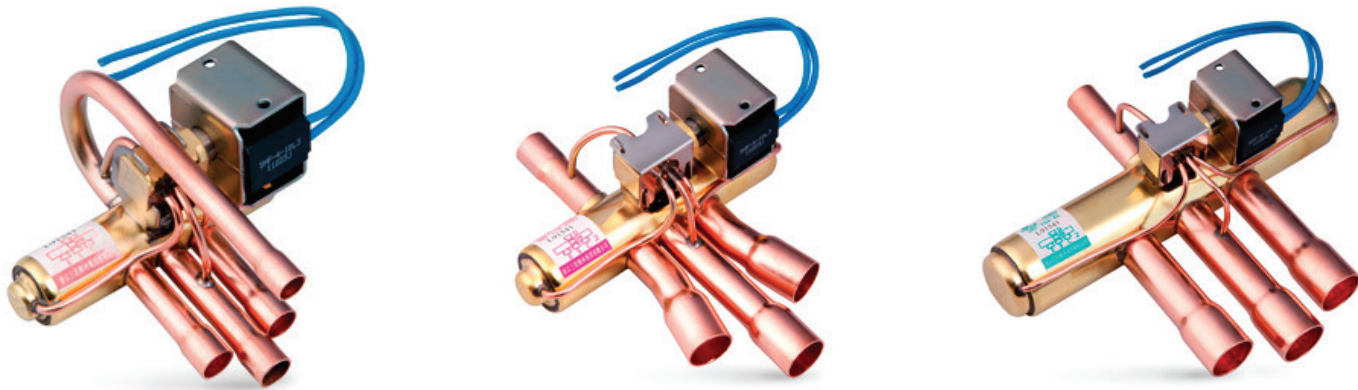


SHF SERIES | 4 Way Reversing Valve



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

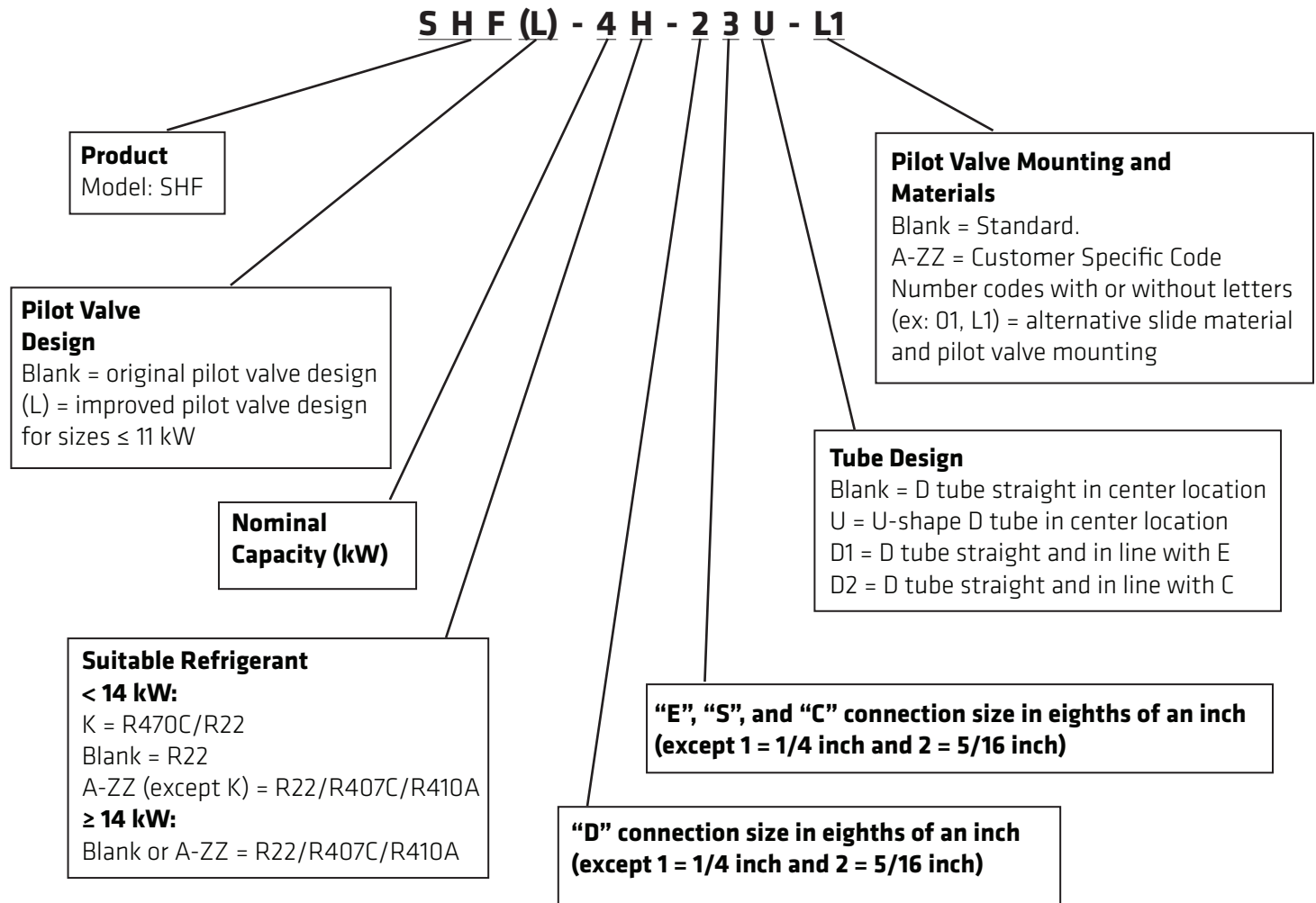
- WIDE APPLICATION RANGE
- SUITABLE FOR COOLING CAPACITIES FROM 1 TO 120 TONS, R-410A
- SEVERAL DESIGNS AVAILABLE

GENERAL SPECIFICATION

- Applicable for all common HCFC and HFC refrigerants such as: R-22, R-134a, R-404A, R-407C, R-410A, R-507
- Applicable ambient temperatures: -22°F to +275°F* maximum for SHF-50-911-D2 is +250°F)
- Fluid temperature range: -22°F to +122°F/175°F (Depending upon coil used)
- Relative Humidity: 0 to 95% RH
- Maximum operating pressure: 650 psig
- Installation Position:
 - Coil upwards or with body axis in horizontal alignment
 - Flow direction according to installation instruction
- Certifications: UL/CSA listed

