

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE QUICK SELECTION GUIDE

Quick Select Guide

Application	Nominal Capacity		Valve Family	Adjustable Superheat	Internal Check	Style			Connections		Configuration		Port	
	R-22	R-410A				Hermetic	Replaceable Power Element	Field Service-able	SAE	ODF	Angle	Straight	Conventional	Balanced
Air Conditioning and Refrigeration	1/4 to 5	1 1/4 to 5	AA	X		X				X			X	
	1/4 to 5	1 1/4 to 5	AN	X		X				X	X		X	
	1/4 to 5	1 1/4 to 5	AAC	X	X	X				X		X	X	
	1/4 to 5	1 1/4 to 5	ANC	X	X	X				X	X		X	
	1/4 to 5		AF A	X		X					X		X	
	1/2 to 6	1/2 to 7 1/2	BA	X		X				X		X		X
	1/2 to 6	1/2 to 7 1/2	BN	X		X				X	X		X	
		1/2 to 7 1/2	C	X	X	X				X	X		X	
	1/4 to 5 1/2		HFK	X			X	X		X	X		X	
	1/4 to 5 1/2		HF	X				X		X	X		X	
	8 to 20		HF EXT	X				X		X	X		X	
	1/3 to 5		TI	X				X			X		X	
	8 to 20	12 to 20	TF	X			X			X		X	X	
	1/2 to 12		TL	X				X		X	X		X	
	1/2 to 12		TCL	X				X		X	X		X	
	11 and 14		TJL	X				X		X	X		X	
	14 and 18		TJR	X				X		X	X		X	
	22 to 45		TER	X				X		X	X		X	
	55		TIR	X				X		X	X		X	
	70 and 85		THR	X				X		X	X		X	
100		TMR	X				X		X	X		X		
10 to 40		TRAE+	X				X		X		X	X		
50 to 70		TRAE	X	X					X		X	X		
Constant Pressure	1/2 to 5		ACP		X				X		X	X		
Electrically Driven	1 to 20		ESVB		X				X	X				
	1/4 to 4		EX2		X				X	X				
Ultra-Low Temp	3/4 to 8		ZZ	X					X	X	X	X		
De-Superheating			LA	X	X				X		X	X		
			LCL	X					X	X	X	X		

Charge Code Selector

Applications	Operating Ranges
R-134a/R-12 Domestic Refrigerators and Freezers, Ice Makers, Dehumidifiers, Transport Refrigeration, Medium Temperature Supermarket Equipment, Medium Temperature Commercial Equipment	MC/FC
	MZ/FZ
	MW35/FW35 (MOP)
	MW55
R-22 Residential Air Conditioners & Heat Pumps, Commercial and Industrial Chillers, Medium Temperature Supermarket Equipment, Commercial Air Handlers	HCA/HAA AIR COND. & HEAT PUMP
	HW/HW100
	HC
	HW65 (MOP)
R-404A/R-507/R-502 Low Temperature Cases, Ice Makers, Commercial Air Handlers, Conditioners, Soft Ice Cream Machines, Environmental Chambers	HZ
	SC/RC
	SZ/RZ
R-410A	SW45/RW45 (MOP)
	ZW195

-50 -40 -30 -20 -10 0 +10 +20 +30 +40 +50

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE A-SERIES 410A

The A-series is used for heat pump, air conditioning, food services and commercial applications.

Features

- Stainless steel power element eliminates corrosion and prevents valve failure
- Hermetic, leak-free construction
- Compact size allows installation in limited spaces
- Mass spectrometer tested to ensure less than 0.10 oz/year external leakage rate



Options

- ZW195 charge available for R-410A systems
- Adjustable or non-adjustable superheat
- SAE or ODF connections standard – Chatleff or Aeroquip are available
- External or internal equalizer
- Internal check valve allows reverse flow for heat pump applications, eliminating the need for external piping and external check valve
- Bleed type pressure equalization to accommodate PSC type compressors
- Pressure limiting charges (MOP) available

Specifications

Maximum working pressure: 700 psig
 UL/CUL file number: SA 5312

Nomenclature example: AACEB 2 HC 30 IN 3/8 x 1/2 ODF ANG

A	A	C	E	B	2	H	C	30 IN	3/8 x 1/2	ODF	ANG
Valve Series Hermetic Design	Superheat Adjustment A = Adjustable N = Non-Adjustable	Internal Check Valve (optional) Reverse Flow Bypass Application	Equalizer E=External (Omit for Internal)	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 Z = R-410A	Charge Code C = medium temp CA = heat pump W(MOP) = press. limiting Z = low temp AA = wide range	Capillary Tube Length 30 IN & 5 FT (std)	Inlet x Outlet Connection Sizes 1/4 x 3/8 3/8 x 1/2 1/2 x 5/8 5/8 x 7/8	Connection Type SAE=flare ODF = solder Chatleff (optional) Aeroquip (optional)	Configuration S/T = straight-thru ANG = 90° angle

+ = R-12 and R-134a are interchangeable refrigerant charges

* = R-507, R-502 and R-404A are interchangeable refrigerant charges

• = R-22 and R-407C are interchangeable refrigerant charges

AA/AN Series – Nominal* Capacity Table in Tons (kW)

R-12	R-134a	R-22	R-410A	R-502	R-507/R-404A	R-407C
–	1/8 (0.4)	1/5 (0.7)	–	–	1/8 (0.4)	1/5
1/8 (0.4)	1/4 (0.9)	1/4 (0.9)	1/4 (0.9)	1/8 (0.4)	1/4 (0.9)	1/4 (0.9)
1/4 (0.9)	1/2 (1.8)	1/2 (1.8)	1/2 (1.8)	1/4 (0.9)	1/2 (1.8)	1/2 (1.8)
1/2 (1.8)	3/4 (2.7)	1 (3.5)	1 (3.5)	1/2 (1.8)	3/4	1 (3.5)
1 (3.5)	1 (3.5)	1½ (5.3)	1½ (5.3)	1 (3.5)	1 (3.5)	1¼ (4.4)
–	1½ (5.3)	2 (7.0)	2 (7.0)	–	1¼ (4.4)	2 (7.0)
1½ (5.3)	2 (7.0)	2½ (8.8)	3 (11.0)	1½ (5.3)	2 (7.0)	2½ (8.8)
2 (7.0)	2½ (9.0)	3 (11.0)	4 (14.0)	2 (7.0)	2¼ (8.0)	3¼ (11.5)
2½ (9.0)	3 (11.0)	4 (14.0)	5 (17.0)	2½ (8.8)	2½ (8.8)	4 (14.0)
3 (11.0)	4 (14.0)	5 (17.0)	–	3 (11.0)	3½ (12.0)	5¼ (19.0)

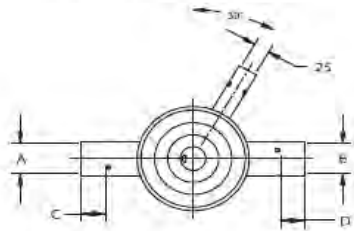
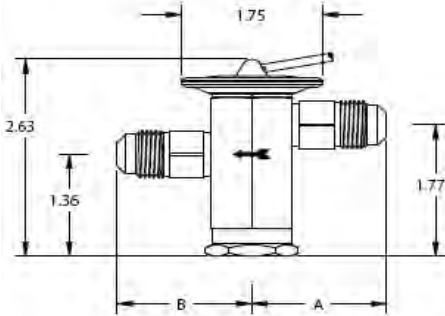
All capacities shown are at 100°F condensing, 40°F evaporator temperature.

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

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE A-SERIES

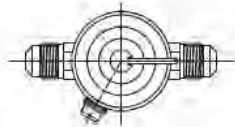
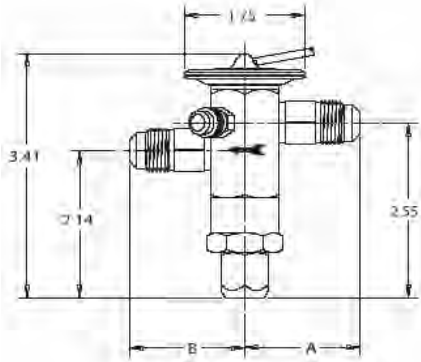
ANCE SAE Dimensional Data

Connection Size		A	B
Inlet	Outlet		
3/8 SAE	3/8 SAE	1.67	1.67
1/2 SAE	1/2 SAE	1.75	1.75



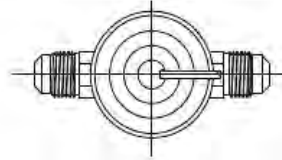
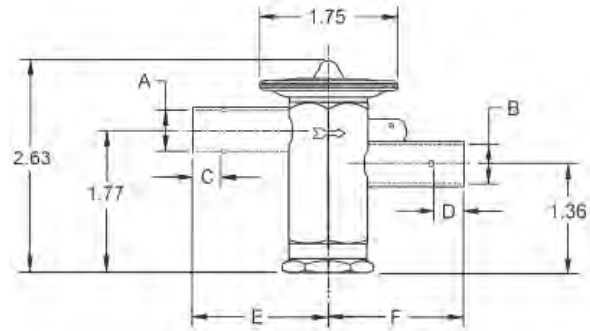
AACE SAE Dimensional Data

Connection Size		A	B
Inlet	Outlet		
3/8 SAE	3/8 SAE	1.67	1.67
1/2 SAE	1/2 SAE	1.75	1.75



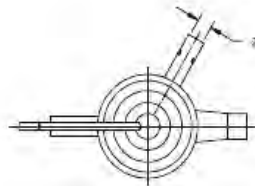
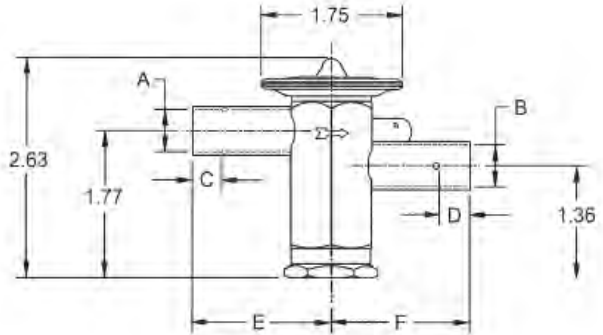
ANCE ODF Dimensional Data

Connection Size		A± .002	B± .002	C MIN	D MIN	E	F
Inlet	Outlet						
1/4 ODF	3/8 ODF	0.25	0.38	0.32	0.32	1.70	1.73
3/8 ODF	3/8 ODF	0.38	0.38	0.32	0.32	1.70	1.73
3/8 ODF	1/2 ODF	0.38	0.50	0.32	0.38	1.73	1.73
1/2 ODF	1/2 ODF	0.50	0.50	0.38	0.38	1.73	1.73
1/2 ODF	5/8 ODF	0.63	0.61	0.38	0.50	1.75	1.75



AACE ODF Dimensional Data

Connection Size		A± .002	B± .002	C MIN	D MIN	E	F
Inlet	Outlet						
1/4 ODF	3/8 ODF	0.25	0.38	0.32	0.32	1.70	1.73
3/8 ODF	3/8 ODF	0.38	0.38	0.32	0.32	1.70	1.73
3/8 ODF	1/2 ODF	0.38	0.50	0.32	0.38	1.73	1.73
1/2 ODF	1/2 ODF	0.50	0.50	0.38	0.38	1.73	1.73
1/2 ODF	5/8 ODF	0.63	0.61	0.38	0.50	1.75	1.75



Compressors,
Chillers, Condensers

Motors

Electrical

Heating
Components

Indoor Air
Quality

Thermostats

Oils &
Chemicals

Accessories, Supplies
& Commodities

Tools &
Instruments

Refrigeration

TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE A-SERIES

Without Internal Check Valve

Ordering Information

Note: When Ordering Apply ALC –As Prefix to PCN Number. Example ALC -054366

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-410A	AAE	3	ZW195	3/8 X 3/8 ODF S/T	30 IN	064595
R-410A	AAE	3	ZW195	3/8 X 1/2 ODF S/T	30 IN	065579
R-410A	AAE	3	ZW195	CHATLEFF	30 IN	015776
R-410A	AAE	5	ZW195	1/2 X 5/8 ODF S/T	30 IN	065580
R-410A	AAE	5	ZW195	CHATLEFF	30 IN	015794
R-134a R-12	AA	1/4	MC	1/4 X 1/2 ODF S/T	5 FT	065623
R-134a R-12	AA	1/2	MC	1/4 X 3/8 SAE S/T	30 IN	058985
R-134a R-12	AA	1/2	MC	1/4 X 1/2 ODF S/T	5 FT	065624
R-134a R-12	AA	1/2	MZ	1/4 X 3/8 SAE S/T	30 IN	058986
R-134a R-12	AAE	1/2	MC	1/4 X 1/2 ODF S/T	5 FT	065630
R-134a R-12	AAE	1	MC	3/8 X 1/2 ODF S/T	5 FT	065631
R-22 R-407C	AA	1/4	HC	1/4 X 3/8 ODF S/T	5 FT	056315
R-22 R-407C	AA	1/4	HC	1/4 X 1/2 ODF S/T	5 FT	055932
R-22 R-407C	AA	1/2	HC	1/4 X 1/2 ODF S/T	5 FT	065626
R-22 R-407C	AA	1/2	HC	3/8 X 3/8 ODF S/T	30 IN	056547
R-22 R-407C	AA	1/2	HC	3/8 X 1/2 SAE S/T	5 FT	057828
R-22 R-407C	AAE	1/2	HC	1/4 X 1/2 ODF S/T	5 FT	065632
R-22 R-407C	AAE	1/2	HC	3/8 X 1/2 ODF S/T	5 FT	065633
R-22 R-407C	AAE	1/2	HC	3/8 X 1/2 SAE ST	5 FT	057987
R-22 R-407C	AAE	1	HC	1/4 X 3/8 ODF ST	30 IN	059582
R-22 R-407C	AAE	1	HC	1/4 X 1/2 ODF S/T	5 FT	065634
R-22 R-407C	AAE	1	HC	3/8 X 1/2 ODF S/T	5 FT	065635
R-22 R-407C	AAE	1-1/2	HC	3/8 X 1/2 ODF S/T	5 FT	064424
R-22 R-407C	AAE	2	HC	3/8 X 1/2 ODF S/T	5 FT	064425
R-22 R-407C	AAE	2	HCA	3/8 X 1/2 ODF S/T	30 IN	049632
R-22 R-407C	AAE	2-1/2	HAA	3/8 X 1/2 ODF S/T	30 IN	063648
R-22 R-407C	AAE	2-1/2	HAA	CHATLEFF	30 IN	013938
R-22 R-407C	AAE	2-1/2	HCA	3/8 X 1/2 ODF S/T	30 IN	049633
R-22 R-407C	AAE	3	HC	3/8 X 1/2 ODF S/T	5 FT	062376
R-22 R-407C	AAE	3	HC	3/8 X 1/2 SAE S/T	5 FT	056686
R-22 R-407C	AAE	3	HCA	3/8 X 1/2 ODF S/T	30 IN	049634
R-22 R-407C	AAE	3	HCA	1/2 X 5/8 ODF S/T	30 IN	060643
R-22 R-407C	AAE	4	HC	1/2 X 5/8 ODF S/T	5 FT	061960
R-22 R-407C	AAE	4	HCA	3/8 X 1/2 ODF S/T	30 IN	049638
R-22 R-407C	AAE	4	HCA	1/2 X 1/2 ODF S/T	30 IN	061247
R-22 R-407C	AAE	5	HAA	3/8 X 1/2 ODF S/T	30 IN	063649
R-22 R-407C	AAE	5	HAA	CHATLEFF	30 IN	013939
R-22 R-407C	AAE	5	HC	1/2 X 5/8 ODF S/T	5 FT	059565
R-22 R-407C	AAE	5	HC	5/8 X 7/8 ODF S/T	30 IN	061805
R-22 R-407C	AAE	5	HCA	3/8 X 1/2 ODF S/T	30 IN	054024
R-22 R-407C	AAE	5	HCA	1/2 X 5/8 ODF S/T	30 IN	059683
R-22 R-407C	AAE	5	HW100	3/8 X 5/8 ODF S/T	5 FT	062088
R-22 R-407C	AAEB	3	HCA	3/8 X 1/2 ODF S/T	30 IN	059603
R-22 R-407C	AAEB	4	HCA	1/2 X 1/2 ODF S/T	30 IN	059605
R-22 R-407C	AAEB	5	HCA	1/2 X 1/2 ODF S/T	30 IN	059607
R-22 R-407C	AAEB	5	HCA	1/2 X 5/8 SAE S/T	30 IN	061243
R-404A R-507 R-502	AA	1/4	SW45	1/4 X 3/8 ODF S/T	5 FT	065676

Chatleff Gasket Kit – KG 10045 (PCN: 066031)

* For interchangeable refrigerant charges R-134a/R-12, R-404A/R-507/R-502, and R-22/R-407C, the tons of capacity shown in the table are for the first (primary) refrigerant listed. Consult the Nominal Capacity Table for determining the tons of capacity for the secondary refrigerants listed.

Example: A 1/4 ton R-12 valve is required. What R-134a ton valve should be selected?

Solution: From the Nominal Capacity Table, a 1/2 ton R-134a valve is equivalent to a 1/4 ton R-12 valve.

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-404A R-507 R-502	AA	1/4	SC	1/4 X 1/2 ODF S/T	30 IN	063503
R-404A R-507 R-502	AA	1/4	SZ	1/4 X 3/8 ODF S/T	5 FT	065675
R-404A R-507 R-502	AA	1/2	SC	1/4 X 1/2 ODF S/T	30 IN	063504
R-404A R-507 R-502	AA	1/2	SW45	1/4 X 1/2 ODF S/T	5 FT	065685
R-404A R-507 R-502	AA	1/2	SZ	1/4 X 1/2 ODF S/T	5 FT	065682
R-404A R-507 R-502	AA	1/2	SZ	3/8 X 1/2 ODF S/T	30 IN	063925
R-404A R-507 R-502	AA	3/4	SW45	3/8 X 1/2 ODF S/T	30 FT	065686
R-404A R-507 R-502	AA	3/4	SZ	3/8 X 1/2 ODF S/T	30 IN	065149
R-404A R-507 R-502	AAE	1/2	SC	3/8 X 1/2 ODF S/T	5 FT	066085
R-404A R-507 R-502	AAE	1/2	SW45	1/4 X 1/2 ODF S/T	5 FT	065636
R-404A R-507 R-502	AAE	1/2	SW45	3/8 X 1/2 ODF S/T	5 FT	065688
R-404A R-507 R-502	AAE	1/2	SZ	3/8 X 1/2 ODF S/T	5 FT	065687
R-404A R-507 R-502	AAE	3/4	SC	3/8 X 1/2 ODF S/T	5 FT	066086
R-404A R-507 R-502	AAE	1	SC	3/8 X 1/2 ODF S/T	5 FT	066087
R-404A R-507 R-502	AAE	1	SW45	3/8 X 1/2 ODF S/T	5 FT	065637
R-404A R-507 R-502	AAE	1	SZ	3/8 X 1/2 ODF S/T	5 FT	065183
R-404A R-507 R-502	AAE	1-1/4	SC	3/8 X 1/2 ODF S/T	5 FT	066081
R-404A R-507 R-502	AAE	1-1/4	SW45	3/8 X 1/2 ODF S/T	5 FT	066079
R-404A R-507 R-502	AAE	1-1/4	SZ	3/8 X 1/2 ODF S/T	5 FT	066080
R-404A R-507 R-502	AAE	1-1/2	SW45	3/8 X 1/2 ODF S/T	5 FT	065698
R-404A R-507 R-502	AAE	1-1/2	SZ	3/8 X 1/2 ODF S/T	5 FT	065697
R-404A R-507 R-502	AAE	2	SC	3/8 X 1/2 ODF S/T	30 IN	065330
R-404A R-507 R-502	AAE	2	SW45	3/8 X 1/2 ODF S/T	5 FT	065690
R-404A R-507 R-502	AAE	2	SZ	3/8 X 1/2 ODF S/T	5 FT	065689
R-404A R-507 R-502	AAE	2-1/4	SW45	3/8 X 1/2 ODF S/T	5 FT	066082
R-404A R-507 R-502	AAE	2-1/4	SZ	3/8 X 1/2 ODF S/T	5 FT	066083
R-404A R-507 R-502	AAE	2-1/4	SC	3/8 X 1/2 ODF S/T	5 FT	066084
R-404A R-507 R-502	AAE	2-1/2	SW45	1/2 X 5/8 ODF S/T	5 FT	065148
R-404A R-507 R-502	AAE	2-1/2	SZ	1/2 X 5/8 ODF S/T	5 FT	065691
R-404A R-507 R-502	AAE	3	SW45	3/8 X 1/2 ODF S/T	5 FT	065693
R-404A R-507 R-532	AAE	3	SZ	3/8 X 1/2 ODF S/T	5 FT	065692

With Internal Check Valve

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-410A	AACE	1-1/2	ZW195	3/8 X 1/2 ODF S/T	5 FT	065871
R-410A	AACE	1-1/2	ZW195	CHATLEFF	30 IN	016432
R-410A	AACE	2	ZW195	3/8 X 1/2 ODF S/T	5 FT	065872
R-410A	AACE	2	ZW195	CHATLEFF	30 IN	016615
R-410A	AACE	3	ZW195	3/8 X 1/2 ODF S/T	5 FT	065873
R-410A	AACE	3	ZW195	CHATLEFF	30 IN	015795
R-410A	AACE	4	ZW195	3/8 X 1/2 ODF S/T	5 FT	065874
R-410A	AACE	4	ZW195	CHATLEFF	30 IN	016433
R-410A	AACE	5	ZW195	1/2 X 5/8 ODF S/T	5 FT	065875
R-410A	AACE	5	ZW195	CHATLEFF	30 IN	015796
R-410A	AACEB	1-1/2	ZW195	3/8 X 1/2 ODF S/T	30 IN	065946
R-410A	AACEB	2	ZW195	3/8 X 1/2 ODF S/T	30 IN	065942
R-410A	AACEB	3	ZW195	3/8 X 1/2 ODF S/T	30 IN	065943
R-410A	AACEB	4	ZW195	3/8 X 1/2 ODF S/T	30 IN	065944
R-410A	AACEB	5	ZW195	3/8 X 1/2 ODF S/T	30 IN	065945
R-22 R-407C	AACE	1-1/2	HCA	3/8 X 1/2 ODF S/T	5 FT	058923
R-22 R-407C	AACE	1-1/2	HCA	1/2 X 5/8 ODF S/T	5 FT	065796
R-22 R-407C	AACE	2	HCA	3/8 X 1/2 ODF S/T	5 FT	065865
R-22 R-407C	AACE	2-1/2	HAA	3/8 X 1/2 ODF S/T	30 IN	064102
R-22 R-407C	AACE	2-1/2	HAA	CHATLEFF	30 IN	014091
R-22 R-407C	AACE	3	HCA	3/8 X 1/2 ODF S/T	5 FT	065868
R-22 R-407C	AACE	3	HCA	1/2 X 5/8 ODF S/T	5 FT	065797
R-22 R-407C	AACE	4	HCA	3/8 X 1/2 ODF S/T	5 FT	065869
R-22 R-407C	AACE	5	HAA	3/8 X 1/2 ODF S/T	30 IN	064103
R-22 R-407C	AACE	5	HAA	CHATLEFF	30 IN	014092
R-22 R-407C	AACE	5	HCA	1/2 X 5/8 ODF S/T	5 FT	065870
R-22 R-407C	AACEB	1-1/2	HCA	3/8 X 1/2 ODF S/T	30 IN	065842
R-22 R-407C	AACEB	2	HCA	3/8 X 1/2 ODF S/T	30 IN	065959
R-22 R-407C	AACEB	3	HCA	3/8 X 1/2 ODF S/T	30 IN	065941
R-22 R-407C	AACEB	4	HCA	3/8 X 5/8 ODF S/T	30 IN	065844

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE AFA(E)-SERIES

The AFA series is designed for air conditioning and commercial refrigeration applications requiring angle configuration SAE connections. The AFA is ideal for those applications requiring compact size combined with stable and accurate control over wide load and evaporator temperature ranges.



