BULLETIN 210-40-4
March 2022
Supersedes November 2008

Field Conversion of Thermostatic Expansion Valves with Replaceable Elements

The practice of converting a valve to a different refrigerant by changing the thermostatic element should be considered the exception rather than the rule. Sporlan recognizes that occasionally this conversion happens to satisfy an emergency situation.

The information below provides the necessary data required for field converstion of thermostatic expansion valves from one refrigerant to another by changing the thermostatic element. It does not take into account the different springs that can be used with various refrigerants. In general, the superheat adjustment on a valve will allow compensation on an operating unit for different spring wire sizes.

If internal components or the bottom cap assembly of the valve needs to be replaced, please see Bulletin 122 to determine the appropriate parts. Internal parts kits are not available for all valve types.

For futher information contact Sporlan.

VALVE TYPE	ELEMENT SIZE	NOMINAL VALVE CAPACITY				
		REFRIGERANT				
		R-134a, R-1234yf, R-513A, R-401A, R-409A	R-22, R-407A, R-407C, R-407F	R-448A, R-449A	R-404A, R-502, R-507A, R-402A	R-410A, R-32, R-454B
(E)F (Internally Equalized)	43	1/20	1/16	1/16	1/25	Not Approved
		1/12	1/10	1/10	1/16	
		—	1/5	1/5	—	
		1/8	—	—	1/8	
		1/6	1/3	1/4	1/6	
		1/4	1/2	1/3	1/4	
		1/2	1	3/4	1/2	
		1	1-1/2	1	1	
		1-1/2	2-1/2	2	1-1/2	
(E)FE (Externally Equalized)	43	1/20	1/16	1/16	1/25	Not Approved
		1/12	1/10	1/10	1/16	
		—	1/5	1/5	—	
		1/8	—	—	1/8	
		1/6	1/3	1/4	1/6	
		1/4	1/2	1/3	1/4	
		1/2	1	3/4	1/2	
		1	1-1/2	1	1	
		1-1/2	2-1/2	2	1-1/2	
		2	3	2 1/2	2	
		3	5	—	3	
FB(E), SFB(E) (OEM Only) (Internally and Externally Equalized)	43	1/8	1/4	1/3	1/8	Not Approved
		1/4	1/2	1/2	1/4	
		1/3	3/4	—	1/3	
		1/2	1	1	1/2	
		1	1-1/2	1-1/2	1	
		—	2	2	1-1/2	
		1-1/2	2-1/2	—	—	
		2	3	3	2	
		2-1/2	4	3-1/2	3	
		3	5	4	3-1/2	
		4	6	5	4-1/2	
		5	8	7	6	
BF(E), EBF(E), SBF(E) (Internally and Externally Equalized)	43	AAA	AAA	AAA	AAA	Not Approved
		AA	AA	AA	AA	
		A	A	A	A	
		B	B	B	B	
		C	C	C	C	

*R-410A, R-32, R-454B or similar refrigerant use only.

VALVE TYPE	ELEMENT SIZE	NOMINAL VALVE CAPACITY				
		REFRIGERANT				
		R-134a, R-1234yf, R-513A, R-401A, R-409A	R-22, R-407A, R-407C, R-407F	R-448A, R-449A	R-404A, R-502, R-507A, R-402A	R-410A, R-32, R-454B
(E)G (Internally Equalized)	53	—	1/5	1/5	—	Not Approved
		1/8	1/4	—	1/8	
		1/6	1/3	1/4	1/6	
		—	1/2	1/3	—	
		1/4	3/4	1/2	1/4	
		1/2	1	1	1/2	
		1	1-1/2	—	1	
		—	2	1-1/2	—	
		1-1/2	2-1/2	—	1-1/2	
(E)GE Externally Equalized	53	—	1/5	1/5	—	Not Approved
		1/8	1/4	—	1/8	
		1/6	1/3	1/4	1/6	
		—	1/2	1/3	—	
		1/4	3/4	1/2	1/4	
		1/2	1	1	1/2	
		1	1-1/2	—	1	
		—	2	1-1/2	—	
		2	3	2-1/2	2	
		—	4	3-1/2	—	
ER(E), SR(E), R(E), RCE, BBI(E) (OEM Only), CBBIE (OEM Only) (Internally and Externally Equalized)	43 45*	1/6	1/3	1/3	1/6	1/3
		1/4	1/2	1/2	1/4	1/2
		1/3	3/4	3/4	1/3	3/4
		1/2	1	1	1/2	1
		1	1-1/2	1-1/2	1	1-1/2
		1-1/2	2	2	1-1/2	2
		2	3	2-1/2	2	3
		2-1/2	4	3-1/2	3	4
		3	5	4	3-1/2	5
		4	6	5	4	6
		5	8	6	6	8
	45-5*	7	10	—	7	12-1/2
		9	12	—	9	15
P (After Oct. 1970)	33	1-1/2	2-1/2	2	1-1/2	Not Approved
		3	5-1/2	3-1/2	—	
		4	7	5	4	
		5	11	8	6-1/2	
		8	16	12	9	
		12	20	17	12	
H (After Oct. 1970)	33	1-1/2	2-1/2	2	1-1/2	Not Approved
		3	5-1/2	3-1/2	—	
		4	7	5	4	
		5	11	8	6-1/2	
		8	16	12	9	
		12	20	17	12	