SHF SERIES | 4 Way Reversing Valve

MODEL DESIGNATION



PRODUCT DATA



SHF SERIES | 4 Way Reversing Valve

TECHNICAL DATA

Valve Model	Ø Port	Cv	Connection ODF		MOP (psig)	OPD (Operating Pressure Differential)	
	(mm)		ØD	ØE/S/C		Max.	Min.
			(in)	(in)		(psi)	(psi)
SHF(L)-3H-12U-51	7.4	1.7	1/4	5/16	650	580	35
SHF(L)-4H-23-01	8.0	1.8	5/16	3/8	650	580	35
SHF(L)-4H-23U-L1	8.0	1.8	5/16	3/8	650	580	35
SHF(L)-7H-34-L1	11.1	3.4	3/8	1/2	650	580	35
SHF(L)-7H-34U-L1	11.1	3.4	3/8	1/2	650	580	35
SHF(L)-7H-35-L1	11.1	3.4	3/8	5/8	650	580	35
SHF(L)-7H-35U-L1	11.1	3.4	3/8	5/8	650	580	44
SHF(L)-7H-45-L2	11.1	3.4	1/2	5/8	650	580	44
SHF(L)-9H-35U-L2	11.5	3.9	3/8	5/8	650	450	44
SHF(L)-9H-45-L1	11.5	3.9	1/2	5/8	650	450	44
SHF-9H-45D1	11.5	3.9	1/2	5/8	650	450	44
SHF(L)-11H-45D1-L1	11.5	5.2	1/2	5/8	650	580	44
SHF(L)-11H-46D1-L1	11.5	5.2	1/2	3/4	650	580	44
SHF-14-46	13.5	7.6	1/2	3/4	650	450	44
SHF-14A-46	13.5	7.6	1/2	3/4	650	580	44
SHF-14-47	13.5	7.6	1/2	7/8	650	450	44
SHF-14-56D1	13.5	7.6	5/8	3/4	650	450	44
SHF-14-57	13.5	7.6	5/8	7/8	650	450	44
SHF-14-57D1	13.5	7.6	5/8	7/8	650	450	44
SHF-20A-45-J	13.5	11	1/2	3/4 ODM	650	580	44
SHF-20A-46	17.2	11	1/2	3/4	650	580	44
SHF-20A-47	17.2	11.4	1/2	7/8	650	580	44
SHF-20A-56D1	17.2	11.4	5/8	3/4	650	580	44
SHF-20A-57	17.2	11.4	5/8	7/8	650	580	44
SHF-20A-57D1	17.2	11.4	5/8	7/8	650	580	44
SHF-20D-46-02	17.2	11	1/2	3/4	650	580	44
SHF-20D-47-02	17.2	11.4	1/2	7/8	650	580	44
SHF-20D-57-02	17.2	11.4	5/8	7/8	650	580	44
SHF-20D-67-03	17.2	11.4	3/4	7/8	650	580	44
SHF-35A-47	20.0	17	1/2	7/8	650	580	44
SHF-35A-49	20.0	17	1/2	1+1/8	650	580	44
SHF-35A-57	20.0	17	5/8	7/8	650	580	44
SHF-35A-59	20.0	17	5/8	1+1/8	650	580	44
SHF-35A-79	20.0	17	7/8	1+1/8	650	580	44
SHF-35A-711	20.0	17	7/8	1+3/8	650	580	44
SHF-35A-911	20.0	17	1+1/8	1+3/8	650	580	44

