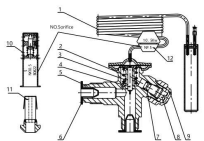
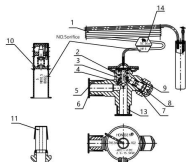


## Structure



1, power element; 2, regulating spring; 3, spring seat; 4, transfer bar component; 5, valve body; 6, dust cap; 7, O-type ring; 8, regulating stem; 9, value bonnet; 10, orifice/No.18-69; 11, fitting component; 12, orifice packing cover



1, power element; 2, regulating spring; 3, spring seat; 4, transfer bar component; 5, valve body; 6, dust cap; 7, O-type ring; 8, regulating stem; 9, value bonnet; 10, orifice/No.18-69; 11, fitting component; 12, dust cap; 13, dust cap; 14, orifice packing cover; 15, external equaliser

## Replaceable element model

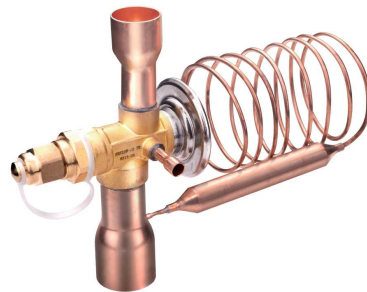
Valve element No.	Nominal refrigerating capacity(TR)				Nominal refrigerating capacity(KW)			
	R22/R407C	R134a	R404A	R410A	R22	R134a	R404A	R410A
No.1	0.7	0.5	0.45	0.92	2.5	1.8	1.6	3.25
No.2	1.0	0.8	0.6	1.55	3.5	2.6	2.1	5.45
No.3	1.5	1.3	1.2	2.5	5.2	4.6	4.2	8.7
No.4	2.3	1.9	1.7	4	8.0	6.7	6.0	14.15
No.5	3.0	2.5	2.2	4.9	10.5	8.6	7.7	17.28
No.6	4.5	3.0	2.6	5.7	15.5	10.5	9.1	19.95

## Model of main valve body

Refrigerant	Model	Pressure Equalisation	Thread		
			Inlet	Outlet	External Equaliser
R22/R407C	TH22	Internal Equalisation	3/8 SAE	1/2 SAE	
R22/R407C	TH22W	External Equalisation	3/8 SAE	1/2 SAE	1/4 SAE
R134a	TH134	Internal Equalisation	3/8 SAE	1/2 SAE	
R134a	TH134W	External Equalisation	3/8 SAE	1/2 SAE	1/4 SAE
R404A	TH404	Internal Equalisation	3/8 SAE	1/2 SAE	
R404A	TH404W	External Equalisation	3/8 SAE	1/2 SAE	1/4 SAE
R410A	TH410	Internal Equalisation	3/8 SAE	1/2 SAE	
R410A	TH410W	External Equalisation	3/8 SAE	1/2 SAE	1/4 SAE

\* Working Condition of Nominal Refrigerating Capacity: Evaporation Temperature: + 5°C; Condensation Temperature: + 35°C; Superheat: 3.5°C; Subcooling: 4°C.

## FRF Thermostatic Expansion Valve



Model FRF (inch ODF)

## Installation and usage requirements

1. Welded pipe expansion valve with the system pipe welding, we must pay attention to the following points:
  - 1.1 PIs use a wet cloth or wet cotton gauze to wrap the valve body to prevent the damage of parts in the valve body during welding
  - 1.2 The direction of the flames of the welding gun should be outward at the valve body.
  - 1.3 Low temperature silverelec trode welding.
2. Expansion valve maintenance should be designated professional staff

## Technical Parameters

Applicable Refrigerants	R22, R134a, R404A
Applicable Medium	R22: -40°C--+10°C; R134a: -30°C--+10°C; R404A: -40°C--+10°C
Adjustable Range of Superheat	2°C--8°C
Maximum Working Pressure	2.8MPa
Maximum Testing Pressure	3.2MPa

