

Data Sheet

Gauge valve Type **SNV-ST** and **SNV-SS**

For servicing of heavy-duty industrial refrigeration applications



SNV stop gauge are designed as service valves with a very sturdy construction. SNV-ST are made in steel approved for low temperature operations, SVA-SS are stainless steel versions.

SNV valves have internal backseating (metal to metal), enabling the spindle seal to be replaced while the valve is still under pressure.

SNV-ST and SNV-SS are available in standard branch length configuration as well as extended branch configuration, with extension length versions from 50 to 150 mm.

Features

- Applicable to HCFC, non flammable HFC, R717 (Ammonia), R744 (CO₂) and hydrocarbons
- Suitable for "heavy duty" industrial applications including high pressures and wide temperature range
- The SNV-ST and SNV-SS valves have backseating (metal to metal)
- Compact and light valve for easy handling and installation
- No special flow direction required
- Provide high flow characteristics
- Each valve type is clearly marked with type and size
- Housing and bonnet material is low temperature steel (stainless steel for SNV-SS) according to requirements of the Pressure Equipment Directive and other international classification authorities
- Valve safety is enhanced with the spindle being secured such that it cannot be unscrewed
- Standard versions available with Max. operating pressure ranges:
 - 52 bar g / 754 psig Valves
 - 65 bar g / 943 psig Valves
- Full temperature range:
 - -60 – 150 °C (200°C) / -76 – 302 °F (392°F)
- Classification: DNV, CRN, BV, EAC etc.

Portfolio overview

SNV-ST and SNV-SS offers numerous configurations and connections as well as versions for high-pressure applications, as shown in table.

Versions with different properties may be produced to order. Contact Danfoss for further information about made to order products.

Figure 1: SNV-ST



Figure 2: SNV-SS



Table 1: SNV-ST and SNV-SS options

Description	SNV-ST	SNV-SS
Configuration	Standard Extended branch	Standard Extended branch
Valve body/connection material	Steel	Stainless steel
Equipment	Cap Handwheel	Cap
Connection standard	ANSI/ASME B1.20.1 DIN 3861 DIN 3901 EN 10220 ISO 228-1 ISO 7-1	ANSI/ASME B1.20.1 EN 10220 ISO 228-1
Bottom branch connection type	Butt weld Cutting ring G NPT R	Butt weld G NPT
Side branch connection type	Cutting ring G NPT Rc UNF	G NPT
Special connections	Manometer connection	Manometer connection
Max working pressure [bar]	52 bar 65 bar	52 bar 65 bar
Max working pressure [psig]	754 psig 943 psig	754 psig 943 psig
Packing format	Multi pack Industrial pack	Multi pack Industrial pack

NOTE:

Not all combinations are possible. For an overview over standard code number properties, refer to [Ordering](#) chapter.

Media

Refrigerants

SNV-ST and SNV-SS valves are currently authorized by Danfoss for use with more than 70 R-numbers HCFC, non-flammable HFC, Ammonia, CO₂ and hydrocarbons.

New refrigerants

Danfoss products are continually evaluated for use with new refrigerants depending on market requirements.

When a refrigerant is approved for use by Danfoss, it is added to the relevant portfolio, and the R number of the refrigerant (e.g. R513A) will be added to the technical data of the code number. Therefore, products for specific refrigerants are best checked at store.danfoss.com/en/, or by contacting your local Danfoss representative.

Product specification

Pressure and temperature

Table 2: Pressure and temperature data

Temperature range	-60 °C – 150 °C / -76 °F – 302 °F
Maximum working pressure	Standard versions available with Max. operating pressure ranges: 52 bar / 754 psig Valves 65 bar / 943 psig Valves

Design

Housing

Made of special steel, approved for low temperature operations

Spindle

Equipped with stainless steel spindle, which is ideal for O-ring sealing

Material specification

Table 3: SNV-ST and SNV-SS

SNV-ST	SNV-ST and SNV-SS (extended branch)

