Part Description: Thermostatic Expansion Valve

SBQE, 3/8 X 1/2 X 1/4 ODF x 5'

Borgen Part Number: 35345

To order this part from Borgen Systems:

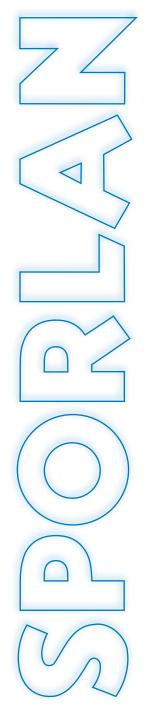
Phone 800-383-7509

Email: service@borgensystems.com



Thermostatic Expansion Valves

With Selective Thermostatic Charges







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users having technical expertise.

OFFER OF SALE

THERMOSTATIC EXPANSION VALVES

10 Outstanding Features & Benefits of Sporlan Thermostatic Expansion Valves

• SELECTIVE THERMOSTATIC CHARGES

Designed to provide optimum performance for all applications — air conditioning and heat pump, medium and low temperature refrigeration.

THERMOSTATIC ELEMENT DESIGN

Long lasting and field proven stainless steel diaphragm and welded element construction.

DIAPHRAGM DESIGN

Large flat diaphragm permits precise valve control.

REPLACEABLE THERMOSTATIC ELEMENTS

Field replaceable elements on all standard valves.

ACCESSIBLE INTERNAL PARTS

Durable, leakproof body joint construction allows the valve to be disassembled, and the internal parts cleaned and inspected.

The thermostatic expansion valve (TEV) controls the flow of liquid refrigerant entering the direct expansion (DX) evaporator by maintaining a constant **superheat** of the refrigerant vapor at the outlet of the evaporator. The TEV controls the difference between the actual temperature and the saturation temperature of the refrigerant corresponding to the suction pressure at the sensing bulb location; this is superheat. By controlling

PIN CARRIER DESIGN (CONVENTIONAL VALVES)

Provides precise pin and port alignment, and tighter seating.

• BALANCED PORT DESIGN

Provides perfect pin and port alignment, and prevents changes in pressure drop across the valve from influencing valve operation. Provides excellent control on applications with widely varying operating conditions.

MATERIALS OF CONSTRUCTION

Pin and port materials offer maximum protection against corrosion and erosion.

SILVER SOLDERED CONNECTIONS

For leakproof, high strength connection-to-body joints.

ADJUSTABLE SUPERHEAT DESIGN

All standard valves are externally adjustable.

superheat, the TEV keeps most of the evaporator surface active, while preventing liquid refrigerant from returning to the compressor. The ability of the TEV to match refrigerant flow to the rate at which refrigerant can be vaporized in the evaporator makes the TEV the ideal expansion device for most air conditioning and refrigeration applications.

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Refer to Bulletin 10-9 for a complete discussion on The Theory of Operation and Application of Thermostatic Expansion Valves.

Refer to Bulletin 10-11 for a complete discussion on Installing and Servicing Thermostatic Expansion Valves.

SELECTION PROCEDURE

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

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

The TEV capacity tables on pages 4 to 8 are based on a liquid temperature of 100°F for R-22, R-134a, R-401A, R-402A, R-404A, R-407C, R-408A, R-409A, R-410A, and R-507. For other liquid temperatures, apply the correction factor given in the tables for each refrigerant. For example see Table B.

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. For example see Table C. 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.

Refer to Bulletin 20-10 for information on refrigerant distributors.

3. Select valve from the capacity tables.

Select a valve 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 factors for liquid temperature and pressure drop. Once the desired valve capacity has been located, determine the nominal capacity of the valve from the tables' second column. On multiple evaporator systems, select each valve on the basis of individual evaporator capacity. For example see Table A.

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. Refer to Bulletin 10-9 for further information on this subject.

5. Select body type.

Select the body type according to the style connections desired. For complete specifications on each TEV type including nominal ratings, refer to pages 9 to 11.

6. Select the Sporlan Selective Thermostatic Charge.

Select the charge according to the design evaporating temperature from the Table on page 3. Refer to Bulletin 10-9 for a complete discussion of the available Sporlan Selective Thermostatic Charges.

Selection Example - Refrigerant 22

Application: medium temperature refrigeration

Design evaporator temperature 20°F Design condenser temperature 95°F Refrigerant liquid temperature 70°F Design system capacity 1 tor
Available pressure drop across TEV: Condensing pressure (psig)
Liquid line and accessories loss (psi)
Refrigerant liquid correction factor

Use the following formula to calculate TEV capacity: TEV Capacity = TEV rating x CF liquid temperature x CF pressure drop

EGVE-1 has valve capacity of: $1.09 \times 1.17 \times 0.89 = 1.14 \text{ Tons}$ at 20°F evaporating temperature, 100 psi pressure drop and 70° liquid temperature.

Thermostatic charge (from table on page 3): VC ②

Selection: EGVE-1-C 3/8" x 1/2" x 1/4" ODF x 5"

- 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.
- 2 Please note that the refrigerant charge designation in the thermostatic charge ("V" in this case) is dropped when it is incorporated into the valve model designation.



AIR CONDIT	IONING H	EAT F	UMF	and	COM	MER	C
AIR CONDI	IUNINO, I		R	FRIGE	RANT		0
	}			22			Ci
	NOMINAL	REC	MME	NDED	THERN	IOSTA	îli î
VALVE	CAPACITY		10100	VGA I	V Z	,, V Z F 4	U
TYPES	CAPACITI	EVA	PORA	TOR TE	MPER	ATURE	-40
		40°	20°	0°	-10°	- 20° 0.15	0.1
F-EF-G-EG	1/5	0.20	8.22	79.19	0.17	0.13	0.1
F-EF-G-EG	1/3	0.35	0.38	0.33	0.27	0.31	0.2
F-EF-G-EG	1/2	0.45	0.49	0.43	0.55	0.61	0.4
G-EG	3/4	0.75	9.62	0.71	0.86	0.77	0.5
F-EF-G-EG	1	1.00	1.09	0.95	1.22	1.09	0.8
F-EF-G-EG	1-1/2	1.60	1.74	1.32		Cable	

The valve capacity should equal or slightly exceed the tonnage rating of the system. (For complete R-22 apacity tables, see pages 4 and 5.)

			Lic	Juid T	empe	eratur	'e /		
REFRIGERANT	0°	LIQUI 10°	D TEN	IPERA	TURE	ENTE	RING	V _E V ²	F
	COR	RECT	ON E	VCTOP	40°	50°	60°	70°	80
22	1.56	RECT 1.51	1 45	1.40	101	OUID	TEM		URI
407C	1.69	1.62	1.55	1.49	1.34	1.29	1.23	1.17	1.1
			1100	1.43	1.42	1.35	1.28	20	1 1

Table B

			<u> </u>		. 0000	c TEV	(nsi)
EVAPORATOR		PRES	SURE	DEC.	ACROS	3 ILV	175
TEMPERATURE	30	50	75	100	125	150	
°F	CO	RRECT	ION F	ACTOF	CF P	II SSU	RE DRO
400	0.55	0.71	0.87	1.00	1.12	1.22	1.32
10°			0.77	0.89	1.00	1.10	1.18
20 ~ -		-	0.71	0.32	0.91	1.00	
-TO U. 20		0	0.65	0.76	0.85	0.93	1.00
-40°	0.41	0.55	0.00			т	ahla C
20° k 0° -10° & -20° -40°	0.49 0.45 0.41	0.63 0.58 0.53	0.77 0.71 0.65	0.92	0.91	1.00	1.08 1.00 able C

TEV Pressure Drop

Design Evaporating Temperature

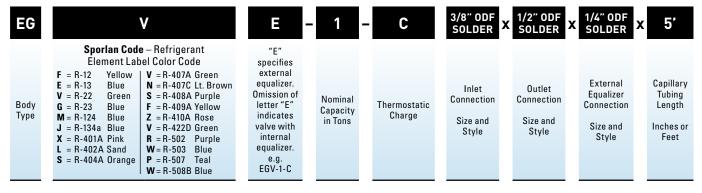


SELECTION PROCEDURE

7. Valve Nomenclature / Ordering Instructions

Combine the letters and numbers in the following manner to obtain the complete valve designation. Also include all connection sizes and the capillary tube length.

EXAMPLE



RECOMMENDED THERMOSTATIC CHARGES*

SPORLAN SELECTIVE CHARGES ENGINEERED for PEAK PERFORMANCE for EACH SPECIFIC APPLICATION

					REFRIG	ERANT					ACTUAL
APPLICATION	12, 409A	22, 422D, 407A	410A	134a	401A	402A	404A, 408A	407C	502	507	THERMOSTATIC CHARGES
	FCP60	-	_	JCP60	XCP60	-	_	_	-	-	JCP60
	_	VCP100	_	-	-	-	_	NCP100	-	_	VCP100
Air Canditioning	_	_	ZCP180	_	_	-	_	_	-	_	ZCP180
Air Conditioning	_	VGA	_	_	_	_	_	NGA	_	_	VGA
	_	-	_	-	_	-	SCP115	_	RCP115	_	SCP115
	_	_	ZGA	_	_	_	_	_	_	_	ZGA
	FC	_	_	JC	XC	_	-	-	-	_	JC
Commercial Refrigeration	_	VC	_	_	-	-	_	NC	_	_	VC
50°F to -10°F	-	-	_	_	_	-	SC	_	RC	_	SC
30 1 10 10 1	_	_	_	_	_	LC	_	-	_	PC	PC
	FZ	-	-	-	-	-	-	-	-	-	JZ
	FZP	_	-	_	-	_	_	-	-	-	JZP
Low Temperature Refrigeration	_	VZ	-	-	-	-	-	-	-	-	VZ
0°F to -40°F	_	VZP40	_	-	-	_	_	-	-	_	VZP40
0 1 10 40 1	_	_	_	_	-	LZ	SZ	-	RZ	PZ	SZ
	_	-	_	_	-	LZP	SZP	-	RZP	PZP	SZP
Extreme Low Temperature Refrigeration	_	VX	_	_	-	_	_	_	_	_	VX
-40°F to -100°F	-	_	_	_	-	LX	SX	-	RX	PX	SX

*APPLICATION FACTORS:

- 1. The Type ZP charges have essentially the same characteristics as the Type Z charge with one exception: they produce a pressure limit Maximum Operating Pressure (MOP). ZP charges are not intended as replacements for Z charges. Each should be selected for its own unique purpose.
- All air conditioning and heat pump charges are intended for use with externally equalized valves.
- Type L liquid charges are also available for most commonly used refrigerants in most element sizes.
- 4. The Type X charges are not to be used with "EBS" and "O" valves.
- 5. If in doubt as to which charge to use, review the section on thermostatic charges in Bulletin 10-9 or contact Sporlan Division of Parker, Washington, Missouri with complete system data.
- 6. For dual temperature applications, use the "C" charge.
- 7. The "C" charge may be used on applications down to -30°F on R-22, R-404A and R-507.