Features

- Stainless steel power element eliminates corrosion and prevents valve failure
- External superheat adjustment
- Replaceable inlet strainer
- SAE connections only
- Wrench flats on inlet and outlet

Options

- External or internal equalizer

Specifications

- Maximum working pressure: 700 psig
- UL/CUL file number: SA 5312

Nomenclature example: AFAE 1/2 HC 5 FT 3/8 x 1/2 SAE ANG

AF	A	E	1/2	H	C	5FT	3/8 x 1/2	SAE	ANG
Valve Series Hermetic Design, Flare Connections	Superheat Adjustment A = Adjustable	Equalizer E=External (Omit for Internal)	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 Z = R-410A	Charge Code C = medium temp CA = heat pump W(MOP) = press. limiting Z = low temp AA = wide range	Capillary Tube Length 30 IN & 5 FT (std)	Inlet x Outlet Connection Sizes 1/4 x 3/8 3/8 x 1/2	Connection Type SAE=flare	Configuration ANG = 90° angle

+ = R-12 and R-134a are interchangeable refrigerant charges,

* = R-507, R-502 and R-404A are interchangeable refrigerant charges, • = R-22 and R-407C are interchangeable refrigerant charges

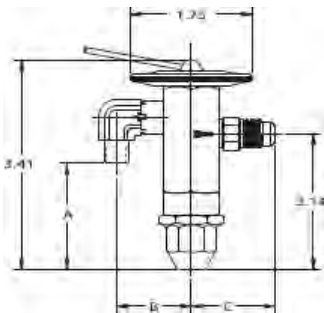
AFA Series – Nominal* Capacity Table in Tons (kW)

R-12	R-134a	R-22	R-502	R-507/R-404A	R-407C
–	1/8 (0.4)	1/5 (0.7)	–	1/8 (0.4)	1/5 (0.7)
1/8 (0.4)	1/4 (0.9)	1/4 (0.9)	1/8 (0.4)	1/4 (0.9)	1/4 (0.9)
1/4 (0.9)	1/2 (1.8)	1/2 (1.8)	1/4 (0.9)	1/2 (1.8)	1/2 (1.8)
1/2 (1.8)	3/4 (2.7)	1 (3.5)	1/2 (1.8)	3/4 (2.7)	1 (3.5)
1 (3.5)	1 (3.5)	1½ (5.3)	1 (3.5)	1 (3.5)	1¼ (4.4)
–	1½ (5.3)	2 (7.0)	–	1¼ (4.4)	2 (7.0)
1½ (5.3)	2 (7.0)	2½ (9.0)	1½ (5.3)	2 (7.0)	2½ (9.0)
2 (7.0)	2½ (9.0)	3 (11.0)	2 (7.0)	2½ (8.0)	3¼ (11.5)
–	3 (11.0)	–	–	2½ (9.0)	4 (14.0)
3 (11.0)	4 (14.0)	5 (17.0)	3 (11.0)	3½ (12.0)	5¼ (19.0)

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

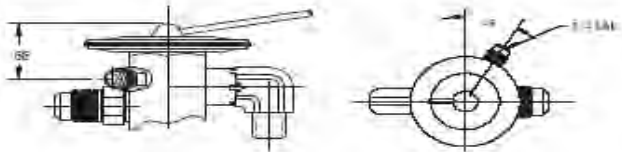
*See Extended Capacity Tables for ratings at a wide range of conditions per ARI standard 750.

Dimensional Data



AFA(E) Connections (in)				
Inlet	Outlet	A	B	C
1/4 SAE elbow	3/8 SAE	1.56	1.31	1.64
	1/2 SAE			1.35
	5/8 SAE			1.98
	3/8 – 1/2 SAE			1.73
3/8 SAE elbow	3/8 SAE	1.47	1.31	1.34
	1/2 SAE			1.36
	5/8 SAE			1.98
	3/8 – 1/2 SAE			1.73

Remote Bulb Tubing Length 30" or 5' Standard



EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE AFA(E)-SERIES

Ordering Information

Internally Equalized

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-12	AFA	1/4	FC	1/4 X 3/8 SAE	5 FT	047753
R-12	AFA	1/4	FC	1/4 X 3/8 SAE	30 IN	057047
R-12	AFA	1/4	FC	3/8 X 3/8 SAE	5 FT	054258
R-12	AFA	1/2	FC	1/4 X 3/8 SAE	5 FT	047752
R-12	AFA	1/2	FC	1/4 X 3/8 SAE	30 IN	057028
R-12	AFA	1/2	FC	3/8 X 3/8 SAE	5 FT	054226
R-12	AFA	1/2	FC	3/8 X 3/8 SAE	30 IN	057027
R-12	AFA	1	FC	3/8 X 3/8 SAE	5 FT	047758
R-12	AFA	1	FC	3/8 X 3/8 SAE	30 IN	057029
R-134a R-12	AFA	1/4	MC	1/4 X 3/8 SAE	5 FT	058536
R-134a R-12	AFA	1/4	MC	1/4 x 1/2 SAE	30 IN	057607
R-134a R-12	AFA	1/2	MC	1/4 x 1/2 SAE	30 IN	057606
R-134a R-12	AFA	1/2	MC	3/8 X 1/2 SAE	30 IN	059625
R-22 R-407C	AFA	1/4	HC	1/4 x 1/2 SAE	30 IN	057261
R-22 R-407C	AFA	1/4	HZ	1/4 X 3/8-1/2 SAE	30 IN	059575
R-22 R-407C	AFA	1/2	HC	1/4 X 1/2 SAE	30 IN	057260
R-22 R-407C	AFA	1	HC	3/8 X 1/2 SAE	5 FT	054231
R-22 R-407C	AFA	1	HZ	3/8 X 3/8-1/2 SAE	5 FT	057555
R-22 R-407C	AFA	1-1/2	HC	3/8 X 1/2 SAE	5 FT	054232
R-22 R-407C	AFA	2	HC	3/8 X 1/2 SAE	5 FT	054233
R-404A R-507 R-502	AFA	1/4	SC	1/4 x 1/2 SAE	5 FT	064072

Externally Equalized

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-134a R-12	AFAE	1/4	MC	3/8 X 3/8 SAE	30 IN	063898
R-134a R-12	AFAE	1/2	MC	1/4 X 3/8 SAE	30 IN	057853
R-134a R-12	AFAE	1/2	MC	3/8 X 3/8 SAE	30 IN	061904
R-134a R-12	AFAE	1	MC	3/8 X 1/2 SAE	30 IN	057613
R-134a R-12	AFAE	1-1/2	MC	3/8 X 3/8 SAE	30 IN	060865
R-134a R-12	AFAE	2	MC	3/8 X 3/8 SAE	30 IN	061906
R-134a R-12	AFAE	3	MC	3/8 X 3/8 SAE	30 IN	061908
R-22 R-407C	AFAE	1/2	HC	1/4 X 3/8 SAE	5 FT	054243
R-22 R-407C	AFAE	1	HC	3/8 X 1/2 SAE	5 FT	054246
R-22 R-407C	AFAE	1-1/2	HC	3/8 X 1/2 SAE	5 FT	054247
R-22 R-407C	AFAE	1-1/2	HZ	3/8 X 1/2 SAE	5 FT	057950
R-22 R-407C	AFAE	2	HZ	3/8 X 3/8 SAE	5 FT	057951
R-22 R-407C	AFAE	3	HC	3/8 X 1/2 SAE	5 FT	054249
R-22 R-407C	AFAE	3	HZ	3/8 X 3/8 SAE	5 FT	057556
R-22 R-407C	AFAE	5	HC	3/8 X 1/2 SAE	5 FT	054250
R-22 R-407C	AFAE	5	HZ	3/8 X 3/8 SAE	5 FT	058484
R-404A R-507 R-502	AFAE	1	SC	3/8 X 3/8 SAE	30 IN	061912
R-404A R-507 R-502	AFAE	1	SZ	3/8 X 3/8 SAE	5 FT	063464
R-404A R-507 R-502	AFAE	1-1/2	SC	3/8 X 3/8 SAE	30 IN	063702
R-404A R-507 R-502	AFAE	1-1/2	SZ	3/8 X 3/8 SAE	5 FT	063465
R-404A R-507 R-502	AFAE	2	SC	3/8 X 3/8 SAE	30 IN	061914
R-404A R-507 R-502	AFAE	2	SZ	3/8 X 3/8 SAE	5 FT	061646

For interchangeable refrigerant charges R-134a/R-12, R-404A/R-507/R-502, and R-22/R-407C, the tons of capacity shown in the table are for the first (primary) refrigerant listed. Consult the Nominal Capacity Table for determining the tons of capacity for the secondary refrigerants listed.

Example: A 1/4 ton R-12 valve is required. What R-134a ton valve should be selected?

Solution: From the Nominal Capacity Table, a 1/2 ton R-134a valve is equivalent to a 1/4 ton R-12 valve.

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE AFA(E)-SERIES

Ordering Information

Internally Equalized

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-12	AFA	1/4	FC	1/4 X 3/8 SAE	5 FT	047753
R-12	AFA	1/4	FC	1/4 X 3/8 SAE	30 IN	057047
R-12	AFA	1/4	FC	3/8 X 3/8 SAE	5 FT	054258
R-12	AFA	1/2	FC	1/4 X 3/8 SAE	5 FT	047752
R-12	AFA	1/2	FC	1/4 X 3/8 SAE	30 IN	057028
R-12	AFA	1/2	FC	3/8 X 3/8 SAE	5 FT	054226
R-12	AFA	1/2	FC	3/8 X 3/8 SAE	30 IN	057027
R-12	AFA	1	FC	3/8 X 3/8 SAE	5 FT	047758
R-12	AFA	1	FC	3/8 X 3/8 SAE	30 IN	057029
R-134a R-12	AFA	1/4	MC	1/4 X 3/8 SAE	5 FT	058536
R-134a R-12	AFA	1/4	MC	1/4 x 1/2 SAE	30 IN	057607
R-134a R-12	AFA	1/2	MC	1/4 x 1/2 SAE	30 IN	057606
R-134a R-12	AFA	1/2	MC	3/8 X 1/2 SAE	30 IN	059625
R-22 R-407C	AFA	1/4	HC	1/4 x 1/2 SAE	30 IN	057261
R-22 R-407C	AFA	1/4	HZ	1/4 X 3/8-1/2 SAE	30 IN	059575
R-22 R-407C	AFA	1/2	HC	1/4 X 1/2 SAE	30 IN	057260
R-22 R-407C	AFA	1	HC	3/8 X 1/2 SAE	5 FT	054231
R-22 R-407C	AFA	1	HZ	3/8 X 3/8-1/2 SAE	5 FT	057555
R-22 R-407C	AFA	1-1/2	HC	3/8 X 1/2 SAE	5 FT	054232
R-22 R-407C	AFA	2	HC	3/8 X 1/2 SAE	5 FT	054233
R-404A R-507 R-502	AFA	1/4	SC	1/4 x 1/2 SAE	5 FT	064072

Externally Equalized

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-134a R-12	AFAE	1/4	MC	3/8 X 3/8 SAE	30 IN	063898
R-134a R-12	AFAE	1/2	MC	1/4 X 3/8 SAE	30 IN	057853
R-134a R-12	AFAE	1/2	MC	3/8 X 3/8 SAE	30 IN	061904
R-134a R-12	AFAE	1	MC	3/8 X 1/2 SAE	30 IN	057613
R-134a R-12	AFAE	1-1/2	MC	3/8 X 3/8 SAE	30 IN	060865
R-134a R-12	AFAE	2	MC	3/8 X 3/8 SAE	30 IN	061906
R-134a R-12	AFAE	3	MC	3/8 X 3/8 SAE	30 IN	061908
R-22 R-407C	AFAE	1/2	HC	1/4 X 3/8 SAE	5 FT	054243
R-22 R-407C	AFAE	1	HC	3/8 X 1/2 SAE	5 FT	054246
R-22 R-407C	AFAE	1-1/2	HC	3/8 X 1/2 SAE	5 FT	054247
R-22 R-407C	AFAE	1-1/2	HZ	3/8 X 1/2 SAE	5 FT	057950
R-22 R-407C	AFAE	2	HZ	3/8 X 3/8 SAE	5 FT	057951
R-22 R-407C	AFAE	3	HC	3/8 X 1/2 SAE	5 FT	054249
R-22 R-407C	AFAE	3	HZ	3/8 X 3/8 SAE	5 FT	057556
R-22 R-407C	AFAE	5	HC	3/8 X 1/2 SAE	5 FT	054250
R-22 R-407C	AFAE	5	HZ	3/8 X 3/8 SAE	5 FT	058484
R-404A R-507 R-502	AFAE	1	SC	3/8 X 3/8 SAE	30 IN	061912
R-404A R-507 R-502	AFAE	1	SZ	3/8 X 3/8 SAE	5 FT	063464
R-404A R-507 R-502	AFAE	1-1/2	SC	3/8 X 3/8 SAE	30 IN	063702
R-404A R-507 R-502	AFAE	1-1/2	SZ	3/8 X 3/8 SAE	5 FT	063465
R-404A R-507 R-502	AFAE	2	SC	3/8 X 3/8 SAE	30 IN	061914
R-404A R-507 R-502	AFAE	2	SZ	3/8 X 3/8 SAE	5 FT	061646

For interchangeable refrigerant charges R-134a/R-12, R-404A/R-507/R-502, and R-22/R-407C, the tons of capacity shown in the table are for the first (primary) refrigerant listed. Consult the Nominal Capacity Table for determining the tons of capacity for the secondary refrigerants listed.

Example: A 1/4 ton R-12 valve is required. What R-134a ton valve should be selected?

Solution: From the Nominal Capacity Table, a 1/2 ton R-134a valve is equivalent to a 1/4 ton R-12 valve.

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE BA/BN SERIES-410A

The BA/BN series is a balanced ported valve. Typical applications include: refrigerated cases, coolers, freezers, ice machines and air conditioning systems. BA/BN valves operate over widely varying operating conditions.



Features

- Stainless steel power element eliminates corrosion and prevents valve failure
- Hermetic, leak-free construction
- Compact size allows installation in limited spaces
- Bi-Flow capability allows one valve to control the superheat in both cooling and heating modes for heat pump applications
- Balanced port construction compensates for changes in operating pressures due to varying ambient, gas defrost, heat reclaim, or widely varying evaporator loads

Specifications

- Maximum working pressure: 700 psig

Options

- ZW195 charge available for R-410A systems
- External or internal equalizer
- Bleed type pressure equalization available to accommodate PSC type compressors
- SAE or ODF connections standard – Chatleff or Aeroquip are available
- Adjustable or non-adjustable superheat

Nomenclature example: BAEB 1/2 HCA 5 FT 3/8 x 1/2 ODF S/T

B	A	E	B	1/2	H	CA	5 FT	3/8 x 1/2	ODF	S/T
Valve Series Hermetic Balanced Port Design	Superheat Adjustment A = Adjustable N = Non-Adjustable	Equalizer E=External (Omit for Internal)	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 Z = R-410A	Charge Code C = medium temp CA = heat pump W(MOP) = press. limiting Z = low temp	Capillary Tube Length 30 IN & 5 FT (std)	Inlet x Outlet Connection Sizes 1/4 x 3/8 3/8 x 1/2 1/2 x 5/8 5/8 x 7/8	Connection Type SAE=flare ODF = solder	Configuration S/T = straight-thru ANG = 90° angle

+ = R-12 and R-134a are interchangeable refrigerant charges

* = R-507, R-502 and R-404A are interchangeable refrigerant charges

• = R-22 and R-407C are interchangeable refrigerant charges

BA/BN Series – Nominal* Capacity Table in Tons (kW)

R-12	R-134a	R-22/R-407C	R-410A	R-502/R-404A/R-507
1/4 (0.9)	1/2 (1.8)	1/2 (1.8)	1/2 (1.8)	1/4 (0.9)
1/2 (1.8)	3/4	1 (3.5)	1 (3.5)	1/2 (1.8)
1 (3.5)	1 (3.5)	1½ (5.3)	1½ (5.3)	1 (3.5)
1¼ (4.4)	1½ (5.3)	2 (7.0)	2 (7.0)	1¼ (4.4)
1½ (5.3)	2 (7.0)	2½ (9.0)	3 (11.0)	1½ (5.3)
2 (7.0)	2¼ (8.0)	3 (11.0)	3½ (12.0)	2 (7.0)
2½ (9.0)	3 (11.0)	4 (14.0)	4½ (16.0)	2½ (9.0)
3 (11.0)	3½ (12.0)	5 (17.0)	6 (21.0)	3 (11.0)
3½ (12.0)	3½ (12.0)	6 (21.0)	7½ (26.0)	4 (14.0)

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

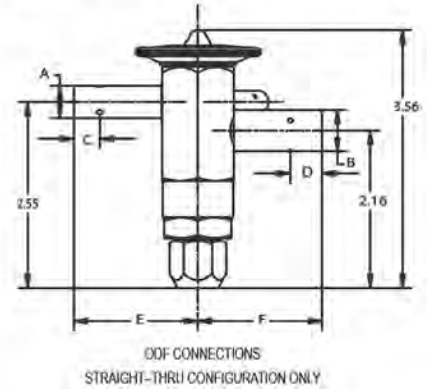
EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE BA/BN SERIES

BA/BN Dimensional Data (in)

BAE

Connection Size		A	B	C MIN	D MIN	E	F
Inlet	Outlet						
1/4 ODF	3/8 ODF	0.25	0.38	0.31	0.32	1.70	1.73
3/8 ODF	3/8 ODF	0.38	0.38	0.32	0.32	1.73	1.73
3/8 ODF	1/2 ODF	0.38	0.50	0.32	0.41	1.73	1.73
1/2 ODF	1/2 ODF	0.50	0.50	0.41	0.41	1.73	1.73
1/2 ODF	5/8 ODF	0.50	0.63	0.41	0.50	1.73	1.75
5/8 ODF	5/8 ODF	0.63	0.61	0.50	0.50	1.75	1.75
5/8 ODF	7/8 ODF	0.63	0.88	0.50	0.62	1.75	1.73

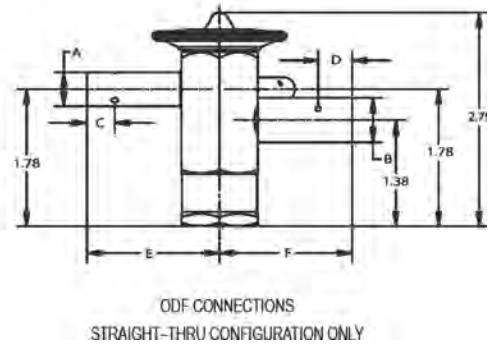
BA(E) Dimensional Diagram



BN(E) Dimensional Data (in)

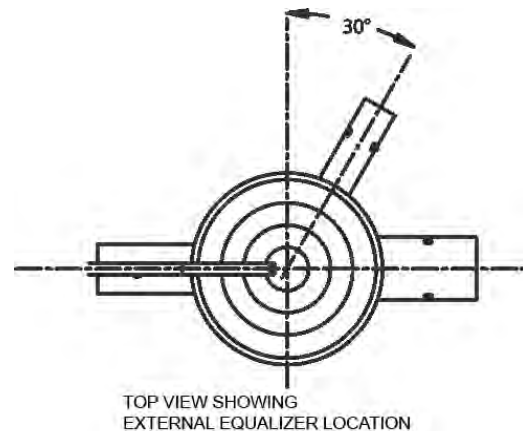
Connection Size		A	B	C MIN	D MIN	E	F
Inlet	Outlet						
1/4 ODF	3/8 ODF	0.25	0.38	0.31	0.32	1.70	1.73
3/8 ODF	3/8 ODF	0.38	0.38	0.32	0.32	1.73	1.73
3/8 ODF	1/2 ODF	0.38	0.50	0.32	0.41	1.73	1.73
1/2 ODF	1/2 ODF	0.50	0.50	0.41	0.41	1.73	1.73
1/2 ODF	5/8 ODF	0.50	0.63	0.41	0.50	1.73	1.75
5/8 ODF	5/8 ODF	0.63	0.61	0.50	0.50	1.75	1.75
5/8 ODF	7/8 ODF	0.63	0.88	0.50	0.62	1.75	1.73

BN(E) Dimensional Diagram



Remote Bulb Tubing Length 30" or 5' Standard

BA(E) & BN(E) Remote Bulb Dimensions		
Refrigerant Charge	Length	Diameter
HCA, HAA	2.31	0.75
MC, MZ, MW (MOP), RW (MOP)	2.09	0.50
RC, SC, SZ, SW (MOP),	2.09	0.50
PC, PZ, PW (MOP)	2.09	0.50



EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE BA/BN SERIES

Ordering Information

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-410A	BAE	1-1/2	ZW195	3/8 X 1/2 ODF S/T	5 FT	065876
R-410A	BAE	2	ZW195	3/8 X 1/2 ODF S/T	5 FT	065877
R-410A	BAE	3	ZW195	3/8 X 1/2 ODF S/T	5 FT	065878
R-410A	BAE	4-1/2	ZW195	3/8 X 1/2 ODF S/T	5 FT	065880
R-410A	BAE	6	ZW195	1/2 X 3/8 ODF S/T	5 FT	065586
R-410A	BAE	7-1/2	ZW195	5/8 X 7/8 ODF S/T	5 FT	066088
R-410A	BAEB	1-1/2	ZW195	3/8 X 1/2 ODF S/T	5 FT	065336
R-410A	BAEB	2	ZW195	3/8 X 1/2 ODF S/T	5 FT	065337
R-410A	BAEB	3	ZW195	3/8 X 1/2 ODF S/T	5 FT	065338
R-410A	BAEB	4-1/2	ZW195	3/8 X 1/2 ODF S/T	5 FT	065339
R-410A	BAEB	6	ZW195	3/8 X 1/2 ODF S/T	5 FT	065340
R-410A	BAEB	6	ZW195	1/2 X 3/8 ODF S/T	5 FT	065978
R-134a R-12	BAE	3/4	MC	3/8 X 1/2 ODF S/T	30 IN	062754
R-134a R-12	BAE	1	MC	3/8 X 1/2 ODF S/T	30 IN	061967
R-134a R-12	BAE	1-1/2	MC	3/8 X 1/2 ODF S/T	30 IN	063129
R-134a R-12	BAE	2	MC	3/8 X 1/2 ODF S/T	30 IN	062830
R-134a R-12	BAE	3	MC	3/8 X 1/2 ODF S/T	30 IN	063201
R-22 R-407C	BAE	1	HCA	3/8 X 1/2 ODF S/T	30 IN	063200
R-22 R-407C	BAE	1-1/2	HCA	3/8 X 1/2 ODF S/T	30 IN	061954
R-22 R-407C	BAE	1-1/2	HW100	3/8 X 1/2 ODF S/T	30 IN	062831
R-22 R-407C	BAE	2	HCA	3/8 X 1/2 ODF S/T	30 IN	061955
R-22 R-407C	BAE	2	HCA	1/2 X 1/2 ODF S/T	5 FT	063018
R-22 R-407C	BAE	2-1/2	HCA	3/8 X 1/2 ODF S/T	30 IN	061956
R-22 R-407C	BAE	2-1/2	HCA	1/2 X 5/8 ODF S/T	30 IN	061962
R-22 R-407C	BAE	2-1/2	HW100	3/8 X 1/2 ODF S/T	30 IN	062616
R-22 R-407C	BAE	3	HCA	3/8 X 1/2 ODF S/T	30 IN	061957
R-22 R-407C	BAE	3	HCA	1/2 X 5/8 ODF S/T	5 FT	063019
R-22 R-407C	BAE	3	HW100	3/8 X 1/2 ODF S/T	30 IN	062372
R-22 R-407C	BAE	4	HCA	3/8 X 1/2 ODF S/T	30 IN	061958
R-22 R-407C	BAE	4	HCA	1/2 X 5/8 ODF S/T	30 IN	061963
R-22 R-407C	BAE	4	HCA	5/8 X 5/8 ODF S/T	5 FT	063020
R-22 R-407C	BAE	4	HW100	3/8 X 1/2 ODF S/T	30 IN	062373
R-22 R-407C	BAE	5	HCA	3/8 X 1/2 ODF S/T	5 FT	062839
R-22 R-407C	BAE	5	HCA	1/2 X 1/2 ODF S/T	5 FT	062852
R-22 R-407C	BAE	5	HCA	1/2 X 5/8 ODF S/T	5 FT	061964
R-22 R-407C	BAE	5	HCA	5/8 X 5/8 ODF S/T	5 FT	062838
R-22 R-407C	BAE	5	HW100	3/8 X 1/2 ODF S/T	30 IN	062374
R-22 R-407C	BAE	6	HCA	1/2 X 1/2 ODF S/T	5 FT	062853
R-22 R-407C	BAE	6	HCA	1/2 X 5/8 ODF S/T	5 FT	062736
R-22 R-407C	BNE	3	HCA	3/8 X 1/2 ODF S/T	5 FT	064166
R-22 R-407C	BNE	3	HCA	1/2 X 1/2 ODF S/T	5 FT	062289
R-22 R-407C	BNE	4	HCA	3/8 X 3/8 ODF S/T	30 IN	063132
R-22 R-407C	BNE	4	HCA	3/8 X 1/2 ODF S/T	30 IN	061971
R-22 R-407C	BNE	5	HCA	1/2 X 1/2 ODF S/T	5 FT	062290
R-22 R-407C	BNE	5	HCA	1/2 X 5/8 ODF S/T	5 FT	065226
R-22 R-407C	BAEB	1-1/2	HCA	3/8 X 1/2 ODF S/T	30 IN	062789
R-22 R-407C	BAEB	1-1/2	HCA	1/2 X 1/2 ODF S/T	30 IN	063006
R-22 R-407C	BAEB	2	HCA	3/8 X 1/2 ODF S/T	30 IN	062790
R-22 R-407C	BAEB	3	HCA	3/8 X 1/2 ODF S/T	30 IN	061968
R-22 R-407C	BAEB	3	HCA	1/2 X 1/2 ODF S/T	30 IN	063015
R-22 R-407C	BAEB	3	HCA	1/2 X 5/8 ODF S/T	5 FT	063348
R-22 R-407C	BAEB	4	HCA	3/8 X 1/2 ODF S/T	30 IN	063939
R-22 R-407C	BAEB	4	HCA	1/2 X 1/2 ODF S/T	5 FT	063010
R-22 R-407C	BAEB	5	HCA	3/8 X 1/2 ODF S/T	5 FT	061980
R-22 R-407C	BAEB	5	HCA	1/2 X 1/2 ODF S/T	30 IN	063128
R-22 R-407C	BAEB	6	HCA	1/2 X 1/2 ODF S/T	30 IN	063940
R-22 R-407C	BAEB	6	HCA	1/2 X 5/8 ODF S/T	5 FT	064805
R-22 R-407C	BAEB	6	HCA	5/8 X 5/8 ODF S/T	5 FT	065977

* For interchangeable refrigerant charges R-134a/R-12, R-404A/R-507/R-502, and R-22/R-407C, the tons of capacity shown in the table are for the first (primary) refrigerant listed. Consult the Nominal Capacity Table for determining the tons of capacity for the secondary refrigerants listed.

Example: A 1/4 ton R-12 valve is required. What R-134a ton valve should be selected?

Solution: From the Nominal Capacity Table, a 1/2 ton R-134a valve is equivalent to a 1/4 ton R-12 valve.

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE B SERIES w/Strainer

The B-series with strainer series is a balanced ported valve. Typical applications include: refrigerated cases, coolers, freezers, ice machines and air conditioning systems that operate over widely varying operating conditions. This valve series also features a removable inlet strainer.



Features

- Stainless steel power element eliminates corrosion and prevents valve failure
- Removable inlet strainer assembly
- Balanced port design compensates for changes in operating pressures due to varying ambients or widely varying evaporator loads
- Hermetic, leak-free construction
- Solid copper ODF connections, angle style only

Options

- Adjustable and non-adjustable configurations
- Ratings from 1/2 to 6 tons

Specifications

- Maximum Working Pressure: 450 psig

Nomenclature example: BAESB 1/2 HC 5 FT 3/8 x 1/2 ODF

B	A	E	S	B	1/2	H	CA	5 FT	3/8 x 1/2	ODF
Valve Series Hermetic Balanced Port Design	Superheat Adjustment A = Adjustable N = Non-Adjustable	Equalizer E=External (Omit for Internal)	Strainer Removable Inlet Screen	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	Charge Code C = medium temp CA = heat pump W(MOP) = press. limiting Z = low temp	Capillary Tube Length 30 IN (std) & 5 FT (std)	Inlet x Outlet Connection Sizes 1/4 x 3/8 3/8 x 1/2 1/2 x 5/8 5/8 x 7/8	Connection Type ODF = solder

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

B Series with Strainer – Nominal* Capacity Table in Tons (kW)

R-12	R-134a	R-22/R-407C	R-502/R-507/R-404A
1/4 (0.9)	1/2 (1.8)	1/2 (1.8)	1/4 (0.9)
1/2 (1.8)	3/4	1 (3.5)	1/2 (1.8)
1 (3.5)	1 (3.5)	1½ (5.3)	1 (3.5)
1¼ (4.4)	1½ (5.3)	2 (7.0)	1¼ (4.4)
1½ (5.3)	2 (7.0)	2½ (9.0)	1½ (5.3)
2 (7.0)	2¼ (8.0)	3 (11.0)	2 (7.0)
2½ (9.0)	3 (11.0)	4 (14.0)	2½ (9.0)
3 (11.0)	3½ (12.0)	5 (17.0)	3 (11.0)
3½ (12.0)	4¼ (15.0)	6 (21.0)	4 (14.0)

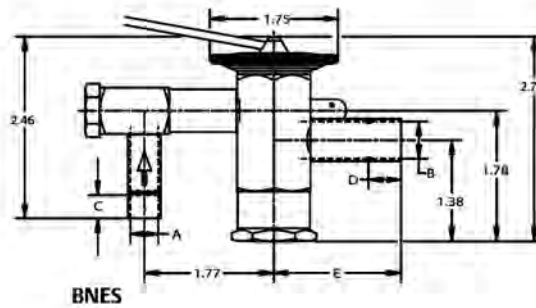
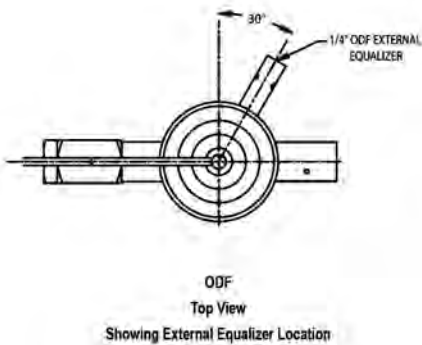
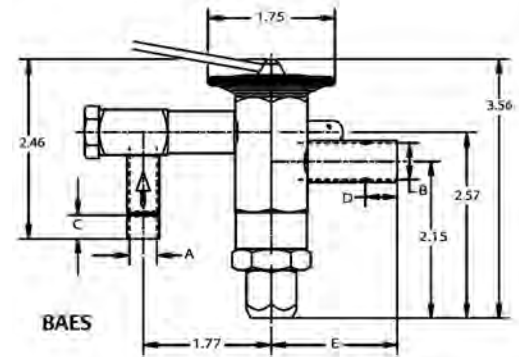
All capacities shown are at 100°F condensing, 40°F evaporator temperature.

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

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE B SERIES w/Strainer BAES/BNES Dimensional Data (in)

ODF Connections, Angle Style Only

Connection Size		A	B	C MIN	D MIN	E
Inlet	Outlet					
1/4 ODF	3/8 ODF	0.25	0.38	0.31	0.32	1.73
1/4 ODF	1/2 ODF	0.25	0.50	0.31	0.41	1.73
1/4 ODF	5/8 ODF	0.25	0.63	0.31	0.50	1.75
3/8 ODF	3/8 ODF	0.38	0.38	0.32	0.32	1.73
3/8 ODF	1/2 ODF	0.38	0.50	0.32	0.41	1.73
3/8 ODF	5/8 ODF	0.38	0.63	0.32	0.50	1.75
3/8 ODF	7/8 ODF	0.38	0.88	0.32	0.62	1.73
1/2 ODF	1/2 ODF	0.50	0.50	0.41	0.41	1.73
1/2 ODF	5/8 ODF	0.50	0.63	0.41	0.50	1.75
1/2 ODF	7/8 ODF	0.50	0.88	0.41	0.62	1.73



Remote Bulb Tubing Length 30" or 5' Standard

BAES & BNES Remote Bulb Dimensions		
Refrigerant Charge	Diameter	Length
HCA, NCA, HAA	0.75	2.38
MC, MZ, MW (MOP), RW (MOP) RC, SC, SZ SW (MOP), PC, PZ, PW (MOP)	0.50	2.13

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE B SERIES w/Strainer

Ordering Information (BAES Only)

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-134a R-12	BAES	1/2	MC	3/8 X 1/2 ODF ANG	30 IN	064244
R-134a R-12	BAES	3/4	MC	3/8 X 1/2 ODF ANG	30 IN	064245
R-134a R-12	BAES	1	MC	3/8 X 1/2 ODF ANG	30 IN	064246
R-134a R-12	BAES	1-1/2	MC	3/8 X 1/2 ODF ANG	30 IN	064247
R-134a R-12	BAES	2	MC	3/8 X 1/2 ODF ANG	30 IN	064248
R-134a R-12	BAES	3	MC	3/8 X 1/2 ODF ANG	30 IN	064250
R-22 R-407C	BAES	1/2	HC	3/8 X 1/2 ODF ANG	30 IN	064235
R-22 R-407C	BAES	1	HC	3/8 X 1/2 ODF ANG	30 IN	064236
R-22 R-407C	BAES	1-1/2	HC	3/8 X 1/2 ODF ANG	30 IN	064237
R-22 R-407C	BAES	2	HC	3/8 X 1/2 ODF ANG	30 IN	064238
R-22 R-407C	BAES	2-1/2	HC	3/8 X 1/2 ODF ANG	30 IN	064239
R-22 R-407C	BAES	3	HC	3/8 X 1/2 ODF ANG	30 IN	064240
R-22 R-407C	BAES	4	HC	3/8 X 1/2 ODF ANG	30 IN	064241
R-22 R-407C	BAES	5	HC	3/8 X 1/2 ODF ANG	30 IN	064242
R-22 R-407C	BAES	6	HC	3/8 X 1/2 ODF ANG	30 IN	064243
R-404A R-507 R-502	BAES	1/4	SC	3/8 X 1/2 ODF ANG	30 IN	064137
R-404A R-507 R-502	BAES	1/4	SZ	3/8 X 1/2 ODF ANG	30 IN	064295
R-404A R-507 R-502	BAES	1/2	SC	3/8 X 1/2 ODF ANG	30 IN	064138
R-404A R-507 R-502	BAES	1/2	SZ	3/8 X 1/2 ODF ANG	30 IN	064144
R-404A R-507 R-502	BAES	1	SC	3/8 X 1/2 ODF ANG	30 IN	064139
R-404A R-507 R-502	BAES	1	SZ	3/8 X 1/2 ODF ANG	30 IN	064145
R-404A R-507 R-502	BAES	1-1/4	SC	3/8 X 1/2 ODF ANG	30 IN	064140
R-404A R-507 R-502	BAES	1-1/4	SZ	3/8 X 1/2 ODF ANG	30 IN	064146
R-404A R-507 R-502	BAES	1-1/2	SC	3/8 X 1/2 ODF ANG	30 IN	064141
R-404A R-507 R-502	BAES	1-1/2	SZ	3/8 X 1/2 ODF ANG	30 IN	064273
R-404A R-507 R-502	BAES	2	SC	3/8 X 1/2 ODF ANG	30 IN	064142
R-404A R-507 R-502	BAES	2	SZ	3/8 X 1/2 ODF ANG	30 IN	064537
R-404A R-507 R-502	BAES	2-1/2	SC	3/8 X 1/2 ODF ANG	30 IN	064280
R-404A R-507 R-502	BAES	2-1/2	SZ	3/8 X 1/2 ODF ANG	30 IN	064434
R-404A R-507 R-502	BAES	3	SC	3/8 X 1/2 ODF ANG	30 IN	064281
R-404A R-507 R-502	BAES	3	SZ	3/8 X 1/2 ODF ANG	30 IN	064538
R-404A R-507 R-502	BAES	4	SC	3/8 X 1/2 ODF ANG	30 IN	064460
R-404A R-507 R-502	BAES	4	SZ	3/8 X 1/2 ODF ANG	30 IN	064780

* For interchangeable refrigerant charges R-134a/R-12, R-404A/R-507/R-502, and R-22/R-407C, the tons of capacity shown in the table are for the first (primary) refrigerant listed. Consult the Nominal Capacity Table for determining the tons of capacity for the secondary refrigerants listed.

Example: A 1/4 ton R-12 valve is required. What R-134a ton valve should be selected?

Solution: From the Nominal Capacity Table, a 1/2 ton R-134a valve is equivalent to a 1/4 ton R-12 valve.

Compressors,
Chillers, Condensers

Motors

Electrical

Heating
Components

Indoor Air
Quality

Thermostats

Oils &
Chemicals

Accessories, Supplies
& Commodities

Tools &
Instruments

Refrigeration

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE C SERIES R-410A

The C series is a balanced ported valve designed for high efficiency R-410A air-conditioning and heat pump applications. C valves operate over widely varying operating conditions.

Features

- Precision superheat control optimized for R-410 A systems
- Stainless steel power element eliminates corrosion and prevents valve failure
- Laser etched identification markings for permanent legibility
- Hermetic, leak-free construction of all joints
- Compact size allows installation in limited spaces
- Bi-Flow capability allows one valve to control the superheat in both cooling and heating modes for close-coupled or packaged heat pump applications
- Balance port construction compensates for changes in operating pressures due to varying ambients, gas defrost, heat recalim, or widely varying evaporator loads
- External equalizer is standard
- Screens on ODF inlet connections

Specifications

- Maximum working pressure (MWP): 700 psig
- R-410A operating range: -20°F to +50°F
- UL/CUL file number: SA 5312



Options

- High flow internal check valve allows reverse flow for heat pump applications, eliminating the need for external check valve and improving overall system efficiency
- Adjustable or non-adjustable superheat
- Bleed type pressure equalization available to accommodate PSC type compressors
- ODF connections are standard - Chatleff, Aeroquip, or SAE connections are available
- External equalizer 1/8" tube with 45° end cut is standard - terminations are available

Nomenclature example: CA 24K ZAA B15%

C	A	24K	ZAA	B15%
Valve Series	Body Type	Capacity	Charge	Bleed %
	A = Adjustable, With Check, Straight-Through	18K = 1-1/2 Ton	R-410A	(optional)
	B = Adjustable, No Check, Straight-Through	24K = 2 Ton		
	C = Non-Adjustable, With Check, Straight-Through	36K = 3 Ton		
	D = Non-Adjustable, No Check, Straight-Through	48K = 4 Ton		
	E = Non-Adjustable, With Check, 90° Angle	60K = 5 Ton		
	F = Non-Adjustable, No Check, 90° Angle	72K = 6 Ton		
		84K = 7 Ton		

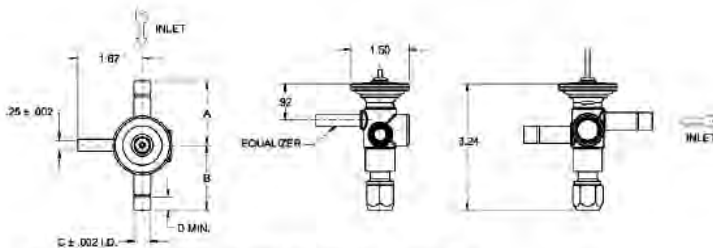
EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE C SERIES 410A

Ordering Information

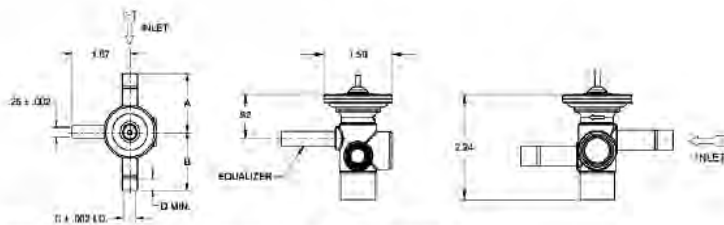
Adjustable, straight-through body style, individually packaged, 5 ft. remote bulb capillary tube

Refrigerant	Tons (Btuh)	Check Valve	Bleed	Inlet x Outlet	External Equalizer	PCN
R-410A	1-1/2 (18K)	Yes	-	3/8 ODF x 1/2 ODF	1/4 ODF	093078
R-410A	1-1/2 (18K)	Yes	15%	3/8 ODF x 1/2 ODF	1/4 ODF	093007
R-410A	1-1/2 (18K)	Yes	-	Chatleff x Chatleff	5 ft With 1/4 SAE Flare Nut	093014
R-410A	1-1/2 (18K)		-	3/8 ODF x 1/2 ODF	1/4 ODF	093021
R-410A	1-1/2 (18K)		15%	3/8 ODF x 1/2 ODF	1/4 ODF	093082
R-410A	2 (24K)	Yes	-	3/8 ODF x 1/2 ODF	1/4 ODF	093072
R-410A	2 (24K)	Yes	15%	3/8 ODF x 1/2 ODF	1/4 ODF	093008
R-410A	2 (24K)	Yes	-	Chatleff x Chatleff	5 ft With 1/4 SAE Flare Nut	093015
R-410A	2 (24K)		-	3/8 ODF x 1/2 ODF	1/4 ODF	093022
R-410A	2 (24K)		15%	3/8 ODF x 1/2 ODF	1/4 ODF	093083
R-410A	3 (36K)	Yes	-	3/8 ODF x 1/2 ODF	1/4 ODF	093073
R-410A	3 (36K)	Yes	15%	3/8 ODF x 1/2 ODF	1/4 ODF	093009
R-410A	3 (36K)	Yes	-	Chatleff x Chatleff	5 ft With 1/4 SAE Flare Nut	093016
R-410A	3 (36K)		-	3/8 ODF x 1/2 ODF	1/4 ODF	093023
R-410A	3 (36K)		15%	3/8 ODF x 1/2 ODF	1/4 ODF	093084
R-410A	4 (48K)	Yes	-	3/8 ODF x 1/2 ODF	1/4 ODF	093074
R-410A	4 (48K)	Yes	15%	3/8 ODF x 1/2 ODF	1/4 ODF	093010
R-410A	4 (48K)	Yes	-	Chatleff x Chatleff	5 ft With 1/4 SAE Flare Nut	093017
R-410A	4 (48K)		-	3/8 ODF x 1/2 ODF	1/4 ODF	093024
R-410A	4 (48K)		15%	3/8 ODF x 1/2 ODF	1/4 ODF	093081
R-410A	5 (60K)	Yes	-	1/2 ODF x 5/8 ODF	1/4 ODF	093075
R-410A	5 (60K)	Yes	15%	1/2 ODF x 5/8 ODF	1/4 ODF	093011
R-410A	5 (60K)	Yes	-	Chatleff x Chatleff	5 ft With 1/4 SAE Flare Nut	093018
R-410A	5 (60K)		-	1/2 ODF x 5/8 ODF	1/4 ODF	093025
R-410A	5 (60K)		15%	1/2 ODF x 5/8 ODF	1/4 ODF	093085
R-410A	6 (72K)	Yes	-	1/2 ODF x 5/8 ODF	1/4 ODF	093076
R-410A	6 (72K)	Yes	15%	1/2 ODF x 5/8 ODF	1/4 ODF	093012
R-410A	6 (72K)	Yes	-	Chatleff x Chatleff	5 ft With 1/4 SAE Flare Nut	093019
R-410A	6 (72K)		-	1/2 ODF x 5/8 ODF	1/4 ODF	093026
R-410A	6 (72K)		15%	1/2 ODF x 5/8 ODF	1/4 ODF	093079
R-410A	7 (84K)	Yes	-	5/8 ODF x 7/8 ODF	1/4 ODF	093077
R-410A	7 (84K)	Yes	15%	5/8 ODF x 7/8 ODF	1/4 ODF	093013
R-410A	7 (84K)	Yes	-	Chatleff x Chatleff	5 ft With 1/4 SAE Flare Nut	093020
R-410A	7 (84K)		-	5/8 ODF x 7/8 ODF	1/4 ODF	093027
R-410A	7 (84K)		15%	5/8 ODF x 7/8 ODF	1/4 ODF	093080

C-Series Dimensional Data (in)



Adjustable - ODF Connections with 1/4 ODF Equalizer Shown



Non-Adjustable - ODF Connections with 1/4 ODF Equalizer Shown

Connections	Dimension			
	A	B	C	D
3/8 ODF	1.65	1.65	0.379	0.34
1/2 ODF	1.65	1.65	0.504	0.48
5/8 ODF	2.15	2.15	0.629	0.75
7/8 ODF	2.15	2.15	0.879	0.75
Chatleff	1.80	1.36	-	-
Aeroquip	1.71	1.30	-	-

Compressors,
Chillers, Condensers

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Heating
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Quality

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Oils &
Chemicals

Accessories, Supplies
& Commodities

Tools &
Instruments

Refrigeration

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE HF/HFK SERIES

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

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

HF	N	E	S	C	B	2	H	C	5FT	3/8 x 1/2	ODF	S/T
Valve Series	Superheat Adjustment N = Non-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	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
Balanced Port Design	Omit for Adjustable											

+ = R-12 and R-134a are interchangeable refrigerant charges

* = R-507, R-502 and R-404A 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-22/R-407C	R-502/R- 404A/R-507
1/8 (0.4)	1/4 (0.9)	1/4 (0.9)	1/8 (0.4)
1/4 (0.9)	1/2 (1.8)	1/2 (1.8)	1/4 (0.9)
1/2 (1.8)	3/4 (2.7)	1 (3.5)	1/2 (1.8)
1 (3.5)	1 (3.5)	1 1/2 (5.3)	1 (3.5)
–	1 1/2 (5.3)	2 (7.0)	–
1 1/2 (5.3)	1 3/4 (6.2)	2 1/2 (8.8)	1 1/2 (5.3)
2 (7.0)	2 1/2 (8.8)	3 (11.0)	2 (7.0)
3 1/2 (12.0)	4 (14.0)	5 1/2 (20.0)	3 1/2 (12.0)

Extended Body HF

R-12	R-134a	R-22/R-407C	R-502/R- 404A/R-507
5 (17.0)	6(21.0)	8 (28.0)	5 (17.0)
6 (21.0)	7 1/2 (27.0)	10 (35.0)	7 (27.0)
9 (32.0)	11 (39.0)	15 (53.0)	10 (35.0)
12 (42.0)	14 (50.0)	20 (70.0)	13 (46.0)

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.