Table 4: Material specification according to standards

No.	Part	Material	EN	JIS	ASTM
1	Housing	Steel	P285QH EN 10222-4	SFL 2 G 3205	LF2
		Stainless steel (SNV-SS)	X5CrNi18-10, 10088		A350
2	Spindle	Stainless steel	X8CrNiS 18-9 EN 10088 DIN 17440 (SNV-SS only)	SUS 303	AISI 304
3	Locking ring	Steel			
4	Sealing ring	Teflon			
5	Seal cap gasket	Nylon			
6	Gland nut	Steel			
7	Seal cap	Steel			

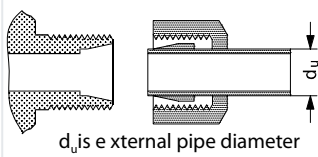
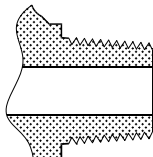
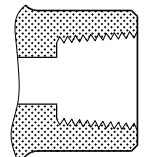
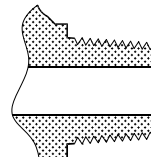
Connections

Available with the following connections:

- CD Cutting ring
- MPT Male NPT thread (ANSI/ASME B1.20.1)
- FPT Female NPT thread (ANSI/ASME B1.20.1)
- R Male thread (ISO 7-1)
- Rc Female thread (ISO 7-1)
- G thread
- W Welding connection

For more details refer to [Ordering](#) chapter.

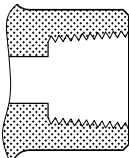
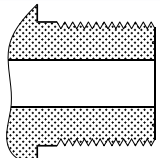
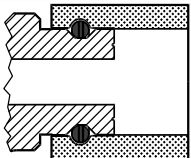
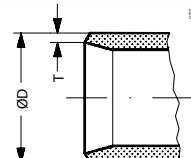
Table 5: Connections

CD 6 CD10	1/4 MPT 3/8 MPT	1/4 FPT 3/8 FPT	1/4 R 3/8 R
 <p>d_u is external pipe diameter</p>			
Cutting ring, DIN 3861 & DIN 3901 class $L, d_u = 6$ mm Cutting ring, DIN 3861 & DIN 3901 class $L, d_u = 10$ mm	1/4 inch male NPT ANSI/ASME B1.20.1 3/8 inch male NPT ANSI/ASME B1.20.1	1/4 inch female NPT ANSI/ASME B1.20.1 3/8 inch female NPT ANSI/ASME B1.20.1	1/4 inch male ISO 7-1 3/8 inch male ISO 7-1

NOTE:

Fittings not included

Table 6: Connections

1/4 RC 3/8 RC	G 1/2		W
			
1/4 inch female ISO 7-1 3/8 inch female ISO 7-1	G 1/2 inch		1/2 inch welding connection $D = 21.3$ mm / 0.839 in $T = 2.3$ mm / 0.091 in.

Installation

No special flow direction is required. The valve is designed to withstand 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.

For further information refer to installation guide for SNV-ST and SNV-SS.

Dimensions and weights

Figure 3: SNV-ST

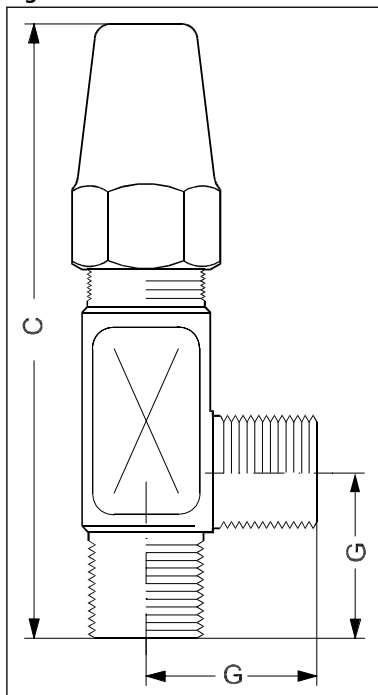


Figure 4: SNV-ST (Manometer)

