

Data sheet

# Shut-off valves, Type SVA-HL 15 (½ in.) - 150 (6 in.)



SVA are angleway and straightway shut-off valves which are designed to meet all industrial refrigeration application requirements.

The valves 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.

## Features

- Applicable to all common refrigerants including R 717 and non corrosive gases/ liquids dependent on sealing material compatibility.
- Accessories:
  - Heavy duty industrial hand wheel for frequent operation.
- Available in angleway and straightway versions with bonnet suitable for installation in normal 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 15 - 65 (½ - 2½ in.)Internal PTFE backseating
  - DN 80 - 150 (3 - 6 in.)
- Can accept flow in both directions.
- Material on housing and bonnet are in lowtemperature steel according to requirements of the Pressure Equipment Directive and other international classification authorities.
- Stainless steel packing gland with special teflon low temperature spindle seal.
- Stainless steel bolt.
- Pressure range:
  - Standard version
  - SVA-HL: 40 bar g (580 psi g)
- Temperature range:
  - Standard version
  - 60/+150°C (–76/+302°F)
- To get an updated list of certification on the products please contact your local Danfoss Sales Company.

**Design**

*Connections*

Available with the following connections:

- Butt-weld JIS (G 3454/3455 Schedule 80), - DN 15 - 40 (½ - 1½ in.)
- Butt-weld JIS (G 3454/3455 Schedule 40), - DN 50 - 150 (2 - 6 in.)

*Housing*

Made of special, cold resistant steel approved for low temperature operations.

*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. A teflon tightening ring provides perfect sealing at a minimum closing momentum.

*Spindle*

Made of polished stainless steel.

*Packing gland*

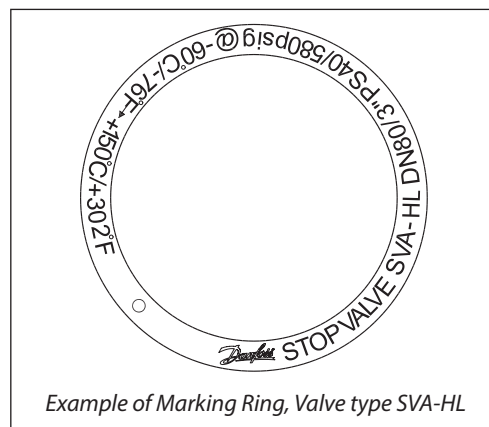
This comprises a threaded bush equipped with teflon wear rings to prevent damage of the spindle surface. In addition, a scraper ring is mounted to prevent dirt and ice to penetrate into the packing gland. The sealing consists of conical shaped teflon rings supported by metal bushings and ensures a perfect tightness in the range: -60°C/+150°C (-76°F/+302°F).

For further details / restrictions - see Installation Instruction.

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 kv-value (Cv-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-HL.



*Installation*

**Technical data**

- Refrigerants  
Applicable to all common non flammable refrigerants including R 717 and non corrosive gases/liquids dependent on sealing material compatibility.

For further information please see installation instruction for SVA-HL.

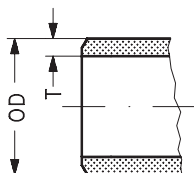
Flammable hydrocarbons are not recommended. For further information please contact your local Danfoss Sales Company.

- Temperature range  
-60/+150°C (-76/+302°F).
- Pressure range  
The valves are designed for max. working\*pressure 40 bar g (580 psi g).

