

# 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
<b>Valve Series</b> Balanced Port Design	<b>Superheat Adjustment</b> N = Non-Adjustable Omit for Adjustable	<b>Equalizer</b> E=External (Omit for Internal)	<b>Connection Type</b> S = Solder (Omit for SAE Flare)	<b>Removable Inlet Strainer</b> (optional) C = Inlet Strainer (ODF only)	<b>Bleed Hole</b> (optional) (Omit for no bleed hole)	<b>Capacity</b> Nominal Rating in Tons (See nominal capacity table below)	<b>Refrigerant Code</b> +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	<b>Charge Code</b> C = medium temp CA = heat pump W(MOP) = press. limiting Z = low temp AA = wide range	<b>Capillary Tube Length</b> 5 FT (std)	<b>Inlet x Outlet Connection Sizes</b> 1/4 x 3/8 3/8 x 1/2	<b>Connection Type</b> SAE = flare ODF = solder	<b>Configuration</b> 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.

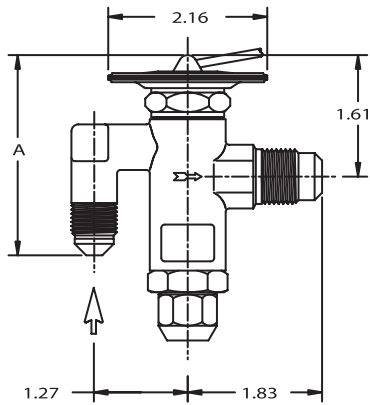
\*See Extended Capacity Tables for ratings at a wide range of conditions per ARI standard 750.

\*\*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

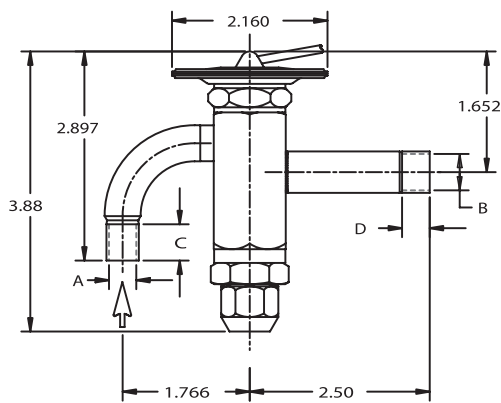
¼ thru 5½ tons R-22



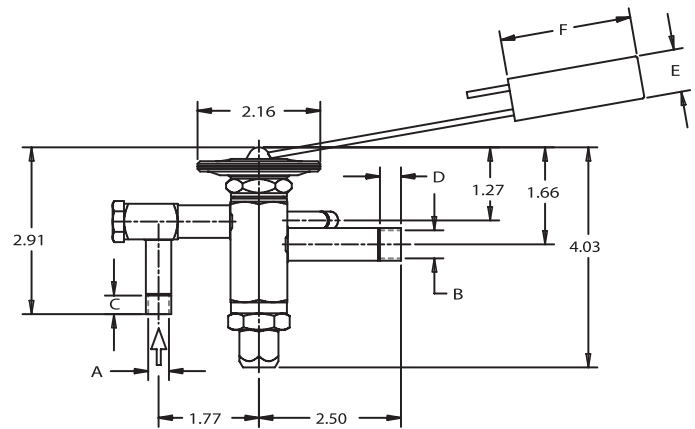
SAE

### 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		



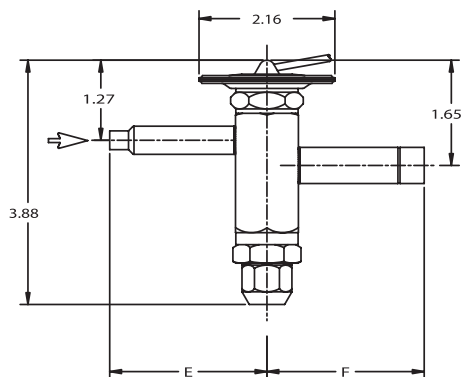
ODF



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 (continued)

