

# SANHUA SHF SERIES



## 4 Way Reversing Valve

SHF series four-way reversing valves are applicable for heat pump systems such as central, unitary and room air conditioners to realize switching between cooling mode and heating mode by changing the flow path of refrigerant.



### FEATURES

- WIDE APPLICATION RANGE
- SUITABLE FOR COOLING CAPACITIES FROM 1.3 TO 15.8 USRT (R410A, CONDITION 1)
- SEVERAL DESIGNS AVAILABLE

### GENERAL SPECIFICATIONS

- Applicable for all common HCFC and HFC refrigerants such as: R22, R134a, R404A, R407C, R410A, R507A
- Medium temperature TS min./max.: -22°F / +275°F
- Ambient temperature min./max.: -13°F / +122 or +158°F (Depending on used coil)
- Relative humidity: 0 to 95% RH

- Max. operating pressure PS: 653 PSI (45 BAR)
- Installation position:
  - Coil upwards or with body axis in horizontal alignment
  - Flow direction according to installation instruction
- Certifications: UL/CSA\* and declaration according to LVD or PED

\* SHF(L)-4H to SHF-50 valves, coil selection on request

### NOMINAL OPERATING CONDITIONS

Nominal operating conditions	Condition 1:	Condition 2:
Condensing Temperature $t_c$	100°F	130°F
Evaporating Temperature $t_o$	41°F	45°F
Superheat $\Delta t_{oh}$	9°F	9°F
Subcooling $\Delta t_{cu}$	0°F	9°F



# SANHUA SHF SERIES 4 Way Reversing Valve

## GENERAL CHARACTERISTICS

Valve Model	Ø Port	Kv	Connections ODF		PS	OPD		PED category
	[inch]		[ft <sup>3</sup> /h]	ØD		ØE/S/C	MAX	
			[inch]	[inch]	[psi]	[psi]	[psi]	
SHF(L)-4H-23U	0.31	60.0	5/16	3/8	652.7	449.6	36.3	3.3
SHF(L)-7H-34U	0.44	109.5	3/8	1/2	652.7	449.6	36.3	3.3
SHF(L)-9H-35U	0.45	127.1	3/8	5/8	652.7	449.6	43.5	3.3
SHF(L)-11H-45D1	0.45	158.9	1/2	5/8	652.7	449.6	43.5	3.3
SHF-14-46	0.53	222.5	1/2	3/4	652.7	449.6	43.5	3.3
SHF-14-47	0.53	222.5	1/2	7/8	652.7	449.6	43.5	3.3
SHF-14-57	0.53	222.5	5/8	7/8	652.7	449.6	43.5	3.3
SHF-20A-46	0.61	279.0	1/2	3/4	652.7	449.6	43.5	3.3
SHF-20A-47	0.61	279.0	1/2	7/8	652.7	449.6	43.5	3.3
SHF-20A-57	0.61	279.0	5/8	7/8	652.7	449.6	43.5	3.3
SHF-20A-67	0.61	279.0	3/4	7/8	652.7	449.6	43.5	3.3
SHF-20D-46-02	0.68	349.6	1/2	3/4	652.7	449.6	43.5	3.3
SHF-35A-47	0.79	490.9	1/2	7/8	652.7	449.6	43.5	3.3
SHF-35A-57	0.79	490.9	5/8	7/8	652.7	449.6	43.5	3.3
SHF-35A-59	0.79	490.9	5/8	1-1/8	652.7	449.6	43.5	3.3
SHF-35A-67	0.79	490.9	3/4	7/8	652.7	449.6	43.5	3.3
SHF-35A-69	0.79	490.9	3/4	1-1/8	652.7	449.6	43.5	3.3
SHF-35A-79	0.79	490.9	7/8	1-1/8	652.7	449.6	43.5	3.3
SHF-35B-67-02	0.82	519.1	3/4	7/8	652.7	449.6	43.5	3.3
SHF-50-911D2	1.00	653.3	1-1/8	1-3/8	652.7	449.6	43.5	3.3
SHF(L)-70-810	1.13	1006.5	1	1-1/4	652.7	449.6	43.5	3.3
SHF(L)-70-810-01	1.13	1006.5	1	1-1/4	652.7	449.6	43.5	3.3
SHF(L)-100-1012	1.37	1430.2	1-1/4	1-1/2	652.7	449.6	43.5	I
SHF(L)-100-1012-01	1.37	1430.2	1-1/4	1-1/2	652.7	449.6	43.5	I
SHF(L)-140-1214	1.61	2062.4	1-1/2	1-3/4	652.7	449.6	43.5	I
SHF(L)-175-1217	1.83	2489.7	1-1/2	2-1/8	652.7	449.6	43.5	I
SHF(L)-210-1321	1.97	2980.6	1-5/8	2-5/8	652.7	449.6	43.5	I
SHF(L)-350-1721	2.32	4887.5	2-1/8	2-5/8	652.7	449.6	43.5	I
SHF(L)-420-2125	2.72	6250.7	2-5/8	3-1/8	652.7	449.6	43.5	I

