

	<h2 style="margin: 0;">4-way Reversing Valves Series STF &amp; VHV</h2>	
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### Features

Danfoss Saginomiya type STF/VHV are 4-way reversing valves in a distinctive design which ensures immediate change with minimum pressure drop. The valves have a mechanism which prevents incomplete change and has a wide range of application. The valves are available for use with R 407C, R 134a, R 404A, and R 410A and are available with many different connection sizes. The capacities range from 1,5 kW up to 400 kW.

The 4-way reversing valves are UL and CE approved.

Max. operating pressure: 45 bar  
 min ΔP suction pressure / high pressure: 3,0 bar  
 max ΔP suction pressure / high pressure: 31 bar  
 Media temperature: -20°C to +120°C  
 Ambient temperature: -20°C to +55°C  
 Installation position: see page 5/47

When soldering the connections, it should be ensured that the housing is not heated above 120°C. The coil must be removed during the soldering process.



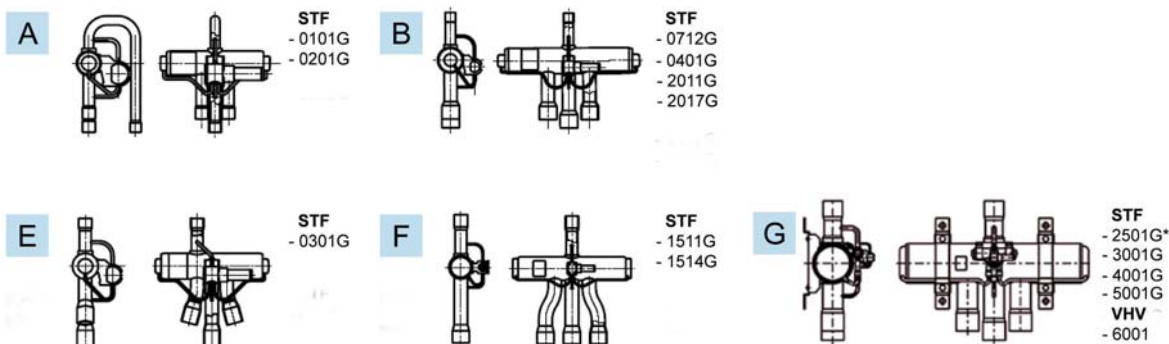
System Components

### Selection:

Type	EDP-No.	max. operating pressure [bar]	Pipe connection				Nominal capacity range [kW]	Design	Weight [kg]
			Discharge side I.D.	Suction side I.D.	Discharge side I.D.	Suction side I.D.			
			Solder [mm]	Solder [mm]	Solder [in]	Solder [in]			
STF-0101G	244.0683	45	8,10	9,70	5/16"	3/8"	1,6 - 5,1	A	0,41
STF-0201G	244.0684	45	9,70	12,95	3/8"	1/2"	2,8 - 11,4	A	0,42
STF-0301G	244.0685	45	12,95	16,15	1/2"	5/8"	5,3 - 14,6	E	0,41
STF-0401G	244.0686	45	12,95	19,15	1/2"	3/4"	8,3 - 29,2	B	0,79
STF-0712G	244.0687	45	19,15	22,30	3/4"	7/8"	21,0 - 53,0	B	2,42
STF-1511G	244.0688	45	22,30	28,90	7/8"	1 1/8"	41 - 61	F	1,57
STF-1514G	244.0689	45	28,90	35,22	1 1/8"	1 3/8"	41 - 61	F	1,57
STF-2011G	244.0690	45	22,30	28,90	7/8"	1 1/8"	41 - 77	B	1,57
STF-2017G	244.0691	45	28,90	35,22	1 1/8"	1 3/8"	41 - 77	B	1,57
STF-2501*	244.0699	45	25,70	32,05	1"	1 1/4"	55 - 98	G	4,99
STF-3001	244.0712	45	32,05	38,40	1 1/4"	1 1/2"	68 - 129	G	6,15
STF-4001	244.0713	45	38,40	45,15	1 1/2"	1 3/4"	122 - 195	G	11,25
STF-5001	244.0714	45	38,35	54,40	1 1/2"	2 1/8"	183 - 256	G	11,45
VHV-6001	244.0710	45	41,20	67,00	1 5/8"	2 5/8"	267 - 374	G	23,20

