

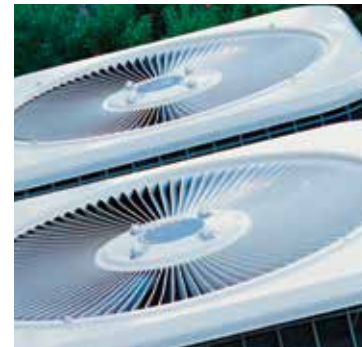


aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



C8 Thermostatic Expansion Valve

Products & Custom Solutions



ENGINEERING YOUR SUCCESS.

The C8 Thermostatic Expansion Valve

Introduction

The C8 Thermostatic Expansion Valves are designed to regulate refrigerant flow into evaporators as a response to sensed superheat value. They can be used in a wide range of AC and refrigeration applications.

Features

- Adjustable superheat
- 8 Replaceable orifice assemblies
- Temperature range from -40°C to +15°C
- Thermostatic charges with or without MOP (Maximum Operating Pressure)
- Solder ODF (with inlet connector) or Flare SAE fittings
- Stainless steel thermostatic element
- Copper sensing bulb
- EC compliant (PED & RoHS Compliant)

Technical Specifications

- Maximum bulb temperature: 100°C
- Maximum valve body temperature: 121°C
- Short-lived peak: 149°C
- Maximum working pressure MWP: 34 bar
- Maximum test pressure: 38 bar

C8 valves are supplied as three individual component parts that need to be ordered separately:

- Valve body & Thermostatic element assembly
- Cartridge & Filter assembly
- Inlet ODF adaptor (not mandatory)

Please refer to further sections for selection/ordering information.

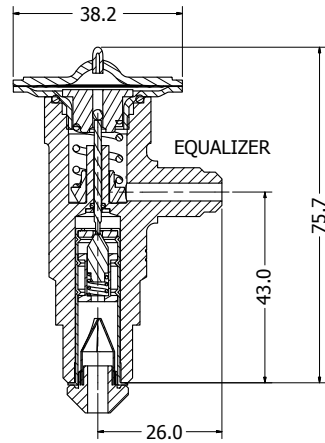
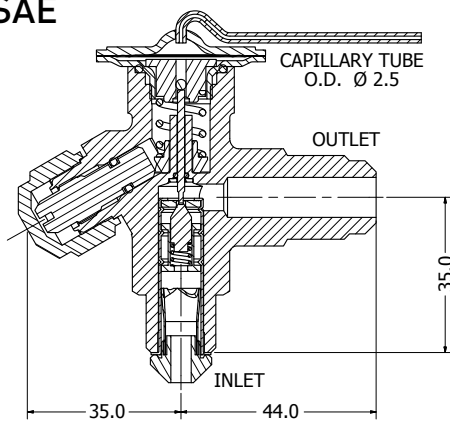
⚠ WARNING – USER RESPONSIBILITY

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

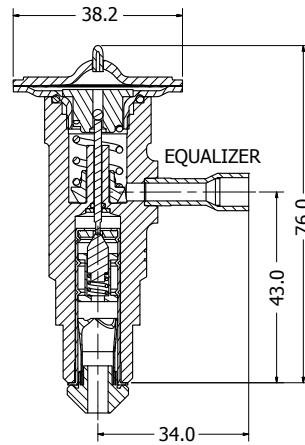
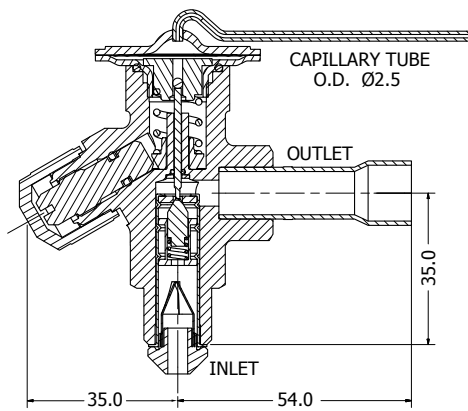
- This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.
- The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.
- To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

C8 Assembly

SAE



ODF



All dimensions in millimeters (mm).

Valve Nomenclature / Ordering Instructions

EXAMPLE

C8	E	F	-	N	W
Valve Type	"E" specifies external equalizer. Omission of letter "E" indicates valve with internal equalizer. e.g. C8F-NW	Connection Type: (Inlet always supplied as 3/8" Flare, SAE) F = Flare, SAE M = Metric, ODF S = Standard, ODF (US Customary Units)		Parker Code – Refrigerant Element Label Color Code: J = R134a Blue R401A Pink S = R404A Orange R402A Sand R402B Olive R502 Purple R507 Teal N = R407C Lt. Brown	Thermostatic Charge See Charge Table for options.