PRODUCT DATA



SHF SERIES | 4 Way Reversing Valve

TECHNICAL DATA *Continued*

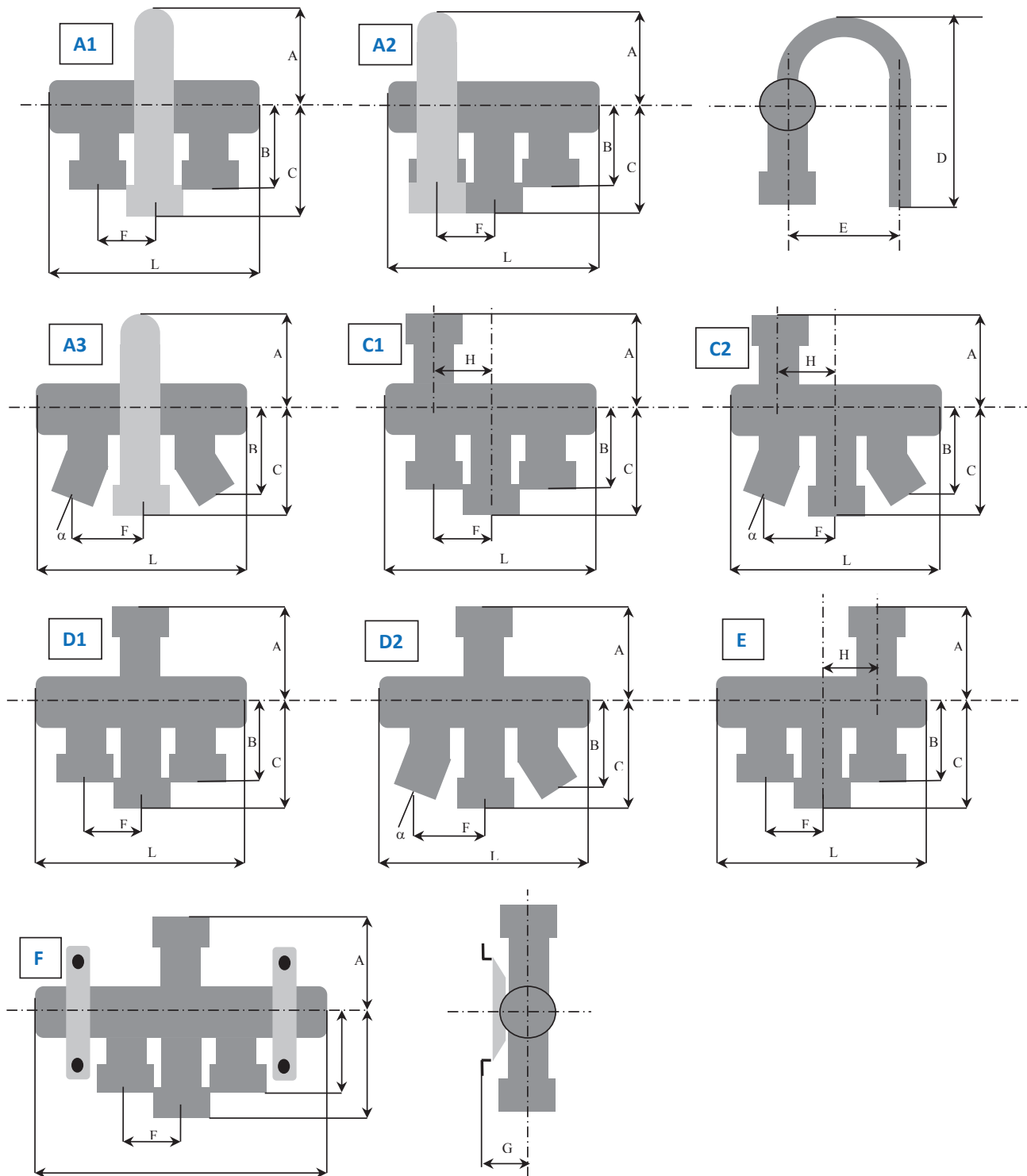
Valve Model	Ø Port	Cv	Connection ODF		MOP	OPD	
			ØD	ØE/S/C		Max.	Min.
	(mm)		(in)	(in)	(psig)	(psi)	(psi)
SHF-35B-47-04	20.0	17.0	1/2	7/8	650	580	44
SHF-35B-79-04	20.9	17.0	7/8	1+1/8	650	580	44
SHF-50A-79	22.8	21.2	7/8	1+1/8	650	580	44
SHF-50-711	22.8	21.2	7/8	1+3/8	650	580	44
SHF-50-911D2	25.6	21.4	1+1/8	1+3/8	650	580	44
SHF(L)-70-810	28.6	32.9	1	1+1/4	650	580	44
SHF(L)-70-810-01	28.6	32.9	1	1+1/4	650	580	44
SHF(L)-70-911	28.6	32.9	1+1/8	1+3/8	650	580	44
SHF(L)-70-911-02	28.6	32.9	1+1/8	1+3/8	650	580	44
SHF(L)-70-913-03	28.6	32.9	1+1/8	1+5/8	650	580	44
SHF(L)-100-911	34.8	46.8	1+1/8	1+3/8	650	580	44
SHF(L)-100-911-01	34.8	46.8	1+1/8	1+3/8	650	580	44
SHF(L)-100-913-01	34.8	46.8	1+1/8	1+5/8	650	580	44
SHF(L)-100-1012	34.8	46.8	1+1/4	1+1/2	650	580	44
SHF(L)-100-1012-01	34.8	46.8	1+1/4	1+1/2	650	580	44
SHF(L)-100-1013-02	34.8	46.8	1+1/4	1+5/8	650	580	44
SHF(L)-140-1214	41.0	67.5	1+1/2	1+3/4	650	580	44
SHF(L)-175-1217	46.4	81.5	1+1/2	2+1/8	650	580	44
SHF(L)-210-1321	50.0	97.6	1+5/8	2+5/8	650	580	44
SHF(L)-350-1721	59.0	160.0	2+1/8	2+5/8	650	580	44
SHF(L)-420-2125	69.0	205.0	2+5/8	3+1/8	650	580	44

PRODUCT DATA



SHF SERIES | 4 Way Reversing Valve

TECHNICAL DATA *Continued*



PRODUCT DATA



SHF SERIES | 4 Way Reversing Valve

DIMENSIONS - VALVES

Dimensions - Valves												
Valve Model	Valve Style	L	A	B	C	D	E	F	G	H	Angle	Weight
		(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(°)	(lb)
SHF(L)-3H-12U-51	A1	3.47	1.52	1.50	1.97	3.48	1.69	0.43	-	-	0	0.44
SHF(L)-4H-23-01	D1	3.72	1.97	1.97	2.44			0.47			0	0.44
SHF(L)-4H-23U-L1	A1	3.72	1.69	1.97	2.44	4.13	1.69	0.47	-	-	0	0.44
SHF(L)-7H-34-L1	D1	4.45	2.07	2.32	2.80	-	-	0.63			0	0.66
SHF(L)-7H-34U-L1	A1	4.45	2.01	2.32	2.80	4.69	2.05	0.63			0	0.66
SHF(L)-7H-35-L1	D2	4.45	2.07	2.24	2.83	-	-	0.93	-		15	0.66
SHF(L)-7H-35U-L1	A3	4.45	2.01	2.24	2.83	4.69	2.05	0.93			15	0.66
SHF(L)-7H-45-L2	D2	4.45	2.05	2.24	2.83	-	-	0.93	-		15	0.66
SHF(L)-9H-35U-L2	A3	4.55	2.01	2.24	2.83	4.69	2.05	0.93			15	0.66
SHF(L)-9H-45-L1	D2	4.61	2.05	2.44	2.83	-	-	0.93	-		15	0.66
SHF-9H-45D1	C2	4.78	2.05	2.44	2.83	-	-	0.93	-		15	0.66
SHF(L)-11H-45D1-L1	C2	4.61	2.05	2.44	3.43	-	-	0.98	-	0.63	15	0.71
SHF(L)-11H-46D1-L1	C2	4.61	2.05	3.23	3.43	-	-	1.28	-	0.63	20	0.77
SHF-14-46	D1	7.27	2.64	3.27	3.74			1.13			0	1.59
SHF-14A-46	D1	6.42	2.64	3.27	3.74	-	-	0.94	-	-	0	1.59
SHF-14-47	D1	7.27	2.64	3.27	3.74			1.13			0	1.59
SHF-14-56D1	C1	7.27	3.38	3.25	3.75			1.13			0	1.59
SHF-14-57	D1	7.27	2.64	3.27	3.74			1.13			0	1.59
SHF-14-57D1	C1	7.27	3.38	3.25	3.75			1.13			0	1.59
SHF-20A-45-J	D1	6.93	2.64	3.27	3.74			1.13			0	1.65
SHF-20A-46	D1	6.93	2.64	3.27	3.74			1.13			0	1.65
SHF-20A-47	D1	6.93	2.64	3.27	3.74			1.13			0	1.65
SHF-20A-56D1	C1	7.27	3.38	3.25	3.75			1.13			0	1.65
SHF-20A-57	D1	6.93	2.64	3.27	3.74			1.13			0	1.65
SHF-20A-57D1	C1	7.27	3.38	3.25	3.75			1.13			0	1.65
SHF-20D-46-02	D1	7.23	2.64	3.27	3.74	-	-	1.13	-	-	0	1.65
SHF-20D-47-02	D1	7.23	2.64	3.27	3.74	-	-	1.13	-	-	0	1.65
SHF-20D-57-02	D1	7.23	2.64	3.27	3.74	-	-	1.13	-	-	0	1.65
SHF-20D-67-03	D1	7.23	2.64	3.27	3.74	-	-	1.13	-	-	0	1.65
SHF-35A-47	D1	8.31	3.23	3.43	3.94	-	-	1.30	-	-	0	2.87
SHF-35A-49	D1	8.31	3.23	3.43	3.94	-	-	1.30	-	-	0	2.87
SHF-35A-57	D1	8.31	3.23	3.43	3.94	-	-	1.30	-	-	0	2.87
SHF-35A-59	D1	8.31	3.23	3.43	3.94	-	-	1.30	-	-	0	2.87
SHF-35A-79	D1	8.31	3.23	3.43	3.94	-	-	1.30	-	-	0	2.87
SHF-35A-711	D1	8.31	3.22	4.55	5.88	-	-	1.59	-	-	0	2.87
SHF-35A-911	D1	8.31	4.00	4.55	5.88	-	-	1.59	-	-	0	2.87
SHF-35B-47-04	D1	8.35	3.23	3.43	3.94	-	-	1.30	-	-	0	2.87
SHF-35B-79-04	D1	8.35	3.23	3.43	3.94	-	-	1.30	-	-	0	2.87
SHF-50A-79	D1	8.54	3.58	3.78	5.04	-	-	1.30	-	-	0	4.63