\*VHV-2501 does not have a valve support

### Designs

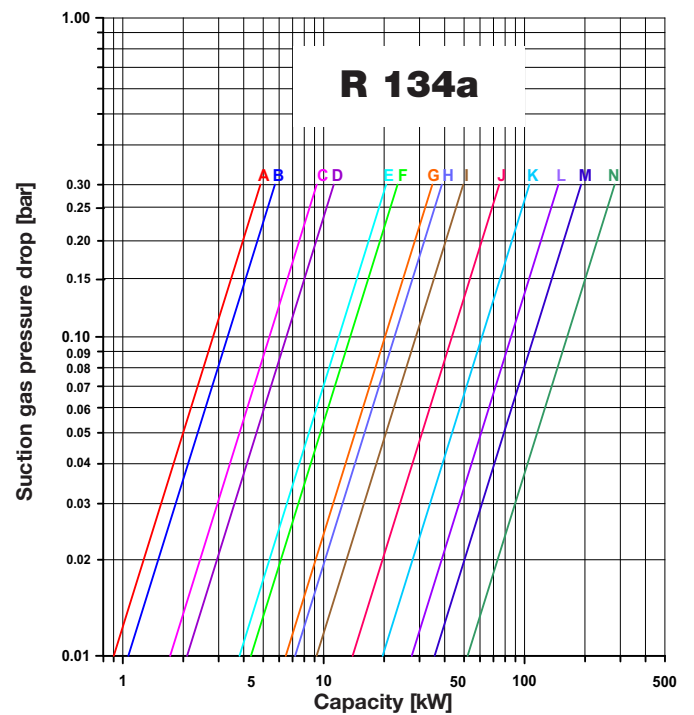
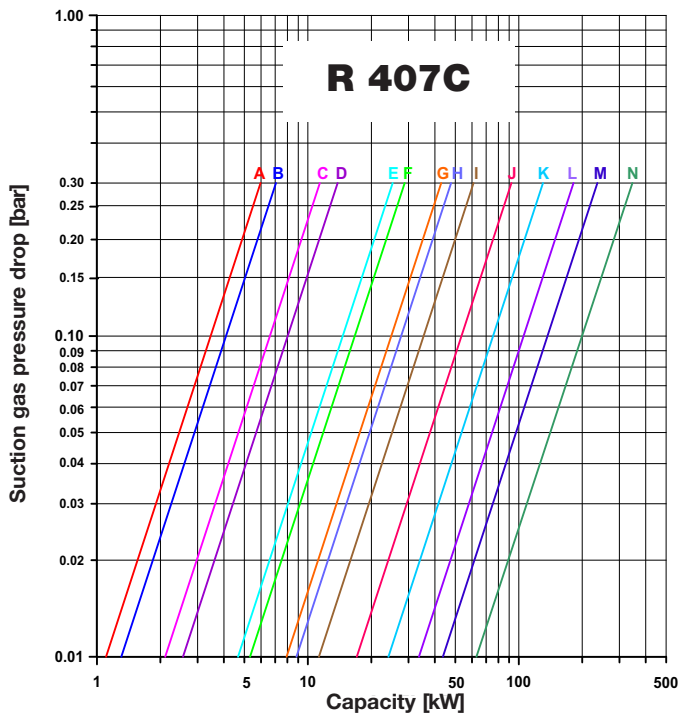
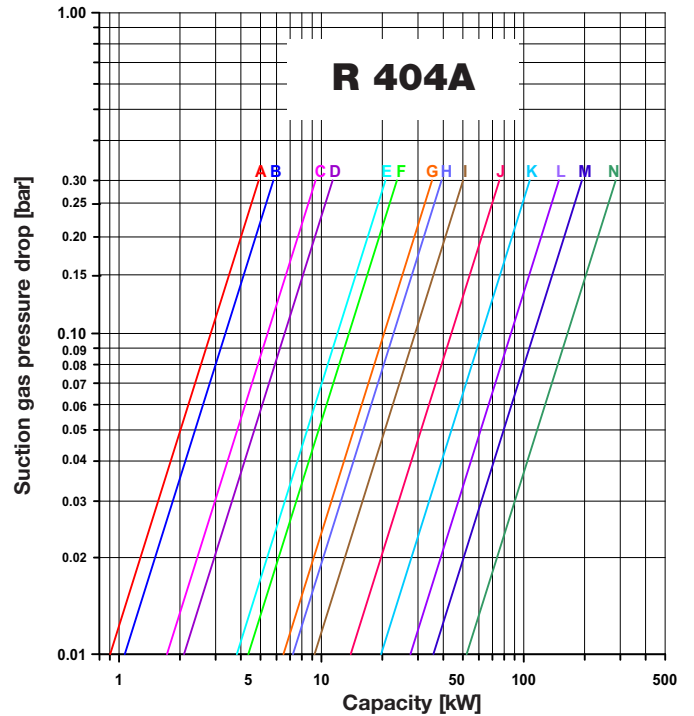
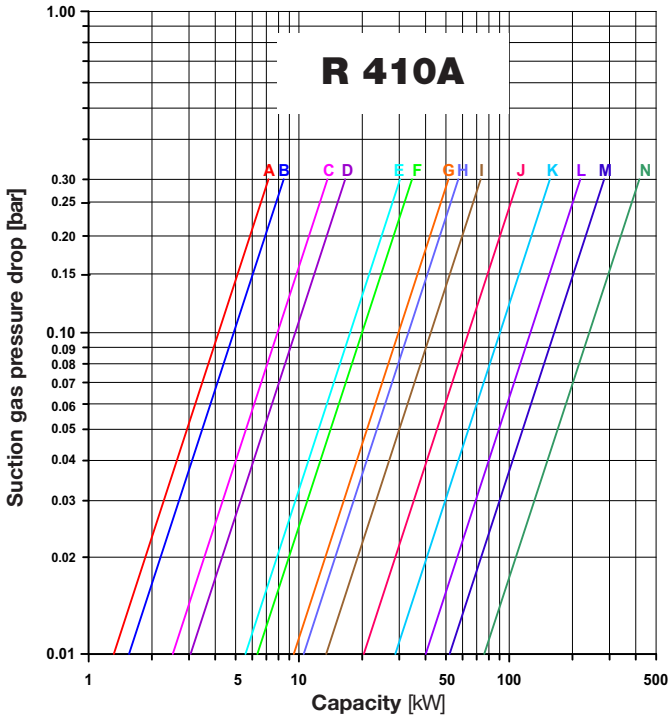


