

Danfoss



CHECK

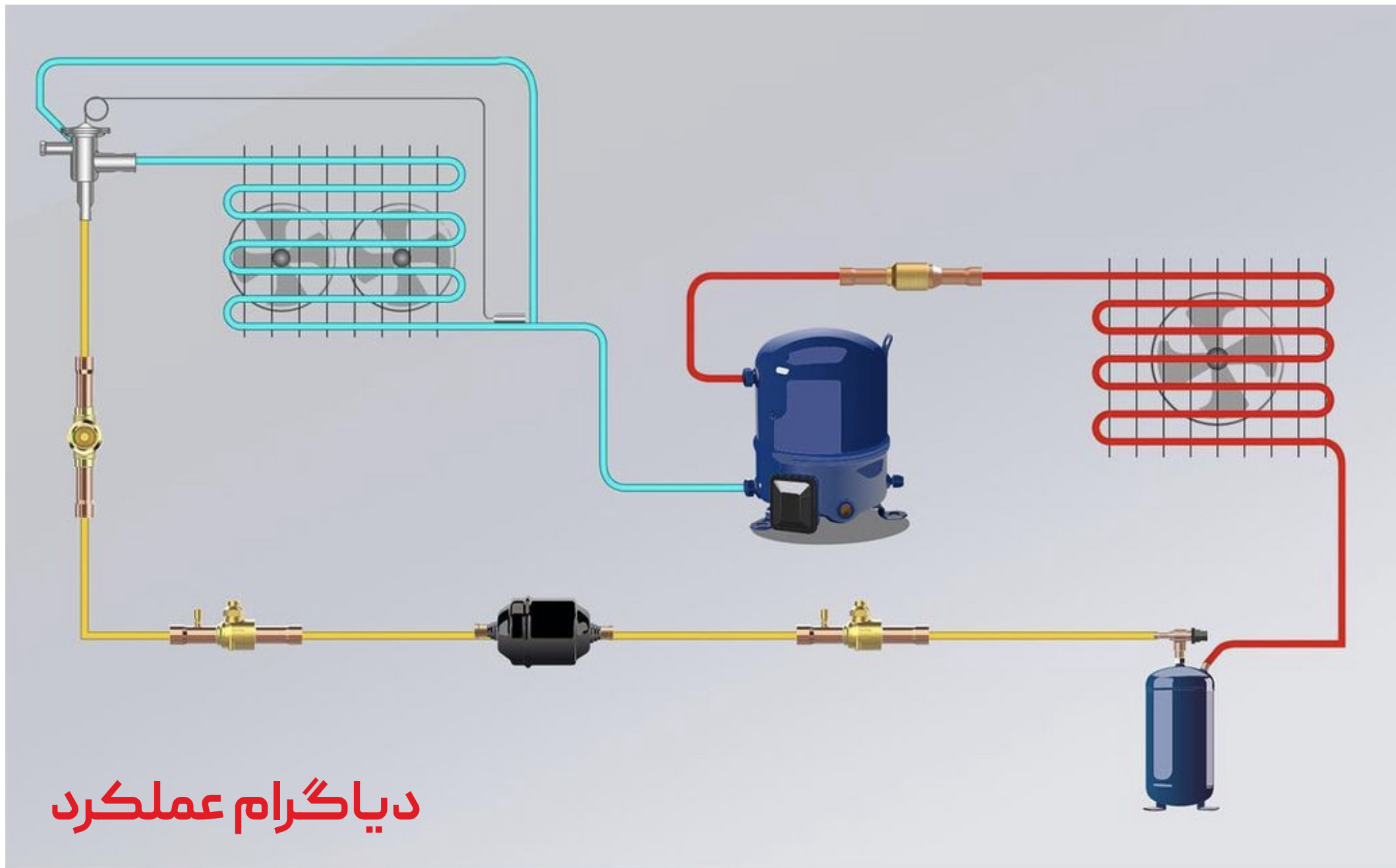
VALVE (NRV)