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# SANHUA SHF SERIES 4 Way Reversing Valve

## CAPACITY SELECTION

Valve Model <sup>1)</sup>	Nominal Capacity (condition 1)							
	R407C <sup>2)</sup>		R410A		R134a		R404A / R507	
	$\Delta P$ : 1.5 psi	$\Delta P$ : 2.9 psi	$\Delta P$ : 1.5 psi	$\Delta P$ : 2.9 psi	$\Delta P$ : 1.5 psi	$\Delta P$ : 2.9 psi	$\Delta P$ : 1.5 psi	$\Delta P$ : 2.9 psi
	[USRT]	[USRT]	[USRT]	[USRT]	[USRT]	[USRT]	[USRT]	[USRT]
SHF(L)-4H-23U	1.1	1.5	1.3	1.8	0.8	1.2	0.9	1.3
SHF(L)-7H-34U	2.0	2.8	2.4	3.4	1.6	2.2	1.7	2.4
SHF(L)-9H-35U	2.3	3.2	2.7	3.9	1.8	2.5	1.9	2.8
SHF(L)-11H-45D1	2.9	4.1	3.5	4.9	2.2	3.2	2.5	3.5
SHF-14-46	4.0	5.6	4.8	6.8	3.1	4.4	3.4	4.8
SHF-14-47	4.0	5.6	4.8	6.8	3.1	4.4	3.4	4.8
SHF-14-57	4.0	5.6	4.8	6.8	3.1	4.4	3.4	4.8
SHF-20A-46	5.0	7.5	6.0	8.5	3.9	5.5	4.3	6.1
SHF-20A-47	5.0	7.5	6.0	8.5	3.9	5.5	4.3	6.1
SHF-20A-57	5.0	7.5	6.0	8.5	3.9	5.5	4.3	6.1
SHF-20A-67	5.0	7.5	6.0	8.5	3.9	5.5	4.3	6.1
SHF-20D-46-02	6.3	8.9	7.6	10.8	5.0	7.5	5.4	7.6
SHF-35A-47	8.8	12.4	10.6	15.0	6.9	9.8	7.5	10.7
SHF-35A-57	8.8	12.4	10.6	15.0	6.9	9.8	7.5	10.7
SHF-35A-59	8.8	12.4	10.6	15.0	6.9	9.8	7.5	10.7
SHF-35A-67	8.8	12.4	10.6	15.0	6.9	9.8	7.5	10.7
SHF-35A-69	8.8	12.4	10.6	15.0	6.9	9.8	7.5	10.7
SHF-35A-79	8.8	12.4	10.6	15.0	6.9	9.8	7.5	10.7
SHF-35B-67-02	9.3	13.1	11.2	15.8	7.3	10.3	8.0	11.3
SHF-50-911D2	11.7	16.6	14.2	20.0	9.2	13.0	10.0	14.2
SHF(L)-70-810	18.1	25.6	21.8	30.9	14.2	20.0	15.5	21.9
SHF(L)-70-810-01	18.1	25.6	21.8	30.9	14.2	20.0	15.5	21.9
SHF(L)-100-1012	25.7	36.3	31.0	43.8	20.1	28.5	22.0	31.1
SHF(L)-100-1012-01	25.7	36.3	31.0	43.8	20.1	28.5	22.0	31.1
SHF(L)-140-1214	37.0	52.3	44.6	63.1	29.0	41.0	31.7	44.8
SHF(L)-175-1217	44.7	63.2	53.9	76.3	35.0	49.6	38.3	54.1
SHF(L)-210-1321	53.5	75.6	64.5	91.3	41.9	59.3	45.8	64.8
SHF(L)-350-1721	87.7	124.0	105.8	149.7	68.8	97.2	75.1	106.2
SHF(L)-420-2125	112.1	158.6	135.4	191.4	88.0	134.6	96.1	135.9