Thermostatic Charge Option

Charge	Application	Evaporator Temperature Range °C	MOP bar / °C	Refrigerants
Z	Wide Range Charge	-40°C to +10°C	-	R-407A/C/F, R-134a, R-404A, R-22
W	Commercial Refrigeration	-20°C to +10°C	-	R-407A/C/F, R-134a, R-404A, R-22
X35	Pressure Limiting Low Temperature	-40°C to -18°C	2.4/-17	R-404A
X60	Pressure Limiting Wide Range	-40°C to +15°C	4.1/+17	R-134a
X100	Pressure Limiting Wide Range	-40°C to +15°C	6.9/+17	R-407A/C/F, R-22
X110	Pressure Limiting Wide Range	-40°C to +10°C	7.6/+12	R-404A

Valve Body & Thermostatic Element Assembly

Refrigerant	Connections			Capillary Tube Length cm	Evaporator Temperature Range °C	MOP bar / °C	Valve Type	Item Number	
	Inlet	Outlet	Equalizer						
R407A R407C R407F	3/8" SAE	1/2" SAE	1/4" SAE	150	-20°C to +10°C	-	C8EF-NW	30136-202C	
			Internally Equalized	150	-40°C to +15°C	6.9 bar / +17°C	C8EF-NX100	30136-203C	
				150	-20°C to +10°C	-	C8F-NW	30136-223C	
			Internally Equalized	150	-40°C to +15°C	6.9 bar / +17°C	C8F-NX100	30136-224C	
				12mm ODF	6mm ODF	150	-20°C to +10°C	-	C8EM-NW
			Internally Equalized		150	-40°C to +15°C	6.9 bar / +17°C	C8EM-NX100	30136-210C
		150			-20°C to +10°C	-	C8M-NW	30136-230C	
		Internally Equalized	150		-40°C to +15°C	6.9 bar / +17°C	C8M-NX100	30136-231C	
			1/2" ODF		1/4" ODF	150	-20°C to +10°C	-	C8ES-NW
		Internally Equalized			150	-40°C to +15°C	6.9 bar / +17°C	C8ES-NX100	30136-217C
				150	-20°C to +10°C	-	C8S-NW	30136-237C	
		Internally Equalized		150	-40°C to +15°C	6.9 bar / +17°C	C8S-NX100	30136-238C	
R134a	3/8" SAE			1/2" SAE	150	-20°C to +10°C	-	C8EF-JW	30136-200C
		Internally Equalized			150	-40°C to +15°C	4.1 bar / +17°C	C8EF-JX60	30136-201C
			150		-20°C to +10°C	-	C8F-JW	30136-221C	
		Internally Equalized	150		-40°C to +15°C	4.1 bar / +17°C	C8F-JX60	30136-222C	
			12mm ODF		6mm ODF	150	-20°C to +10°C	-	C8EM-JW
		Internally Equalized			150	-40°C to +15°C	4.1 bar / +17°C	C8EM-JX60	30136-208C
				150	-20°C to +10°C	-	C8M-JW	30136-228C	
		Internally Equalized		150	-40°C to +15°C	4.1 bar / +17°C	C8M-JX60	30139-229C	
				1/2" ODF	1/4" ODF	150	-20°C to +10°C	-	C8ES-JW
		Internally Equalized			150	-40°C to +15°C	4.1 bar / +17°C	C8ES-JX60	30136-215C
			150		-20°C to +10°C	-	C8S-JW	30136-235C	
		Internally Equalized	150		-40°C to +15°C	4.1 bar / +17°C	C8S-JX60	30136-236C	

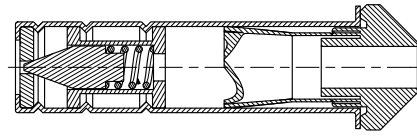
Valve Body & Thermostatic Element Assembly