**Connections**

Size mm	Size in.	OD mm	T mm	OD in.	T in.			kv-angle m <sup>2</sup> /h	kv-straight m <sup>2</sup> /h	Cv-angle USgal/min	Cv-straight USgal/min
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**JIS**



*Butt-weld JIS (G 3454 / 3455 Schedule 80)*

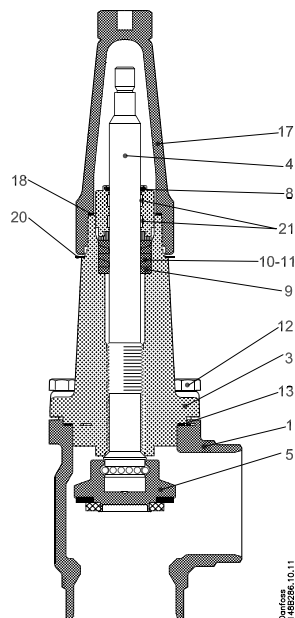
15	½	21.3	3.7	0.839	0.146			7.0	4.9	8.1	5.7
20	¾	26.9	4.0	1.059	0.158			14.6	10.2	16.9	11.8
25	1	33.7	4.6	1.327	0.181			24.8	17.4	28.8	20.2
32	1¼	42.4	4.9	1.669	0.193			42.6	29.8	49.4	34.6
40	1½	48.3	5.1	1.902	0.201			45.2	31.6	52.4	36.7

*Butt-weld JIS (G 3454 / 3455 Schedule 40)*

50	2	60.3	3.9	2.37	0.15			80	65	93	76
65	2½	76.3	5.2	3.00	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

**Material specification**

SVA-HL 15 - 65 (½ - 2½ in.)

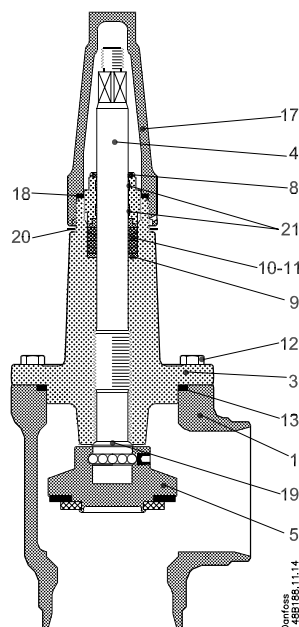


**SVA-HL**

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	X2CrNiMo17-12-2 10088		AISI 316
5	Cone Cone seal	Steel 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	Washer	Cast iron			
10-11	Seal ring	PTFE			
12	Bolts	Stainless steel	A2-70	A2-70	Type 308
13	Gasket	Fiber, Non-asbestos			
14	Hand wheel	Steel			
15	Washer	Stainless steel			
16	Screw/Nut	Stainless steel			
17	Cap	Aluminium			
18	Gasket for cap	Nylon (PA6)			
20	Identification ring	Stainless steel			
21	Wear ring	PTFE (Teflon)			