**Note:** 1) Pressure drop is valid for flow from  $\emptyset C$  to  $\emptyset S$  or from  $\emptyset E$  to  $\emptyset S$   
 2) R407C data based on dew point conditions





# SANHUA SHF SERIES 4 Way Reversing Valve

## CAPACITY SELECTION

Valve Model <sup>1)</sup>	Nominal Capacity (condition 2)							
	R407C <sup>2)</sup>		R410A		R134a		R404A / R507	
	$\Delta P$ : 1.5 psi	$\Delta P$ : 2.9 psi	$\Delta P$ : 1.5 psi	$\Delta P$ : 2.9 psi	$\Delta P$ : 1.5 psi	$\Delta P$ : 2.9 psi	$\Delta P$ : 1.5 psi	$\Delta P$ : 2.9 psi
	[USRT]	[USRT]	[USRT]	[USRT]	[USRT]	[USRT]	[USRT]	[USRT]
SHF(L)-4H-23U	1.0	1.4	1.1	1.6	0.8	1.1	0.8	1.1
SHF(L)-7H-34U	1.8	2.6	2.1	3.0	1.5	2.0	1.5	2.0
SHF(L)-9H-35U	2.1	2.9	2.4	3.4	1.6	2.3	1.6	2.3
SHF(L)-11H-45D1	2.6	3.7	3.1	4.3	2.1	3.0	2.1	3.0
SHF-14-46	3.6	5.1	4.2	6.0	2.9	4.1	2.9	4.1
SHF-14-47	3.6	5.1	4.2	6.0	2.9	4.1	2.9	4.1
SHF-14-57	3.6	5.1	4.2	6.0	2.9	4.1	2.9	4.1
SHF-20A-46	4.5	6.4	5.3	7.5	3.6	5.1	3.6	5.1
SHF-20A-47	4.5	6.4	5.3	7.5	3.6	5.1	3.6	5.1
SHF-20A-57	4.5	6.4	5.3	7.5	3.6	5.1	3.6	5.1
SHF-20A-67	4.5	6.4	5.3	7.5	3.6	5.1	3.6	5.1
SHF-20D-46-02	5.7	8.1	6.7	9.5	4.6	6.5	4.6	6.5
SHF-35A-47	8.0	11.3	9.4	13.3	6.4	9.0	6.4	9.0
SHF-35A-57	8.0	11.3	9.4	13.3	6.4	9.0	6.4	9.0
SHF-35A-59	8.0	11.3	9.4	13.3	6.4	9.0	6.4	9.0
SHF-35A-67	8.0	11.3	9.4	13.3	6.4	9.0	6.4	9.0
SHF-35A-69	8.0	11.3	9.4	13.3	6.4	9.0	6.4	9.0
SHF-35A-79	8.0	11.3	9.4	13.3	6.4	9.0	6.4	9.0
SHF-35B-67-02	8.4	11.9	9.9	14.0	6.7	9.5	6.7	9.5
SHF-50-911D2	10.7	15.1	12.5	17.7	8.5	12.1	8.5	12.0
SHF(L)-70-810	16.5	23.3	19.3	27.2	13.1	18.6	13.1	18.5
SHF(L)-70-810-01	16.5	23.3	19.3	27.2	13.1	18.6	13.1	18.5
SHF(L)-100-1012	23.4	33.1	27.4	38.7	18.7	26.4	18.6	26.4
SHF(L)-100-1012-01	23.4	33.1	27.4	38.7	18.7	26.4	18.6	26.4
SHF(L)-140-1214	33.7	47.6	39.4	55.7	26.9	38.0	26.8	37.9
SHF(L)-175-1217	40.7	57.5	47.6	67.3	32.5	45.9	32.4	45.8
SHF(L)-210-1321	48.7	68.8	57.0	80.6	38.8	54.9	38.8	54.9
SHF(L)-350-1721	79.8	112.9	93.4	132.1	63.7	90.1	63.6	90.0
SHF(L)-420-2125	102.1	144.4	119.5	169.0	81.5	115.2	76.3	115.1