شیر یک طرفه





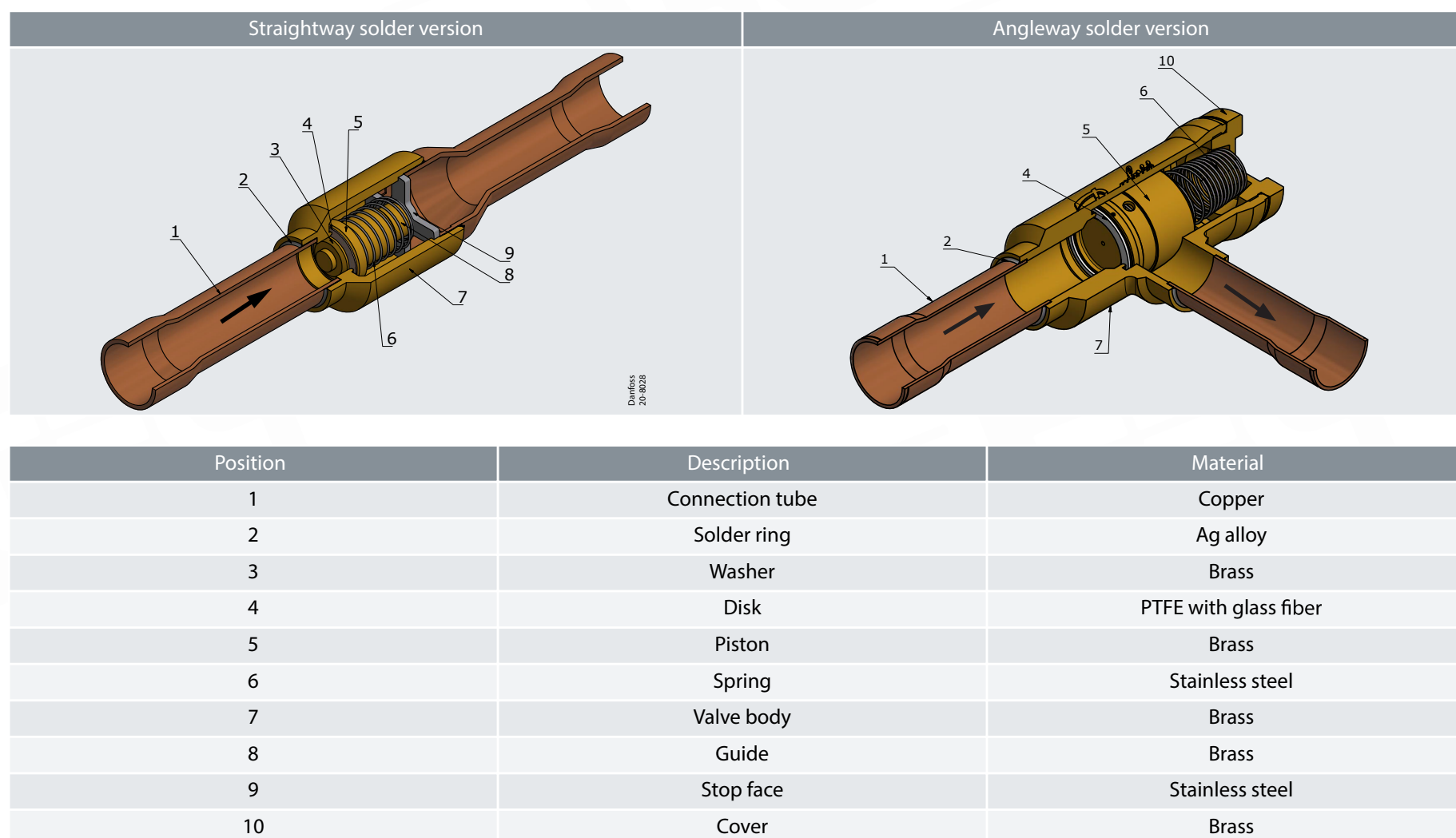
چک ولو های مدل **NRV** به جهت کنترل جریان مبرد و جلوگیری از برگشت آن در سیستم های سردخانه ای و تهویه طراحی شده اند