TEV CAPACITY RATINGS

FOR REFRIGERANTS: 22, 134a, 401A, 402A, 404A, 407C, 408A, 409A, 410A, 422D, 507

TEV capacity ratings for R-22, R-134a, R-401A, R-402A, R-404A, R-407C, R-408A, R-409A, R-410A, R-422D, and R-507 are based on vapor free 100°F liquid refrigerant entering the expansion valve, a maximum opening superheat of 7°F, and a standard factory air test superheat setting. A discussion of the relationship between valve capacities and superheat settings can be found in Bulletin 10-9.

The ratings for evaporator temperatures 40°F, 20°F, -10°F, -40°F in the capacity tables are in accordance with ANSI/ARI

Standard Number 750. TEVs are tested in accordance with ANSI/ASHRAE 17.

TEV models featuring the mechanical pressure limit style thermostatic elements, i.e., the Types G(PL) and C(PL) TEVs, are now obsolete. Consult Bulletin 210-10-17 for additional information on this subject and replacement valves.

For TEV capacity ratings at operating conditions not shown in the following tables, contact Sporlan Division of Parker.

THERMOSTATIC EXPANSION VALVE **CAPACITIES for REFRIGERANTS - TONS OF REFRIGERATION**

AIR CONDITIONING, HEAT PUMP and COMMERCIAL REFRIGERATION APPLICATIONS

			REFRIGERANT														
					2	2						D①				407C	
VALVE	TVDEC	NOMINAL								THERM		IC CHA	RGE				
VALVE	TIFES	CAPACITY	VC, V	CP100,	VGA	V	Z, VZP			CP100,			Z, VZP	40	NC, N	ICP100,	, NGA
						,				R TEMP							
			40°	20°	0°	-10°	-20°	-40°	40°	20°	0°	-10°	-20°	-40°	40°	20°	0°
F-EF-		1/5	0.20	0.22	0.19	0.17	0.15	0.11	0.14	0.15	0.13	0.11	0.10	0.07	0.18	0.20	0.17
	G-EG	1/3	0.35	0.38	0.33	0.27	0.24	0.18	0.25	0.26	0.22	0.18	0.16	0.11	0.32	0.35	0.30
	G-EG	1/2	0.45	0.49	0.43	0.35	0.31	0.23	0.36	0.34	0.29	0.23	0.20	0.15	0.41	0.44	0.38
	EG	3/4	0.75	0.82	0.71	0.68	0.61	0.45	0.54	0.57	0.48	0.45	0.40	0.28	0.69	0.74	0.64
F-EF-		1 1/2	1.00	1.09	0.95	0.86	0.77	0.57	0.71	0.76	0.64	0.57	0.50	0.36	0.92	0.99	0.85
	G-EG G&EG(Ext)-S	1-1/2	1.60	1.74	1.52	1.22	1.09	0.81	1.14	1.21	1.02	0.81	0.71	0.51	1.47	1.58	1.36
		2 2 1/2	2.00	2.18	1.91	1.96 2.20	1.75 1.97	1.31	1.43	1.51	1.28	1.30	1.14	0.82	1.84 2.30	1.97	1.70
	-G&EG(Int)	2-1/2 3	2.50 3.20	2.72 3.49	2.38 3.05	2.20	2.09	1.47 1.56	1.78 2.28	1.89 2.42	1.60 2.05	1.45 1.54	1.28	0.92	2.94	2.46 3.16	2.12
	G&EG (Ext)-S S	4	4.50	4.90	4.29	3.43	3.07	2.29	3.21	3.40	2.88	2.27	1.99	1.43	4.14	4.44	3.81
		5	5.20	5.67	4.29	4.04	3.62	2.70	3.71	3.93	3.33	2.67	2.35	1.69	4.78	5.13	4.41
S(E		8	8.00	8.72	7.04	5.82	4.87	3.59	5.70	6.04	4.73	3.85	3.16	2.24	7.35	7.89	6.25
S(E		10	10.0	10.9	8.80	7.27	6.08	4.48	7.13	7.56	5.91	4.81	3.95	2.80	9.19	9.86	7.82
		5-1/2	5.60	5.98	5.34	4.59	3.39	2.73	3.99	4.15	3.59	3.03	2.20	1.71	5.15	5.41	4.75
		7	7.00	7.48	6.67	5.14	3.79	3.06	4.99	5.18	4.48	3.40	2.46	1.91	6.43	6.76	5.93
<u>-</u>		11	10.5	11.2	10.0	7.00	5.17	4.17	7.49	7.77	6.73	4.63	3.36	2.61	9.65	10.1	8.90
<u>_</u>		16	15.2	16.2	14.5	10.0	7.38	5.96	10.8	11.3	9.74	6.61	4.79	3.72	14.0	14.7	12.9
		20	22.2	23.7	21.2	16.3	12.0	9.71	15.8	16.4	14.2	10.8	7.81	6.07	20.4	21.5	18.8
	И	21	21.5	23.4	22.5	18.4	16.3	13.2	15.3	16.2	15.1	12.2	10.6	8.27	19.8	21.2	20.0
<u></u>		26	26.5	28.9	27.8	26.0	23.0	18.7	18.9	20.0	18.7	17.2	15.0	11.7	24.4	26.1	24.7
<u></u>		34	34.0	37.1	35.6	30.6	27.1	22.0	24.2	25.7	24.0	20.2	17.6	13.8	31.3	33.5	31.7
<u></u>		42	42.0	45.8	44.0	39.6	32.7	25.2	29.9	31.7	29.6	26.2	21.3	15.8	38.6	41.4	39.2
	4		LANCE								20.0	20.2	21.0	10.0	00.0	71.7	00.2
BF-EB	F-SRF	AAA	0.35	0.38	0.33	0.27	0.24	0.18	0.25	0.26	0.22	0.18	0.16	0.11	0.32	0.34	0.30
	F-SBF	AA	0.75	0.82	0.71	0.68	0.61	0.45	0.54	0.57	0.48	0.45	0.40	0.28	0.69	0.74	0.64
	F-SBF	A	1.60	1.74	1.52	1.22	1.09	0.81	1.14	1.21	1.02	0.81	0.71	0.51	1.47	1.58	1.36
	F-SBF	В	2.80	3.05	2.67	2.25	2.01	1.50	2.00	2.12	1.79	1.49	1.31	0.94	2.57	2.76	2.37
	F-SBF	C	5.20	5.67	4.96	4.04	3.62	2.70	3.71	3.93	3.33	2.67	2.35	1.69	4.78	5.13	4.41
	38	8	8.51	8.81	7.30	6.15	5.15	3.79	6.06	6.10	4.90	4.06	3.34	2.37	7.81	7.96	6.48
EE		11	11.5	11.9	9.86	8.32	6.96	5.13	8.20	8.25	6.63	5.50	4.52	3.21	10.6	10.8	8.77
EE		15	15.5	16.3	12.2	11.1	8.88	6.85	11.0	11.3	8.19	7.33	5.77	4.28	14.2	14.7	10.8
EE		20	22.3	22.8	16.9	15.4	12.4	8.66	15.9	15.8	11.4	10.2	8.02	5.42	20.5	20.6	15.0
)	15	15.0	15.5	13.0	9.20	8.15	6.14	10.7	10.8	8.75	6.08	5.29	3.84	13.8	14.1	11.6
)	20	22.2	23.0	19.3	16.3	12.0	9.71	15.8	15.9	13.0	10.8	7.81	6.07	20.4	20.8	17.1
)	30	30.5	31.6	26.5	19.4	17.1	14.4	21.7	21.9	17.8	12.8	11.1	8.97	28.0	28.6	23.6
)	40	40.3	43.5	32.0	29.5	26.1	21.8	28.7	30.1	21.5	19.5	17.0	13.6	37.0	39.3	28.5
)	55	55.0	59.3	43.7	39.4	29.9	24.3	39.2	41.1	29.4	26.0	19.4	15.2	50.6	53.7	38.9
)	70	73.0	78.8	58.0	51.5	34.0	26.4	52.0	54.6	39.0	34.0	22.1	16.5	67.1	71.3	51.6
	I	52	52.0	56.1	54.0	52.2	37.0	29.5	37.1	38.9	36.3	34.5	24.0	18.4	47.8	50.8	48.0
	I	70	73.0	78.8	75.8	71.6	50.7	40.4	52.0	54.6	50.9	47.3	32.9	25.3	67.1	71.3	67.4
\	I	100	100	108	104	92.2	65.3	52.1	71.3	74.8	69.8	60.9	42.4	32.6	91.9	97.6	92.3
V	-	135	143	154	148	132	93.5	74.5	102	107	99.7	87.3	60.7	46.6	131	140	132
V		180	180	_	_	_	_	_	128	_	-	_	_	_	165	_	
VALVE TYPES										STATIC							
<u> </u>	0	1/3	0.35	0.38	0.33	0.27	0.24	0.18	0.25	0.26	0.22	0.18	0.16	0.11	0.32	0.35	0.30
<u> </u>	1	3/4	0.75	0.82	0.72	0.68	0.61	0.45	0.54	0.57	0.48	0.45		0.28	0.69	0.74	0.64
<u> 0-EQ-SQ</u>	2	1 1 1 1 1 1	1.00	1.09	0.95	0.86	0.77	0.57	0.71	0.76	0.64	0.57	0.50	0.36	0.92	0.99	
<u> </u>	3	1-1/2	1.50		1.43	1.10	0.99	0.73	1.07	1.13	0.96	0.73		0.46	1.38	1.48	
<u> 0-EQ-SQ</u>	4	2-1/2	2.50	2.73		2.20	1.97	1.47	1.78	1.89	1.60	1.45	1.28	0.92	2.30	2.46	2.12
<u> </u>	5	3-1/2	3.50	3.82	3.34	3.00	2.69	2.00	2.50	2.64	2.24	1.98		1.25	3.22	3.45	
Q-EQ-SQ	6	5	4.80	5.24	4.58	3.65	3.27	2.44	3.42		3.07			1.52			4.07
BQ-EBQ-SBQ	Balanced port replaceable cartridges, AAA, AA, A, B and C, have the same capacities as the matching nominal capacity of the standard balanced port valves above.																

LIQUID TEMPERATURE ENTERING TEV °F REFRIGERANT 0° | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° | 100° | 110° | 120° | 130° | 140° CORRECTION FACTOR, CF LIQUID TEMPERATURE 1.56 | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 1.99 | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.41 | 1.31 | 1.20 | 1.10 | 1.00 | 0.90 | 0.79 | 0.68 | 0.57

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to 40°F since the variation in the actual factors across this range 1.69 1.62 1.55 1.49 1.42 1.35 1.28 1.21 1.14 1.07 1.00 0.93 0.85 0.77 0.69 is insignificant.

EVAPORATOR		PRESSURE DROP ACROSS TEV (psi) 30 50 75 100 125 150 175 200 225 250 275 300											
TEMPERATURE	30	50	75	100	125	150	175	200	225	250	275	300	
°F		CORRECTION FACTOR, CF PRESSURE DROP											
40°	0.55	0.71	0.87	1.00	1.12	1.22	1.32	1.41	1.50	1.58	1.66	1.73	
20° & 0°	0.49	0.63	0.77	0.89	1.00	1.10	1.18	1.26	1.34	1.41	1.48	1.55	
-10° & -20°	0.45	0.58	0.71	0.82	0.91	1.00	1.08	1.15	1.22	1.29	1.35	1.41	
-40°	0.41	0.53	0.65	0.76	0.85	0.93	1.00	1.07	1.13	1.20	1.25	1.31	

422D

407C

TEV Capacity = TEV Rating x CF Liquid Temperature x CF Pressure Drop — Example: Actual capacity of a nominal 2 ton R-22 Type S valve at 20°F evaporator, 100 psi pressure drop across the TEV, and 90°F liquid temperature entering the TEV = 2.18 (from rating chart) x 1.06 (CF liquid temperature) x 0.89 (CF pressure drop) = 2.06 tons.

