

THERMOSTATIC EXPANSION VALVES

DANFOSS TYPE TUA(E), TUB(E), TUC(E), T(E)2, TDE, TDEB, TE, TXI 2, AKV

Thermostatic Expansion Valves

Valve	Applications	Features	Models	Nominal Capacity Ranges in TR for Range N -40 to 50°F						Body Type	Pressure Equalization	Connections	
				R-12	R-22	R-502	R-134A	R-404A/507	R-407C			SAE X SAE	SAE X ODF
TUA(E)	Supermarket Cases Walk-In-Coolers Residential A/C Ice-Machines Heat Pump Transport Refrigeration Food Dispensers	Interchangeable orifice, Bi flow, Stainless Steel body/cap tube/bulb, Adjustable Superheat			0.17-4.50		0.13-3.50	0.13-3.50	0.18-4.80	Straightway	Internal/ External		1/4 X 3/8 1/4 X 1/2 3/8 X 3/8 3/8 X 1/2 1/2 X 5/8
TUB(E)	Supermarket Cases Walk-In-Coolers Residential A/C Commercial HVAC Ice-Machines Heat Pump Transport Refrigeration Food Dispensers	Bi flow, Stainless Steel body/cap tube/bulb, Adjustable Superheat			0.17-4.50		0.19-3.50	0.19-3.50	0.18-4.80	Angleway/ Straightway	Internal/ External		1/4 X 3/8 1/4 X 1/2 3/8 X 3/8 3/8 X 1/2
TUC(E)	Supermarket Cases Walk-In-Coolers Residential A/C Commercial HVAC Ice-Machines Heat Pump Transport Refrigeration Food Dispensers	Bi flow, Stainless Steel body/cap tube/bulb, Non-Adjustable Superheat			0.17-4.50		0.19-3.50	0.19-3.50	0.18-4.80	Angleway/ Straightway	Internal/ External		1/4 X 3/8 1/4 X 1/2 3/8 X 3/8 3/8 X 1/2
T(E)2	Supermarket Cases Walk-In-Coolers Residential A/C Ice-Machines Heat Pump Transport Refrigeration Food Dispensers	Interchangeable orifice, available with or w/o Maximum Operating Pressure (MOP), Adjustable Superheat		0.20-3.00	0.15-4.50	0.20-3.00	0.11-3.00	0.11-2.60		Angleway	Internal/ External	3/8 X 1/2	1/4 X 1/2 3/8 X 1/2
TDE	Commercial HVAC Heat Pump Transport Refrigeration	High capacity capability, Bi flow, available with or w/o Maximum Operating Pressure (MOP), adjustable superheat			3.0-7.5				3.0-7.5	Straightway	External		3/8 X 5/8 1/2 X 5/8 1/2 X 7/8 5/8 X 7/8
TDEB	Commercial HVAC Heat Pump Transport Refrigeration	Balanced Port, High capacity capability, Bi flow, available with or w/o MOP, Adjustable Superheat			7.5-40.0				7.5-40.0	Straightway	External		5/8 X 7/8 5/8 X 1-1/8 7/8 X 1-1/8 7/8 X 1-3/8 1-1/8 X 1-3/8
TE	Commercial HVAC Heat Pump Transport Refrigeration	Take a part valve, High capacity capability	TE 5	2.0-8.0	3.0-12.0	2.0-8.0	3.7-11.2	3.7-10.3		Angleway/ Straightway	External	1/2 X 5/8	1/2 X 5/8 1/2 X 7/8 5/8 X 7/8
			TE 12	3.0-12.0	4.5-18.0	3.0-12.0	4.7-15.0	4.2-13.4		Straightway	External		5/8 X 7/8 7/8 X 1 7/8 X 1-1/8
			TE 20	20.0	30.0	20.0	18.0	16.5		Straightway	External		7/8 X 1-1/8
			TE 55	50.0-85.0	33.0-55.0	24.0-40.0	41.0-62.0	37.0-56.0		Straightway	External		1-1/8 X 1-3/8
TXI 2	Desuperheating Liquid Injection	Interchangeable orifice, Adjustable superheat			.32-3.36					Angleway	Internal	3/8 X 1/2	
AKV	Supermarket Cases Walk-In-Coolers Ice-Machines	Electronic expansion valves	AKV 10		0.3-5.7	0.2-3.9	0.2-4.4	0.2-4.8		Angleway	Internal	3/8 X 1/2 1/2 X 5/8	3/8 X 1/2 1/2 X 5/8
			AKV 15		7.2-29.0		6.0-24.0	5.6-22.2		Straightway	Internal		3/4 X 3/4 7/8 X 7/8 1-1/8 X 1-1/8
			AKV 20		28.0-179.0					Straightway	Internal		1-3/8 X 1-3/8 1-5/8 X 1-5/8 2-1/8 X 2-1/8

THERMOSTATIC EXPANSION VALVES

DANFOSS TYPE T2 & TE2

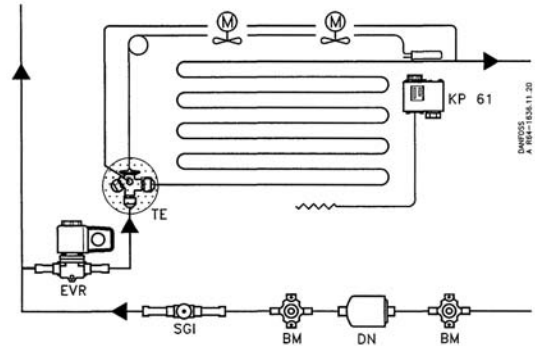
Introduction

Range 1/6 to 4 1/2 tons (R22)

Thermostatic expansion valves, type T 2 and TE 2 regulate the flow of refrigerant liquid into evaporators.

Injection is controlled by the refrigerant superheat.

T 2 valves are especially suitable for liquid injection into "dry" evaporators where the superheat at the evaporator outlet is proportional to the evaporator load.



P332B

Features

Large temperature range

Equally applicable to freezing, refrigeration, and air conditioning applications.

Interchangeable orifice assembly

- Easier stocking
- Easy capacity matching
- Better service

Can be supplied with MOP (Max. Operating Pressure)

- Protects the compressor motor against excessive evaporating pressure during normal operation

Patented double contact bulb

- Fast and easy to install
- Good temperature transfer from pipe to bulb

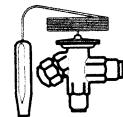
Valves for special temperature ranges can be supplied.

5 ft. long capillary tube

THERMOSTATIC EXPANSION VALVES

DANFOSS TYPE T2 & TE2

Ordering



Components with Flare x Flare Connections

Thermostatic element and valve body with bulb strap (without orifice and filter)

Refrigerant	Valve Type	Pressure Equalization ¹⁾	Capillary Tube (ft)	Connection Inlet x Outlet (in. x in.)	Part No.					
					Range N -40 to +50° F		Range NM -40 to +25° F	Range NL -40 to +5° F	Range B -75 to -15° F	
					Without MOP	With MOP	With MOP	With MOP	Without MOP	With MOP
R-22	TX 2	Int.	5	3/8 x 1/2	068Z3206	068Z3208	068Z3224	068Z3226	068Z3207	068Z3228
	TEX 2	Ext.	5	3/8 x 1/2	068Z3209	068Z3211	068Z3225	068Z3227	068Z3210	068Z3229
R407C	TZ 2	Int.	5	3/8 x 1/2	068Z3496	068Z3516				
	TEZ 2	Ext. 1/4"	5	3/8 x 1/2	068Z3501	068Z3517				
R-134a	TN 2	Int.	5	3/8 x 1/2	068Z3346	068Z3347	068Z3393	068Z3369		
	TEN 2	Ext.	5	3/8 x 1/2	068Z3348	068Z3349	068Z3392	068Z3370		
R-404A/ R-507	TS 2	Int.	5	3/8 x 1/2	068Z3400	068Z3402	068Z3406	068Z3408	068Z3401	068Z3410
	TES 2	Ext.	5	3/8 x 1/2	068Z3403	068Z3405	068Z3407	068Z3409	068Z3404	068Z3411
R-12	TF 2	Int.	5	3/8 x 1/2	068Z3202	068Z3236	068Z3220	068Z3222		
	TEF 2	Ext.	5	3/8 x 1/2	068Z3204	068Z3237	068Z3221	068Z3223		
R-502	TY 2	Int.	5	3/8 x 1/2	068Z3212	068Z3214	068Z3230	068Z3232	068Z3213	068Z3234
	TEY 2	Ext.	5	3/8 x 1/2	068Z3215	068Z3217	068Z3231	068Z3233	068Z3216	068Z3235

1) Externally equalized connections are 1/4 in. flare.

Orifice Assembly with Filter Rated capacity in tons (TR)



Orifice No.	Range N: -40 to +50° F				Range B: -75 to -15° F			Part No.
	R-22	R-407C	R-134a	R-404A/R-507	R-22	R-404A/R-507	R-502	
0X	0.15	0.16	0.11	0.11	0.15	0.11		068-2002
00	0.3	0.3	0.25	0.21	0.2	0.21	0.2	068-2003
01	0.7	0.8	0.5	0.45	0.3	0.45	0.3	068-2010
02	1.0	1.1	0.8	0.6	0.6	0.6	0.5	068-2015
03	1.5	1.6	1.3	1.2	0.8	1.0	0.8	068-2006
04	2.3	2.5	1.9	1.7	1.2	1.4	1.2	068-2007
05	3.0	3.2	2.5	2.2	1.5	1.7	1.5	068-2008
06	4.5	4.9	3.0	2.6	2.0	1.9	2.0	068-2009

Rated capacity is based on:

Evaporating temperature $t_e = +40^\circ \text{F}$ for range N and

$t_e = -20^\circ \text{F}$ for range B

Condensing temperature $t_c = +90^\circ \text{F}$

Refrigerant liquid temperature ahead of valve $t_l = +80^\circ \text{F}$

Flare Connection Accessories



Connection for copper tubing with outside diameter (in.)	Reducer for copper tube with outside diameter (in.)	Part No.
1/4		011L1101
	1/4	011L1107

Metric conversions

1 psi = 0.07 bar

5/9 ($t_1^\circ \text{F} - 32$) = $t_2^\circ \text{C}$

1 ton = 3.5 kW

1 in. = 25.4 mm

1 ft = 0.3 m

Example

A TE 2 thermostatic expansion valve consists of two elements + flare nuts if required:

- 1 thermostatic element
- 1 orifice assembly and flare nuts

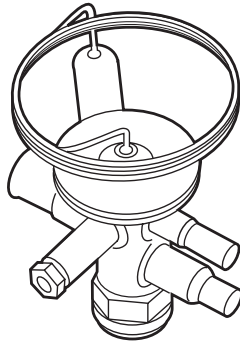
When ordering one thermostatic expansion valve, TEX 2 with orifice 01, two code numbers are required:

- 1 thermostatic element **068Z3209**
- 1 orifice assembly 01 **068-2010**

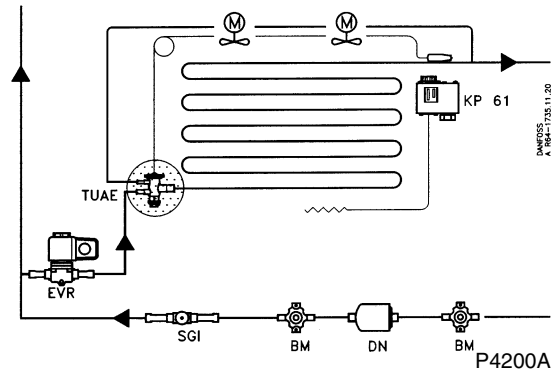
THERMOSTATIC EXPANSION VALVES

DANFOSS TYPE TUA/TUAE

TUA-TUAE Range 1/6 to 41/2 TR (R-22)



P4200



Features

Type TUA/TUAE is available with interchangeable orifice assembly and removable strainer in a straightway design.

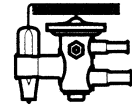
The valves are offered in rated capacities up to 4.5 TR (R-22) and can be used in a wide range of applications.

The TUA/TUAE is made of stainless steel and therefore is especially well-suited to refrigeration systems where aggressive environments exist. The TUA/TUAE has been developed and designed especially for soldering into hermetic refrigeration systems.