Refrigeration

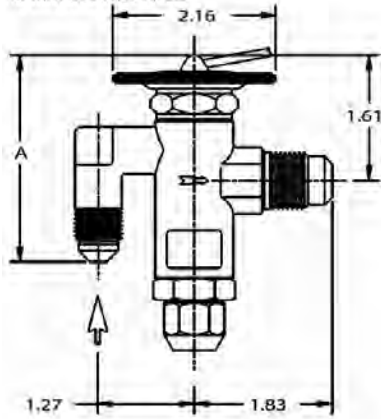
EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE HF/HFK SERIES

Dimensional Data

Standard Body HF

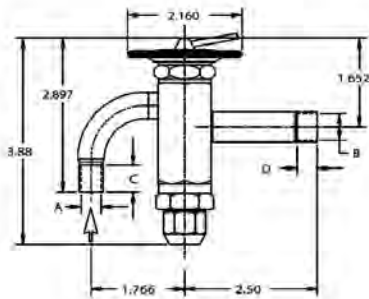
HF SAE

¼ thru 5½ tons R-22

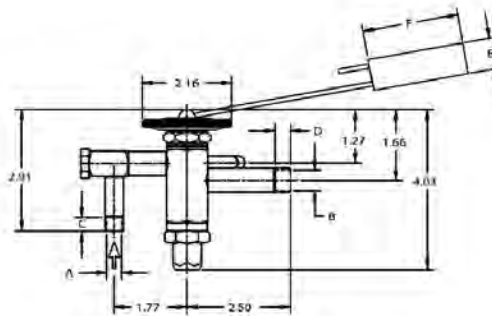


SAE

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	1.27	1.83



ODF

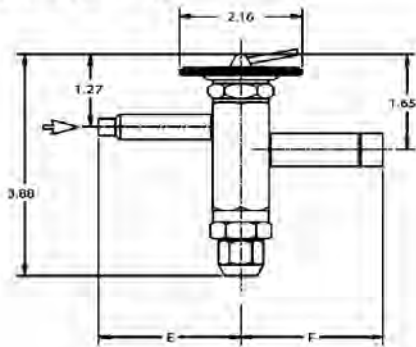


ODF
w/optional strainer
at inlet

Extended Body HF

HF ODF

8, 10, 15 & 20 ton R-22



ODF

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

Compressors,
Chillers, Condensers

Motors

Electrical

Heating
Components

Indoor Air
Quality

Thermostats

Oils &
Chemicals

Accessories, Supplies
& Commodities

Tools &
Instruments

Refrigeration

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE HF/HFK SERIES

Ordering Information

Use the following tables to order individual components.

HFK Body Selection Table

PCN	Type	Connections (Inlet x Outlet)	Description
064881	HFK	1/4 x 1/2 SAE Ang Inlet	KT-20298-1
064882	HFK	3/8 x 1/2 SAE Ang Inlet	KT-20298-2
064883	HFKE	1/4 x 1/2 SAE Ang Inlet	KT-20298-3
064884	HFKE	3/8 x 1/2 SAE Ang Inlet	KT-20298-4
064885	HFKSC	3/8 x 1/2 ODF Ang Inlet w/ Strainer	KT-20298-5
064886	HFKESC	3/8 x 1/2 ODF Ang Inlet w/ Strainer	KT-20298-6
064887	HFKS	3/8 x 1/2 ODF S/T	KT-20298-7
064888	HFKS	3/8 x 5/8 ODF S/T	KT-20298-8
064889	HFKS	1/2 x 5/8 ODF S/T	KT-20298-9
064890	HFKS	1/2 x 7/8 ODF S/T	KT-20298-10
064891	HFKES	3/8 x 1/2 ODF S/T	KT-20298-11
064892	HFKES	3/8 x 5/8 ODF S/T	KT-20298-12
064895	HFKES	1/2 x 5/8 ODF S/T	KT-20298-13
064896	HFKES	1/2 x 7/8 ODF S/T	KT-20298-14

HF & HFK Power Element Table

PCN	System Refrigerant(s)	Application	Description
053769	R-134a/R-12	Low Temp MOP	X26300-FW15-1
054798	R-134a/R-12	Low Temp MOP	X26300-FW35-1
063869	R-134a/R-12	Low Temp MOP	X26300-FW55-1
053766	R-134a/R-12	Low Temp	X26300-FZ-1
053763	R-134a/R-12	Medium Temp	X26300-FC-1
058074	R-134a	Medium Temp	X26300-MC-1
053767	R-22/R-407C	Low Temp	X26300-HZ-1
057834	R-22/R-407C	Heat Pump	X26300-HCA-1
057764	R-22/R-407C	AC MOP	X26300-HW100-1
053764	R-22/R-407C	A/C Med. Temp	X26300-HC-1
058085	R-404/ R-507/ R-502	Low Temp MOP	X26300-SW45-1
058082	R-404/ R-507/ R-502	Low Temp	X26300-SZ-1
058083	R-404/ R-507/ R-502	Medium Temp	X26300-SC-1

HFK Cage Nominal* Capacity Table

PCN	Cage Code	R-12	R-22	R-134a	R-404	R-507	R-502	R-407C	
064868	0	1/8	1/4	1/4	1/8	1/8	1/8	1/4	KT-20299-0
064869	1	1/4	1/2	1/2	1/4	1/4	1/4	1/2	KT-20299-1
064870	2	1/2	1	3/4	1/2	1/2	1/2	1	KT-20299-2
064871	3	1	1 1/2	1	1	1	1	1 1/2	KT-20299-3
064872	4	1 1/4	2	1 1/2	1 1/4	1 1/4	1 1/4	2	KT-20299-4
064873	5	1 1/2	2 1/2	1 3/4	1 1/2	1 1/2	1 1/2	2 1/2	KT-20299-5
064874	6	2	3	2 1/2	2	2	2	3	KT-20299-6
064875	7	3 1/2	5 1/2	4	3 1/2	3 1/2	3 1/2	5 1/2	KT-20299-7

*Cage Kit includes Cage, Insertion Tool and ID Clips.

*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.

Cage Kit (PCN 064879)

Item	Qty
Size 0 Cage (1/4 ton R-22)	2
Size 1 Cage (1/2 ton R-22)	2
Size 2 Cage (1 ton R-22)	2
Size 3 Cage (1 1/2 ton R-22)	2
Size 4 Cage (2 ton R-22)	2
Size 5 Cage (2 1/2 ton R-22)	2
Size 6 Cage (3 ton R-22)	2
Size 7 Cage (5 1/2 ton R-22)	2
Insertion Tool	1
Oil Bottle	1
Cage ID Tags	16

Refrigeration

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE HF/HFK SERIES

Replacement Parts – SAE Inlet

Part Number	PCN	Description
X-11176-1	027385	Filter Screen
27676-1	058707	Seal Cap

Replacement Parts- HFSC & HFESC Only

PCN	Kit Number	Description
057686	KT-20264	Includes seal cap, gasket o-ring, screen, spring

HFK Accessories

PCN	Description
064880	Service Box
064897	Cage Box (Empty)
064898	Insertion Tool
064899	Oil Bottle
065203	Cage Gasket Kit (12 sets)

Compressors,
Chillers, Condensers

Motors

Electrical

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Components

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Tools &
Instruments

Refrigeration

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE HF/HFK SERIES

HFK Pre-Packaged Kits

Ordering Information

The HFK is a pre-packaged kit consisting of a mix of popular bodies and power elements with a complete selection of cages. These kits provide great flexibility allowing valves to be assembled as needed for each application. Three kits are provided as shown below, along with the cage kit which is included in each pre-packaged kit. In addition, custom kits can be assembled by stocking an empty kit case with desired components.



SAE/ODF Kit (PCN 065135)

Item	Qty
HFK 3/8 x 1/2 SAE ANG	1
HFKE 3/8 x 1/2 SAE ANG	1
HFKS 3/8 x 1/2 ODF S/T	1
HFKES 3/8 x 1/2 ODF S/T	1
Cage Kit (PCN 064879)	1
Insertion Tool (PCN 065219)	1
Service Box (PCN 064880)	1
FC Power Element	1
FZ Power Element	1
HC Power Element	1
HZ Power Element	1
SC Power Element	1
SW45 Power Element	1

SAE Kit (PCN 064876)

Item	Qty
HFK 1/4 X 1/2 Body	1
HFK 3/8 X 1/2 Body	1
HFKE 3/8 X 1/2 Body	2
FC Power Element	2
HC Power Element	1
HZ Power Element	1
SZ Power Element	2
Cage Kit (PCN 064879)	1

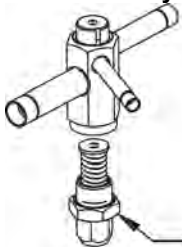
ODF Kit (PCN 064877)

Item	Qty
HFKSC 3/8 X 1/2 Body	1
HFKES 3/8 X 1/2 Body	1
HFKESC 3/8 X 1/2 Body	2
FC Power Element	2
HC Power Element	1
HZ Power Element	1
SZ Power Element	2
Cage Kit (PCN 064879)	1

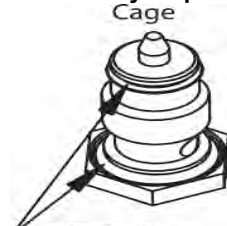
Cage Kit (PCN 064879)

Item	Qty
Size 0 Cage (1/4 ton R-22)	2
Size 1 Cage (1/2 ton R-22)	2
Size 2 Cage (1 ton R-22)	2
Size 3 Cage (1 1/2 ton R-22)	2
Size 4 Cage (2 ton R-22)	2
Size 5 Cage (2 1/2 ton R-22)	2
Size 6 Cage (3 ton R-22)	2
Size 7 Cage (5 1/2 ton R-22)	2
Insertion Tool	1
Oil Bottle	1
Cage ID Tags	16

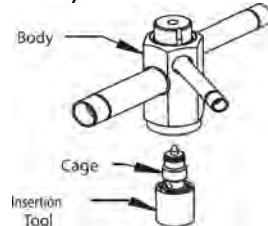
HFK Assembly Procedure (see 6 assembly steps & diagrams below)



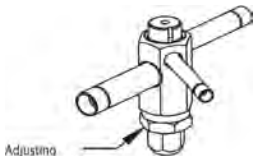
1. Remove adjusting stem assembly from body with 15/16" wrench.



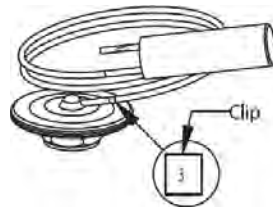
2. Lubricate both o-rings on cage.



3. Insert cage into body with driver and insertion tool and hand tighten. (Do not over-tighten)



4. Replace adjustment stem assembly to body and hand tighten. Use the 15/16" wrench to tighten adjustment stem assembly 60° or one wrench fl at. (300-360 inch lbs. - Do not over-tighten)



5. Attach cage identification clip on power element cap tube.



6. Screw power element to top of valve body and hand tighten. Use the 1" wrench to tighten power element 60° or one wrench fl at. (300-360 inch lbs. - Do not over-tighten)

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE HF/HFK SERIES

HF Series - Internally Equalized

Ordering Information

Use the following tables to order factory assembled valves.

Note: When Ordering Apply ALC -As Prefix to PCN Number. Example ALC -054366

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-12	HF	1/4	FC	1/4 X 1/2 SAE ANG	5 FT	009811
R-12	HF	1/4	FC	3/8 X 1/2 SAE ANG	5 FT	054134
R-12	HF	1/2	FC	1/4 X 1/2 SAE ANG	5 FT	009810
R-12	HF	1/2	FC	3/8 X 1/2 ODF ANG	5 FT	056063
R-12	HF	1/2	FC	3/8 X 1/2 ODF S/T	5 FT	056013
R-12	HF	1/2	FC	3/8 X 1/2 SAE	5 FT	054966
R-12	HF	1/2	FC	3/8 X 1/2 SAE ANG	5 FT	054892
R-12	HF	1	FC	3/8 X 1/2 ODF S/T	5 FT	056119
R-12	HF	1	FC	3/8 X 1/2 SAE ANG	5 FT	057619
R-12	HF	1-1/2	FC	3/8 X 1/2 SAE ANG	5 FT	054914
R-12	HF	2	FC	3/8 X 1/2 SAE	5 FT	053060
R-134a R-12	HF	1/4	MC	3/8 X 1/2 ODF ANG	5 FT	058545
R-134a R-12	HF	1/4	MC	3/8 X 1/2 SAE ANG	5 FT	057618
R-134a R-12	HF	1/2	MC	3/8 X 1/2 ODF S/T	5 FT	058100
R-134a R-12	HF	1/2	MC	3/8 X 1/2 SAE ANG	5 FT	057620
R-134a R-12	HF	1	MC	3/8 X 1/2 ODF S/T	5 FT	065641
R-22 R-407C	HF	1/4	HC	1/4 X 1/2 SAE ANG	5 FT	058430
R-22 R-407C	HF	1/4	HC	3/8 X 1/2 ODF ANG	5 FT	055493
R-22 R-407C	HF	1/4	HC	3/8 X 1/2 ODF S/T	5 FT	055633
R-22 R-407C	HF	1/4	HC	3/8 X 1/2 SAE	5 FT	054921
R-22 R-407C	HF	1/4	HZ	1/4 X 1/2 SAE ANG	5 FT	059653
R-22 R-407C	HF	1/4	HZ	3/8 X 1/2 ODF S/T	5 FT	056169
R-22 R-407C	HF	1/2	HC	1/4 X 1/2 SAE ANG	5 FT	009812
R-22 R-407C	HF	1/2	HC	3/8 X 1/2 ODF ANG	5 FT	054723
R-22 R-407C	HF	1/2	HC	3/8 X 1/2 ODF S/T	5 FT	054136
R-22 R-407C	HF	1/2	HC	3/8 X 1/2 SAE	5 FT	054135
R-22 R-407C	HF	1/2	HZ	3/8 X 1/2 SAE	5 FT	054364
R-22 R-407C	HF	1	HC	3/8 X 1/2 ODF ANG	5 FT	055702
R-22 R-407C	HF	1	HC	3/8 X 1/2 ODF S/T	5 FT	055928
R-22 R-407C	HF	1	HC	3/8 X 1/2 SAE	5 FT	054927
R-22 R-407C	HF	1	HZ	3/8 X 1/2 SAE	5 FT	054928
R-22 R-407C	HF	1-1/2	HC	3/8 X 1/2 ODF ANG	5 FT	055969
R-22 R-407C	HF	1-1/2	HC	3/8 X 1/2 ODF S/T	5 FT	056018
R-22 R-407C	HF	1-1/2	HC	3/8 X 1/2 SAE	5 FT	054933
R-22 R-407C	HF	2	HC	3/8 X 1/2 SAE	5 FT	054939
R-22 R-407C	HF	2	HZ	3/8 X 1/2 SAE ANG	5 FT	054940
R-22 R-407C	HF	2-1/2	HC	3/8 X 1/2 SAE	5 FT	054947
R-22 R-407C	HF	3	HC	3/8 X 1/2 SAE	5 FT	053316
R-22 R-407C	HF	3	HC	3/8 X 1/2 ODF S/T	5 FT	053915
R-404A R-507 R-502	HF	1	SC	3/8 X 1/2 ODF S/T	5 FT	065643
R-502	HF	1/4	RC	1/4 X 1/2 SAE ANG	5 FT	059304
R-502	HF	1/4	RC	3/8 X 1/2 ODF ANG	5 FT	055490
R-502	HF	1/4	RC	3/8 X 1/2 SAE	5 FT	054137
R-502	HF	1/4	RZ	1/4 X 3/8 ODF S/T	5 FT	055792
R-502	HF	1/4	RZ	3/8 X 1/2 ODF S/T	5 FT	056228
R-502	HF	1/4	RZ	3/8 X 1/2 SAE	5 FT	054369
R-502	HF	1/2	RC	3/8 X 1/2 SAE	5 FT	054964
R-502	HF	1/2	RZ	3/8 X 1/2 ODF ANG	5 FT	055874
R-502	HF	1/2	RZ	3/8 X 1/2 ODF S/T	5 FT	056008
R-502	HF	1/2	RZ	3/8 X 1/2 SAE	5 FT	054965
R-502	HF	1	RC	3/8 X 1/2 SAE	5 FT	054976
R-502	HF	1	RC	3/8 X 1/2 SAE ANG	5 FT	054905
R-502	HF	1	RZ	3/8 X 1/2 ODF ANG	5 FT	055785
R-502	HF	1	RZ	3/8 X 1/2 SAE	5 FT	054977
R-502	HF	1-1/2	RC	3/8 X 1/2 SAE	5 FT	054984
R-502	HF	1-1/2	RZ	3/8 X 1/2 SAE	5 FT	054986
R-502	HF	2	RC	3/8 X 1/2 SAE	5 FT	053061
R-502	HF	3-1/2	RC	3/8 X 1/2 SAE	5 FT	055936

Compressors,
Chillers, Condensers

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EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE HF/HFK SERIES

HF Series – Externally Equalized (continued)

Ordering Information (continued)

Note: When Ordering Apply ALC –As Prefix to PCN Number. Example ALC -054366

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

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE HF/HFK SERIES

HF Series – Externally Equalized (continued)

Ordering Information (continued)

