Constant pressure expansion valves(hot gas bypass)
PTV series

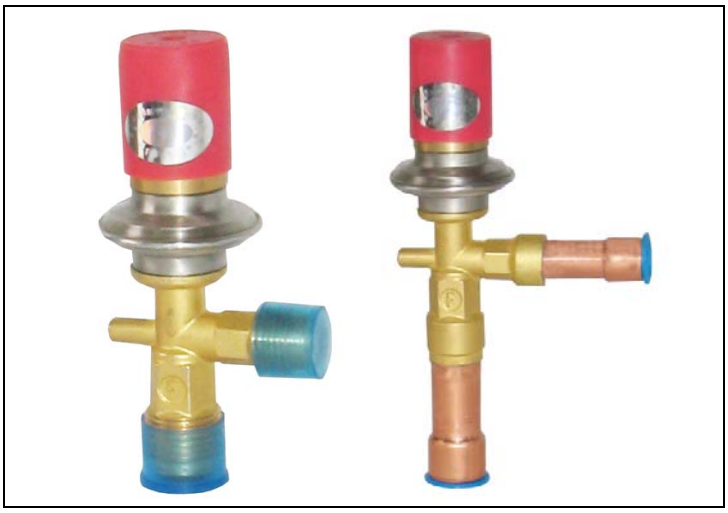
Introduction

PTV series constant pressure expansion valves (hot gas bypass) can adjust compressor capacity and make it match with the load of evaporator.

Placed in a bypass between high and low pressure side of refrigeration system, PTV imposes a lower limit on compressor suction pressure by supplying the low pressure side with replacement capacity in the form of hot or cool gas from high pressure side.

Features :

1) Exquisite angle design for easy installation.
2) Accurate adjusting pressure.
3) Wide capacity and operating ranges.



Type & data

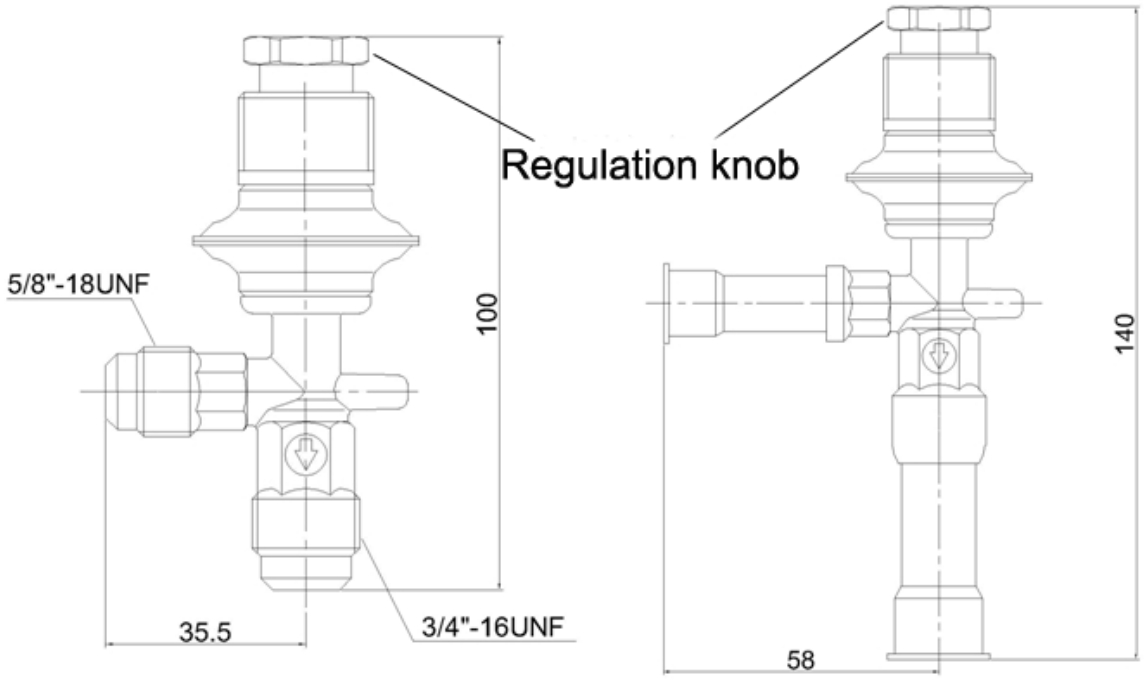
Model	Normal capacity (KW)			Connection (in.)		Adjusting range (MPa)	Medium temperature (℃)	Max. working pressure (MPa)	Max. testing pressure (MPa)
	R134a	R22/R407C	R404A/R507	Inlet	Outlet				
PTV8	7	11	7	3/8 SAE	1/2 SAE	0.03→0.6	-50～150	2.5	3
PTV10W	14	22.5	16.2	1/2 ODF	5/8 ODF				

Notes: 1) Nominal capacity is based on evaporating temperature +5℃, condensing temperature +38 ℃.

2) After the model, "W" indicates solder ODF,"E" indicates external equalization.

