

HF/HFK Series

Thermal Expansion Valves

The HF series is a balanced ported valve designed for refrigeration, air conditioning and heat pump applications.

Features

- Stainless steel replaceable power element eliminates corrosion and prevents valve failure
- Two body sizes provide capacities from 1/4 to 20 tons

Standard Body – HF & HFK

- The HF is offered several ways:
 - *Pre-packaged HFK service kits* – Include a mix of bodies and power elements with a complete set of cages to serve the most applications with a minimum of parts
 - *Individual components* – Bodies, cages, & power elements may be ordered separately
 - *Finished valves* – Assembled valves ready for immediate installation
- Bi-Flow capability up to 5-1/2 tons R-22 allows one valve to control the superheat in both cooling and heating modes

Extended Body – HF

- Capacity range from 8 to 20 tons (R-22)
- Finished valve only



NOTE: If the HF body is stamped HFK, then the cage is replaceable.

Options

- ODF or SAE connections
- Straight-through or angle flow configurations
- Removable inlet strainer (ODF only)
- Internal or external equalizer

Specifications

- Maximum working pressure: 450 psig
- UR/CUR file number: SA5312

Nomenclature example: HFESC 2 HC 5 FT 3/8 x 1/2 ODF S/T

HF	N	E	S	C	B	2	H	C	5 FT	3/8 x 1/2	ODF	S/T
Valve Series Balanced Port Design	Superheat Adjustment N = Non-Adjustable Omit for Adjustable	Equalizer E=External (Omit for Internal)	Connection Type S = Solder (Omit for SAE Flare)	Removable Inlet Strainer (optional) C = Inlet Strainer (ODF only)	Bleed Hole (optional) (Omit for no bleed hole)	Capacity Nominal Rating in Tons (See nominal capacity table below)	Refrigerant Code +F = R-12 • H = R-22 +M = R-134a • N = R-407C * P = R-507 * R = R-502 * S = R-404A *B = R-448A /R-449A +D=R-450A /R-513A	Charge Code C = medium temp CA = heat pump W(MOP) = press. limiting Z = low temp AA = wide range	Capillary Tube Length 5 FT (std)	Inlet x Outlet Connection Sizes 1/4 x 3/8 3/8 x 1/2	Connection Type SAE = flare ODF = solder	Configuration ANG = 90° angle S/T = straight-thru

+ = R-12, R-134a, R-450A and R-513A are interchangeable refrigerant charges
 * = R-507, R-502, R-404A, R-448A and R-449A are interchangeable refrigerant charges
 • = R-22 and R-407C are interchangeable refrigerant charges

HF Series-Nominal* Capacity Tables in Tons (kW)

Standard Body HF

R-12	R-134a	R-450A/ R-513A	R-22/ R-407C	R-502/ R-404A/ R-507	**R-448A/ R-449A
1/8 (0.4)	1/4 (0.9)	1/5 (0.7)	1/4 (0.9)	1/8 (0.4)	1/4 (0.9)
1/4 (0.9)	1/2 (1.8)	1/4 (0.9)	1/2 (1.8)	1/4 (0.9)	1/2 (1.8)
1/2 (1.8)	3/4 (2.7)	1/2 (1.8)	1 (3.5)	1/2 (1.8)	1 (3.5)
1 (3.5)	1 (3.5)	3/4 (2.7)	1½ (5.3)	1 (3.5)	1-1/2 (5.3)
1¼ (4.4)	1½ (5.3)	1 (3.5)	2 (7.0)	1¼ (4.4)	2 (7.0)
1½ (5.3)	1¾ (6.2)	1½ (5.3)	2½ (8.8)	1½ (5.3)	2-1/2 (9.0)
2 (7.0)	2½ (8.8)	2 (7.0)	3 (11.0)	2 (7.0)	3-1/2 (12.0)
3½ (12.0)	4 (14.0)	3½ (12.0)	5½ (20.0)	3½ (12.0)	6 (21.0)

Extended Body HF

R-12	R-134a	R-450A/ R-513A	R-22/ R-407C	R-502/ R-404A/ R-507	**R-448A/ R-449A
5 (17.0)	6 (2.1)	4½ (16.0)	8 (28.0)	5 (17.0)	8½ (30.0)
6 (21.0)	7½ (27.0)	6 (21.0)	10 (35.0)	7 (27.0)	10½ (37.0)
9 (32.0)	11 (39.0)	9 (32.0)	15 (53.0)	10 (35.0)	16 (56.0)
12 (42.0)	14 (50.0)	11½ (40.0)	20 (70.0)	13 (46.0)	20 (70.0)

All capacities shown are at 100°F condensing, 40°F evaporator temperature.