Note: When Ordering Apply ALC –As Prefix to PCN Number. Example ALC -054366

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-22 R-407C	HFE	3	HCA	1/2 X 5/8 ODF ANG	5 FT	061730
R-22 R-407C	HFE	3	HZ	3/8 X 1/2 ODF S/T	5 FT	055924
R-22 R-407C	HFE	3	HZ	3/8 X 1/2 SAE	5 FT	053191
R-22 R-407C	HFE	5-1/2	HC	3/8 X 1/2 ODF S/T	5 FT	054141
R-22 R-407C	HFE	5-1/2	HC	3/8 X 1/2 SAE	5 FT	054140
R-22 R-407C	HFE	5-1/2	HC	1/2 X 5/8 ODF ANG	5 FT	054778
R-22 R-407C	HFE	5-1/2	HC	1/2 X 7/8 ODF S/T	5 FT	055187
R-22 R-407C	HFE	5-1/2	HC	5/8 X 7/8 ODF S/T	5 FT	054779
R-22 R-407C	HFE	5-1/2	HCA	3/8 X 1/2 ODF S/T	5 FT	065649
R-22 R-407C	HFE	5-1/2	HCA	1/2 X 5/8 ODF ANG	5 FT	057378
R-22 R-407C	HFE	5-1/2	HZ	3/8 X 1/2 ODF S/T	5 FT	054780
R-22 R-407C	HFE	5-1/2	HZ	3/8 X 1/2 SAE	5 FT	054777
R-22 R-407C	HFE	8	HC	1/2 X 5/8 ODF S/T	5 FT	057312
R-22 R-407C	HFE	8	HC	5/8 X 1 1/8 ODF S/T	5 FT	057313
R-22 R-407C	HFE	8	HCA	1/2 X 7/8 ODF S/T	5 FT	056818
R-22 R-407C	HFE	8	HCA	5/8 X 1 1/8 ODF S/T	5 FT	056819
R-22 R-407C	HFE	10	HC	1/2 X 5/8 ODF S/T	5 FT	057315
R-22 R-407C	HFE	10	HC	5/8 X 7/8 ODF S/T	5 FT	057256
R-22 R-407C	HFE	10	HC	7/8 X 1 1/8 ODF S/T	5 FT	057316
R-22 R-407C	HFE	10	HCA	5/8 X 7/8 ODF S/T	5 FT	056820
R-22 R-407C	HFE	10	HCA	5/8 X 1 1/8 ODF S/T	5 FT	056821
R-22 R-407C	HFE	12	HC	5/8 X 1 1/8 ODF S/T	5 FT	062737
R-22 R-407C	HFE	15	HC	5/8 X 7/8 ODF S/T	5 FT	057317
R-22 R-407C	HFE	15	HC	7/8 X 1 1/8 ODF S/T	5 FT	057318
R-22 R-407C	HFE	15	HCA	5/8 X 1 1/8 ODF S/T	5 FT	056824
R-22 R-407C	HFE	15	HCA	5/8 X 7/8 ODF S/T	5 FT	056823
R-22 R-407C	HFE	15	HCA	7/8 X 1 1/8 ODF S/T	5 FT	056825
R-22 R-407C	HFE	20	HC	7/8 X 1 1/8 ODF S/T	5 FT	062055
R-22 R-407C	HFE	20	HCA	7/8 X 1 1/8 ODF S/T	5 FT	058490
R-404A R-507 R-502	HFE	1/4	SW 45	3/8 X 1/2 ODF S/T	5 FT	065734
R-404A R-507 R-502	HFE	1/4	SZ	3/8 X 1/2 ODF S/T	5 FT	065733
R-404A R-507 R-502	HFE	1/2	SC	3/8 X 1/2 ODF ANG	5 FT	058976
R-404A R-507 R-502	HFE	1/2	SW 45	3/8 X 1/2 ODF S/T	5 FT	065736
R-404A R-507 R-502	HFE	1/2	SZ	3/8 X 1/2 ODF ANG	5 FT	058995
R-404A R-507 R-502	HFE	1/2	SZ	3/8 X 1/2 ODF S/T	5 FT	065735
R-404A R-507 R-502	HFE	1	SC	3/8 X 1/2 ODF S/T	5 FT	065650
R-404A R-507 R-502	HFE	1	SW 45	3/8 X 1/2 ODF ANG	5 FT	059086
R-404A R-507 R-502	HFE	1	SW 45	3/8 X 1/2 ODF S/T	5 FT	065651
R-404A R-507 R-502	HFE	1	SZ	3/8 X 1/2 ODF S/T	5 FT	064289
R-404A R-507 R-502	HFE	1-1/4	SC	3/8 X 1/2 ODF ANG	5 FT	058977
R-404A R-507 R-502	HFE	1-1/4	SW 45	3/8 X 1/2 ODF S/T	5 FT	057976
R-404A R-507 R-502	HFE	1-1/4	SZ	3/8 X 1/2 ODF S/T	5 FT	065737
R-404A R-507 R-502	HFE	1-1/2	SC	3/8 X 1/2 ODF S/T	5 FT	057974
R-404A R-507 R-502	HFE	1-1/2	SW 45	3/8 X 1/2 ODF S/T	5 FT	065738
R-404A R-507 R-502	HFE	1-1/2	SZ	3/8 X 1/2 ODF S/T	5 FT	064290
R-404A R-507 R-502	HFE	2	SC	3/8 X 1/2 ODF S/T	5 FT	057958
R-404A R-507 R-502	HFE	2	SW 45	3/8 X 1/2 ODF S/T	5 FT	065740
R-404A R-507 R-502	HFE	2	SZ	3/8 X 1/2 ODF S/T	5 FT	065739
R-404A R-507 R-502	HFE	3-1/2	SC	3/8 X 1/2 ODF S/T	5 FT	065652
R-404A R-507 R-502	HFE	3-1/2	SC	5/8 X 7/8 ODF S/T	5 FT	062151
R-404A R-507 R-502	HFE	3-1/2	SZ	1/2 X 5/8 ODF S/T	5 FT	061694
R-404A R-507 R-502	HFE	5	SW 45	5/8 X 7/8 ODF S/T	5 FT	064170
R-404A R-507 R-502	HFE	5	SZ	5/8 X 7/8 ODF S/T	5 FT	058451
R-404A R-507 R-502	HFE	7	SZ	5/8 X 7/8 ODF S/T	5 FT	064291
R-404A R-507 R-502	HFE	10	SW 45	5/8 X 7/8 ODF S/T	5 FT	064195
R-404A R-507 R-502	HFE	10	SZ	5/8 X 7/8 ODF S/T	5 FT	062828

Compressors,
Chillers, Condensers

Motors

Electrical

Heating
Components

Indoor Air
Quality

Thermostats

Oils &
Chemicals

Accessories, Supplies
& Commodities

Tools &
Instruments

Refrigeration

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE HF/HFK SERIES

HF Series – Externally Equalized (continued)

Ordering Information (continued)

Note: When Ordering Apply ALC –As Prefix to PCN Number. Example ALC -054366

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-502	HFE	1/4	RC	3/8 X 1/2 SAE	5 FT	054366
R-502	HFE	1/4	RC	3/8 X 1/2 ODF ANG	5 FT	055092
R-502	HFE	1/4	RZ	3/8 X 1/2 ODF ANG	5 FT	055491
R-502	HFE	1/4	RZ	3/8 X 1/2 SAE	5 FT	054370
R-502	HFE	1/2	RC	3/8 X 1/2 ODF ANG	5 FT	055992
R-502	HFE	1/2	RC	3/8 X 1/2 ODF S/T	5 FT	056022
R-502	HFE	1/2	RC	3/8 X 1/2 SAE	5 FT	054967
R-502	HFE	1/2	RW 45	3/8 X 1/2 ODF ANG	5 FT	055996
R-502	HFE	1/2	RW 45	3/8 X 1/2 SAE	5 FT	054969
R-502	HFE	1/2	RZ	3/8 X 1/2 ODF ANG	5 FT	055497
R-502	HFE	1/2	RZ	3/8 X 1/2 ODF S/T	5 FT	056024
R-502	HFE	1/2	RZ	3/8 X 1/2 SAE	5 FT	054968
R-502	HFE	1	RC	3/8 X 1/2 ODF ANG	5 FT	054983
R-502	HFE	1	RC	3/8 X 1/2 ODF S/T	5 FT	056029
R-502	HFE	1	RC	3/8 X 1/2 SAE	5 FT	054979
R-502	HFE	1	RW 45	3/8 X 1/2 SAE	5 FT	054981
R-502	HFE	1	RZ	3/8 X 1/2 ODF ANG	5 FT	055496
R-502	HFE	1	RZ	3/8 X 1/2 ODF S/T	5 FT	056225
R-502	HFE	1	RZ	3/8 X 1/2 SAE	5 FT	054980
R-502	HFE	1-1/2	RC	3/8 X 1/2 ODF ANG	5 FT	055657
R-502	HFE	1-1/2	RC	3/8 X 1/2 ODF S/T	5 FT	056031
R-502	HFE	1-1/2	RC	3/8 X 1/2 SAE	5 FT	054988
R-502	HFE	1-1/2	RW 45	3/8 X 1/2 ODF ANG	5 FT	055991
R-502	HFE	1-1/2	RW 45	3/8 X 1/2 ODF S/T	5 FT	056032
R-502	HFE	1-1/2	RW 45	3/8 X 1/2 SAE	5 FT	054990
R-502	HFE	1-1/2	RZ	3/8 X 1/2 ODF ANG	5 FT	055498
R-502	HFE	1-1/2	RZ	3/8 X 1/2 SAE	5 FT	054989
R-502	HFE	2	RC	3/8 X 1/2 ODF ANG	5 FT	054768
R-502	HFE	2	RC	3/8 X 1/2 ODF S/T	5 FT	053270
R-502	HFE	2	RC	3/8 X 1/2 SAE	5 FT	053070
R-502	HFE	2	RW 45	3/8 X 1/2 SAE	5 FT	054992
R-502	HFE	2	RZ	3/8 X 1/2 ODF S/T	5 FT	053271
R-502	HFE	2	RZ	3/8 X 1/2 ODF ANG	5 FT	054844
R-502	HFE	2	RZ	3/8 X 1/2 SAE	5 FT	053071
R-502	HFE	3-1/2	RC	3/8 X 1/2 ODF ANG	5 FT	054783
R-502	HFE	3-1/2	RC	3/8 X 1/2 ODF S/T	5 FT	054143
R-502	HFE	3-1/2	RC	3/8 X 1/2 SAE	5 FT	054142
R-502	HFE	3-1/2	RW 45	3/8 X 1/2 ODF ANG	5 FT	058907
R-502	HFE	3-1/2	RZ	3/8 X 1/2 ODF ANG	5 FT	054785
R-502	HFE	3-1/2	RZ	3/8 X 1/2 ODF S/T	5 FT	054784
R-502	HFE	3-1/2	RZ	3/8 X 1/2 SAE	5 FT	054145
R-502	HFE	5	RC	3/8 X 1/2 ODF S/T	5 FT	058875
R-502	HFE	5	RC	5/8 X 7/8 ODF S/T	5 FT	058608
R-502	HFE	5	RW 45	5/8 X 7/8 ODF S/T	5 FT	058305
R-502	HFE	5	RZ	1/2 X 5/8 ODF ANG	5 FT	061196
R-502	HFE	7	RC	5/8 X 7/8 ODF S/T	5 FT	058607
R-502	HFE	7	RW 45	5/8 X 7/8 ODF S/T	5 FT	059291
R-502	HFE	10	RC	5/8 X 7/8 ODF S/T	5 FT	058808

* For interchangeable refrigerant charges R-134a/R-12, R-404A/R-507/R-502, and R-22/R-407C, the tons of capacity shown in the table are for the first (primary) refrigerant listed. Consult the Nominal Capacity Table for determining the tons of capacity for the secondary refrigerants listed.

Example: A 1/4 ton R-12 valve is required. What R-134a ton valve should be selected?

Solution: From the Nominal Capacity Table, a 1/2 ton R-134a valve is equivalent to a 1/4 ton R-12 valve.

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE HF/HFK SERIES

HFESC Series – Externally Equalized (continued)

Ordering Information (continued)

Note: When Ordering Apply ALC –As Prefix to PCN Number. Example ALC -054366

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-12	HFESC	1/2	FC	3/8 X 1/2 ODF ANG	5 FT	057397
R-12	HFESC	1	FC	3/8 X 1/2 ODF ANG	5 FT	057398
R-12	HFESC	1-1/2	FC	3/8 X 1/2 ODF ANG	5 FT	057399
R-134a R-12	HFESC	1/4	MC	3/8 X 1/2 ODF ANG	5 FT	057572
R-134a R-12	HFESC	1/2	MC	3/8 X 1/2 ODF ANG	5 FT	058069
R-134a R-12	HFESC	1	MC	3/8 X 1/2 ODF ANG	5 FT	057570
R-134a R-12	HFESC	1-1/2	MC	3/8 X 1/2 ODF ANG	5 FT	057568
R-134a R-12	HFESC	2-1/2	MC	3/8 X 1/2 ODF ANG	5 FT	058421
R-22 R-407C	HFESC	1/4	HC	3/8 X 1/2 ODF ANG	5 FT	057409
R-22 R-407C	HFESC	1/4	HZ	3/8 X 1/2 ODF ANG	5 FT	057428
R-22 R-407C	HFESC	1/2	HC	3/8 X 1/2 ODF ANG	5 FT	057291
R-22 R-407C	HFESC	1/2	HZ	3/8 X 1/2 ODF ANG	5 FT	057429
R-22 R-407C	HFESC	1	HC	3/8 X 1/2 ODF ANG	5 FT	057410
R-22 R-407C	HFESC	1	HZ	3/8 X 1/2 ODF ANG	5 FT	057430
R-22 R-407C	HFESC	1-1/2	HC	3/8 X 1/2 ODF ANG	5 FT	057292
R-22 R-407C	HFESC	1-1/2	HZ	3/8 X 1/2 ODF ANG	5 FT	057321
R-22 R-407C	HFESC	2	HZ	3/8 X 1/2 ODF ANG	5 FT	057433
R-22 R-407C	HFESC	2	HC	3/8 X 1/2 ODF ANG	5 FT	057294
R-22 R-407C	HFESC	2-1/2	HC	3/8 X 1/2 ODF ANG	5 FT	057411
R-22 R-407C	HFESC	2-1/2	HZ	3/8 X 1/2 ODF ANG	5 FT	057434
R-22 R-407C	HFESC	3	HC	3/8 X 1/2 ODF ANG	5 FT	057412
R-22 R-407C	HFESC	3	HZ	3/8 X 1/2 ODF ANG	5 FT	057748
R-22 R-407C	HFESC	5-1/2	HC	3/8 X 1/2 ODF ANG	5 FT	057781
R-22 R-407C	HFESC	8	HC	3/8 X 1/2 ODF ANG	5 FT	058609
R-502	HFESC	1/4	RC	3/8 X 1/2 ODF ANG	5 FT	057436
R-502	HFESC	1/4	RZ	3/8 X 1/2 ODF ANG	5 FT	057454
R-502	HFESC	1/2	RC	3/8 X 1/2 ODF ANG	5 FT	057437
R-502	HFESC	1/2	RZ	3/8 X 1/2 ODF ANG	5 FT	057455
R-502	HFESC	1	RC	3/8 X 1/2 ODF ANG	5 FT	057438
R-502	HFESC	1	RW 45	3/8 X 1/2 ODF ANG	5 FT	057446
R-502	HFESC	1	RZ	3/8 X 1/2 ODF ANG	5 FT	057456
R-502	HFESC	1-1/2	RC	3/8 X 1/2 ODF ANG	5 FT	057439
R-502	HFESC	1-1/2	RW 45	3/8 X 1/2 ODF ANG	5 FT	057448
R-502	HFESC	1-1/2	RZ	3/8 X 1/2 ODF ANG	5 FT	057322
R-502	HFESC	2	RC	3/8 X 1/2 ODF ANG	5 FT	057440
R-502	HFESC	2	RZ	3/8 X 1/2 ODF ANG	5 FT	057457
R-502	HFESC	2-1/2	RC	3/8 X 1/2 ODF ANG	5 FT	057441
R-502	HFESC	2-1/2	RZ	3/8 X 1/2 ODF ANG	5 FT	057458
R-502	HFESC	5	RC	3/8 X 1/2 ODF ANG	5 FT	058595
R-502	HFESC	5	RZ	3/8 X 1/2 ODF ANG	5 FT	059654
R-502	HFESC	7	SC	5/8 X 7/8 ODF ANG	5 FT	065458
R-502	HFESC	10	SC	5/8 X 7/8 ODF ANG	5 FT	064219

Compressors,
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Tools &
Instruments

Refrigeration

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE HF/HFK SERIES

HFSC Series – Internally Equalized

Ordering Information (continued)

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-134a R-12	HFSC	1/4	MC	3/8 X 1/2 ODF ANG	5 FT	057573
R-134a R-12	HFSC	1/2	MC	3/8 X 1/2 ODF ANG	5 FT	058067
R-22 R-407C	HFSC	1/4	HC	3/8 X 1/2 ODF ANG	5 FT	057467
R-22 R-407C	HFSC	1/2	HC	3/8 X 1/2 ODF ANG	5 FT	057293
R-22 R-407C	HFSC	1/2	HZ	3/8 X 1/2 ODF ANG	5 FT	057482
R-22 R-407C	HFSC	1	HC	3/8 X 1/2 ODF ANG	5 FT	057468
R-22 R-407C	HFSC	2	HC	3/8 X 1/2 ODF ANG	5 FT	057470
R-404A R-507 R-502	HFSC	1/8	SC	3/8 X 1/2 ODF ANG	5 FT	058248
R-404A R-507 R-502	HFSC	1/4	SC	3/8 X 1/2 ODF ANG	5 FT	058249
R-404A R-507 R-502	HFSC	1/2	SC	3/8 X 1/2 ODF ANG	5 FT	058250
R-404A R-507 R-502	HFSC	1-1/4	SC	3/8 X 1/2 ODF ANG	5 FT	058252
R-502	HFSC	1/4	RC	3/8 X 1/2 ODF ANG	5 FT	057487
R-502	HFSC	1/4	RZ	3/8 X 1/2 ODF ANG	5 FT	057484
R-502	HFSC	1/2	RC	3/8 X 1/2 ODF ANG	5 FT	057488
R-502	HFSC	1/2	RZ	3/8 X 1/2 ODF ANG	5 FT	057485
R-502	HFSC	1	RC	3/8 X 1/2 ODF ANG	5 FT	057489
R-502	HFSC	1	RZ	3/8 X 1/2 ODF ANG	5 FT	057486

* For interchangeable refrigerant charges R-134a/R-12, R-404A/R-507/R-502, and R-22/R-407C, the tons of capacity shown in the table are for the first (primary) refrigerant listed. Consult the Nominal Capacity Table for determining the tons of capacity for the secondary refrigerants listed.

Example: A 1/4 ton R-12 valve is required. What R-134a ton valve should be selected?

Solution: From the Nominal Capacity Table, a 1/2 ton R-134a valve is equivalent to a 1/4 ton R-12 valve.

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE TRAE Plus

The TRAE Plus series is a large capacity valve designed for refrigeration, air conditioning, heat pump, and chille applications.

Features

- Stainless steel power element eliminates corrosion and prevents valve failure
- Suitable for Bi-Flow applications
- Replaceable power element and cage assembly for full serviceability
- Double balanced port design improves operation and stability over wide loads and evaporator temperature ranges
- Square body with straight-thru connections
- Solid copper connections
- External superheat adjustment
- Large diaphragm provides superior stability
- Permanent inlet strainer

Options

- Cages (For available cage kits, see page 26.)

Specifications

- Maximum working pressure: 450 psig
- Torque Power Assembly: 375 - 425 in. lb.



Nomenclature example: TRAE+ 30 HC 10 FT 7/8 x 1 1/8 ODF S/T

TRA	E	+	30	H	C	10 FT	7/8 x 1 1/8	ODF	S/T
Valve Series	Equalizer	Replaceable Components	Capacity Nominal Rating in Tons	Refrigerant Code	Charge Code	Capillary Tube Length	Inlet x Outlet Connection	Connection Type	Configuration
Double Balanced Port Design	E=External 1/4"SAE	Cage and Power Assembly	(See nominal capacity table below)	+F = R-12 • H = R-22 +M = R-134a • N = R-407C *P = R-507 *R = R-502 *S = R-404A	C = medium temp CA = heat pump W(MOP) = press. limiting Z = low temp	10 FT (std)	Sizes 5/8 x 7/8 7/8 x 1 1/8 1 1/8 x 1 3/8	ODF = solder (Only)	S/T = straight-thru (Only)

+ = R-12 and R-134a are interchangeable refrigerant charges

* = R-507, R-502 and R-404A are interchangeable refrigerant charges

• = R-22 and R-407C are interchangeable refrigerant charges

TRAE+ Series – Nominal* Capacity Table in Tons (kW)

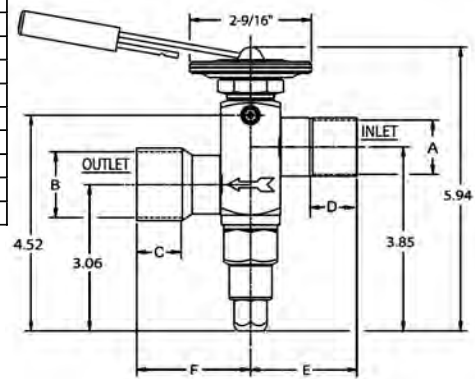
R-12	R-134a	R-22/R-407C	R-507/R-404A/R-502
7½ (27)	9 (32)	10 (35)	8 (28)
10 (35)	13 (46)	15 (53)	12 (42)
12 (42)	14 (50)	20 (71)	14 (50)
18 (64)	22 (78)	30 (106)	20 (71)
25 (88)	30 (106)	40 (142)	30 (106)

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.

TRAE+ Dimensional Data (in)

TRAE Valve Type	Nominal Inlet (B)	Sizes (ODF) Outlet (E)	Inlet			
			A	B	C	D
TRAE+ 10-40 Tons	5/8	7/8	1.57	0.50	2.09	0.75
	5/8	1-1/8	1.57	0.50	2.21	0.91
	7/8	7/8	2.09	0.75	2.09	0.75
	7/8	1-3/8	2.09	0.75	2.21	0.91
	7/8	1-3/8	2.09	0.75	2.39	0.97
	1-1/8	1-1/8	2.21	0.91	2.21	0.97
	1-1/8	1-3/8	2.21	0.91	2.39	0.97
	5/8	7/8	1.57	0.50	2.09	0.75



EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE TRAE SERIES

The TRAE series is a large capacity valve for chiller, heat pump, refrigeration, and air conditioning applications.

Features

- Suitable for Bi-Flow applications
- External superheat adjustment
- Integral body with straight-thru connections
- Balanced port design improves valve operation and stability over wide loads and evaporator temperature range
- Solid copper connections
- Large diaphragm provides superior stability



Specifications

- Maximum Working Pressure: 450 psig

Nomenclature example: TRAE+ 50 HC 10 FT 7/8 x 1 1/8 ODF S/T

TRA	E	50	H	C	10 FT	7/8 x 1 1/8	ODF	S/T
Valve Series Hermetic Balanced Port Design	Equalizer E=External 1/4"SAE	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	Charge Code C = medium temp CA = heat pump W(MOP) = press. limiting Z = low temp	Capillary Tube Length 10 FT (std)	Inlet x Outlet Connection Sizes 1/4 x 3/8 3/8 x 1/2	Connection Type ODF = solder (Only)	Configuration S/T = straight- thru (Only)

+ = R-12 and R-134a are interchangeable refrigerant charges

* = R-507, R-502 and R-404A are interchangeable refrigerant charges

• = R-22 and R-407C are interchangeable refrigerant charges

TRAE Series – Nominal* Capacity Table in Tons (kW)

R-12	R-134a	R-22/R-407C	R-507/R-404A/R-502
30 (106)	40 (142)	50 (177)	35 (124)
35 (124)	45 (159)	60 (212)	40 (142)
40 (142)	50 (177)	70 (248)	50 (177)

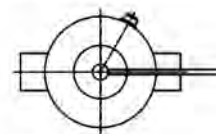
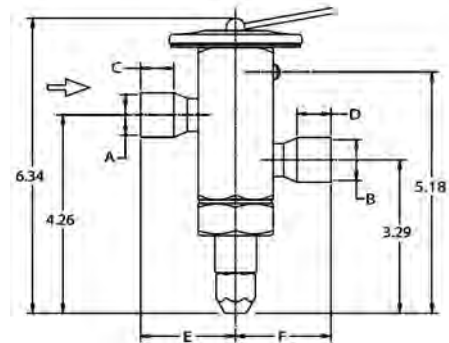
All capacities shown are at 100°F condensing, 40°F evaporator temperature.