3) Factory setting opening pressure is 0.4MPa. Adjust regulation knob at clockwise rotation for one round, opening pressure increases 0.1 MPa, inversely, opening pressure decreases 0.1 MPa.

Dimension



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Valve capacity (KW)

R134a Model	Evaporating temperature (℃)																	
	10						0						-10					
	Pressure drop across valve (MPa)																	
	0.3	0.4	0.6	0.7	0.8	1	0.4	0.6	0.7	0.8	1	1.1	0.4	0.6	0.7	0.8	1	1.1
PTV(E)8	6.21	7.17	8.79	9.49	10.1	11.3	6.89	8.44	9.11	9.74	10.9	11.4	6.46	7.91	8.54	9.13	10.2	10.7
PTV10(E)W	11.6	13.5	16.5	17.7	19	21.3	12.9	15.9	17.1	18.3	20.4	21.4	12.1	14.9	16	17.1	19.1	20.1
R134a Model	Evaporating temperature (℃)																	
	-20						-30						-40					
	Pressure drop across valve (MPa)																	
	0.6	0.7	0.8	1	1.1	1.2	0.6	0.7	0.8	1	1.1	1.2	0.6	0.7	0.8	1	1.1	1.2
PTV(E)8	6.77	7.31	7.81	8.74	9.16	9.57	5.01	5.41	5.78	6.47	6.78	7.08	3.25	3.51	3.75	4.2	4.4	4.6
PTV10(E)W	12.6	13.8	14.6	16.4	17.1	18	9.39	10.1	10.9	12.1	12.8	13.3	6.1	6.59	7.04	7.88	8.25	8.63

R22/R407C Model	Evaporating temperature (℃)																	
	10						0						-10					
	Pressure drop across valve (MPa)																	
	0.5	0.7	0.9	1	1.2	1.4	0.5	0.7	0.9	1	1.2	1.4	0.7	0.9	1	1.2	1.4	1.6
PTV(E)8	9.01	10.7	12.1	12.7	14	15.1	8.83	10.4	11.8	12.5	13.7	14.8	10.1	11.5	12.1	13.3	14.3	15.3
PTV10(E)W	18.8	22.3	25.1	26.5	29.1	31.4	18.4	21.8	24.6	26	28.5	30.8	21.1	23.9	25.3	27.6	29.9	31.9
R22/R407C Model	Evaporating temperature (℃)																	
	-20						-30						-40					
	Pressure drop across valve (MPa)																	
	0.9	1	1.2	1.4	1.6	1.7	0.9	1	1.2	1.4	1.6	1.7	0.9	1	1.2	1.4	1.6	1.7
PTV(E)8	9.79	10.3	11.3	12.2	13.1	13.5	7.25	7.64	8.37	9.04	9.67	9.96	4.83	5.09	5.58	6.03	6.44	6.64
PTV10(E)W	20.4	21.5	23.5	25.4	27.3	28	15.1	15.9	17.5	18.9	20.1	20.8	10.1	10.6	11.6	12.5	13.4	13.9

R404A/R507 Model	Evaporating temperature (℃)																	
	10						0						-10					
	Pressure drop across valve (MPa)																	
	0.5	0.7	0.9	1	1.2	1.4	0.5	0.7	0.9	1	1.2	1.4	0.5	0.7	0.9	1	1.2	1.4
PTV(E)8	6.06	7.17	8.14	8.58	9.39	10.1	5.88	6.96	7.89	8.32	9.11	9.84	5.58	6.6	7.48	7.89	8.64	9.33
PTV10(E)W	14.1	16.6	19	20	21.9	23.6	13.7	16.2	18.4	19.3	21.2	22.9	13	15.3	17.4	18.4	20.1	21.7
R404A/R507 Model	Evaporating temperature (℃)																	
	-20						-30						-40					
	Pressure drop across valve (MPa)																	
	0.7	0.9	1	1.2	1.4	1.6	0.9	1	1.2	1.4	1.6	1.7	0.9	1	1.2	1.4	1.6	1.7
PTV(E)8	5.67	6.43	6.77	7.42	8.02	8.57	4.8	5.06	5.54	5.99	6.4	6.6	3.09	3.26	3.57	3.86	4.12	4.25
PTV10(E)W	13.1	15	15.7	17.2	18.6	19.9	11.2	11.7	12.9	14	14.9	15.3	7.19	7.58	8.3	8.97	9.58	9.89

Temperature of liquid entering valve correction factor

Refrigerant	Refrigerant liquid temperature ℃									
	10	16	21	27	32	38	43	49	54	60
R134a	1.33	1.27	1.21	1.11	1.07	1	0.93	0.87	0.81	0.71
R22/R407C	1.3	1.24	1.18	1.12	1.06	1	0.94	0.88	0.82	0.78
R404A/R507	1.48	1.39	1.3	1.19	1.1	1	0.89	0.78	0.67	0.56

To determine the capacities for other temperatures of vapor free liquid refrigerant entering the valve, multiply the capacities listed in the table of extend capacities.