THERMOSTATIC EXPANSION VALVES

DANFOSS TYPE TUE/TUAE

Ordering



Thermostatic element and valve body with bulb strap (without orifice and filter)

R-22, R-134a, R-404A, R-407C, R-507

REFRIGERANT	VALVE TYPE	PRESSURE EQUALIZATION ¹⁾	CAPILLARY TUBE (in.)	CONNECTIONS ODF x ODF (in.)	Part No.		
					Range N -40 → 50° F		Range B -60 → -15° F
					w/o MOP	MOP 60° F	MOP -4° F
R-22	TUA	Int.	59	1/4 x 1/2	068U2234	068U2242	—
	TUA	Int.	59	3/8 x 1/2	068U2235	068U2243	—
	TUAE	Ext. 1/4 in.	59	1/4 x 1/2	068U2236	068U2244	—
	TUAE	Ext. 1/4 in.	69	3/8 x 1/2	068U2237	068U2245	—
R-134a	TUA	Int.	59	1/4 x 1/2	068U2204	068U2212	—
	TUA	Int.	59	3/8 x 1/2	068U2205	068U2213	—
	TUAE	Ext. 1/4 in.	59	1/4 x 1/2	068U2206	068U2214	—
	TUAE	Ext. 1/4 in.	59	3/8 x 1/2	068U2207	068U2215	—
R-404A/ R-507	TUA	Int.	59	1/4 x 1/2	068U2284	068U2292	068U2316
	TUA	Int.	59	3/8 x 1/2	068U2285	068U2293	068U2317
	TUAE	Ext. 1/4 in.	59	1/4 x 1/2	068U2286	068U2294	068U2318
	TUAE	Ext. 1/4 in.	59	3/8 x 1/2	068U2287	068U2295	068U2319
R-407C	TUA	Int.	59	1/4 x 1/2	068U2324	068U2332	—
	TUA	Int.	59	3/8 x 1/2	068U2325	068U2333	—
	TUAE	Ext. 1/4 in.	59	1/4 x 1/2	068U2326	068U2334	—
	TUAE	Ext. 1/4 in.	59	3/8 x 1/2	068U2327	068U2335	—

Orifice assembly with filter and gasket

Rated capacity in tons (TR)¹⁾

ORIFICE NO.	RANGE N: -40 → 50° F					RANGE B: -60 → -15° F				PART NO.
	R-22	R-134a	R-404A	R-407C	R-507	R-22	R-404A	R-407C	R-507	
0	0.17	0.13	0.13	0.18	0.13	0.15	0.10	0.13	0.11	068U1030
1	0.25	0.19	0.19	0.26	0.19	0.19	0.14	0.16	0.15	068U1031
2	0.36	0.28	0.28	0.38	0.27	0.24	0.18	0.20	0.20	068U1032
3	0.50	0.39	0.39	0.53	0.38	0.34	0.25	0.28	0.28	068U1033
4	0.75	0.59	0.60	0.80	0.57	0.50	0.37	0.41	0.41	068U1034
5	1.00	0.78	0.79	1.1	0.76	0.66	0.50	0.55	0.55	068U1035
6	1.5	1.2	1.2	1.6	1.1	1.0	0.75	0.82	0.82	068U1036
7	2.0	1.6	1.6	2.1	1.5	1.3	1.0	1.1	1.1	068U1037
8	3.0	2.3	2.4	3.2	2.3	2.0	1.5	1.6	1.7	068U1038
9	4.5	3.5	3.5	4.8	3.4	2.9	2.2	2.4	2.4	068U1039

1) According to ARI 750-94.

Rated capacities for range N are based on:
 Liquid temperature ahead of expansion valve $t_l = 100^\circ \text{F}$
 Evaporating temperature $t_e = 40^\circ \text{F}$
 Pressure drop across valve $\Delta p = 60 \text{ psi}$ for R-134a
 Pressure drop across valve $\Delta p = 100 \text{ psi}$ for R-22, R-404A, R-407C and R-507.

Rated capacities for range B are based on:
 Liquid temperature ahead of expansion valve $t_l = 100^\circ \text{F}$
 Evaporating temperature $t_e = -40^\circ \text{F}$
 Pressure drop across valve $\Delta p = 100 \text{ psi}$ for R-134a
 Pressure drop across valve $\Delta p = 150 \text{ psi}$ for R-22, R-404A, R-507C and R-507.

Spare Parts

Filter (24 pcs): 068U0016

Gasket (24 pcs): 068U0015

NOTE: To secure tightness, the orifice gasket must be changed each time the orifice is disassembled.

Metric conversions

1 psi = 0.07 bar

5/9 ($t_1^\circ \text{F} - 32$) = $t_2^\circ \text{C}$

1 ton = 3.5 kW

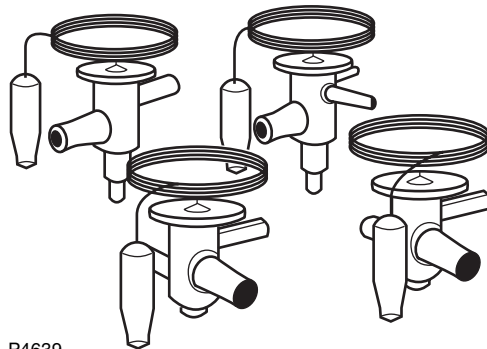
1 in. = 25.4 mm

THERMOSTATIC EXPANSION VALVES

DANFOSS TYPE TUB

Introduction

Type TUB-TUC Range 1/4 to 4 1/2 (R-22)



P4639

The TU series of thermostatic expansion valves is specifically developed for soldering into hermetic refrigeration systems.

TU valves are offered in rated capacities up to 4.5 TR (R-22) and can be used in a wide range of applications.

The TU is made of stainless steel and therefore is well-suited to refrigeration systems for aggressive environments and for the food industry.

TUB, TUBE

- Internal (TUB) or external (TUBE) equalization
- Fixed orifice and strainer
- Adjustable superheat
- Angleway body (optional)

TUC, TUCE

- Internal (TUC) or external (TUCE) equalization
- Fixed orifice and strainer
- Fixed superheat
- Angleway body

Thermostatic charge options

In addition to the standard range, TU is also available with the following range options:

Range N:	-40 to +50°F	MOP +60°F
Range NM:	-40 to +25°F	MOP +32°F
Range B ¹⁾	-75 to -15°F	
Range B ¹⁾	-75 to -15°	MOP -4°F

1) TU valves for range B are not supplied for R-134a.

THERMOSTATIC EXPANSION VALVES

DANFOSS TYPE TUB

Ordering

Angleway Valve Body with 2.6 ft. cap. tube and bulb strap ¹⁾													
Range N: -40 to +50°F (without MOP)													
Valve Type	Connection Solder ODF inlet x outlet in.	Press. equal.	Orifice no. ²⁾	R-22		R-134a		R-404A/R-507		R-407C		R-410A	
				Range N -40 to +50°F		Range N -40 to +50°F		Range N -40 to +50°F		Range N -40 to +50°F		Range N -40 to +50°F	
				Rated capacity TR ³⁾	Part No.	Rated capacity TR ³⁾	Part No.	Rated capacity TR ³⁾	Part No.	Rated capacity TR ³⁾	Part No.	Rated capacity TR ³⁾	Part No.
TUB	1/4 x 1/2	Int.	1	0.25	068U2057	0.19	068U2027	0.19	068U2094			0.40	068U1958
			2	0.36	068U2058	0.28	068U2028	0.28	068U2095			0.60	068U1959
			3	0.50	068U2059	0.39	068U2029	0.39	068U2096			0.80	068U1960
			4	0.75	068U2060	0.59	068U2030	0.60	068U2097			1.30	068U1961
			5	1.00	068U2061	0.78	068U2031	0.79	068U2098			1.70	068U1962
			6	1.50	068U2062	1.20	068U2032	1.20	068U2099			2.50	068U1963
	3/8 x 1/2		1	0.25	068U2157								
			2	0.36	068U2179								
			3	0.50	068U2180								
			4	0.75	068U2183								
			5	1.00	068U2181								
			6	1.50	068U2182								
			7	2.00	068U2063								
			8	3.00	068U2064								
TUBE	1/4 x 1/2	Ext. 1/4 in. solder ODF	1					0.19	068U2103				
			2					0.28	068U2104				
			3			0.39	068U2020	0.39	068U2105				
			4	0.75	068U2070	0.59	068U2021	0.60	068U2106				
			5	1.00	068U2071	0.78	068U2022	0.79	068U2107	1.10	068U1935		
			6	1.50	068U2072	1.20	068U2023	1.20	068U2108	1.60	068U1936		
	3/8 x 1/2		1	0.25	068U2159								
			2	0.36	068U2160								
			3	0.50	068U2161								
			4	0.75	068U2162								
			5	1.00	068U2163								
			6	1.50	068U2164								
			7	2.00	068U2073	1.60	068U2024	1.60	068U2109	2.10	068U1937	3.40	068U1973
			8	3.00	068U2074	2.30	068U2025	2.40	068U2110	3.20	068U1938	5.00	068U1974
9	4.50	068U2075	3.50	068U2026	3.50	068U2111	4.80	068U1939	7.50	068U1975			

Metric conversions

1 psi = 0.07 bar

5/9 (t₁ °F - 32) = t₂ °C

1 ton = 3.5 kW

1 in. = 25.4 mm

1) The TUB series is also available with 5 ft. cap. tube.

Please contact Danfoss for further information.

2) All TUB and TUBE valves with orifice #9 cannot be used for bi-flow operation.

3) According to ARI 750-01

Rated capacities for range N are based on:

Liquid temperature ahead of expansion valve t_l = 100°F

Evaporating temperature t_e = 40°F

Pressure drop across valve Δp = 60 psi for R-134a

Pressure drop across valve Δp = 100 psi for R-22, R-404A, R-407C, and R-507

Pressure drop across valve Δp = 160 psi for R-410A

THERMOSTATIC EXPANSION VALVES

DANFOSS MINIMIZER EXPANSION VALVE SERVICE KITS

Features

Choose from five Danfoss Minimizer Service Kits. Each has six expansion valve bodies and a selection of orifices to cover a wide range of capacities for three refrigerants.

Valve Series	Connection Type	Service Kit Part No.	Valve Refrigerants
T2	Flare x Flare	000MMK-A 000MMK-I	R 12, R 22, R 502 R 22, R 134a, R 404A/R 507
TUA	Sweat x Sweat	000MMK-U	R 22, R 134a, R 404A/R 507

Capacity selection charts and a pressure–temperature slide rule are included in each kit. Create your own custom kits by ordering the case and your selection of valves separately.

Service Kit	Part No.
T2	00MMKBOX01
TUA	00MMKBOX02

Each case contains a valve capacity table.
This case does not come with valves and orifices.

Refill the Kit

068-2002

068-2003

068-2010

068-2015

068-2015

0X

00

01

02

02

TX2

internal eqln.

068Z3206

TN2

internal eqln.

068Z3346

TS2

internal eqln.

068Z3400

TEX2

external eqln.

068Z3209

TEN2

external eqln.

068Z3348

TES2

external eqln.

068Z3403

068-2006

068-2006

068-2007

068-2008

068-2009

03

03

04

05

06

P4641

THERMOSTATIC EXPANSION VALVES

DANFOSS MINIMIZER EXPANSION VALVE SERVICE KITS

T2 and TE2

Selection Chart for Thermostatic Expansion Valves

Choose valve by refrigerant and style, then read down to the required capacity in tons and select orifice.

			R 12	R 502	R 22	R 134a	R 404A
Flare Style Valves (Internally Equalized)			TF2 068Z3202	TY2 068Z3212	TX2 068Z3206	TN2 068Z3346	TS2 068Z3400
Flare Style Valves (Externally Equalized)			TEF2 068Z3204	TEY2 068Z3215	TEX2 068Z3209	TEN2 068Z3348	TES2 068Z3403
Sweat Style Valves (Internally Equalized)			TF2 068Z3280	TY2 068Z3282	TX2 068Z3281	TN2 068Z3383	TS2 068Z3414
Sweat Style Valves (Externally Equalized)			TEF2 068Z3283	TEY2 068Z3285	TEX2 068Z3284	TEN2 068Z3385	TES2 068Z3415
Orifice No.	Part No. (flare)	Part No. (sweat)	Nominal Capacity*				
0X	068-2002	068-2089			1/5	1/10	1/10
00	068-2003	068-2090	1/5	1/5	1/3	1/4	1/5
01	068-2010	068-2091	1/3	1/3	7/10	1/2	1/3
02	068-2015	068-2092	1/2	1/2	1	3/4	1/2
03	068-2006	068-2093	1	1	1 1/2	1 1/4	1
04	068-2007	068-2094	1 1/2	1 1/2	2 1/3	1 3/4	1 1/2
05	068-2008	068-2095	2	2	3	2 1/4	2
06	068-2009	068-2096	3	3	4 1/2	3	3

Solder adapters for Sweat Style valves:
068-2062 for 1/4" OD pipe
068-2060 for 3/8" OD pipe

* Valve capacity is rated at 40°F evaporating temperature, 90°F condensing temperature, and 80°F refrigerant temperature ahead of valve.