Danfoss

شرح عملکرد:

داخل بدنه چک ولوهای NRV مجهز به فنر STAINLESS STEEL و صفحه واشر برنجی است و در حالتی که فشار مبرد از نیروی پتانسیل فنر کمتر باشد واشر ذکر شده، محل عبور مبرد در داخل شیر را مسدود نگه می دارد. زمانی که فشار مبرد از نیروی پتانسیل فنر بیشتر شود صفحه واشر از محل عبور مبرد به عقب فشرده می شود و به اصطلاح شیر باز می شود. در صورت افت فشار و یا تغییر جهت جریان مبرد صفحه ی واشر به سرعت محل عبور را مسدود می کند.

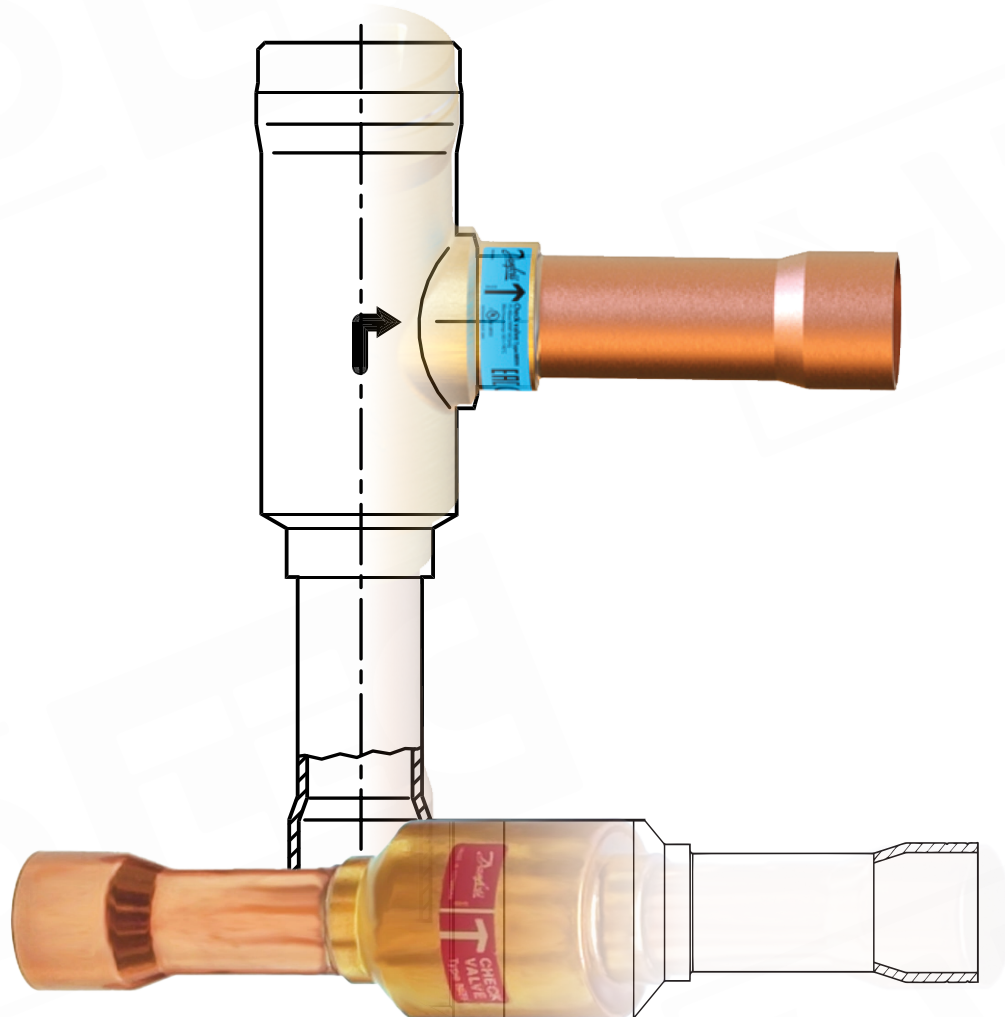


انتخاب Check Valve مناسب:

هنگام انتخاب Check Valve حتما به این دو نکته توجه کنیم:

(1) اختلاف فشار ورودی و خروجی شیر ΔP

(2) حداقل افت فشار مجاز برای باز شدن Check Valve OPD



نکته مهم: $\Delta P > OPD$

جدول انتخاب چک ولوهای NRV با توجه به میردهای مجاز و فشار عملکرد:

Valve type	Connection type	Max. working pressure	Refrigerants
		(PS/MWP)	
NRV/NRVH 6-19	Straight-way - flare	46 bar / 667 psig	R134a, R22/R407C, R404A/R507, R407A, R407F, R407H, R410A, R448A, R449A, R449B, R450A, R452A, R452B, R454A, R454B, R454C, R455A, R513A, R515B, R516A, R1233zd(E), R1234ze(E), R1234yf
NRV/NRVH 6s-19s ⁽¹⁾	Straight-way - solder	49 bar / 710 psig	R134a, R22/R407C, R290, R32, R404A/R507, R407A, R407F, R407H, R410A, R448A, R449A, R449B, R450A, R452A, R452B, R454A, R454B, R454C, R455A, R513A, R515B, R516A, R600, R600a, R1233zd(E), R1234ze(E), R1234yf, R1270
NRV/NRVH 22s-35s ⁽¹⁾	Angle-way - solder	46 bar / 667 psig	R134a, R22/R407C, R290 ⁽²⁾ , R404A/R507, R407A, R407F, R407H, R410A, R448A, R449A, R449B, R450A, R452A, R452B ⁽²⁾ , R454A ⁽²⁾ , R454B ⁽²⁾ , R454C ⁽²⁾ , R455A ⁽²⁾ , R513A, R515B, R516A ⁽²⁾ , R600 ⁽²⁾ , R600a ⁽²⁾ , R1233zd(E), R1234ze(E), R1234yf ⁽²⁾ , R1270 ⁽²⁾
NRV/NRVH 22s E-35s E ⁽¹⁾	Angle-way - solder	49 bar / 710 psig	R290, R32, R452B, R454A, R454B, R454C, R455A, R516A, R600, R600a, R1234ze(E), R1234yf, R1270

⁽¹⁾ Oversize connections

⁽²⁾ NRV/NRVH 28s ⁽¹⁾-35s ⁽¹⁾ can be used with flammable refrigerants, without certificate of PED Fluid Group 1, category II

جدول انتخاب چک ولوهای NRV با توجه به سایز و مدل اتصالات:

Direction	Inlet	Outlet	mm connections	Inch connections
Straightway	Flare	Flare	-	¼ in x ¼ in ⅜ in x ⅜ in ½ in x ½ in ⅝ in x ⅝ in ¾ in x ¾ in
Straightway	Solder ODF	Solder ODF	6 mm x 6 mm 10 mm x 10 mm 12 mm x 12 mm 16 mm x 16 mm 18 mm x 18 mm 19 mm x 19 mm 22 mm x 22 mm	¼ in x ¼ in ⅜ in x ⅜ in ½ in x ½ in ⅝ in x ⅝ in ¾ in x ¾ in ⅞ in x ⅞ in
Angleway	Solder ODF	Solder ODF	22 mm x 22 mm 28 mm x 28 mm 35 mm x 35 mm 42 mm x 42 mm	⅞ in x ⅞ in 1 ⅛ in x 1 ⅛ in 1 ⅜ in x 1 ⅜ in 1 ⅝ in x 1 ⅝ in