Refrigerant	Connections			Capillary Tube Length cm	Evaporator Temperature Range °C	MOP bar / °C	Valve Type	Item Number
	Inlet	Outlet	Equalizer					
R404A R507	3/8" SAE	1/2" SAE	1/4" SAE	150	-40°C to +10°C	–	C8EF-SZ	30136-254C
					-20°C to +10°C	–	C8EF-SW	30136-204C
					-40°C to +10°C	7.6 bar / +12°C	C8EF-SX110	30136-205C
					-40°C to -18°C	2.4 bar / -17°C	C8EF-SX35	30136-206C
			Internally Equalized	150	-40°C to +10°C	–	C8F-SZ	30136-255C
					-20°C to +10°C	–	C8F-SW	30136-225C
					-40°C to +10°C	7.6 bar / +12°C	C8F-SX110	30136-226C
					-40°C to -18°C	2.4 bar / -17°C	C8F-SX35	30136-227C
		12mm ODF	6mm ODF	150	-40°C to +10°C	–	C8EM-SZ	30136-256C
					-20°C to +10°C	–	C8EM-SW	30136-211C
					-40°C to +10°C	7.6 bar / +12°C	C8EM-SX110	30136-212C
					-40°C to -18°C	2.4 bar / -17°C	C8EM-SX35	30136-213C
			Internally Equalized	150	-40°C to +10°C	–	C8M-SZ	30136-257C
					-20°C to +10°C	–	C8M-SW	30136-232C
					-40°C to +10°C	7.6 bar / +12°C	C8M-SX110	30136-233C
					-40°C to -18°C	2.4 bar / -17°C	C8M-SX35	30136-234C
		1/2" ODF	1/4" ODF	150	-40°C to +10°C	–	C8ES-SZ	30136-258C
					-20°C to +10°C	–	C8ES-SW	30136-218C
					-40°C to +10°C	7.6 bar / +12°C	C8ES-SX110	30136-219C
					-40°C to -18°C	2.4 bar / -17°C	C8ES-SX35	30136-220C
			Internally Equalized	150	-40°C to +10°C	–	C8S-SZ	30136-259C
					-20°C to +10°C	–	C8S-SW	30136-239C
					-40°C to +10°C	7.6 bar / +12°C	C8S-SX110	30136-240C
					-40°C to -18°C	2.4 bar / -17°C	C8S-SX35	30136-241C
R22 R448A R449A	3/8" SAE	1/2" SAE	1/4" SAE	150	-40°C to +10°C	–	C8EF-VZ	30136-260C
					-20°C to +10°C	–	C8EF-VW	30136-242C
					-40°C to +15°C	6.9 bar / +17°C	C8EF-VX100	30136-248C
					-40°C to +10°C	–	C8F-VZ	30136-261C
			Internally Equalized	150	-20°C to +10°C	–	C8F-VW	30136-245C
					-40°C to +15°C	6.9 bar / +17°C	C8F-VX100	30136-251C
					-40°C to +10°C	–	C8EM-VZ	30136-262C
					-20°C to +10°C	–	C8EM-VW	30136-243C
		12mm ODF	6mm ODF	150	-40°C to +15°C	6.9 bar / +17°C	C8EM-VX100	30136-249C
					-40°C to +10°C	–	C8M-VZ	30136-263C
					-20°C to +10°C	–	C8M-VW	30136-246C
					-40°C to +15°C	6.9 bar / +17°C	C8M-VX100	30136-252C
			Internally Equalized	150	-40°C to +10°C	–	C8ES-VZ	30136-264C
					-20°C to +10°C	–	C8ES-VW	30136-244C
					-40°C to +15°C	6.9 bar / +17°C	C8ES-VX100	30136-250C
					-40°C to +10°C	–	C8S-VZ	30136-265C
		1/2" ODF	1/4" ODF	150	-20°C to +10°C	–	C8S-VW	30136-247C
					-40°C to +15°C	6.9 bar / +17°C	C8S-VX100	30136-253C
					-40°C to +10°C	–	C8S-VZ	30136-265C
					-20°C to +10°C	–	C8S-VW	30136-247C
			Internally Equalized	150	-40°C to +15°C	6.9 bar / +17°C	C8S-VX100	30136-253C

C8 Cartridge & Filter Assembly

Cartridge and Filter Assembly
 Rated Capacities, kW¹

Item Number	Cartridge Type	Rated Capacities, kW ¹			
		R407C	R134a	R404A	R22
506032C	C-0X	0.55	0.44	0.42	0.55
506033C	C-00	1.2	1.0	0.77	1.1
506034C	C-01	2.4	1.6	1.4	2.3
506035C	C-02	3.8	2.6	2.1	3.5
506036C	C-03	5.2	4.3	3.9	4.9
506037C	C-04	9.0	7.0	6.3	8.4
506038C	C-05	11.3	8.6	7.7	10.5
506039C	C-06	15.0	9.5	8.2	14.0



■ The cartridge orifice is stamped with the orifice size, ex. C-0X



■ A metallic tag is provided with each individual cartridge and should be fixed on the cap tube as the orifice is installed in the valve body.

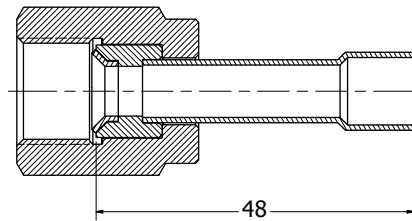
¹ The rated capacity is based on the following conditions:
 Evaporating temperature, T_e = +5°C
 Condensing temperature, T_c = +32°C
 Refrigerant temperature ahead of valve, T₁ = +28°C

Inlet ODF Adaptor

All C8 Thermostatic Expansion Valves feature 3/8" SAE inlet fitting. Solder inlet adaptors are available from Parker distributors.

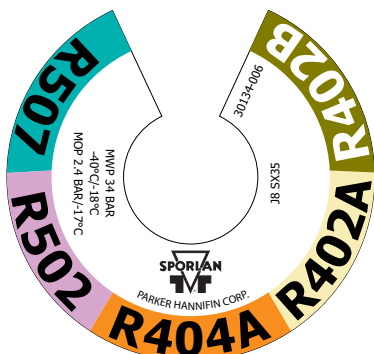
Solder inlet adaptors allow the installation of the C8 TEV and easy access of cartridge orifice & filter assembly. Parker Solder Inlet Adaptors have been designed to be used with flare orifice filter.

Item	Description
A-6M	Solder Inlet Adaptor 3/8" SAE to 6mm ODF
A-10M	Solder Inlet Adaptor 3/8" SAE to 10mm ODF
A-2	Solder Inlet Adaptor 3/8" SAE to 1/4" ODF
A-3	Solder Inlet Adaptor 3/8" SAE to 3/8" ODF



All dimensions in millimeters (mm).