**Material specification**

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

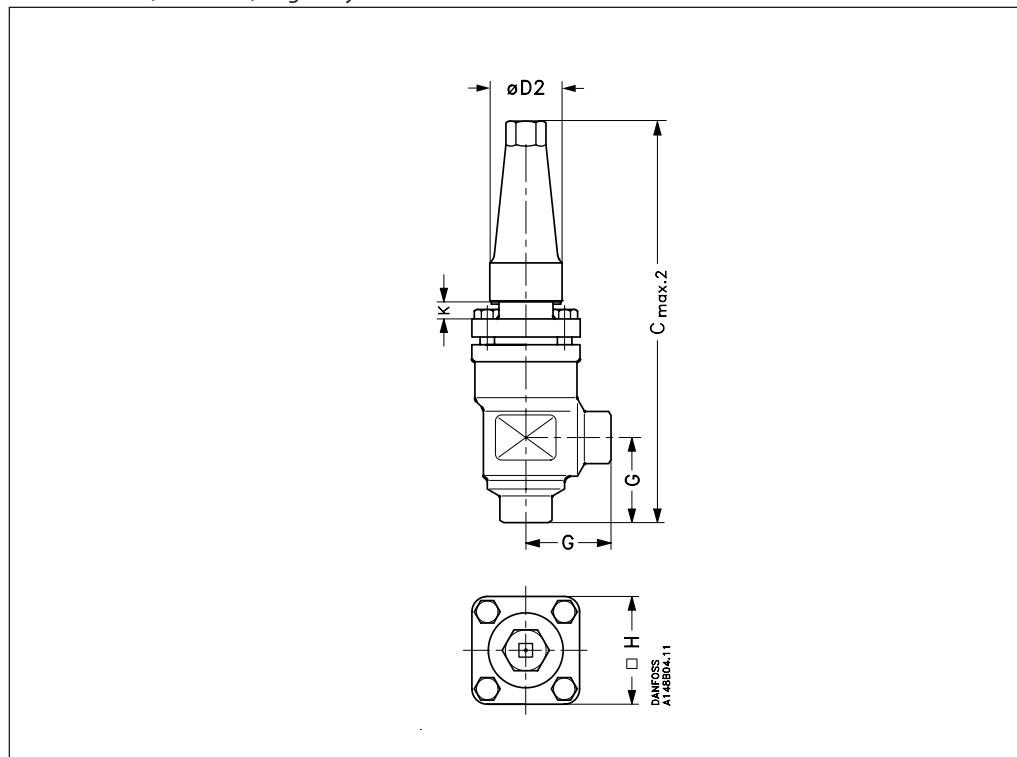


**SVA-HL**

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	X2CrNiMo17-12-2 10088		AISI 316
5	Cone Cone seal	Steel PTFE	115Mn30 10087	Type 2, R 683/9	AISI 1213
8	Packing gland	Stainless steel	X8CrNiS18-9 10088	Type 17 R 683/13	AISI 303
9	Washer	Cast iron			
10-11	Seal ring	PTFE			
12	Bolts	Stainless steel	A2-70	A2-70	Type 308
13	Gasket	Fiber, Non-asbestos			
14	Hand wheel	Steel			
15	Washer	Stainless steel			
16	Screw/Nut	Stainless steel			
17	Cap	Aluminium			
18	Gasket for cap	Nylon (PA6)			
19	Internal soft backseating	PTFE			
20	Identification ring	Stainless steel			
21	Wear ring	PTFE			