068U0015 **068U1030** **068U1031** **068U1032** **068U1033** **068U1034**

TUA
 internal eqln.
068U2235

TUA
 internal eqln.
068U2205

TUA
 internal eqln.
068U2285

TUAE
 external eqln.
068U2237

TUAE
 external eqln.
068U2207

TUAE
 external eqln.
068U2287








068U1035 **068U1036** **068U1037** **068U1038** **068U1039**

P4640

THERMOSTATIC EXPANSION VALVES

DANFOSS MINIMIZER EXPANSION VALVE SERVICE KITS

Minimizer-Sweat

Select Valve Body and Orifice Size

This Kit contains TU type expansion valves which have Sweat (ODF) connections

		R 22	R 134a	R 404A/R 507
Internally Equalized Valve Bodies		TUA 068U2235	TUA 068U2205	TUA 068U2285
Externally Equalized Valve Bodies		TUAE 068U2237	TUAE 068U2207	TUAE 068U2287
Orifice size	Part No.	Nominal Capacity (Tons) for -40 to +50°F Range		
0	068U1030	1/6	1/8	1/8
1	068U1031	1/4	1/5	1/5
2	068U1032	1/3	1/4	1/4
3	068U1033	1/2	1/3	1/3
4	068U1034	3/4	1/2	1/2
5	068U1035	1	3/4	3/4
6	068U1036	1-1/2	1	1
7	068U1037	2	1-1/2	1-1/2
8	068U1038	3	2	2-1/4
9	068U1039	4-1/2	3	3-1/2

Minimizer-Flare

Select Valve Body and Orifice Size

		R 22	R 134a	R 404A/R 507
Internally Equalized		TX2 068Z3206	TN2 068Z3346	TS2 068Z3400
Externally Equalized		TEX2 068Z3209	TEN2 068Z3348	TES2 068Z3403
Orifice size	Part No.	Nominal Capacity (Tons) for -40 to -10°F Range		
0X	068-2002	1/6	1/10	1/10
00	068-2003	1/3	1/4	1/5
01	068-2010	3/4	1/2	1/3
02	068-2015	1	3/4	1/2
03	068-2006	1-1/2	1-1/3	1
04	068-2007	2-1/3	1-3/4	1-1/2
05	068-2008	3	2-1/5	2
06	068-2009	4-1/2	3	3

THERMOSTATIC EXPANSION VALVES

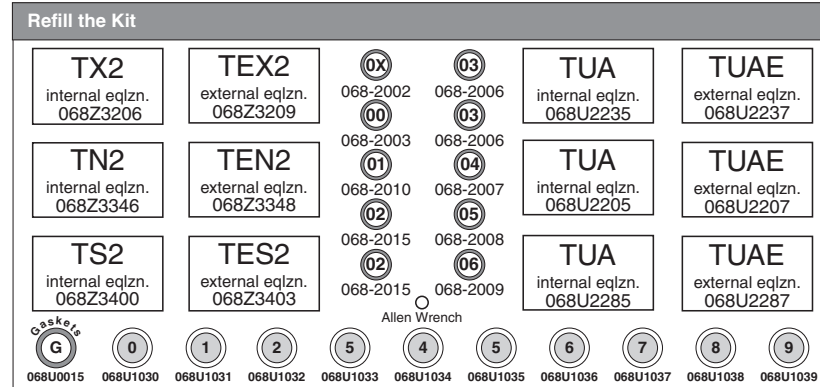
DANFOSS MAXIMIZER KIT

Introduction

Building on the success of the Minimizer kit --

Every TEV you need - both flare and sweat - in one convenient kit

- 12 valves and 20 orifices = 105 size combinations from 1/10 to 4 1/2 TR
- Cut out unnecessary supply house runs - the right valve is always on the truck
- Sweat valves have bi-metal connections - no wet wrap required
- Factory superheat setting - no adjustment after assembly
- Sizing and selection chart
- Durable fitted case
- Easy to refill



P4642

Ordering

Product	Part No.	Product	Part No.
TX2	068Z3206	TUA R 22	068U2235
TEX2	068Z3209	TUA E R 22	068U2237
TN2	068Z3346	TUA R 134a	068U2205
TEN2	068Z3348	TUA E R 134a	068U2207
TS2	068Z3400	TUA R 404A/507	068U2285
TES2	068Z3403	TUA E R 404A/507	068U2287
T/E Orifice no. 0X	068-2002	TU Orifice no. 0	068U1030
T/E Orifice no. 00	068-2003	TU Orifice no. 1	068U1031
T/E Orifice no. 01	068-2010	TU Orifice no. 2	068U1032
T/E Orifice no. 02	068-2015	TU Orifice no. 3	068U1033
T/E Orifice no. 03	068-2006	TU Orifice no. 4	068U1034
T/E Orifice no. 04	068-2007	TU Orifice no. 5	068U1035
T/E Orifice no. 05	068-2008	TU Orifice no. 6	068U1036
T/E Orifice no. 06	068-2009	TU Orifice no. 7	068U1037
TU Metal Gasket	068U0015	TU Orifice no. 8	068U1038
Allen Wrench	WRENCH	TU Orifice no. 9	068U1039

THERMOSTATIC EXPANSION VALVES

Orifice Selection

Select Valve Body and Orifice Size—Flare

		R 22	R 134a	R 404A/R 507
Internally Equalized Valve Bodies		TX2 068Z3206	TN2 068Z3346	TS2 068Z3400
Externally Equalized Valve Bodies		TEX2 068Z3209	TEN2 068Z3348	TES2 068Z3403
Orifice size	Part No.	Nominal Capacity (Tons) for –40 to +50°F Range		
0X	068-2002	1/6	1/10	1/10
00	068-2003	1/3	1/4	1/5
01	068-2010	3/4	1/2	1/3
02	068-2015	1-1/2	3/4	1/2
03	068-2006	1-1/2	1-1/4	1
04	068-2007	2-1/3	1-3/4	1-1/2
05	068-2008	3	2-1/4	2
06	068-2009	4-1/2	3	3

Select Valve Body and Orifice Size—Sweat

		R 22	R 134a	R 404A/R 507
Internally Equalized Valve Bodies		TUA 068U2235	TUA 068U2205	TUA 068U2285
Externally Equalized Valve Bodies		TUAE 068U2237	TUAE 068U2207	TUAE 068U2287
Orifice size	Part No.	Nominal Capacity (Tons) for –40 to +50°F Range		
0	068U1030	1/6	1/8	1/8
1	068U1031	1/4	1/5	1/5
2	068U1032	1/3	1/4	1/4
3	068U1033	1/2	1/3	1/3
4	068U1034	3/4	1/2	1/2
5	068U1035	1	3/4	3/4
6	068U1036	1-1/2	1	1
7	068U1037	2	1-1/2	1-1/2
8	068U1038	3	2	2-1/4
9	068U1039	4-1/2	3	3-1/2

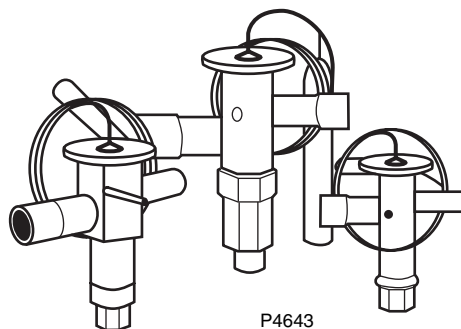
THERMOSTATIC EXPANSION VALVES

DANFOSS TYPE TDE & TDEB (R22)

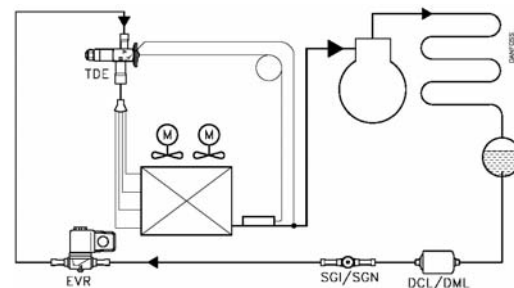
Introduction

TDE Range 3 – 7 1/2 TR

TDEB Range 8 – 40 TR



P4643



The TDE series of thermostatic expansion valves is designed for use in:

- Air conditioning systems
- Heat pumps
- Water chillers
- Refrigerated containers
- Traditional refrigeration systems

The TDE product programs consist of two hermetic valve designs:

- Single port (type TDE) and balanced port (type TDEB). Valve selection is determined by the application and the capacity required.

Single port version (type TDE)

- The single port's simplified construction is designed for use on systems with small capacities (3 to 7.5 TR R 22). Single port design is effective because in smaller capacities condensing pressure is negligible. Type TDE single port valves can also be used for bi-flow applications in the same capacity range.

Balanced port versions (type TDEB)

- The balanced port design has been developed for large capacity systems (greater than 8 to 40 TR) where fluctuating condensing pressures are present.
- The balanced port feature eliminates any influence by condensing pressure on the expansion valve function in the normal flow direction.
- The TDEB design is unique in that it also provides a balance function in the reverse flow direction making it ideal for use in bi-flow applications.

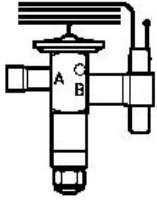
All TDE valves are available with a selection of bulb charges with or without maximum operating pressure (MOP) function.

Single and industrial pack quantities are available.

THERMOSTATIC EXPANSION VALVES

DANFOSS TYPE TDE & TDEB (R22)

Ordering



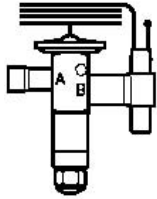
Metric conversions
 1 psi = 0.07 bar
 5/9 ($t_1^{\circ}\text{F} - 32$) = $t_2^{\circ}\text{C}$
 1 ton = 3.5 kW
 1 in. = 25.4 mm

Range K = -15 to 50°F with MOP 100 psig

	Type and rated capacity* TR	Connection solder ODF x ODF in.	Part No. Multipack
TDEX 3 - 7.5 Single port	TDEX 3	3/8 x 5/8	068H6200
	TDEX 3	1/2 x 5/8	068H6201
	TDEX 4	1/2 x 7/8	068H6202
	TDEX 6	1/2 x 5/8	068H6234
	TDEX 6	1/2 x 7/8	068H6203
	TDEX 6	5/8 x 7/8	068H6204
	TDEX 7.5	5/8 x 7/8	068H6205
TDEBX 20 - 40 Balanced port	TDEBX 20	7/8 x 1 1/8	068H7146
	TDEBX 26	7/8 x 1 3/8	068H7148
	TDEBX 30	7/8 x 1 3/8	068H7150
	TDEBX 30	1 1/8 x 1 3/8	068H7152
	TDEBX 40	1 1/8 x 1 3/8	068H7154
TDEBX 8 - 19 Balanced port	TDEBX 8	5/8 x 7/8	068H7130
	TDEBX 11	5/8 x 7/8	068H7132
	TDEBX 11	5/8 x 1 1/8	068H7134
	TDEBX 12.5	5/8 x 7/8	068H7136
	TDEBX 12.5	5/8 x 1 1/8	068H7138
	TDEBX 16	5/8 x 1 1/8	068H7140
	TDEBX 16	7/8 x 1 1/8	068H7142
	TDEBX 19	7/8 x 1 1/8	068H7144

* The rated capacity is based on:
 Evaporating temperature $t_e = 40^{\circ}\text{F}$
 Liquid temperature $t_l = 80^{\circ}\text{F}$
 Condensing temperature $t_c = 90^{\circ}\text{F}$

Range AC = 15 to 60°F with MOP 120 psig



	Type and rated capacity* TR	Connection solder ODF x ODF in.	Part No. Multipack
TDEX 3 - 7.5 Single port	TDEX 3	3/8 x 5/8	068H6100
	TDEX 3	1/2 x 5/8	068H6101
	TDEX 4	1/2 x 7/8	068H6102
	TDEX 6	1/2 x 5/8	068H6134
	TDEX 6	1/2 x 7/8	068H6103
	TDEX 6	5/8 x 7/8	068H6104
	TDEX 7.5	5/8 x 7/8	068H6105
TDEBX 20 - 40 Balanced port	TDEBX 20	7/8 x 1 1/8	068H7116
	TDEBX 26	7/8 x 1 3/8	068H7118
	TDEBX 30	7/8 x 1 3/8	068H7120
	TDEBX 30	1 1/8 x 1 3/8	068H7122
	TDEBX 40	1 1/8 x 1 3/8	068H7124
TDEBX 8 - 19 Balanced port	TDEBX 8	5/8 x 7/8	068H7100
	TDEBX 11	5/8 x 7/8	068H7102
	TDEBX 11	5/8 x 1 1/8	068H7104
	TDEBX 12.5	5/8 x 7/8	068H7106
	TDEBX 12.5	5/8 x 1 1/8	068H7108
	TDEBX 16	5/8 x 1 1/8	068H7110
	TDEBX 16	7/8 x 1 1/8	068H7112
	TDEBX 19	7/8 x 1 1/8	068H7114

* The rated capacity is based on:
 Evaporating temperature $t_e = 40^{\circ}\text{F}$
 Liquid temperature $t_l = 80^{\circ}\text{F}$
 Condensing temperature $t_c = 90^{\circ}\text{F}$

THERMOSTATIC EXPANSION VALVES

DANFOSS TYPE TDE & TDEB (R22)

Identification

Essential valve data is given on the element label.