Identification



The main information about the valve is provided on the element label:

- Element C8 SX35
- Refrigerant
- Maximum Working Pressure (MWP) = 34 bar
- Evaporating temperature range in °C = -40°C/-18°C
- Maximum Operating Pressure (MOP) point in bar & °C = MOP 2.4 bar/-17°C

Selection Procedure

The following procedure should be used when selecting a Parker TEV:

1. Determine the liquid temperature of the refrigerant entering the valve.

The TEV capacity tables on pages 8-11 are based on a liquid temperature of 100°F (38°C) for R-134a, R-404A, R407A, R-407C, R407F, R448A, and R449A. For other liquid temperatures, apply the correction factor given in the tables for each refrigerant. See selection example.

2. Determine pressure drop across valve.

The pressure drop correction factors are based on standard liquid temperature and pressure drop. The standard pressure drop is dependent on the evaporator temperature. To determine the pressure drop, subtract the saturated pressure equivalent to evaporator temperature from the condensing pressure. The condensing pressure used in this calculation should be the minimum operating condensing pressure of the system. From this value, subtract all other pressure losses to obtain the net pressure drop across the valve. Use this value to determine the pressure drop correction factor. See selection example. Be sure to consider all of the following possible sources of pressure drop:

1. Friction losses through refrigeration lines including the evaporator and condenser.
2. Pressure drop across liquid line accessories such as a solenoid valve and filter-drier.
3. Static pressure loss (gain) due to the vertical lift (drop) of the liquid line.
4. Pressure drop across a refrigerant distributor if used.

3. Select cartridge from the capacity tables.

Select a cartridge based on the design evaporating temperature. If possible, the valve capacity should be equal or slightly exceed the design rating of the system. Be sure to apply the appropriate correction factor for liquid temperature choose proper pressure drop. Once the desired valve capacity has been located, determine the proper cartridge from the table's left column. On multiple evaporator systems, select each valve on the basis of individual evaporator capacity. See selection example.

4. Determine if an external equalizer is required.

The amount of pressure drop between the valve outlet and bulb location will determine if an external equalizer is required. Internally equalized models should be limited to single circuit

evaporators having a pressure drop no greater than the equivalent of 1°C saturated temperature change.

5. Select body type.

Select the body type according to the style connections desired. Refer to page 4.

6. Select the Thermostatic Charge.

Select the charge according to the design evaporating temperature from the Table on page 4.

Selection Example – Refrigerant R-404A

Application: Refrigeration

Design evaporator temperature	-10°C
Design condenser temperature	38°C
Refrigerant liquid temperature	28°C
Design system capacity	7 kW

Available pressure drop across TEV:	
Condensing pressure - bar	16.3
Evaporating pressure - bar	3.3
	13

Liquid line and accessories loss - bar	0.58
Distributor and tubes loss - bar ①	2.06
	10.36

Refrigerant liquid correction factor	1.10
--------------------------------------	------

Use the following formula to calculate cartridge capacity:
 Cartridge Capacity = Cartridge rating x CF liquid temperature

Cartridge C-04 has capacity of: 7.4 x 1.10 = 8.1kW at -10°C evaporating temperature and 28°C liquid temperature.

Thermostatic charge (from table on page 4): **SZ**

Selection:

- ① An externally equalized valve must be used on evaporators employing a refrigerant distributor due to the pressure drop created by the distributor. In addition, an externally equalized valve should always be used with air conditioning thermostatic charges to reduce the possibility of thermostatic charge migration.

Selection Tables

R404A/R507 (kW)

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
	Evaporating Temperature +10°C							
C-0X	0.31	0.39	0.44	0.46	0.47	0.47	0.46	0.45
C-00	0.74	0.90	1.0	1.0	1.1	1.1	1.0	1.0
C-01	1.5	1.9	2.1	2.2	2.3	2.3	2.2	2.1
C-02	2.3	3.0	3.4	3.6	3.7	3.7	3.7	3.6
C-03	3.9	5.1	5.6	6.0	6.2	6.3	6.2	6.0
C-04	6.5	8.5	9.5	10.2	10.5	10.5	10.3	10.1
C-05	7.9	10.2	11.4	12.2	12.5	12.6	12.3	12.0
C-06	8.7	11.3	12.6	13.4	13.8	13.8	13.6	13.2

Table A

Correction Factor, (CF) Liquid Temperature
 TEV corrected capacity = Required Evaporator Capacity / Correction Factor, (CF), for Subcooling.

Subcooling	4°K	10°K	15°K	20°K	25°K	30°K	35°K	40°K	45°K	50°K
Correction Factor	1.00	1.08	1.14	1.21	1.27	1.33	1.39	1.45	1.51	1.57

Table B

Design Evaporating Temperature

Liquid Temperature

The valve capacity should equal or slightly exceed the tonnage rating of the system.