جدول راهنما برای سفارش چک ولو مدل NRV



Table 9: Straightway Flare Version without flare nut

Valve type	SAE Flare Flare ext. × ext. [in.]	Min. OPD Δp ⁽¹⁾		Kv ⁽²⁾ [m ³ /h]	Cv ⁽²⁾ [gal/min]	Max. working pressure: PS/MWP	Media tempera- ture range	PED category [Fluid Group 1]	PED category [Fluid Group 2]	Multi pack		Industrial pack	
		[bar]	[psi]							Code no.	Qty/ pack	Code no.	Qty/ pack
NRV 6	1/4	0.07	1.01	0.56	0.65	46 bar / 667 psig	-50 °C - 140 °C / -58 °F - 285 °F	Art. 4.3	Art. 4.3	020-1040	25	020-0138	140
NRV 10	3/8	0.07	1.01	1.2	1.39					020-1041	25	-	-
NRV 12	1/2	0.05	0.72	2.05	2.37					020-1042	25	-	-
NRV 16	5/8	0.05	0.72	3.6	4.16					020-1043	25	-	-
NRV 19	3/4	0.05	0.72	5.5	6.36					020-1044	24	-	-

⁽¹⁾ Δp = Minimum Opening Pressure Differential

⁽²⁾ The Kv / Cv is the flow of water in [m³/h – gal/min] at a pressure drop across valve of 1 bar/14.5 psig, $\rho = 1000 \text{ kg/m}^3 / 62.4 \text{ lb/ft}^3$



Angleway Solder ODF Version, PS = 46 bar



Table 10: Angleway Solder ODF Version, PS = 46 bar

Valve type	Connection Solder ODF × ODF		Min. OPD Δp ⁽²⁾		Kv ⁽³⁾	Cv ⁽³⁾	Max. working pressure: PS/MWP	Media temperature range	PED category	PED category	Multi pack		Industrial pack	
	[in.]	[mm]	[bar]	[psi]	[m ³ /h]	[gal/min]			[Fluid Group 1]	[Fluid Group 2]	Code no.	Qty/pack	Code no.	Qty/pack
NRV 22s	7/8	22	0.04	0.58	8.5	9.83	46 bar / 667 psig	-50 °C - 140 °C / -58 °F - 285 °F	Art. 4.3	Art. 4.3	020-1020	18	020-1152	12
NRVH 22s	7/8	22	0.30	4.35	8.5	9.83					020-1032	18	020-0129	12
NRV 22s ⁽¹⁾	1 1/8	-	0.04	0.58	8.5	9.83					020-1060	18	-	-
	-	28	0.04	0.58	8.5	9.83					020-1055	18	-	-
NRVH 22s ⁽¹⁾	1 1/8	-	0.30	4.35	8.5	9.83					020-1072	18	-	-
	-	28	0.30	4.35	8.5	9.83					020-1067	18	-	-
NRV 28s	1 1/8	-	0.04	0.58	16.5	19.07					020-1021	6	020-0126	12
	-	28	0.04	0.58	16.5	19.07					020-1025	6	020-1153	12
NRVH 28s	1 1/8	-	0.30	4.35	16.5	19.07					020-1029	6	-	-
	-	28	0.30	4.35	16.5	19.07					020-1033	6	020-0131	12
NRV 28s ⁽¹⁾	1 3/8	35	0.04	0.58	16.5	19.07					020-1056	6	-	-
NRVH 28s ⁽¹⁾	1 3/8	35	0.30	4.35	16.5	19.07					020-1068	6	-	-
NRV 35s	1 3/8	35	0.04	0.58	29	33.52					020-1026	6	020-1154	12
NRVH 35s	1 3/8	35	0.30	4.35	29	33.52					020-1034	6	020-0127	12
NRV 35s ⁽¹⁾	1 5/8	-	0.04	0.58	29	33.52					020-1061	6	-	-
	-	42	0.04	0.58	29	33.52					020-1027	6	-	-
NRVH 35s ⁽¹⁾	1 5/8	-	0.30	4.35	29	33.52	020-1073	6	-	-				
	-	42	0.30	4.35	29	33.52	020-1035	6	-	-				

⁽¹⁾ Oversize connections

⁽²⁾ Δp = Minimum Opening Pressure Differential

⁽³⁾ The Kv / Cv is the flow of water in [m³/h – gal/min] at a pressure drop across valve of 1 bar/14.5 psig, $\rho = 1000 \text{ kg/m}^3 / 62.4 \text{ lb/ft}^3$