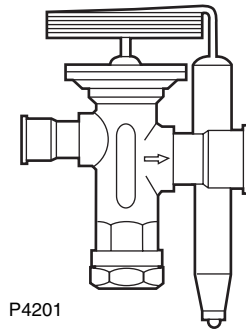
TDEX	=	Type (X: refrigerant R 22)
8 TR	=	Rated capacity Qnom. in Tons of Refrigeration
28 kW	=	Rated capacity Qnom. in kW
R 22	=	Refrigerant
-25/+10 °C	=	Evaporating temperature range (°C)
-15/+50 °F	=	Evaporating temperature range (°F)
068H4112	=	Code number
BP 15	=	Bleed 15%
MOP 100	=	Max. Operation Pressure
PB 28 bar/ MWP 400 psig	=	Max. working pressure
288	=	Date marking (week 28, 1998)



Element label

THERMOSTATIC EXPANSION VALVES

DANFOSS TYPE TRE10, TRE20, TRE40, AND TRE80



Introduction

TRE thermostatic expansion valves have been designed and developed for soldering into air-conditioning and refrigeration systems. Their hermetic tight design meets environmental demands for today and the future. They can be used in systems ranging in capacity from 8 to 70 TR (R 22).

The TRE design incorporates a forged brass body with the entire power element, including the capillary tube and bulb, fabricated from stainless steel. The straight through bimetal

solder connections are formed from deep drawn stainless steel and copper. The valve incorporates a 2-way balanced port orifice making it ideal for biflow operation.

External superheat adjustment is a standard feature on all TRE valves. For non-adjustable OEM versions, a setting assembly is available for field retrofit.

Contact Danfoss for further information.

Features

Bimetal connections

- waterless soldering
- quicker installation times
- higher productivity

Developed for R 410A

- R 22, R 407C, R 134a, R 410A, R 404A, R 507 and other fluorinated refrigerants

Laser-welded power element

- longer diaphragm life
- high pressure tolerance and working pressure

Stainless steel power element, capillary tube and bulb

- high corrosion resistance
- high strength and vibration resistance
- fast installation: self-aligning bulb
- secures with one strap
- good thermal contact and transmission

Two-way balanced port/bi-flow function

- superheat unaffected by condensing pressure independent of flow direction
- one valve for heat pump service

Stainless steel double contact bulb

- straightforward and fast installation
- good thermal contact and heat transfer

Adjustable/non-adjustable version

- setting spindle assembly can be retrofitted to non-adjustable version

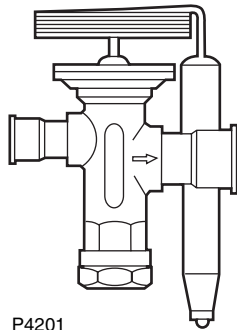
Static superheat, adjustable

- 3.6°F → 10.8°F

THERMOSTATIC EXPANSION VALVES

DANFOSS TYPE TRE10, TRE20, TRE40, AND TRE80

Valve options



P4201

In addition to the standard program, TRE valves are also available with the following options:

Refrigerants - Range - MOP:
Contact Danfoss for information regarding different refrigerants and evaporator ranges.

Static superheat, adjustable:
3.6°F → 10.8°F

Static superheat, fixed:
3.6°F → 10.8°F

Internal bleed: 15%

Capillary tube length:

TYPE	CAPILLARY TUBE LENGTH
TRE10	3 or 5 ft
TRE20	3; 5 or 10 ft
TRE40	5 or 10 ft
TRE80	5 or 10 ft

Connections:

TYPE	INLET ODF SOLDER	OUTLET ODF SOLDER
TRE10	1/2 - 5/8 - 7/8 in.	1/2 - 5/8 - 7/8 - 1-1/8 in.
TRE20	5/8 - 7/8 - 1-1/8 in.	5/8 - 7/8 - 1-1/8 - 1-3/8 in.
TRE40	7/8 - 1-1/8 in.	7/8 - 1-1/8 - 1-3/8 in.
TRE80	1-1/8 - 1-3/8 in.	1-1/8 - 1-3/8 - 1-5/8 in.

Equalizing connection 1/4 in. or 6 mm ODF on all types.
Sizes in bold type are standard sizes.

Ordering

Valve and bulb strap are supplied in mutipack.

The numbers supplied are as follows:

Type	Multipack
TRE 10	12 pcs
TRE 20	8 pcs
TRE 40	6 pcs
TRE 80	4 pcs

Overview of product range

Capacity TR	Refrigerant		Range	MOP
	Type	Code		
8 - 70	R 22	X	K	60°F
8 - 70	R 22	X	N	
8 - 85	R 410A	L	K	60°F
8 - 85	R 410A	L	N	
8 - 70	R 407C	Z	K	60°F
8 - 70	R 407C	Z	N	
5 - 56	R 134a	N	K	60°F
5 - 56	R 134a	N	N	

K: -15 → +50°F

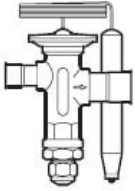
N: -40 → +50°F

THERMOSTATIC EXPANSION VALVES

DANFOSS TYPE TRE10, TRE20, TRE40, AND TRE80

Ordering
Standard Program

R22, R410A



REFRIGERANT	TYPE RATED CAPACITY $Q_{nom}^{1)}$ TR	RATED CAPACITY $Q_{nom}^{1)}$ TR	CONNECTION ODF SOLDER		RANGE K -15°/+50°F MOP 60°F -25°/+10°C MOP 15°C	RANGE N -40°/+50°F -40°/+10°C
			Inlet in.	Outlet in.	Part no. Multipack ²⁾	Part no. Multipack ²⁾
R22	TRE10-8X	8	5/8	7/8	067L1021	067L1121
	TRE10-10X	10	5/8	7/8	067L1024	067L1124
	TRE20-10X	10	5/8	7/8	067L1075	067L1175
	TRE20-12.5X	12.5	5/8	7/8	067L1079	067L1179
	TRE20-15X	15	7/8	1 1/8	067L1084	067L1184
	TRE20-20X	20	7/8	1 1/8	067L1087	067L1187
	TRE20-20X	20	7/8	1 3/8	067L1088	067L1188
	TRE40-20X	20	7/8	1 1/8	067L3001	067L3101
	TRE40-20X	20	7/8	1 3/8	067L3002	067L3102
	TRE40-25X	25	7/8	1 3/8	067L3005	067L3105
	TRE40-25X	25	1 1/8	1 3/8	067L3006	067L3106
	TRE40-30X	30	1 1/8	1 3/8	067L3009	067L3109
	TRE40-40X	40	1 1/8	1 3/8	067L3012	067L3112
	TRE80-40X	40	1 1/8	1 3/8	067L3060	067L3160
	TRE80-55X	55	1 1/8	1 3/8	067L3063	067L3163
	TRE80-70X	70	1 1/8	1 5/8	067L3066	067L3166
R410A	TRE10-8L	8	5/8	5/8	067L1028	067L1128
	TRE10-8L	8	5/8	7/8	067L1029	067L1129
	TRE10-10L	10	5/8	5/8	067L1030	067L1130
	TRE10-10L	10	5/8	7/8	067L1031	067L1131
	TRE10-12.5L	12.5	5/8	5/8	067L1034	067L1134
	TRE10-12.5L	12.5	5/8	7/8	067L1035	067L1135
	TRE10-15L	15	7/8	7/8	067L1038	067L1138
	TRE10-15L	15	7/8	1 1/8	067L1039	067L1139
	TRE20-15L	15	7/8	7/8	067L1091	067L1191
	TRE20-15L	15	7/8	1 1/8	067L1092	067L1192
	TRE20-20L	20	7/8	7/8	067L1093	067L1193
	TRE20-20L	20	7/8	1 1/8	067L1094	067L1194
	TRE20-25L	25	7/8	1 1/8	067L1097	067L1197
	TRE20-25L	25	1 1/8	1 1/8	067L1099	067L1199
	TRE40-25L	25	7/8	1 1/8	067L3015	067L3115
	TRE40-25L	25	1 1/8	1 3/8	067L3016	067L3116
	TRE40-30L	30	1 1/8	1 3/8	067L3019	067L3119
	TRE40-30L	30	1 1/8	1 3/8	067L3020	067L3120
	TRE40-40L	40	1 1/8	1 1/8	067L3023	067L3123
	TRE40-40L	40	1 1/8	1 3/8	067L3024	067L3124
	TRE40-55L	55	1 1/8	1 1/8	067L3027	067L3127
	TRE40-55L	55	1 1/8	1 3/8	067L3028	067L3128
	TRE80-55L	55	1 1/8	1 1/8	067L3069	067L3169
	TRE80-55L	55	1 1/8	1 3/8	067L3070	067L3170
	TRE80-80L	80	1 1/8	1 3/8	067L3073	067L3173
	TRE80-80L	80	1 1/8	1 5/8	067L3074	067L3174
	TRE80-80L	80	1 3/8	1 3/8	067L3075	067L3175
	TRE80-100L	100	1 1/8	1 5/8	067L3078	067L3178
	TRE80-100L	100	1 3/8	1 5/8	067L3079	067L3179

Pressure equalization = 1/4 in. ODF

1) The rated capacity is based on
ARI Standard 750-97

2) Number of valves in industrial
and multipacks.

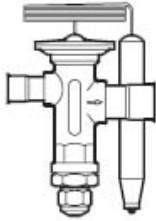
For connections, refrigerants, capillary tube lengths, etc. outside the standard program, see *Valve options*.

THERMOSTATIC EXPANSION VALVES

DANFOSS TYPE TRE10, TRE20, TRE40, AND TRE80

Ordering
Standard program

R407C, R134a



REFRIGERANT	TYPE RATED CAPACITY $Q_{nom}^{1)}$ TR	RATED CAPACITY $Q_{nom}^{1)}$ TR	CONNECTION ODF SOLDER		RANGE K -15°/+50°F MOP 60°F -25°/+10°C MOP 15°C	RANGE N -40°/+50°F -40°/+10°C
			Inlet in.	Outlet in.	Part no. Multipack ²⁾	Part no. Multipack ²⁾
R407C	TRE10-8Z	8	5/8	7/8	067L1012	067L1112
	TRE10-10Z	10	5/8	7/8	067L1015	067L1115
	TRE20-10Z	10	5/8	7/8	067L1058	067L1158
	TRE20-12.5Z	12.5	5/8	7/8	067L1062	067L1162
	TRE20-15Z	15	7/8	1 1/8	067L1067	067L1167
	TRE20-20Z	20	7/8	1 1/8	067L1070	067L1170
	TRE20-20Z	20	7/8	1 3/8	067L1071	067L1171
	TRE40-20Z	20	7/8	1 1/8	067L3030	067L3130
	TRE40-20Z	20	7/8	1 3/8	067L3031	067L3131
	TRE40-25Z	25	7/8	1 3/8	067L3034	067L3134
	TRE40-25Z	25	1 1/8	1 3/8	067L3035	067L3135
	TRE40-30Z	30	1 1/8	1 3/8	067L3038	067L3138
	TRE40-40Z	40	1 1/8	1 3/8	067L3040	067L3140
	TRE80-40Z	40	1 1/8	1 3/8	067L3082	067L3182
	TRE80-55Z	55	1 1/8	1 3/8	067L3085	067L3185
	TRE80-70Z	70	1 1/8	1 5/8	067L3088	067L3188
R134a	TRE10-5N	5	5/8	7/8	067L1003	067L1103
	TRE10-7N	7	5/8	7/8	067L1006	067L1106
	TRE20-7N	7	5/8	7/8	067L1041	067L1141
	TRE20-9N	9	5/8	7/8	067L1045	067L1145
	TRE20-11N	11	7/8	1 1/8	067L1050	067L1150
	TRE20-14N	14	7/8	1 1/8	067L1053	067L1153
	TRE20-14N	14	7/8	1 3/8	067L1054	067L1154
	TRE40-14N	14	7/8	1 1/8	067L3043	067L3143
	TRE40-14N	14	7/8	1 3/8	067L3044	067L3144
	TRE40-16N	16	7/8	1 3/8	067L3047	067L3147
	TRE40-16N	16	1 1/8	1 3/8	067L3048	067L3148
	TRE40-20N	20	1 1/8	1 3/8	067L3051	067L3151
	TRE40-25N	25	1 1/8	1 3/8	067L3054	067L3154
	TRE80-25N	25	1 1/8	1 1/8	067L3091	067L3191
	TRE80-35N	35	1 1/8	1 3/8	067L3094	067L3194
	TRE80-45N	45	1 1/8	1 5/8	067L3097	067L3197

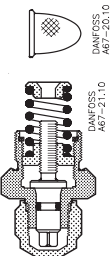
Pressure equalization = 1/4 in. ODF

1) According to ARI 750
Rated capacities for Range N are based on:
Liquid temperature ahead of expansion valve $t_l = 100^\circ\text{F}$
Evaporating temperature $t_e = 40^\circ\text{F}$
Pressure drop across valve $\Delta p = 60$ psi for R134a
Pressure drop across valve $\Delta p = 100$ psi for R22, R404A, R407C and R507
Pressure drop across valve $\Delta p = 160$ psi for R410A.

2) Number of valves in industrial and multipacks.

For connections, refrigerants, capillary tube lengths, etc. outside the standard program, see *Valve options*.

