressure drop	Δp:	0.5	[bar]

In this example it is not possible to use the selection diagrams (fig. 5 - 8) as the refrigerant in question is not included.

Use the curves of the k_v-values instead (fig. 1 - 4) and calculate the required k_v by means of the formulas in the "Introduction" passage at the beginning of this chapter. Alternatively calculate the k_v-values by means of the calculation factor C_A (fig. 11) and the flow rate diagram (in this example: fig. 12) as per the following calculation example.

Calculation example:

Required k_v-value
C_A = 0.00132 (from fig. 18)
k_v = $C_A \times G$
k_v = 0.00132 × 2,700 [kg/h]
= 3.56 [m³/h]

Calculation factor C_A

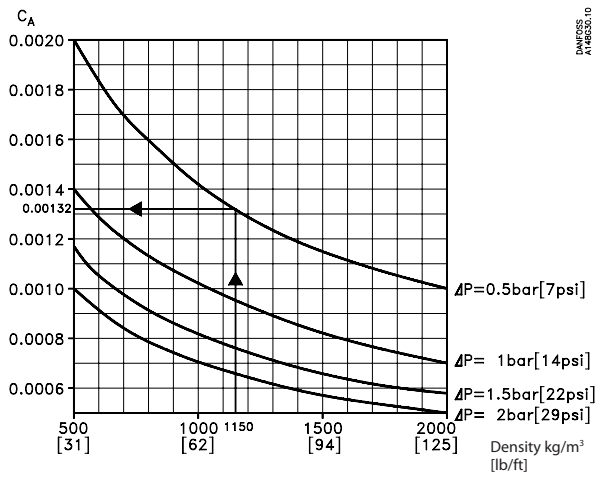


Fig. 11

Flow rate diagram

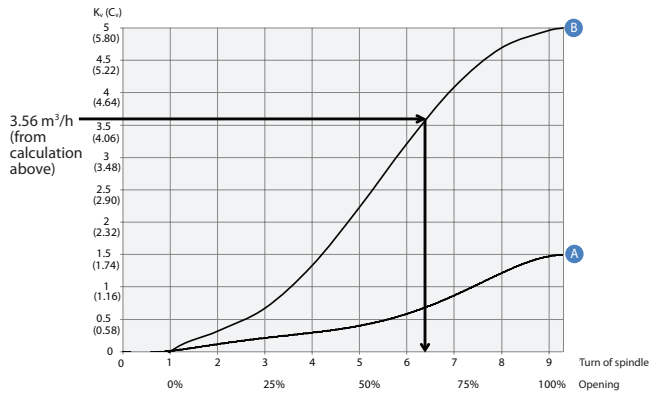
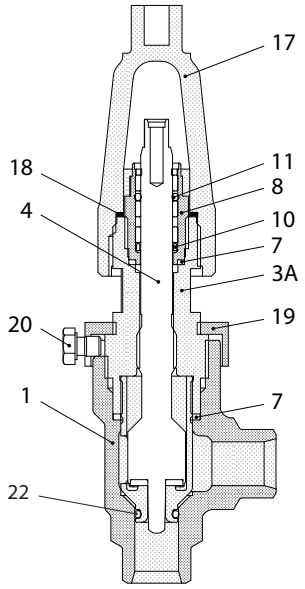


Fig. 12

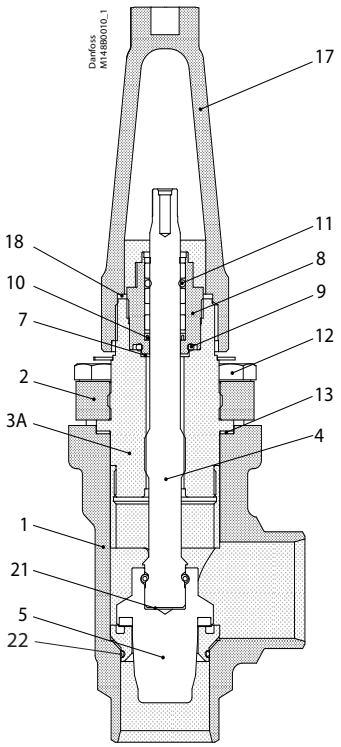
REG-SB 15 and REG-SB 20 with cone B can be used.