Model Selection												
Refrigerant	Condensing Temp (°C)	Model	Cooling capacity(KW)/(TR)									
			Evaporation temperature(°C)									
			-35	-30	-25	-20	-15	-10	-5	0	5	
R22/R40C	40	FRF22W-3-3-5	4.99/1.43	5.69/1.63	6.43/1.84	7.2/2.06	7.96/2.28	8.75/2.5	9.49/2.71	10.17/2.91	10.72/3.06	
		FRF22W-3-4-5	4.99/1.43	5.69/1.63	6.43/1.84	7.2/2.06	7.96/2.28	8.75/2.5	9.49/2.71	10.17/2.91	10.72/3.06	
		FRF22W-4-4-7	6.68/1.91	7.63/2.18	8.63/2.47	9.66/2.77	10.73/3.07	11.81/3.37	12.83/3.67	13.76/3.93	14.52/4.15	
		FRF22W-6-4-5	9.69/2.77	11.1/3.17	12.58/3.59	14.12/4.03	15.74/4.49	17.26/4.93	18.77/5.36	20.12/5.75	21.24/6.07	
		FRF22W-6-4-7	9.69/2.77	11.1/3.17	12.58/3.59	14.12/4.03	15.74/4.49	17.26/4.93	18.77/5.36	20.12/5.75	21.24/6.07	
		FRF22W-7.5-5-7	12.00/3.43	13.86/3.96	15.84/4.53	17.85/5.11	19.97/5.71	21.63/6.01	22.86/6.57	25.12/7.35	27.1/7.74	
		FRF22W-11-5-7	19.44/5.55	22.45/6.41	25.58/7.31	28.73/8.21	31.96/9.14	34.6/9.89	37.07/10.59	38.85/11.1	39.95/11.41	
		FRF22W-11-5-9	19.44/5.55	22.45/6.41	25.58/7.31	28.73/8.21	31.96/9.14	34.6/9.89	37.07/10.59	38.85/11.1	39.95/11.41	
		FRF22W-12-5-7	19.86/5.67	22.01/6.29	25.07/7.16	28.26/8.07	31.5/9	34.25/9.79	37.91/10.83	40.1/11.46	42.61/12.17	
		FRF22W-12-5-9	19.86/5.67	22.01/6.29	25.07/7.16	28.26/8.07	31.5/9	34.25/9.79	37.91/10.83	40.1/11.46	42.61/12.17	
		FRF22W-15-5-9	22.47/6.42	25.11/7.17	28.3/8.09	31.96/9.13	35.68/10.2	38.86/11.1	41.85/11.96	51.3/14.61	54.25/15.5	
		FRF22W-15-7-9	22.47/6.42	25.11/7.17	28.3/8.09	31.96/9.13	35.68/10.2	38.86/11.1	41.85/11.96	51.3/14.61	54.25/15.5	
		FRF22W-18-7-9	25.31/7.23	28.72/8.21	33.17/9.48	38.98/11.14	45.08/12.88	49.37/14.11	53.68/15.34	58.76/16.79	63.22/18.06	
		FRF22W-18-7-11	25.31/7.23	28.72/8.21	33.17/9.48	38.98/11.14	45.08/12.88	49.37/14.11	53.68/15.34	58.76/16.79	63.22/18.06	
		FRF22W-26-7-11	36.48/10.42	42.31/12.09	48.76/13.93	55.84/15.95	62.49/18.14	71.61/20.46	79.99/22.85	88.29/25.23	92.02/26.29	
		FRF22W-26-9-11	36.48/10.42	42.31/12.09	48.76/13.93	55.84/15.95	62.49/18.14	71.61/20.46	79.99/22.85	88.29/25.23	92.02/26.29	
		FRF22W-30-7-11	41.30/11.80	47.93/13.69	55.26/15.79	63.29/18.08	71.96/20.57	81.2/23.2	90.69/25.91	100.1/28.6	104.8/29.94	
		FRF22W-30-9-11	41.30/11.80	47.93/13.69	55.26/15.79	63.29/18.08	71.96/20.57	81.2/23.2	90.69/25.91	100.1/28.6	104.8/29.94	
		FRF22W-38-9-11	48.63/13.89	55.75/15.93	64.95/18.56	75.29/21.51	86.78/24.79	99.3/28.37	111.5/31.86	123.7/35.34	134.7/38.49	
		R404A/R507	40	FRF40W-4-4-5	4.1/1.17	4.71/1.35	5.38/1.54	6.09/1.74	6.84/1.95	7.62/2.18	8.39/2.4	9.11/2.6
FRF40W-5-5-7	5.1/1.46			5.71/1.63	6.48/1.85	7.58/2.17	8.84/2.53	9.52/2.72	10.39/2.97	11.36/3.25	12.28/3.51	
FRF40W-7.5-5-7	7.55/2.16			8.71/2.49	10.12/2.89	11/1.34	12.94/3.7	14/4	15.55/4.44	16.5/4.71	17.97/5.13	
FRF40W-9-5-7	9.57/2.73			10.98/3.14	12.51/3.57	14.14/4.04	15.81/4.52	17.53/5.01	19.18/5.48	20.75/5.91	21.98/6.28	
FRF40W-11-5-9	12.07/3.45			13.93/3.98	15.92/4.55	18.02/5.15	20.16/5.76	22.29/6.37	24.28/6.94	25.98/7.42	27.21/7.77	
FRF40W-13-7-9	12.93/3.69			15.14/3.1	17.1/4.89	19.5/4.3	22.1/6.31	25.05/7.16	27.1/7.74	30.55/8.73	32.1/7.9	
FRF40W-18-7-11	16.59/4.74			19.54/5.58	22.27/6.36	25.13/7.18	29.03/8.29	32.94/9.41	36.69/10.48	40.27/11.51	43.57/12.45	
FRF40W-21-7-11	20.63/5.44			29.79/8.51	33.77/9.65	37.87/10.62	41.93/11.96	45.77/13.08	49.21/14.06	52.06/14.87	54.14/15.47	
FRF40W-26-9-11	24.64/7.04			28.59/8.17	33.03/9.44	37.91/10.83	43.18/12.34	48.69/13.91	54.28/15.51	59.71/17.06	64.74/18.5	
FRF410W-3-3-5	5.93/1.69			6.73/1.91	7.57/2.15	8.45/2.40	9.35/2.66	10.25/2.92	11.12/3.16	11.91/3.39	12.56/3.57	
FRF410W-4-5-7	7.92/2.25			9.0/2.56	10.15/2.89	11.35/3.23	12.58/3.58	13.81/3.93	15.01/4.27	16.10/4.58	17.00/4.84	
FRF410W-6-5-4-7	11.48/3.27			13.07/3.72	14.76/4.20	16.51/4.70	18.32/5.21	20.13/5.73	21.88/6.22	23.48/6.68	24.80/7.05	
FRF410W-9-5-7	15.36/4.37	17.49/4.97	19.73/5.61	22.06/6.27	24.44/6.95	26.81/7.63	29.08/8.27	31.13/8.85	32.77/9.32			
FRF410W-13-5-7	23.1/6.57	26.50/7.54	30.02/8.54	33.57/9.55	37.07/10.54	40.36/11.48	43.27/12.31	45.56/12.96	46.97/13.32			
FRF410W-15-5-7	23.01/6.54	26.51/7.54	30.1/8.62	34.48/9.78	38.74/11.02	42.35/12.30	47.80/13.59	52.15/14.83	55.88/15.92			
FRF410W-19-5-9	28.36/8.07	32.73/9.31	37.49/10.66	42.64/12.13	48.14/13.69	53.89/15.33	59.72/16.99	65.36/18.59	70.41/20.03			
FRF410W-23-9-9	34.74/9.88	39.94/11.36	45.52/12.95	51.47/14.64	57.75/16.42	64.27/18.20	70.84/20.15	77.12/21.94	82.66/23.51			
FRF410W-31-7-11	44.23/12.58	51.02/14.51	58.50/16.64	66.71/18.97	75.60/21.50	85.08/24.20	94.91/26.99	104.70/29.78	113.70/32.34			
FRF410W-35-7-11	50.06/14.24	57.16/15.63	66.26/18.85	75.58/21.50	85.67/24.37	96.41/27.42	107.50/30.57	118.60/33.73	128.80/36.63			
FRF410W-46-9-11	61.44/17.7	71.40/20.31	82.66/23.51	95.18/27.07	108.80/30.94	123.00/34.98	137.40/39.08	151.10/42.97	163.10/46.39			
R134A	40	FRF134W-3-5-4-5	5.42/1.54	6.16/1.75	6.97/1.98	7.86/2.24	8.81/2.51	9.82/2.79	10.89/3.38	12.84/3.65		
		FRF134W-4-5-5-7	7.39/2.10	8.40/2.39	9.50/2.70	10.70/3.04	11.99/3.41	13.35/3.80	14.74/4.19	16.11/4.58	17.37/4.94	
		FRF134W-7-5-7	10.85/3.09	12.39/3.52	14.08/4.00	15.91/4.53	17.85/5.08	19.86/5.65	21.91/6.21	23.71/6.74	25.28/7.19	

