

## Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

EMERSON Take-apart Thermo™-Expansion Valves are designed for air conditioning, chillers, rooftops, close control, A/C transportation, heat pumps, industrial cooling process, refrigeration and numerous special applications. The take-apart expansion valves are ideal for those applications requiring flexibility in selection of capacity and excellent stable superheat control under varying operating conditions such as high and low head pressure, wide load variation and partial load down to 10%. Valves with XB power elements can be applied in systems with Copeland Digital Scroll™ Compressors.

### Features

- Take-apart design consists of power element, cage and flange
- Large diaphragm eliminates disturbances to the valve and provides smoother and consistent valve control over wide range of operation
- Constant superheat across a wide application range
- ZZ-Series: expansion valves for evaporating temperature down to -100°C
- L / 935-Series: desuperheating of two stage compressors or hot gas bypass applications



Selection table T-Series

Series	Capacity R448A/R449A		Capacity R450A		Capacity R513A		Capacity R1234ze		Orifice Type	Power Element
	Type	[kW]	Type	[kW]	Type	[kW]	Type	[kW]		
TCLE-	25BW	1.9	20DW	1.3	20CW	1.3	20EW	1.1	X22440-B1B	XB1019...1B
	100BW	3.7	50DW	2.5	50CW	2.6	50EW	2.2	X22440-B2B	
	200BW	7.9	100DW	5.4	100CW	5.5	120EW	4.8	X22440-B3B	
	250BW	11.9	150DW	8.1	150CW	8.3	150EW	7.2	X22440-B3.5B	
	300BW	17.3	200DW	11.8	200CW	12.1	200EW	10.5	X22440-B4B	
	500BW	22.1	250DW	15.1	250CW	15.5	300EW	13.4	X22440-B5B	
	800BW	30.3	400DW	20.7	400CW	21.2	450EW	18.4	X22440-B6B	
	1100BW	41.0	500DW	28.0	500CW	28.7	600EW	24.8	X22440-B7B	
	1300BW	47.7	600DW	32.6	600CW	33.4	700EW	28.9	X22440-B8B	
TJRE-	15BW	58	8DW	40	8CW	40	9EW	35	X11873-B4B	XB1019...1B
	18BW	74	9DW	50	9CW	52	10EW	45	X11873-B5B	
TERE	23BW	91	11DW	62	11CW	64	13EW	55	X9117-B6B	XC726...2B
	26BW	104	13DW	71	13CW	73	15EW	63	X9117-B7B	
	35BW	143	17DW	98	17CW	100	20EW	86	X9117-B8B	
	44BW	174	22DW	119	22CW	121	24EW	105	X9117-B9B	
TIRE-	60BW	222	31DW	152	31CW	156	35EW	135	X9166-B10B	
THRE-	78BW	252	38DW	173	38CW	177	43EW	153	X9144-B11B	
	98BW	301	47DW	206	47CW	211	53EW	183	X9144-B13B	

Note 1: For detailed information see flange table and connections sizes at the end of T-, L-, 935-, & ZZ Series chapter.

Note 2: Products are classified based on fluid group 2 (non-flammable) according European pressure equipment directive.

For selection of other operating condition, please use quick selection tables in the next pages or Controls Navigator selection program.

# Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

The nominal capacity is based on the following conditions:

Refrigerant	Evaporating temperature [°C]	Condensing temperature [°C]	Subcooling
R448A, R449A	+4°C dew point	+38°C bubble / +43°C dew point	1K
R450A		+38°C bubble / +38.6°C dew point	
R513A, R1234ze		+38°C bubble / +38°C dew point	

## Important consideration

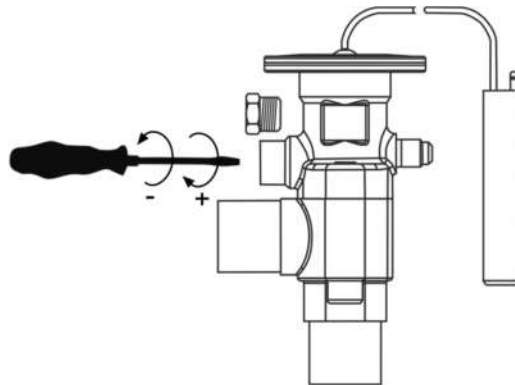
In general, take a part valves are based on three different major parts i.e. power element, cage assembly and flange. It is important to consider the combination of power element with cage assembly as follows:

Valve series	Power element		Cage assembly type	Readjustment of cage assembly
	Type	Charge code		
T-series	XB-1019-...	BW, DW, CW, EW	X22440-B1B....B8B and X11873-B4B....B5B	Factory setting
		SW, MW		Filed setting is required
	XC-726-...	BW, DW, CW, EW	X9117-B6B....B13B	Factory setting
		SW, MW		Filed setting is required
ZZ-series	XC-726-...	BW, SW	X10-B1B...B7B	Filed setting is required
LL-series	XB-1019-...	CL, GL, UL	X22440-B1B....B8B and X11873-B4B....B5B	Factory setting
	XC726-...		X9117-B6B....B10B	
935-series	XB-1019-...	UL, KL, YL, JL, LL	X10-A/B/C01 A/B/C07	Factory setting

Note: BW, DW, CW, EW charges upon request and minimum 100 pieces order quantity.

The following table/graphic is a guideline for readjustment

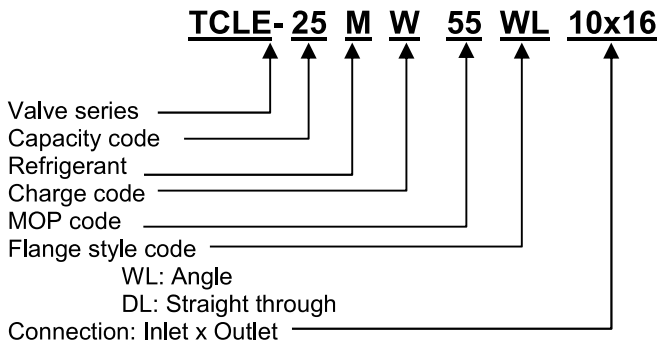
Evaporating temperature [°C]	HFO Power element							
	XB-1019-MW...		XB-1019-SW...		XC726-MW...		XC726-SW...	
	System refrigerant							
	R450A	R513A	R1234ze	R448A/R449A	R450A	R513A	R1234ze	R448A/R449A
Number of turn				Number of turn				
-40	1.5	-1.5	3	6.5	2	-2	3.5	8.5
-35	2	-2	3.5	8	2.5	-2.5	5	10
-30	2.5	-2	4.5	9	3	-3	6	12
-25	3	-3	5.5	10.5	4	-3.5	7.5	13.5
-20	4	-3	7	12	5	-4	9.5	15.5
-15	4.5	-3.5	8.5	13.5	6	-5	11.5	18
-10	5.5	-4	10	15	7.5	-5.5	13.5	20
-5	6.5	-5	12.5	17	9	-6.5	16.5	-
0	8	-5.5	15	19	10.5	-7	-	-
5	9.5	-6	18	-	12.5	-8	-	-
10	11	-6.5	-	-	14.5	-9	-	-



Note: Number of turns in direction of clockwise as positive number and in direction of counterclockwise as negative number.

# Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

## Type designation T-Series



## Selection table ZZ Series

Series	R448A/ R449A		Orifice	Connection Standard-Flange, Angle Solder/ODF		Power Element
	Type	Nominal Capacity [kW]		[mm]	[inch]	
ZZCE	1BW	1.7	X 10-B01	C501 – 5 mm 10 X 16	C501 - 5 3/8" X 5/8"	XC726 ... 2B
	2BW	3.7	X 10-B02			
	3BW	6.2	X 10-B03			
	5BW	9.8	X 10-B04	C501 – 7 mm 12 X 16	C501 - 7 1/2" X 5/8"	
	6BW	14.8	X 10-B05			
	10BW	19.8	X 10-B06	A 576 mm 16 X 22 (22 X 28 ODM)	A 576 5/8" X 7/8" (7/8" X 1 1/8" ODM)	
	12BW	24.7	X 10-B07			

**Note 1:** To withstand stress at extremely low temperatures, ZZ-Series valves feature bronze bolts

**Note 2:** See flange table and connection sizes at the end of T-, L-, 935-, & ZZ Series chapter.

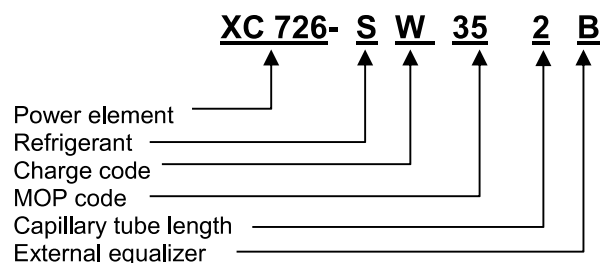
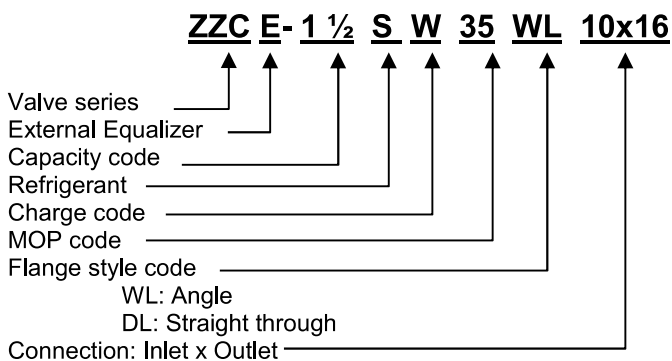
**Note 3:** Products are classified based on fluid group 2 (non-flammable) according European pressure equipment directive.

The nominal capacity is based on the following conditions:

Refrigerant	Evaporating temperature [°C]	Condensing temperature [°C]	Subcooling
R448A, R449A	-40°C dew point	+25°C bubble / +30°C dew point	1K

For selection of other operating condition, please use quick selection tables in the next pages or Controls Navigator selection program.