PRODUCT DATA



SHF SERIES | 4 Way Reversing Valve

DIMENSIONS - VALVES *Continued*

Dimensions - Valves												
Valve Model	Valve Style	L	A	B	C	D	E	F	G	H	Angle	Weight
		(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(°)
SHF-50-711	D1	10.60	3.58	5.87	6.85			1.63			0	4.63
SHF-50-911D2	E	10.60	3.82	5.87	6.85	-	-	1.63	-	1.63	0	4.63
SHF(L)-70-810	D1	11.90	4.37	4.61	5.16	-	-	1.81	-	-	0	6.61
SHF(L)-70-810-01	F	11.90	4.37	4.61	6.06	-	-	1.81	2.28	-	0	6.61
SHF(L)-70-911	D1	11.90	4.37	4.61	6.06	-	-	1.81	-	-	0	6.61
SHF(L)-70-911-02	F	11.90	4.37	4.61	5.16	-	-	1.93	2.28	-	0	7.72
SHF(L)-70-913-03	F	12.60	4.37	4.61	5.16	-	-	1.93	2.28	-	0	7.72
SHF(L)-100-911	D1	12.60	4.37	4.61	5.16	-	-	1.93	-	-	0	7.72
SHF(L)-100-911-01	F	11.90	4.37	4.61	5.16	-	-	1.81	2.28	-	0	6.61
SHF(L)-100-913-01	F	11.90	4.37	4.61	6.06	-	-	1.81	2.28	-	0	6.61
SHF(L)-100-1012	D1	12.60	4.37	4.61	5.16	-	-	1.93	-	-	0	7.72
SHF(L)-100-1012-01	F	12.60	4.37	4.61	5.16	-	-	1.93	2.28	-	0	7.72
SHF(L)-100-1013-02	F	12.60	4.37	4.61	5.16	-	-	1.93	2.28	-	0	7.72
SHF(L)-140-1214	F	15.40	5.34	5.85	6.64	-	-	2.28	2.48	-	0	15.90
SHF(L)-175-1217	F	15.40	5.34	5.85	7.80	-	-	2.28	2.48	-	0	16.80
SHF(L)-210-1321	F	17.80	5.34	5.85	7.80	-	-	2.81	2.48	-	0	19.20
SHF(L)-350-1721	F	20.90	6.95	7.24	9.45	-	-	2.95	3.25	-	0	48.50
SHF(L)-420-2125	F	24.10	6.95	7.24	9.45	-	-	3.66	3.25	-	0	57.30

Coil Characteristics

Coil Characteristics											
Coil Model ¹⁾	Winding Code	Electrical Function / Connection Type	Cable Length (in)	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			
SQ-A25 200-00 0001	SHF-4-10L2	Lead Wires	20	AC	200	4.5	3.5	-			
SQ-A25 100-00 0001	SHF-4-10L1	Lead Wires	20	AC	100	4.5	3.5	-			
SQ-A25 11A-00 0001	SHF-4-10L4	Lead Wires	20	AC	110-120	4.5	3.5	-			
SQ-A25 024-00 0001	SHF-4-10L5	Lead Wires	20	AC	24	4.5	3.5	-			
SQ-A25 26H-00 0001	SHF-4-10L6	Lead Wires	20	AC	265-277	4.5	3.5	-			
SQ-A25 22G-00 0870	SHF-4-10L3	Lead Wires	60	AC	220-240	4.5	3.5	-			
SQ-A25 11A-00 0840	SHF-4-10L4	Lead Wires	60	AC	110-120	4.5	3.5	-			
SQ-A25 024-00 0161	SHF-4-10L5	Lead Wires	60	AC	24	4.5	3.5	-			

Note:

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

5. Bi-stable coils (SQ-A27 series) cannot be selected with the following valves:

- SHF(G)-7C-34U (P/N: SHF-19009)
- SHF(G)-7C-34 (P/N: SHF-19010)
- SHF(G)-11C-34U (P/N: SHF-19012)