AIR CONDITIONING and HEAT PUMP APPLICATIONS

					R	EFRIGERAN	IT			
			22			422D①			407C	
VALVE TYPES	NOMINAL			REC	OMMENDE	D THERMOS	STATIC CHA	RGE		
VALVETTES	CAPACITY				V	CP100, VGA	2			
					EVAPORAT	OR TEMPE	RATURE °F			
		40°	20°	0°	40°	20°	0°	40°	20°	0°
ER, RC	1	1.0	1.1	1.0	0.71	0.76	0.66	0.9	1.0	0.9
ER, RC	1-1/2	1.8	1.9	1.7	1.25	1.32	1.15	1.6	1.7	1.5
ER, RC	2	2.3	2.5	2.2	1.64	1.74	1.51	2.1	2.3	2.0
ER, RC	3	3.2	3.5	3.1	2.28	2.42	2.10	2.9	3.2	2.8
ER, RC	4	4.2	4.6	4.1	2.99	3.17	2.75	3.9	4.1	3.6
ER, RC	5	5.0	5.5	4.9	3.56	3.78	3.27	4.6	4.9	4.3
ER, RC	6	6.0	6.5	5.3	4.28	4.53	3.54	5.5	5.9	4.7
ER	8	8.0	8.7	7.8	5.70	6.04	5.24	7.4	7.9	6.9
ER	10	10.4	11.4	10.2	7.44	7.88	6.83	9.6	10.3	9.0
ER	12	12.1	13.2	11.8	8.62	9.14	7.92	11.1	11.9	10.5

					LIQU	ID TEN	IPERA	TURE	ENTER	ING T	EV °F				
REFRIGERANT	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°	110°	120°	130°	140°
	CORRECTION FACTOR, CF LIQUID TEMPERATURE														
22	1.56	1.51	1.45	1.40	1.34	1.29	1.23	1.17	1.12	1.06	1.00	0.94	0.88	0.82	0.76
422D	1.99	1.90	1.80	1.70	1.60	1.50	1.41	1.31	1.20	1.10	1.00	0.90	0.79	0.68	0.57
407C	1.69	1.62	1.55	1.49	1.42	1.35	1.28	1.21	1.14	1.07	1.00	0.93	0.85	0.77	0.69

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to 40°F since the variation in the actual factors across this range is insignificant.

EVAPORATOR	PRESSURE DROP ACROSS TEV (psi) 30 50 75 100 125 150 175 200 225 250 275 300											
TEMPERATURE	30	50	75	100	125	150	175	200	225	250	275	300
°F	CORRECTION FACTOR, CF PRESSURE DROP											
40°	0.55	0.71	0.87	1.00	1.12	1.22	1.32	1.41	1.50	1.58	1.66	1.73
20° & 0°	0.49	0.63	0.77	0.89	1.00	1.10	1.18	1.26	1.34	1.41	1.48	1.55

TEV Capacity = TEV Rating x CF Liquid Temperature x CF Pressure
Drop — Example: Actual capacity of a nominal 2 ton R-22 Type S valve
at 20°F evaporator, 100 psi pressure drop across the TEV, and 90°F
liquid temperature entering the TEV = 2.18 (from rating chart) x 1.06
(CF liquid temperature) x 0.89 (CF pressure drop) = 2.06 tons.



THERMOSTATIC EXPANSION VALVE
CAPACITIES for REFRIGERANTS - TONS OF REFRIGERATION

410A

REFRIGERANT

AIR CONDITIONING and HEAT PUMP APPLICATIONS

		R	EFRIGERAN	T						
			410A							
VALVE TYPES	NOMINAL	RECOMMENDED THERMOSTATIC CHARGE								
VALVETTILES	CAPACITY		CP180, ZGA							
			TOR TEMPE							
		40°	20°	0°						
ER, RC	1	1.2	1.3	1.2						
ER, RC	1-1/2	2.1	2.3	2.0						
ER, RC	2	2.7	3.0	2.7						
ER, RC	3	3.8	4.1	3.7						
ER, RC	4	5.0	5.4	4.9						
ER, RC	5	5.9	6.5	5.8						
ER, RC	6	7.1	7.8	6.3						
ER	8	9.5	10.4	9.3						
ER	12-1/2	12.3	13.5	12.1						
ER	15	14.3	15.7	14.0						

VALVE T	YPES	NOMINAL CAPACITY	THERMOSTATIC CHARGE					
		CAPACITY	7	ZCP180, ZG <i>A</i>	\			
			EVAPORA [*]	TOR TEMPE	RATURE °F			
			40°	20°	0°			
OZE-	20	20	19.7	21.6	20.4			
OZE-	25	25	23.7	25.9	24.5			
OZE-	35	35	32.6	35.6	33.6			
OZE-	50	50	49.3	54.0	51.0			
OZE-	60	60	59.2	64.8	61.2			
VALVE	CARTRIDGE							
TYPES	TYPE							
BQ, EBQ, SBQ	AAA	1/3	0.4	0.5	0.4			
BQ, EBQ, SBQ	AA	3/4	0.9	1.0	0.9			
BQ, EBQ, SBQ	Α	1-3/4	1.9	2.1	1.8			
BQ, EBQ, SBQ	В	3-1/2	3.4	3.7	3.2			
BQ, EBQ, SBQ			6.2	6.8	5.9			

		LIQUID TEMPERATURE ENTERING TEV °F										
REFRIGERANT	40	50	60	70	80	90	100	110	120	130	140	
	(ORRI	ECTIO	N FA	CTOR	, CF L	IQUIE	TEM	IPER/	ATURI	=	
410A	1.39	1.31	1.23	1.17	1.12	1.06	1.00	0.94	0.88	0.82	0.76	

EVAPORATOR		PRE	SSURE	DROP	ACROS	S TEV (psi)				
TEMPERATURE	80	120	160	200	240	280	320	360			
°F	CORRECTION FACTOR, CF PRESSURE DROP										
40°	0.71	0.87	1.00	1.12	1.22	1.32	1.41	1.50			
20° & 0°	0.63	0.77	0.89	1.00	1.10	1.18	1.26	1.34			

① R-422D can be used in a system with R-22 valves, but the TEV capacity will be reduced. Please verify valve capacity will handle system load.

The RC valve for R-22 applications is only available with a VGA element.

COMMERCIAL and LOW TEMPERATURE REFRIGERATION APPLICATIONS

								REFRIC	ERANT					
					40	4A						8A		
VALVE	TYPES	NOMINAL				REC	OMMEN							
		CAPACITY	S	C, SCP1	15		SZ, SZP			C, SCP1			SZ, SZP	
			40°	200	00	400			EMPERA		0°	400	200	-40°
E_EE	-G-EG	1/8	0.15	20° 0.16	0° 0.15	-10° 0.15	-20° 0.13	-40° 0.11	40° 0.20	20° 0.21	0.20	-10° 0.22	-20° 0.19	0.16
	-G-EG	1/6	0.13	0.10	0.13	0.13	0.13	0.17	0.20	0.33	0.20	0.22	0.13	0.10
	-G-EG	1/4	0.29	0.31	0.29	0.31	0.27	0.22	0.39	0.42	0.41	0.43	0.38	0.32
	-G-EG	1/2	0.56	0.59	0.56	0.59	0.51	0.42	0.75	0.81	0.77	0.83	0.72	0.61
F-EF-	-G-EG	1	1.02	1.10	1.04	1.10	0.94	0.79	1.37	1.50	1.44	1.54	1.34	1.14
F-EF-	-G-EG	1-1/2	1.53	1.61	1.39	1.47	1.26	1.05	2.05	2.19	1.92	2.06	1.79	1.53
F&EF(Ext)-0	G&EG(Ext)-S	2	2.04	2.14	1.84	1.96	1.68	1.40	2.74	2.92	2.54	2.74	2.38	2.04
	S	3	2.86	3.00	2.52	2.45	2.10	1.75	3.83	4.08	3.48	3.43	2.98	2.54
	S	4	4.08	4.28	3.60	3.42	2.94	2.45	5.48	5.83	4.97	4.80	4.17	3.56
	Ext)	6	5.61	5.12	4.27	4.52	3.84	2.97	7.53	6.97	5.90	6.34	5.45	4.32
	Ext)	7	7.14	6.51	5.44	5.76	4.90	3.79	9.58	8.87	7.50	8.08	6.94	5.51
	<u>H</u>	3 4	2.85	2.72	2.32	2.45	2.08	1.65	3.83	3.71	3.20	3.434	2.95	2.41
	<u>H</u>		4.08	3.89	3.15	3.42	2.91	2.32	5.48	5.30	4.34	4.80	4.13	3.37
	<u>H</u> H	6-1/2 9	6.63 9.69	6.33 9.25	5.12 7.48	5.32 6.11	4.52 5.19	3.60 4.13	8.90 13.0	8.61 12.6	7.06	7.46 8.57	6.41 7.36	5.24 6.01
	H	12	13.3	12.7	10.2	9.79	8.31	6.62	17.8	17.2	14.1	13.7	11.8	9.60
	vi	15	16.1	17.1	13.1	13.8	12.4	10.0	21.6	23.3	18.0	19.3	17.5	14.5
	v. VI	20	21.0	22.3	16.4	17.3	15.5	12.5	28.2	30.3	22.7	24.2	22.0	18.2
	vi	25	26.2	27.8	20.5	20.3	18.2	14.7	35.2	37.8	28.3	28.4	25.8	21.4
	VI	30	31.6	33.5	24.7	23.5	21.1	17.0	42.4	45.7	34.1	32.9	29.9	24.7
		BAI	LANCED	PORT T	HERMOS	TATIC EX	(PANSIO	N VALV	ES					
BF-EB	BF-SBF	AAA	0.23	0.24	0.23	0.24	0.21	0.17	0.31	0.33	0.32	0.34	0.30	0.25
BF-EB	F-SBF	AA	0.46	0.49	0.46	0.45	0.39	0.32	0.62	0.66	0.64	0.63	0.55	0.47
	F-SBF	Α	1.02	1.10	1.04	1.10	0.94	0.79	1.37	1.50	1.44	1.54	1.34	1.14
	BF-SBF	В	1.89	1.98	1.66	1.60	1.37	1.14	2.53	2.70	2.30	2.24	1.95	1.66
	BF-SBF	C	2.86	3.00	2.50	2.45	2.10	1.75	3.83	4.08	3.48	3.43	2.98	2.54
	BS	6	5.71	5.63	4.61	4.15	3.28	2.97	7.67	7.66	6.40	5.82	4.66	4.32
	BS	7-1/2	7.75	7.64	6.26	5.28	4.18	3.78	10.4	10.4	8.68	7.41	5.93	5.49
	BS BS	10 13	9.54 13.6	9.63 14.0	7.25 10.2	6.72 9.54	5.56 8.00	4.64 6.15	12.8 18.3	13.2 19.0	10.0 14.2	9.42 13.4	7.88 11.4	6.74 8.94
	ง 0	9	9.69	9.24	7.24	6.11	5.31	4.43	13.0	12.6	10.1	8.57	7.53	6.44
	0	12	13.3	12.6	9.91	9.74	8.46	7.06	17.8	17.2	13.8	13.6	12.0	10.3
	0	21	21.4	20.4	14.3	11.7	10.1	8.46	28.8	27.8	19.8	16.4	14.4	12.3
	0	30	30.8	32.3	23.0	17.5	15.2	12.7	41.4	44.0	32.0	24.5	21.5	18.4
	0	35	35.7	37.4	26.7	19.0	16.5	13.8	47.9	51.0	37.0	26.6	23.4	20.0
	0	45	45.9	48.1	34.3	21.9	19.0	15.9	61.6	65.6	47.6	30.7	26.9	23.1
	V	38	38.7	39.4	33.6	33.2	30.5	24.1	52.0	53.7	46.6	46.6	43.2	35.1
	V	50	52.0	52.9	45.1	47.4	43.5	34.4	69.8	72.1	62.6	66.5	61.7	50.0
	V	70	71.4	72.6	62.7	66.4	60.9	48.1	95.8	99.0	87.0	93.1	86.4	70.0
VALVE TYPES	CARTRIDGE NO.	- 12			ACEABLE									
<u> 0-E0-S0</u>	0	1/6	0.20	0.22	0.20	0.20	0.17	0.14	0.27	0.30	0.28	0.28	0.24	0.21
<u> </u>	1	1/4	0.46	0.49	0.46	0.45	0.39	0.32	0.62	0.66	0.64	0.63	0.55	0.47
Q-EQ-SQ Q-EQ-SQ	3	1/2 1	0.66 1.02	0.72 1.07	0.67 0.89	0.59 0.85	0.51 0.73	0.42	0.89 1.37	0.98 1.46	0.94 1.24	0.83 1.19	0.72 1.03	0.61 0.88
<u>u-Eu-Su</u> Q-EQ-SQ	4	1-1/2	1.63	1.07	1.44	1.47	1.26	1.05	2.19	2.33	1.24	2.06	1.03	1.53
Q-EQ-SQ	5	2	2.14	2.25	1.88	1.96	1.68	1.40	2.88	3.06	2.61	2.74	2.38	2.04
Q-EQ-SQ	6	3	2.14	3.00	2.51	2.45	2.11	1.75	3.83	4.08	3.48	3.43	2.98	2.54
	Balanced port rep													
BQ-EBQ-SBQ	standard balance			-,,	, = =	-,					J		. ,	