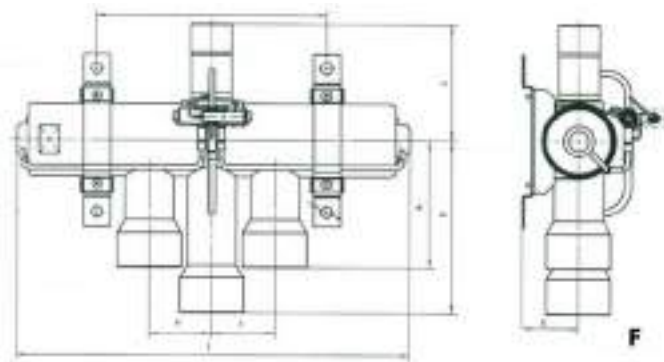
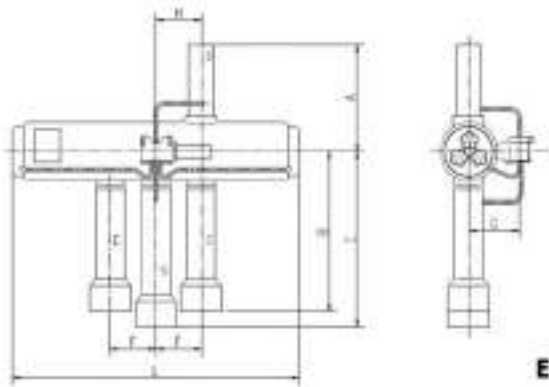
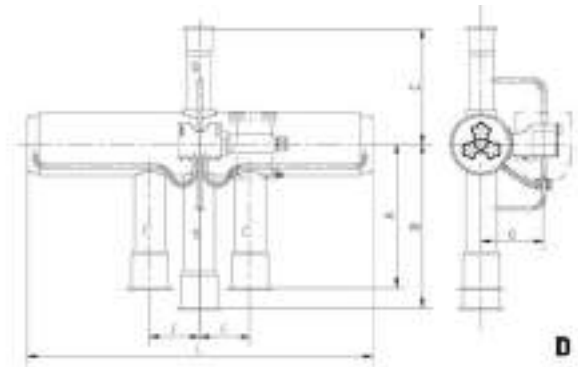
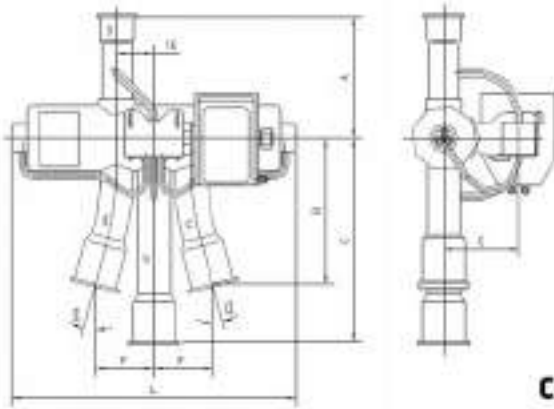
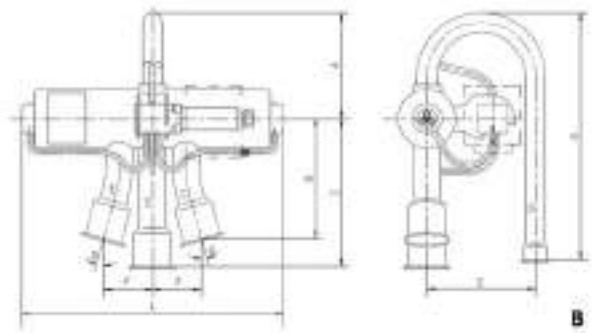
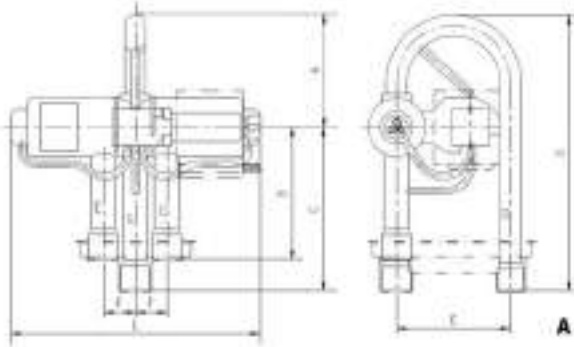
**Note:** 1) Pressure drop is valid for flow from ØC to ØS or from ØE to ØS  
2) R407C data based on dew point conditions