SHF SERIES | 4 Way Reversing Valve

Coil Characteristics *Continued*

Coil Characteristics											
Coil Model ¹⁾	Winding Code	Electrical Function / Connection Type	Cable Length (in)	Power Supply (-)	Rated Voltage (V)	Power Consumption			Protection Class (-)	Insulation Class (-)	Max. Op. Temp. (°F)
						AC 50Hz	AC 60Hz	DC			
						(W)	(W)	(W)			
SQ-A44 22G-00 0771	SHF-4-10FA5	Spade 4)	-	AC	220-240	6	5	-	IP00	F ³⁾	311
SQ-A44 220-00 0001	SHF-4-10FA1	Spade 4)	-	AC	220	6	5	-			
SQ-A44 11B-00 0001	SHF-4-10FA2	Spade 4)	-	AC	120	6	5	-			
SQ-A44 10A-00 0001	SHF-4-10FA3	Spade 4)	-	AC	100-110	6	5	-			
SQ-A44 024-00 0771	SHF-4-10FA4	Spade 4)	-	AC	24	6	5	-			
SQ-A44 26H-00 0831	SHF-4-10FA6	Spade 4)	-	AC	265-277	6	5	-			
SQ-D44 012-00 0001	SHF-4-10FA8	Spade 4)	-	DC	12	-	-	10			
SQ-D44 024-00 0001	SHF-4-10FA9	Spade 4)	-	DC	24	-	-	11			

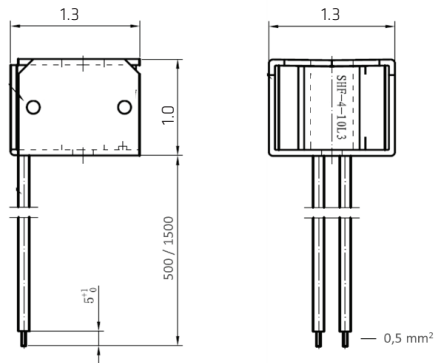
Note:

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

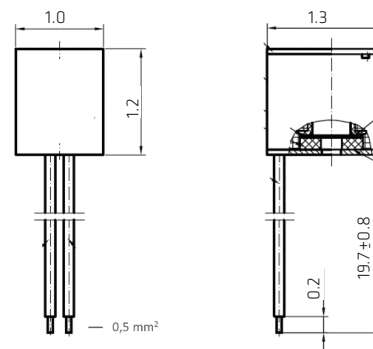
10. Bi-stable coils (SQ-A27 series) cannot be selected with the following valves:

- SHF(G)-7C-34U (P/N: SHF-19009)
- SHF(G)-7C-34 (P/N: SHF-19010)
- SHF(G)-11C-34U (P/N: SHF-19012)

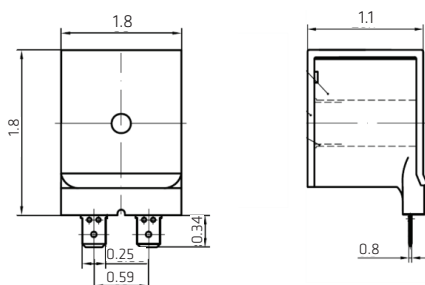
Coils with Lead Wires (SQ-A25 Series)



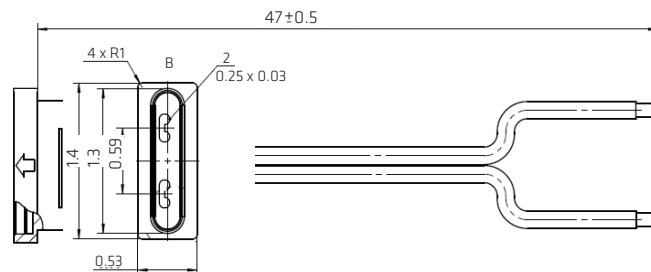
Bistable Coils (SQ-A/D27 Series)



Coils with Spade Connections (SQ-A/D44 Series)



Wire Harness (SQ-000000-090028)



SHF SERIES | 4 Way Reversing Valve

REFRIGERANT CAPACITY SELECTION TABLE CONDITION 1

Capacity Selection Table								
Valve Model	Nominal Cooling Capacity (condition 1)							
	R-407C ²⁾		R-410A		R-134a		R-404A / R-507	
	ΔP : 1.0 psi	ΔP : 2.0 psi	ΔP : 1.5 psi	ΔP : 3.0 psi	ΔP : 1.0 psi	ΔP : 2.0 psi	ΔP : 1.0 psi	ΔP : 2.0 psi
	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)
SHF(L)-3H-12U-51	0.79	1.11	1.18	1.67	0.62	0.87	0.67	0.95
SHF(L)-4H-23-01	0.84	1.19	1.26	1.78	0.66	0.93	0.72	1.02
SHF(L)-4H-23U-L1	0.84	1.19	1.26	1.78	0.66	0.93	0.72	1.02
SHF(L)-7H-34-L1	1.52	2.15	2.28	3.23	1.19	1.68	1.30	1.84
SHF(L)-7H-34U-L1	1.52	2.15	2.28	3.23	1.19	1.68	1.30	1.84
SHF(L)-7H-35-L1	1.52	2.15	2.28	3.23	1.19	1.68	1.30	1.84
SHF(L)-7H-35U-L1	1.52	2.15	2.28	3.23	1.19	1.68	1.30	1.84
SHF(L)-7H-45-L2	1.52	2.15	2.28	3.23	1.19	1.68	1.30	1.84
SHF(L)-9H-35U-L2	2.05	2.90	3.07	4.34	1.60	2.26	1.75	2.48
SHF(L)-9H-45-L1	2.05	2.90	3.07	4.34	1.60	2.26	1.75	2.48
SHF-9H-45D1	2.05	2.90	3.07	4.34	1.60	2.26	1.75	2.48
SHF(L)-11H-45D1-L1	2.36	3.34	3.54	5.01	1.85	2.61	2.02	2.86
SHF(L)-11H-46D1-L1	2.36	3.34	3.54	5.01	1.85	2.61	2.02	2.86
SHF-14-46	3.47	4.90	5.19	7.34	2.71	3.83	2.97	4.19
SHF-14A-46	3.47	4.90	5.19	7.34	2.71	3.83	2.97	4.19
SHF-14-47	3.47	4.90	5.19	7.34	2.71	3.83	2.97	4.19
SHF-14-56D1	3.47	4.90	5.19	7.34	2.71	3.83	2.97	4.19
SHF-14-57	3.47	4.90	5.19	7.34	2.71	3.83	2.97	4.19
SHF-14-57D1	3.47	4.90	5.19	7.34	2.71	3.83	2.97	4.19
SHF-20A-45-J	4.99	7.06	7.47	10.60	3.90	5.51	4.27	6.04
SHF-20A-46	4.99	7.06	7.47	10.60	3.90	5.51	4.27	6.04
SHF-20A-47	5.20	7.35	7.79	11.00	4.06	5.74	4.45	6.29
SHF-20A-56D1	5.20	7.35	7.79	11.00	4.06	5.74	4.45	6.29
SHF-20A-57	5.20	7.35	7.79	11.00	4.06	5.74	4.45	6.29
SHF-20A-57D1	5.20	7.35	7.79	11.00	4.06	5.74	4.45	6.29
SHF-20D-46-02	4.99	7.06	7.47	10.60	3.90	5.51	4.27	6.04
SHF-20D-47-02	5.20	7.35	7.79	11.00	4.06	5.74	4.45	6.29
SHF-20D-57-02	5.20	7.35	7.79	11.00	4.06	5.74	4.45	6.29
SHF-20D-67-03	5.20	7.35	7.79	11.00	4.06	5.74	4.45	6.29
SHF-35B-79-04	7.72	10.90	11.60	16.40	6.03	8.53	6.61	9.34
SHF-35A-47	7.72	10.90	11.60	16.40	6.03	8.53	6.61	9.34
SHF-35A-49	7.72	10.90	11.60	16.40	6.03	8.53	6.61	9.34