## Type designation ZZ-Series



# Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

**TCLE: Quick selection** (included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature [°C]	R448A/R449A													Cage assembly type
	Capacity [kW]													
	Evaporating temperature [°C]													
	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	
60 bubble/ 63.4 dew point	1.7	1.7	1.8	1.8	1.7	1.7	1.5	1.3	1.1	0.9	0.7	0.6	0.5	X22440-B1B
	3.4	3.4	3.4	3.4	3.4	3.4	3.0	2.5	2.1	1.7	1.3	1.1	0.9	X22440-B2B
	7.2	7.3	7.3	7.3	7.2	7.2	6.3	5.4	4.4	3.6	2.9	2.3	1.9	X22440-B3B
	10.8	10.9	11.0	11.0	10.9	10.8	9.6	8.1	6.6	5.4	4.3	3.5	2.8	X22440-B3.5B
	15.7	15.9	16.0	16.0	15.9	15.7	13.9	11.7	9.6	7.8	6.3	5.1	4.1	X22440-B4B
	20.2	20.4	20.5	20.5	20.4	20.2	17.8	15.1	12.4	10.0	8.1	6.5	5.3	X22440-B5B
	27.7	28.0	28.1	28.1	27.9	27.6	24.4	20.6	16.9	13.7	11.0	8.9	7.2	X22440-B6B
	37.4	37.8	38.0	37.9	37.7	37.3	33.0	27.9	22.9	18.5	14.9	12.0	9.7	X22440-B7B
	43.5	44.0	44.2	44.1	43.9	43.4	38.4	32.4	26.6	21.5	17.3	14.0	11.3	X22440-B8B
50 bubble/ 54 dew point	1.8	1.8	1.8	1.8	1.9	1.9	1.7	1.4	1.2	0.9	0.8	0.6	0.5	X22440-B1B
	3.4	3.5	3.6	3.6	3.6	3.6	3.2	2.7	2.3	1.8	1.5	1.2	1.0	X22440-B2B
	7.3	7.5	7.6	7.7	7.7	7.7	6.9	5.9	4.8	3.9	3.2	2.6	2.1	X22440-B3B
	11.0	11.3	11.5	11.6	11.6	11.6	10.3	8.8	7.3	5.9	4.8	3.9	3.2	X22440-B3.5B
	16.0	16.4	16.7	16.8	16.9	16.9	15.0	12.8	10.6	8.6	7.0	5.7	4.6	X22440-B4B
	20.5	21.1	21.4	21.6	21.7	21.7	19.3	16.4	13.6	11.1	9.0	7.3	6.0	X22440-B5B
	28.1	28.8	29.3	29.6	29.7	29.7	26.4	22.5	18.6	15.2	12.3	10.0	8.2	X22440-B6B
	38.0	39.0	39.6	40.0	40.2	40.1	35.7	30.4	25.2	20.5	16.6	13.5	11.0	X22440-B7B
	44.2	45.3	46.1	46.5	46.7	46.6	41.6	35.4	29.3	23.9	19.4	15.7	12.8	X22440-B8B
40 bubble/ 44.5 dew point	1.6	1.7	1.8	1.8	1.9	1.9	1.7	1.4	1.2	1.0	0.8	0.7	0.5	X22440-B1B
	3.2	3.4	3.5	3.6	3.6	3.6	3.3	2.8	2.3	1.9	1.6	1.3	1.1	X22440-B2B
	6.8	7.2	7.4	7.6	7.7	7.8	7.0	6.0	5.0	4.1	3.3	2.7	2.2	X22440-B3B
	10.3	10.8	11.2	11.4	11.6	11.7	10.5	9.0	7.5	6.2	5.0	4.1	3.4	X22440-B3.5B
	15.0	15.7	16.2	16.6	16.9	17.0	15.3	13.1	10.9	9.0	7.3	6.0	4.9	X22440-B4B
	19.2	20.1	20.8	21.3	21.7	21.9	19.6	16.9	14.0	11.5	9.4	7.7	6.3	X22440-B5B
	26.3	27.6	28.5	29.2	29.7	29.9	26.9	23.1	19.2	15.8	12.9	10.5	8.6	X22440-B6B
	35.5	37.3	38.6	39.5	40.1	40.5	36.4	31.2	26.0	21.3	17.4	14.2	11.7	X22440-B7B
	41.3	43.4	44.9	46.0	46.7	47.1	42.3	36.3	30.2	24.8	20.2	16.6	13.6	X22440-B8B
30 bubble/ 33.5 dew point	1.4	1.5	1.6	1.7	1.7	1.8	1.6	1.4	1.2	1.0	0.8	0.7	0.5	X22440-B1B
	2.7	2.9	3.1	3.3	3.4	3.5	3.2	2.7	2.3	1.9	1.6	1.3	1.1	X22440-B2B
	5.7	6.3	6.7	7.0	7.3	7.4	6.8	5.9	4.9	4.1	3.3	2.7	2.3	X22440-B3B
	8.6	9.5	10.1	10.6	11.0	11.2	10.2	8.8	7.4	6.1	5.0	4.1	3.4	X22440-B3.5B
	12.5	13.7	14.7	15.4	15.9	16.3	14.8	12.8	10.8	8.9	7.3	6.0	5.0	X22440-B4B
	16.0	17.6	18.9	19.8	20.4	20.9	19.0	16.5	13.8	11.4	9.4	7.7	6.4	X22440-B5B
	21.9	24.2	25.8	27.1	28.0	28.6	26.0	22.6	18.9	15.6	12.9	10.6	8.7	X22440-B6B
	29.6	32.7	34.9	36.6	37.9	38.7	35.2	30.5	25.6	21.2	17.4	14.3	11.8	X22440-B7B
	34.4	38.0	40.6	42.6	44.0	45.0	40.9	35.5	29.8	24.6	20.2	16.6	13.7	X22440-B8B
20 bubble/ 25.3 dew point	1.1	1.3	1.4	1.5	1.5	1.6	1.5	1.3	1.1	0.9	0.8	0.6	0.5	X22440-B1B
	2.2	2.5	2.8	3.0	3.1	2.9	2.6	2.2	1.8	1.5	1.2	1.0	X22440-B2B	
	4.6	5.4	6.0	6.4	6.7	6.2	5.5	4.6	3.9	3.2	2.6	2.2	X22440-B3B	
	6.9	8.1	9.0	9.6	10.1	9.3	8.2	7.0	5.8	4.8	4.0	3.3	X22440-B3.5B	
	10.1	11.8	13.1	14.0	14.7	13.6	11.9	10.1	8.5	7.0	5.8	4.8	X22440-B4B	
	12.9	15.2	16.8	18.0	18.8	17.4	15.3	13.0	10.8	9.0	7.4	6.2	X22440-B5B	
	17.7	20.8	23.0	24.6	25.8	23.9	21.0	17.8	14.9	12.3	10.2	8.5	X22440-B6B	
	24.0	28.1	31.1	33.2	34.9	32.3	28.4	24.1	20.1	16.6	13.8	11.4	X22440-B7B	
	27.9	32.7	36.1	38.7	40.5	37.5	33.0	28.0	23.4	19.3	16.0	13.3	X22440-B8B	

# Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

**TJRE/TERE/TIRE/THRE: Quick selection** (included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature [°C]	R448A/R449A Capacity [kW]												Cage assembly type	
	Evaporating temperature [°C]													
	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40		-45
60 bubble/ 63.4 dew point	53	53	54	54	53	53	47	39	32	26	21	17	14	X11873-B4B
	67	68	68	68	68	67	59	50	41	33	27	22	18	X11873-B5B
	83	84	84	84	83	83	73	62	51	41	33	27	22	X9117-B6B
	95	96	96	96	95	94	84	71	58	47	38	30	25	X9117-B7B
	130	132	132	132	131	130	115	97	80	64	52	42	34	X9117-B8B
	158	160	161	161	160	158	140	118	97	78	63	51	41	X9117-B9B
	203	205	206	206	205	203	179	151	124	100	81	65	53	X9166-B10B
	230	233	234	233	232	230	203	172	141	114	92	74	60	X9144-B11B
	275	278	279	279	277	274	242	205	168	136	110	88	72	X9144-B13B
50 bubble/ 54 dew point	54	55	56	56	57	57	50	43	36	29	23	19	16	X11873-B4B
	68	70	71	72	72	72	64	55	45	37	30	24	20	X11873-B5B
	84	86	88	89	89	89	79	67	56	45	37	30	24	X9117-B6B
	96	99	100	101	102	101	90	77	64	52	42	34	28	X9117-B7B
	132	136	138	139	140	140	124	106	88	71	58	47	38	X9117-B8B
	161	165	168	169	170	170	151	129	107	87	70	57	47	X9117-B9B
	206	212	215	217	218	218	194	165	137	111	90	73	60	X9166-B10B
	234	240	244	246	247	247	220	187	155	126	102	83	68	X9144-B11B
	279	286	291	294	295	295	263	224	185	151	122	99	81	X9144-B13B
40 bubble/ 44.5 dew point	50	53	54	56	57	57	51	44	37	30	25	20	16	X11873-B4B
	64	67	69	71	72	73	65	56	47	38	31	26	21	X11873-B5B
	79	83	85	87	89	90	81	69	58	47	39	32	26	X9117-B6B
	90	94	98	100	102	102	92	79	66	54	44	36	30	X9117-B7B
	124	130	134	137	140	141	127	109	90	74	61	50	41	X9117-B8B
	150	158	163	167	170	171	154	132	110	90	74	60	49	X9117-B9B
	193	202	209	214	218	220	197	169	141	116	94	77	63	X9166-B10B
	219	230	238	243	247	249	224	192	160	131	107	88	72	X9144-B11B
	261	274	284	290	295	297	267	229	191	157	128	105	86	X9144-B13B
30 bubble/ 33.5 dew point	42	46	49	52	53	55	50	43	36	30	25	20	17	X11873-B4B
	53	59	63	66	68	70	63	55	46	38	31	26	21	X11873-B5B
	66	72	77	81	84	86	78	68	57	47	38	32	26	X9117-B6B
	75	83	88	93	96	98	89	77	65	54	44	36	30	X9117-B7B
	103	114	122	127	132	135	122	106	89	74	60	50	41	X9117-B8B
	125	138	148	155	160	164	149	129	108	90	74	60	50	X9117-B9B
	161	177	189	199	205	210	191	166	139	115	94	78	64	X9166-B10B
	182	201	215	225	233	238	217	188	158	130	107	88	73	X9144-B11B
	218	240	257	269	278	284	259	224	188	155	128	105	87	X9144-B13B
20 bubble/ 25.3 dew point		34	40	44	47	49	46	40	34	28	23	19	16	X11873-B4B
		43	51	56	60	63	58	51	43	36	30	25	21	X11873-B5B
		53	62	69	74	77	71	63	53	44	37	30	25	X9117-B6B
		61	71	79	84	88	82	72	61	51	42	35	29	X9117-B7B
		83	98	108	116	121	112	99	84	70	58	48	40	X9117-B8B
		101	119	131	141	148	137	120	102	85	70	58	48	X9117-B9B
		130	152	168	180	189	175	154	131	109	90	75	62	X9166-B10B
		148	173	191	205	215	199	175	148	124	102	85	70	X9144-B11B
	176	206	228	244	256	237	209	177	148	122	101	84	X9144-B13B	
10 bubble/ 15.5 dew point				30	36	40	39	35	30	26	21	18	15	X11873-B4B
				39	46	51	49	45	39	33	27	23	19	X11873-B5B
				48	57	63	61	55	47	40	34	28	24	X9117-B6B
				54	65	72	69	63	54	46	38	32	27	X9117-B7B
				75	89	99	95	86	75	63	53	44	37	X9117-B8B
				91	108	121	116	105	91	77	64	54	45	X9117-B9B
				117	139	155	149	134	116	98	82	69	58	X9166-B10B
				132	158	175	169	152	132	112	94	78	65	X9144-B11B
			158	188	209	202	182	158	133	112	93	78	X9144-B13B	

# Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

TCLE: Quick selection (included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature [°C]	R450A Capacity [kW]												Cage assembly type	
	Evaporating temperature [°C]													
	30	25	20	15	10	5	0	-5	-10	-15	-20	-25		-30
70	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.0	0.8	0.7	0.5	X22440-B1B
	2.4	2.5	2.5	2.5	2.5	2.4	2.4	2.3	2.3	2.0	1.6	1.3	1.0	X22440-B2B
	5.2	5.3	5.3	5.3	5.3	5.2	5.1	5.0	4.9	4.3	3.5	2.7	2.1	X22440-B3B
	7.9	8.0	8.0	8.0	7.9	7.8	7.7	7.5	7.3	6.4	5.3	4.1	3.2	X22440-B3.5B
	11.4	11.6	11.7	11.6	11.5	11.4	11.2	10.9	10.6	9.3	7.7	6.0	4.6	X22440-B4B
	14.7	14.9	15.0	14.9	14.8	14.6	14.3	14.0	13.6	12.0	9.8	7.7	5.9	X22440-B5B
	20.1	20.4	20.5	20.4	20.3	20.0	19.6	19.2	18.7	16.4	13.4	10.6	8.1	X22440-B6B
	27.2	27.5	27.7	27.6	27.4	27.1	26.6	26.0	25.3	22.2	18.2	14.3	11.0	X22440-B7B
	31.6	32.0	32.2	32.2	31.9	31.5	30.9	30.2	29.4	25.8	21.1	16.6	12.8	X22440-B8B
60	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.1	0.9	0.7	0.6	X22440-B1B
	2.3	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.2	1.8	1.4	1.1	X22440-B2B
	4.9	5.1	5.3	5.3	5.4	5.4	5.3	5.3	5.2	4.6	3.8	3.0	2.4	X22440-B3B
	7.4	7.7	7.9	8.0	8.1	8.1	8.0	7.9	7.8	6.9	5.7	4.5	3.5	X22440-B3.5B
	10.8	11.2	11.5	11.7	11.8	11.8	11.7	11.5	11.3	10.1	8.3	6.6	5.2	X22440-B4B
	13.8	14.4	14.8	15.0	15.1	15.1	15.0	14.8	14.6	12.9	10.7	8.5	6.6	X22440-B5B
	18.9	19.7	20.2	20.5	20.7	20.7	20.5	20.3	19.9	17.7	14.6	11.6	9.1	X22440-B6B
	25.6	26.6	27.3	27.8	27.9	27.9	27.7	27.4	26.9	23.9	19.8	15.7	12.2	X22440-B7B
	29.8	31.0	31.8	32.3	32.5	32.5	32.3	31.9	31.3	27.8	23.0	18.3	14.2	X22440-B8B
50	1.0	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.1	0.9	0.8	0.6	X22440-B1B
	1.9	2.1	2.2	2.3	2.4	2.4	2.5	2.5	2.4	2.2	1.8	1.5	1.2	X22440-B2B
	4.1	4.5	4.8	5.0	5.1	5.2	5.2	5.2	5.2	4.7	3.9	3.1	2.5	X22440-B3B
	6.1	6.8	7.2	7.5	7.7	7.9	7.9	7.9	7.9	7.1	5.9	4.7	3.7	X22440-B3.5B
	8.9	9.8	10.5	10.9	11.2	11.4	11.5	11.5	11.4	10.3	8.6	6.9	5.4	X22440-B4B
	11.5	12.6	13.4	14.0	14.4	14.6	14.8	14.8	14.7	13.2	11.0	8.8	6.9	X22440-B5B
	15.7	17.3	18.4	19.2	19.7	20.1	20.2	20.2	20.1	18.0	15.0	12.0	9.5	X22440-B6B
	21.2	23.4	24.9	26.0	26.7	27.1	27.3	27.3	27.1	24.4	20.3	16.3	12.8	X22440-B7B
	24.7	27.2	29.0	30.2	31.0	31.5	31.8	31.8	31.6	28.3	23.7	18.9	14.9	X22440-B8B
40	0.5	0.8	0.9	1.0	1.1	1.1	1.2	1.2	1.2	1.1	0.9	0.7	0.6	X22440-B1B
	1.0	1.5	1.8	2.0	2.1	2.2	2.3	2.3	2.3	2.1	1.8	1.4	1.1	X22440-B2B
	2.2	3.2	3.8	4.2	4.5	4.7	4.9	4.9	5.0	4.5	3.8	3.1	2.4	X22440-B3B
	3.4	4.8	5.7	6.3	6.8	7.1	7.3	7.4	7.5	6.8	5.7	4.6	3.7	X22440-B3.5B
	4.9	7.0	8.3	9.2	9.9	10.3	10.6	10.8	10.9	9.9	8.4	6.8	5.4	X22440-B4B
	6.3	9.0	10.7	11.8	12.7	13.3	13.6	13.9	14.0	12.7	10.7	8.7	6.9	X22440-B5B
	8.6	12.3	14.6	16.2	17.4	18.2	18.7	19.0	19.2	17.4	14.7	11.9	9.4	X22440-B6B
	11.6	16.6	19.7	21.9	23.5	24.5	25.3	25.7	25.9	23.5	19.8	16.0	12.7	X22440-B7B
	13.5	19.3	23.0	25.5	27.3	28.5	29.4	29.9	30.1	27.4	23.1	18.7	14.8	X22440-B8B
30				0.7	0.8	0.9	1.0	1.0	1.1	1.0	0.8	0.7	0.6	X22440-B1B
				1.3	1.6	1.8	1.9	2.0	2.1	1.9	1.6	1.3	1.1	X22440-B2B
				2.7	3.4	3.8	4.1	4.3	4.5	4.1	3.5	2.9	2.3	X22440-B3B
				4.1	5.1	5.7	6.2	6.5	6.7	6.2	5.3	4.3	3.5	X22440-B3.5B
				6.0	7.4	8.3	9.0	9.4	9.7	9.0	7.7	6.3	5.1	X22440-B4B
				7.6	9.5	10.7	11.5	12.1	12.5	11.6	9.9	8.1	6.5	X22440-B5B
				10.5	13.0	14.6	15.8	16.6	17.1	15.8	13.6	11.1	8.9	X22440-B6B
				14.2	17.5	19.8	21.3	22.4	23.2	21.4	18.3	15.0	12.0	X22440-B7B
				16.5	20.4	23.0	24.8	26.1	26.9	24.9	21.3	17.4	14.0	X22440-B8B

# Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

**TCLE: Quick selection** (included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature [°C]	R513A													Cage assembly type
	Capacity [kW]													
	Evaporating temperature [°C]													
	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	
70	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.1	1.1	0.9	0.8	0.6	0.5	X22440-B1B
	2.3	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2.1	1.8	1.5	1.2	0.9	X22440-B2B
	5.0	5.1	5.1	5.0	5.0	4.9	4.7	4.6	4.4	3.9	3.2	2.5	1.9	X22440-B3B
	7.5	7.6	7.6	7.6	7.5	7.3	7.1	6.9	6.7	5.9	4.8	3.8	2.9	X22440-B3.5B
	11.0	11.1	11.1	11.0	10.9	10.6	10.4	10.1	9.7	8.5	7.0	5.5	4.2	X22440-B4B
	14.1	14.2	14.2	14.1	13.9	13.7	13.3	12.9	12.5	10.9	9.0	7.0	5.4	X22440-B5B
	19.3	19.5	19.5	19.3	19.1	18.7	18.2	17.7	17.1	15.0	12.3	9.7	7.4	X22440-B6B
	26.0	26.3	26.3	26.2	25.8	25.3	24.7	23.9	23.1	20.2	16.6	13.0	10.1	X22440-B7B
	30.3	30.6	30.6	30.4	30.0	29.4	28.7	27.8	26.8	23.5	19.3	15.2	11.7	X22440-B8B
60	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.1	0.9	0.7	0.6	X22440-B1B
	2.3	2.4	2.4	2.5	2.5	2.5	2.4	2.4	2.4	2.1	1.7	1.4	1.1	X22440-B2B
	4.9	5.1	5.2	5.3	5.3	5.3	5.2	5.1	5.0	4.5	3.7	3.0	2.3	X22440-B3B
	7.4	7.7	7.9	8.0	8.0	8.0	7.9	7.7	7.6	6.7	5.6	4.5	3.5	X22440-B3.5B
	10.8	11.2	11.4	11.6	11.6	11.6	11.4	11.3	11.0	9.8	8.2	6.5	5.1	X22440-B4B
	13.8	14.3	14.7	14.9	14.9	14.8	14.7	14.4	14.1	12.6	10.5	8.4	6.6	X22440-B5B
	18.9	19.6	20.1	20.4	20.4	20.3	20.1	19.8	19.3	17.2	14.3	11.4	9.0	X22440-B6B
	25.6	26.6	27.2	27.5	27.6	27.5	27.2	26.7	26.2	23.3	19.4	15.5	12.1	X22440-B7B
	29.7	30.9	31.6	32.0	32.1	32.0	31.6	31.1	30.4	27.1	22.5	18.0	14.1	X22440-B8B
50	1.0	1.1	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.1	1.0	0.8	0.6	X22440-B1B
	2.0	2.2	2.3	2.4	2.4	2.5	2.5	2.5	2.5	2.2	1.9	1.5	1.2	X22440-B2B
	4.2	4.6	4.9	5.1	5.2	5.3	5.3	5.3	5.3	4.7	4.0	3.2	2.6	X22440-B3B
	6.3	6.9	7.4	7.7	7.9	8.0	8.0	8.0	7.9	7.1	6.0	4.9	3.8	X22440-B3.5B
	9.2	10.1	10.7	11.2	11.5	11.6	11.7	11.6	11.5	10.4	8.7	7.1	5.6	X22440-B4B
	11.8	13.0	13.8	14.3	14.7	14.9	15.0	14.9	14.8	13.3	11.2	9.1	7.2	X22440-B5B
	16.2	17.7	18.9	19.6	20.1	20.4	20.5	20.4	20.2	18.2	15.3	12.4	9.8	X22440-B6B
	21.8	24.0	25.5	26.5	27.2	27.6	27.7	27.6	27.4	24.6	20.7	16.8	13.3	X22440-B7B
	25.4	27.9	29.7	30.9	31.6	32.1	32.2	32.1	31.8	28.7	24.1	19.5	15.5	X22440-B8B
40	0.6	0.8	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.1	1.0	0.8	0.6	X22440-B1B
	1.1	1.6	1.9	2.1	2.2	2.3	2.4	2.4	2.4	2.2	1.9	1.5	1.2	X22440-B2B
	2.4	3.4	4.0	4.4	4.7	4.9	5.1	5.1	5.2	4.7	4.0	3.3	2.6	X22440-B3B
	3.6	5.1	6.0	6.7	7.1	7.4	7.6	7.7	7.8	7.1	6.0	4.9	3.9	X22440-B3.5B
	5.3	7.4	8.7	9.7	10.3	10.8	11.1	11.2	11.3	10.3	8.8	7.2	5.7	X22440-B4B
	6.8	9.5	11.2	12.4	13.3	13.8	14.2	14.4	14.5	13.2	11.3	9.2	7.4	X22440-B5B
	9.3	13.0	15.4	17.0	18.2	18.9	19.5	19.8	19.9	18.1	15.4	12.6	10.1	X22440-B6B
	12.5	17.6	20.8	23.0	24.5	25.6	26.3	26.7	26.9	24.5	20.8	17.0	13.6	X22440-B7B
	14.6	20.4	24.2	26.7	28.6	29.8	30.6	31.1	31.2	28.5	24.2	19.8	15.8	X22440-B8B
30				0.7	0.9	1.0	1.1	1.1	1.1	1.1	0.9	0.8	0.6	X22440-B1B
				1.4	1.7	1.9	2.1	2.2	2.2	2.1	1.8	1.5	1.2	X22440-B2B
				3.0	3.6	4.1	4.4	4.6	4.7	4.4	3.8	3.1	2.5	X22440-B3B
				4.5	5.5	6.1	6.6	6.9	7.1	6.6	5.7	4.7	3.8	X22440-B3.5B
				6.6	8.0	8.9	9.6	10.1	10.4	9.6	8.3	6.9	5.6	X22440-B4B
				8.4	10.2	11.5	12.3	12.9	13.3	12.3	10.7	8.8	7.1	X22440-B5B
				11.5	14.0	15.7	16.9	17.7	18.2	16.9	14.6	12.1	9.8	X22440-B6B
				15.6	19.0	21.2	22.8	23.9	24.6	22.9	19.7	16.3	13.2	X22440-B7B
				18.1	22.1	24.7	26.5	27.8	28.6	26.6	23.0	19.0	15.4	X22440-B8B

# Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

TJRE/TERE/TIRE/THRE: Quick selection (included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature [°C]	R450A													Cage assembly type
	Capacity [kW]													
	Evaporating temperature [°C]													
	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	
70	38	39	39	39	39	38	37	37	36	31	26	20	16	X11873-B4B
	49	50	50	50	49	49	48	47	45	40	33	26	20	X11873-B5B
	60	61	61	61	61	60	59	57	56	49	40	32	24	X9117-B6B
	69	70	70	70	69	68	67	66	64	56	46	36	28	X9117-B7B
	94	96	96	96	95	94	92	90	88	77	63	50	38	X9117-B8B
	115	117	117	117	116	115	112	110	107	94	77	60	47	X9117-B9B
	147	149	150	150	149	147	144	141	137	120	99	77	60	X9166-B10B
	167	170	170	170	169	167	163	160	155	137	112	88	68	X9144-B11B
	200	202	204	203	202	199	195	191	186	163	134	105	81	X9144-B13B
60	36	38	39	39	39	39	39	39	38	34	28	22	17	X11873-B4B
	46	48	49	50	50	50	50	49	49	43	36	28	22	X11873-B5B
	57	59	61	61	62	62	61	61	60	53	44	35	27	X9117-B6B
	65	67	69	70	71	71	70	69	68	61	50	40	31	X9117-B7B
	89	93	95	97	97	97	96	95	94	83	69	55	43	X9117-B8B
	108	113	116	118	118	118	117	116	114	101	84	67	52	X9117-B9B
	139	145	148	151	152	151	150	149	146	130	107	85	66	X9166-B10B
	158	164	168	171	172	172	171	169	166	147	122	97	75	X9144-B11B
	188	196	201	204	205	205	204	201	198	176	145	115	90	X9144-B13B
50	30	33	35	37	38	38	39	39	38	34	29	23	18	X11873-B4B
	38	42	45	47	48	49	49	49	49	44	37	29	23	X11873-B5B
	47	52	55	57	59	60	60	60	60	54	45	36	28	X9117-B6B
	54	59	63	66	68	69	69	69	69	62	51	41	32	X9117-B7B
	74	81	87	90	93	94	95	95	94	85	71	57	45	X9117-B8B
	90	99	105	110	113	115	116	116	115	103	86	69	54	X9117-B9B
	115	127	135	141	145	147	148	148	147	132	110	88	69	X9166-B10B
	131	144	153	160	164	167	168	168	167	150	125	100	79	X9144-B11B
	156	172	183	191	196	199	201	201	199	179	149	120	94	X9144-B13B
40	16	23	28	31	33	35	36	36	37	33	28	23	18	X11873-B4B
	21	30	36	39	42	44	45	46	47	42	36	29	23	X11873-B5B
	26	37	44	49	52	54	56	57	57	52	44	36	28	X9117-B6B
	29	42	50	55	59	62	64	65	66	60	50	41	32	X9117-B7B
	40	58	69	76	82	85	88	89	90	82	69	56	44	X9117-B8B
	49	70	84	93	99	104	107	109	110	100	84	68	54	X9117-B9B
	63	90	107	119	127	133	137	139	141	128	108	87	69	X9166-B10B
	71	102	121	135	144	151	156	158	160	145	122	99	78	X9144-B11B
	85	122	145	161	172	180	186	189	190	173	146	118	93	X9144-B13B
30				20	25	28	30	32	33	30	26	21	17	X11873-B4B
				25	32	36	38	40	42	39	33	27	22	X11873-B5B
				31	39	44	47	50	51	47	41	33	27	X9117-B6B
				36	44	50	54	57	59	54	46	38	30	X9117-B7B
				49	61	69	74	78	81	74	64	52	42	X9117-B8B
				60	74	84	90	95	98	91	78	63	51	X9117-B9B
				77	95	107	116	122	126	116	99	81	65	X9166-B10B
				87	108	122	131	138	143	132	113	92	74	X9144-B11B
				104	129	145	157	165	170	157	135	110	88	X9144-B13B

# Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

TJRE/TERE/TIRE/THRE: Quick selection (included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature [°C]	R513A Capacity [kW]													Cage assembly type
	Evaporating temperature [°C]													
	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	
70	37	37	37	37	36	36	35	34	33	29	23	18	14	X11873-B4B
	47	47	47	47	46	46	44	43	42	36	30	23	18	X11873-B5B
	58	58	58	58	57	56	55	53	51	45	37	29	22	X9117-B6B
	66	67	67	66	65	64	62	61	58	51	42	33	25	X9117-B7B
	91	92	92	91	90	88	86	83	80	70	58	45	35	X9117-B8B
	110	111	112	111	109	107	104	101	98	86	70	55	43	X9117-B9B
	141	143	143	142	140	137	134	130	125	110	90	71	55	X9166-B10B
	160	162	162	161	159	156	152	147	142	125	102	80	62	X9144-B11B
	191	193	194	192	190	186	181	176	170	149	122	96	74	X9144-B13B
60	36	37	38	39	39	39	38	38	37	33	27	22	17	X11873-B4B
	46	48	49	50	50	49	49	48	47	42	35	28	22	X11873-B5B
	57	59	60	61	61	61	60	59	58	52	43	34	27	X9117-B6B
	65	67	69	70	70	70	69	68	66	59	49	39	31	X9117-B7B
	89	92	95	96	96	96	95	93	91	81	67	54	42	X9117-B8B
	108	112	115	116	117	116	115	113	111	99	82	66	51	X9117-B9B
	139	144	147	149	150	149	147	145	142	126	105	84	66	X9166-B10B
	157	163	167	169	170	169	167	165	161	143	119	95	75	X9144-B11B
	188	195	200	202	203	202	200	196	192	171	142	114	89	X9144-B13B
50	31	34	36	37	38	39	39	39	39	35	29	24	19	X11873-B4B
	39	43	46	48	49	50	50	50	49	44	37	30	24	X11873-B5B
	48	53	56	59	60	61	61	61	61	55	46	37	29	X9117-B6B
	55	61	65	67	69	70	70	70	69	62	52	42	34	X9117-B7B
	76	83	89	92	95	96	96	96	95	86	72	58	46	X9117-B8B
	92	102	108	112	115	117	117	117	116	104	88	71	56	X9117-B9B
	118	130	138	144	148	150	150	150	149	134	113	91	72	X9166-B10B
	134	148	157	163	167	170	171	170	168	152	128	103	82	X9144-B11B
	160	176	187	195	200	203	204	203	201	181	152	123	98	X9144-B13B
40	18	25	29	32	35	36	37	38	38	35	29	24	19	X11873-B4B
	23	32	37	41	44	46	47	48	48	44	38	31	25	X11873-B5B
	28	39	46	51	54	57	58	59	59	54	46	38	30	X9117-B6B
	32	44	53	58	62	65	67	68	68	62	53	43	34	X9117-B7B
	44	61	72	80	85	89	92	93	93	85	73	59	47	X9117-B8B
	53	74	88	97	104	108	111	113	114	104	88	72	58	X9117-B9B
	68	95	113	125	133	139	143	145	146	133	113	92	74	X9166-B10B
	77	108	128	142	151	158	162	164	165	151	128	105	84	X9144-B11B
	92	129	153	169	180	188	193	196	197	180	153	125	100	X9144-B13B
30				22	27	30	32	34	35	32	28	23	19	X11873-B4B
				28	34	38	41	43	44	41	36	29	24	X11873-B5B
				35	42	47	51	53	54	51	44	36	29	X9117-B6B
				39	48	54	58	60	62	58	50	41	33	X9117-B7B
				54	66	74	79	83	86	80	69	57	46	X9117-B8B
				66	80	90	97	101	104	97	84	69	56	X9117-B9B
				85	103	115	124	130	133	124	107	89	72	X9166-B10B
				96	117	131	140	147	151	141	122	100	81	X9144-B11B
				115	139	156	168	176	181	168	145	120	97	X9144-B13B

# Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

TCLE: Quick selection (included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature [°C]	R1234ze													Cage assembly type
	Capacity [kW]													
	Evaporating temperature [°C]													
	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	
70	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	0.9	0.7	0.6	0.4	X22440-B1B
	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.0	1.8	1.4	1.1	0.9	X22440-B2B
	4.7	4.8	4.8	4.8	4.7	4.6	4.5	4.4	4.3	3.8	3.1	2.4	1.8	X22440-B3B
	7.1	7.2	7.2	7.2	7.1	7.0	6.8	6.6	6.4	5.7	4.6	3.6	2.8	X22440-B3.5B
	10.3	10.4	10.5	10.4	10.3	10.1	9.9	9.7	9.4	8.2	6.7	5.2	4.0	X22440-B4B
	13.2	13.4	13.4	13.4	13.2	13.0	12.7	12.4	12.0	10.5	8.6	6.7	5.1	X22440-B5B
	18.1	18.3	18.4	18.3	18.1	17.8	17.4	17.0	16.5	14.4	11.8	9.2	7.0	X22440-B6B
	24.4	24.8	24.8	24.7	24.5	24.1	23.6	23.0	22.3	19.5	16.0	12.5	9.5	X22440-B7B
	28.4	28.8	28.9	28.8	28.5	28.0	27.4	26.7	25.9	22.7	18.6	14.5	11.1	X22440-B8B
60	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	0.8	0.6	0.5	X22440-B1B
	2.0	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	1.9	1.6	1.2	1.0	X22440-B2B
	4.4	4.5	4.7	4.7	4.8	4.7	4.7	4.6	4.5	4.0	3.3	2.6	2.0	X22440-B3B
	6.6	6.8	7.0	7.1	7.2	7.1	7.1	7.0	6.8	6.1	5.0	4.0	3.1	X22440-B3.5B
	9.5	9.9	10.2	10.4	10.4	10.4	10.3	10.1	9.9	8.8	7.3	5.8	4.5	X22440-B4B
	12.2	12.8	13.1	13.3	13.4	13.3	13.2	13.0	12.8	11.3	9.4	7.4	5.7	X22440-B5B
	16.8	17.5	17.9	18.2	18.3	18.2	18.1	17.8	17.5	15.5	12.8	10.1	7.8	X22440-B6B
	22.7	23.6	24.3	24.6	24.7	24.7	24.4	24.1	23.6	21.0	17.3	13.7	10.6	X22440-B7B
	26.4	27.5	28.2	28.6	28.8	28.7	28.4	28.0	27.5	24.4	20.2	15.9	12.3	X22440-B8B
50	0.8	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.0	0.8	0.7	0.5	X22440-B1B
	1.6	1.8	2.0	2.0	2.1	2.1	2.1	2.1	2.1	1.9	1.6	1.3	1.0	X22440-B2B
	3.5	3.9	4.2	4.4	4.5	4.6	4.6	4.6	4.5	4.1	3.4	2.7	2.1	X22440-B3B
	5.3	5.9	6.3	6.6	6.8	6.9	6.9	6.9	6.8	6.1	5.1	4.1	3.2	X22440-B3.5B
	7.7	8.5	9.1	9.5	9.8	10.0	10.0	10.0	10.0	8.9	7.5	5.9	4.6	X22440-B4B
	9.8	10.9	11.7	12.3	12.6	12.8	12.9	12.9	12.8	11.5	9.6	7.6	6.0	X22440-B5B
	13.5	15.0	16.0	16.8	17.3	17.5	17.6	17.6	17.5	15.7	13.1	10.5	8.2	X22440-B6B
	18.2	20.3	21.7	22.7	23.3	23.7	23.9	23.8	23.7	21.2	17.7	14.1	11.0	X22440-B7B
	21.2	23.6	25.2	26.4	27.1	27.6	27.8	27.7	27.5	24.7	20.6	16.4	12.8	X22440-B8B
40	0.6	0.8	0.9	0.9	1.0	1.0	1.0	1.0	1.0	0.9	0.8	0.6	0.5	X22440-B1B
	1.2	1.5	1.7	1.8	1.9	2.0	2.0	2.0	2.0	1.8	1.5	1.2	1.0	X22440-B2B
	2.6	3.2	3.6	3.9	4.1	4.2	4.3	4.3	4.3	3.9	3.3	2.7	2.1	X22440-B3B
	3.8	4.8	5.4	5.8	6.1	6.3	6.4	6.5	6.5	5.9	5.0	4.0	3.2	X22440-B3.5B
	5.6	6.9	7.8	8.5	8.9	9.2	9.3	9.4	9.4	8.5	7.2	5.8	4.6	X22440-B4B
	7.2	8.9	10.1	10.9	11.4	11.8	12.0	12.1	12.1	11.0	9.3	7.5	5.9	X22440-B5B
	9.8	12.2	13.8	14.9	15.6	16.1	16.4	16.5	16.5	15.0	12.7	10.2	8.1	X22440-B6B
	13.3	16.5	18.6	20.1	21.1	21.8	22.2	22.3	22.3	20.3	17.2	13.8	10.9	X22440-B7B
	15.5	19.2	21.6	23.4	24.5	25.3	25.8	26.0	26.0	23.6	20.0	16.1	12.7	X22440-B8B
30	0.5	0.6	0.8	0.8	0.9	0.9	0.9	0.9	0.8	0.7	0.6	0.5	X22440-B1B	
	0.9	1.3	1.5	1.6	1.7	1.8	1.8	1.8	1.6	1.4	1.1	0.9	X22440-B2B	
	2.0	2.7	3.1	3.4	3.6	3.8	3.5	3.5	3.5	3.0	2.5	2.0	X22440-B3B	
	3.0	4.1	4.7	5.2	5.5	5.7	5.3	5.3	5.3	4.5	3.7	2.9	X22440-B3.5B	
	4.4	5.9	6.9	7.5	8.0	8.3	7.7	7.7	7.7	6.6	5.4	4.3	X22440-B4B	
	5.7	7.6	8.8	9.6	10.2	10.6	9.8	9.8	9.8	8.4	6.9	5.5	X22440-B5B	
	7.8	10.4	12.1	13.2	14.0	14.5	13.5	13.5	13.5	11.6	9.4	7.5	X22440-B6B	
	10.5	14.1	16.3	17.9	18.9	19.6	18.2	18.2	18.2	15.6	12.8	10.2	X22440-B7B	
	12.2	16.3	19.0	20.8	22.0	22.8	21.2	21.2	21.2	18.2	14.8	11.8	X22440-B8B	

Note: Products are classified based on fluid group 2 (non-flammable) according European pressure equipment directive.

# Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

**TJRE/TERE/TIRE/THRE: Quick selection** (included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature [°C]	R1234ze													Cage assembly type
	Capacity [kW]													
	Evaporating temperature [°C]													
	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	
70	35	35	35	35	35	34	33	32	31	28	23	18	13	X11873-B4B
	44	45	45	45	44	43	42	41	40	35	29	22	17	X11873-B5B
	54	55	55	55	54	53	52	51	49	43	35	28	21	X9117-B6B
	62	63	63	63	62	61	60	58	56	49	40	32	24	X9117-B7B
	85	86	86	86	85	84	82	80	77	68	56	43	33	X9117-B8B
	104	105	105	105	104	102	100	97	94	83	68	53	40	X9117-B9B
	133	134	135	134	133	131	128	125	121	106	87	68	52	X9166-B10B
	151	152	153	152	151	148	145	141	137	120	98	77	59	X9144-B11B
	180	182	183	182	180	177	173	169	164	144	117	92	70	X9144-B13B
60	32	33	34	35	35	35	34	34	33	30	24	19	15	X11873-B4B
	41	43	44	44	45	44	44	43	43	38	31	25	19	X11873-B5B
	50	52	54	54	55	55	54	53	52	46	38	30	23	X9117-B6B
	57	60	61	62	63	62	62	61	60	53	44	35	27	X9117-B7B
	79	82	84	86	86	86	85	84	82	73	60	48	37	X9117-B8B
	96	100	103	104	105	104	103	102	100	89	73	58	45	X9117-B9B
	123	128	132	133	134	134	133	131	128	114	94	74	58	X9166-B10B
	140	145	149	151	152	152	150	148	145	129	107	84	65	X9144-B11B
	167	174	178	181	182	181	180	177	174	154	127	101	78	X9144-B13B
50	26	29	31	32	33	33	34	34	33	30	25	20	16	X11873-B4B
	33	36	39	41	42	43	43	43	43	38	32	25	20	X11873-B5B
	40	45	48	50	52	52	53	53	52	47	39	31	24	X9117-B6B
	46	51	55	57	59	60	60	60	60	54	45	36	28	X9117-B7B
	63	70	75	79	81	82	83	83	82	74	62	49	38	X9117-B8B
	77	86	92	96	99	100	101	101	100	90	75	60	47	X9117-B9B
	99	110	118	123	127	129	129	129	128	115	96	77	60	X9166-B10B
	112	125	134	140	144	146	147	147	146	131	109	87	68	X9144-B11B
	134	149	159	167	171	174	175	175	174	156	130	104	81	X9144-B13B
40		19	23	26	28	30	31	31	32	29	24	20	15	X11873-B4B
		24	30	34	36	38	39	40	40	37	31	25	20	X11873-B5B
		29	36	41	44	47	48	49	49	45	38	31	24	X9117-B6B
		34	42	47	51	53	55	56	57	51	43	35	28	X9117-B7B
		46	57	65	70	73	76	77	78	71	60	48	38	X9117-B8B
		56	70	79	85	89	92	94	95	86	73	59	46	X9117-B9B
		72	89	101	109	115	118	120	121	110	93	75	59	X9166-B10B
		82	101	115	124	130	134	136	138	125	106	85	67	X9144-B11B
		98	121	137	148	155	160	163	164	149	126	102	80	X9144-B13B
30				15	20	23	25	27	28	26	22	18	14	X11873-B4B
				19	25	29	32	34	35	33	28	23	18	X11873-B5B
				23	31	36	40	42	43	40	35	28	23	X9117-B6B
				27	36	41	45	48	50	46	40	32	26	X9117-B7B
				36	49	57	62	66	68	63	54	44	35	X9117-B8B
				44	60	69	76	80	83	77	66	54	43	X9117-B9B
				57	76	89	97	103	106	99	85	69	55	X9166-B10B
				65	87	100	110	116	121	112	96	79	63	X9144-B11B
				77	103	120	131	139	144	134	115	94	75	X9144-B13B

**Note 1:** Products are classified based on fluid group 2 (non-flammable) according European pressure equipment directive.

# Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

**ZZ-Series: Quick selection** (included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature [°C]	R448A/R449A Capacity [kW]							R448A/R449A		Cage assembly type
	Evaporating temperature [°C]							-70	-75	
	-40	-45	-50	-55	-60	-65				
40 bubble/ 44.5 dew point	1.7	1.4	1.1	0.9	0.7	0.6	0.4	0.3	X10-B01	
	3.5	2.9	2.4	1.9	1.5	1.2	0.9	0.7	X10-B02	
	5.9	4.9	4.0	3.2	2.6	2.0	1.6	1.2	X10-B03	
	9.4	7.8	6.4	5.1	4.1	3.2	2.5	1.9	X10-B04	
	14.1	11.7	9.6	7.8	6.2	4.9	3.8	2.9	X10-B05	
	18.8	15.6	12.8	10.3	8.2	6.5	5.0	3.8	X10-B06	
	23.5	19.5	15.9	12.9	10.3	8.1	6.3	4.8	X10-B07	
30 bubble/ 34.5 dew point	1.7	1.4	1.1	0.9	0.7	0.6	0.5	0.3	X10-B01	
	3.5	2.9	2.4	2.0	1.6	1.2	1.0	0.7	X10-B02	
	5.9	4.9	4.0	3.3	2.6	2.1	1.6	1.2	X10-B03	
	9.4	7.8	6.4	5.2	4.2	3.3	2.6	2.0	X10-B04	
	14.2	11.8	9.7	7.9	6.3	5.0	3.9	3.0	X10-B05	
	18.9	15.7	12.9	10.5	8.4	6.7	5.2	4.0	X10-B06	
	23.6	19.6	16.2	13.1	10.5	8.3	6.5	5.0	X10-B07	
20 bubble/ 25.3 dew point	1.6	1.3	1.1	0.9	0.7	0.6	0.5	0.3	X10-B01	
	3.4	2.8	2.3	1.9	1.5	1.2	1.0	0.7	X10-B02	
	5.7	4.8	3.9	3.2	2.6	2.1	1.6	1.2	X10-B03	
	9.0	7.6	6.3	5.1	4.1	3.3	2.6	2.0	X10-B04	
	13.7	11.5	9.5	7.7	6.2	4.9	3.9	3.0	X10-B05	
	18.2	15.2	12.6	10.3	8.3	6.6	5.2	4.0	X10-B06	
	22.7	19.0	15.8	12.9	10.4	8.2	6.4	5.0	X10-B07	
10 bubble/ 15.5 dew point	1.5	1.2	1.0	0.9	0.7	0.5	0.4	0.3	X10-B01	
	3.1	2.6	2.2	1.8	1.5	1.2	0.9	0.7	X10-B02	
	5.2	4.4	3.7	3.0	2.4	2.0	1.5	1.2	X10-B03	
	8.3	7.0	5.9	4.8	3.9	3.1	2.4	1.9	X10-B04	
	12.6	10.6	8.9	7.3	5.9	4.7	3.7	2.8	X10-B05	
	16.8	14.2	11.8	9.7	7.8	6.3	4.9	3.8	X10-B06	
	20.9	17.7	14.7	12.1	9.8	7.8	6.1	4.7	X10-B07	
0 bubble/ 5.7 dew point	1.3	1.1	0.9	0.8	0.6	0.5	0.4	0.3	X10-B01	
	2.7	2.3	1.9	1.6	1.3	1.1	0.8	0.6	X10-B02	
	4.6	3.9	3.3	2.7	2.2	1.8	1.4	1.1	X10-B03	
	7.3	6.2	5.2	4.3	3.5	2.8	2.2	1.7	X10-B04	
	11.0	9.4	7.9	6.5	5.3	4.3	3.4	2.6	X10-B05	
	14.6	12.5	10.5	8.7	7.1	5.7	4.5	3.5	X10-B06	
	18.3	15.6	13.1	10.9	8.8	7.1	5.6	4.3	X10-B07	
-10 bubble/ -4.2 dew point	1.0	0.9	0.8	0.6	0.5	0.4	0.3	0.3	X10-B01	
	2.1	1.9	1.6	1.4	1.1	0.9	0.7	0.6	X10-B02	
	3.6	3.2	2.7	2.3	1.9	1.5	1.2	0.9	X10-B03	
	5.8	5.1	4.3	3.6	3.0	2.4	1.9	1.5	X10-B04	
	8.7	7.6	6.5	5.5	4.5	3.7	2.9	2.3	X10-B05	
	11.6	10.2	8.7	7.3	6.0	4.9	3.9	3.0	X10-B06	
	14.4	12.7	10.9	9.1	7.5	6.1	4.8	3.8	X10-B07	
-20 bubble/ -14.1 dew point	0.6	0.6	0.5	0.5	0.4	0.3	0.3	0.2	X10-B01	
	1.3	1.2	1.1	1.0	0.8	0.7	0.6	0.4	X10-B02	
	2.1	2.1	1.9	1.7	1.4	1.2	0.9	0.7	X10-B03	
	3.4	3.3	3.1	2.7	2.3	1.9	1.5	1.2	X10-B04	
	5.1	5.1	4.6	4.0	3.4	2.8	2.3	1.8	X10-B05	
	6.9	6.7	6.1	5.4	4.5	3.7	3.0	2.4	X10-B06	
	8.6	8.4	7.7	6.7	5.7	4.7	3.8	3.0	X10-B07	

# Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

Selection Table: L-series

Valve Series	Size code*	Capacity [kW]				Cage Type	Angle flange Type / connection		Power Element
		R448A/ R449A	R450A	R513A	R1234ze		Metric	Imperial	
LCLE-	1-*	1.9	1.3	1.3	1.1	X22440-B1B	C501-5 mm	C501-5	XB1019...1B
	2-*	3.7	2.5	2.6	2.2	X22440-B2B			
	3-*	7.9	5.4	5.5	4.8	X22440-B3B			
	3.5-*	11.9	8.1	8.3	7.2	X22440-B3.5B			
	4-*	17.3	11.8	12.1	10.5	X22440-B4B	C501-7 mm	C501-7	
	6-*	22.1	15.1	15.5	13.4	X22440-B5B			
	7-*	30.3	20.7	21.2	18.4	X22440-B6B	A576-mm	A576	
	9-*	41.0	28.0	28.7	24.8	X22440-B7B			
10-*	47.7	32.6	33.4	28.9	X22440-B8B				
LJRE-	11-*	58	40	40	35	X11873-B4B	10331	10331	XC726...2B
	12-*	74	50	52	45	X11873-B5B			
LERE-	13-*	91	62	64	55	X9117-B6B	9153 mm	9153	
	14-*	104	71	73	63	X9117-B7B			
	15-*	143	98	100	86	X9117-B8B			
	16-*	174	119	121	105	X9117-B9B			
LIRE-	17-*	222	152	156	135	X9166-B10B			

Note 1: See flange table and connection sizes at the end of T-, L-, 935-, & ZZ Series chapter.

Note 2: Products are classified based on fluid group 2 (non-flammable) according European pressure equipment directive.

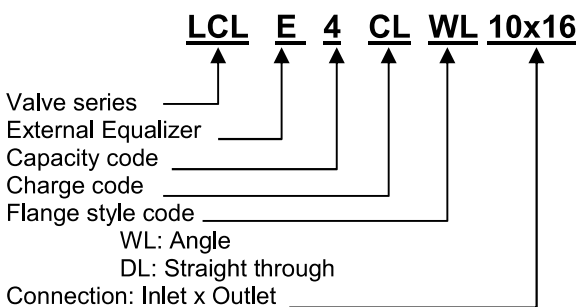
Please see the next page for nominal capacity rating conditions as desuperheating. For selection of other operating condition, please use Controls Navigator selection program.

## Valve selection for desuperheating of suction gas in conjunction with hot gas bypass

The required bypass capacity ( $Q_{byp}$  [kW]) has to be multiplied with correction factors  $K_{ti}$  per table belows:

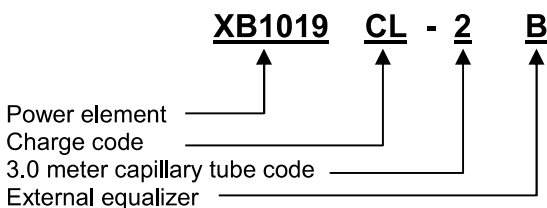
Condensing temperature [°C]	Evaporating temperature [°C]						Condensing temperature [°C]	Evaporating temperature [°C]					
	-20	-15	-10	-5	0	5		-20	-15	-10	-5	0	5
R450A/R513A	Correction factors $K_{ti}$						R1234ze	Correction factors $K_{ti}$					
20	0.41	0.36	0.32	0.28	0.25	0.22	20	0.42	0.37	0.33	0.29	0.25	0.22
25	0.45	0.40	0.35	0.31	0.28	0.25	25	0.46	0.41	0.36	0.32	0.28	0.25
30	0.49	0.44	0.39	0.35	0.31	0.28	30	0.51	0.45	0.40	0.36	0.32	0.28
35	0.54	0.49	0.43	0.39	0.35	0.31	35	0.56	0.50	0.44	0.39	0.35	0.32
40	0.60	0.54	0.48	0.43	0.39	0.35	40	0.62	0.55	0.49	0.44	0.39	0.35
45	0.66	0.59	0.53	0.48	0.43	0.39	45	0.68	0.61	0.54	0.49	0.44	0.39
50	0.74	0.66	0.59	0.53	0.48	0.43	50	0.76	0.67	0.60	0.54	0.49	0.44

## Type designation L-Series



## \* Suction gas superheat selection

Refrigerant	Charge code *		
	CL	GL	UL
R448A	16 K	27 K	
R449A	16 K	27 K	
R450A		9 K	27 K
R513A		16 K	33 K
R1234ze			24 K



# Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

Selection table: 935-series

Valve Series	Size and code	Capacity [kW]				Cage Type	Angle flange Type / connection		Power Element
		R448A/ R449A	R450A	R513A	R1234ze		Metric	Imperial	
935*-	A	5.2	3.5	3.6	3.1	X10-**01	C501-5 mm	C501-5	XB1019-***-2A
	B	10.1	6.9	7.1	6.1	X10-**02			
	C	14.2	9.7	9.9	8.6	X10-**03			
	D	21.0	14.4	14.7	12.8	X10-**04	C501-7 mm	C501-7	
	E	28.8	19.7	20.2	17.5	X10-**05			
	G	41.1	28.1	28.8	24.9	X10-**06	A576-mm	A576	
X	59.8	40.9	41.9	36.3	X10-**07				

*) Temperature code	Temperature range [°C]	**) Spring code
3	-1...+17	B
6	+14...+38	C
105	+44...+70	C
106	+66...+94	C
100	+94...+121	C

***) Charge code
UL
KL
YL
JL
LL

Note 1: See flange table and connection sizes at the end of T-, L-, 935-, & ZZ Series chapter.