Selection Tables

R407A/R407C/R407F (kW)

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
Evaporating Temperature +10°C								
C-0X	0.44	0.55	0.62	0.67	0.69	0.70	0.69	0.70
C-00	1.0	1.2	1.3	1.4	1.5	1.5	1.5	1.5
C-01	2.1	2.6	3.0	3.1	3.2	3.2	3.3	3.2
C-02	3.1	4.1	4.8	5.2	5.4	5.5	5.6	5.6
C-03	5.2	6.9	8.0	8.6	9.1	9.2	9.3	9.3
C-04	8.8	11.6	13.4	14.6	15.2	15.4	15.6	15.6
C-05	10.6	14.0	16.0	17.4	18.3	18.5	18.7	18.7
C-06	11.8	15.5	17.7	19.1	20.1	20.3	20.5	20.5

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
Evaporating Temperature 0°C								
C-0X	0.44	0.55	0.62	0.66	0.69	0.70	0.70	0.69
C-00	0.96	1.1	1.3	1.4	1.4	1.5	1.5	1.4
C-01	1.8	2.3	2.5	2.7	2.8	2.8	2.9	2.9
C-02	2.7	3.5	4.1	4.3	4.6	4.7	4.8	4.8
C-03	4.5	5.9	6.7	7.4	7.7	7.8	7.9	7.9
C-04	7.5	9.9	11.2	12.2	12.8	13.0	13.2	13.3
C-05	9.2	11.9	13.6	14.7	15.5	15.8	15.9	15.9
C-06	10.1	13.1	14.9	16.2	17.0	17.3	17.5	17.5

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
Evaporating Temperature -10°C								
C-0X	0.42	0.53	0.59	0.63	0.66	0.68	0.68	0.67
C-00	0.90	1.1	1.2	1.3	1.3	1.4	1.4	1.3
C-01	1.5	1.8	2.1	2.3	2.3	2.3	2.4	2.4
C-02	2.3	3.0	3.3	3.6	3.8	3.9	4.0	3.9
C-03	3.8	4.9	5.6	6.0	6.4	6.6	6.7	6.5
C-04	6.3	8.2	9.2	10.0	10.6	10.8	11.0	10.9
C-05	7.7	9.8	11.1	12.0	12.8	13.0	13.2	13.1
C-06	8.6	10.8	12.2	13.2	14.0	14.3	14.5	14.4

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
Evaporating Temperature -20°C								
C-0X	-	0.50	0.56	0.59	0.62	0.63	0.65	0.63
C-00	-	1.0	1.1	1.2	1.2	1.3	1.3	1.2
C-01	-	1.5	1.7	1.8	2.0	2.0	2.0	2.0
C-02	-	2.4	2.7	2.9	3.1	3.1	3.2	3.1
C-03	-	4.0	4.5	4.9	5.1	5.2	5.3	5.2
C-04	-	6.6	7.5	8.1	8.5	8.6	8.8	8.7
C-05	-	8.1	9.1	9.8	10.2	10.5	10.6	10.5
C-06	-	8.8	10.0	10.7	11.3	11.4	11.7	11.6

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
Evaporating Temperature -30°C								
C-0X	-	0.45	0.50	0.54	0.56	0.58	0.58	0.58
C-00	-	0.89	1.0	1.1	1.1	1.2	1.1	1.1
C-01	-	1.3	1.4	1.5	1.6	1.5	1.6	1.6
C-02	-	1.9	2.2	2.7	2.5	2.5	2.5	2.5
C-03	-	3.3	3.7	3.9	4.0	4.1	4.2	4.2
C-04	-	5.3	6.1	6.4	6.7	6.8	7.0	6.9
C-05	-	6.5	7.3	7.7	8.1	8.3	8.4	8.4
C-06	-	7.2	8.0	8.6	8.9	9.1	9.3	9.2

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
Evaporating Temperature -40°C								
C-0X	-	-	0.46	0.48	0.51	0.53	0.53	0.54
C-00	-	-	0.88	0.92	1.0	1.0	1.0	1.0
C-01	-	-	1.2	1.3	1.2	1.3	1.3	1.4
C-02	-	-	1.7	1.9	1.9	1.9	2.0	1.9
C-03	-	-	2.9	3.1	3.2	3.3	3.3	3.3
C-04	-	-	4.8	5.0	5.2	5.3	5.4	5.4
C-05	-	-	5.8	6.2	6.3	6.6	6.6	6.6
C-06	-	-	6.4	6.8	7.0	7.2	7.3	7.3

Correction Factor, (CF) Liquid Temperature

TEV corrected capacity = Required Evaporator Capacity / Correction Factor, (CF), for Subcooling.