*Notes for Capacity Selection Tables (Condition 1):

1. Pressure drop is valid for flow from ØC to ØS or from ØE to ØS
2. R407C data based on dew point conditions
3. Nominal operating conditions: Condensing Temp. 100°F, Evaporating Temp. 41°F, Superheat 9°F, Subcooling 0°F

PRODUCT DATA



SHF SERIES | 4 Way Reversing Valve Continued

REFRIGERANT CAPACITY SELECTION TABLE CONDITION 1 Continued

Capacity Selection Table								
Valve Model	Nominal Cooling Capacity (condition 1)							
	R-407C ²⁾		R-410A		R-134a		R-404A / R-507	
	ΔP : 1.0 psi	ΔP : 2.0 psi	ΔP : 1.5 psi	ΔP : 3.0 psi	ΔP : 1.0 psi	ΔP : 2.0 psi	ΔP : 1.0 psi	ΔP : 2.0 psi
	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)
SHF-35A-57	7.72	10.90	11.60	16.40	6.03	8.53	6.61	9.34
SHF-35A-59	7.72	10.90	11.60	16.40	6.03	8.53	6.61	9.34
SHF-35A-79	7.72	10.90	11.60	16.40	6.03	8.53	6.61	9.34
SHF-35A-711	7.72	10.90	11.60	16.40	6.03	8.53	6.61	9.34
SHF-35A-911	7.72	10.90	11.60	16.40	6.03	8.53	6.61	9.34
SHF-35B-47-04	7.72	10.90	11.60	16.40	6.03	8.53	6.61	9.34
SHF-50A-79	9.61	13.60	14.40	20.40	7.51	10.60	8.22	11.60
SHF-50-711	9.61	13.60	14.40	20.40	7.51	10.60	8.22	11.60
SHF-50-911D2	9.72	13.70	14.60	20.60	7.59	10.70	8.31	11.80
SHF(L)-70-810	15.00	21.20	22.40	31.70	11.70	16.50	12.80	18.10
SHF(L)-70-810-01	15.00	21.20	22.40	31.70	11.70	16.50	12.80	18.10
SHF(L)-70-911	15.00	21.20	22.40	31.70	11.70	16.50	12.80	18.10
SHF(L)-70-911-02	15.00	21.20	22.40	31.70	11.70	16.50	12.80	18.10
SHF(L)-70-913-03	15.00	21.20	22.40	31.70	11.70	16.50	12.80	18.10
SHF(L)-100-911	21.30	30.10	31.90	45.10	16.60	23.50	18.20	25.70
SHF(L)-100-911-01	21.30	30.10	31.90	45.10	16.60	23.50	18.20	25.70
SHF(L)-100-913-01	21.30	30.10	31.90	45.10	16.60	23.50	18.20	25.70
SHF(L)-100-1012	21.30	30.10	31.90	45.10	16.60	23.50	18.20	25.70
SHF(L)-100-1012-01	21.30	30.10	31.90	45.10	16.60	23.50	18.20	25.70
SHF(L)-100-1013-02	21.30	30.10	31.90	45.10	16.60	23.50	18.20	25.70
SHF(L)-140-1214	30.70	43.40	45.90	65.00	24.00	33.90	26.20	37.10
SHF(L)-175-1217	37.00	52.40	55.50	78.40	28.90	40.90	31.70	44.80
SHF(L)-210-1321	44.30	62.70	66.40	93.90	34.60	49.00	37.90	53.60
SHF(L)-350-1721	72.70	103.00	109.00	154.00	56.80	80.30	62.20	88.00
SHF(L)-420-2125	93.00	131.00	139.00	197.00	72.60	103.00	79.50	112.00

*Notes for Capacity Selection Tables (Condition 1):

1. Pressure drop is valid for flow from ØC to ØS or from ØE to ØS
2. R407C data based on dew point conditions
3. Nominal operating conditions: Condensing Temp. 100°F, Evaporating Temp. 41°F, Superheat 9°F, Subcooling 0°F