Material specification

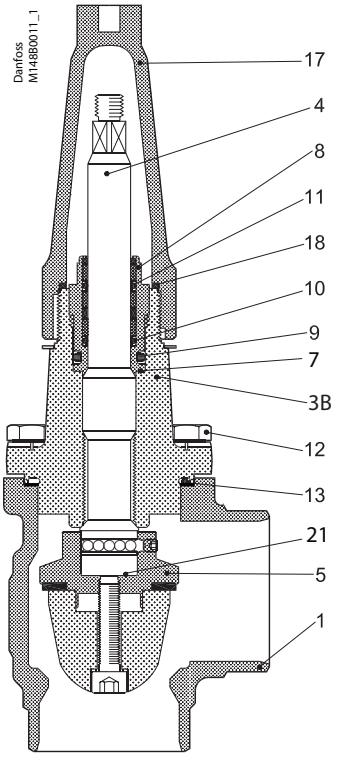
REG-SA and REG-SB 10



REG-SA and REG-SB 15 - 40



REG-SB 50 - 65



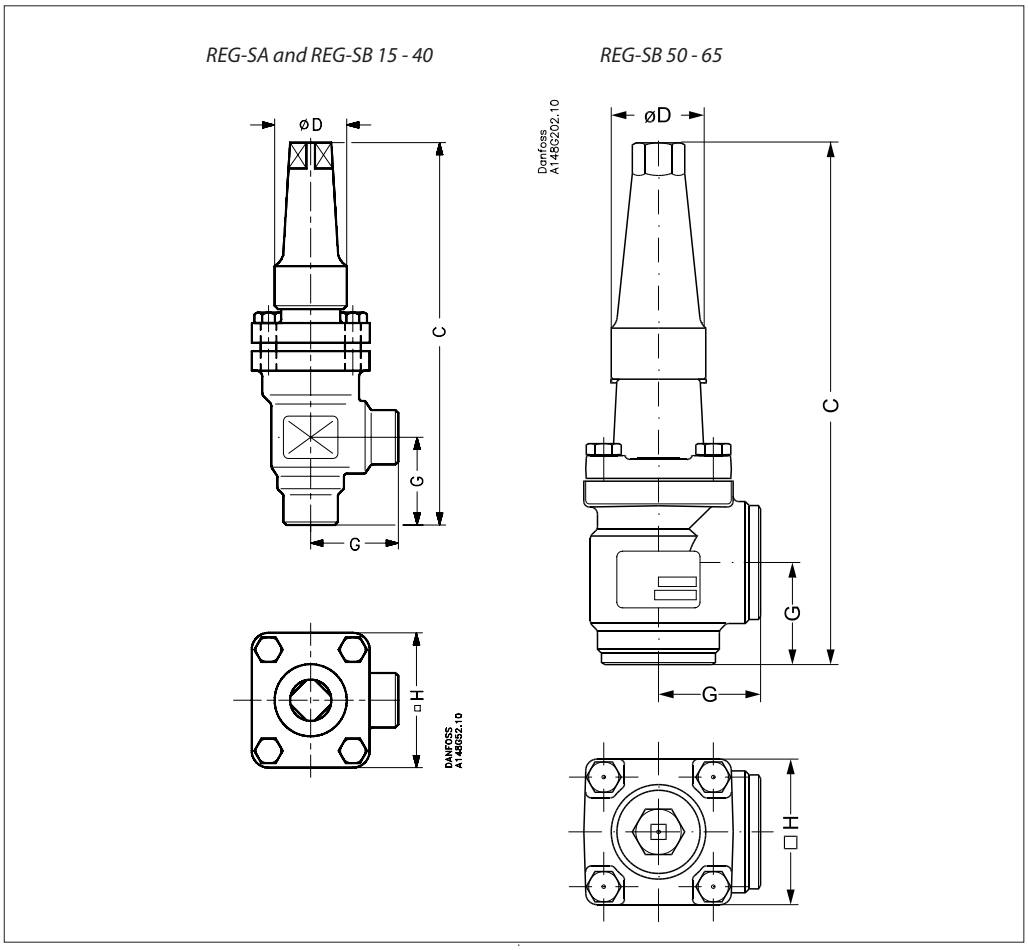
No.	Part	Material	EN	ISO	ASTM
1	Housing	Steel	G20Mn5QT, 10213-3 --- P285QH+QT, 10222-4		LCC, A352 --- LF2, A350
2	DN 15 - 40 (½ - 1½ in.) – Bonnet, Flange	Steel	P275NL1 or 2 EN10028-3		A, A662
3A	DN 15 - 40 ($^3/_8$ - 1½ in.) – Bonnet, Insert	Steel	11SMn30 10087	Type 2, R 683-9	1213 SAE J403
3B	DN 50 - 65 (2 - 2½ in.) – Bonnet, Flange	Steel	P285QH+QT 10222-4		LF2 A350
4	Spindle DN 15 - 65 (¼ - 2½ in.)	Stainless steel	X8CrNiS 18-9, 17440	Type 17, 683/13	AISI 303
5	Cone	Steel			
7	Packing washer	Aluminium			
8	Packing gland	Stainless Steel	X8CrNiS 18-9, 10088	Type 17, 683/13	AISI 303
9	O-ring	Cloroprene (Neoprene)			
10	Spring loaded Teflon ring	PTFE			
11	O-ring	Cloroprene (Neoprene)			
12	Bolts	High temperature steel	42CrMo5 10269		A193
13	Gasket	Fiber, non asbestos			
14	Bottom insert	Steel			
17	Seal cap	Aluminium			
18	Gasket f. seal cap	Nylon			
19	Locking nut	Steel			
20	Screw	Steel			
21	Disk spring	Steel			
22	O-ring	Cloroprene (Neoprene)*			