### Accessories / Replacement parts: Solenoid valve coils f. STF

Type	EDP-No.	Supply voltage	Cable length	Capacity	suitable for Type
			[m]	[W]	
STF-01AB500A1	244.0696	24V 50/60 Hz AC	0,6 m	6	STF & VHV
STF-01AJ506B1	244.0694	220-240V 50 Hz AC	0,6 m	6	
STF-01AJ504F1	244.0679	208-240V 50 Hz AC	1,2 m	6	
STF-01AJ512D1	244.0697	220-240V 50 Hz AC	2,0 m	6	



#### Performance charts



Capacity\* for 4-way reversing valves type STF-G and VHV  
\* based on: Condensing temp. = 54,4 °C, evaporating temp. = 7,2 °C superheat = 5 K, subcooling = 5 K

<b>A</b> —	STF-0101G	<b>G</b> —	STF-0[712, 715, 728]G	<b>M</b> —	STF-[5001, 5002]G
<b>B</b> —	STF-0104G	<b>H</b> —	STF-[1511, 1513, 1514]G	<b>N</b> —	VHV-6001
<b>C</b> —	STF-0[201, 202, 204, 205, 208, 209, 214]G	<b>I</b> —	STF-[2011, 2017]G		
<b>D</b> —	STF-0[301, 306]G	<b>J</b> —	STF-[2501, 2505, 2506]G		
<b>E</b> —	STF-0[401, 409, 413]G	<b>K</b> —	STF-[3001, 3003, 3006]G		
<b>F</b> —	STF-0[404, 420]G	<b>L</b> —	STF-[4001, 4002]G		