PRODUCT DATA



SHF SERIES | 4 Way Reversing Valve Continued

REFRIGERANT CAPACITY SELECTION TABLE CONDITION 2

Capacity Selection Table								
Valve Model	Nominal Cooling Capacity (condition 2)							
	R-407C ²⁾		R-410A		R-134a		R-404A / R-507	
	ΔP: 1.0 psi	ΔP: 2.0 psi	ΔP: 1.5 psi	ΔP: 3.0 psi	ΔP: 1.0 psi	ΔP: 2.0 psi	ΔP: 1.0 psi	ΔP: 2.0 psi
	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)
SHF(L)-3H-12U-51	0.72	1.02	1.06	1.50	0.57	0.81	0.58	0.82
SHF(L)-4H-23-01	0.77	1.09	1.13	1.60	0.61	0.86	0.62	0.88
SHF(L)-4H-23U-L1	0.77	1.09	1.13	1.60	0.61	0.86	0.62	0.88
SHF(L)-7H-34-L1	1.40	1.98	2.05	2.90	1.10	1.56	1.12	1.59
SHF(L)-7H-34U-L1	1.40	1.98	2.05	2.90	1.10	1.56	1.12	1.59
SHF(L)-7H-35-L1	1.40	1.98	2.05	2.90	1.10	1.56	1.12	1.59
SHF(L)-7H-35U-L1	1.40	1.98	2.05	2.90	1.10	1.56	1.12	1.59
SHF(L)-7H-45-L2	1.40	1.98	2.05	2.90	1.10	1.56	1.12	1.59
SHF(L)-9H-35U-L2	1.88	2.66	2.76	3.90	1.48	2.10	1.51	2.13
SHF(L)-9H-45-L1	1.88	2.66	2.76	3.90	1.48	2.10	1.51	2.13
SHF-9H-45D1	1.88	2.66	2.76	3.90	1.48	2.10	1.51	2.13
SHF(L)-11H-45D1-L1	2.17	3.07	3.18	4.50	1.71	2.42	1.74	2.46
SHF(L)-11H-46D1-L1	2.17	3.07	3.18	4.50	1.71	2.42	1.74	2.46
SHF-14-46	3.19	4.51	4.67	6.60	2.51	3.55	2.55	3.61
SHF-14A-46	3.19	4.51	4.67	6.60	2.51	3.55	2.55	3.61
SHF-14-47	3.19	4.51	4.67	6.60	2.51	3.55	2.55	3.61
SHF-14-56D1	3.19	4.51	4.67	6.60	2.51	3.55	2.55	3.61
SHF-14-57	3.19	4.51	4.67	6.60	2.51	3.55	2.55	3.61
SHF-14-57D1	3.19	4.51	4.67	6.60	2.51	3.55	2.55	3.61
SHF-20A-45-J	4.59	6.49	6.72	9.51	3.61	5.11	3.68	5.20
SHF-20A-46	4.59	6.49	6.72	9.51	3.61	5.11	3.68	5.20
SHF-20A-47	4.78	6.76	7.00	9.91	3.76	5.32	3.83	5.42
SHF-20A-56D1	4.78	6.76	7.00	9.91	3.76	5.32	3.83	5.42
SHF-20A-57	4.78	6.76	7.00	9.91	3.76	5.32	3.83	5.42
SHF-20A-57D1	4.78	6.76	7.00	9.91	3.76	5.32	3.83	5.42
SHF-20D-46-02	4.59	6.49	6.72	9.51	3.61	5.11	3.68	5.20
SHF-20D-47-02	4.78	6.76	7.00	9.91	3.76	5.32	3.83	5.42
SHF-20D-57-02	4.78	6.76	7.00	9.91	3.76	5.32	3.83	5.42
SHF-20D-67-03	4.78	6.76	7.00	9.91	3.76	5.32	3.83	5.42
SHF-35A-47	7.10	10.00	10.40	14.70	5.59	7.90	5.69	8.05
SHF-35A-49	7.10	10.00	10.40	14.70	5.59	7.90	5.69	8.05

**Notes for Capacity Selection Tables (Condition 2):

1. Pressure drop is valid for flow from ØC to ØS or from ØE to ØS

2. R407C data based on dew point conditions

3. Nominal operating conditions: Condensing Temp. 130°F, Evaporating Temp. 45°F, Superheat 9°F, Subcooling 9°F

SHF SERIES | 4 Way Reversing Valve Continued

CAPACITY SELECTION TABLE CONDITION 2 Continued

Capacity Selection Table								
Valve Model	Nominal Cooling Capacity (condition 2)							
	R-407C ²⁾		R-410A		R-134a		R-404A / R-507	
	ΔP : 1.0 psi	ΔP : 2.0 psi	ΔP : 1.5 psi	ΔP : 3.0 psi	ΔP : 1.0 psi	ΔP : 2.0 psi	ΔP : 1.0 psi	ΔP : 2.0 psi
	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)
SHF-35A-57	7.10	10.00	10.40	14.70	5.59	7.90	5.69	8.05
SHF-35A-59	7.10	10.00	10.40	14.70	5.59	7.90	5.69	8.05
SHF-35A-79	7.10	10.00	10.40	14.70	5.59	7.90	5.69	8.05
SHF-35A-711	7.10	10.00	10.40	14.70	5.59	7.90	5.69	8.05
SHF-35A-911	7.10	10.00	10.40	14.70	5.59	7.90	5.69	8.05
SHF-35B-47-04	7.10	10.00	10.40	14.70	5.59	7.90	5.69	8.05
SHF-35B-79-04	7.10	10.00	10.40	14.70	5.59	7.90	5.69	8.05
SHF-50A-79	8.84	12.50	12.90	18.30	6.96	9.84	7.08	10.00
SHF-50-711	8.84	12.50	12.90	18.30	6.96	9.84	7.08	10.00
SHF-50-911D2	8.94	12.60	13.10	18.50	7.03	9.95	7.16	10.10
SHF(L)-70-810	13.80	19.50	20.20	28.50	10.80	15.30	11.00	15.60
SHF(L)-70-810-01	13.80	19.50	20.20	28.50	10.80	15.30	11.00	15.60
SHF(L)-70-911	13.80	19.50	20.20	28.50	10.80	15.30	11.00	15.60
SHF(L)-70-911-02	13.80	19.50	20.20	28.50	10.80	15.30	11.00	15.60
SHF(L)-70-913-03	13.80	19.50	20.20	28.50	10.80	15.30	11.00	15.60
SHF(L)-100-911	19.60	27.70	28.70	40.50	15.40	21.80	15.70	22.20
SHF(L)-100-911-01	19.60	27.70	28.70	40.50	15.40	21.80	15.70	22.20
SHF(L)-100-913-01	19.60	27.70	28.70	40.50	15.40	21.80	15.70	22.20
SHF(L)-100-1012	19.60	27.70	28.70	40.50	15.40	21.80	15.70	22.20
SHF(L)-100-1012-01	19.60	27.70	28.70	40.50	15.40	21.80	15.70	22.20
SHF(L)-100-1013-02	19.60	27.70	28.70	40.50	15.40	21.80	15.70	22.20
SHF(L)-140-1214	28.20	39.90	41.30	58.40	22.20	31.40	22.60	32.00
SHF(L)-175-1217	34.10	48.20	49.90	70.50	26.80	37.90	27.30	38.60
SHF(L)-210-1321	40.80	57.70	59.70	84.50	32.10	45.40	32.70	46.20
SHF(L)-350-1721	66.90	94.60	98.00	138.00	52.60	74.40	53.60	75.70
SHF(L)-420-2125	85.50	121.00	125.00	177.00	67.30	95.20	68.50	96.90