Accessories



Filter:
For mounting in the inlet connection.

DIMENSION	PART NO.
1/2 in.	067L1281
5/8 in.	067L1282
7/8 in.	067L1283
1 1/8 in.	067L1284

Setting spindle assembly:
For installation on valves with fixed setting.
Note: Spring not included.

TYPE	TIGHTENING TORQUE	PART NO.
TRE10	22 ft lbf	067L1295
TRE20	34 ft lbf	067L1296
TRE40	49 ft lbf	067L1297
TRE80	66 ft lbf	067L1298

SOLENOID VALVES

DANFOSS SOLENOID VALVES

INTRODUCTION

EVR is a direct or servo operated solenoid valve for liquid, suction, and hot gas lines using fluorinated refrigerants.

EVR valves are supplied as separate components; valve body and coil, if required, can be ordered separately.

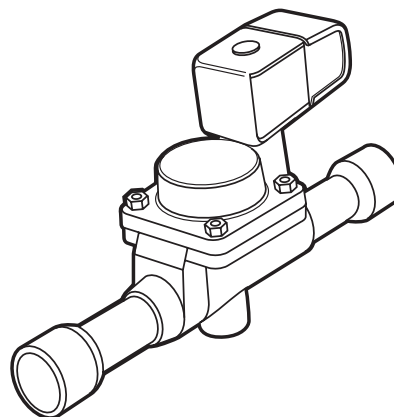
FEATURES

- A complete range of solenoid valves for refrigeration, freezing and air conditioning systems.
- Normally closed (NC) and normally open (NO) versions available.
- AC and DC coils are interchangeable on all valve body versions.
- Use with any fluorinated refrigerant.
- Designed for media temperatures up to 220° F.
- Flare connections up to 5/8 in.
- Solder connections up to 2-1/8 in.
- Solder versions have extended connections; there is no need to dismantle the valve when soldering.

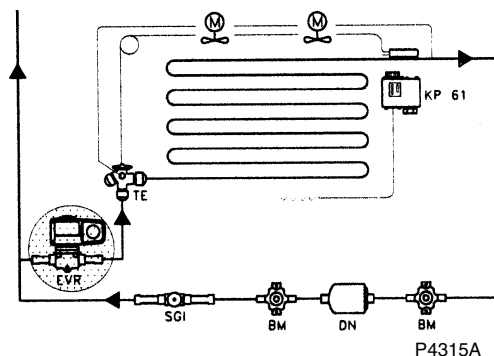
APPROVALS

NOTE: These approvals are only recognized when one of the EVR series of solenoid valves found in this leaflet is combined with a GP general purpose coil.

- UL listed, file MH 7648.
- CSA certified, LR 52727.



P4315



SOLENOID VALVES

DANFOSS TYPE EVR 2 TO 40

Ordering

Separate valve bodies, normally closed (NC)

Metric conversions

1 psi = 0.07 bar
 5/9 (t₁°F - 32) = t₂°C
 1 ton = 3.5 kW
 1 in. = 25.4 mm
 US gal/min = 8.6 m³/h

Type	Rated capacity R22 (liquid) tons	Connection in.	Port size in.	Cv value gal/min	Part no. Valve body without coil type			
					Flare		Solder ODF	
					With manual stem operation in.	Without manual stem operation in.	With manual stem operation in.	Without manual stem operation in.
EVR 2	1.17	1/4	3/32	0.19		032F7101		032F7100
EVR 3	2.03	1/4	1/8	0.32		032F1155		032F7105
EVR 3	2.03	3/8	1/8	0.32		032F1154		032F1157
EVR 4	4.15	3/8	5/32	0.66		032F7112		032F7110
EVR 4	4.15	1/2	5/32	0.66		032F7113		032F7111
EVR 6	5.83	3/8	15/64	0.93	032F1185	032F1160	032F7116	032F7115
EVR 6	5.83	1/2	15/64	0.93		032F1159		032F1162
EVR 6	5.83	5/8	15/64	0.93				032F7117
EVR 8	8.01	3/8	9/32	1.30				032F7120
EVR 8	8.01	1/2	9/32	1.30		032F7123		032F7121
EVR 8	8.01	5/8	9/32	1.30				032F7122
EVR 10	13.8	3/8	3/8	2.20				032F7125
EVR 10	13.8	1/2	3/8	2.20	032F1187	032F1165	032F1188	032F1166
EVR 10	13.8	5/8	3/8	2.20		032F1167		032F1168
EVR 15	18.9	5/8	9/16	3.00			032F1172	032F1171
EVR 15	18.9	7/8	1/4	3.00				032F7130
EVR 18	24.6	7/8	19/32	3.90			032F1004	032F7135
EVR 18	24.6	1 1/8	19/32	3.90				032F7136
EVR 20	36.4	7/8	7/8	5.80			032F1177	032F1176
EVR 20	36.4	1 1/8	7/8	5.80			032F2272	032F1178
EVR 22	43.7	1 1/8	9/16	6.90				032F7145
EVR 22	43.7	1 3/8	9/16	6.90				032F7146
EVR 25	72.8	1 1/8	1	12.00			032F1190	032F1189
EVR 25	72.8	1 3/8	1	12.00			032F1194	032F1193
EVR 32	116.5	1 3/8	7/8	18.00			042H1177	042H1176
EVR 32	116.5	1 5/8	7/8	18.00			042H1179	042H1178
EVR 32	116.5	2 1/8	7/8	18.00			042H1181	042H1180
EVR 40	182.0	1 5/8	1	29.00			042H1186	042H1185
EVR 40	182.0	2 1/8	1	29.00			042H1188	042H1187

Separate valve bodies, normally open (NO)

Type	Rated capacity R22 (liquid) tons	Connection in.	Port size in.	Cv value gal/min	Valve body excl. coil	
					Flare in.	Solder ODF in.
EVR 6	5.8	3/8	1/4	0.93	032F1163	032F1164
EVR 10	13.8	1/2	3/8	2.20		032F1169
EVR 15	18.9	5/8	9/16	3.00		032F1174

Coils, see next page.

Accessories

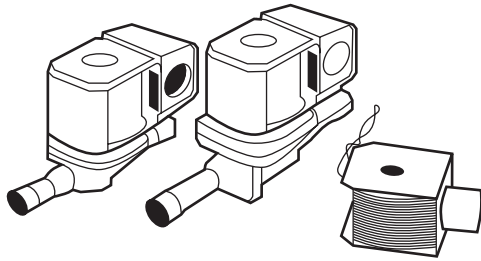
Mounting bracket for EVR 2, 3, 4, 6 and 10
 Part no. **32F0086**

SOLENOID VALVES

DANFOSS TYPE EVR 2 TO 40

Introduction

General Purpose coil, type GP



P4644

The GP is a general purpose solenoid valve coil with Danlok™ snap-on mounting to make installation faster, easier, and more secure.

Features

Mount and dismount without tools.
No loose parts during mounting or operation.
Suitable for all standard Danfoss solenoid valves.

Available with terminal box or conduit boss connection.
Dual voltage models available.

Technical Data

Enclosure

- with junction box, NEMA 2
- with conduit boss, NEMA 4

Ambient temperature

– 40 to +120°F

Ordering

Voltage +10 to –15% V	Frequency Hz	Part No.		Conduit Boss Length	Box Qty.
		Junction Box	Conduit Boss		
Dual 120/208	50/60	018Z7600	—	—	35
208/240	50/60	018Z7611	018Z7621	18"	35
110/120	50/60	018Z7612	018Z7622	18"	35
24	50/60	018Z7613	018Z7623	18"	35
110/120	50/60	—	018Z7627	124"	35
115	60	—	018Z7601	124"	35
110/120	50/60	—	018Z7628	70"	35
24	50/60	—	018Z7602	70"	35
24	60	—	018Z7626	99"	35
120 DC	—	018Z7603	—	—	35
120 DC	—	—	018Z7625	19"	35

EVAPORATOR PRESSURE REGULATORS

DANFOSS EVAPORATOR PRESSURE REGULATORS

INTRODUCTION

KVP evaporator pressure regulators are mounted in the suction line of refrigeration and air conditioning systems.

They are used to maintain a constant pressure corresponding to a constant temperature on the evaporator.

They also protect against too low an evaporating pressure by throttling down when pressure falls below the set value.

They are also used to differentiate the evaporating pressures in two or more evaporators in systems with one compressor.

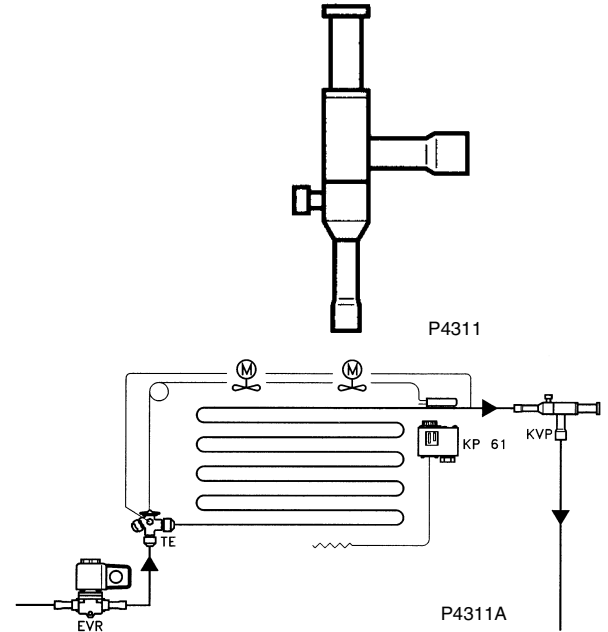
APPROVALS

UL listed, file SA7200.

CSA approved.



ORDERING



TYPE	RATED CAPACITY* (Tons)				FLARE CONNECTION†		SOLDER CONNECTION	
	R22	R134a	R404A/ R507	R407C	in.	Part No.	in. ODF	Part No.
KVP 12	1.3	0.9	1.2	1.2	1/2	034L0021	1/2	034L0023
KVP 15	1.3	0.9	1.2	1.2	5/8	034L0022	5/8	034L0029
KVP 22	1.3	0.9	1.2	1.2			7/8	034L0025
KVP 28	2.8	1.9	2.4	2.6			1-1/8	034L0026
KVP 35	2.8	1.9	2.4	2.6			1-3/8	034L0032

*Rated capacity is based on:

Evaporating temperature $t_e = 40^\circ \text{F}$

Condensing temperature $t_c = 100^\circ \text{F}$

Pressure drop across regulator $\Delta p = 2 \text{ psi}$

Offset (design evaporating pressure minus minimum allowable evaporator pressure) = 9 psi.

†KVP supplied without flare nuts. Separate flare nuts can be supplied:

1/2 in., part no. **011L1103**

5/8 in., part no. **011L1167**

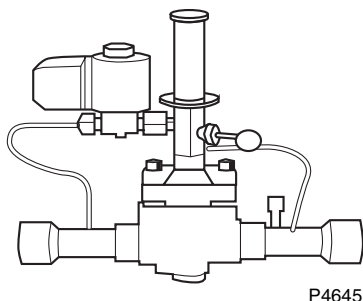
NOTE: The connection dimensions chosen must not be too small, as gas velocities in excess of 130 ft/s at the inlet of the regulator can result in flow noise.

EVAPORATOR PRESSURE REGULATORS

DANFOSS TYPE PKV/PKVS

Introduction

Range 5 1/4 – 13 1/2 TR (R 22)



PKV is a servo-operated, evaporator pressure regulator that operates with minimum pressure drop in the suction line.

When designing refrigeration systems, it is important to minimize the pressure drop in the suction line, because increased pressure drop reduces compressor capacity, resulting in longer running times and higher energy costs.

PKV has been specifically developed for low temperature systems where pressure drop has the greatest effect.

PKVS is fitted with an EVR 3 solenoid valve for use in systems with hot gas defrost and where positive shut-off is required.

Ordering

TYPE	RATED CAPACITY ¹⁾ tons				CONNECTION SOLDER ODF in.	Part No.
	R22	R134a	R404A/ R507	R407C		
PKV 12	5.2	3.8	4.4	4.8	1 1/8	034N1051
PKV 15	8.3	6.1	7.0	7.7	1 3/8	034N1052
PKV 20	13.5	10.1	11.4	12.6	1 5/8	034N1053
PKVS 12	5.2	3.8	4.4	4.8	1 1/8	034N1080 ²⁾
PKVS 15	8.3	6.1	7.0	7.7	1 3/8	034N1081 ²⁾
PKVS 20	13.5	10.1	11.4	12.6	1 5/8	034N1082 ²⁾

1) Rated capacity is based on:

Evaporating temperature	$t_e = 40^\circ \text{F}$
Condensing temperature	$t_c = 100^\circ \text{F}$
Pressure drop across valve	$\Delta p = 2 \text{ psi}$

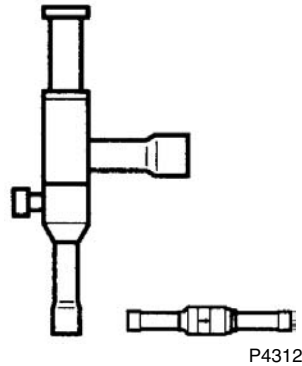
2) With 115 V coil

Note: Type PKVS is supplied with an EVR 3 NC solenoid valve (032F1155) fitted in the vent line. EVR 3 is supplied without coil and must be ordered separately.