*To be replaced in R717 Heat Pump and R1270 Propylene applications.

© Danfoss | DCS (ms) | 2020.05

Dimensions and weights

REG-SA and REG-SB 15 - 65 in angleway version



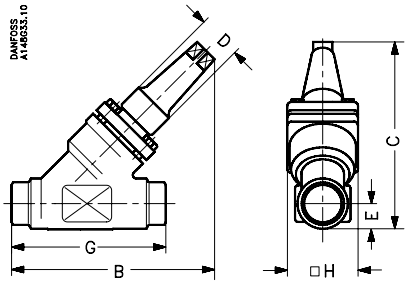
Valve size		C		G		∅D		□H		Weight
REG-SA/SB 15-20	mm	182		45		38		60		1.4 kg
REG-SA/SB (½-¾)	in.	7.17		1.77		1.50		2.36		3.1 lb
REG-SA/SB 25-40	mm	237		55		50		70		2.4 kg
REG-SA/SB (1-1½)	in.	9.33		2.17		1.97		2.76		5.3 lb
REG-SB 50	mm	315		60		50		77		3.2 kg
REG-SB (2 in.)	in.	12.4		2.36		1.97		3.03		7.1 lb
REG-SB 65	mm	335		70		50		90		4.8 kg
REG-SB (2½ in.)	in.	13.19		2.76		1.97		3.54		10.6 lb

Specified weights are approximate values only.

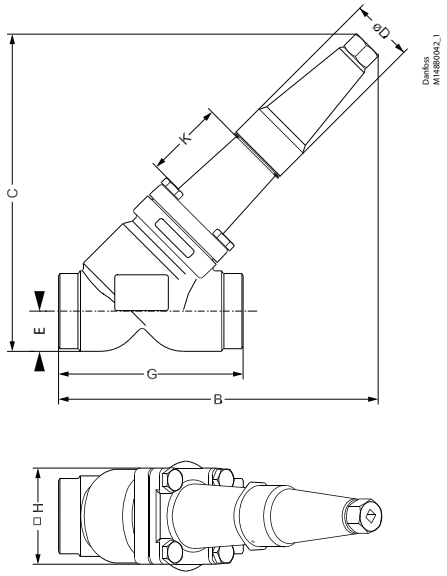
Dimensions and weights
(cont.)

REG-SA and REG-SB 15 - 65 in straightway version

REG-SA and REG-SB 15 - 40



REG-SB 50-65



Valve size		C	B	E	G		∅D		□H		Weight
REG-SA/SB 15-20	mm	145	155	20	120		38		60		2.0 kg
REG-SA/SB (½-$^{3}/_{4}$)	in.	5.71	6.10	0.79	4.72		1.50		2.36		4.4 lb
REG-SA/SB 25-40	mm	200	215	26	155		50		70		3.0 kg
REG-SA/SB (1-1½)	in.	7.87	8.46	1.02	6.10		1.97		2.76		6.6 lb
REG-SB 50	mm	257	250	32	148		50		77		4.2 kg
REG-SB (2 in.)	in.	10.12	10.20	1.26	5.83		1.97		3.03		9.3 lb
REG-SB 65	mm	280	284	40	176		50		90		6.3 kg
REG-SB (2½ in.)	in.	11.02	11.18	1.57	6.93		1.97		3.54		13.9 lb

Specified weights are approximate values only.