**Notes for Capacity Selection Tables (Condition 2):

1. Pressure drop is valid for flow from ØC to ØS or from ØE to ØS
2. R407C data based on dew point conditions
3. Nominal operating conditions: Condensing Temp. 130°F, Evaporating Temp. 45°F, Superheat 9°F, Subcooling 9°F

SHF SERIES | 4 Way Reversing Valve Continued

TROUBLESHOOTING

TROUBLESHOOTING								
Valve Operating Condition	DISCHARGE TUBE from Compressor (D) Length	SUCTION TUBE to Compressor (S)ply	Tube to INSIDE COIL	Tube to OUTSIDE COILply	LEFT Pilot Capillary Tubeply	RIGHT Pilot Capillary Tubeply	NOTES: 1) Temperature of Valve Body 2) Warmer than Valve Body	
							Possible Causes	Corrections
NORMAL OPERATION OF VALVE								
Normal COOLING	Hot	Cool	Cool as (S)	Hot as (D)	See Note 1	See Note 1		
Normal HEATING	Hot	Cool	Hot as (D)	Cool as (S)	See Note 1	See Note 1		
MALFUNCTION OF VALVE								
Valve will not shift from cool to heat	Check electrical circuit and coil						No voltage to coil.	Repair electrical circuit.
							Defective coil.	Replace coil.
	Check refrigeration charge						Low charge.	Repair leak, recharge system.
							Pressure differential too high.	Recheck system.
	Hot	Cool	Cool, as (S)	Hot, as (D)	See Note 1	Hot	Pilot valve okay. Dirt in one bleeder hole.	Deenergize solenoid, raise head pressure, reenergize solenoid to break dirt loose. If unsuccessful, remove valve, wash out. Check on air before installing. If no movement, replace valve, add strainer to discharge tube, mount valve horizontally.
							Piston cup leak.	Stop unit. After pressures equalize, restart with solenoid energized. If valve shifts, reattempt with compressor running. If still no shift, replace valve.
	Hot	Cool	Cool, as (S)	Hot, as (D)	See Note 1	See Note 1	Clogged pilot tubes.	Raise head pressure, operate solenoid to free dirt. If still no shift, replace valve.
	Hot	Cool	Cool, as (S)	Hot, as (D)	Hot	Hot	Both parts of pilot open. (Back seat port did not close.)	Raise head pressure, operate solenoid to free partially clogged port. If still no shift, replace valve.
Warm	Cool	Cool, as (S)	Warm, as (D)	See Note 1	Warm	Defective compressor.		
VALVE OPERATED SATISFACTORILY PRIOR TO COMPRESSOR MOTOR BURN OUT - caused by dirt and small greasy particles inside the valve.								
TO CORRECT: Remove valve, thoroughly wash it out. Check on air before reinstalling, or replace valve. Add strainer and filter-dryer to discharge tube between valve and compressor.								

SHF SERIES | 4 Way Reversing Valve Continued

TROUBLESHOOTING *Continued*

TROUBLESHOOTING								
Valve Operating Condition	DISCHARGE TUBE from Compressor (D) Length	SUCTION TUBE to Compressor (S)ply	Tube to INSIDE COIL	Tube to OUTSIDE COILply	LEFT Pilot Capillary Tube ply	RIGHT Pilot Capillary Tube ply	NOTES: 1) Temperature of Valve Body 2) Warmer than Valve Body	
							Possible Causes	Corrections
MALFUNCTION OF VALVE								
Start to shift but does not complete reversal	Hot	Warm	Warm	Hot	See Note 1	Hot	Not enough pressure differential at start of stroke or not enough flow to maintain pressure differential.	Check unit for correct operating pressures and charge. Raise headpressure. If no shift, use valve with smaller ports.
	Hot	Warm	Warm	Hot	Hot	Hot	Body damage.	Replace valve.
	Hot	Hot	Hot	Hot	See Note 1	Hot	Both ports of Pilot open.	Raise head pressure, operate solenoid. If no shift, replace valve.
	Hot	Hot	Hot	Hot	Hot	Hot	Valve hung up at mid-stroke. Pumping volume of compressor not sufficient to maintain reversal.	Raise head pressure, operate solenoid. If no shift, use valve with smaller ports.
Apparent leak in heating	Hot	Cool	Hot, as (D)	Cool, as (S)	See Note 1	See Note 2	Both ports of Pilot open.	Raise head pressure, operate solenoid. If no shift, replace valve.
							Piston needle on end of slide leaking.	Operate valve several times then recheck. If excessive leak, replace valve.
Will not shift from heat to cool	Hot	Cool	Hot, as (D)	Cool, as (S)	See Note 1	See Note 1	Pressure differential too high.	Stop unit. Will reverse during equalization period. Recheck system.
							Clogged pilot tubes.	Raise head pressure, operate solenoid to free dirt. If still no shift, replace valve.
	Hot	Cool	Hot, as (D)	Cool, as (S)	Hot	See Note 1	Dirt in bleeder hole.	Raise head pressure, operate solenoid. Remove valve and wash out. Check on air before reinstalling, if no movement, replace valve. Add strainer to discharge tube. Mount valve horizontally.
	Hot	Cool	Hot, as (D)	Cool, as (S)	Hot	See Note 1	Piston cup leak.	Stop unit, after pressure equalizes, restart with solenoid deenergized. If valve shifts, reattempt with compressor running. If it still will not reverse while running, replace valve.
	Hot	Cool	Hot, as (D)	Cool, as (S)	Hot	Hot	Defective pilot.	Replace valve.
	Warm	Cool	Warm, as (D)	Cool, as (S)	Warm	See Note 1	Defective compressor.	