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

Dimensional Data (in)

Remote Bulb Tubing Length 10' Standard

Connection Size		A	B	C MIN	D MIN	E	F
Inlet	Outlet						
7/8 ODF	7/8 ODF	0.88	0.88	0.75	0.75	2.09	2.09
7/8 ODF	1-1/8 ODF	0.88	1.13	0.75	0.91	2.90	2.21
7/8 ODF	1-3/8 ODF	0.88	1.38	0.75	0.97	2.90	2.39
1-1/8 ODF	1-1/8 ODF	1.13	1.13	0.91	0.91	2.21	2.21
1-1/8 ODF	1-3/8 ODF	1.13	1.38	0.91	0.97	2.21	2.39
1-3/8 ODF	1-3/8 ODF	1.38	1.38	0.91	0.97	2.39	2.39



Remote Bulb Table

Remote Bulb Tubing Length	Bulb Length
5, 10, 15 ft.	4-7/8
20, 30 ft.	
40, 50 ft.	6-3/16

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE TRAE / TRAE+ SERIES

Ordering Information

Note: When Ordering Apply ALC –As Prefix to PCN Number. Example ALC -054366

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-22 R-407C	TRAE+	10	HC	5/8 X 7/8 ODF S/T	5 FT	062718
R-22 R-407C	TRAE+	10	HCA	5/8 X 7/8 ODF S/T	10 FT	063138
R-22 R-407C	TRAE+	10	HCA	7/8 X 1-1/8 ODF S/T	10 FT	063554
R-22 R-407C	TRAE+	10	HC	7/8 X 1-1/8 ODF S/T	15 FT	063100
R-22 R-407C	TRAE+	15	HC	7/8 X 1-1/8 ODF S/T	10 FT	062721
R-22 R-407C	TRAE+	15	HCA	5/8 X 7/8 ODF S/T	10 FT	063510
R-22 R-407C	TRAE+	15	HCA	7/8 X 1-1/8 ODF S/T	10 FT	062722
R-22 R-407C	TRAE+	15	HCA	7/8 X 1-3/8 ODF S/T	10 FT	063141
R-22 R-407C	TRAE+	15	HW100	5/8 X 7/8 ODF S/T	10 FT	063103
R-22 R-407C	TRAE+	20	HC	7/8 X 1-3/8 ODF S/T	10 FT	063650
R-22 R-407C	TRAE+	20	HCA	7/8 X 1-1/8 ODF S/T	10 FT	062725
R-22 R-407C	TRAE+	20	HCA	1/8 X 1-1/8 ODF S/T	10 FT	064581
R-22 R-407C	TRAE+	20	HW90	7/8 X 1-1/8 ODF S/T	15 FT	064018
R-22 R-407C	TRAE+	20	HC	7/8 X 1-1/8 ODF S/T	10 FT	062724
R-22 R-407C	TRAE+	30	HC	7/8 X 1-1/8 ODF S/T	10 FT	062727
R-22 R-407C	TRAE+	30	HC	1-1/8 X 1-3/8 ODF S/T	10 FT	062728
R-22 R-407C	TRAE+	30	HCA	1-1/8 X 1-3/8 ODF S/T	10 FT	062730
R-22 R-407C	TRAE+	30	HW100	7/8 X 1-3/8 ODF S/T	5 FT	063425
R-22 R-407C	TRAE+	40	HC	1-1/8 X 1-3/8 ODF S/T	10 FT	062733
R-22 R-407C	TRAE+	40	HC	1-1/8 X 1-3/8 ODF S/T	15 FT	063153
R-22 R-407C	TRAE+	40	HCA	1-1/8 X 1-3/8 ODF S/T	10 FT	062734
R-22 R-407C	TRAE	50	HC	1-1/8 X 1-3/8 ODF S/T	10 FT	061700
R-22 R-407C	TRAE	60	HC	1-1/8 X 1-3/8 ODF S/T	10 FT	061865
R-22 R-407C	TRAE	70	HC	1-1/8 X 1-3/8 ODF S/T	10 FT	061866

(+) Replaceable Power Assembly

Cage Replacement Kits for TRAE+ Series Valves

Cage kits are cross referenced by capacity and tonnage in the table below. Each cage kit consists of a replacement cage and cage removal wrench. In addition, the cage removal wrench (KT-20294) can be ordered as a separate item.

PCN	TRAE+ KIT	Nominal Capacity - Tons		
		R-22	R-12/R-134a	R-507/R-404A/ R-502
063387	KT-20289 CAGE KIT	10	9	8
063388	KT-20290 CAGE KIT	15	13	12
063389	KT-20291 CAGE KIT	20	14	14
063390	KT-20292 CAGE KIT	30	22	20
063391	KT-20293 CAGE KIT	40	30	30
063392	KT-20294 CAGE WRENCH KIT	All tonnages	All tonnages	All tonnages

Replacement Parts

PCN	Part Number	Description
063414	X-28458 HCA-2	Power Assembly
063416	X-28458 HW100-2	Power Assembly
065298	X-28458 SW45-2	Power Assembly
058707	27676-1	Seal Nut

Compressors,
Chillers, Condensers

Motors

Electrical

Heating
Components

Indoor Air
Quality

Thermostats

Oils &
Chemicals

Accessories, Supplies
& Commodities

Tools &
Instruments

Refrigeration

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE T SERIES - TAKE-Apart

The T-series Take-Apart valves, with adjustable superheat and replaceable, interchangeable components are ideal for original equipment and field replacements in air conditioning, heat pump, and refrigeration applications.

Features

- Take-Apart construction for easy field service
- External superheat adjustment
- Bi-Flow capability
- Stainless steel power assembly up to 18 tons

Options

- Interchangeable, replaceable cages
- Interchangeable body flanges
- Interchangeable power assemblies
- 1/4 to 100 tons capacity

Specifications

- Maximum working pressure: 450 psig
- Torque Bolts: 300 in. lb.



Nomenclature example: TCL5 HC 5 FT 3/8 X 1/2 SAE ANG

TCL	E	B	5	H	C	5 FT	3/8 x 1/2	SAE	ANG
Valve Series Take-Apart Adjustable	Equalizer E=External (Omit for Internal)	Bleed Hole (optional) B=Bleed Hole (Omit for no bleed hole)	Capacity Nominal Rating in Tons (See Cage Assembly Interchange- ability Tables)	Refrigerant Code +F = R-12 • H = R-22 +M = R-134a • N = R-407C *P = R-507 *R = R-502 *S = R404A	Charge Code C = medium temp CA = heat pump W(MOP) = press. limiting Z = low temp	Capillary Tube Length	Inlet x Outlet Connection Sizes Various sizes are available (valve is also available less flange)	Connection Type SAE=flare ODF=solder	Configuration ANG = 90° angle S/T=straight- thru

+ = R-12 and R-134a are interchangeable refrigerant charges

* = R-507, R-502 and R-404A are interchangeable refrigerant charges

• = R-22 and R-407C are interchangeable refrigerant charges

Single Outlet "T" Series Body Flanges with Bleed Hole for Use with PSC Compressors

Valve Type			Bleed Hole Diameter ¹ for % Capacity Bypass											
R-12/R-134a	R-22/R-407C	R-507/R-502/R-404A	10%		15%		20%		25%		30%		40%	
			Dia. (In)	Drill Size	Dia. (In)	Drill Size	Dia. (In)	Drill Size	Dia. (In)	Drill Size	Dia. (In)	Drill Size	Dia. (In)	Drill Size
TCL1/4F	TCL1/2H	TCL1/2R	—	—	0.02	1/64	0.02	77	0.02	76	0.02	74	0.03	72
TCL1/2F	TCL1H	TCL1/2R	0.02	77	0.02	75	0.02	73	0.03	71	0.03	69	0.04	65
TCL1F	TCL2H	TCL1R	0.03	71	0.03	1/32	0.04	64	0.04	60	0.05	56	0.05	55
TCL2F	TCL3H	TCL2R	0.03	70	0.04	65	0.04	60	0.04	57	0.05	3/4	0.06	54
TCL3F	TCL5H	TCL3R	0.04	65	0.04	57	0.05	55	0.06	54	0.06	1/16	0.07	50
TCL4F	TCL7-1/2H	TCL4-1/2R	0.04	57	0.05	55	0.06	53	0.07	51	0.08	48	0.09	44
TCL6-1/2F	TCL10H	TCL7R	0.05	55	0.06	53	0.07	50	0.08	47	0.09	44	0.10	39
TCL7-1/2F	TCL12H	TCL8R	0.05	55	0.06	53	0.07	50	0.08	47	0.09	44	0.10	39

¹Bleed hole sizes shown above are based on a percent of full effective port area of the valve. This does not necessarily indicate the percent of valve capacity that will be bypassed. The hole sizes shown above should be used for reference only. Normal industry practice is to equalize systems 3 to 5 minutes.

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE T SERIES Take A-Part Small Capacity 1/2 to 18 tons (R-22 Nominal – Bi Flow)

Step 1: Select Cage from Capacity Table

Note: When Ordering Apply ALC –As Prefix to PCN Number.

Example ALC -054366

Externally Adjustable
Cage Assembly



Valve Type	Nominal Capacity - Tons						PCN	Description
	R-12	R-134a	R-22	R-404A R-507	R-502	R-407C		
TCL TCLE	1/4	1/4	1/2	1/4	1/4	1/2	037034	X22440B1A
TCL TCLE	1/4	1/4	1/2	1/4	1/4	1/2	037035	X22440B1B
TCL TCLE	1/2	3/4	1	1/2	1/2	1	037036	X22440B2A
TCL TCLE	1/2	3/4	1	1/2	1/2	1	037037	X22440B2B
TCL TCLE	1	1-1/2	2	1	1	2	037038	X22440B3A
TCL TCLE	1	1-1/2	2	1	1	2	037039	X22440B3B
TCL TCLE	2	2-1/2	3	2	2	3	037040	X22440B4A
TCL TCLE	2	2-1/2	3	2	2	3	037041	X22440B4B
TCL TCLE	3	3-1/2	5	3	3	5	037043	X22440B5B
TCL TCLE	4	5-1/2	7-1/2	4-1/2	4-1/2	7-1/2	037045	X22440B6B
TCL TCLE	6-1/2	7-1/2	10	7	7	10	037047	X22440B7B
TCL TCLE	7-1/2	9	12	8	8	12	037049	X22440B8B
TJLE	7	9	11	7	7	11	093343	XC724B4B
TJLE	8	11	14	9	9	14	038699	XC724B5B
TJR	8	11	14	9	9	14	088837	X11873B4B
TJR	11	13	18	12	12	18	089058	X11873B5B

¹Gaskets included on cage.

Gasket strip X13455-1 (PCN: 027579) replaces all older T-Series Gasket kits.

Compressors,
Chillers, Condensers

Motors

Electrical

Heating
Components

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Chemicals

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& Commodities

Tools &
Instruments

Refrigeration

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE T SERIES Take A-Part Small Capacity ½ to 18 tons (R-22 Nominal – Bi Flow)

Step 2: Select Flange

Note: When Ordering Apply ALC –As Prefix to PCN Number.

Example ALC -054366



Valve Type	Flow	Size & Style Connections		Body Flange Part	
		Inlet	Outlet	Number	PCN
TCL TCLE	Angle	3/8 SAE	1/2 SAE	C500-4	056932
TCL TCLE	Angle	3/8 SAE	5/8 SAE	C500-5	057153
TCL TCLE	Angle	1/2 SAE	4/8 SAE	C500-6	056294
TCL TCLE	Angle	3/8 ODF	1/2 ODF	C501-4	065527
TCL TCLE	Angle	3/8 OFD	5/8 ODF	C501-5	065748
TCL TCLE	Angle	1/2 ODF	5/8 ODF	C501-7	065861
TCL TCLE	Angle	5/8 ODF or 7/8 ODM	7/8 ODF or 1-1/8 ODM	A576	027764
TCL TCLE	Straight-Thru	3/8 SAE	1/2 SAE	X6669-4	051176
TCL TCLE	Straight-Thru	3/8 SAE	5/8 SAE	X6669-1	050563
TCL TCLE	Straight-Thru	1/2 SAE	1/2 SAE	X6669-5	083378
TCL TCLE	Straight-Thru	1/2 SAE	5/8 SAE	X6669-2	050842
TCL TCLE	Straight-Thru	3/8 ODF	1/2 ODF	9761-5	027769
TCL TCLE	Straight-Thru	3/8 ODF	5/8 ODF	9761-3	027771
TCL TCLE	Straight-Thru	1/2 ODF	1/2 ODF	9761-6	027766
TCL TCLE	Straight-Thru	1/2 ODF	5/8 ODF	9761-4	027268
TCL TCLE	Straight-Thru	1/2 ODF	7/8 ODF	9761-2	027770
TCL TCLE	Straight-Thru	5/8 ODF	5/8 ODF	X6346-16	044733
TCL TCLE	Straight-Thru	5/8 ODF	7/8 ODF	X6346-17	044846
TCL TCLE	Straight-Thru	5/8 ODF	1-1/8 ODF	X6346-18	094038
TCL TCLE	Straight-Thru	7/8 ODF	1-1/8 ODF	X6346-34	071757
TJLE	Angle	5/8 ODF or 7/8 ODM	7/8 ODF or 1-1/8 ODM	B504	044984
TJLE	Straight-Thru	5/8 ODF	1-1/8 ODF	X6347-2	094289
TJLE	Straight-Thru	7/8 ODF	1-1/8 ODF	X6347-6	057210
TJLE	Straight-Thru	7/8 ODF	1-3/8 ODF	X6347-7	057323
	Angle	5/8 ODF or 1-1/8 ODM	7/8 ODF or 1-1/8 ODM	10331	029411
	Straight-Thru	7/8 ODF or 1-1/8 ODM	7/8 ODF or 1-1/8 ODM	10332	032988

²TJR is balanced ported. TJR flange includes extended length cap screws.

NOTE: Nominal capacities shown here are based on 40°F evaporator temperature and 100°F vapor-free liquid refrigerant entering the valve. R-12 and R-134a rated at 60 PSID. All other refrigerants rated at 100 PSID.

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE T SERIES Take A-Part Small Capacity 1/2 to 18 tons (R-22 Nominal – Bi Flow)

Step 3: Select Power Assembly

TCL-TCLE-TJLE-TJR Power Assemblies³

Note: When Ordering Apply ALC –As Prefix to PCN Number.

Example ALC -054366

Superheat Plug
X28124-1 (ODM)
(PCN: 058336)



Capscrews



Refrigerant	Equalizer Type	Cap Tube Length	Application			PCN
			Temp. Range			
R-12	Internal	5 FT	-20 to +50	NONE	XB-1019FC1A	052951
R-12	1/4 SAE	5 FT	-20 to +50	NONE	XB-1019FC1B	049881
R-12	Internal	10 FT	-20 to +50	NONE	XB-1019FC2A	032374
R-12	1/4 SAE	10 FT	-20 to +50	NONE	XB-1019FC2B	052954
R-12	1/4 SAE	15 FT	-20 to +50	NONE	XB-1019FC3B	058569
R-12	1/4 SAE	5 FT	-50 to +50	35	XB-1019FW351B	079346
R-12	1/4 SAE	5 FT	-50 to +50	55	XB-1019FW551B	057432
R-12	1/4 SAE	10 FT	-50 to +50	55	XB-1019FW552B	050981
R-12	1/4 SAE	5 FT	-50 to 0	15	XB-1019FW151B	077063
R-22	Internal	5 FT	-20 to +50	NONE	XB-1019HC1A	062078
R-22	1/4 SAE	5 FT	-20 to +50	NONE	XB-1019HC1B	053416
R-22	1/4 SAE	10 FT	-20 to +50	NONE	XB-1019HC2B	054390
R-22	1/4 SAE	5 FT	-20 to +50	NONE	XB-1019HCA1B	056039
R-22	1/4 SAE	5 FT	-50 to +5	35	XB-1019HW351B	089975
R-22	1/4 SAE	5 FT	-50 to +20	55	XB-1019HW551B	039152
R-22	1/4 SAE	5 FT	-50 to +30	65	XB-1019HW651B	089445
R-22	1/4 SAE	5 FT	-50 to +50	100	XB-1019HW1001B	062437
R-22	1/4 SAE	20 FT	-10 to +50	NONE	XB-1019HW4B	055703
R-22	1/4 SAE	10 FT	-50 to +50	100	XB-1019HW1002B	062658
R-22	1/4 SAE	5 FT	-50 to +10	NONE	XB-1019HZ1B	040568
R-22	1/4 SAE	10 FT	-50 to +10	NONE	XB-1019HZ2B	054105
R-407C	1/4 SAE	5 FT	-20 to +50	NONE	XB-1019NC1B	064837
R-407C	1/4 SAE	5 FT	-20 to +50	100	XB-1019NW1001B	063069
R-507	1/4 SAE	5 FT	-20 to +50	NONE	XB-1019PC1B	061949
R-507	1/4 SAE	5 FT	-50 to 0	40	XB-1019PW401B	064200
R-507	1/4 SAE	5 FT	-50 to +10	NONE	XB-1019PZ1B	061951
R-134a	1/4 SAE	5 FT	-20 to +50	NONE	XB-1019MC1B	057878
R-134a	1/4 SAE	10 FT	-20 to +50	NONE	XB-1019MC2B	059548
R-134a	1/4 SAE	5 FT	-50 to +50	55	XB-1019MW551B	057370
R-134a	1/4 SAE	5 FT	-50 to +10	NONE	XB-1019MZ1B	061946
R-502	1/4 SAE	5 FT	-20 to +50	NONE	XB-1019RC1B	052955
R-502	1/4 SAE	10 FT	-20 to +50	NONE	XB-1019RC2B	054415
R-502	1/4 SAE	5 FT	-50 to +20	15	XB-1019RW151B	070346
R-502	1/4 SAE	5 FT	-50 to +5	35	XB-1019RW351B	063644
R-502	1/4 SAE	5 FT	-50 to +5	45	XB-1019RW451B	055881
R-502	1/4 SAE	10 FT	-50 to +5	45	XB-1910RW452B	055704
R-502	1/4 SAE	5 FT	-50 to +25	65	XB-1019RW651B	063114
R-502	1/4 SAE	5 FT	-50 to +10	NONE	XB-1019RZ1B	046474
R-502	1/4 SAE	10 FT	-50 to +10	NONE	XB-1019RZ2B	047358
R-404A	1/4 SAE	5 FT	-20 to +50	NONE	XB-1019SC-1B	059189
R-404A	1/4 SAE	5 FT	-50 to 0	40	XB-1019SW401B	059130
R-404A	1/4 SAE	5 FT	-50 to +25	65	XB-1019SW651B	063541
R-404A	1/4 SAE	10 FT	-50 to +10	NONE	XB-1019SZ2B	061948
Misc.	Internal	5 FT	Liquid Injection	NONE	XB-1019A-1A	037389
Misc.	1/4 SAE	5 FT	Liquid Injection	NONE	XB-1019A-1B	034803
Misc.	1/4 SAE	5 FT	Liquid Injection	NONE	XB-1019B-1B	032207
Misc.	1/4 SAE	5 FT	Liquid Injection	NONE	XB-1019C-1B	035162
Misc.	1/4 SAE	5 FT	Liquid Injection	NONE	XB-1019CW-1B	084768

³ Capscrews included with Power Assembly

⁴ Maximum Operating Pressure Limit to prevent motor overload

⁵ Power Assembly final character: A=Internally Equalized, B=Externally Equalized

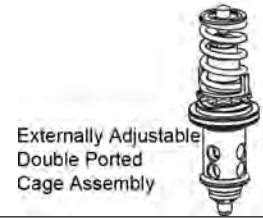
NOTE: Nominal capacities shown here are based on 40°F evaporator temperature and 100°F vapor-free liquid refrigerant entering the valve. R-12 and R-134a rated at 60 PSID. All other refrigerants rated at 100 PSID.

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE T SERIES Take-Apart Large Capacity 22 to 100 tons (R22 Nominal – Balanced Ported and Bi Flow)

Step 1: Select Cage from Capacity Table

Note: When Ordering Apply ALC –As Prefix to PCN Number.

Example ALC -054366

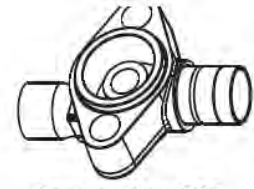


Valve Type	Nominal Capacity - Tons						PCN	Description
	R-12	R-134a	R-22	R-404A R-507	R-502	R-407C		
TER	13	16	22	14	14	22	077896	X9117B6B
TER	15	19	26	16	16	26	078117	X9117B7B
TER	20	25	35	21	21	35	071155	X9117B8B
TER	25	31	45	27	27	45	029429	X9117B9B
TIR	35	45	55	37	37	55	070738	X9166B10B
THR	35	45	55	37	37	55	071238	X9144B10B
THR	45	55	70	48	48	70	020846	X9144B11B
THR	55	68	85	60	60	85	021067	X9144B13B
TMR	55	68	100	60	--	100	065123	X9144B14B

¹ Gaskets included on cage.

Gasket strip X13455-1 (PCN: 027579) replaces all older T-Series Gasket kits.

Step 2: Select Flange



Valve Type	Style	Size & Style Connections		Body Flange Part	
		Inlet	Outlet	Number	PCN
	ANGLE	7/8 ODF or 1-1/8 ODM	7/8 ODF or 1-1/8 ODM	9153	027919
	STRAIGHT-THRU	7/8 ODF or 1-1/8 ODM	7/8 ODF or 1-1/8 ODM	9152	027918
TIR	ANGLE	7/8 ODF or 1-1/8 ODM	7/8 ODF or 1-1/8 ODM	9151	027926
TIR	STRAIGHT-THRU	7/8 ODF or 1-1/8 ODM	7/8 ODF or 1-1/8 ODM	9150	028849
THR	ANGLE	1-1/8 ODM	1-1/8 ODM	9149	028030
THR	STRAIGHT-THRU	1-1/8 ODM	1-1/8 ODM	9148	028032
TMR2	ANGLE	1-1/8 ODM	1-1/8 ODM	9149-1	065124
TMR2	STRAIGHT-THRU	1-1/8 ODM	1-1/8 ODM	9148-1	065125

² TER-TMR Flange includes extended length cap screws.

NOTE: Nominal capacities shown here are based on 40°F evaporator temperature and 100°F vapor-free liquid refrigerant entering the valve. R-12 and R-134a rated at 60 PSID. All other refrigerants rated at 100 PSID.

Refrigeration

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE T SERIES Take-Apart Large Capacity 22 to 100 tons (R22 Nominal – Balanced Ported and Bi Flow)

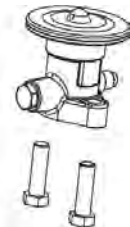
Step 3: Select Power Assembly

TER-TIR-THR-TMR Power Assemblies³

Note: When Ordering Apply ALC –As Prefix to PCN Number.