EVAPORATOR PRESSURE REGULATORS

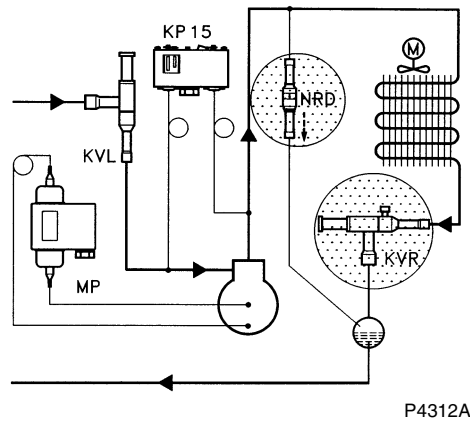
DANFOSS CONDENSER PRESSURE REGULATORS

Introduction



KVR condenser regulators can be mounted in either the gas or liquid side of the condenser in refrigeration and air conditioning systems. They are used to maintain a constant and sufficiently high condensing pressure with systems using air-cooled condensers.

They can also be used with valve types NRD or KVD to assure that adequate pressure is maintained on the receiver.



Ordering

Type	Rated Liquid Capacity ¹⁾ (Evaporator Capacity) tons				Rated Hot Gas ¹⁾ (Evaporator Capacity) tons				Flare Connection ²⁾ in.	Part No.	Solder Connection in.	Part No.
	R22	R134a	R404A/ R507	R407C	R22	R134a	R404A/ R507	R407C				
KVR 12	12.7	11.8	8.2	13.8	4.13	3.03	3.27	4.50	1/2	034L0091	1/2	034L0093
KVR 15									5/8	034L0092	5/8	034L0097
KVR 22											7/8	034L0094
KVR 28	32.6	30.2	20.9	35.5	10.93	8.04	8.66	11.91			1 1/8	034L0095
KVR 35											1 3/8	034L0100

1) Rated capacity is based on:
 Evaporating temperature $t_e = 40^\circ \text{F}$
 Condensing temperature $t_c = 100^\circ \text{F}$
 Pressure drop across valve $\Delta p = 3 \text{ psi}$ for liquid capacity
 $\Delta p = 3 \text{ psi}$ for hot gas capacity

2) KVR are delivered without flare nuts. Separate flare nuts can be supplied:
 1/2 in., part no. **011L1103**
 5/8 in., part no. **011L1167**

Note: The connection dimensions chosen must not be too small, as gas velocities in excess of 130 ft/s at the inlet of the regulator can result in flow noise.

HOT GAS BYPASS CAPACITY REGULATORS

DANFOSS HOT GAS BYPASS CAPACITY REGULATORS

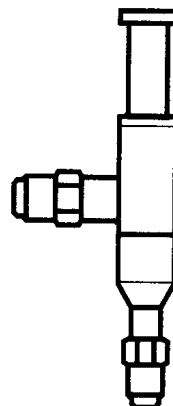
INTRODUCTION

KVC capacity regulators are used to adapt compressor capacity to actual evaporator load by supplying a replacement capacity in form of hot/cool gas.

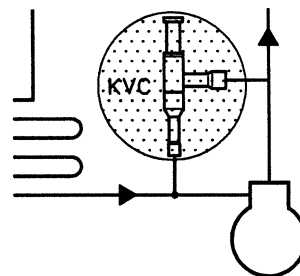
It is installed in a bypass line between the high and low pressure sides of the refrigeration system and is designed for direct gas injection into the suction line.

APPROVALS.

UL listed, file SA7200.
CSA approved



P4313



P4313A

ORDERING

TYPE	RATED CAPACITY* (Tons)				FLARE CONNECTION†		SOLDER CONNECTION	
	R-22	R-134a	R-404A/R-507	R-407C	in.	Code No.	in. ODF	Code No.
KVC 12	2.14	1.36	2.02	2.31	1/2	034L0141	1/2	034L0143
KVC 15	4.17	2.65	3.93	4.50	5/8	034L0142	5/8	034L0147
KVC 22	5.35	3.41	5.04	5.78			7/8	034L0144

*Rated capacity is based on:

Suction gas temperature $t_s = 10^\circ \text{F}$

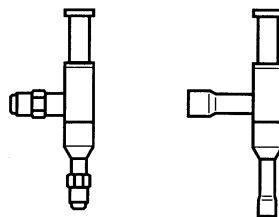
Liquid temperature $t_l = 100^\circ \text{F}$

Offset $\Delta p = 10 \text{ psi}$

†KVC are delivered without flare nuts. Separate flare nuts can be supplied: 1/2 in. code no. **011L1103**; 5/8 in. code no. **011L1167**.

NOTE: The connection dimensions chosen must not be too small, as gas velocities in excess of 130 ft/s at the inlet of the regulator can result in flow noise.

If the temperature in the discharge gas line is too high according to the compressor specifications, it is recommended to install a liquid injection valve in a bypass from the liquid line to the suction line.

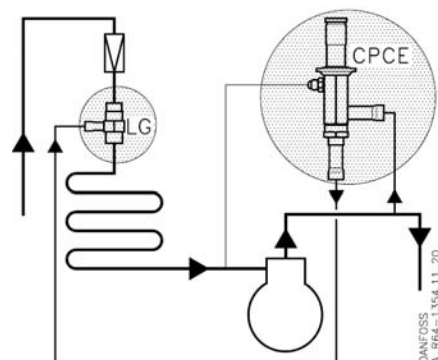
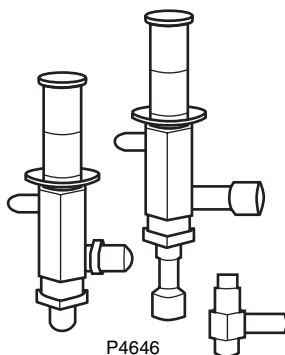


P4313B

HOT GAS BYPASS CAPACITY REGULATORS

DANFOSS TYPE CPCE/LG (LIQUID-GAS MIXERS)

Introduction

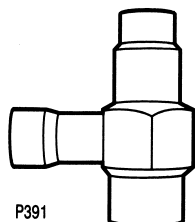


CPCE capacity regulators are used to adapt compressor capacity to actual evaporator load.

They are installed in a bypass line between the high and low pressure sides of the refrigeration

system and is designed for hot gas injection into the evaporator just after the expansion valve.

Liquid-gas mixer type LG can be used at the point of injection to assure a proper mixture.



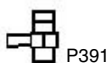
TYPE	CONNECTION FOR			PART NO.
	EXPANSION VALVE (in.) ODM	HOT-GAS (in.) ODM	LIQUID DISTRIBUTOR (in.) ODF	
LG 12/16	5/8	1/2	5/8	069G4001
LG 12/22	7/8	1/2	7/8	069G4002
LG 16/28	1 1/8	5/8	1 1/8	069G4003
LG 22/35	1 3/8	7/8	1 3/8	069G4004

Ordering



Capacity regulator

TYPE	CONNECTION		RATED CAPACITY ¹⁾ tons				Part No.
	Flare in.	SOLDER-ODF in.	R22	R134a	R404A/R507	R407C	
CPCE 12	1/2		6.2	4.3	6.3	6.7	034N0081
CPCE 12		1/2	6.2	4.3	6.3	6.7	034N0082
CPCE 15		5/8	9.2	6.3	9.1	9.9	034N0083
CPCE 22		7/8	12.2	8.4	12.1	13.2	034N0084



1) Rated capacity is based on:
 Minimum suction temperature $t_s = 15^\circ \text{F}$
 Condensing temperature $t_c = 100^\circ \text{F}$
 Superheat of expansion valve $\Delta t_s = 7^\circ \text{F}$

CRANKCASE PRESSURE REGULATORS

DANFOSS CRANKCASE PRESSURE REGULATORS

INTRODUCTION

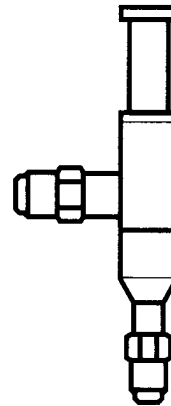
KVL crankcase pressure regulators are used to protect the compressor motor against overload experienced during startup after long off periods or just after defrost periods.

They are installed in the suction line of refrigeration systems.

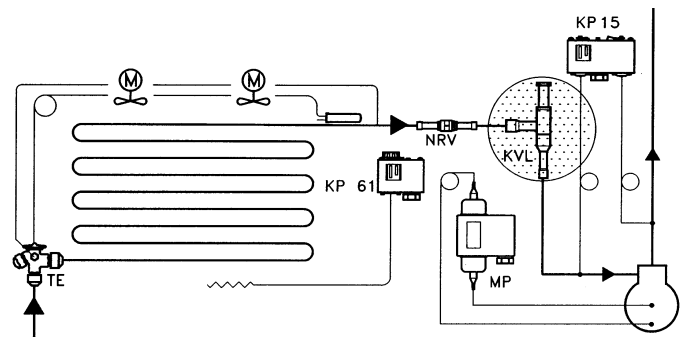
APPROVALS

C^{UL} US listed, file SA7200.

CSA approved.



P4314

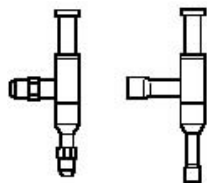


P4314A

CRANKCASE PRESSURE REGULATORS

DANFOSS TYPE KVL

Ordering



Metric conversions

1 psi = 0.07 bar

$5/9 (t_1^{\circ}\text{F} - 32) = t_2^{\circ}\text{C}$

1 ton = 3.5 kW

1 in. = 25.4 mm

Type	Rated Capacity ¹⁾ TR				Flare Connection ²⁾ in.	Part No.	Solder Connection in.	Part No.
	R22	R134a	R404A/ R507	R407C				
KVL 12	0.34	0.22	0.28	0.31	1/2	034L0041	1/2	034L0043
KVL 15	0.34	0.22	0.28	0.31	5/8	034L0042	5/8	034L0049
KVL 22	0.34	0.22	0.28	0.31			7/8	034L0045
KVL 28	1.60	0.74	0.96	1.08			1 1/8	034L0046
KVL 35	1.60	0.74	0.96	0.96			1 3/8	034L0052

1) Rated capacity is based on:

Maximum suction pressure

$p_s = 70$ psig

Suction temperature

$t_s = 10^{\circ}\text{F}$

Condensing temperature

$t_c = 100^{\circ}\text{F}$

Pressure drop across regulator

$\Delta p = 2$ psi

2) KVL are supplied without flare nuts.

Separate flare nuts can be supplied:

1/2 in., part no. **011L1103**

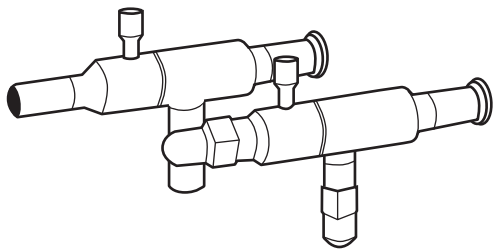
5/8 in., part no. **011L1167**

Note: The connection dimensions chosen must not be too small, as gas velocities in excess of 130 ft/s at the inlet of the regulator can result in flow noise.

RECEIVER PRESSURE REGULATORS

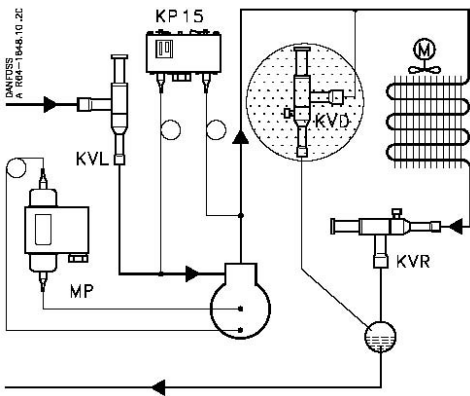
DANFOSS TYPE KVD

Introduction



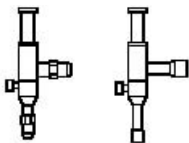
P4647

KVD is a modulating pressure regulator. It opens on falling receiver pressure and bypasses hot gas to maintain the receiver pressure at the regulator setting (adjustable).



KVD and KVR form a regulating system, used to maintain constant and adequately high condensing and receiver pressure in systems with heat-recovery, and in refrigeration and air conditioning systems with air-cooled condensers.

Ordering

	Type	Flare connection ¹⁾		Solder connection	
		in.	Part No.	in.	Part No.
	KVD 12	1/2	034L0171	1/2	034L0173
	KVD 15	5/8	034L0172	5/8	034L0177

1) KVD supplied without flare nuts. Separate flare nuts can be supplied: 1/2 in., part no. 011L1103.