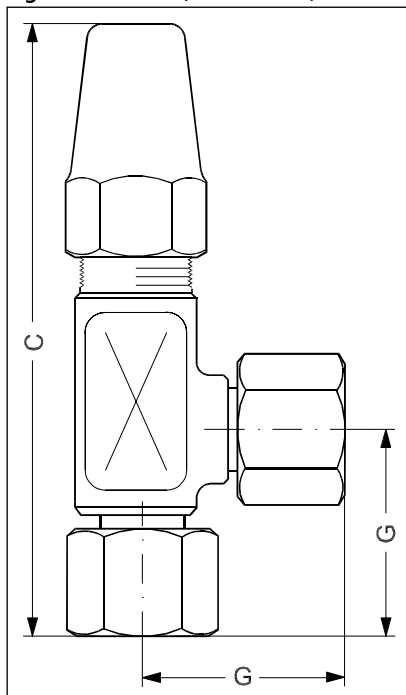
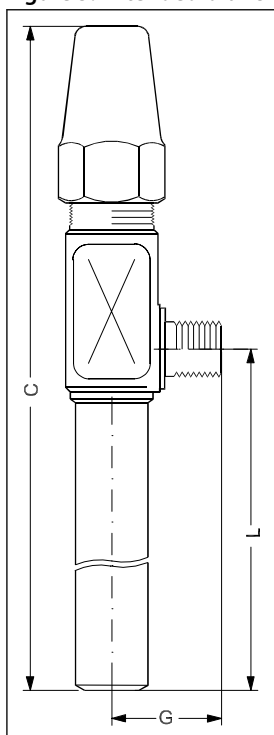


Table 7: SNV-ST Standard versions

Type	Size	C	G	Weight
SNV-ST	mm	115	32	0.36 kg
	in.	4.53	1.26	0.79 lb
SNV-ST (Manometer)	mm	127	45	0.56 kg
	in.	5.00	1.77	1.22 lb

Figure 5: Extended branch



Gauge valve, type SNV-ST and SNV-SS

Table 8: Extended branch versions

Type	Size	C	G	L	Weight
SNV-ST, SNV-SS	mm	131	32	50	0.60 kg
	in.	5.16	1.26	1.97	1.32 lb
SNV-ST	mm	181	32	100	0.60 kg
	in.	7.13	1.26	3.94	1.32 lb
	mm	206	32	125	0.60 kg
	in.	8.11	1.26	4.92	1.32 lb
SNV-SS	mm	231	32	150	0.60 kg
	in.	9.09	1.26	5.91	1.32 lb

NOTE:

Specified weights are nominal, and may differ depending on actual configuration of the code number.