Example ALC -054366

Superheat Plug
XC28124-1 (ODM)
(PCN: 058336)



Capscrews

Refrigerant	Equalizer Type	Cap Tube Length	Application		Power Assembly	PCN
			Temp. Range			
R-12	1/4 SAE	10 FT	-20 to +40	NONE	XC-726FC2B	052957
R-12	1/4 SAE	10 FT	-50 to +50	55	XC-726FW552B	035000
R-22	1/4 SAE	10 FT	-20 to +50	NONE	XC-726HC2B	056421
R-22	1/4 SAE	10 FT	-50 to +50	35	XC-726HW352B	024511
R-22	1/4 SAE	10 FT	-50 to +30	65	XC-726HW652B	025011
R-22	1/4 SAE	10 FT	-20 to +50	NONE	XC-726HCA2B	059333
R-22	1/4 SAE	10 FT	-50 to +50	100	XC-726HW1002B	036750
R-22	1/4 SAE	10 FT	-50 to +10	NONE	XC-726HZ2B	040569
R-134A	1/4 SAE	10 FT	-20 to +50	NONE	XC-726MC2B	057235
R-134A	1/4 SAE	10 FT	-50 to +50	55	XC-726MW552B	057372
R-134A	1/4 SAE	10 FT	-50 to +10	NONE	XC-726MZ2B	063075
R-502	1/4 SAE	10 FT	-20 to +50	NONE	XC-726RC2B	052958
R-502	1/4 SAE	10 FT	-50 to +20	15	XC-726RW152B	023351
R-502	1/4 SAE	10 FT	-50 to +50	35	XC-726RW352B	070866
R-502	1/4 SAE	10 FT	-50 to +25	65	XC-726RW652B	071421
R-502	1/4 SAE	10 FT	-50 to +10	NONE	XC-726RZ2B	046692
R-404A	1/4 SAE	10 FT	-20 to +50	NONE	XC-726SC2B	062303
R-404A	1/4 SAE	10 FT	-50 to +10	40	XC-726SW402B	063127
R-404A	1/4 SAE	10 FT	-50 to +25	65	XC-726SW652B	061692
R-404A	1/4 SAE	10 FT	-50 to +10	NONE	XC-726SZ2B	063974

³ Capscrews included with Power Assembly

⁴ Maximum Operating Pressure Limit to prevent motor overload

Additional Parts

PCN	Description
039862	Packing Nut Wrench
027579	Gasket Strip
058336	Superheat Adjustment Plug

NOTE: Nominal capacities shown here are based on 40°F evaporator temperature and 100°F vapor-free liquid refrigerant entering the valve. R-12 and R-134a rated at 60 PSID. All other refrigerants rated at 100 PSID.

Compressors,
Chillers, Condensers

Motors

Electrical

Heating
Components

Indoor Air
Quality

Thermostats

Oils &
Chemicals

Accessories, Supplies
& Commodities

Tools &
Instruments

Refrigeration

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE T SERIES Take-Apart

Ordering Information Valves less flange – (VLF)

TCLE, TJLE & TJRE SAE External 5 FT. Cap Tube Length

Valve Description

Note: When Ordering Apply ALC –As Prefix to PCN Number.
 Example ALC -054366

PCN	R-12	R-22	R-502
054413	TCLE 1/2 FC		
052940	TCLE 1 FC		
052941	TCLE 2 FC		
052942	TCLE 3 FC		
052943	TCLE 4 FC		
052944	TCLE 6-1/2 FC		
052945	TCLE 7-1/2 FC		
055104	TJLE 8 FC		
055105	TJRE 11 FC		
062884		TCLE 1 HC	
061724		TCLE 2 HC	
054395		TCLE 3 HC	
054399		TCLE 5 HC	
054401		TCLE 7-1/2 HC	
054079		TCLE 7-1/2 HW100	
054404		TCLE 10 HC	
059076		TCLE 10 HW100	
060854		TCLE 12 HC	
060855		TJLE 11 HC	
060856		TJLE 14 HC	
060857		TJRE 14 HC	
060858		TJRE 18 HC	
061215			TCLE 2 RC
055501			TCLE 3 RC
063501			TCLE 8 RC

TER, TIR & THR 10 FT. Cap Tube Length

Valve Description

PCN	R-12	R-22	R-502
055109	TER 20 FC		
055111	TER 25 FC		
061673		TER 22 HC	
058582		TER 22 HW100	
061674		TER 26 HC	
061675		TER 35 HC	
058038		TER 35 HW100	
061676		TER 45 HC	
061677		TIR 55 HC	
064961		THR 75 HC	
062036		THR 100 HC	
052912		THR 100 HW100	
060788			TER 14 RC

Replacement Cap Screw Kits

PCN	Contains Screw #	Pcs. Per Pkg.	Description
054569	PS-286-5	10	KT-30021
054570	PS-168-5	10	KT-30022
054571	PS-259	10	KT-30023
054572	PS-370	10	KT-30024
054573	PS-514-5	10	KT-30025
054574	PS-517-5	10	KT-30026

TCLE/TJLE/TJRE Rapid Response Power Assemblies

PCN	Description
031654	X-8019 FWS 1B
055652	X-8019 HWS 1B
055873	X-8019 HWS 2B
032131	X-8019 RWS 1A
042426	X-8019 RWS 2B

Nomenclature Cross-Reference

Refrigerant	New	Old
R-12	TJLE7	TJLE800
	TJLE8	TJLE1100
R-22	TJLE11	TJLE1400
	TJLE14	TJLE1800
R-502	TJLE7	TJLE900
	TJLE9	TJLE1200

TER/TIR/THR Rapid Response Power Assemblies

PCN	Description
035083	X-7726 FWS 2B
093565	X-7726 HWS 2B
036616	X-7726 RWS 2B

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE TLE SERIES

Valve Less Flange (VLF)

Note: When Ordering Apply ALC –As Prefix to PCN Number.
 Example ALC -054366

	PCN	Equalizer Type	Refrigerant
TLE 1/2 HW	--	1/4 SAE External	R-22
TLE 1 HW	--	1/4 SAE External	R-22
TLE 2 HW	--	1/4 SAE External	R-22
TLE 3 HW	041734	1/4 SAE External	R-22
TLE 5 HW	054793	1/4 SAE External	R-22
TLE 7-1/2 HW	054794	1/4 SAE External	R-22
TLE 10 HW	055125	1/4 SAE External	R-22
TLE 12 HW	054795	1/4 SAE External	R-22

¹ Also available with "HCA" charge for heat pump and air conditioning applications.

Cage Capacities in Tons

PCN	R-12	R-134A	R-22/R-407C	R-404/R-507/R-502	Description
041556	1	1-1/2	2	1	X-22517 B3B
041560	2	2-1/2	3	2	X-22517 B4A
041562	3	3-1/2	5	3	X-22517 B5B
041566	6-1/2	7-1/2	10	7	X-22517 B7B

Flanges

PCN	Connections	Description
027770	1/2 X 7/8 ODF S/T	9761-2
027771	3/8 X 5/8 ODF S/T	9761-3
027268	1/2 X 5/8 ODF S/T	9761-4
027769	3/8 X 1/2 ODF S/T	9761-5
027766	1/2 X 1/2 ODF S/T	9761-6
027764	5/8 X 7/8 ODF ANG	A-576
056932	3/8 X 1/2 SAE ANG	C-500-4
057153	3/8 X 5/8 SAE ANG	C-500-5
056294	1/2 X 5/8 SAE ANG	C-500-6
065527	3/8 X 1/2 ODF ANG	C-501-4
065748	3/8 X 5/8 ODF ANG	C-504-5
065861	1/2 X 5/8 ODF ANG	C-504-7
044733	5/8 X 5/8 ODF S/T	X-6346-16
044846	5/8 X 7/8 ODF S/T	X-6346-17
094038	5/8 X 1-1/8 ODF S/T	X-6346-18
071757	7/8 X 1-1/8 ODF S/T	X-6346-34
050563	3/8 X 5/8 SAE S/T	X-6669-1
050842	1/2 X 5/8 SAE S/T	X-6669-2
051176	3/8 X 1/2 SAE S/T	X-6669-4
083378	1/2 X 1/2 SAE S/T	X-6669-5

Replacement Power Assemblies

PCN	Description
083765	XB1033 FW25-1B
061760	XB1033 HW-1B
077201	XB1033 HW-15A
089748	XB1033 HW-75B
095534	XB1033 HW100-15B
095813	XB1033 HW100-1B

Power Assembly Nomenclature

Description
XB-1033 XXX-YZ
xxx = charge code
y = cap tube length code
z = internal (A) or external (B) equalizer

Refrigeration

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE TFE R-22 SERIES

The TFE R-22 series is designed for large tonnage heat pump, air conditioning, and commercial refrigeration applications.

Features

- Stainless steel power element eliminates corrosion and prevents valve failure
- Replaceable power element
- External superheat adjustment
- ODF connections
- Balanced port construction compensates for changes in operating pressures due to varying ambients, or widely varying evaporator loads
- Bi-Flow capability for heat pump applications
- External equalizer

Specifications

- Maximum working pressure: 450 psig

TFE Nominal* Capacity Table in Tons

R-134a	R-22/R-407C	R-502, R-404a/R-507
6	8	5
8	10	7
10	12	9
15	20	14

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

Note: When Ordering Apply ALC -As Prefix to PCN Number. Example ALC -054366

Nomenclature example: TFES 10 HCA 5/8 x 7/8 ODF S/T

TF	E	S	10	H	CA	5/8 x 7/8	ODF	S/T
Valve Series Balanced Port, Replaceable Power Assembly	Equalizer E=External 1/4" ODF	Connection Type S = solder (Only)	Capacity Nominal Rating in Tons (See nominal capacity table below)	Refrigerant Code •H = R-22 M = R-134a •N = R-407C *P = R-507 *R = R-502 *S = R-404A	Charge Code C = medium temp CA = heat pump	Inlet x Outlet Connection Sizes (See ordering information table below)	Connection Type ODF=solder	Configuration S/T = Straight-thru

* = R-507, R-502 and R-404A are interchangeable refrigerant charges, • = R-22 and R-407C are interchangeable refrigerant charges

Ordering Information

Valve Series	Capacity Tons* (R-22 Nominal)	Connections	PCN HCA Charge (R-22 Heat Pump)
TFES	8	1/2 X 5/8 ODF S/T 6A	061710
		5/8 X 5/8 ODF S/T 6A	061611
		5/8 X 7/8 ODF S/T 6A ODF EE	061608
		5/8 X 7/8 ODF S/T 6A SAE EE	062370
	10	1/2 X 7/8 ODF S/T 6A	062124
		5/8 X 7/8 ODF S/T 6A	062347
		5/8 X 7/8 ODF S/T 6A ODF EE	061610
		5/8 X 7/8 ODF S/T 6A SAE EE	062371
	12	5/8 X 7/8 ODF S/T 6A	061609
		5/8 X 7/8 ODF S/T 12A	062460
20	5/8 X 7/8 ODF S/T 6A	064493	

Inlet/Outlet Fittings Dimensional Data (in)

Connections		Inlet		Outlet		Equalizer	
Inlet	Outlet	A	B	C MIN	D MIN	1/4 ODF	SAE
1/4 ODF	3/8 ODF	0.25	0.38	0.31	0.31	1.70	1.65
	1/2 ODF	0.25	0.50		0.37		
	5/8 ODF	0.25	0.63		0.50		
3/8 ODF	3/8 ODF	0.38	0.38		0.31		
	1/2 ODF	0.38	0.50		0.37		
	5/8 ODF	0.38	0.63		0.50		
1/2 ODF	7/8 ODF	0.38	0.88		0.76		
	1/2 ODF	0.50	0.50		0.37		
	5/8 ODF	0.50	0.63		0.37		
5/8 ODF	7/8 ODF	0.50	0.88		0.37		
	5/8 ODF	0.63	0.63	0.50			
	7/8 ODF	0.63	0.88	0.50			
7/8 ODF	1-1/8 ODF	0.63	1.13	0.50			
	7/8 ODF	0.88	0.88	0.76			
	1-1/8 ODF	0.88	1.13	0.76			



Compressors,
Chillers, Condensers

Motors

Electrical

Heating
Components

Indoor Air
Quality

Thermostats

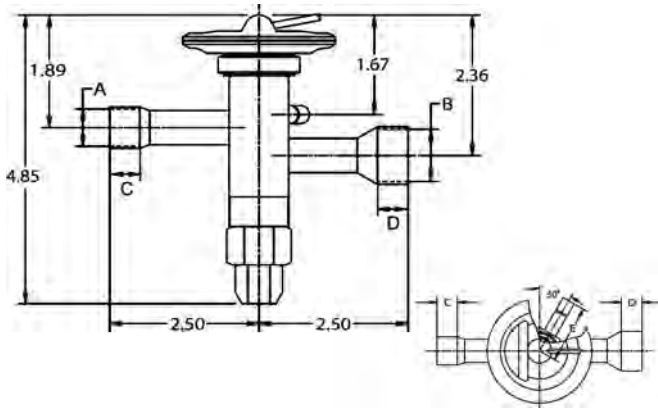
Oils &
Chemicals

Tools &
Instruments
Accessories, Supplies
& Commodities

Refrigeration

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE TFE R-22 SERIES

Dimensional Data (in)



Remote Bulb

Charge	Tubing Length (Ft)	F	G
C,A,Z	2, 2-1/2, 5	3.06	0.63
	10	3.56	
	15, 20, 30	4.81	
	40, 50	6.19	
CA, AA	2-1/2, 5, 10	2.31	0.76

Replacement Parts

	PCN	Description
Power Assembly	063414	X-28458 HCA-2
Power Assembly	063416	X-28458 HW100-2
Power Assembly	065298	X-28458 SW45-2
Seal Nut	058707	27676-1

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE TFE R-410A SERIES

The TFE R-410A series is designed for large tonnage heat pump, air conditioning, and commercial refrigeration applications.

Features

- Stainless steel power element eliminates corrosion and prevents valve failure
- Replaceable power element
- External superheat adjustment
- ODF connections
- Balanced port construction compensates for changes in operating pressures due to varying ambient, or widely varying evaporator loads
- Bi-Flow capability for heat pump applications
- External equalizer
- ZAA charge for R-410A systems

Specifications

- Maximum working pressure: 630 psig

TFE Nominal* Capacity Table in Tons

Model	Typical System Application
TFE 12	10-13 Tons
TFE 16	14-17 Tons
TFE 20	18-20 Tons

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

Note: When Ordering Apply ALC –As Prefix to PCN Number. Example ALC -054366

Nomenclature example: TFES 16 ZAA 5/8 x 7/8 ODF S/T

TF	E	S	16	Z	AA	5/8 x 7/8	ODF	S/T
Valve Series Balanced Port, Replaceable Power Assembly	Equalizer E=External 1/4" ODF	Connection Type S = solder	Capacity Nominal Rating in Tons	Refrigerant Code Z = R-410A	Charge Code AA = wide range	Inlet x Outlet Connection Sizes (See ordering information table below)	Connection Type ODF=solder	Configuration S/T = Straight- thru

Ordering Information

Refrigerant	Tons	Bleed	Inlet x Outlet	Sensing Bulb Capillary Tube Length	PCN
R-410A	12	-	5/8 ODF x 7/8 ODF	5 ft.	066146
R-410A	12	15%	5/8 ODF x 7/8 ODF	5 ft.	066147
R-410A	12	-	7/8 ODF x 1-1/8 ODF	10 ft.	066148
R-410A	16	-	5/8 ODF x 7/8 ODF	5 ft.	066149
R-410A	16	15%	5/8 ODF x 7/8 ODF	5 ft.	066150
R-410A	16	-	7/8 ODF x 1-1/8 ODF	10 ft.	066151
R-410A	20	-	5/8 ODF x 7/8 ODF	5 ft.	066152
R-410A	20	15%	5/8 ODF x 7/8 ODF	5 ft.	066153
R-410A	20	-	7/8 ODF x 1-1/8 ODF	10 ft.	066154

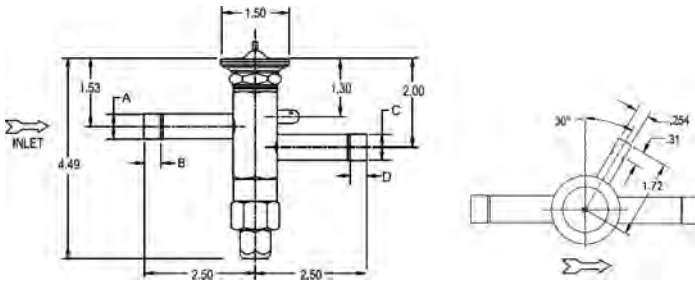
Inlet/Outlet Fittings Dimensional Data (in)

Connections		Inlet		Outlet	
Inlet	Outlet	A	B MIN	C	D MIN.
1/2 ODF	1/2 ODF	0.50	0.37	0.50	0.37
	5/8 ODF	0.50	0.37	0.63	0.50
	7/8 ODF	0.50	0.37	0.88	0.76
5/8 ODF	5/8 ODF	0.63	0.50	0.63	0.50
	7/8 ODF	0.63	0.50	0.88	0.76
	1-1/8 ODF	0.63	0.50	1.13	0.91
7/8 ODF	7/8 ODF	0.88	0.76	0.88	0.76
	1-1/8 ODF	0.88	0.76	1.13	0.91



EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE TFE R-410A SERIES

Dimensional Data (in)



Replacement Parts

PCN	Description
066155*	R-410A Power Assembly (10 ft.)*
058707	Seal Nut

*Approved for use only on TFE-Series R-410A valves (with ZAA charge)

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE TI SERIES w/ Interchangeable Cartridges

The TI series has interchangeable cages capable of changing valve capacity in the field.

Features

- Stainless steel power element eliminates corrosion and prevents valve failure
- Wrench flats on inlet and outlet
- Forged brass valve body
- Inlet strainer assembly

Options

- Interchangeable capacity cages

Specifications

- Inlet connection size: 3/8" SAE, Outlet 1/2" SAE
- Maximum working pressure: 450 psig
- Maximum bulb temperature: 165°F

Note: When Ordering Apply ALC –As Prefix to PCN Number. Example ALC -054366

Nomenclature example: TIE4 HW

TI	E	4	H	W
Valve Series	Equalizer E=External (Omit for internal)	Orifice Size Valves sold less cage (Select proper cage from inter-changeability table below)	Refrigerant Code •H = R-22 M = R-134a •N = R-407C *P = R-507 *S = R-404A	Charge Code W = medium temp W(MOP) = press. limiting

* = R-507 and R-404a are interchangeable refrigerant charges

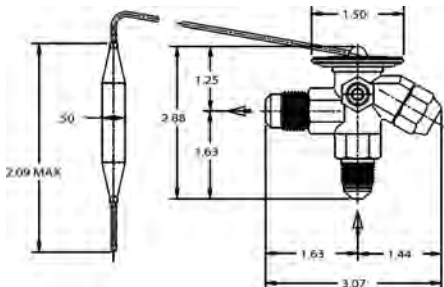
• = R-22 and R-407C are interchangeable refrigerant charges

Interchangeable Cages

Cage Size	Type	PCN	Nominal Capacity (kW)		
			R-134a	R-22/R-407C	R-404A/R-507
00	TIO-00X	065087	0.03	0.05	0.04
0	TIO-000	065088	0.08	1.30	1.00
1	TIO-001	065090	1.90	3.20	2.30
2	TIO-002	065091	3.10	5.30	3.90
3	TIO-003	065092	5.00	8.50	6.20
4	TIO-004	065093	8.30	13.90	10.10
5	TIO-005	065094	10.10	16.90	12.30
6	TIO-006	065095	11.70	19.50	14.20

NOTE: Nominal capacities shown on pages at the end of this section are based on European standards of +38°C condensing temperature, +4°C evaporating temperature and 1°K liquid subcooling at the inlet of the expansion valve. This methodology varies from the rest of the capacity tables in this catalog.

Dimensional Data (in)



TI(E) Series – Valve bodies, Flare type

Evaporating Temp Range °F	PCN	Equalizer Type	Refrigerant		
			R-134a Valve	R-22/R-407C Valve	R-404A/R-507 Valve
-10 to +40	065016	internal	TI-MW		
-10 to +40	065017	external	TIE-MW		
-10 to +40	065020	internal		TI-HW	
-10 to +40	065021	external		TIE-HW	
-10 to +40	065028	internal			TI-SW
-10 to +40	065031	external			TIE-SW



EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE ZZ SERIES for Ultra Low Temperatures

The ZZ series is designed for ultra low temperature applications such as environmental test chambers and other applications where the desired evaporator temperature is below -40°F.

Features

- Take-Apart construction for easy field service
- Improved internal construction extends valve life
- External equalizer standard
- Exclusive cage bellows eliminates friction at low temperatures
- External superheat adjustment

Options

- Interchangeable cages, power assemblies, and flanges for maximum flexibility

Specifications

Maximum working pressure: 450 psig



Nomenclature example: ZZC 6 B G125 10 FT 3/8 x 5/8 ODF ANG

ZZC	6	B	G125	10 FT	3/8 x 5/8	ODF	ANG
Valve Series	Capacity (nominal @ -40°F) Tons	Refrigerant Code B = R-13/R-23 H = R-22 R = R-502	Charge Code Z = low temp G(MOP) = press.limiting	Capillary Tube Length 10 FT (std)	Inlet x Outlet Connection Sizes	Connection Type SAE = flare ODF=solder	Configuration ANG = 90° angle S/T = straight-thru
Ultra Low Temperature							
Take-Apart							

R-13/R-23 Valve Type	R-22 Valve Type	Standard Connections
ZZC 1BG	ZZC 3/4HZ	3/8 ODF x 5/8 ODF
ZZC 2-1/2BG	ZZC 1-1/2HZ	
ZZC 4BG	ZZC 2-1/2HZ	
ZZC 6BG	ZZC 4HZ	1/2 ODF x 5/8 ODF
ZZC 9BG	ZZC 6HZ	
ZZC 13BG	ZZC 8HZ	
ZZ ER 20BG	--	7/8 ODF x 1-1/8 ODM

NOTE: Nominal capacities shown here are based upon the following conditions:

Refrigerant	Evaporator Temperature	Liquid Temperature at Valve Inlet	Pressure Drop Across Valve
R-23	-40°F	0°F	150 psig
R-22	-40°F	20°F	150 psig

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE ZZ SERIES for Ultra Low Temperatures

Cage Assemblies & Gaskets

Ordering Information

Note: When Ordering Apply ALC –As Prefix to PCN Number.