Model Selection											
Refrigerant	Condensing Temp (°C)	Model	Cooling capacity(KW)/(TR)								
			Evaporation temperature(°C)								
			-35	-30	-25	-20	-15	-10	-5	0	5
R134A	40	FRF134W-8-5-9	11.50/3.27	13.21/3.76	15.14/4.31	17.29/4.92	19.67/5.59	22.26/6.33	25.00/7.11	27.79/7.90	30.49/8.67
		FRF134W-10-7-9	14.34/4.08	16.50/4.69	18.93/5.38	21.66/6.16	24.69/7.02	27.99/7.96	31.50/8.96	35.10/9.98	38.61/10.98
		FRF134W-12-7-11	17.69/5.03	20.34/5.78	23.27/6.62	26.51/7.54	30.04/8.54	33.85/9.63	37.85/10.77	41.91/11.92	45.79/13.02
		FRF134W-17-7-11	23.02/6.55	26.54/7.55	30.53/8.68	35.01/9.86	40.07/11.38	45.50/12.94	51.39/14.62	57.50/16.35	63.54/18.07
		FRF134W-20-9-11	26.17/7.44	30.19/8.59	34.74/9.88	39.85/11.33	45.52/12.96	51.80/14.73	58.51/16.64	65.47/18.62	72.32/20.57