Danfoss



Angleway Solder ODF Version, PS = 49 bar

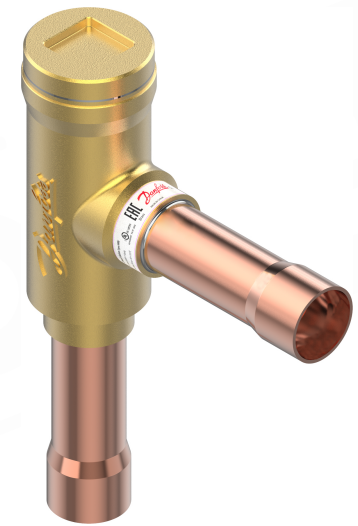


Table 11: Angleway Solder ODF Version, PS = 49 bar

Valve type	Connection Solder ODF × ODF		Min. OPD $\Delta p^{(2)}$		Kv ⁽³⁾ [m ³ /h]	Cv ⁽³⁾ [gal/min]	Max. working pressure: PS/MWP	Media temperature range	PED category [Fluid Group 1]	PED category [Fluid Group 2]	Multi pack		Industrial pack	
	[in.]	[mm]	[bar]	[psi]							Code no.	Qty/pack	Code no.	Qty/pack
NRV 22s E	7/8	22	0.04	0.58	8.5	9.83	49 bar / 710 psig	-50 °C - 155 °C / -58 °F - 311 °F	Art. 4.3	-	020-3020	18	-	-
NRVH 22s E	7/8	22	0.30	4.35	8.5	9.83					020-3032	18	-	-
NRV 22s E ⁽¹⁾	1 1/8	-	0.04	0.58	8.5	9.83					020-3060	18	-	-
		28	0.04	0.58	8.5	9.83					020-3055	18	-	-
NRVH 22s E ⁽¹⁾	1 1/8	-	0.30	4.35	8.5	9.83					020-3072	18	-	-
		28	0.30	4.35	8.5	9.83					020-3067	18	-	-
NRV 28s E	1 1/8	-	0.04	0.58	16.5	19.07					020-3021	6	-	-
		28	0.04	0.58	16.5	19.07					020-3025	6	-	-
NRVH 28s E	1 1/8	-	0.30	4.35	16.5	19.07					020-3029	6	-	-
		28	0.30	4.35	16.5	19.07					020-3039	6	-	-
NRV 28s E ⁽¹⁾	1 3/8	35	0.04	0.58	16.5	19.07					020-3056	6	-	-
NRVH 28s E ⁽¹⁾	1 3/8	35	0.30	4.35	16.5	19.07					020-3068	6	-	-
NRV 35s E	1 3/8	35	0.04	0.58	29	33.52			020-3026	6	-	-		
NRVH 35s E	1 3/8	35	0.30	4.35	29	33.52			020-3036	6	-	-		
NRV 35s E ⁽¹⁾	1 5/8	-	0.04	0.58	29	33.52			020-3061	6	-	-		
		-	42	0.04	0.58	29			33.52	020-3027	6	-	-	
NRVH 35s E ⁽¹⁾	1 5/8	-	0.30	4.35	29	33.52			020-3073	6	-	-		
		-	42	0.30	4.35	29			33.52	020-3035	6	-	-	

⁽¹⁾ Oversize connections

⁽²⁾ Δp = Minimum Opening Pressure Differential

⁽³⁾ The Kv / Cv is the flow of water in [m³/h – gal/min] at a pressure drop across valve of 1 bar/14.5 psig, $\rho = 1000 \text{ kg/m}^3 / 62.4 \text{ lb/ft}^3$