Example ALC -054366

Valve	PCN	Description
ZZC1BG, ZZC34RHW, ZZC34RW	021288	X10110-B1B
ZZC2-1/2BG, ZZC1-1/2HW, ZZC1-1/2RW	020871	X10110-B2B
ZZC4BG, ZZC2-1/2HW, ZZC2-1/2RW	096091	X10110-B3B
ZZC6BG, ZZC4HW, ZZC3-1/2RW	096312	X10110-B4B
ZZC9BG, ZZC6HW, ZZC5RW	096425	X10110-B5B
ZZC13BG, ZZC8HW, ZZC8RW	096646	X10110-B6B
ZZER6BG, ZZER4HW, ZZC3-1/2RW	045362	X10059-B4B
ZZER9BG, ZZER6HW, ZZER5RW	033697	X10059-B5B
ZZER20BG, ZZER12HW, ZZER11RW	030071	X10059-B6B
ZZER21BG, ZZER13HW, ZZER13RW	025100	X10059-B7B
ZZER29BG, ZZER18HW, ZZER18RW	025101	X10059-B8B
ZZIR48BG, ZZIR30HW, ZZIR29RW	025090	X10060-B10B
ZZJR16BG, ZZJR10HW, ZZJR9RW	089306	X10111-B5B

Power Assemblies

PCN	Description
094594	XC-726 BG 30-2B 10FT. SAE EE
039130	XC-726 BG 125-2B 10 FT. SAE EE
024511	XC-726 HW 35-2B 10 FT. SAE EE
025011	XC-726 HW 65-2B 10 FT. SAE EE
023357	XC-726 HW 85-3B 15 FT. SAE EE
036750	XC-726 HW 100-2B 10FT. SAE EE
040569	XC-726 HZ-2B 10FT. SAE EE

Replacement Power Assembly consists of: power assembly, and bulb clamps

Replacement Gasket Set

PCN	Description
027579	X-13455-1

Gasket Set includes necessary body flange gasket & seat gasket

Flanges

PCN	Connections	Description
027770	1/2 X 7/8 ODF S/T	9761-2
027771	3/8 X 5/8 ODF S/T	9761-3
027268	1/2 X 5/8 ODF S/T	9761-4
027769	3/8 X 1/2 ODF S/T	9761-5
027766	1/2 X 1/2 ODF S/T	9761-6
027764	5/8 X 7/8 ODF ANG	A-576
056932	3/8 X 1/2 SAE ANG	C-500-4
057153	3/8 X 5/8 SAE ANG	C-500-5
056294	1/2 X 5/8 SAE ANG	C-500-6
065527	3/8 X 1/2 ODF ANG	C-501-4
065748	3/8 X 5/8 ODF ANG	C-501-5
065861	1/2 X 5/8 ODF ANG	C-501-7
044733	5/8 X 5/8 ODF S/T	X-6346-16
044846	5/8 X 7/8 ODF S/T	X-6346-17
094038	5/8 X 1-1/8 ODF S/T	X-6346-18
071757	7/8 X 1-1/8 ODF S/T	X-6346-34
050563	3/8 X 5/8 SAE S/T	X-6669-1
050842	1/2 X 5/8 SAE S/T	X-6669-2
051176	3/8 X 1/2 SAE S/T	X-6669-4
083378	1/2 X 1/2 SAE S/T	X-6669-5

Compressors,
Chillers, Condensers

Motors

Electrical

Heating
Components

Indoor Air
Quality

Thermostats

Oils &
Chemicals

Accessories, Supplies
& Commodities

Tools &
Instruments

Refrigeration

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE LCL Take-Apart-DeSuperheating

The LCL Take-Apart series is a desuperheating (Liquid Injection) valve used in conjunction with hot gas bypass to prevent excessive suction line superheat. LCL valves can be used for interstage cooling in compound systems.

Features

- Stainless steel power element eliminates corrosion and prevents valve failure
- Take-Apart construction for easy field service

Options

- Interchangeable, replaceable cages for versatility
- External superheat adjustment
- Interchangeable body flanges
- Interchangeable power assemblies

Specifications

Maximum working pressure: 450 psig

Note: When Ordering Apply ALC –As Prefix to PCN Number. Example ALC -054366



Nomenclature example: LCLE 2 B 5 FT 3/8 x 1/2 ODF S/T

LCL	E	2	B	5 FT	3/8 x 1/2	ODF	S/T
Valve Series De-Superheating Liquid Injection Take-Apart	Equalizer E=External (Omit for Internal)	Capacity Nominal NOTE: This is not system capacity (See hot gas bypass charts for valve sizing)	Refrigerant Code (See hot gas bypass charts for valve selection)	Capillary Tube Length 5 FT (std)	Inlet x Outlet Connection Sizes (see table below)	Connection Type SAE = flare ODF=solder	Configuration ANG = 90° angle S/T = straight-thru

LCL (LA) Charge Codes

Saturated Suction	Refrigerant					
	R-134A		R-22		R-404A/R-507	
	Required Suction Gas		Required Suction Gas		Required Suction Gas	
TEMP	45°F	65°F	45°F	65°F	45°F	65°F
40°F	--	B (GL)	--	A (CL)	--	--
30°F	B (GL)	B (GL)	--	A (CL)	--	A (CL)
20°F	B (GL)	C (UL)	A (CL)	B (GL)	--	A (CL)
10°F	B (GL)	C (UL)	B (GL)	B (GL)	A (CL)	B (GL)
0°F	C (UL)	C (UL)	B (GL)	B (GL)	A (CL)	B (GL)
-10°F	C (UL)	C (UL)	B (GL)	C (UL)	B (GL)	B (GL)
-20°F	C (UL)	C (UL)	B (GL)	C (UL)	B (GL)	C (UL)
-30°F	C (UL)	C (UL)	C (UL)	C (UL)	B (GL)	C (UL)
-40°F	C (UL)	C (UL)	C (UL)	C (UL)	B (GL)	C (UL)

() Denotes LA Series valve charge code.

Ordering Information

Description	Equalizer Type	PCN By Charge			Connections
		Select From Table Below			
		A	B	C	
LCL 1	Internal	022018	022017	--	Same as TCL & TCLE
LCL 2		022005	021996	045527	
LCL 3		055093	021987	--	
LCL 6		047759	--	--	
LCLE 1	1/4" SAE External	055096	--	--	
LCLE 2		022003	021997	--	
LCLE 3		021991	021985	--	
LCLE 4		--	061054	055097	

NOTE: Add charge suffix symbol "A", "B", or "C" based on the following table. Example: LCLE4-A

Replacement Valve Guide

If have:	Replace with:
LA(E)S 1/2	LCL 1
LA(E)S 1	LCL 2
LA(E)S 2	LCL 3
LA(E)S 3	LCL 4
LA(E)S 5	LCL 6
LCL 5	LCL 6
LCLE 5	LCLE 6
LCL 8	LCL 9
LCLE 8	LCLE 9

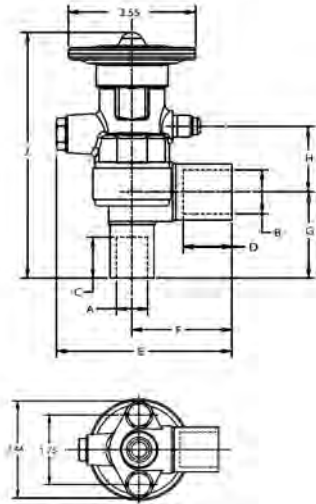
Note: Valve sizes LCL5, LCL8, LCLE5 and LCLE8 are OBSOLETE.

Refrigeration

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE LCL Take-Apart-DeSuperheating LCL(E) Dimensional Data (in)

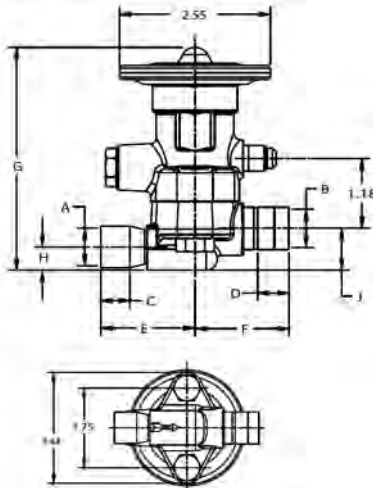
LCL Angle

Angle



Connection Size		A	B	C MIN.	D MIN.	E	F	G	H	J
Inlet	Outlet									
3/8 SAE	1/2 SAE					3.06	1.50	1.13	1.20	4.14
3/8 SAE	5/8 SAE					3.19	1.63	1.13	1.20	4.14
1/2 SAE	5/8 SAE					3.19	1.63	1.38	1.20	4.39
1/4 ODF	3/8 ODF	0.25	0.38	0.31	0.31	2.91	1.34	0.94	1.20	3.95
3/8 ODF	1/2 ODF	0.38	0.50	0.31	0.38	3.03	1.47	1.06	1.20	4.11
3/8 ODF	5/8 ODF	0.38	0.63	0.31	0.50	3.16	1.59	1.06	1.20	4.11
1/2 ODF	5/8 ODF	0.50	0.63	0.38	0.50	3.16	1.59	1.90	1.20	4.20
5/8 ODF	7/8 ODF	0.63	0.88	0.50	0.75	3.56	2.00	1.69	1.20	4.83

LCL Straight Thru Straight-Thru



Connection Size		A	B	C MIN.	D MIN.	E	F	G	H	J
Inlet	Outlet									
3/8 SAE	1/2 SAE					1.78	1.98	3.70	0.38	0.69
3/8 SAE	5/8 SAE					1.78	2.16	3.70	0.38	0.69
1/2 SAE	1/2 SAE					1.97	1.56	3.70	0.38	0.69
3/8 ODF	1/2 ODF	0.38	0.50	0.31	0.38	1.41	1.58	3.69	0.38	0.69
3/8 ODF	5/8 ODF	0.38	0.63	0.31	0.50	1.41	1.63	3.69	0.36	0.67
1/2 ODF	1/2 ODF	0.50	0.50	0.38	0.38	1.41	1.56	3.70	0.38	0.69
1/2 ODF	5/8 ODF	0.50	0.63	0.38	0.50	1.59	1.63	3.69	0.36	0.67
5/8 ODF	5/8 ODF	0.63	0.63	0.50	0.50	1.59	1.63	3.70	0.38	0.69
5/8 ODF	7/8 ODF	0.63	0.88	0.50	0.75	1.59	1.94	3.70	0.38	0.69
5/8 ODF	1-1/8 ODF	0.88	1.13	0.50	0.91	1.59	2.38	3.70	0.38	0.69
7/8 ODF	1-1/8 ODF	0.88	1.13	0.75	0.91	1.94	2.38	3.81	0.38	0.69

Allow 2-1/8" above valve for removal of power assembly.

Remote Bulb Dimensions

Capillary Tubing Length (Ft)	Standard Remote Bulb	
	Diameter	Length
5	5/8	3-1/16
10		3-9/16
15 or 20		4-13/16

Compressors,
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Refrigeration

Refrigeration

Compressors,
Chillers, Condensers

Motors

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Quality

Thermostats

Oils &
Chemicals

Accessories, Supplies
& Commodities

Tools &
Instruments

Refrigeration

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE LA(E) Series DeSuperheating SAE

Connection Size		A MIN	B MIN
Inlet	Outlet		
1/4 SAE	3/8 SAE	1.50	1.64
3/8 SAE	3/8 SAE	1.64	1.64
3/8 SAE	1/2 SAE	1.64	1.72
1/4 SAE	1/2 SAE	1.50	1.72
1/4 SAE	5/8 SAE	1.50	1.98
3/8 SAE	5/8 SAE	1.64	1.98

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE EX2 Pulse Modulated Electric

The EX2 is an electrically driven expansion valve designed for use with R-12, R-22, R-134a, R-404A, R-407C, and R-502.

Features

- Pulse width modulation provides very precise temperature control
- Dampened plunger reduces noise and effects of “water hammer”
- Shut off function eliminates the necessity of a separate solenoid valve

Options

- One valve body can be combined with 6 orifices to make 6 capacity ranges up to 2.7 tons R-22.

Specifications

- Designed for 15 year life or 80 million cycles at 15 sec. duty cycle
- Maximum Working Pressure: 400 psig MOPD, 500 psig
- ASC2X Coils: 24V/60Hz, 120V/60Hz
- UL/CUL file number: MP604

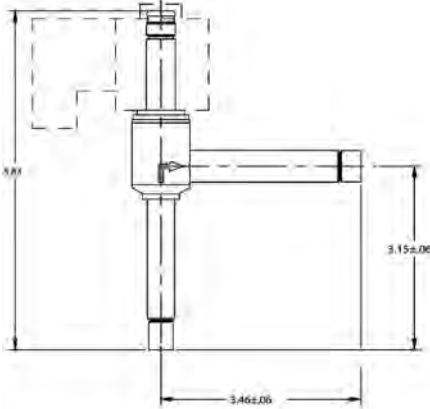
NOTE: This valve requires a ASC2X type coil assembly.
ASC2X type coil requires cable assembly PCN:059261.



Nomenclature example: EX2 1/4 x 3/8 EXO-001 ASC2X 120V

EX2	1/4	3/8	EXO-001	ASC2X 120V
Valve Series	Inlet Connection	Outlet Connection	Orifice	Coil

Dimensional Data



Ordering Information

Note: When Ordering Apply ALC –As Prefix to PCN Number. Example ALC -054366

Device	PCN	Description
Electronic Expansion Valve	064497	EX2 3/8 x 1/2
24V/60Hz Coil	064503	ASC2X 24/60
120V/60Hz Coil	064504	ASC2X 120/60

Liquid Capacity Table in Tons @ 100% Duty Cycle

The liquid capacity table below quotes capacities at 100% duty cycle (i.e. the valve is open continuously). However, it is recommended to operate the valve at partial load (50-80%) to allow for system load fluctuations. The valve operates with a 6 second pulse width cycle. Partial capacity can be calculated by proportioning the actual pulse time relative to 6 seconds (i.e. 3 second pulse width cycle time = 50% valve capacity).

PCN	Orifice #	R-134a Tons (kW)	R-22 Tons (kW)	R-404A / R-507 Tons (kW)	R-407C Tons (kW)	R-744 Tons (kW)
064570	EXO-00X	0.2 (0.7)	0.2 (0.9)	0.17 (0.6)	0.28 (1.0)	0.51 (1.8)
064569	EXO-000	0.3 (1.2)	0.4 (1.6)	0.3 (1.1)	0.48 (1.7)	0.94 (3.3)
064499	EXO-001	0.7 (2.5)	0.9 (3.2)	0.65 (2.3)	1.0 (3.5)	1.85 (6.5)
064500	EXO-002	0.9 (3.3)	1.2 (4.3)	0.85 (3.0)	1.34 (4.7)	2.47 (8.7)
064501	EXO-003	1.6 (5.6)	2.0 (7.2)	1.45 (5.1)	2.22 (7.8)	4.15 (14.6)
064502	EXO-004	2.4 (8.5)	3.1 (10.9)	2.19 (7.7)	3.36 (11.8)	6.31 (22.2)
064497	No Orifice Used	3.7 (13.3)	4.8 (17.2)	3.44 (12.1)	5.32 (18.7)	9.95 (35.0)

Nominal capacities shown in this table are based on 40°F evaporating temperature, 100°F condensing temperature and 100 psig pressure drop across the valve.

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE ACP(E) Automatic

The ACP is designed for small cooling units where the heat load is reasonably constant. The ACP is ideal for room air conditioners, domestic refrigerators, drink dispensers, food dispensers, ice cream cabinets, bottle coolers, home freezers, ice cube makers, ice cream freezers, and milk coolers.

Features

- Friction-free floating design
- Can be used as a small capacity hot gas bypass valve
- Fully adjustable from 0-80 psig (factory setting 40 psig)
- Wrench flats on inlets and outlets

Options

- Internal or external equalizer
- SAE or ODF connections
- Adjustable or non-adjustable

Note: When Ordering Apply ALC –As Prefix to PCN Number. Example ALC -054366

Nomenclature example: ACPE 6 SAE EE 1/4 x 3/8 ODF ANG

ACP	E	6	SAE EE	1/4 x 3/8	ODF	ANG
Valve Series	Equalizer	Port Size (diameter)	External Equalizer Type	Inlet x Outlet Connection Sizes	Connection Type	Body Style
	E=External (optional)	see table below			ODF or SAE	ANG = Angle S/T = Straight-thru

Specifications

- Maximum working pressure: 450 psig
- Maximum working temperature: 300°F
- UL/CUL file number: SA5312



Ordering Information

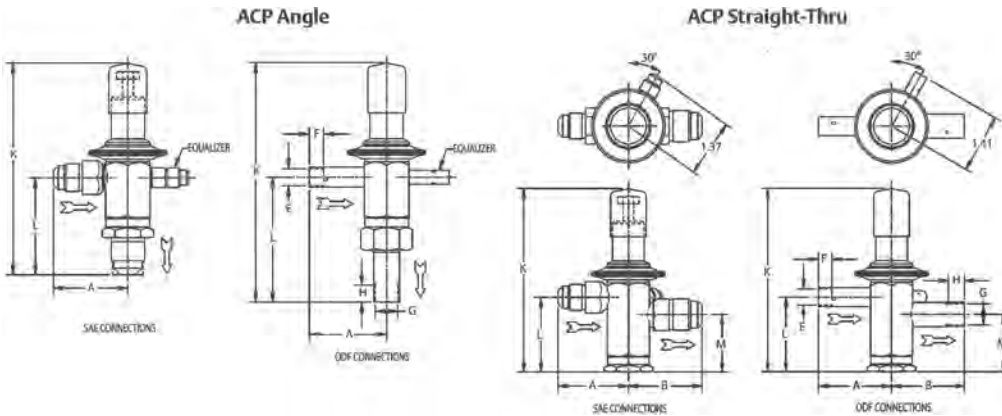
PCN	Description
046838	ACP 1 IE 1/4 x 3/8-1/2 SAE ANG
057233	ACP 1 IE 1/4 x 3/8 ODF S/T
047680	ACP 1 IE 1/4 x 3/8 ODF ANG
056240	ACP 1 IE 1/4 X 3/8 SAE ANG
046839	ACP 2 IE 1/4 X 3/8 SAE ANG
047651	ACP 2 IE 1/4 x 3/8 ODF ANG
047283	ACP 3 IE 1/4 X 3/8 ODF ANG
046840	ACP 3 IE 1/4 x 3/8 SAE ANG
047105	ACP 4 IE 1/4 x 3/8 ODF ANG
047101	ACP 4 IE 1/4 X 3/8 SAE ANG
047284	ACP 5 IE 1/4 x 3/8 ODF ANG
047332	ACP 5 IE 1/4 X 3/8 SAE ANG
053374	ACP 5 IE 3/8 x 3/8 ODF ANG
049204	ACP 5 IE 3/8 X 3/8-1/2 SAE ANG
047653	ACP 6 IE 1/4 x 3/8 SAE ANG
047654	ACP 7 IE 3/8 x 1/2 ODF ANG
047285	ACP 7 IE 3/8 x 3/8-1/2 SAE ANG
047655	ACP 8 IE 3/8 x 1/2 ODF ANG
047657	ACP 9 IE 3/8 X 1/2 ODF ANG
057209	ACP 9 IE 3/8 X 3/8 ODF ANG
057771	ACP 9 IE 1/2 x 5/8 ODF ANG
052773	ACP 9 IE 1/4 X 3/8 ODF ANG
047658	ACP 9 IE 3/8 x 3/8-1/2 SAE ANG
047280	ACPE 1 SAE EE 1/4 x 3/8 SAE S/T
047790	ACPE 7 SAE EE 3/8 x 1/2 ODF ANG
048657	ACPE 9 SAE EE 3/8 x 1/2 ODF S/T
058674	ACPE 9 SAE EE 1/2 x 5/8 ODF S/T

ACP(E)- Nominal* Capacity Table in Tons

Valve	Port Diameter (in)	R-12/R-134a			R-407C/R-22		R-502/R-404A/R-507	
		Pressure Drop Across Valve – PSI						
		60	100	100	100	100		
ACP(E)1	0.05	0.31	0.44	0.29				
ACP(E)2	0.06	0.41	0.57	0.38				
ACP(E)3	0.10	0.65	0.91	0.61				
ACP(E)4	0.11	0.90	1.30	0.87				
ACP(E)5	0.13	1.40	1.96	1.31				
ACP(E)6	0.14	1.90	2.67	1.78				
ACP(E)7	0.17	2.30	3.28	2.19				
ACP(E)8	0.20	2.70	3.75	2.50				
ACP(E)9	0.23	3.80	5.32	3.55				

*All capacities shown are at 100°F Condensing, 40°F Evaporator Temperature, with a solid column of liquid at the valve inlet.

EMERSON CLIMATE TECHNOLOGIES-THERMOSTATIC EXPANSION VALVE ACP(E) Automatic ACP Dimensional Data



Dimensional Data (in)

ACP(E) Valve Type	Inlet	Outlet	A	B	E DIA.	F MIN.	G DIA.	H MIN.	K	L	M			
Angle SAE	1/4	3/8	1.50	—	—	—	—	—	4.50	2.13				
	3/8	3/8 - 1/2	1.64											
	1/2		1.72											
	1/4	5/8	1.50											
	3/8		1.64											
	1/2		1.72											
Angle ODF	1/4	3/8	1.25	—	0.25	0.32	0.37	0.32	4.55	2.17				
	3/8		1/2		1.19	0.37						0.32	0.50	0.38
	1/2	5/8			1.38	0.50	0.38	0.62	0.50	4.73		2.36		
	5/8		1.38		0.62	0.50								
	1/4		1.25		0.25	0.32								
	3/8	1.19	0.37		0.32									
	1/4	1/2	1.25		0.25	0.32	0.50	0.38	4.55	2.17				
	1/2	7/8	1.19		0.50	0.38	0.87	0.75	5.11	2.73				
	Straight-Thru SAE	1/4	3/8		1.50	1.64	—	—	—	—				
		3/8	3/8 - 1/2		1.64									
1/2		1.72												
1/4		5/8	1.50											
3/8			1.64											
1/2			1.72											
Straight-Thru ODF	1/4	3/8	1.25	1.98 1.19	0.25	0.32	0.37	0.32	4.25	1.88	1.48			
	3/8		1/2		1.19	0.37						0.32	0.50	0.38
	1/2	5/8			1.38	0.50	0.38	0.62	0.50					
	5/8		1.38		0.62	0.50								
	1/4		1.25		0.25	0.32								
	3/8	1.19	0.37		0.32									
	1/4	1/2	1.25		0.25	0.32	0.50	0.38						
	1/2	7/8	1.19		0.50	0.38	0.87	0.75						
	3/8				0.37	0.32	0.87	0.75						