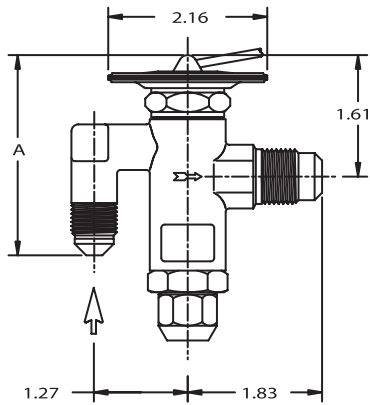
*See Extended Capacity Tables for ratings at a wide range of conditions per ARI standard 750.

**Use SZ charge for all R-448A/R-449A applications. Recommend oversizing the valve capacity by 50% for low temperature applications.

Dimensional Data

Standard Body HF

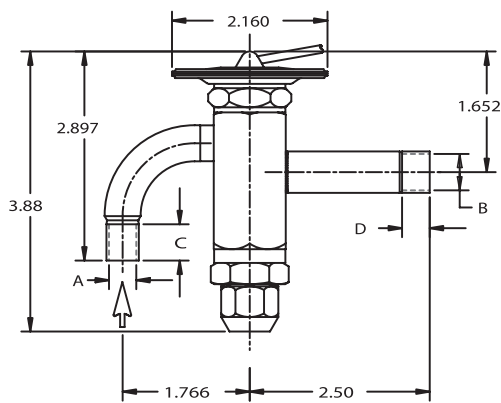
¼ thru 5½ tons R-22



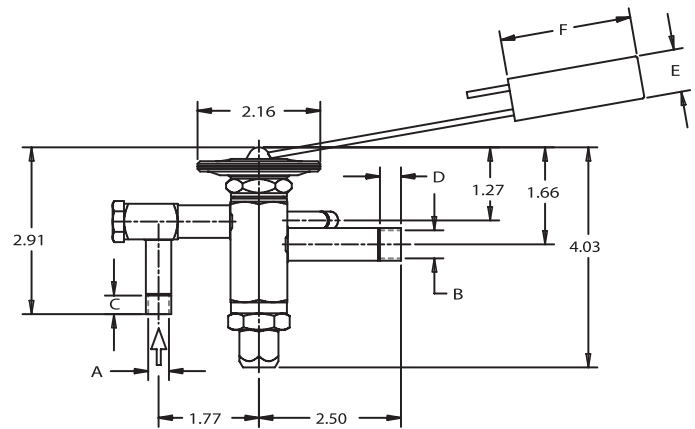
SAE

HF SAE

Connection Size		A	B	C
Inlet	Outlet			
1/4 SAE	1/2 SAE	3.11	1.27	1.83
3/8 SAE	1/2 SAE	2.72		



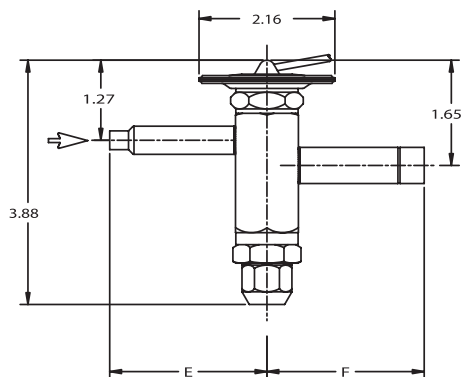
ODF



ODF
w/optional strainer
at inlet

Extended Body HF

8, 10, 15 & 20 ton R-22



ODF

HF ODF

Connection Size		A±	B±	C	D	E	F
Inlet	Outlet	.002	.002	MIN	MIN		
1/4 ODF	3/8 ODF	0.25	0.38	0.31	0.31	2.50	2.50
3/8 ODF	1/2 ODF	0.25	0.50	0.31	0.37		
3/8 ODF	1/2 ODF	0.38	0.50	0.37	0.37		

Ordering Information

Use the following tables to order factory assembled valves.