The size of connection must not be chosen too small since gas velocities of more than 40 m/s in the inlet can cause flow noise.

PRESSURE CONTROLS

DANFOSS PRESSURE CONTROLS

INTRODUCTION

KP pressure controls can be used as safety switches against too low a suction pressure and/or too high a discharge pressure in refrigeration and air conditioning systems. They can also be used to start/stop compressors and fans for air-cooled condensers.

They are available in both single and dual versions and include a single pole double throw (SPDT) switch.

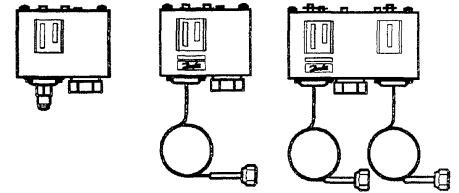
APPROVALS

- UL listed, file E31024.
- CSA certified, LR 27339.

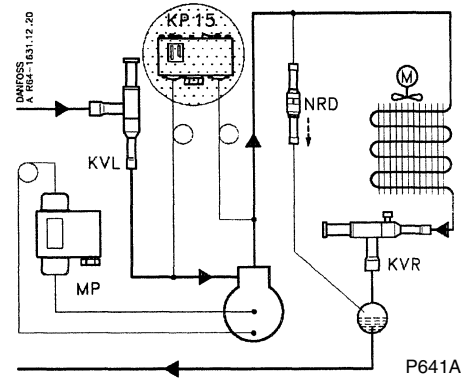


Metric Conversions

1 psi = 0.07 bar
 $5/9 (t_1^{\circ} \text{F} - 32) = t_2^{\circ} \text{C}$
 1 ton = 3.5 kW
 1 in. = 25.4 mm
 1 ft = 0.3 m
 1 lb = 0.454 kg
 1 oz = 28.35 g
 US gal/min = 0.86 m³/h



P641B



ORDERING

Refrigerants: CFC, HCFC, HFC

PRESSURE	TYPE	LOW PRESSURE (LP)		HIGH PRESSURE (HP)		RESET		CONTACT SYSTEM	PART NO.	
		Regulating Range (in. Hg to psig)	Differential Δp psi	Regulating Range psig	Differential Δp psi	Low Pressure LP	High Pressure HP		Pressure Connection	
									1/4 in. Flare	Cap. Tube w/1/4 in. Flare Nut 36 in.
Low	KP 1	6 to 108	10 to 58			auto.		SPDT	0602001	
Low	KP 1	6 to 108	10 to 58			auto.				0602051
Low	KP 1	27 to 100	fixed 10			manual				0602052*
Low	KP 1	6 to 108	10 to 58			auto.				0602076
Low	KP 2	6 to 50	6 to 32			auto.			0602013	
Low	KP 2	6 to 50	6 to 32			auto.				0602063
High	KP 5			115 to 465	25 to 85		auto.	SPDT	0602014	
High	KP 5			115 to 465	25 to 85		auto.			0602064
High	KP 7W†			115 to 465	58 to 140		auto.		0602003	
High	KP 7W†			115 to 465	58 to 140		auto.			0602053
High	KP7B†			115 to 465	fixed 58		manual		0602004	
High	KP7B†			115 to 465	fixed 58		manual			0602054
Dual	KP 15	6 to 108	10 to 58	115 to 465	fixed 58	auto.	auto.	SPDT/w. LP signal	0602008	
Dual	KP 15	6 to 108	10 to 58	115 to 465	fixed 58	auto.	auto.			0602058
Dual	KP 15	6 to 108	10 to 58	115 to 465	fixed 58	auto.	manual			0602059
Dual	KP 15	6 to 108	10 to 58	115 to 465	fixed 58	manual	manual			0602060
Dual	KP 15	6 to 108	10 to 58	115 to 465	fixed 58	auto.	auto.	SPDT/w. LP + HP signal		0602031
Dual	KP 15	6 to 108	10 to 58	115 to 465	fixed 58	auto.	manual		0602026	
Dual	KP 17W†	6 to 108	10 to 58	115 to 465	fixed 58	auto.	auto.	SPDT/w. LP signal		0602029
Dual	KP 17W†	6 to 108	10 to 58	115 to 465	fixed 58	auto.	auto.			0602055

*With dial knob.

†With fail safe double bellows.

Metric Conversions

1 psi = 0.07 bar
 $5/9 (t_1^{\circ} \text{F} - 32) = t_2^{\circ} \text{C}$

PRESSURE CONTROLS

DANFOSS OIL DIFFERENTIAL PRESSURE CONTROLS

INTRODUCTION

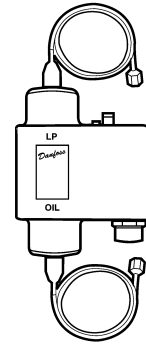
MP 54 and MP 55 oil differential pressure controls are used as safety switches to protect refrigeration compressors against low lubricating oil pressure.

If the oil pressure fails, the control will stop the compressor after a predetermined time period has elapsed.

MP 54 and 55 are used in refrigerating systems using CFC, HCFC, HFC

MP 54 has a fixed differential pressure setting. It also incorporates a thermal time relay with a fixed release time setting.

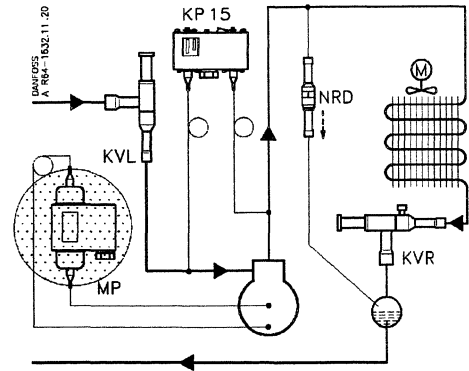
MP 55 have adjustable differential pressure and are available with thermal time relay.



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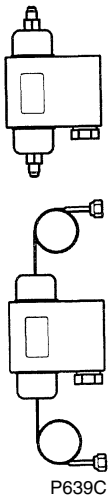
APPROVALS

- UL listed, file E31024.
- CSA certified, LRA 56093.



P639B

ORDERING



P639C

TYPE	DIFFERENTIAL RANGE (PSI)	TIME DELAY (SEC)	REGULATION RANGE LP SIDE (IN. HG TO PSIG)	PRESSURE CONNECTION			PART NO.
				1/4 in. Flare	36 in. Capillary Tube	88 in. Capillary Tube	
MP54	Fixed 6.0	45	29 in. to 170	Yes			060B2008
		45	29 in. to 170		Yes		060B2050
		60	29 in. to 170			Yes	060B2058
		60	29 in. to 170		Yes		060B2059
		120	29 in. to 170	Yes			060B2109
	Fixed 9.0	60	29 in. to 170	Yes			060B2001
		60	29 in. to 170		Yes		060B2051
		90	29 in. to 170	Yes			060B2002
		120	29 in. to 170	Yes			060B2003
		120	29 in. to 170		Yes		060B2053
MP55	Fixed 13	45	29 in. to 170	Yes			060B2150
	4.3 to 64	45	29 in. to 170		Yes		060B2054
		60	29 in. to 170	Yes			060B2012
		90	29 in. to 170	Yes			060B2006
		90	29 in. to 170		Yes		060B2056
		120	29 in. to 170	Yes			060B2007
		120	29 in. to 170		Yes		060B2057

REFRIGERATION THERMOSTATS

DANFOSS TYPE KP

INTRODUCTION

KP thermostats are temperature-controlled electrical switches.

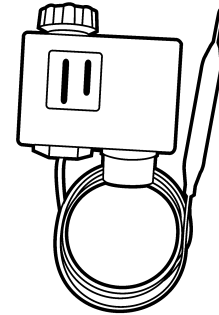
All KP thermostats have a single pole double throw (SPDT) changeover switch. The position of the switch depends on the thermostat setting and the bulb temperature.

A KP thermostat can be directly connected to single-phase a.c. motors of up to about 2.7 hp, or installed in the control current circuit of d.c. motors and large a.c. motors.

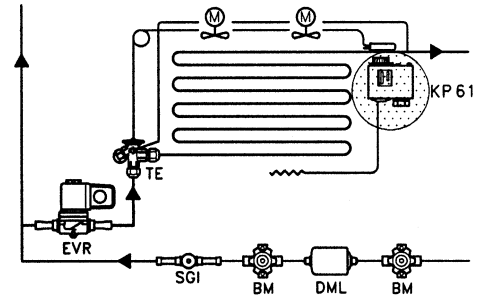
APPROVALS

UL listed, file E31024.

CSA certified, LR 27339.

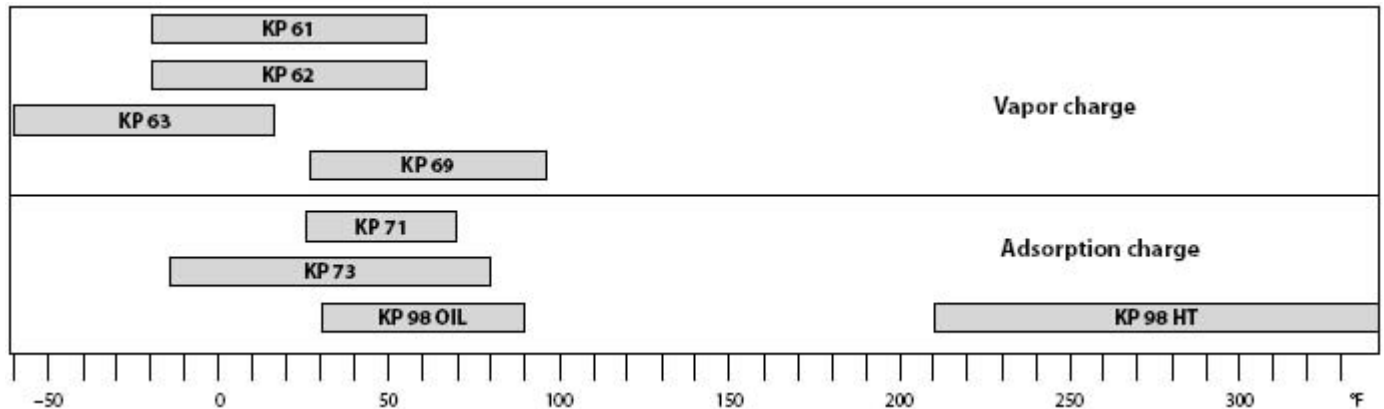


P636



P636C

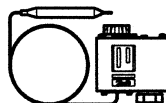
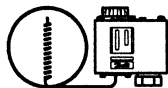
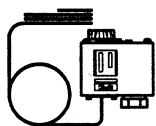
REGULATING RANGES



REFRIGERATION THERMOSTATS

DANFOSS TYPE KP

ORDERING



CHARGE	TYPE	BULB TYPE*	REGULATION RANGE	DIFFERENTIAL Δt		RESET	CAP. TUBE LENGTH (ft)	PART NO.
				At Lowest Temperature Setting °F	At Highest Temperature Setting °F			
Vapour	KP 61	B	-20 to 55	8 to 40	2.2 to 13	Auto.	6.5	060L2002
	KP 62	C	-20 to 60	10 to 40	2.7 to 13	Auto.	—	060L2015
	KP 63	A	-60 to 15	18 to 125	4.9 to 15	Auto.	6.5	060L2007
	KP 69	B	25 to 95	8 to 45	3.2 to 13	Auto.	6.5	060L2009
Adsorption	KP 71	E2	20 to 70	4.5 to 18	4 to 18	Auto.	6.5	060L2010
		E2	25 to 70	Fixed 5.4	Fixed 5.4	Man. Min.	6.5	060L2011
	KP 73	D	-15 to 60	8 to 36	6.3 to 36	Auto.	6.5	060L2017
		E1	0 to 80	10 to 35	10 to 35	Auto.	6.5	060L2029
	KP 98	E2	Oil: 30 to 90	Oil: Fixed 22	Oil: Fixed 22	Man.	3.2	060L2025
		E2	HT: 210 to 350	HT: Fixed 45	HT: Fixed 45	Max.	6.5	

*Bulb Types:

- A** — Straight Capillary Tube
- B** — 3/8-in. dia. x 2-3/4-in. Remote Air Coil
- C** — Integrated Air Coil
- D** — Double Contact Remote Bulb
- E1** — 1/4-in. dia. x 3-3/8-in. Remote Bulb
- E2** — 3/8-in. dia. x 4-in. Remote Bulb

THERMOSTAT BULB TYPES

A		Straight capillary tube Sensing Length: 15 in. of 80 in.
B		Dia. 1-9/16 in. x 1 in. air coil (integral with thermostat)
C		Dia. 1-9/16 in. x 1 in. air coil (integral with thermostat)
D		Dia. 3/8 in. x 2-3/4 in. double contact remote bulb NOTE: Cannot be used in sensor (bulb) pocket.
E		E1: Dia. 1/4 in. x 3-3/8 in. remote bulb E2: Dia. 3/8 in. x 4 in. remote bulb

MOISTURE LIQUID INDICATORS

DANFOSS SIGHT GLASSES

INTRODUCTION

Sight glasses are used to indicate:

1. The condition of the refrigerant in the plant liquid line.
2. The moisture content in the refrigerant.
3. The flow in the oil return line from the oil separator.