REFRIGERANT 0° 10° 20° 30° 40° 50° 60° 70° 80° 90° 100° 110° 120° 130° 140°

CORRECTION FACTOR, CF LIQUID TEMPERATURE

404A 2.04 1.94 1.84 1.74 1.64 1.54 1.43 1.33 1.22 1.11 1.00 0.89 0.77 0.65 0.53
408A 1.66 1.60 1.54 1.47 1.40 1.34 1.27 1.21 1.14 1.07 1.00 0.93 0.86 0.79 0.71

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to 40°F since the variation in the actual factors across this range is insignificant.

		PR	ESSU	RE DRO	OP AC	ROSS	TEV (p	osi)					
30	50	75	100	125	150	175	200	225	250	275			
	CORRECTION FACTOR, CF PRESSURE DROP												
0.55	0.71	0.87	1.00	1.12	1.22	1.32	1.41	1.50	1.58	1.66			
0.49	0.63	0.77	0.89	1.00	1.10	1.18	1.26	1.34	1.41	1.48			
0.45	0.58	0.71	0.82	0.91	1.00	1.08	1.15	1.22	1.29	1.35			
0.41	0.53	0.65	0.76	0.85	0.93	1.00	1.07	1.13	1.20	1.25			
	0.55 0.49 0.45	0.55 0.71 0.49 0.63 0.45 0.58	30 50 75 CORRE 0.55 0.71 0.87 0.49 0.63 0.77 0.45 0.58 0.71	30 50 75 100 CORRECTION 0.55 0.71 0.87 1.00 0.49 0.63 0.77 0.89 0.45 0.58 0.71 0.82	30 50 75 100 125 CORRECTION FACT 0.55 0.71 0.87 1.00 1.12 0.49 0.63 0.77 0.89 1.00 0.45 0.58 0.71 0.82 0.91	30 50 75 100 125 150 CORRECTION FACTOR, C 0.55 0.71 0.87 1.00 1.12 1.22 0.49 0.63 0.77 0.89 1.00 1.10 0.45 0.58 0.71 0.82 0.91 1.00	30 50 75 100 125 150 175 CORRECTION FACTOR, CF PRE 0.55 0.71 0.87 1.00 1.12 1.22 1.32 0.49 0.63 0.77 0.89 1.00 1.10 1.18 0.45 0.58 0.71 0.82 0.91 1.00 1.08	30 50 75 100 125 150 175 200 CORRECTION FACTOR, CF PRESSURI 0.55 0.71 0.87 1.00 1.12 1.22 1.32 1.41 0.49 0.63 0.77 0.89 1.00 1.10 1.18 1.26 0.45 0.58 0.71 0.82 0.91 1.00 1.08 1.15	CORRECTION FACTOR, CF PRESSURE DRO 0.55 0.71 0.87 1.00 1.12 1.22 1.32 1.41 1.50 0.49 0.63 0.77 0.89 1.00 1.10 1.18 1.26 1.34 0.45 0.58 0.71 0.82 0.91 1.00 1.08 1.15 1.22	30 50 75 100 125 150 175 200 225 250 CORRECTION FACTOR, CF PRESSURE DROP 0.55 0.71 0.87 1.00 1.12 1.22 1.32 1.41 1.50 1.58 0.49 0.63 0.77 0.89 1.00 1.10 1.18 1.26 1.34 1.41 0.45 0.58 0.71 0.82 0.91 1.00 1.08 1.15 1.22 1.29			

TEV Capacity = TEV Rating x CF Liquid Temperature x CF Pressure Drop — Example: Actual capacity of a nominal 1-1/2 ton R-404A Type EG valve at -20°F evaporator, 125 psi pressure drop across the TEV, and 60°F liquid temperature entering the TEV = 1.26 (from rating chart) x 1.43 (CF liquid temperature) x 0.91 (CF pressure drop) = 1.64 tons.

COMMERCIAL and LOW TEMPERATURE REFRIGERATION APPLICATIONS

								REERIG	ERANT					
					40	2A		IILI IIIC			5(07		
	T/DE0	NOMINAL			- 10		OMMEN	DED THE	RMOSTA	ATIC CHA		-		
VALVE	TYPES	CAPACITY		LC			LZ, LZP			PC			PZ, PZP	
							EVAPO	RATOR T	EMPERA	TURE °F				
			40°	20°	0°	-10°	-20°	-40°	40°	20°	0°	-10°	-20°	-40°
	-G-EG	1/8	0.15	0.16	0.15	0.16	0.13	0.11	0.14	0.15	0.14	0.15	0.13	0.11
	-G-EG	1/6	0.23	0.24	0.23	0.24	0.21	0.18	0.22	0.24	0.22	0.24	0.20	0.17
	-G-EG	1/4 1/2	0.29	0.31	0.29	0.31	0.27	0.23	0.29	0.30	0.29	0.30	0.26	0.22
	- <u>G-EG</u> -G-EG	1/2	0.56 1.02	0.59 1.10	0.56 1.04	0.59 1.11	0.51 0.95	0.43	0.55 1.00	0.58 1.08	0.54 1.01	0.58 1.08	0.50 0.93	0.41
	-G-EG	1-1/2	1.52	1.61	1.39	1.48	1.27	1.07	1.50	1.57	1.36	1.44	1.24	1.03
	G&EG(Ext)-S	2	2.03	2.14	1.84	1.97	1.70	1.42	2.00	2.09	1.79	1.92	1.65	1.38
	S	3	2.85	3.00	2.52	2.47	2.12	1.78	2.79	2.93	2.45	2.40	2.06	1.72
	S	4	4.07	4.28	3.60	3.45	2.97	2.49	3.99	4.19	3.50	3.36	2.89	2.41
S (I	Ext)	6	5.59	5.12	4.27	4.56	3.88	3.02	5.49	5.00	4.16	4.43	3.77	2.93
S (Ext)	7	7.12	6.51	5.44	5.81	4.95	3.85	6.99	6.36	5.30	5.65	4.80	3.73
	H	3	2.85	2.72	2.32	2.46	2.10	1.68	2.79	2.66	2.26	2.40	2.04	1.63
	H	4	4.07	3.89	3.15	3.45	2.94	2.36	3.99	3.81	3.07	3.36	2.86	2.28
	H	6-1/2	6.61	6.33	5.12	5.36	4.57	3.66	6.49	6.18	4.98	5.22	4.44	3.54
	H 	9	9.66	9.25	7.48	6.16	5.25	4.20	9.48	9.04	7.28	5.99	5.09	4.07
	<u>H</u>	12	13.2	12.7	10.2	9.86	8.40	6.73	13.0	12.4	10.0	9.59	8.16	6.52
	<u>M</u> M	15 20	16.1 20.9	17.1 22.3	13.1 16.4	13.9 17.4	12.5	10.2 12.7	15.8	16.7	12.7	13.5	12.1	9.83
	VI M	25	26.1	27.8	20.5	20.4	15.7 18.4	14.9	20.6 25.6	21.8 27.2	16.0 20.0	16.9 19.9	15.2 17.9	12.3 14.5
	M	30	31.5	33.5	24.7	23.6	21.3	17.3	30.9	32.8	24.1	23.0	20.7	16.7
	(VI				IERMOS					32.0	27.1	20.0	20.7	10.7
BF-EB	BF-SBF	AAA	0.23	0.24	0.23	0.24	0.21	0.18	0.23	0.24	0.22	0.24	0.21	0.17
	BF-SBF	AA	0.46	0.49	0.46	0.45	0.39	0.33	0.45	0.48	0.45	0.44	0.38	0.32
	BF-SBF	Α	1.02	1.10	1.04	1.11	0.95	0.80	1.00	1.08	1.01	1.08	0.93	0.77
BF-EB	BF-SBF	В	1.88	1.98	1.66	1.61	1.39	1.16	1.85	1.94	1.62	1.57	1.35	1.12
	BF-SBF	C	2.85	3.00	2.52	2.47	2.12	1.78	2.79	2.93	2.45	2.40	2.06	1.72
	BS	6	5.69	5.63	4.63	4.18	3.32	3.01	5.59	5.50	4.52	4.06	3.22	2.92
	BS	7-1/2	7.73	7.64	6.29	5.32	4.23	3.84	7.59	7.47	6.13	5.18	4.10	3.72
	BS	10	9.51	9.64	7.28	6.77	5.62	4.71	9.35	9.43	7.10	6.59	5.46	4.57
	BS	13	13.6	14.0	10.2	9.61	8.08	6.25	13.4	13.7	9.99	9.36	7.85	6.06
	<u>0</u> 0	9 12	9.66 13.2	9.25 12.7	7.28 9.96	6.16 9.81	5.37 8.55	4.50 7.17	9.48 13.0	9.04 12.4	7.09 9.71	5.99 9.54	5.21 8.30	4.36 6.95
	0	21	21.3	20.4	14.4	11.8	10.2	8.60	21.0	20.0	14.0	11.4	9.95	8.32
	0	30	30.7	32.3	23.1	17.6	15.3	12.9	30.1	31.6	22.5	17.1	14.9	12.5
	0	35	35.6	37.5	26.8	19.1	16.7	14.0	34.9	36.6	26.1	18.6	16.2	13.5
	0	45	45.7	48.2	34.5	22.0	19.2	16.1	44.9	47.1	33.6	21.4	18.6	15.6
	V	38	38.6	39.5	33.8	33.5	30.8	24.5	37.9	38.6	32.9	32.6	29.9	23.7
1	V	50	51.8	52.9	45.3	47.8	44.0	34.9	50.9	51.8	44.2	46.5	42.7	33.8
1	V	70	71.2	72.7	63.0	66.9	61.5	48.9	69.9	71.0	61.4	65.1	59.8	47.4
	CARTRIDGE NO.										VALVE			
<u>Q-EQ-SQ</u>	0	1/6	0.20	0.22	0.20	0.20	0.17	0.15	0.20	0.21	0.20	0.20	0.17	0.14
0-E0-S0	1	1/4	0.46	0.49	0.46	0.45	0.39	0.33	0.45	0.48	0.45	0.44	0.38	0.32
<u> </u>	2	1/2	0.66	0.72	0.67	0.59	0.51	0.43	0.65	0.70	0.66	0.58	0.50	0.42
Q-EQ-SQ Q-EQ-SQ	3 4	1 1-1/2	1.02 1.63	1.07 1.71	0.89 1.44	0.86 1.48	0.74 1.27	0.62 1.07	1.00	1.05 1.67	0.88 1.41	0.83	0.72 1.24	0.60
Q-EQ-SQ	5	2	2.14	2.25	1.44	1.48	1.70	1.07	1.60 2.10	2.20	1.84	1.44 1.92	1.65	1.03
Q-EQ-SQ	6	3	2.14	3.00	2.51	2.47	2.13	1.43	2.79	2.20	2.46	2.40	2.07	1.72
	Balanced port rep													
BQ-EBQ-SBQ	standard balance				, D and	-, 11410		- Jupuon				ouput		