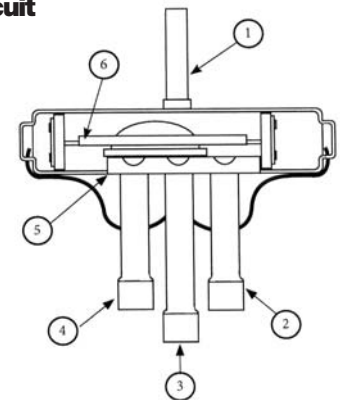
	<h2>4-way Reversing Valves Series STF &amp; VHV</h2>	
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**Construction: Installation position and operation in refrigeration and heating circuit**

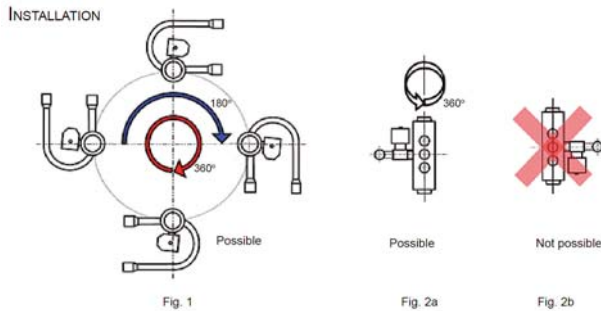
The valve consists of three basic components:

- pilot valve
- main valve body, incl. valve piston
- solenoid coil (ordered separately)

The piston of the 4-way reversing valve is moved by means of changes in the differential pressure in the pilot solenoid valve. The valve body is specially designed to prevent incomplete changeover and motion at minimum pressure difference.



1. Discharge pipe connection
2. Connection to evaporator / condenser
3. Suction gas connection
4. Connection to condenser / evaporator
5. Valve body
6. Piston



- a. In horizontal position, the alignment of the STF series 25, 30, 40, 50 and VHV 60 should be in a range from 0° to 180°. For the remaining types, 0° to 360° is possible (Figure 1).
- b. In vertical position, the valve can be installed in all directions, as long as the coil is pointing up (Figure 2a).

Fig 1. HEATING CYCLE  
(Coil energized)

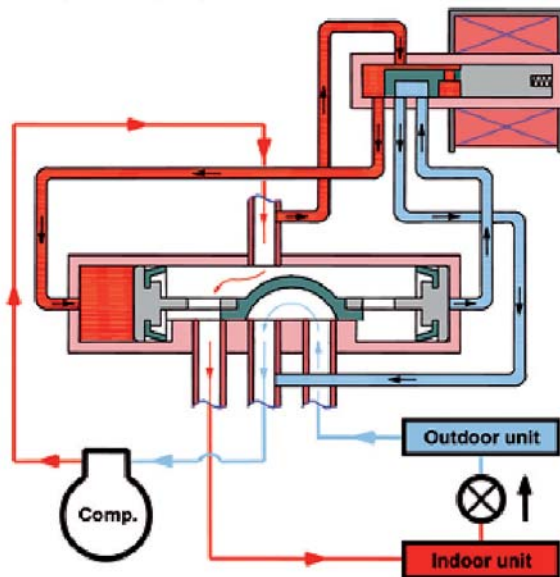
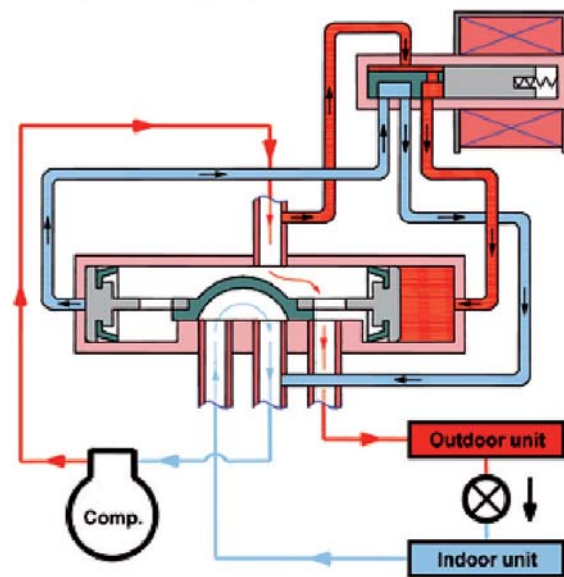


Fig. 2 COOLING CYCLE  
(Coil not energized)