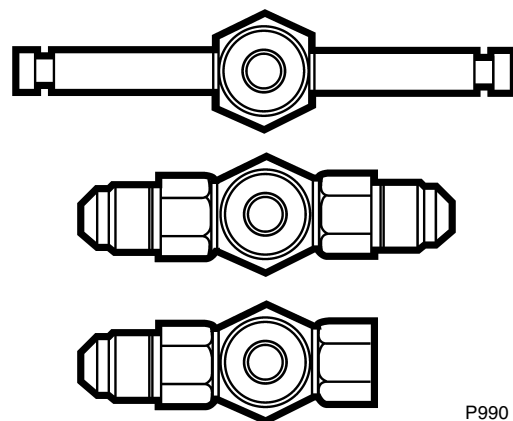
The SGI, SGN, SGR or SGRN can be used for CFC, HCFC and HFC refrigerants.

The SGI and SGN are fitted with an indicator which changes color to show the moisture content in the refrigerant.

The SGR is used to indicate the liquid level in a receiver or the oil level in a compressor crankcase.

The SGRN is a sight glass like SGR, but supplied with a moisture indicator.

The moisture indicators in the sight glasses are dirt repelling.



P990

APPROVALS

UL listed, file SA 652.

CSA Certified, LR 55874.



TECHNICAL DATA

Refrigerants:

SGI/SGRI: CFC

SGN/SGRN: HFC and HCFC

Ambient Temperature:

-60° F → 175° F

Maximum Working Pressure:

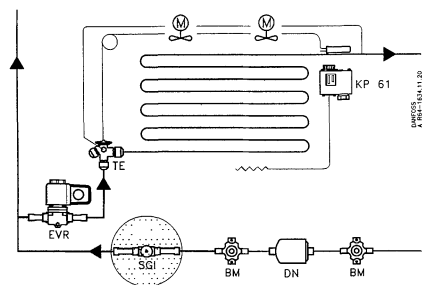
SGI/SGN: 6 → 12: MWP = 500 psig

SGI/SGN: 16s (solder): MWP = 500 psig

SGI/SGN: 16 (flare): MWP = 400 psig

SGI/SGN 19 → 22: MWP = 400 psig

SGR/SGRI/SGRN: MWP = 500 psig



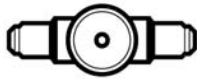
P990D

MOISTURE LIQUID INDICATORS

DANFOSS SIGHT GLASSES

Ordering

SGI, SGR AND SGRI

BODY STYLES	TYPE	VERSION	CONNECTION (in.)	PART NO.	LENGTH (in.)	WEIGHT (LB)
	SGI 6	Flare ext. x ext.	1/4 x 1/4	014-0007	2.65	0.25
	SGI 10		3/8 x 3/8	014-0008	3.25	0.50
	SGI 12		1/2 x 1/2	014-0009	3.50	0.75
	SGI 16		5/8 x 5/8	014-0024	4.10	1.00
	SGI 19		3/4 x 3/4	014-0028	3.33	1.00
	SGI 6	Flare int. x ext. ¹⁾	1/4 x 1/4	014-0021	1.80	0.25
	SGI 10		3/8 x 3/8	014-0022	2.25	0.50
	SGI 12		1/2 x 1/2	014-0025	2.33	0.75
	SGI 16		5/8 x 5/8	014-0026	2.80	1.00
	SGI 19		3/4 x 3/4	014-0043	3.00	1.33
	SGI 6s	ODF x ODF solder	1/4 x 1/4	014-0034	4.00	0.25
	SGI 10s		3/8 x 3/8	014-0035	4.70	0.25
	SGI 12s		1/2 x 1/2	014-0036	5.75	0.50
	SGI 16s		5/8 x 5/8	014-0044	5.75	0.50
	SGI 19s		3/4 x 3/4	014-0047	6.82	0.50
	SGI 6s	ODF x ODF solder		014-0040		
	SGI 10s			014-0041		
	SGI 12s			014-0042		
	SGI 18s			014-0045		
	SGI 6s	ODF x ODM solder	1/4 x 1/4	014-0125		0.25
	SGI 10s		3/8 x 3/8	014-0126	4.00	0.25
	SGI 12s		1/2 x 1/2	014-0127	5.75	0.50
	SGI 16s		5/8 x 5/8	014-0128	5.75	0.50
	SGI 22s		7/8 x 7/8	014-0130		
	SGR 3/4	Pipe thread NPT NPT	G 3/4 A ²⁾	014-0004		
	SGR 3/4		3/4 NPT	014-0005		
	SGRI 1/2		1/2 NPT	014-0002		

1) Can be screwed directly into the filter drier.

2) ISO 228/1.

SGN AND SGRN

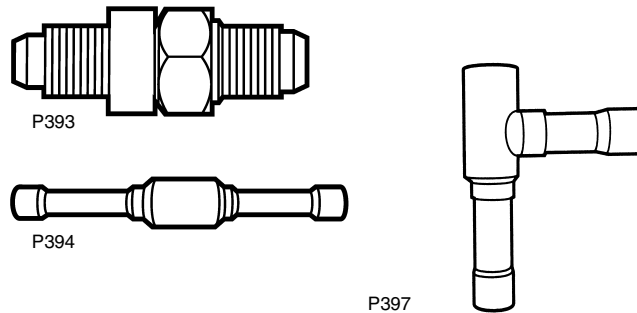
BODY STYLES	TYPE	VERSION	CONNECTION (in.)	PART NO.	LENGTH (in.)	WEIGHT (LB)
	SGN 6	Flare ext. x ext.	1/4 x 1/4	014-0161	2.65	0.25
	SGN 10		3/8 x 3/8	014-0162	3.25	0.50
	SGN 12		1/2 x 1/2	014-0163	3.50	0.75
	SGN 16		5/8 x 5/8	014-0165	4.10	1.00
	SGN 19		3/4 x 3/4	014-0166	3.33	1.00
	SGN 6	Flare int. x ext. ¹⁾	1/4 x 1/4	014-0171	1.80	0.25
	SGN 10		3/8 x 3/8	014-0172	2.25	0.50
	SGN 12		1/2 x 1/2	014-0173	2.33	0.75
	SGN 16		5/8 x 5/8	014-0174	2.80	1.00
	SGN 19		3/4 x 3/4	014-0175	3.00	1.33
	SGN 6s	ODF x ODF solder	1/4 x 1/4	014-0181	4.00	0.25
	SGN 10s		3/8 x 3/8	014-0182	4.70	0.50
	SGN 12s		1/2 x 1/2	014-0183	5.75	0.50
	SGN 16s		5/8 x 5/8	014-0184	5.75	0.50
	SGN 19s		3/4 x 3/4	014-0185	6.82	0.50
	SGN 22s	ODF x ODF solder	7/8 x 7/8	014-0186	6.82	0.25
	SGN 22s		1 1/8 x 1 1/8	014-0187	0.25	0.50
	SGN 6s	ODF x ODM solder	1/4 x 1/4	014-0201	4.00	0.25
	SGN 10s		3/8 x 3/8	014-0202	4.70	0.25
	SGN 12s		1/2 x 1/2	014-0203	5.75	0.50
	SGN 16s		5/8 x 5/8	014-0204	5.75	0.50
	SGN 22s		7/8 x 7/8	014-0206		
	SGRN	NPT	1/2 NPT	014-0006		

1) Can be screwed directly into the filter drier.

CHECK VALVES

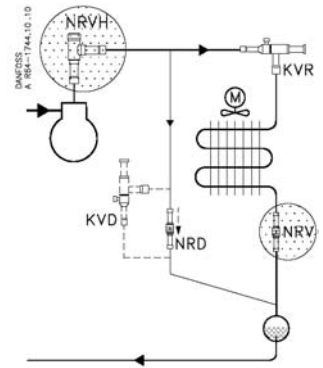
DANFOSS TYPES NRV AND NRVH

Introduction



NRV check valves can be used in liquid, suction, and hot gas lines in refrigeration and air conditioning systems using fluorinated refrigerants. They allow flow in only one direction and have a built-in damping piston that makes the valve suitable for installation in lines where pulsation can occur. They are available in both angleway and straightway versions.

NRVH check valves can be used in liquid and hot gas lines in refrigeration and air conditioning systems using fluorinated refrigerants. They are supplied with a stronger spring than type NRV ($\Delta P = 4.3$ psi) and are especially suitable for installation in the discharge line of systems with compressors connected in parallel.



CHECK VALVES

DANFOSS TYPES NRV AND NRVH

Ordering

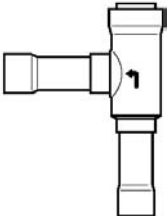
NRV straightway, flare connection

BODY STYLE	TYPE	CONNECTION in.	PRESSURE DROP ²⁾ ACROSS VALVE Δp psi	C _v VALUE ³⁾ gal/min	PART NO.	OVERALL LENGTH in.	WEIGHT lb
	NRV 6	1/4	1.0	0.65	020-1040	2.21	0.2
	NRV 10	3/8	1.0	1.65	020-1041	2.36	0.4
	NRV 12	1/2	0.7	2.37	020-1042	2.72	0.4
	NRV 16	5/8	0.7	4.16	020-1043	3.15	0.7
	NRV 19	3/4	0.7	5.78	020-1044	3.47	0.9

NRV / NRVH straightway, solder connection

BODY STYLE	TYPE	CONNECTION in.	PRESSURE DROP ²⁾ ACROSS VALVE Δp psi	C _v VALUE ³⁾ gal/min	PART NO.	OVERALL LENGTH in.	WEIGHT lb
	NRV 6s	1/4	1.0	0.65	020-1010	3.62	0.2
	NRV 6s ¹⁾	3/8	1.0	0.65	020-1057	3.62	0.4
	NRVH 6s ¹⁾	3/8	1.0	0.65	020-1069	3.62	0.4
	NRV 10s	3/8	1.0	1.65	020-1011	4.29	0.4
	NRVH 10s	3/8	4.3	1.65	020-1046	4.29	0.4
	NRV 10s ¹⁾	1/2	1.0	1.65	020-1058	4.29	0.4
	NRVH 10s ¹⁾	1/2	4.3	1.65	020-1070	4.29	0.4
	NRV 12s	1/2	0.7	2.37	020-1012	5.16	0.4
	NRVH 12s	1/2	4.3	2.37	020-1039	5.16	0.4
	NRV 12s ¹⁾	5/8	0.7	2.37	020-1052	5.16	0.4
	NRVH 12s ¹⁾	5/8	4.3	2.37	020-1064	5.16	0.4
	NRV 16s	5/8	0.7	4.16	020-1018	5.43	0.7
	NRVH 16s	5/8	4.3	4.16	020-1038	5.43	0.7
	NRV 16s ¹⁾	3/4	0.7	4.16	020-1059	5.43	0.7
	NRVH 16s ¹⁾	3/4	4.3	4.16	020-1071	5.43	0.7
	NRV 19s	3/4	0.7	5.78	020-1019	6.50	0.9
	NRVH 19s	3/4	4.3	5.78	020-1023	6.50	0.9
	NRV 19s ¹⁾	7/8	0.7	5.78	020-1054	6.50	0.9
	NRVH 19s ¹⁾	7/8	4.3	5.78	020-1066	6.50	0.9

NRV / NRVH angleway, solder connection

BODY STYLE	TYPE	CONNECTION in.	PRESSURE DROP ²⁾ ACROSS VALVE Δp psi	C _v VALUE ³⁾ gal/min	PART NO.	WEIGHT lb
	NRV 22s	7/8	0.6	9.83	020-1020	1.1
	NRVH 22s	7/8	4.3	9.83	020-1032	1.1
	NRV 22s ¹⁾	1 1/8	0.6	9.83	020-1060	1.1
	NRVH 22s ¹⁾	1 1/8	4.3	9.83	020-1072	1.1
	NRV 28s	1 1/8	0.6	21.96	020-1021	2.4
	NRVH 28s	1 1/8	4.3	21.96	020-1029	2.4
	NRV 28s ¹⁾	1 3/8	0.6	21.96	020-1056	2.4
	NRVH 28s ¹⁾	1 3/8	4.3	21.96	020-1068	2.4
	NRV 35s	1 3/8	0.6	33.52	020-1026	2.4
	NRVH 35s	1 3/8	4.3	33.52	020-1034	2.4
	NRV 35s ¹⁾	1 5/8	0.6	33.52	020-1061	2.4
	NRVH 35s ¹⁾	1 5/8	4.3	33.52	020-1073	2.4

1) Oversize connections

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

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

3) C_v value is the water flow in gal/min at a pressure drop across valve of 1 psi, $\rho = 10$ lb/gal.

Metric Conversions

1 psi = 0.07 bar

1 in. = 25.4 mm

US gal/min = 0.86 m³/h