Ordering

SNV Steel

Table 9: SNV-ST to ANSI/ASME B1.20.1, Standard branch, 52 bar MWP

Type	Spec. key	Bottom branch	Side branch	Equipment	Pack format	Qty/pack	Code no.
SNV-ST	SNV-ST CD6-1/4MPT	1/4 NPT ext	Cutting ring 6 mm	Cap	Multi pack	12 pc	148B3742
SNV-ST	SNV-ST CD6-3/8MPT	3/8 NPT ext	Cutting ring 6 mm	Cap	Multi pack	12 pc	148B3744
SNV-ST	SNV-ST CD6-1/4MPT	1/4 NPT ext	Cutting ring 6 mm	Handwheel	Industrial pack	30 pc	148B4216
SNV-ST	SNV-ST CD10-1/4MPT	1/4 NPT ext	Cutting ring 10 mm	Cap	Multi pack	12 pc	148B3741
SNV-ST	SNV-ST CD10-3/8MPT	3/8 NPT ext	Cutting ring 10 mm	Cap	Multi pack	12 pc	148B3743
SNV-ST	SNV-ST 7/16UNF-1/4MPT	1/4 NPT ext	7/16 UNF ext	Cap	Industrial pack	30 pc	148B4230
SNV-ST	SNV-ST 7/16UNF-1/4MPT	1/4 NPT ext	7/16 UNF ext	Cap	Multi pack	12 pc	148B4566
SNV-ST	SNV-ST 3/8FPT-3/8MPT	3/8 NPT ext	3/8 NPT int	Cap	Multi pack	12 pc	148B3747
SNV-ST	SNV-ST 3/8FPT-3/8MPT	3/8 NPT ext	3/8 NPT int	Cap	Industrial pack	30 pc	148B4181
SNV-ST	SNV-ST 3/8FPT-3/8FPT	3/8 NPT int	3/8 NPT int	Cap	Industrial pack	30 pc	148B4225
SNV-ST	SNV-ST 3/8FPT-1/2MPT	1/2 NPT ext	3/8 NPT int	Cap	Industrial pack	30 pc	148B4233
SNV-ST	SNV-ST 3/8FPT-1/2MPT	1/2 NPT ext	3/8 NPT int	Cap	Multi pack	12 pc	148B4565
SNV-ST	SNV-ST 3/8FPT-3/8FPT	3/8 NPT int	3/8 NPT int	Cap	Multi pack	12 pc	148B4572
SNV-ST	SNV-ST 1/4FPT-1/4MPT	1/4 NPT ext	1/4 NPT int	Cap	Multi pack	12 pc	148B3746
SNV-ST	SNV-ST 1/4FPT-1/4MPT	1/4 NPT ext	1/4 NPT int	Cap	Industrial pack	30 pc	148B4180
SNV-ST	SNV-ST 1/4FPT-1/4FPT	1/4 NPT int	1/4 NPT int	Cap	Multi pack	12 pc	148B4568
SNV-ST	SNV-ST 1/4FPT-1/4MPT	1/4 NPT ext	1/4 NPT int	Cap, Adapter for ICS	Multi pack	6 pc	148B4772
SNV-ST	SNV-ST 1/2MPT-1/2MPT	1/2 NPT ext	1/2 NPT ext	Cap	Industrial pack	30 pc	148B4224
SNV-ST	SNV-ST 1/2MPT-3/8FPT	3/8 NPT int	1/2 NPT ext	Cap	Industrial pack	30 pc	148B4226
SNV-ST	SNV-ST 1/2MPT-1/2MPT	1/2 NPT ext	1/2 NPT ext	Cap	Multi pack	12 pc	148B4564

Table 10: SNV-ST to ANSI/ASME B1.20.1, Extended branch, 52 bar MWP

Type	Spec. Key	Bottom branch	Bottom branch length	Side branch	Equipment	Packing format	Qty/pack	Code no.
SNV-ST	SNV-ST 1/4FPT-1/4MPT L100	1/4 NPT ext	100 mm / 4 in	1/4 NPT int	Cap	Industrial pack	20 pc	148B4232
SNV-ST	SNV-ST 1/4FPT-1/4MPT L100	1/4 NPT ext	100 mm / 4 in	1/4 NPT int	Cap	Multi pack	6 pc	148B4567
SNV-ST	SNV-ST 1/4FPT-W1/2 L100	Butt weld 1/2 in	100 mm / 4 in	1/4 NPT int	Handwheel	Industrial pack	30 pc	148B4408
SNV-ST	SNV-ST 1/4FPT-W1/2 L100	Butt weld 1/2 in ext	100 mm / 4 in	1/4 NPT int	Cap	Industrial pack	20 pc	148B4495

Table 11: SNV-ST to EN 10220, Extended branch, 52 bar MWP

Type	Spec. Key	Bottom branch	Bottom branch length	Side branch	Equipment	Packing format	Qty/pack	Code no.
SNV-ST	SNV-ST G1/2-W1/2 L50	Butt weld 1/2 in	50 mm / 2 in	G 1/2A	Cap	Industrial pack	30 pc	148B4218
SNV-ST	SNV-ST G1/2-W1/2 L50	Butt weld 1/2 in	50 mm / 2 in	G 1/2A	Cap	Multi pack	12 pc	148B4570
SNV-ST	SNV-ST G1/2-W1/2 L100	Butt weld 1/2 in	100 mm / 4 in	G 1/2A	Cap	Multi pack	6 pc	148B3769
SNV-ST	SNV-ST G1/2-W1/2 L100	Butt weld 1/2 in	100 mm / 4 in	G 1/2A	Cap	Industrial pack	30 pc	148B4211
SNV-ST	SNV-ST G1/2-W1/2 L125	Butt weld 1/2 in	125 mm / 5 in	G 1/2A	Cap	Industrial pack	30 pc	148B4219