Subcooling	4°K	10°K	15°K	20°K	25°K	30°K	35°K	40°K	45°K	50°K
Correction Factor	1.00	1.08	1.14	1.21	1.27	1.33	1.39	1.45	1.51	1.57

Selection Tables

R134a/R513A (kW)

Orifice Number	Pressure Drop Across the Valve (bar)				
	2	4	6	8	10
Evaporating Temperature +10°C					
C-0X	0.37	0.47	0.52	0.55	0.56
C-00	0.78	0.95	1.0	1.1	1.1
C-01	1.4	1.7	1.9	2.0	2.0
C-02	2.0	2.6	3.0	3.1	3.2
C-03	3.4	4.4	5.0	5.2	5.4
C-04	5.7	7.3	8.2	8.7	9.0
C-05	6.9	8.9	9.9	10.8	10.9
C-06	7.6	9.7	10.9	11.5	11.9

Orifice Number	Pressure Drop Across the Valve (bar)				
	2	4	6	8	10
Evaporating Temperature 0°C					
C-0X	0.36	0.46	0.51	0.52	0.54
C-00	0.72	0.86	0.95	1.0	1.0
C-01	1.2	1.4	1.5	1.6	1.6
C-02	1.7	2.2	2.4	2.6	2.6
C-03	2.8	3.7	4.1	4.3	4.4
C-04	4.7	6.0	6.7	7.1	7.3
C-05	5.7	7.3	8.1	8.6	8.8
C-06	6.3	8.0	9.0	9.5	9.7

Orifice Number	Pressure Drop Across the Valve (bar)				
	2	4	6	8	10
Evaporating Temperature -10°C					
C-0X	0.33	0.42	0.47	0.48	0.48
C-00	0.65	0.77	0.85	0.89	0.90
C-01	0.90	1.2	1.3	1.4	1.4
C-02	1.4	1.8	2.0	2.1	2.1
C-03	2.3	2.9	3.3	3.5	3.6
C-04	3.8	4.8	5.3	5.7	5.9
C-05	4.6	5.8	6.5	6.9	7.1
C-06	5.1	6.4	7.2	7.6	7.7

Orifice Number	Pressure Drop Across the Valve (bar)				
	2	4	6	8	10
Evaporating Temperature -20°C					
C-0X	0.31	0.39	0.43	0.45	0.46
C-00	0.58	0.68	0.76	0.79	0.80
C-01	0.73	0.90	1.0	1.1	1.1
C-02	1.1	1.4	1.5	1.6	1.7
C-03	1.9	2.3	2.6	2.7	2.8
C-04	3.0	3.8	4.2	4.5	4.6
C-05	3.7	4.6	5.1	5.4	5.5
C-06	4.1	5.0	5.6	5.9	6.1

Orifice Number	Pressure Drop Across the Valve (bar)				
	2	4	6	8	10
Evaporating Temperature -30°C					
C-0X	0.28	0.35	0.39	0.41	0.42
C-00	0.53	0.61	0.67	0.70	0.70
C-01	0.59	0.72	0.79	0.84	0.86
C-02	0.90	1.1	1.2	1.3	1.3
C-03	1.5	1.9	2.1	2.2	2.2
C-04	2.4	3.0	3.4	3.5	3.6
C-05	3.0	3.6	4.0	4.2	4.3
C-06	3.2	4.0	4.4	4.7	4.8

Orifice Number	Pressure Drop Across the Valve (bar)				
	2	4	6	8	10
Evaporating Temperature -40°C					
C-0X	0.25	0.31	0.35	0.36	0.37
C-00	0.48	0.55	0.59	0.62	0.63
C-01	0.49	0.59	0.65	0.68	0.69
C-02	0.74	0.89	1.0	1.0	1.0
C-03	1.2	1.5	1.7	1.8	1.8
C-04	2.0	2.4	2.7	2.8	2.8
C-05	2.4	2.9	3.2	3.5	3.5
C-06	2.7	3.2	3.6	3.8	3.9

Correction Factor, (CF) Liquid Temperature

TEV corrected capacity = Required Evaporator Capacity / Correction Factor, (CF), for Subcooling.

Subcooling	4°K	10°K	15°K	20°K	25°K	30°K	35°K	40°K	45°K	50°K
Correction Factor	1.00	1.08	1.13	1.19	1.25	1.31	1.37	1.42	1.48	1.54

Selection Tables

R404A/R507 (kW)

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
Evaporating Temperature +10°C								
C-0X	0.31	0.39	0.44	0.46	0.47	0.47	0.46	0.45
C-00	0.74	0.90	1.0	1.0	1.1	1.1	1.0	1.0
C-01	1.5	1.9	2.1	2.2	2.3	2.3	2.2	2.1
C-02	2.3	3.0	3.4	3.6	3.7	3.7	3.7	3.6
C-03	3.9	5.1	5.6	6.0	6.2	6.3	6.2	6.0
C-04	6.5	8.5	9.5	10.2	10.5	10.5	10.3	10.1
C-05	7.9	10.2	11.4	12.2	12.5	12.6	12.3	12.0
C-06	8.7	11.3	12.6	13.4	13.8	13.8	13.6	13.2

