

NRV / NRVH, Check valves

NRV and NRVH check valves can be used in liquid, suction and hot gas lines in refrigeration and air conditioning plants with HCFC, HFC and HC flammable refrigerants. Special versions, with a max. working pressure of 90 bar / 1305 psig are available for CO2 applications.

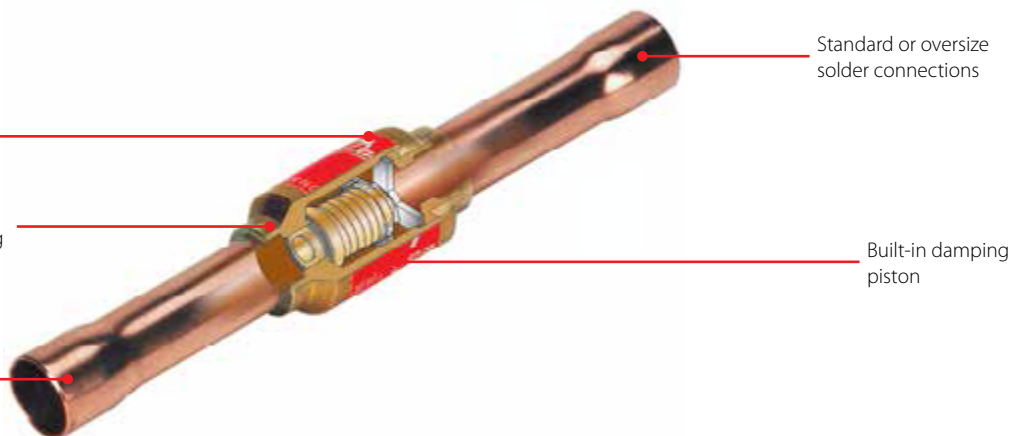
The valves ensure the correct flow direction and prevent back-condensation from a warm part of the system to the cold evaporator. A built-in damping piston makes the valves suitable for installation in lines where pulsation can occur, e. g. in the discharge line from the compressor.



Min. pressure drop
NRV 0.04 – 0.07 bar / 0.58 – 1.01 psig
NRVH 0.3 bar / 4.35 psig

Max. working pressure
PS / MWP 46 bar / 667 psig

Flare and solder version
NRV 6 – 19
NRV 6s – 35s
NRVH 6s – 35s



Facts

Applications:

- Traditional refrigeration
- Heat pump systems
- Air conditioning units
- Liquid coolers
- Transport refrigeration

Refrigerants:

- R1233zd(E)
- R1234yf
- R1234ze(E)
- R1270
- R134a
- R22/R407C
- R290
- R32
- R404A/R507
- R407A
- R407F
- R407H
- R410A
- R448A
- R449A
- R449B
- R450A
- R452A
- R452B
- R454B
- R454C
- R455A
- R513A
- R515B
- R516A
- R600
- R600a
- R454A

Benefits:

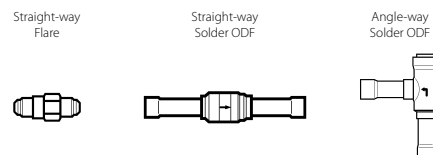
- Hermetic tight design for solder versions
- Built-in damping piston that makes the valves suitable for installation in lines where pulsation can occur, e.g. in the discharge line from the compressor
- Available in both straightway and angleway versions
- Solder versions are compliant with ATEX hazard zone 2
- NRVH type check valve is with stronger spring and it's recommended to use for compressors in parallel (i.e. power packs) where higher level of pulsation and vibration are expected

Technical data and ordering

NRV / NR VH - Check valves

Technical data

Type	Description
Temperature range	-50 - 140 °C / -58 - 285 °F
Max. working pressure (PS/ MWP)	46 bar / 667 psig
Approvals	C UL US LISTED, EAC