### HF Series – Externally Equalized (continued)

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-12	HFE HFES	1/4	FC	3/8 X 1/2 SAE ANG	5 FT	054360
			FC	1/4 X 1/2 SAE ANG	5 FT	009955
		1/2	FC	3/8 X 1/2 ODF ANG	5 FT	056021
			FC	3/8 X 1/2 ODF S/T	5 FT	056331
			FC	3/8 X 1/2 SAE ANG	5 FT	054895
			FC	3/8 X 1/2 ODF ANG	5 FT	055993
		1	FC	3/8 X 1/2 ODF S/T	5 FT	056151
			FC	3/8 X 1/2 SAE ANG	5 FT	054909
			FC	3/8 X 1/2 ODF ANG	5 FT	055994
		1½	FC	3/8 X 1/2 SAE ANG	5 FT	054917
			FC	3/8 X 1/2 ODF S/T	5 FT	053266
		2	FC	3/8 X 1/2 SAE ANG	5 FT	053069
FC	3/8 X 1/2 SAE ANG		5 FT	054138		
R-134a R-12 R-450A R-513A	HFE HFES	1/4	MC	3/8 X 1/2 SAE ANG	30 IN	057860
		1/2	MC	3/8 X 1/2 ODF S/T	5 FT	065645
			MC	3/8 X 1/2 SAE ANG	5 FT	057616
		3/4	MC	3/8 X 1/2 ODF ANG	5 FT	057784
			MC	3/8 X 1/2 SAE ANG	30 IN	057861
		1	MC	3/8 X 1/2 ODF S/T	5 FT	059422
			MC	3/8 X 1/2 ODF ANG	5 FT	058546
			MC	3/8 X 1/2 SAE ANG	5 FT	065646
		1½	MC	3/8 X 1/2 ODF S/T	5 FT	057617
			MC	3/8 X 1/2 SAE ANG	5 FT	057895
		1¾	MC	3/8 X 1/2 ODF S/T	5 FT	065647
			MC	3/8 X 1/2 SAE	5 FT	058152
			MC	3/8 X 1/2 SAE ANG	5 FT	057896
		4	MC	3/8 X 1/2 SAE ANG	5 FT	057897
		6	MC	5/8 X 7/8 ODF S/T	5 FT	057903
			MC	5/8 X 7/8 ODF S/T	5 FT	057906
		11	MC	7/8 X 1 1/8 ODF S/T	5 FT	058681
			MC	7/8 X 1 3/8 ODF S/T	5 FT	064000
		14	MC	7/8 X 1 3/8 ODF S/T	5 FT	064000
			MC	7/8 X 1 3/8 ODF S/T	5 FT	064000
R-22 R-407C	HFE HFES	1/4	HC	3/8 X 1/2 ODF S/T	5 FT	055927
			HC	3/8 X 1/2 SAE	5 FT	054924
			HZ	3/8 X 1/2 SAE	5 FT	054925
		1/2	HC	1/4 X 1/2 SAE ANG	5 FT	059079
			HC	3/8 X 1/2 ODF ANG	5 FT	054838
			HC	3/8 X 1/2 ODF S/T	5 FT	055827
			HC	3/8 X 1/2 SAE	5 FT	054361
			HZ	3/8 X 1/2 ODF S/T	5 FT	055889
			HZ	3/8 X 1/2 SAE	5 FT	054365
		1	HC	3/8 X 1/2 ODF ANG	5 FT	055494
			HC	3/8 X 1/2 ODF S/T	5 FT	055708
			HC	3/8 X 1/2 SAE	5 FT	054930
			HW 35	3/8 X 1/2 SAE	5 FT	054932
		1½	HZ	3/8 X 1/2 SAE	5 FT	054931
			HC	3/8 X 1/2 ODF ANG	5 FT	055495
			HC	3/8 X 1/2 ODF S/T	5 FT	055863
			HC	3/8 X 1/2 SAE	5 FT	054936
			HZ	3/8 X 1/2 ODF S/T	5 FT	055870
		2	HZ	3/8 X 1/2 SAE	5 FT	054937
			HC	3/8 X 1/2 ODF S/T	5 FT	055706
			HC	3/8 X 1/2 SAE	5 FT	054942
			HC	3/8 X 1/2 ODF ANG	5 FT	054946
		2½	HZ	3/8 X 1/2 SAE	5 FT	054943
			HC	3/8 X 1/2 ODF ANG	5 FT	056042
			HC	3/8 X 1/2 ODF S/T	5 FT	055931
		3	HC	3/8 X 1/2 SAE	5 FT	054950
			HC	3/8 X 1/2 ODF ANG	5 FT	054756
			HC	3/8 X 1/2 ODF S/T	5 FT	053916
			HC	3/8 X 1/2 SAE	5 FT	053317
			HC	1/2 X 5/8 ODF ANG	5 FT	064761
			HCA	3/8 X 1/2 ODF S/T	5 FT	058648
			HCA	1/2 X 5/8 ODF S/T	5 FT	061730
			HZ	3/8 X 1/2 ODF S/T	5 FT	055924
		HZ	3/8 X 1/2 SAE	5 FT	053191	