# SANHUA SHF SERIES 4 Way Reversing Valve

## DIMENSIONS - VALVES





# SANHUA SHF SERIES 4 Way Reversing Valve

## DIMENSIONS - VALVES

Valve Model	Valve Style	L	A	B	C	D	E	F	G	H	Angle $\alpha$	Weight	
		[inch]	[inch]	[inch]	[inch]	[inch]	[inch]	[inch]	[inch]	[inch]	[°]	[lb]	
SHF(L)-4H-23U	A	3.91	1.69	1.97	2.44	4.13	1.69	0.47	-	-	0	0.44	
SHF(L)-7H-34U		4.45	2.01	2.32	2.80	4.69	2.05	0.63	-	-	0	0.62	
SHF(L)-9H-35U	B	4.55	2.01	2.24	2.83	4.69	2.05	0.93	-	-	15	0.66	
SHF(L)-11H-45D1	C	4.78	2.05	2.44	3.43	-	-	0.98	1.24	0.63	15	0.71	
SHF-14-46	D	7.25	2.64	3.27	3.74	-	-	1.13	1.40	-	0	1.59	
SHF-14-47		7.25	2.64	3.27	3.74	-	-	1.13	1.40	-	0	1.59	
SHF-14-57		7.25	2.64	3.27	3.74	-	-	1.13	1.40	-	0	1.59	
SHF-20A-46		6.93	2.64	3.27	3.74	-	-	1.13	1.40	-	0	1.65	
SHF-20A-47		6.93	2.64	3.27	3.74	-	-	1.13	1.40	-	0	1.65	
SHF-20A-57		6.93	2.64	3.27	3.74	-	-	1.13	1.40	-	0	1.65	
SHF-20A-67		6.93	2.64	3.27	3.74	-	-	1.13	1.40	-	0	1.65	
SHF-20D-46-02		7.23	2.64	3.27	3.74	-	-	1.13	1.40	-	0	1.65	
SHF-35A-47		8.31	3.23	3.43	3.94	-	-	1.42	1.57	-	0	2.87	
SHF-35A-57		8.31	3.23	3.43	3.94	-	-	1.42	1.57	-	0	2.87	
SHF-35A-59		8.31	3.23	3.43	3.94	-	-	1.42	1.57	-	0	2.87	
SHF-35A-67		8.31	3.23	3.43	3.94	-	-	1.42	1.57	-	0	2.87	
SHF-35A-69		8.31	3.23	3.43	3.94	-	-	1.42	1.57	-	0	2.87	
SHF-35A-79		8.31	3.23	3.43	3.94	-	-	1.42	1.57	-	0	2.87	
SHF-35B-67-02		8.39	3.23	3.43	3.94	-	-	1.42	1.57	-	0	2.87	
SHF-50-911D2		E	10.59	3.82	5.87	6.85	-	-	1.63	1.57	1.63	0	4.63
SHF(L)-70-810		D	11.93	4.40	4.61	5.16	-	-	1.81	3.39	-	0	6.61
SHF(L)-100-1012	12.64		4.40	4.61	5.16	-	-	1.93	3.39	-	0	7.72	
SHF(L)-70-810-01	F	11.93	4.40	4.61	5.16	-	-	1.81	3.39	-	0	6.61	
SHF(L)-100-1012-01		12.64	4.40	4.61	5.16	-	-	1.93	3.39	-	0	7.72	
SHF(L)-140-1214		15.35	5.34	5.85	6.64	-	-	2.28	3.82	-	0	15.87	
SHF(L)-175-1217		15.35	5.34	5.85	6.64	-	-	2.28	3.82	-	0	16.76	
SHF(L)-210-1321		17.80	5.34	5.85	6.64	-	-	2.82	3.82	-	0	19.18	
SHF(L)-350-1721		21.77	6.95	7.09	9.25	-	-	2.95	4.41	-	0	48.50	
SHF(L)-420-2125		24.13	6.95	7.09	9.25	-	-	3.66	4.45	-	0	57.32	