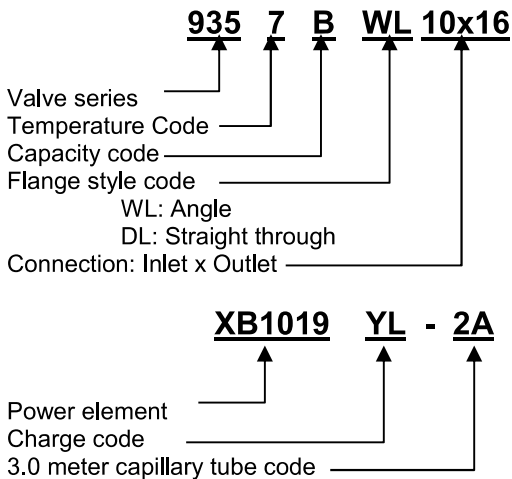
Note 2: Products are classified based on fluid group 2 (non-flammable) according European pressure equipment directive.

The nominal capacity is based on the following conditions: 935- and L-series:

Refrigerant	Evaporating temperature [°C]	Condensing temperature [°C]	Subcooling
R448A, R449A	+4°C dew point	+38°C bubble / +43°C dew point	1K
R450A		+38°C bubble / +38.6°C dew point	
R513A, R1234ze		+38°C bubble / +38°C dew point	

For selection of other operating condition, please use quick selection tables in the next pages or Controls Navigator selection program.

## Type designation 935-Series



# Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

**935-Series: Quick selection** (included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature [°C]	R448A/R449A													Capacity [kW]	R448A/R449A				Cage assembly type
	Evaporating temperature [°C]																		
	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45						
60 bubble/ 63.4 dew point	4.7	4.8	4.8	4.8	4.8	4.7	4.7	4.6	4.5	4.4	4.3	4.1	4.0	935-A					
	9.2	9.3	9.3	9.3	9.3	9.2	9.0	8.9	8.7	8.5	8.3	8.0	7.8	935-B					
	12.9	13.1	13.1	13.1	13.0	12.9	12.7	12.5	12.2	12.0	11.6	11.3	11.0	935-C					
	19.2	19.4	19.5	19.5	19.4	19.2	18.9	18.6	18.2	17.8	17.3	16.8	16.3	935-D					
	26.3	26.6	26.7	26.7	26.5	26.2	25.9	25.4	24.9	24.3	23.7	23.0	22.3	935-E					
	37.5	37.9	38.1	38.0	37.8	37.4	36.9	36.3	35.5	34.7	33.8	32.8	31.8	935-G					
	54.6	55.2	55.4	55.4	55.0	54.5	53.7	52.8	51.7	50.5	49.2	47.8	46.3	935-X					
50 bubble/ 54 dew point	4.8	4.9	5.0	5.1	5.1	5.1	5.0	5.0	4.9	4.9	4.8	4.7	4.5	935-A					
	9.3	9.6	9.7	9.8	9.9	9.9	9.8	9.7	9.6	9.4	9.2	9.0	8.8	935-B					
	13.1	13.5	13.7	13.8	13.9	13.9	13.8	13.6	13.5	13.3	13.0	12.7	12.4	935-C					
	19.5	20.0	20.3	20.5	20.6	20.6	20.5	20.3	20.0	19.7	19.3	18.9	18.5	935-D					
	26.7	27.4	27.9	28.1	28.2	28.2	28.0	27.8	27.4	27.0	26.5	25.9	25.3	935-E					
	38.1	39.1	39.7	40.1	40.3	40.2	40.0	39.6	39.1	38.4	37.7	36.9	36.0	935-G					
	55.5	56.9	57.9	58.4	58.6	58.5	58.2	57.6	56.9	56.0	54.9	53.8	52.5	935-X					
40 bubble/ 44.5 dew point	4.5	4.7	4.9	5.0	5.1	5.1	5.1	5.1	5.1	5.0	5.0	4.9	4.8	935-A					
	8.7	9.2	9.5	9.7	9.9	9.9	10.0	10.0	9.9	9.8	9.7	9.5	9.4	935-B					
	12.3	12.9	13.3	13.7	13.9	14.0	14.0	14.0	13.9	13.8	13.6	13.4	13.1	935-C					
	18.2	19.1	19.8	20.3	20.6	20.8	20.8	20.8	20.7	20.5	20.2	19.9	19.5	935-D					
	25.0	26.2	27.1	27.8	28.2	28.5	28.5	28.5	28.3	28.0	27.7	27.2	26.8	935-E					
	35.6	37.4	38.7	39.6	40.2	40.6	40.7	40.6	40.4	40.0	39.5	38.8	38.1	935-G					
	51.9	54.4	56.3	57.7	58.6	59.1	59.2	59.1	58.8	58.2	57.5	56.6	55.5	935-X					
30 bubble/ 34.5 dew point	3.7	4.1	4.4	4.6	4.8	4.9	5.0	5.0	5.0	5.0	5.0	4.9	4.9	935-A					
	7.3	8.0	8.6	9.0	9.3	9.5	9.7	9.7	9.7	9.7	9.7	9.6	9.4	935-B					
	10.2	11.3	12.1	12.7	13.1	13.4	13.6	13.7	13.7	13.7	13.6	13.4	13.3	935-C					
	15.2	16.8	17.9	18.8	19.4	19.9	20.2	20.3	20.4	20.3	20.2	20.0	19.7	935-D					
	20.8	23.0	24.6	25.7	26.6	27.2	27.6	27.8	27.9	27.8	27.6	27.4	27.0	935-E					
	29.7	32.7	35.0	36.7	37.9	38.8	39.4	39.7	39.8	39.7	39.4	39.0	38.5	935-G					
	43.2	47.7	51.0	53.5	55.3	56.5	57.3	57.8	57.9	57.7	57.4	56.8	56.1	935-X					
20 bubble/ 25.3 dew point			3.6	3.9	4.2	4.4	4.6	4.7	4.7	4.8	4.8	4.7	4.7	935-A					
			6.9	7.6	8.2	8.6	8.8	9.0	9.2	9.2	9.2	9.2	9.1	935-B					
			9.7	10.7	11.5	12.0	12.4	12.7	12.9	13.0	13.0	13.0	12.9	935-C					
			14.4	15.9	17.1	17.9	18.5	18.9	19.2	19.3	19.3	19.2	19.1	935-D					
			19.7	21.8	23.4	24.5	25.3	25.9	26.2	26.4	26.4	26.4	26.2	935-E					
			28.2	31.1	33.3	34.9	36.1	36.9	37.4	37.7	37.7	37.6	37.3	935-G					
			41.0	45.3	48.5	50.9	52.6	53.7	54.5	54.8	54.9	54.7	54.3	935-X					
10 bubble/ 15.5 dew point					3.2	3.6	3.9	4.1	4.2	4.3	4.3	4.4	4.4	935-A					
					6.3	7.0	7.5	7.9	8.2	8.3	8.4	8.5	8.5	935-B					
					8.8	9.8	10.6	11.1	11.5	11.7	11.9	11.9	12.0	935-C					
					13.1	14.6	15.7	16.5	17.0	17.4	17.6	17.8	17.8	935-D					
					18.0	20.0	21.5	22.6	23.3	23.9	24.2	24.3	24.3	935-E					
					25.7	28.6	30.7	32.2	33.3	34.0	34.5	34.7	34.7	935-G					
					37.4	41.6	44.7	46.9	48.5	49.5	50.2	50.5	50.5	935-X					

# Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

935-Series: Quick selection (included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature [°C]	R450A													Cage assembly type
	Capacity [kW]													
	Evaporating temperature [°C]													
	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	
60	3.2	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.0	2.5	2.0	1.5	935-A
	6.3	6.5	6.7	6.8	6.9	6.9	6.8	6.7	6.6	5.9	4.9	3.9	3.0	935-B
	8.8	9.2	9.4	9.6	9.7	9.6	9.6	9.5	9.3	8.3	6.8	5.4	4.2	935-C
	13.1	13.7	14.0	14.3	14.3	14.3	14.2	14.1	13.8	12.3	10.2	8.1	6.3	935-D
	18.0	18.7	19.2	19.5	19.6	19.6	19.5	19.3	18.9	16.8	13.9	11.0	8.6	935-E
	25.7	26.7	27.4	27.8	28.0	28.0	27.8	27.5	27.0	24.0	19.8	15.8	12.3	935-G
	37.4	38.9	39.9	40.5	40.8	40.8	40.5	40.0	39.3	34.9	28.9	22.9	17.9	935-X
50	2.7	3.0	3.1	3.3	3.4	3.4	3.5	3.5	3.4	3.1	2.6	2.1	1.6	935-A
	5.2	5.7	6.1	6.4	6.6	6.7	6.7	6.7	6.7	6.0	5.0	4.0	3.1	935-B
	7.3	8.1	8.6	9.0	9.2	9.4	9.4	9.4	9.4	8.4	7.0	5.6	4.4	935-C
	10.9	12.0	12.8	13.3	13.7	13.9	14.0	14.0	13.9	12.5	10.4	8.4	6.6	935-D
	14.9	16.4	17.5	18.3	18.8	19.1	19.2	19.2	19.1	17.1	14.3	11.4	9.0	935-E
	21.3	23.4	25.0	26.0	26.7	27.2	27.4	27.4	27.2	24.4	20.4	16.3	12.8	935-G
	31.0	34.1	36.3	37.9	39.0	39.6	39.9	39.9	39.6	35.6	29.7	23.8	18.7	935-X
40		2.1	2.5	2.8	3.0	3.1	3.2	3.3	3.3	3.0	2.5	2.0	1.6	935-A
		4.1	4.9	5.4	5.8	6.0	6.2	6.3	6.4	5.8	4.9	3.9	3.1	935-B
		5.7	6.8	7.6	8.1	8.5	8.7	8.9	9.0	8.1	6.9	5.5	4.4	935-C
		8.5	10.1	11.3	12.0	12.6	13.0	13.2	13.3	12.1	10.2	8.2	6.5	935-D
		11.7	13.9	15.4	16.5	17.3	17.8	18.1	18.2	16.5	14.0	11.3	8.9	935-E
		16.6	19.8	22.0	23.5	24.6	25.3	25.8	26.0	23.6	19.9	16.1	12.7	935-G
		24.2	28.8	32.0	34.3	35.8	36.9	37.5	37.8	34.3	29.0	23.4	18.6	935-X
30				1.8	2.2	2.5	2.7	2.8	2.9	2.7	2.3	1.9	1.5	935-A
				3.5	4.3	4.9	5.2	5.5	5.7	5.3	4.5	3.7	2.9	935-B
				4.9	6.1	6.8	7.4	7.7	8.0	7.4	6.3	5.2	4.1	935-C
				7.3	9.0	10.1	11.0	11.5	11.9	11.0	9.4	7.7	6.2	935-D
				10.0	12.3	13.9	15.0	15.8	16.3	15.1	12.9	10.5	8.4	935-E
				14.2	17.6	19.8	21.4	22.5	23.2	21.5	18.4	15.0	12.0	935-G
				20.7	25.6	28.9	31.2	32.7	33.8	31.3	26.8	21.9	17.5	935-X

# Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

**935-Series: Quick selection** (included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature [°C]	R513A													Cage assembly type
	Capacity [kW]													
	Evaporating temperature [°C]													
	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	
60	3.2	3.4	3.4	3.5	3.5	3.5	3.4	3.4	3.3	2.9	2.5	2.0	1.5	935-A
	6.3	6.5	6.7	6.8	6.8	6.8	6.7	6.6	6.4	5.7	4.8	3.8	3.0	935-B
	8.8	9.2	9.4	9.5	9.5	9.5	9.4	9.2	9.0	8.0	6.7	5.3	4.2	935-C
	13.1	13.6	14.0	14.1	14.2	14.1	14.0	13.7	13.4	12.0	9.9	7.9	6.2	935-D
	18.0	18.7	19.1	19.3	19.4	19.3	19.1	18.8	18.4	16.4	13.6	10.9	8.5	935-E
	25.6	26.6	27.2	27.6	27.7	27.5	27.2	26.8	26.2	23.3	19.4	15.5	12.2	935-G
	37.3	38.8	39.7	40.2	40.3	40.1	39.7	39.0	38.2	34.0	28.3	22.6	17.7	935-X
50	2.8	3.0	3.2	3.4	3.4	3.5	3.5	3.5	3.5	3.1	2.6	2.1	1.7	935-A
	5.4	5.9	6.3	6.5	6.7	6.8	6.8	6.8	6.7	6.1	5.1	4.1	3.3	935-B
	7.5	8.3	8.8	9.2	9.4	9.5	9.6	9.5	9.5	8.5	7.2	5.8	4.6	935-C
	11.2	12.3	13.1	13.6	14.0	14.2	14.2	14.2	14.1	12.7	10.6	8.6	6.8	935-D
	15.4	16.9	17.9	18.7	19.1	19.4	19.5	19.4	19.2	17.3	14.6	11.8	9.3	935-E
	21.9	24.0	25.6	26.6	27.3	27.6	27.8	27.7	27.4	24.7	20.8	16.8	13.3	935-G
	31.9	35.0	37.2	38.7	39.7	40.3	40.4	40.3	40.0	36.0	30.3	24.5	19.4	935-X
40		2.2	2.6	2.9	3.1	3.2	3.3	3.4	3.4	3.1	2.6	2.2	1.7	935-A
		4.3	5.1	5.7	6.0	6.3	6.5	6.6	6.6	6.0	5.1	4.2	3.3	935-B
		6.1	7.2	7.9	8.5	8.8	9.1	9.2	9.3	8.5	7.2	5.9	4.7	935-C
		9.0	10.7	11.8	12.6	13.2	13.5	13.7	13.8	12.6	10.7	8.7	7.0	935-D
		12.4	14.6	16.2	17.3	18.0	18.5	18.8	18.9	17.2	14.7	12.0	9.6	935-E
		17.6	20.8	23.1	24.6	25.7	26.4	26.8	26.9	24.6	20.9	17.1	13.7	935-G
		25.7	30.3	33.6	35.8	37.4	38.4	39.0	39.2	35.8	30.4	24.9	19.9	935-X
30				2.0	2.4	2.7	2.9	3.0	3.1	2.9	2.5	2.1	1.7	935-A
				3.8	4.7	5.2	5.6	5.9	6.0	5.6	4.9	4.0	3.2	935-B
				5.4	6.6	7.3	7.9	8.3	8.5	7.9	6.8	5.6	4.6	935-C
				8.0	9.7	10.9	11.7	12.3	12.6	11.7	10.1	8.4	6.8	935-D
				11.0	13.3	14.9	16.0	16.8	17.3	16.1	13.9	11.5	9.3	935-E
				15.6	19.0	21.3	22.9	24.0	24.7	22.9	19.8	16.4	13.2	935-G
				22.8	27.7	31.0	33.3	34.9	35.9	33.4	28.8	23.8	19.3	935-X

## Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

935-Series: Quick selection (included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature [°C]	R1234ze													Cage assembly type
	Capacity [kW]													
	Evaporating temperature [°C]													
	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	
60	2.9	3.0	3.1	3.1	3.1	3.1	3.1	3.0	3.0	2.7	2.2	1.7	1.3	935-A
	5.6	5.8	6.0	6.0	6.1	6.1	6.0	5.9	5.8	5.2	4.3	3.4	2.6	935-B
	7.8	8.2	8.4	8.5	8.5	8.5	8.4	8.3	8.2	7.2	6.0	4.7	3.7	935-C
	11.6	12.1	12.5	12.6	12.7	12.7	12.5	12.4	12.1	10.8	8.9	7.0	5.4	935-D
	15.9	16.6	17.1	17.3	17.4	17.3	17.2	16.9	16.6	14.7	12.2	9.6	7.5	935-E
	22.7	23.7	24.3	24.7	24.8	24.7	24.5	24.2	23.7	21.0	17.4	13.7	10.6	935-G
	33.1	34.5	35.4	35.9	36.1	36.0	35.7	35.2	34.5	30.6	25.3	20.0	15.5	935-X
50	2.3	2.6	2.7	2.9	3.0	3.0	3.0	3.0	3.0	2.7	2.2	1.8	1.4	935-A
	4.5	5.0	5.3	5.6	5.7	5.8	5.9	5.9	5.8	5.2	4.4	3.5	2.7	935-B
	6.3	7.0	7.5	7.8	8.1	8.2	8.2	8.2	8.2	7.3	6.1	4.9	3.8	935-C
	9.3	10.4	11.1	11.6	12.0	12.2	12.3	12.2	12.1	10.9	9.1	7.3	5.7	935-D
	12.8	14.2	15.3	16.0	16.4	16.7	16.8	16.8	16.6	14.9	12.5	9.9	7.8	935-E
	18.2	20.3	21.7	22.7	23.4	23.8	23.9	23.9	23.7	21.3	17.8	14.2	11.1	935-G
	26.6	29.6	31.7	33.1	34.1	34.6	34.8	34.8	34.5	31.0	25.9	20.6	16.1	935-X
40		1.7	2.1	2.4	2.5	2.7	2.8	2.8	2.8	2.6	2.2	1.7	1.4	935-A
		3.3	4.0	4.6	4.9	5.2	5.4	5.4	5.5	5.0	4.2	3.4	2.7	935-B
		4.6	5.7	6.4	6.9	7.3	7.5	7.7	7.7	7.0	5.9	4.8	3.8	935-C
		6.8	8.5	9.6	10.3	10.8	11.2	11.4	11.5	10.4	8.8	7.1	5.6	935-D
		9.3	11.6	13.1	14.1	14.8	15.3	15.6	15.7	14.3	12.1	9.7	7.7	935-E
		13.3	16.5	18.7	20.1	21.2	21.8	22.2	22.4	20.4	17.2	13.9	10.9	935-G
		19.4	24.1	27.2	29.3	30.8	31.8	32.4	32.6	29.6	25.1	20.2	15.9	935-X
30				1.3	1.8	2.1	2.3	2.4	2.5	2.3	2.0	1.6	1.3	935-A
				2.6	3.5	4.0	4.4	4.6	4.8	4.5	3.8	3.1	2.5	935-B
				3.6	4.9	5.6	6.2	6.5	6.8	6.3	5.4	4.4	3.5	935-C
				5.4	7.2	8.4	9.2	9.7	10.1	9.3	8.0	6.6	5.2	935-D
				7.4	9.9	11.5	12.6	13.3	13.8	12.8	11.0	9.0	7.2	935-E
				10.5	14.1	16.4	17.9	19.0	19.7	18.2	15.7	12.8	10.2	935-G
				15.3	20.5	23.8	26.1	27.6	28.6	26.6	22.8	18.6	14.9	935-X

**Note:** Products are classified based on fluid group 2 (non-flammable) according European pressure equipment directive.

## Thermo™-Expansion Valves T-, L-, 935-, ZZ-Series

### Flanges: T-Series

Valve series	Orifice type	Angle style		Straight through		Connection (inlet x outlet)	
		Type	Part No.	Type	Part No.	Metric	Imperial
TCLE / LCLE	X22440-B1B / B2B/ B3B / B3.5B / B4B	C501-5	803232	9761-3	803240	-	3/8"x5/8" ODF
		C501-5mm	803233	9761-3mm	803241	10 x16 mm ODF	
	X22440-B5B / B6B	C501-7	803234	9761-4	803350		1/2"x5/8" ODF
		C501-7mm	803235	9761-4mm	803243	12 x16 mm ODF	-
	X22440-B7B / B8B	-	-	6346-17	803330	16 x22 mm ODF	5/8"x7/8" ODF
		A576	803238	-	-	-	5/8"x7/8" ODF 7/8"x1-1/8" ODM
A576-mm		803239	-	-	16 x22 mm ODF 22 x28 mm ODM	-	
TJRE / LJRE	X11873-B4B / B5B	10331	803338	10332	803324	22 x22 mm ODF	7/8"x7/8" ODF 1-1/8"x1-1/8" ODM
TERE/ TIRE LERE/ LIRE	X9117-B6B / B7B / B8B / B9B / B10B	9153	803244	9152	803286	-	7/8"x7/8" ODF 1-1/8"x1-1/8" ODM
		9153-mm	803245	9152-mm	803287	22 x22 mm ODF 22 x28 mm ODM	
THRE	X9144-B11B / B13B	9149	803284	9148	803283	22 x22 mm ODF	7/8"x7/8" ODF 1-1/8"x1-1/8" ODM

### Flanges: 935- / ZZ-Series\*

Valve series	Orifice type	Angle style		Straight through		Connection (inlet x outlet)	
		Type	Part No.	Type	Part No.	Metric	Imperial
935 / ZZ	X10-*01 / *02 / *03	C501-5	803232	9761-3	803240	-	3/8"x5/8" ODF
		C501-5mm	803233	9761-3mm	803241	10 x16 mm ODF	
	X10-*04 / *05	C501-7	803234	9761-4	803350		1/2"x5/8" ODF
		C501-7mm	803235	9761-4mm	803243	12 x16 mm ODF	-
	X10-*06 / *07	-	-	6346-17	803330	16 x22 mm ODF	5/8"x7/8" ODF
		A576	803238	-	-	-	5/8"x7/8" ODF 7/8"x1-1/8" ODM
A576-mm		803239	-	-	16 x22 mm ODF 22 x28 mm ODM	-	

Note:  
Mandatory  
for ZZ-Valves

Type Bronze Screw	Part No.	Flange types
Screw BZ 32	803575	C500, C501, 9761, X6346, X6669, A576
Screw BZ 48	803576	9148, 9149, 9152, 9153, 10331