					LIQUI	D TEM	IPERA	TURE	ENTE	RING	ΓEV °F				
REFRIGERANT	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°	110°	120°	130°	140°
		CORRECTION FACTOR, CF LIQUID TEMPERATURE													
402A	2.01	1.91	1.82	1.72	1.62	1.52	1.42	1.32	1.22	1.11	1.00	0.89	0.77	0.65	0.53
507	1.99	1.89	1.79	1.69	1.59	1.50	1.40	1.30	1.20	1.10	1.00	0.89	0.78	0.66	0.51

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to 40°F since the variation in the actual factors across this range is insignificant.

EVAPORATOR	PRESSURE DROP ACROSS TEV (psi) 30 50 75 100 125 150 175 200 225 250 275												
TEMPERATURE	30	50	75	100	125	150	175	200	225	250	275		
°F	CORRECTION FACTOR, CF PRESSURE DROP												
40°	0.55	0.71	0.87	1.00	1.12	1.22	1.32	1.41	1.50	1.58	1.66		
20° & 0°	0.49	0.63	0.77	0.89	1.00	1.10	1.18	1.26	1.34	1.41	1.48		
-10° & -20°	0.45	0.58	0.71	0.82	0.91	1.00	1.08	1.15	1.22	1.29	1.35		
-40°	0.41	0.53	0.65	0.76	0.85	0.93	1.00	1.07	1.13	1.20	1.25		

TEV Capacity = TEV Rating x CF Liquid Temperature x CF Pressure Drop — Example: Actual capacity of a nominal 1-1/2 ton R-404A Type EG valve at -20°F evaporator, 125 psi pressure drop across the TEV, and 60° F liquid temperature entering the TEV = 1.26 (from rating chart) x 1.43 (CF liquid temperature) x 0.91 (CF pressure drop) = 1.64 tons.

134a, 401A, 409A

AIR CONDITIONING, HEAT PUMP and COMMERCIAL REFRIGERATION APPLICATIONS

						R	EFRIGERAN	IT			
				134a			401A			409A	
VALVE	TVPES	NOMINAL			REC	OMMENDE	D THERMOS	STATIC CHA	RGE		
VALVE	111 23	CAPACITY		JC, JCP60			XC, XCP60			FC, FCP60	
							TOR TEMPE				
	0.50	4/0	40°	20°	0°	40°	20°	0°	40°	20°	0°
F-EF-		1/8	0.15	0.15	0.14	0.16	0.16	0.15	0.15	0.15	0.14
F-EF-		1/6	0.25	0.28	0.26	0.27	0.30	0.29	0.25	0.28	0.27
F-EF-		1/4	0.31	0.35	0.33	0.34	0.37	0.36	0.32	0.35	0.33
F-EF-		1/2	0.60	0.60	0.55	0.65	0.65	0.60	0.61	0.60	0.56
F-EF-		1 1/2	1.20	1.20	1.10	1.29	1.29	1.20	1.21	1.21	1.12
F-EF-		1-1/2	1.93	1.91	1.76	2.07	2.07	1.92	1.94	1.93	1.79
F&EF(Ext)-G		2 2 1/2	2.41	2.39	2.20	2.59	2.59	2.40	2.42	2.42	2.23
		2-1/2	3.01	2.99	2.75	3.23	3.24	3.00	3.03	3.02	2.79
S (E		3 5	3.62 6.03	3.59 4.98	3.30 4.17	3.88 6.47	3.88 5.39	3.60 4.56	3.63 6.05	3.62 5.03	3.35 4.24
			7.23	5.98	5.01	7.76	6.47	5.47	7.26	6.04	5.09
S (E		6 3	3.62	3.59	3.04	3.88	3.88	3.31	3.63	3.62	3.08
<u>_</u>		4	4.82	4.79	4.05	5.18	5.18	4.42	4.84	4.83	4.11
<u></u>		5	6.03		5.06			5.52	6.05		
<u></u>		8	9.04	5.98 8.97	7.59	6.47 9.70	6.47 9.71	8.29	9.08	6.04 9.06	5.14 7.71
			14.1	14.0	11.8	15.1		12.9			12.0
		12 15	18.7	18.5	15.1	20.1	15.1 20.1		14.2	14.1	15.3
N		20	24.1	23.9	19.5	25.9	25.9	16.5 21.3	18.8 24.2	18.7 24.2	19.8
			30.1								
N	И	25 DA		29.9 Ort therm	24.3	32.3	32.4	26.6	30.3	30.2	24.7
BF-EB	r edr		0.25	0.28	0.26	0.27	0.30	0.29	0.25	0.20	0.27
BF-EB		AAA AA		0.28	0.50		 		0.25	0.28	0.27
BF-EB		A	0.54 1.21	1.20	1.10	0.58 1.29	0.58 1.29	0.54 1.20	1.21	0.54 1.21	1.12
BF-EB		В	2.05	2.03	1.87	2.20	2.20	2.04	2.06	2.05	1.12
BF-EB		C	3.62	3.59	3.30	3.88	3.88	3.60	3.63	3.62	3.35
EE		5	6.12	5.60	4.82	6.57	6.06	5.26	6.15	5.66	4.89
EE		7	8.44	7.72	6.64	9.06	8.36	7.25	8.47	7.80	6.74
EB		9	11.2	9.72	7.80	12.0	10.5	8.52	11.2	9.81	7.92
EB		12	16.0	14.0	10.9	17.2	15.1	11.9	16.1	14.1	11.1
		9	10.8	10.8	9.33	11.6	11.7	10.2	10.1	10.9	9.48
		12	14.1	14.0	12.1	15.1	15.1	13.2	14.2	14.1	12.3
		16	18.7	18.5	16.1	20.1	20.1	17.6	18.8	18.7	16.3
		23	27.7	30.0	24.7	29.8	32.4	27.0	27.8	30.2	25.1
		32	38.6	41.7	34.4	41.4	45.1	37.6	38.7	42.1	34.9
		40	48.2	52.1	43.0	51.8	56.4	47.0	48.4	52.6	43.7
		35	42.2	41.9	33.2	45.3	45.3	36.3	40.4	42.3	33.7
		45	54.2	53.8	42.7	58.2	58.3	46.6	54.5	54.3	43.3
		55	66.3	65.8	52.2	71.2	71.2	57.0	66.6	66.4	53.0
v		80	102	102	75.3	110	110	82.2	103	103	76.4
v		110	137	— IUZ		148	—	02.2	138	—	70.4
	CARTRIDGE NO.	110		REPLACEAE				EX DA NISION			
Q-EQ-SQ	OANTRIDGE NO.	1/6	0.24	0.24	0.22	0.26	0.26	0.24	0.24	0.24	0.22
Q-EQ-SQ	1	1/4	0.54	0.54	0.50	0.58	0.58	0.54	0.55	0.54	0.50
Q-EQ-SQ	2	1/2	0.78	0.78	0.72	0.84	0.84	0.78	0.79	0.79	0.73
Q-EQ-SQ	3	1	1.21	1.20	1.10	1.29	1.29	1.20	1.21	1.21	1.12
Q-EQ-SQ	4	1-1/2	1.69	1.67	1.54	1.81	1.81	1.68	1.69	1.69	1.56
Q-EQ-SQ	5	2	2.41	2.39	2.20	2.59	2.59	2.40	2.42	2.42	2.23
Q-EQ-SQ	6	2-1/2	3.25	3.23	2.20	3.49	3.50	3.24	3.27	3.26	3.02
	Balanced port repl										
BQ-EBQ-SBQ	atanderd belanced	nort volvee e	have	,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,	iiu o, iiave	ine same to	uputities as	tile match	ng nominal	σαμαστιγ στ	uie

BQ-EBQ-SBQ

| Balanced port replaceable call ridges, AAA, AA, A, B and C, have the same capacities as the matching nominal capacity of standard balanced port valves above.

| Compared to the same capacities as the matching nominal capacity of standard balanced port valves above.

					LIQUI	D TEM	IPERA	TURE	ENTE	RING	TEV °F				
REFRIGERANT	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°	110°	120°	130°	140°
		CORRECTION FACTOR, CF LIQUID TEMPERATURE													
134a	1.70	1.63	1.56	1.49	1.42	1.36	1.29	1.21	1.14	1.07	1.00	0.93	0.85	0.78	0.71
401A	1.60	1.54	1.48	1.43	1.36	1.31	1.25	1.19	1.13	1.06	1.00	0.94	0.87	0.80	0.74
409A	1.55	1.50	1.45	1.39	1.34	1.28	1.23	1.17	1.12	1.06	1.00	0.94	0.88	0.82	0.76

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an evaporator temperature of 0°F. However, they may be used for any evaporator temperature from 0°F to 40°F since the variation in the actual factors across this range is insignificant.