# SANHUA SHF SERIES 4 Way Reversing Valve

## COIL CHARACTERISTICS

Coil Model <sup>1)</sup>	Winding Code	Electrical function / connection Type	Cable Length [inch]	Power Supply [-]	Rated Voltage [V]	Power Consumption			Protection class [-]	Insulation class [-]	Max. Op. Temp. [° F]
						AC 50Hz [W]	AC 60Hz [W]	DC [W]			
SQ-A25 22G-00 0001	SHF-4-10L3	Lead Wires	19.69	AC	220-240	4,5	3,5	-	IP54	B <sup>2)</sup>	266
SQ-A25 200-00 0001	SHF-4-10L2	Lead Wires	19.69	AC	200	4,5	3,5	-			
SQ-A25 100-00 0001	SHF-4-10L1	Lead Wires	19.69	AC	100	4,5	3,5	-			
SQ-A25 11A-00 0001	SHF-4-10L4	Lead Wires	19.69	AC	110-120	4,5	3,5	-			
SQ-A25 024-00 0001	SHF-4-10L5	Lead Wires	19.69	AC	24	4,5	3,5	-			
SQ-A25 26H-00 0001	SHF-4-10L6	Lead Wires	19.69	AC	265-277	4,5	3,5	-			
SQ-A25 22G-00 0870	SHF-4-10L3	Lead Wires	59.06	AC	220-240	4,5	3,5	-	IP00	F <sup>3)</sup>	311
SQ-A25 11A-00 0840	SHF-4-10L4	Lead Wires	59.06	AC	110-120	4,5	3,5	-			
SQ-A25 024-00 0161	SHF-4-10L5	Lead Wires	59.06	AC	24	4,5	3,5	-			
SQ-A44 22G-00 0771	SHF-4-10FA5	Spade (Faston) <sup>4)</sup>	-	AC	220-240	6	5	-			
SQ-A44 220-00 0001	SHF-4-10FA1	Spade (Faston) <sup>4)</sup>	-	AC	220	6	5	-			
SQ-A44 11B-00 0001	SHF-4-10FA2	Spade (Faston) <sup>4)</sup>	-	AC	120	6	5	-			
SQ-A44 10A-00 0001	SHF-4-10FA3	Spade (Faston) <sup>4)</sup>	-	AC	100-110	6	5	-	IP54	B <sup>2)</sup>	266
SQ-A44 024-00 0771	SHF-4-10FA4	Spade (Faston) <sup>4)</sup>	-	AC	24	6	5	-			
SQ-A44 26H-00 0831	SHF-4-10FA6	Spade (Faston) <sup>4)</sup>	-	AC	265-277	6	5	-			
SQ-D44 012-00 0001	SHF-4-10FA8	Spade (Faston) <sup>4)</sup>	-	DC	12	-	-	10			
SQ-D44 024-00 0001	SHF-4-10FA9	Spade (Faston) <sup>4)</sup>	-	DC	24	-	-	11			
SQ-A27 100-00 0001	-	Bistable/ Lead W.	19.69	AC	100	18	18	-	IP54	B <sup>2)</sup>	266
SQ-A27 200-00 0001	-	Bistable/ Lead W.	19.69	AC	200	18	18	-			
SQ-A27 20K-00 0001	-	Bistable/ Lead W.	19.69	AC	220-240	18	18	-			
SQ-D27 012-00 0001	-	Bistable/ Lead W.	19.69	DC	12	-	-	20			

- Note:**
- 1) Every coil is applicable to all above specified valve models
  - 2) Max ambient temperature up to + 122°F
  - 3) Max ambient temperature up to + 158°F
  - 4) Wire Harness for coil with Faston connector:  
SQ-000000-090028 (Part Number: SHF-56026)



# SANHUA SHF SERIES 4 Way Reversing Valve

## DIMENSIONS - COILS [inch]