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
Evaporating Temperature 0°C								
C-0X	0.33	0.41	0.45	0.46	0.47	0.47	0.47	0.45
C-00	0.75	0.88	1.0	1.0	1.0	1.0	1.0	1.0
C-01	1.4	1.7	1.8	1.9	2.0	2.0	2.0	1.9
C-02	2.1	2.6	3.0	3.1	3.2	3.3	3.2	3.1
C-03	3.5	4.4	5.0	5.2	5.4	5.4	5.3	5.2
C-04	5.8	7.4	8.3	8.7	9.0	9.0	8.9	8.7
C-05	7.0	8.9	10.0	10.5	10.8	10.9	10.8	10.4
C-06	7.7	9.8	11.0	11.6	11.9	12.0	11.8	11.4

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
Evaporating Temperature -10°C								
C-0X	0.33	0.41	0.44	0.46	0.46	0.46	0.45	0.45
C-00	0.72	0.84	0.90	0.92	1.0	1.0	0.94	0.91
C-01	1.2	1.4	1.5	1.6	1.6	1.7	1.6	1.6
C-02	1.8	2.2	2.5	2.6	2.7	2.7	2.7	2.6
C-03	2.9	3.7	4.2	4.4	4.5	4.5	4.5	4.4
C-04	4.9	6.3	6.9	7.3	7.4	7.5	7.4	7.2
C-05	5.9	7.6	8.4	8.8	9.0	9.1	9.0	8.7
C-06	6.6	8.4	9.3	9.7	9.9	10.0	9.9	9.6

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
Evaporating Temperature -20°C								
C-0X	–	0.39	0.42	0.44	0.43	0.44	0.43	0.42
C-00	–	0.77	0.83	0.85	0.87	0.87	0.87	0.84
C-01	–	1.2	1.4	1.4	1.4	1.4	1.4	1.4
C-02	–	1.9	2.0	2.1	2.2	2.2	2.2	2.1
C-03	–	3.1	3.5	3.6	3.7	3.7	3.7	3.6
C-04	–	5.1	5.7	5.9	6.1	6.1	6.0	5.9
C-05	–	6.2	6.9	7.2	7.3	7.3	7.2	7.1
C-06	–	6.8	7.6	7.9	8.0	8.0	7.9	7.7

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
Evaporating Temperature -30°C								
C-0X	–	–	0.39	0.41	0.40	0.41	0.40	0.39
C-00	–	–	0.74	0.77	0.77	0.77	0.76	0.74
C-01	–	–	1.1	1.1	1.1	1.1	1.1	1.1
C-02	–	–	1.6	1.7	1.7	1.7	1.7	1.6
C-03	–	–	2.7	2.8	2.9	2.9	2.8	2.7
C-04	–	–	4.5	4.7	4.7	4.7	4.7	4.6
C-05	–	–	5.5	5.7	5.7	5.7	5.7	5.5
C-06	–	–	6.0	6.2	6.3	6.3	6.2	6.1

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
Evaporating Temperature -40°C								
C-0X	–	–	0.35	0.36	0.36	0.36	0.35	0.35
C-00	–	–	0.66	0.67	0.68	0.67	0.66	0.65
C-01	–	–	0.83	0.86	0.87	0.86	0.85	0.82
C-02	–	–	1.3	1.3	1.3	1.3	1.3	1.2
C-03	–	–	2.2	2.2	2.2	2.2	2.2	2.1
C-04	–	–	3.5	3.7	3.7	3.7	3.6	3.5
C-05	–	–	4.3	4.4	4.5	4.4	4.4	4.2
C-06	–	–	4.7	4.9	5.0	4.9	4.8	4.7

Correction Factor, (CF) Liquid Temperature

TEV corrected capacity = Required Evaporator Capacity / Correction Factor, (CF), for Subcooling.

Subcooling	4°K	10°K	15°K	20°K	25°K	30°K	35°K	40°K	45°K	50°K
Correction Factor	1.00	1.10	1.20	1.29	1.37	1.46	1.54	1.63	1.70	1.78

Selection Tables

R22/R448A/R449A (kW)

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
Evaporating temperature +10°C								
C-0X	0.41	0.53	0.61	0.66	0.69	0.72	0.72	0.74
C-00	1.0	1.2	1.3	1.4	1.5	1.5	1.5	1.7
C-01	2.0	2.5	2.9	3.1	3.2	3.3	3.4	3.4
C-02	3.0	4.0	4.7	5.1	5.4	5.6	5.8	5.8
C-03	5.1	6.7	7.8	8.5	9.1	9.4	9.6	9.7
C-04	8.5	11.3	13.1	14.5	15.2	15.7	16.1	16.2
C-05	10.2	13.6	15.7	17.2	18.3	18.9	19.3	19.5
C-06	11.3	15.0	17.4	18.9	20.1	20.8	21.2	21.3

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
Evaporating temperature 0°C								
C-0X	0.41	0.53	0.61	0.65	0.69	0.72	0.73	0.73
C-00	0.92	1.1	1.3	1.4	1.4	1.5	1.5	1.5
C-01	1.7	2.2	2.4	2.7	2.8	2.9	3.0	3.0
C-02	2.6	3.4	4.0	4.3	4.6	4.8	4.9	5.0
C-03	4.3	5.7	6.7	7.3	7.7	8.0	8.2	8.2
C-04	7.2	9.5	11.0	12.1	12.8	13.3	13.6	13.8
C-05	8.8	11.6	13.3	14.6	15.5	16.1	16.4	16.6
C-06	9.7	12.8	14.7	16.0	17.0	17.6	18.0	18.2