Dimensions and weights

SVA-HL 15 - 40 (½ - 1½ in.) angleway version with hand wheel

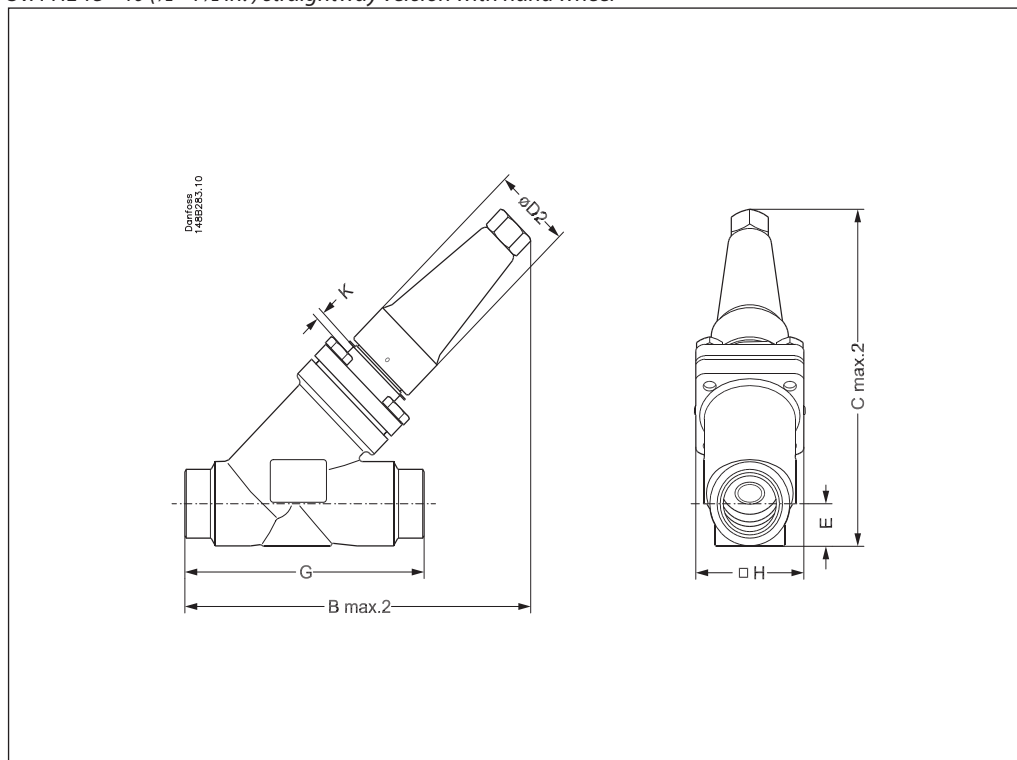


Valve size	K	C <sub>max.1</sub>	G	∅D <sub>1</sub>	∅H	Weight
<b>SVA-HL</b>						
SVA 15 - 20	mm 63	237	248	45	60	1.4 kg
SVA (½ - ¾)	in. 2.48	9.33	9.76	1.77	2.36	3.1 lb
SVA 25 - 40	mm 74	296	330	55	80	2.4 kg
SVA (1 - 1½)	in. 2.91	11.65	12.99	2.17	3.15	5.3 lb

Specified weights are approximate values only.