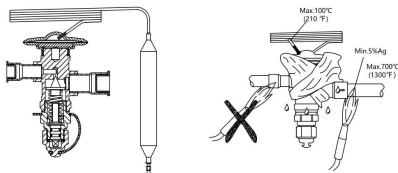
\* Model of expansion valve should be selected by refrigerating capacity of evaporators.  
 \* External equalization thermostatic expansion valve should be chosen for evaporators with distributors.  
 \* Pay attention to the refrigerant when choosing expansion valve.

Product Parameters						
Refrigerant	Model	Pressure Equalization	Thread(Connector Size)			
			Inlet inch	Outlet inch	External Equalizer	
R22	FRF22W-3-3-5	External Equalization	3/8" ODF	5/8" ODF		
	FRF22W-3-4-5		1/2" ODF	5/8" ODF		
	FRF22W-4-4-7		1/2" ODF	7/8" ODF		
	FRF22W-6-4-4		1/2" ODF	5/8" ODF		
	FRF22W-6-4-7		1/2" ODF	7/8" ODF		
	FRF22W-7.5-5-7		5/8" ODF	7/8" ODF		
	FRF22W-11-5-7		5/8" ODF	7/8" ODF		
	FRF22W-11-5-9		5/8" ODF	1-1/8" ODF		
	FRF22W-12-5-7		5/8" ODF	7/8" ODF		
	FRF22W-12-5-9		5/8" ODF	1-1/8" ODF		
	FRF22W-15-5-9		5/8" ODF	1-1/8" ODF		
	FRF22W-15-7-9		7/8" ODF	1-1/8" ODF		
	FRF22W-18-7-9		7/8" ODF	1-1/8" ODF	1/4" ODF	
	FRF22W-18-7-11		7/8" ODF	1-3/8" ODF		
	FRF22W-26-7-11		7/8" ODF	1-3/8" ODF		
	FRF22W-26-9-11		1-1/8" ODF	1-3/8" ODF		
	FRF22W-30-7-11		7/8" ODF	1-3/8" ODF		
	FRF22W-30-9-11		1-1/8" ODF	1-3/8" ODF		
FRF22W-38-9-11	1-1/8" ODF	1-3/8" ODF				
R134a	FRF134W-3-5-4-5	External Equalization	1/2" ODF	5/8" ODF		
	FRF134W-4-5-5-7		5/8" ODF	7/8" ODF		
	FRF134W-7-5-7		5/8" ODF	7/8" ODF		
	FRF134W-8-5-9		5/8" ODF	1-1/8" ODF		
	FRF134W-10-7-9		7/8" ODF	1-1/8" ODF		
	FRF134W-12-7-11		7/8" ODF	1-3/8" ODF		
	FRF134W-17-7-11		7/8" ODF	1-3/8" ODF		
	FRF134W-20-9-11		1-1/8" ODF	1-3/8" ODF		