Table 12: SNV-ST to DIN 3861, Standard & extended branch, 52 bar MWP

Type	Spec. Key	Bottom branch	Bottom branch length	Side branch	Equipment	Packing format	Qty/pack	Code no.
SNV-ST	SNV-ST CD10-W1/2 L100	Butt weld 1/2 in	100 mm / 4 in	Cutting ring 10 mm	Cap	Multi pack	6 pc	148B3768
SNV-ST	SNV-ST CD10-W1/2 L100	Butt weld 1/2 in	100 mm / 4 in	Cutting ring 10 mm	Cap	Industrial pack	30 pc	148B4210
SNV-ST	SNV-ST CD10-CD10	Cutting ring 10 mm	Standard	Cutting ring 10 mm	Cap	Multi pack	12 pc	148B3740
SNV-ST	SNV-ST CD10-CD10	Cutting ring 10 mm	Standard	Cutting ring 10 mm	Cap	Industrial pack	30 pc	148B4177

Table 13: SNV-ST to ISO 228-1, Standard, 52 bar MWP

Type	Spec. Key	Bottom branch	Bottom branch length	Side branch	Equipment	Packing format	Qty/pack	Code no.
SNV-ST	SNV-ST G1/2-G1/2	G 1/2A	Standard	G 1/2A	Cap	Multi pack	12 pc	148B3745
SNV-ST	SNV-ST G1/2 MAN	G 1/2A	Standard	G 1/2A	Cap Manometer conn.	Multi pack	6 pc	148B3778

Gauge valve, type SNV-ST and SNV-SS

Table 14: SNV-ST to ISO 7-1, Standard branch, 52 bar MWP

Type	Spec. Key	Bottom branch	Side branch	Equipment	Packing format	Qty/pack	Code no.
SNV-ST	SNV-ST Rc $\frac{3}{8}$ -R $\frac{3}{8}$	R $\frac{3}{8}$ ext	Rc $\frac{3}{8}$ int	Cap	Industrial pack	30 pc	148B4227
SNV-ST	SNV-ST Rc $\frac{1}{4}$ -R $\frac{3}{8}$	R $\frac{3}{8}$ ext	Rc $\frac{1}{4}$ int	Cap	Industrial pack	30 pc	148B4228
SNV-ST	SNV-ST Rc $\frac{1}{4}$ -R $\frac{1}{4}$	R $\frac{1}{4}$ ext	Rc $\frac{1}{4}$ int	Cap	Industrial pack	30 pc	148B4229

Table 15: SNV-ST to DIN 3901, Standard & extended branch, 65 bar MWP

Type	Spec. Key	Bottom branch	Bottom branch length	Side branch	Equipment	Packing format	Qty/pack	Code no.
SNV-ST	SNV-ST CD10-CD10 65 bar	Cutting ring 10 mm	Standard	Cutting ring 10 mm	Cap	Multi pack	12 pc	148B6400
SNV-ST	SNV-ST CD10-W $\frac{1}{2}$ L100	Butt weld 1/2 in	100 mm / 4 in	Cutting ring 10 mm	Cap	Industrial pack	30 pc	148B4723

SNV Stainless steel

Table 16: SNV-SS to ANSI/ASME B1.20.1, Standard branch, 52 bar MWP

Type	Spec. Key	Bottom branch	Side branch	Equipment	Packing format	Qty/pack	Code no.
SNV-SS	SNV-SS $\frac{3}{8}$ FPT- $\frac{3}{8}$ MPT	$\frac{3}{8}$ NPT ext	$\frac{3}{8}$ NPT int	Cap	Multi pack	6 pc	148B3750
SNV-SS	SNV-SS $\frac{1}{4}$ FPT- $\frac{1}{4}$ MPT	$\frac{1}{4}$ NPT ext	$\frac{1}{4}$ NPT int	Cap	Multi pack	6 pc	148B4771