Dimensions and weights

SVA-HL 15 - 40 (½ - 1½ in.) straightway version with hand wheel

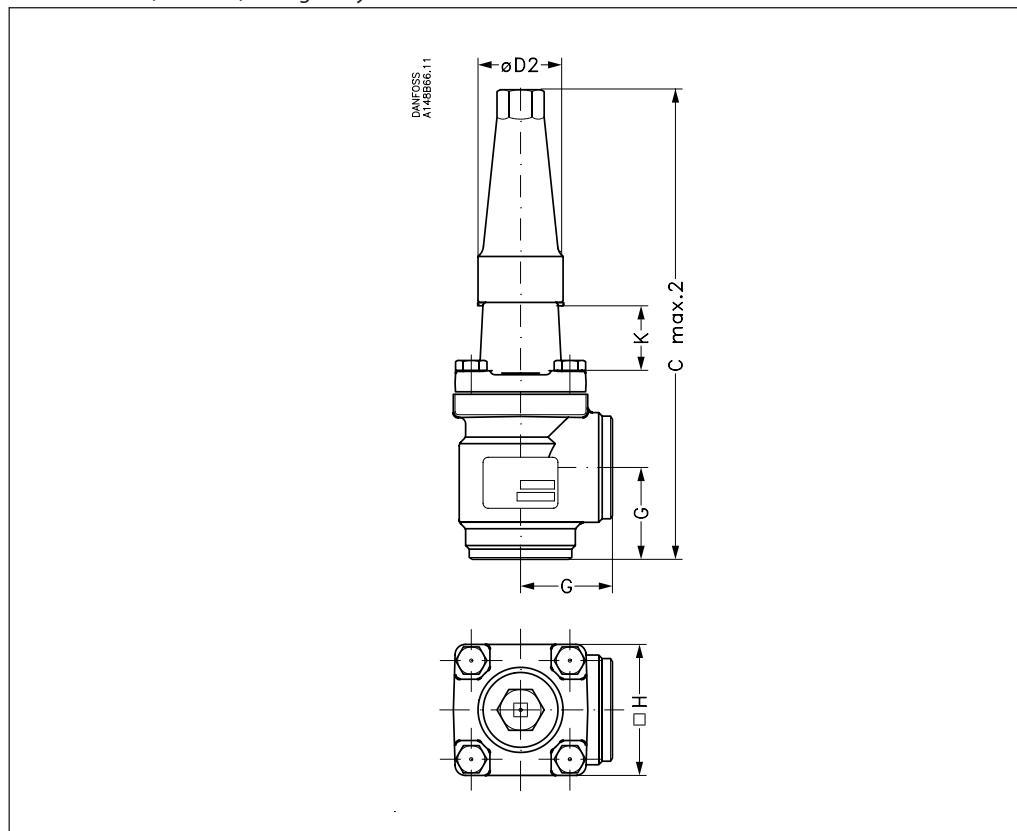


Valve size	K	C <sub>max.1</sub>	B <sub>max.1</sub>	E	G	ØD <sub>1</sub>	H	Weight			
<b>SVA-HL</b>											
SVA 15 - 20 mm	63	188	184	202	198	20	120	60	38	60	2.0 kg
SVA (½ - ¾) in.	2.48	7.40	7.24	7.95	7.80	0.79	4.72	2.36	1.50	2.36	4.4 lb
SVA 25 - 40 mm	74	243	252	256	265	26	155	80	50	70	3.0 kg
SVA (1 - 1½) in.	2.91	9.57	9.92	10.08	10.43	1.02	6.10	3.15	1.97	2.76	6.6 lb

Specified weights are approximate values only.

Dimensions and weights

SVA-HL 50 - 65 (2 - 2½ in.) in angleway version with hand wheel

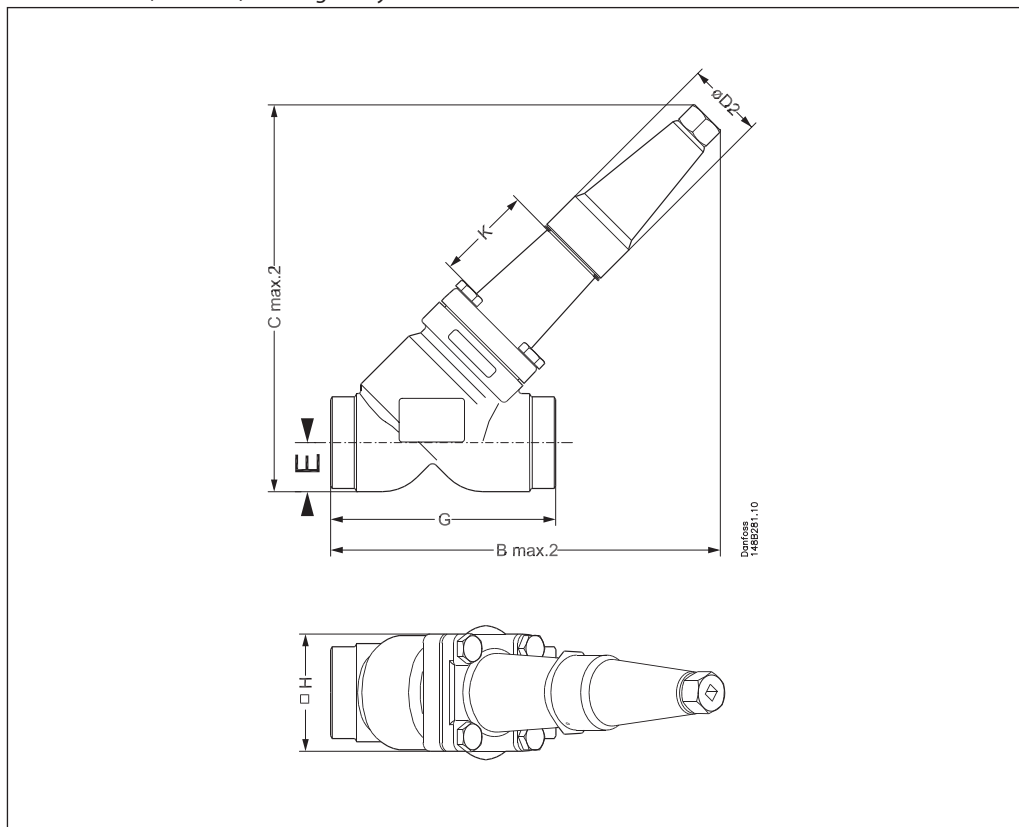


Valve size		K	C <sub>max.1</sub>		G	∅D <sub>1</sub>		□H		Weight
<b>SVA-HL</b>										
SVA 50	mm	70	284	315	60	100	50	77		3.2 kg
SVA (2)	in.	2.76	11.18	12.40	2.36	3.94	1.97	3.03		7.1 lb
SVA 65	mm	70	310	335	70	100	50	90		4.8 kg
SVA (2½)	in.	2.76	12.20	13.19	2.76	3.94	1.97	3.54		10.6 lb

Specified weights are approximate values only.