Product Parameters					
Refrigerant	Model	Pressure Equalization	Thread Connection Size		
			Inlet inch	Outlet inch	External Equaliser
R404A	FRF404W-4-4-5	External Equalisation	1/2" ODF	5/8" ODF	1/4" ODF
	FRF404W-5-5-7		5/8" ODF	7/8" ODF	
	FRF404W-7.5-5-7		5/8" ODF	7/8" ODF	
	FRF404W-9-5-7		5/8" ODF	7/8" ODF	
	FRF404W-11-5-9		5/8" ODF	1-1/8" ODF	
	FRF404W-13-7-9		7/8" ODF	1-1/8" ODF	
	FRF404W-18-7-11		7/8" ODF	1-3/8" ODF	
	FRF404W-21-7-11		7/8" ODF	1-3/8" ODF	
	FRF404W-26-9-11		1-1/8" ODF	1-3/8" ODF	
	FRF410W-3.5-3-5		3/8" ODF	5/8" ODF	
	FRF410W-4.5-4-7		1/2" ODF	7/8" ODF	
R410A	FRF410W-6.5-4-7	1/2" ODF	7/8" ODF		
	FRF410W-9-5-7	5/8" ODF	7/8" ODF		
	FRF410W-13-5-7	5/8" ODF	7/8" ODF		
	FRF410W-15-5-7	5/8" ODF	7/8" ODF		
	FRF410W-19-5-9	5/8" ODF	1-1/8" ODF		
	FRF410W-23-7-9	7/8" ODF	1-1/8" ODF		
	FRF410W-31-7-11	7/8" ODF	1-3/8" ODF		
	FRF410W-35-7-11	7/8" ODF	1-3/8" ODF		
	FRF410W-46-9-11	1-1/8" ODF	1-3/8" ODF		
	FRF407W-3.5-4-7	1/2" ODF	7/8" ODF		
	FRF407W-5-4-7	1/2" ODF	7/8" ODF		
R407C	FRF407W-7-5-7	5/8" ODF	7/8" ODF		
	FRF407W-10-5-7	5/8" ODF	7/8" ODF		
	FRF407W-12-5-9	5/8" ODF	1-1/8" ODF		
	FRF407W-15-7-9	7/8" ODF	1-1/8" ODF		
	FRF407W-18-7-11	7/8" ODF	1-3/8" ODF		

• Working Condition of Nominal Refrigerating Capacity: Evaporation Temperature: +5°C; Condensation Temperature: +40°C; Superheat:3.5°C;Subcooling:2°C.

#### Structure



## ERF ERFW Thermostatic Expansion Valve



Model ERF (metric/inch flare)



Model ERFW (inch flare)

#### Product Description

• Model ERF/ERFW thermal expansion valve are used to adjust the liquid refrigerant supply volume to the evaporator and they are suitable to various refrigerants and different charging condition. It meets the requirements of the cold storage facility, ice

maker and dehumidifier as well as the refrigeration and air conditioning requirements under varied evaporation temperature.

#### Features

• The big power head structure with perfect linear performance has a stable adjustment on the degree of superheat.  
• New structure has large scope of evaporation temperature and big work amplitude under low temperature.

• With proprietary technology, the diaphragm movement hysteresis <0.5k and the valve has good stability.  
• The bonnet features food-proofing design to prevent loss and ensure the reliability of sealing.

#### Technical Parameters

Applicable Refrigerants:	R404A,R22, R134a	<ul style="list-style-type: none"> <li>• Model ERF (ERFW) and FRF thermostatic expansion valve have two types of connection: Flare/ODF.</li> <li>• Capillary length of Model ERF (ERFW) and FRF thermostatic expansion valve can be standard 1.5 m, (g10- 13 is 3m) or customized.</li> </ul>
Applicable Medium Temperature:	-40°C--+10°C	
Nominal Capacity:	3.5KW-158KW	
Adjustable Range of Superheat:	2°C-8°C	
Ex-Works Static Heat Adjustment:	3.5°C	
Outer Equilibrium End Leakage:	≤75ml/min	
Maximum Working Pressure:	2.8MPa	
Maximum Testing Pressure:	3.2MPa	