EVAPORATOR		PRESSURE DROP ACROSS TEV (psi) 20 40 60 80 100 120 140 160											
TEMPERATURE	20	40	60	80	100	120	140	160					
°F	COF	RECT	ION F	ACTOF	, CF P	RESS	JRE D	ROP					
40°	0.58	0.82	1.00	1.15	1.29	1.41	1.53	1.63					
20° & 0°	0.50	0.71	0.87	1.00	1.12	1.22	1.32	1.41					

TEV Capacity = TEV Rating x CF Liquid Temperature x CF Pressure Drop — Example: Actual capacity of a nominal 1-1/2 ton R-134a Type EG valve at 20°F evaporator, 100 psi pressure drop across the TEV, and 60° F liquid temperature entering the TEV = 1.91 (from rating chart) x 1.29 (CF liquid temperature) x 1.12 (CF pressure drop) = 2.76 tons.



TEV QUICK REFERENCE GUIDE

		NOMIN	NOMINAL CAPACITY RANGE (Tons)		(Tons)		
VALVE TYPE	SPECS	R-22	R-134a	R-404A & R-507	R-410A	CONNECTION TYPES	VALVE DESCRIPTION AND APPLICATION
RC	Page 12	1 thru 6	-	-	1 thru 6	Chatleff, SAE Flare, or ODF Solder	Small brass body, externally adjustable valve available for R-22 and R-410A air conditioning and heat pump applications. This valve features a balanced port construction and contains an internal check valve to eliminate the need for an external bypass check valve on heat pump applications. Suitable for replacing OEM type TEVs with or without internal check valve on these applications. Inlet strainer is not included.
ER	Page 13	1 thru 12	-	-	1 thru 15	ODF Solder	Small brass body, externally adjustable valve available for R-22 and R-410A air conditioning and heat pump applications. This valve features a balanced port construction and is approved for bi-directional operation. Suitable for replacing OEM type TEVs without internal check valve on these applications. A 60 x 50 mesh inlet strainer is included with 3/8" inlet.
	Page 15 - 16	1/5 thru 3	1/8 thru 2	1/8 thru 2	-	SAE Flare	Small brass bar body, externally adjustable valve for small capacity refrigeration systems. SAE flare inlet connection has a removable 100 mesh strainer. Typical applications: Refrigerated cases, coolers, freezers.
EF	Page 15 - 16	1/5 thru 3	1/8 thru 2	1/8 thru 2	-	ODF Solder	Same as the Type F valve except valve features ODF solder connections. The inlet connection has a 60 x 50 mesh insert type strainer. Typical applications: Refrigerated cases, coolers, freezers.
Q/BQ	Page 17 - 21	0 1/3 thru 5 BQ 1/8 thru 5-1/2	0 1/6 thru 2-1/2 BQ 1/8 thru 3	0 1/6 thru 3 BQ 1/8 thru 3	Q - BQ 1/4 thru 6	SAE Flare	The brass body Type Q valve is externally adjustable with a removable cartridge or orifice. The valve body, cartridge and thermostatic element is supplied as independent components. This allows body, cartridge and element to be assembled and matched to specific system requirements. Inlet connection has a 100 mesh removable strainer screen. Typical applications: Refrigeration applications and external equalized versions may be used on air conditioning. Type BQ same as above, with balanced port construction.
EQ/EBQ	Page 17 - 21	EQ 1/3 thru 5 EBQ 1/8 thru 5-1/2	EQ 1/6 thru 2-1/2 EBQ 1/8 thru 3	EQ 1/6 thru 3 EBQ 1/8 thru 3	EQ - EBQ 1/4 thru 6	Extended ODF Solder	Type EQ same as the Type Q except it features extended ODF connections. A 100 mesh insert strainer is provided with the valve. Type EBQ same as Type EQ with balanced port construction and is approved for bi-directional applications.
SQ/SBQ	Page 17 - 21	\$0 1/3 thru 5 \$B0 1/8 thru 5-1/2	\$0 1/6 thru 2-1/2 \$B0 1/8 thru 3	\$0 1/6 thru 3 \$B0 1/8 thru 3	SQ - SBQ 1/4 thru 6	Extended ODF Solder	Type SQ same as the Type Q valve except it features ODF solder connections and a forged brass inlet fitting with a removable 100 mesh strainer screen which can be cleaned and/or replaced without removing the valve from the line. Type SBQ is the same as Type SQ with balanced port construction and is approved for bi-directional applications.



TEV QUICK REFERENCE GUIDE

		NOMIN	IAL CAPAC	ITY RANGI	E (Tons)	CONNECTION	
VALVE TYPE	SPECS	R-22	R-134a	R-404A & R-507	R-410A	CONNECTION TYPES	VALVE DESCRIPTION AND APPLICATION
G	Page 22	1/5 thru 3	1/8 thru 2	1/8 thru 2	-	SAE Flare	Forged brass body, externally adjustable valve for small capacity refrigeration systems. Inlet connection has a removable 100 mesh strainer. Typical applications: Refrigerated cases, coolers, freezers, small capacity air conditioners.
EG	Page 23	1/5 thru 3	1/8 thru 2	1/8 thru 2	_	ODF Solder	Same as the Type G valve except it features ODF solder connections and a forged brass inlet fitting with a removable 100 mesh strainer which can be cleaned and/or replaced without removing the valve from the line.
BF	Page 24	1/8 thru 5-1/2	1/8 thru 3	1/8 thru 3	-	SAE Flare	Same physical size as the Type F valve with SAE flare connections except it features a balanced port construction. Inlet connection has a removable 100 mesh strainer. Typical applications: Small capacity refrigeration that operates over widely varying operating conditions.
SBF	Page 25 - 26	1/8 thru 5-1/2	1/8 thru 3	1/8 thru 3	-	Extended ODF Solder	Same as the Type BF valve except it features ODF solder connections and a forged brass inlet fitting with a removable 100 mesh strainer which can be cleaned and/or replaced without removing the valve from the line.
EBF	Page 25 - 26	1/8 thru 5-1/2	1/8 thru 3	1/8 thru 3	-	Extended ODF Solder	Same as the Type BF valve except it features extended ODF connections. A 100 mesh insert strainer is provided with the valve.
S	Page 27	2 thru 10	2 thru 6	2 thru 7	-	ODF Solder	Brass bar body, externally adjustable valve. Inlet has a permanent 12 mesh strainer. General purpose valve for air conditioning and refrigeration applications.
EBS	Page 28	8 thru 20	5 thru 12	6 thru 13	-	Extended ODF Solder	Same physical size as the Type S valve except it features extended ODF connections. This valve features a balanced port construction which, depending on its capacity, makes it suitable for bi-directional operation. See page 28 for details.



TEV QUICK REFERENCE GUIDE

		NOMIN	IAL CAPAC	ITY RANGI	E (Tons)	CONNECTION	
VALVE TYPE	SPECS	R-22	R-134a	R-404A & R-507	R-410A	CONNECTION TYPES	VALVE DESCRIPTION AND APPLICATION
0	Page 29 - 30	15 thru 70	9 thru 40	9 thru 45	20 thru 60	ODF Solder	Brass bar body, externally adjustable valve. Inlet has a permanent 12 mesh strainer. This valve features a balanced port construction, and it is suitable for both air conditioning and refrigeration applications. Optional bi-directional feature available, please contact Sporlan Division of Parker for details.
H	Page 31	5-1/2 thru 20	3 thru 12	3 thru 12	_	ODF Solder or FPT Flange	Brass bar body, externally adjustable valve with flange connections. Inlet flange bushing has a permanent 16 mesh strainer. The FPT flange connection requires the K-1178 adapter kit. This valve provides the smallest capacity TEVs with flange connections and it is suitable for both air conditioning and refrigeration applications.
M	Page 32	21 thru 42	15 thru 25	15 thru 30	-	ODF Solder or FPT Flange	Cast bronze body, externally adjustable valve with flange connections. Inlet has a 12 mesh strainer. This valve type provides valve capacities greater than the Type H and it is suitable for air conditioning and refrigeration applications. Flanges for the Type M valve are interchangeable with the Type V valve.
V	Page 33	52 thru 100	35 thru 55	38 thru 70	-	ODF Solder or FPT Flange	Cast bronze body, externally adjustable valve with flange connections. Inlet has a 12 mesh strainer. This valve type features a dual port semi-balanced design. This valve type provides valve capacities greater than the Type M and is suitable for air conditioning and refrigeration applications. Flanges for the Type V are interchangeable with the Type M.
W	Page 34	135 & 180	80 & 110	-	-	ODF Solder Flange	Cast bronze body, externally adjustable valve with flange connections. Inlet has a 12 mesh strainer. This valve type features a dual port semi-balanced design and it is primarily for large capacity chillers. This valve type provides the largest valve capacities available for flange connection TEVs.



Sporlan Type RC valve is a small brass body, externally adjustable valve with balanced port construction. The RC valves are available for replacement of types CBI and CBBI valves. These valves contain internal check valves to allow reverse flow on heat pump applications. This eliminates the need for an external check valve piped around the TEV for reverse flow. The RC valve can be used on heat pump and air conditioning (cooling only) applications. This allows you to reduce inventory by using the same valve to replace the I, BI and BBI valves. The RC valves can even be used to replace the RI valve (non-RPB versions only).

Outlet Connections

1/2" SAE, 1/2" ODF, 5/8" ODF

Mating Distributors (See Bulletin 20-10)

D260, D262, 1603, 1605, 1606, 1608, 1620, 1622, 1650(R), 1651(R)

For complete details of construction, see page 35.



SPECIFICATIONS ELEMENT SIZE NO. 43 (R-22) AND NO. 45 (R-410A), KNIFE EDGE JOINT

REFRIGERANT (Sporlan Code)	VALVE TYPE	EXTERNAL EQUALIZER ②, ③	NOMINAL CAPACITY Tons of tefrigeration	IERMOSTATIC ELEMENT SIZE NO.	IERMOSTATIC CHARGES AVAILABLE	STANDARD TUBING LENGTH	SAE Flare/ @ Blue figures and will be fu	IS - Inches ① ODF Solder are standard nished unless specified.	NET WEIGHT	SHIPPING WEIGHT
				Ĕ	Ĕ		INLET	OUTLET		
	RCVE-1-GA		1							
00 (1/)	RCVE-1-1/2-GA		1-1/2			3/8 SAE	1/2 SAE			
22 (V)	RCVE-2-GA	1/4 0 4 5	2	43	VGA		3/8 ODF	1/2 ODF	1-1/4 lbs.	
407C (N)	RCVE-3-GA	1/4 SAE 1/4 ODF	3							
407A (V) 422D (V)	RCVE-4-GA	1/4 001	4]			1/2 ODF	1/2 ODF		
422D (V)	RCVE-5-GA		5]			1/2 SAE	1/2 SAE		
	RCVE-6-GA		6			30 in.	1/2 ODF	5/8 ODF		1-1/2 lbs.
	RCZE-1-GA		1]		760 mm			568 g	680 g
	RCZE-1-1/2-GA		1-1/2				3/8 ODF	1/2 ODF		
	RCZE-2-GA		2]			3/6 001	1/2 001		
410A (Z)	RCZE-3-GA	1/4 ODF	3	45 ZGA						
, ,	RCZE-4-GA		4				1/2 ODF	1/2 ODF		
	RCZE-5-GA		5	[1/2 ODF	5/8 ODF		
	RCZE-6-GA		6				1/2 005	3/0 001		

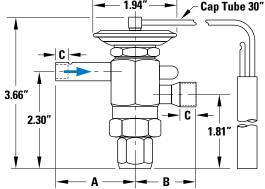
DIMENSIONS

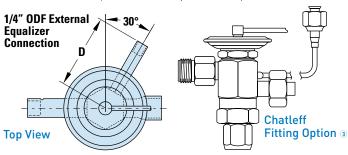
CONNECTIONS - Inches

VALVE TYPE	FITTING SIZE	Α	В	C	D
	3/8 SAE	1.92	-	-	1.63
	1/2 SAE	1.89	1.92	-	1.63
RC	3/8 ODF	1.92	1.45	0.31	1.90
	1/2 ODF	1.98	1.45	0.40	1.90
	5/8 ODF	-	1.53	0.50	1.90
RC Chatleff Fitting		1.89	1.71	_	3

BULB SIZES - Inches

STANDARD	REFRIGERANT					
CHARGES	22	410A				
GA	0.75 OD x 2.00					





① Valves are also available as special order with Chatleff connections.
② Valves with SAE inlet and outlet fittings are available only with the 1/4" SAE flare external equalizer; valves with ODF fittings are available only with the 1/4" ODF external equalizer.
③ Valves with Chatleff fittings are available only with the 1/8" OD X 24" long tube with flare and nut external equalizer.