© Danfoss | DCS (ms) | 2020.05

Ordering from the entire SVL 65 bar (943 psi) series

Size [DN]	Parts Program														
	Housing								Top complete						
	ANG				STR				SVA-S (cap)	SVA-L (cap)	SCA-X	CHV-X	REG-SA	REG-SB	FIA
	DIN	ANSI	SD	SA	DIN	ANSI	SD	SA							
6	148B6689	148B6687	148B6722	148B6711	148B6693	148B6691	148B6743	148B6732	148B6695						
10	148B6690	148B6688	148B6723	148B6712	148B6694	148B6692	148B6744	148B6733					148B5761	148B5764	
15	148B6622	148B6612	148B6724	148B6713	148B6642	148B6632	148B6745	148B6734	148B6652	148B6659	148B5769	148B5776	148B5762	148B5765	148B5783
20	148B6623	148B6613	148B6725	148B6714	148B6643	148B6633	148B6746	148B6735	148B6652	148B6659	148B5769	148B5776	148B5762	148B5765	148B5783
25	148B6624	148B6614	148B6726	148B6715	148B6644	148B6634	148B6747	148B6736	148B6653	148B6660	148B5770	148B5777	148B5763	148B5766	148B5784
32	148B6625	148B6615	148B6727	148B6716	148B6645	148B6635	148B6748	148B6737	148B6653	148B6660	148B5770	148B5777	148B5763	148B5766	148B5784
40	148B6626	148B6616	148B6728	148B6717	148B6646	148B6636	148B6749	148B6738	148B6653	148B6660	148B5770	148B5777	148B5763	148B5766	148B5784
50	148B6627	148B6617	148B6718		148B6647	148B6637	148B6739		148B6654		148B5771	148B5778		148B5767	148B5785
65	148B6628	148B6618	148B6729	148B6719	148B6648	148B6638	148B6750	148B6740	148B6655		148B5772	148B5779		148B5768	148B5786
80	148B6629	148B6619	148B6730	148B6720	148B6649	148B6639	148B6751	148B6741	148B6656		148B5773	148B5780			148B5787
100	148B6630	148B6620	148B6731	148B6721	148B6650	148B6640	148B6752	148B6742	148B6657		148B5774	148B5781			148B5788
125	148B6631	148B6621			148B6651	148B6641			148B6658		148B5775	148B5782			148B5789
150															
200															

Size [DN]	Service kit*		Complete valve							
	O-ring kit for		SVA (cap)				FIA			
	R717 Heat Pump	R1270 Propylene	ANG		STR		ANG		STR	
			DIN	ANSI	DIN	ANSI	DIN	ANSI	DIN	ANSI
6				148B5033		148B5053				
10	148B6084	148B6085		148B5034		148B5054				
15	148B6070	148B6077		148B5035		148B5055				
20				148B5036		148B5056				
25	148B6071** 148B6096***	148B6078** 148B6097***		148B5037		148B5057				
32				148B5038		148B5058				
40				148B5039		148B5059				
50	148B6072	148B6079		148B5040		148B5060				
65	148B6073	148B6080		148B5041		148B5061				
80	148B6074	148B6081		148B5042		148B5062				
100	148B6075	148B6082		148B5043		148B5063				
125	148B6076	148B6083		148B5044		148B5064				
150			148B6665	148B6667	148B6666	148B6668	148B6669	148B6671	148B6670	148B6672
200			148B6673	148B6675	148B6674	148B6676	148B6677	148B6679	148B6678	148B6680

* to be used for SCA-X, CHV-X and REG SA/SB (all sizes)
** to be used for SCA-X, CHV-X, 25-40
*** to be used for REG SA/SB, 25-40

Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without subsequential changes being necessary in specifications already agreed.
All trademarks in this material are property of the respective companies. Danfoss and the Danfoss logotype are trademarks of Danfoss A/S. All rights reserved.