Dimensions and weights

SVA-HL 50 - 65 (2 - 2½ in.) in straightway version with hand wheel



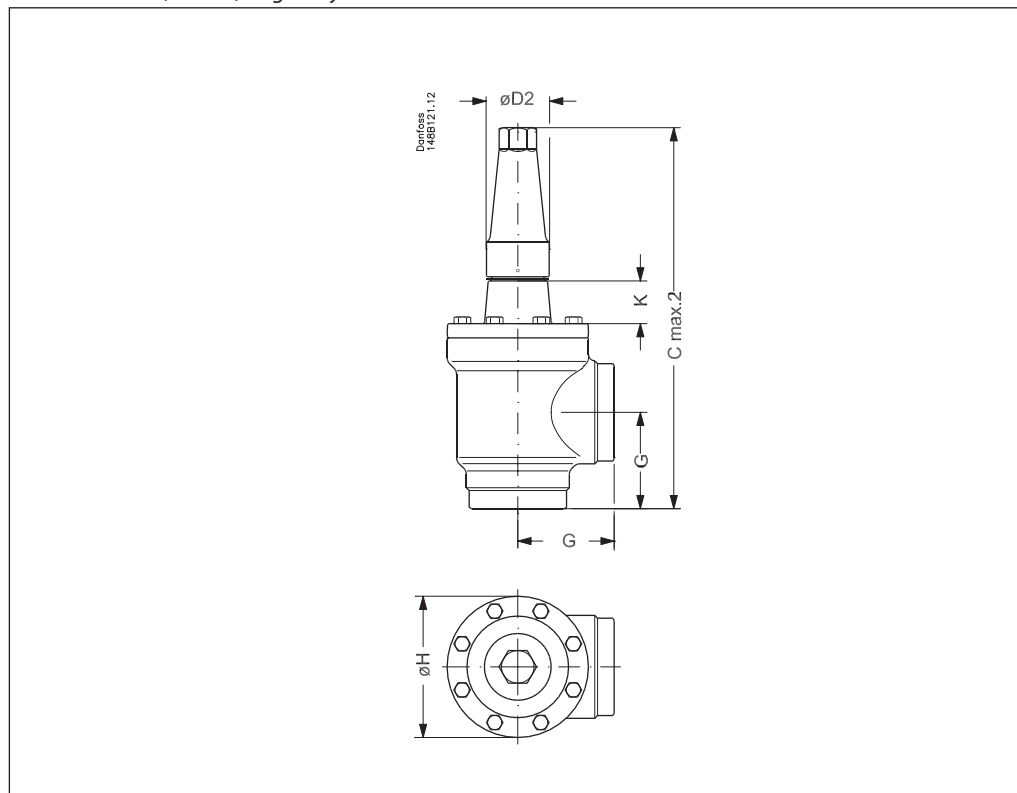
Valve size		K	B <sub>max.1</sub>		C <sub>max.1</sub>		E	G	ØD <sub>1</sub>		□H	Weight
<b>SVA-HL</b>												
SVA 50	mm	70	259	259	257	257	32	148	100	50	77	4.2 kg
SVA (2)	in.	2.76	10.20	10.20	10.12	10.12	1.26	5.83	3.94	1.97	3.03	9.3 lb
SVA 65	mm	70	284	280	284	280	40	176	100	50	90	6.3 kg
SVA (2½)	in.	2.76	11.18	11.02	11.18	11.02	1.57	6.93	3.94	1.97	3.54	13.9 lb

Specified weights are approximate values only.