ODF Solder on Type RC valves indicates a female connection on the valve of proper diameter to receive copper tubing of corresponding OD size. Thus 1/2" ODF will receive 1/2" OD tubing.



Sporlan Type ER valve is a small brass bar body, externally adjustable with ODF solder connections, a replaceable thermostatic element, and balanced port construction. The ER valve is designed for R-22 and R-410A air conditioning and heat pump applications and is ideal for replacing I, BI, BBI and RI (non-RPB version only) valves.

This valve type has two body styles: a small body which provides capacities up to 8 tons R-22 and R-410A, and a large body style which extends capacities to 12 tons R-22 and 15 tons R-410A.

Replacement elements available for these valves are the following: Refrigerant 22, Element Kit Number KT-43-VGA or VCP100 for the small

body style and KT-45-5-VGA or VCP100 for the large body, and Refrigerant 410A, Element Kit Number KT-45-ZGA or ZCP180 for the small body style and KT-45-5-ZGA or ZCP180 for the large body style.

This valve may also be applied in bi-directional applications.

Outlet Connections

1/2" ODF, 5/8" ODF, 7/8" ODF, 1-1/8" ODF

Mating Distributors (See Bulletin 20-10)
D260, D262, 1620, 1622, 1112, 1113, 1115, 1116, 1135, 1136, 1137, 1651(R), 1653(R), 1655(R)

For complete details of construction, see page 35.



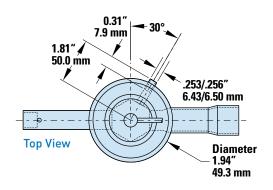
SPECIFICATIONS ELEMENT SIZE NO. 43 (R-22), NO. 45 (R-410A), AND NO. 45-5, KNIFE EDGE JOINT

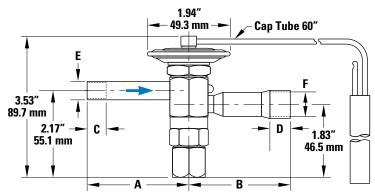
REFRIGERANT (Sporlan Code)	VALVE TYPE	NOMINAL CAPACITY Tons of Refrigeration	THERMOSTATIC ELEMENT SIZE NO.	THERMOSTATIC CHARGES AVAILABLE	STANDARD TUBING LENGTH	① ODI Not all co	CONNECTIONS -Inches ① ODF Solder Not all connection combinations are available.		SHIPPING WEIGHT
		Œ	폰	TH /	0,	INLET	OUTLET		
	ERVE-1	1							
	ERVE-1-1/2	1-1/2				3/8	1/2		
	ERVE-2	2							
22 (V)	ERVE-3	3	43			3/8 or 1/2	1/2 or 5/8		1-1/2 lbs. 680 g
407C (N)	ERVE-4	4		VGA VCP100	60 in.		1/2, 5/8 or 7/8	1 lb. 454 g	
407A (V)	ERVE-5	5			1.5 m		1/2, 3/0 01 7/0		
422D (V)	ERVE-6	6				1/2	5/8 or 7/8		
	ERVE-8	8				1/2			
	ERVE-10	10	45-5			5/8	7/8		
	ERVE-12	12	40-0			3/0			
	ERZE-1	1							
	ERZE-1-1/2	1-1/2				3/8	1/2		
	ERZE-2	2							
	ERZE-3	3	45				1/2 or 5/8		
410A (Z)	ERZE-4	4	40	ZGA	60 in.	3/8 or 1/2	1/2, 5/8 or 7/8	1 lb.	1-1/2 lbs.
410A (Z)	ERZE-5	5		ZCP180	1.5 m		1/2, 3/0 01 7/0	454 g	680 g
	ERZE-6	6				1/2	5/8 or 7/8		
	ERZE-8	8		-		1/2	7/8		
	ERZE-12-1/2	12-1/2	45-5			5/8	1-1/8		
	ERZE-15	15	40-0			3/0	1-1/0		

① ODF Solder indicates a female connection on the valve of proper diameter to receive copper tubing of corresponding OD size. Thus 1/2" ODF will receive 1/2" OD tubing.



TYPE ER with NUMBER 43 and 45 ELEMENT





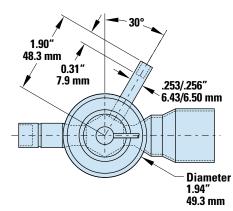
DIMENSIONS - CONNECTIONS

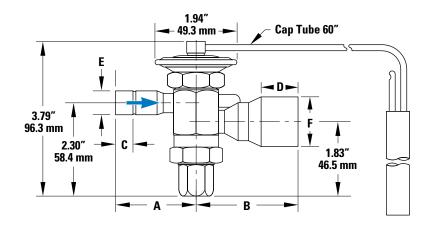
DIFFERSIONS CONNECTIONS									
REFRIGERANT	NOMINAL	FITTIN	IG SIZE	Α	В	C	D	E	F
NEFRIGENAIVI	CAPACITY	INLET	OUTLET	A	ь	L L	ט		
	1-1/2 2 3 4 5	3/8"	1/2"	2.42" 61.5 mm	2.51" 63.8 mm	0.31" 7.9 mm	0.40" 10.2 mm	.377/.381" 9.58/9.68 mm	.502/.506" 12.8/12.9 mm
	3 4 5 6	1/2"	5/8"	2.35″ 59.7 mm	2.51" 63.8 mm	0.40"	0.50" 12.7 mm	.502/.506" 12.8/12.9 mm	.627/.632" 15.9/16.1 mm
22 410A	4 5 6 8		7/8"		2.41" 61.2 mm	10.2 mm	0.78" 19.8 mm		.877/.882" 22.3/22.4 mm
	6 8		7/8"	2.35"	2.41"	0.50"	0.78" 19.8 mm	.627/.632"	.877/.882" 22.3/22.4 mm
	8	5/8"	1-1/8"	59.7 mm	61.2 mm	12.7 mm	0.91" 23.1 mm	15.9/16.1 mm	1.128/1.135" 28.7/28.8 mm

BULB SIZES

STANDARD	REFRIGERANT					
CHARGES	22	410A				
VCP100, ZCP180	0.50" OD x 3.00" 12.7 mm x 76.2 mm					
GA	0.75" OD x 2.00" 19.1 mm x 50.8 mm					

TYPE ER with NUMBER 45-5 ELEMENT





DIMENSIONS - CONNECTIONS

REFRIGERANT	NOMINAL	FITTING SIZE			В	С	D	Е	F
REFRIGERANT	CAPACITY	INLET	OUTLET	Α	_ D		"	_	
22	10 12	5/8"	7/8"	2.48"	2.51" 0.	0.50"	0.78" 19.8 mm	.627/.632" 15.9/16.1 mm	.877/.882" 22.3/22.4 mm
410A	12-1/2 15		1-1/8"	63.0 mm	63.8 mm	12.7 mm	0.91" 23.1 mm		1.128/1.135" 28.7/28.8 mm



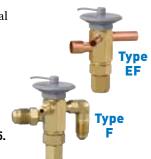
Sporlan Type F with SAE flare connections or Type EF with ODF solder connections are small brass bar body valves with identical internal construction and replaceable thermostatic elements. The Type F valve has a removable 100 mesh strainer as a standard feature. The Type EF has a 60 x 50 mesh insert strainer. These valves are designed for small refrigeration systems such as refrigerated cases, coolers, and freezers where space is limited and an external adjustment is desired.

Outlet Connections

3/8" SAE, 1/2" SAE, 3/8" ODF, 1/2" ODF

Mating Distributors (See Bulletin 20-10) D260, D262, 1603, 1605, 1606, 1608, 1650(R)

For complete details of construction, see page 35.



SPECIFICATIONS ELEMENT SIZE NO. 43, KNIFE EDGE JOINT

	TY	PE F	TYP	E EF		<u>0</u>		CONNECTIO			
	SAE	Flare	ODFS	Solder	AL T T ₹	TAT ES 3LE	RD G H	SAE Flare / ②		⊨	9 ⊨
REFRIGERANT (Sporlan Code)	Internal Equalizer	External Equalizer	Internal Equalizer	External Equalizer	NOMINA CAPACIT Tons of Refrigerati	THERMOSTATI CHARGES AVAILABLE	STANDARD TUBING LENGTH	Blue figures ar will be furni otherwise	shed unless	NET WEIGHT	SHIPPING WEIGHT
	FV-1/5	FVE-1/5	EFV-1/5	EFVE-1/5	1/5						
	FV-1/3	FVE-1/3	EFV-1/3	EFVE-1/3	1/3				2/2		
22 (V)	FV-1/2	FVE-1/2	EFV-1/2	EFVE-1/2	1/2			1/4 or 3/8 ①	3/8 or 1/2		
407C (N)	FV-1	FVE-1	EFV-1	EFVE-1	1	C					
407A (V)	FV-1-1/2	FVE-1-1/2	EFV-1-1/2	EFVE-1-1/2	1-1/2	Z ZP40					
422D (V)	_	FVE-2	-	EFVE-2	2			3/8 ③	4/0		
	FV-2-1/2	-	EFV-2-1/2	_	2-1/2				1/2	1 ' 1 '	
	_	-	-	EFVE-3	3						
	FJ-1/8	FJE-1/8	EFJ-1/8	EFJE-1/8	1/8			1/4 or 3/8 ①	3/8 or 1/2		
404 (1)	FJ-1/6	FJE-1/6	EFJ-1/6	EFJE-1/6	1/6						
134a (J)	FJ-1/4	FJE-1/4	EFJ-1/4	EFJE-1/4	1/4						
12 (F)	FJ-1/2	FJE-1/2	EFJ-1/2	EFJE-1/2	1/2	C					
401A (X) 409A (F)	FJ-1	FJE-1	EFJ-1	EFJE-1	1			3/8 ③	1/2		
409A (F)	FJ-1-1/2	FJE-1-1/2	EFJ-1-1/2	EFJE-1-1/2	1-1/2						1-1/2 lbs. 680 a
	-	FJE-2	-	EFJE-2	2		30 in. 760 mm				
	FS-1/8	FSE-1/8	EFS-1/8	EFSE-1/8	1/8		700 111111				000 9
	FS-1/6	FSE-1/6	EFS-1/6	EFSE-1/6	1/6			4/4 2/9 @	2/0 4/2		2/2 4/5
404A(S)	FS-1/4	FSE-1/4	EFS-1/4	EFSE-1/4	1/4	С		1/4 or 3/8 ①	3/8 or 1/2		
502 (R)	FS-1/2	FSE-1/2	EFS-1/2	EFSE-1/2	1/2	Z					
408A (R)	FS-1	FSE-1	EFS-1	EFSE-1	1	ZP40					
	FS-1-1/2	FSE-1-1/2	EFS-1-1/2	EFSE-1-1/2	1-1/2			3/8 ③	1/2		
	_	FSE-2	-	EFSE-2	2						
	FP-1/8	FPE-1/8	EFP-1/8	EFPE-1/8	1/8						
	FP-1/6	FPE-1/6	EFP-1/6	EFPE-1/6	1/6			4/4 2/9	2/0 4/2		
E07 / D\	FP-1/4	FPE-1/4	EFP-1/4	EFPE-1/4	1/4	c		1/4 or 3/8 ①	3/8 or 1/2		
507 (P)	FP-1/2	FPE-1/2	EFP-1/2	EFPE-1/2	1/2	Z					
402A (L)	FP-1	FPE-1	EFP-1	EFPE-1	1	ZP40					
	FP-1-1/2	FPE-1-1/2	EFP-1-1/2	EFPE-1-1/2	1-1/2			3/8 ③ 1/2			
	_	FPE-2	-	EFPE-2	2						