NRV / NR VH

Check valves

Type	Version		Connection		Pressure drop across valve Δp bar ¹⁾	kv-value ²⁾ m ³ /h
			Size			
			in.	Code no.		
NRV6	Straight - way	Flare	1/4	020-1040	0.07	0.56
NRV 10	Straight - way	Flare	3/8	020-1041	0.07	1.43
NRV 12	Straight - way	Flare	1/2	020-1042	0.05	2.05
NRV 16	Straight - way	Flare	5/8	020-1043	0.05	3.6
NRV 6s	Straight - way	Solder ODF	1/4	020B1010	0.07	0.56
NRV 6s ³⁾	Straight - way	Solder ODF	3/8	020B1057	0.07	0.56
NRVH 6s ³⁾	Straight - way	Solder ODF	3/8	020B1069	0.3	0.56
NRV 10s	Straight - way	Solder ODF	3/8	020B1011	0.07	1.43
NRV 12s	Straight - way	Solder ODF	1/2	020B1012	0.05	2.05
NRV 12s ³⁾	Straight - way	Solder ODF	5/8	020B1052	0.05	2.05
NRV 16s	Straight - way	Solder ODF	5/8	020B1018	0.05	3.6
NRVH 16s	Straight - way	Solder ODF	5/8	020B1038	0.3	3.6
NRVH 16s ³⁾	Straight - way	Solder ODF	3/4	020B1071	0.3	3.6
NRV 19s	Straight - way	Solder ODF	3/4	020B1019	0.05	5.5
NRVH 19s	Straight - way	Solder ODF	3/4	020B1023	0.3	5.5
NRVH 19s ³⁾	Straight - way	Solder ODF	7/8	020B1066	0.3	5.5
NRV 19s ³⁾	Straight - way	Solder ODF	7/8	020B1054	0.05	5.5
NRV 22s	Angle - way	Solder ODF	7/8	020-1020	0.04	8.5
NRVH 22s	Angle - way	Solder ODF	7/8	020-1032	0.03	8.5
NRV 22s ³⁾	Angle - way	Solder ODF	1 1/8	020-1060	0.04	8.5
NRVH 22s ³⁾	Angle - way	Solder ODF	1 1/8	020-1072	0.3	8.5
NRV 28s	Angle - way	Solder ODF	1 1/8	020-1021	0.04	19
NRV 28s ³⁾	Angle - way	Solder ODF	1 3/8	020-1056	0.04	19
NRV 35s	Angle - way	Solder ODF	1 3/8	020-1026	0.04	29
NRVH 35s	Angle - way	Solder ODF	1 3/8	020-1034	0.3	29
NRV 35s ³⁾	Angle - way	Solder ODF	1 5/8	020-1061	0.04	29

1) Δp = the minimum pressure at which the valve is completely open.

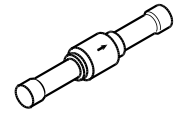
The NR VH with a stronger spring is used in the discharge line from compressors connected in parallel.

2) The Kv value is the flow of water in m³/h at a pressure drop across valve of 1 bar, $\rho = 1000 \text{ kg/m}^3$.

3) Oversize connections.

Max operating pressure is 90 bar.

Technical data and ordering



NRV 10s H - Check valve for R744 (CO₂)

Technical data

Type	Description
Refrigerants	R744 (CO ₂)
Oil	POE, PAG
Temperature range	-50 - 140 °C / -58 - 285 °F
Max. working pressure (PS / MWP)	90 bar / 1305 psig
Approvals	C UL US LISTED, EAC

NRV 10s H - Check valve, straight-way - solder ODF

Ordering

Type	Connection type	Connection size		Differential pressure to start opening the valve		Pressure drop across valve Δp		Kv - value ²⁾	Cv - value ²⁾	Code no.
		[in]	[mm]	[bar] ¹⁾	[psi] ¹⁾	[bar] ¹⁾	[psi] ¹⁾	[m ³ /h]	[gal/min]	
NRV 10s H	Straightway Solder ODF	3/8	-	0.4	5.8	1.0	14.5	0.9	1.04	020-4000

1) Δp_1 = the minimum pressure at which the valve start opening.

Δp_2 = the minimum pressure at which the valve is completely open.

2) The Kv / Cv value is the flow of water in [m³/h] / [gal/min] at a pressure drop across valve of 1 bar / 14.5 psig, $\rho = 1000 \text{ kg/m}^3 / 2205 \text{ lbs/G}$.