HF Series – Internally Equalized

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-12	HF HFS	1/4	FC	1/4 X 1/2 SAE ANG	5 FT	009811
			FC	3/8 X 1/2 SAE ANG	5 FT	054134
		1/2	FC	1/4 X 1/2 SAE ANG	5 FT	009810
			FC	3/8 X 1/2 ODF ANG	5 FT	056063
			FC	3/8 X 1/2 ODF S/T	5 FT	056013
			FC	3/8 X 1/2 SAE	5 FT	054966
			FC	3/8 X 1/2 SAE ANG	5 FT	054892
		1	FC	3/8 X 1/2 ODF S/T	5 FT	056119
			FC	3/8 X 1/2 SAE ANG	5 FT	057619
		1½	FC	3/8 X 1/2 SAE ANG	5 FT	054914
2	FC	3/8 X 1/2 SAE	5 FT	053060		
R-134a R-12 R-450A R-513A	HF HFS	1/4	MC	3/8 X 1/2 ODF ANG	5 FT	058545
			MC	3/8 X 1/2 SAE ANG	5 FT	057618
		1/2	MC	3/8 X 1/2 ODF S/T	5 FT	058100
			MC	3/8 X 1/2 SAE ANG	5 FT	057620
1	MC	3/8 X 1/2 ODF S/T	5 FT	065641		
R-22 R-407C	HF HFS	1/4	HC	1/4 X 1/2 SAE ANG	5 FT	058430
			HC	3/8 X 1/2 ODF ANG	5 FT	055493
			HC	3/8 X 1/2 ODF S/T	5 FT	055633
			HC	3/8 X 1/2 SAE	5 FT	054921
			HZ	1/4 X 1/2 SAE ANG	5 FT	059653
			HZ	3/8 X 1/2 ODF S/T	5 FT	056169
		1/2	HC	1/4 X 1/2 SAE ANG	5 FT	009812
			HC	3/8 X 1/2 ODF ANG	5 FT	054723
			HC	3/8 X 1/2 ODF S/T	5 FT	054136
			HC	3/8 X 1/2 SAE	5 FT	054135
			HZ	3/8 X 1/2 SAE	5 FT	054364
			HC	3/8 X 1/2 ODF ANG	5 FT	055702
		1	HC	3/8 X 1/2 ODF S/T	5 FT	055928
			HC	3/8 X 1/2 SAE	5 FT	054927
			HZ	3/8 X 1/2 SAE	5 FT	054928
			HC	3/8 X 1/2 ODF ANG	5 FT	055969
		1½	HC	3/8 X 1/2 ODF S/T	5 FT	056018
			HC	3/8 X 1/2 SAE	5 FT	054933
		2	HC	3/8 X 1/2 SAE	5 FT	054939
			HZ	3/8 X 1/2 SAE ANG	5 FT	054940
		2½	HC	3/8 X 1/2 SAE	5 FT	054947
		3	HC	3/8 X 1/2 SAE	5 FT	053316
			HC	3/8 X 1/2 ODF S/T	5 FT	053915
		R-404A R-507 R-502 **R-448A **R-449A	HF HFS	1/4	SC	1/4 X 1/2
SW45	1/4 X 1/2				30 IN	066517
SZ	1/4 X 1/2				30 IN	066518
1/2	SC			1/4 X 1/2	30 IN	066519
	SW45			1/4 X 1/2	30 IN	066520
	SZ			1/4 X 1/2	30 IN	066521
1	SC			3/8 X 1/2 ODF S/T	5 FT	065643
	SW45			3/8 X 1/2	5 FT	066522
	SZ			3/8 X 1/2	5 FT	066523
½	SC			3/8 X 1/2	5 FT	066524
	SW45			3/8 X 1/2	5 FT	066525
	SZ			3/8 X 1/2	5 FT	066526
2	SC			3/8 X 1/2	5 FT	066527
	SW45			3/8 X 1/2	5 FT	066528
	SZ			3/8 X 1/2	5 FT	066529
3½	SC			3/8 X 1/2	5 FT	066530
	SW45			3/8 X 1/2	5 FT	066531
	SZ			3/8 X 1/2	5 FT	066532

**Use SZ charge for all R-448A/R-449A applications. Recommend oversizing the valve by 50% for low temperature applications.