Danfoss



Straightway Solder ODF Version

Valve type	Connection Solder ODF × ODF		Min. OPD Δp ⁽²⁾		Kv ⁽³⁾	Cv ⁽³⁾	Max. working pressure: PS/MWP	Media temperature range	PED category [Fluid Group 1]	PED category [Fluid Group 2]	Multi pack		Industrial pack	
	[in.]	[mm]	[bar]	[psi]	[m ₃ /h]	[gal/min]					Code no.	Qty/pack	Code no.	Qty/pack
NRV 6s	1/4	-	0.04	0.58	0.67	0.77	49 bar / 710 psig	-50 °C - 155 °C / -58 °F - 311 °F	Art. 4.3	Art. 4.3	020B1010	25	020B0125	88
	-	6	0.04	0.58	0.67	0.77					020B1014	25	020B1156	88
NRV 6s ⁽¹⁾	3/8	-	0.04	0.58	0.67	0.77					020B1057	25	020B1191	88
	-	10	0.04	0.58	0.67	0.77					020B1050	25	020B1082	88
NRVH 6s ⁽¹⁾	3/8	-	0.20	2.90	0.67	0.77					020B1069	25	-	-
	-	10	0.20	2.90	0.67	0.77					020B1062	25	-	-
NRV 10s	3/8	-	0.04	0.58	1.64	1.90					020B1011	25	020B1168	40
	-	10	0.04	0.58	1.64	1.90					020B1015	25	020B0136	88
NRVH 10s	1/2	-	0.20	2.90	1.64	1.90					020B1046	25	-	-
	-	12	0.20	2.90	1.64	1.90					020B1036	25	020B0132	88
NRV 10s ⁽¹⁾	1/2	-	0.04	0.58	1.64	1.90					020B1058	25	020B0165	40
	-	12	0.04	0.58	1.64	1.90					020B1051	25	020B0161	40
NRVH 10s ⁽¹⁾	1/2	-	0.20	2.90	1.64	1.90					020B1070	25	-	-
	-	12	0.20	2.90	1.64	1.90					020B1063	25	-	-
NRV 12s	1/2	-	0.02	0.29	2.50	2.89					020B1012	24	020B1155	40
	-	12	0.02	0.29	2.50	2.89					020B1016	24	020B0137	40
NRVH 12s	1/2	-	0.20	2.90	2.50	2.89					020B1039	24	020B1239	40
	-	12	0.20	2.90	2.50	2.89					020B1037	24	020B0133	40
NRV 12s ⁽¹⁾	5/8	16	0.02	0.29	2.50	2.89					020B1052	24	020B0162	54
NRVH 12s ⁽¹⁾	5/8	16	0.20	2.90	2.50	2.89					020B1064	24	-	-
NRV 16s	5/8	16	0.02	0.29	4.00	4.62					020B1018	24	020B1150	54
NRVH 16s	5/8	16	0.20	2.90	4.00	4.62					020B1038	24	020B0134	54
NRV 16s ⁽¹⁾	-	18	0.02	0.29	4.00	4.62					020B1053	24	-	-
NRVH 16s ⁽¹⁾	-	18	0.20	2.90	4.00	4.62					020B1065	24	-	-
NRV 16s ⁽¹⁾	3/4	19	0.02	0.29	4.00	4.62					020B1059	24	-	-
NRVH 16s ⁽¹⁾	3/4	19	0.20	2.90	4.00	4.62					020B1071	24	-	-
NRV 19s	-	18	0.02	0.29	6.50	7.51					020B1017	28	-	-
NRVH 19s	-	18	0.14	2.03	6.50	7.51					020B1008	28	-	-
NRV 19s	3/4	19	0.02	0.29	6.50	7.51					020B1019	28	-	-
NRVH 19s	3/4	19	0.14	2.03	6.50	7.51					020B1023	28	-	-
NRV 19s ⁽¹⁾	7/8	22	0.02	0.29	6.50	7.51	020B1054	28	020B1091	54				
NRVH 19s ⁽¹⁾	7/8	22	0.14	2.03	6.50	7.51	020B1066	28	-	-				



⁽¹⁾ Oversize connections

⁽²⁾ Δp = Minimum Opening Pressure Differential

⁽³⁾ The Kv / Cv is the flow of water in [m³/h – gal/min] at a pressure drop across valve of 1 bar/14.5 psig, $\rho = 1000 \text{ kg/m}^3 / 62.4 \text{ lb/ft}^3$





Thanks for your attention

سپاس از توجه شما