Dimensions and weights

SVA-HL 80 - 150 (3 - 6 in.) angleway version with hand wheel

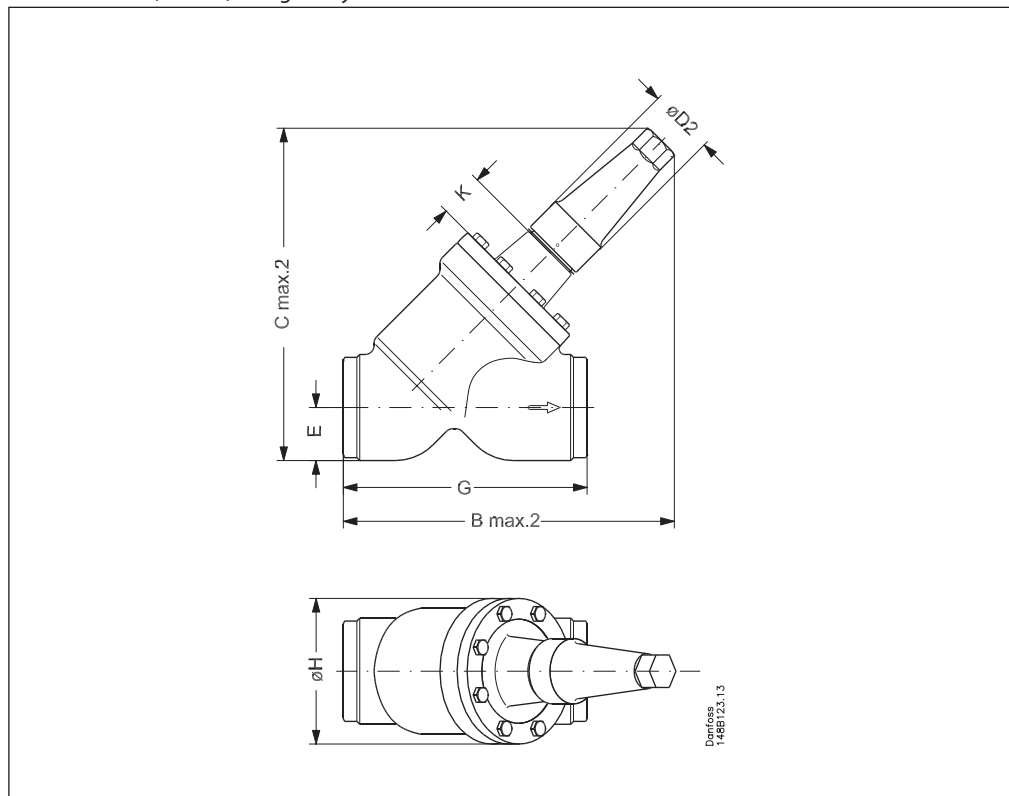


Valve size		K		$C_{\text{max.1}}$			G	$\varnothing D_1$		$\varnothing H$	Weight
<b>SVA-HL</b>											
SVA 80	mm	76		373	388		90	200	58	129	9.7 kg
SVA (3)	in.	3.00		14.69	15.28		3.54	7.87	2.28	5.08	21.4 lb
SVA 100	mm	90		432	437		106	250	58	156	15.3 kg
SVA (4)	in.	3.54		17.00	17.20		4.17	9.84	2.28	6.14	33.7 lb
SVA 125	mm	90		517	533		128	315	74	193	28.1 kg
SVA (5)	in.	3.54		20.35	20.98		5.04	12.40	2.91	7.60	61.9 lb
SVA 150	mm	90		564	568		145	315	74	219	39.7 kg
SVA (6)	in.	3.54		22.20	22.36		5.71	12.40	2.91	8.62	87.5 lb

Specified weights are approximate values only.