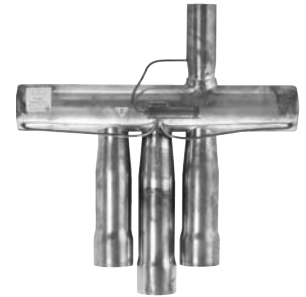
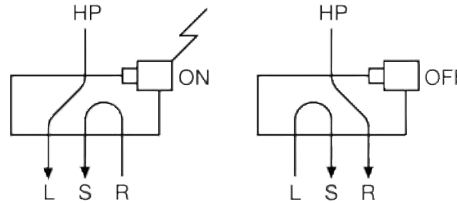


## 4-way Reversing Valves Series V ...

### Features

Can be used for R 134a R 404A, R 507, R 407C, R410 A.  
4-way solenoid valve for circuit changeover in heat pumps and defrosting circuits.  
Compact design.

Max. operating pressure: 46 bar  
Pressure drop  $\Delta P$  min/max: 1,03/33,3 bar  
Burst pressure: 172 bar  
Operating temperature: max. +121°C  
Installation position: any position



### Selection:

Type	EDP-No.	max. operating pressure [bar]	Pipe connection		Nominal capacity $Q_n$ *)										Weight [g]
			Discharge side	Suction side	R410A		R134a		R404A		R507		R407C		
			Solder	Solder	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	
			[mm]	[mm]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	
V1-408050-100	244.2360	46	8,00	12,84	1,75	5,9	1,4	2,7	1,5	2,9	1,5	2,9	1,3	3,3	350
V2-408060-200	244.2361	46	9,66	12,84	3,1	7,7	1,75	3,5	2,1	5,7	2,1	5,7	1,8	5,2	350
V2-4100604-400	244.2354	46	9,66	16,03	4,5	8,7	20,9	6,3	3,1	7,8	3,1	7,8	2,4	6,5	350
V3-412080-800	244.2355	46	12,84	19,18	4,5	12,2	3,5	8,0	4,3	8,8	4,3	8,8	3,6	10,3	400
V6-412080-100	244.2357	46	12,84	19,18	4,5	23,4	3,5	14,7	5,5	16,1	5,5	16,1	3,6	18	800
V6-414080-100	244.2358	46	12,84	22,36	4,5	23,4	3,5	14,7	5,5	16,1	5,5	16,1	3,6	18	800
V6-414120-100	244.2356	46	19,18	22,36	4,5	23,4	3,5	14,7	5,5	16,1	5,5	16,1	3,6	18	800
V10-414120-200	244.2353	46	19,18	22,35	13,3	35,3	7,5	25,4	8,5	27,9	5,5	27,9	12,3	31,2	1300
V12-42200T0200	244.2359	46	35,00	28,60	22,0	52,5	22,0	40,0	23,3	44,1	23,3	44,1	18,6	49,1	2100

\*) Nominal capacities of the reversing valves are listed according to  $T_o$  7°C, and  $T_c$  54°C.

If the operating conditions are different, the required refrigerating capacity must be multiplied by the correction factor "K".  
The valve can be determined according to this result.

### Correction factor "K"

Evaporating temperature $T_e$ in °C	Condensing temperature $T_c$ in °C									Evaporating temperature $T_e$ in °C
	+60	+55	+50	+45	+40	+35	+30	+25	+20	
+10	1,03	0,97	0,92	0,88	0,84	0,81	0,76	0,74	0,71	+10
0	1,42	1,31	1,25	1,19	1,14	1,11	1,04	1,01	0,96	0
-10	1,71	1,62	1,53	1,47	1,39	1,34	1,27	1,23	1,18	-10
-20	2,19	2,08	1,97	1,88	1,79	1,72	1,64	1,58	1,51	-20
-30	2,79	2,63	2,49	2,39	2,27	2,19	2,07	2,01	1,92	-30
-35	3,38	3,21	3,12	3,05	2,91	2,79	2,65	2,53	2,39	-35

### Accessories / Replacement parts: Solenoid valve coil

Type	EDP-No.	Supply voltage	Cable length	Capacity	suitable for Type
			[m]	[W]	
LDK-414801000	244.2362	240V 50/60 Hz AC	1,2	5	V1-V12
LDK-114801000	244.2363	24V 50/60 Hz AC	1,2	5	