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
Evaporating temperature +10°C								
C-0X	0.41	0.52	0.58	0.63	0.66	0.69	0.70	0.70
C-00	0.87	1.1	1.2	1.3	1.3	1.4	1.4	1.4
C-01	1.4	1.8	2.1	2.3	2.3	2.4	2.5	2.5
C-02	2.2	2.9	3.3	3.6	3.8	4.0	4.1	4.1
C-03	3.7	4.8	5.5	6.0	6.4	6.7	6.8	6.8
C-04	6.1	8.0	9.1	10.0	10.6	11.0	11.3	11.4
C-05	7.4	9.6	11.0	12.0	12.8	13.3	13.6	13.8
C-06	8.2	10.6	12.2	13.2	14.0	14.6	14.9	15.1

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
Evaporating Temperature -20°C								
C-0X	-	0.48	0.55	0.59	0.63	0.65	0.67	0.67
C-00	-	1.0	1.1	1.2	1.2	1.3	1.3	1.3
C-01	-	1.5	1.7	1.8	2.0	2.1	2.1	2.1
C-02	-	2.4	2.7	2.9	3.1	3.2	3.3	3.3
C-03	-	3.9	4.5	4.9	5.2	5.4	5.5	5.6
C-04	-	6.5	7.4	8.1	8.6	8.9	9.1	9.2
C-05	-	7.9	9.0	9.8	10.3	10.8	11.0	11.2
C-06	-	8.6	9.9	10.7	11.3	11.8	12.2	12.3

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
Evaporating Temperature -30°C								
C-0X	-	0.44	0.50	0.54	0.57	0.61	0.62	0.63
C-00	-	0.87	1.0	1.1	1.1	1.2	1.2	1.2
C-01	-	1.3	1.4	1.5	1.6	1.6	1.7	1.7
C-02	-	1.9	2.2	2.7	2.5	2.6	2.6	2.7
C-03	-	3.2	3.7	3.9	4.1	4.3	4.4	4.5
C-04	-	5.2	6.0	6.5	6.8	7.1	7.3	7.4
C-05	-	6.4	7.2	7.8	8.3	8.6	8.8	9.0
C-06	-	7.0	7.9	8.6	9.1	9.5	9.7	9.9

Orifice Number	Pressure Drop Across the Valve (bar)							
	2	4	6	8	10	12	14	16
Evaporating Temperature -40°C								
C-0X	-	-	0.46	0.50	0.53	0.55	0.57	0.58
C-00	-	-	0.88	0.95	1.0	1.0	1.1	1.1
C-01	-	-	1.2	1.3	1.3	1.4	1.4	1.4
C-02	-	-	1.7	1.9	2.0	2.0	2.1	2.1
C-03	-	-	2.9	3.2	3.3	3.5	3.6	3.6
C-04	-	-	4.8	5.1	5.4	5.7	5.9	6.0
C-05	-	-	5.8	6.3	6.6	6.9	7.1	7.2
C-06	-	-	6.4	6.9	7.3	7.6	7.8	7.9

Correction Factor, (CF) Liquid Temperature

TEV corrected capacity = Required Evaporator Capacity / Correction Factor, (CF), for Subcooling.

Subcooling	4°K	10°K	15°K	20°K	25°K	30°K	35°K	40°K	45°K	50°K
Correction Factor	1.00	1.06	1.11	1.15	1.20	1.25	1.30	1.35	1.39	1.44

Parker Worldwide

United Arab Emirates Middle East

Sarkis OHANNESSIAN
Tel +961 3334622
sohannessian@parker.com

Germany, Austria and German speaking part of Switzerland

Francesco GALANTE
Tel +49 (0) 175 5756 032
francesco.galante@parker.com

Spain and Portugal

Alberto PEÑA
Tel +34 609 153 154
alberto.pena@parker.com

France, Belgium, French speaking part of Switzerland

Goska WARNECK
Tel + 33 (0)6 73 89 36 08
gwarneck@parker.com

Italy, Greece, Malta, Cyprus Italian speaking part of Switzerland

Andrea BRAGA
Tel +39 334 6944386
abraga@parker.com

Baltic Countries, Eastern and Central Europe, Africa

Eliane EMERIT-BONNOT
Tel +33 (0)6 73 89 36 01
ebonnot@parker.com

Turkey

parker.turkey@parker.com

UK, Northern Europe

Kenny ADAMSON
Tel +44 77853 71229
kadamson@parker.com

Customer Service: Parker Hannifin Ltd

*Instrumentation Group
Refrigeration and
Air Conditioning Europe*
Manvers House
Office 21
Pioneer Close
Wath Upon Dearne
Rotherham S63 7JZ
United Kingdom
Tel +44 (0) 1709 774600
Fax +44 (0) 1709 774601
racecustomerservice@parker.com
www.parker.com/race

Your local authorized Parker distributor