Table 17: SNV-SS to EN 10220, Extended branch, 65 bar MWP

Type	Spec. Key	Bottom branch	Bottom branch length	Side branch	Equipment	Packing format	Qty/pack	Code no.
SNV-SS	SNV-SS G $\frac{1}{2}$ -W $\frac{1}{2}$ L50 65 bar	Butt weld 1/2 in	50 mm / 2 in	G $\frac{1}{2}$ A	Cap	Multi pack	6 pc	148B4581
SNV-SS	SNV-SS G $\frac{1}{2}$ -W $\frac{1}{2}$ L150 65 bar	Butt weld 1/2 in	150 mm / 6 in	G $\frac{1}{2}$ A	Cap	Multi pack	12 pc	148B4582
SNV-SS	SNV-SS G $\frac{1}{2}$ -W $\frac{1}{2}$ L50 65 bar	Butt weld 1/2 in	50 mm / 2 in	G $\frac{1}{2}$ A	Cap	Multi pack	30 pc	148B4584
SNV-SS	SNV-SS G $\frac{1}{2}$ -W $\frac{1}{2}$ L50 65 bar	Butt weld 1/2 in	150 mm / 6 in	G $\frac{1}{2}$ A	Cap	Multi pack	30 pc	148B4585

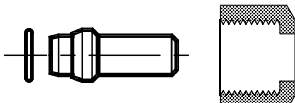
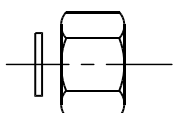
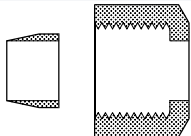
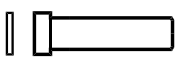
Table 18: SNV-SS to ISO 228-1, Standard branch, 52 bar MWP

Type	Spec. Key	Bottom branch	Side branch	Equipment	Packing format	Qty/pack	Code no.
SNV-SS	SNV-SS G $\frac{1}{2}$ MAN	G $\frac{1}{2}$ A	G $\frac{1}{2}$ A	Cap Manometer conn	Multi pack	6 pc	148B6545

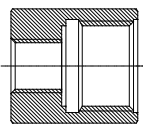
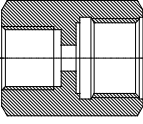
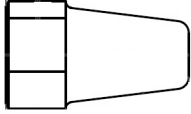
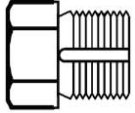
Pack size definitions

- Single pack contains 1 item
- Multipack contains several items, individually packed. Each individual package includes all relevant documentation
- Industrial pack contains several items that are not individually packed. Industrial packages cannot be broken down, and will only contain documentation on pack level, not on item level

Accessories

Type	Connection type	Quantity	Code no.
	CD 10	1 pc.	148B3729
	G 1/2	1 pc.	148H3450 148B4317
	CD 6	1 pc.	148B4182
		60 pcs.	148B4217
	CD 10	1 pc.	148B4183
		60 pcs.	148B4186
	G $\frac{1}{2}$ - ND6	2 pcs.	148B4184

Gauge valve, type SNV-ST and SNV-SS

	Type	Connection type	Quantity	Code no.
	Adapter kit (Al gaskets included)	1/4" FPT - 1/2" G	1 pc.	148B3860
	Adapter kit (Al gaskets included)	3/8" G - 1/2" G	1 pc.	148B3861
	Seal cap & gasket - SNV-ST Seal cap & gasket - SNV-SS		1 pc.	148B4576 148B3269
	Plug and gasket	G1/2" (external)	1 pc.	148H3462

Certificates, declarations, and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

Some approvals may change over time. You can check the most current status at danfoss.com or contact your local Danfoss representative if you have any questions.

Type	File name	Document type	Document topic	Approval authority
SNV-ST	UA.089.D.00188-17	UA Declaration	PED	LLC CDC EURO TYSK
	UA.TR-089.0993-17	Pressure - Safety Certificate	PED	LLC CDC EURO TYSK
	033F0691.AD	Manufacturers Declaration	RoHS	Danfoss
	033F0686.AG	Manufacturers Declaration	PED	Danfoss
	CRN.OC18678.513467890YTN	Pressure - Safety Certificate	CRN	TSSA
	19.10048.266	Marine - Safety Certificate	-	RMRS
SNV-SS	033F0691.AD	Manufacturers Declaration	RoHS	Danfoss
	033F0686.AG	Manufacturers Declaration	PED	Danfoss
	CRN.OC18678.513467890YTN	Pressure - Safety Certificate	CRN	TSSA
	19.10048.266	Marine - Safety Certificate	-	RMRS

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