Dimensions and weights

SVA-HL 80 - 150 (3 - 6 in.) straightway version with hand wheel



Valve size		K	B <sub>max.1</sub>		C <sub>max.1</sub>		E	G	ØD <sub>1</sub>		ØH	Weight
<b>SVA-HL</b>												
SVA 80	mm	76	365	321	367	322	48	216	200	58	129	10.9 kg
SVA (3)	in.	3.00	14.37	12.64	14.45	12.72	1.89	8.50	7.87	2.28	5.08	24.0 lb
SVA 100	mm	90	435	367	443	375	60	264	250	58	156	18.2 kg
SVA (4)	in.	3.54	17.13	14.45	17.44	14.76	2.36	10.39	9.84	2.28	6.14	40.1 lb
SVA 125	mm	90	526	444	538	456	74	322	315	74	193	32.8 kg
SVA (5)	in.	3.54	20.71	17.48	21.18	17.95	2.91	12.68	12.40	2.91	7.60	72.3 lb
SVA 150	mm	90	572	483	594	505	91	370	315	74	219	60.0 kg
SVA (6)	in.	3.54	22.52	19.02	23.39	19.88	3.58	14.57	12.40	2.91	8.62	132.3 lb

Specified weights are approximate values only.

**Ordering**

Please note that the type codes only serve to identify the valves, some of which may not form part of the standard product range. For further information please contact your local Danfoss Sales Company.

*Type codes*

Valve type	SVA-HL	Shut-off valve
Nominal size in mm		Available connections
(valve size measured on the connection diameter)		JIS
	<b>15</b>	DN 15 (½) x
	<b>20</b>	DN 20 (¾) x
	<b>25</b>	DN 25 (1) x
	<b>32</b>	DN 32 (1¼) x
	<b>40</b>	DN 40 (1½) x
	<b>50</b>	DN 50 (2) x
	<b>65</b>	DN 65 (2½) x
	<b>80</b>	DN 80 (3) x
	<b>100</b>	DN 100 (4) x
	<b>125</b>	DN 125 (5) x
	<b>150</b>	DN 150 (6) x
Connections	<b>JIS</b>	Butt-weld connection: JIS G3454/3455 schedule 80, DN 15 - 40 (½ - 1½ in.) Butt-weld connection: JIS G3454/3455 schedule 40, DN 50 - 150 (2 - 6 in.)
Valve housing	<b>ANG</b> <b>STR</b>	Angle flow Straight flow
Other equipment	<b>CAP</b>	Cap

**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.

The table below is used to identify the valve required.

TYPE	Code No.
SVA-HL 15 JIS ANG STOP VALVE CAP	<b>148B4585</b>
SVA-HL 15 JIS STR STOP VALVE CAP	<b>148B4586</b>
SVA-HL 20 JIS ANG STOP VALVE CAP	<b>148B4587</b>
SVA-HL 20 JIS STR STOP VALVE CAP	<b>148B4588</b>
SVA-HL 25 JIS ANG STOP VALVE CAP	<b>148B4589</b>
SVA-HL 25 JIS STR STOP VALVE CAP	<b>148B4590</b>
SVA-HL 32 JIS ANG STOP VALVE CAP	<b>148B4591</b>
SVA-HL 32 JIS STR STOP VALVE CAP	<b>148B4592</b>
SVA-HL 40 JIS ANG STOP VALVE CAP	<b>148B4593</b>
SVA-HL 40 JIS STR STOP VALVE CAP	<b>148B4594</b>
SVA-HL 50 JIS ANG STOP VALVE CAP	<b>148B4584</b>
SVA-HL 50 JIS STR STOP VALVE CAP	<b>148B4595</b>
SVA-HL 65 JIS ANG STOP VALVE CAP	<b>148B4596</b>
SVA-HL 65 A STR STOP VALVE CAP	<b>148B4597</b>
SVA-HL 80 A STR STOP VALVE CAP	<b>148B4598</b>
SVA-HL 100 A ANG STOP VALVE CAP	<b>148B4599</b>

Example:  
SVA-HL 20 JIS angleway  
with cap = **148B4587**

**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.

JIS = Butt-weld JIS

ANG = Angle-way

STR = Straight-way

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