*R-410A, R-32, R-454B or similar refrigerant use only.

VALVE TYPE	ELEMENT SIZE	NOMINAL VALVE CAPACITY				
		REFRIGERANT				
		R-134a, R-1234yf, R-513A, R-401A, R-409A	R-22, R-407A, R-407C, R-407F	R-448A, R-449A	R-404A, R-502, R-507A, R-402A	R-410A, R-32, R-454B
C, S (Internally and Externally Equalized)	83	1/8	1/4	1/5	1/8	Not Approved
		1/4	1/2	1/3	1/4	
		1/2	1	1/2	1/2	
		1	1-1/2	1	1	
		1-1/2	2	2	1-1/2	
		2	3	2-1/2	2	
		2-1/2	4	3-1/2	3	
		3	5	5	4	
		5	8	7	6	
		6	10	9	7	
		10	15	12-1/2	10	
EBS	83	5	8	7	6	Not Approved
		7	11	10	7-1/2	
		9	15	12	10	
		12	20	17	13	
M	63	5	8	—	6	Not Approved
		7-1/2	12	—	9	
		11	18	—	13	
		13	21	21	15	
		15	26	27	20	
		20	34	34	25	
		25	42	42	30	
O (Small)	83 85*	6	10	7	6	—
		—	—	—	—	20
		9	15	12	9	—
		—	—	—	—	25
		12	20	17	12	—
		16	30	28	21	35
O (Large)	33	23	40	40	30	—
		32	55	45	35	—
		40	70	60	45	—
	85-3*	—	—	—	—	50
		—	—	—	—	60
V	63	35	52	50	38	Not Approved
		45	70	65	50	
		55	100	90	70	
W	63	80	135	—	100	Not Approved
	7	110	180	130	130	

*R-410A, R-32, R-454B or similar refrigerant use only.

APPLICATION	RECOMMENDED THERMOSTATIC CHARGE REFRIGERANT											THERMOSTATIC CHARGE	SYSTEM MOP psig
	22	134a	404A	407A	407C	407F	410A	448A	449A	507	513A		
AIR CONDITIONING	–	X	–	–	–	–	–	–	–	–	X	JCP60	50
	X	–	–	X	X	X	–	X	X	–	–	VCP100	90
	X	–	–	X	X	X	–	X	X	–	–	NGA	–
	–	–	X	–	–	–	–	–	–	–	–	SCP115	105
	–	–	–	–	–	–	X	–	–	–	–	ZGA	–
	–	–	–	–	–	–	X	–	–	–	–	ZCP180	170
COMMERICAL REFRIGERATION +50°F to -10°F	–	X	–	–	–	–	–	–	–	–	X	JC	–
	X	–	–	X	–	X	–	X	X	–	–	VC	–
	–	–	X	–	–	–	–	–	–	X	–	SC/PC	–
LOW TEMPERATURE REFRIGERATION 0°F to -40°F	X	–	–	X	X	X	–	X	X	–	–	VZ	–
	X	–	–	X	X	X	–	X	X	–	–	VZP40	30
	–	–	X	–	–	–	–	–	–	X	–	SZ	–
	–	–	X	–	–	–	–	–	–	X	–	SZP	35

For Dual Temperature applications, use the "C" Charge.
VC and SC/PC charge can be used down to -30F (34C).

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