① The 3/8" SAE inlet fitting has a long taper on the flare surface. A 3/8" x 1/4" reducing flare nut will allow 1/4" OD tubing to be attached to this fitting.
② ODF Solder on Type EF valves indicates a female connection on the valve of proper diameter to receive copper tubing of corresponding OD size. Thus 1/2" ODF will receive 1/2" OD tubing.
③ Nominal 1 ton and larger F valves for R-134a, R-404A and R-507 type refrigerants, and nominal 1-1/2 ton and larger for R-22 refrigerant require 3/8" SAE Flare or 3/8" ODF inlet, minimum.

▼ TYPE **F & EF**

SAE FLARE

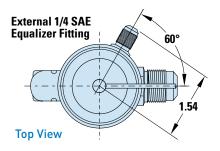
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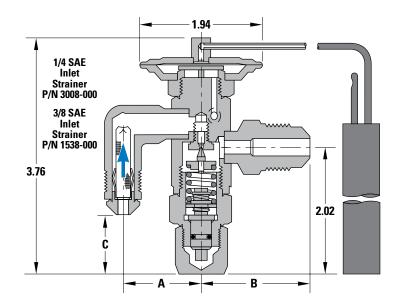
SAE CONNECTIONS - Inches

FITTING SIZE	Α	В	C	
1/4 SAE Elbow	1.05	-	1.34	
3/8 SAE Elbow	1.27	-	0.98	
3/8 SAE	-	1.61	-	
1/2 SAE	_	1.80	_	

BULB SIZES - Inches

STANDARD	REFRIGERANT							
CHARGES	22	134a	404A	507				
С	0.50 OD x 3.00							
Z & ZP Series	0.50 OD x 3.00 - 0.50 OD x 3.00							





ODF SOLDER

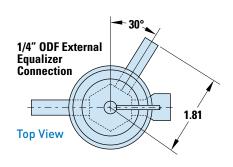
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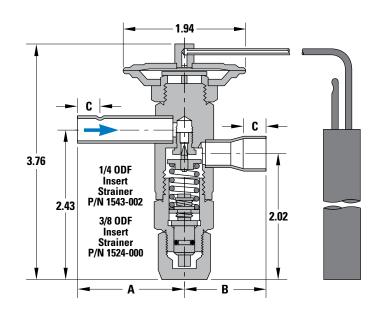
ODF CONNECTIONS - Inches

FITTING SIZE	Α	В	C
1/4 ODF	1.69	-	0.31
3/8 ODF	1.69	1.35	0.31
1/2 ODF	-	1.35	0.40

BULB SIZES - Inches

STANDARD	REFRIGERANT										
CHARGES	22 134a 404A 507										
C	0.50 OD x 3.00										
Z & ZP Series	0.50 OD x 3.00 - 0.50 OD x 3.00										





For Refrigerants 22, 134a, 404A, 410A*, 507 SAE Flare & Extended ODF Solder Connections

*Type Q, EQ, and SQ are not approved for R-410A applications.

The Sporlan Q & BQ series are replaceable cartridge style valves designed for small refrigeration systems, such as refrigerated cases, coolers, and freezers. The externally equalized versions of these valves are ideal for air conditioning and heat pump systems. BQ valves are balanced ported, engineered specifically for systems with a wide range of operating conditions and may be applied on bi-directional applications.

Q & BQ valves are supplied as three individual component parts: the **thermostatic element**, the **valve body**, and the **replaceable cartridge** or orifice. The interchangeable nature of the Q & BQ family make it ideal for reducing inventory, while increasing valve options — so, the right valve is always on hand.

BODY FEATURES

Q & BQ brass body type valves feature Sporlan's traditional knife edge, metal-to-metal thermostatic element to valve body construction, which ensures a leak-proof joint.

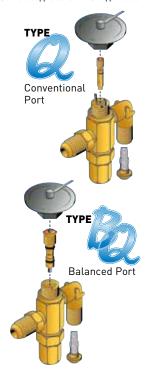
SELECTIVE CHARGES

Sporlan selective thermostatic charges are specifically designed for low temperature, medium temperature, and air conditioning applications. The elements are manufactured with a large flat diaphragm to reduce diaphragm stresses and provide precise control. And, because Q & BQ valve bodies and thermostatic elements are supplied as independent components, the installer is able to select the best possible thermostatic charge for the application.

INTERNAL PORT DESIGN

Refrigerant flow through the valve port opposes the pin movement in all type Q and BQ valves. This provides improved stability at light loads, when the pin modulates to a position close to the port. Additionally, charge migration, is reduced or eliminated by the Q & BQ valve design. By engineering the liquid flow to enter through the top of the valve body, the liquid refrigerant warms the thermostatic element and minimizes the potential for charge migration.

For complete details of construction, see page 35.

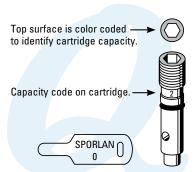


SELECTING COMPONENTS

BODY **Flare Connections Extended Solder Connections Extended Solder Connections with** Forged Inlet and Replaceable Strainer EQ SQ SAE ODE ODE (Internally (Internally (Internally Equalized) Equalized) Equalized) **EQE** QE SQE SAF ODE ODF (Externally (Externally (Externally Equalized) Equalized) Equalized) SBQ BQ **EBQ** SAE ODF ODF **Internally** (Internally (Internally Equalized) Equalized) Equalized) **BQE EBQE SBQE** ODF SAE ODE *IExternally* (Externally (Externally Equalized) Equalized) Equalized)

*Type Q, EQ, and SQ are not approved for R-410A applications.

CARTRIDGE



Identification tag with cartridge number (bends around capillary tubing).

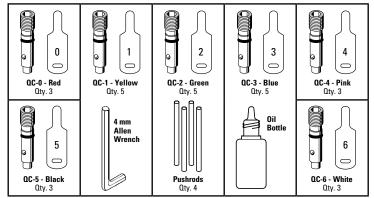
INDIVIDUAL REPLACEMENT PARTS

PART NUMBER	SIZE	COLOR CODE								
CARTRI	DGE and	I.D. TAG								
QC-0 QC-1 QC-2 QC-3 QC-4 QC-5 QC-6	0 1 2 3 4 5 6	Red Yellow Green Blue Pink Black White								
MISCEL	LANEOU	S PARTS								
0B-1	Oil B	ottle (With Oil)								
AW-1	4 mm	Allen Wrench								
CSK-1	Q Cart	ridge Service Kit (Empty)								
184000		ridge Service Kit te as noted above)								

Top surface is color coded to identify cartridge capacity.

Capacity code on cartridge.

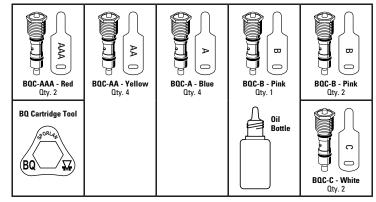
Q CARTRIDGE SERVICE KIT PART NUMBER 184000



CAPACITIES

	NOMINAL CAPACITY (TONS) of SPORLAN VALVE TO BE REPLACED											
R-12	R-22, R-422D	R-134a	R-401A	R-402A	R-404A	R-410A	R-502	R-507	SIZE	COLOR CODE		
1/8	1/4	1/8	1/8	1/8	1/8		1/8	1/8	0	Red		
1/6	1/3	1/6	1/6	1/6	1/6		1/6	1/6	U	neu		
1/4	1/2 3/4	1/4	1/4	1/4	1/4	APPROVED	1/4	1/4	1	Yellow		
1/2	1	1/2	1/2	1/2	1/2	30	1/2	1/2	2	Green		
1	1-1/2	1	1	1	1	-	1	1	3	Blue		
1-1/2	2 2-1/2	1-1/2	1-1/2	1-1/2	1-1/2	NOTA	1-1/2	1-1/2	4	Pink		
2	3	2	2	2	2	_	2	2	5	Black		
2-1/2	4	2-1/2	2-1/2	3	3		3	3	6	White		
3	5	3	3	"			5	"	"			

BQ CARTRIDGE SERVICE KIT PART NUMBER 184007



INDIVIDUAL REPLACEMENT PARTS

(bends around capillary tubing).

SPORLAN

AAA

Identification tag with cartridge number

INDIVIDUAL RE	FLACE	MENTERNIS
PART NUMBER	SIZE	COLOR CODE
CARTRII	DGE and I	.D. TAG*
BQC-AAA BQC-AA BQC-A BQC-B BQC-C	AAA AA A B C	Red Yellow Blue Pink White
MISCEL	LANEOU	S PARTS
0B-1	Oil B	ottle (With Oil)
4444-000	ВΩ	Cartridge Tool
CSK-1	BQ Car	tridge Service Kit (Empty)

BQ Cartridge Service Kit 184007 (Complete as noted above)

*BQC with B15 (15% bleed port) is available.

CAPACITIES

•~											
	NOMINAL CAPACITY (TONS) of SPORLAN VALVE TO BE REPLACED										
R-12	R-22, R-422D	R-134a	R-401A	R-402A	R-404A	R-410A	R-502	R-507	SIZE	COLOR CODE	
1/8 thru 1/5	1/8 thru 1/3	1/8 thru 1/5	1/8 thru 1/5	1/8 thru 1/5	1/8 thru 1/5	1/4 thru 1/3	1/8 thru 1/5	1/8 thru 1/5	AAA	Red	
1/4 thru 1/3	1/2 thru 2/3	1/4 thru 1/3	1/4 thru 1/3	1/4 thru 1/3	1/4 thru 1/3	1/2 thru 3/4	1/4 thru 1/3	1/4 thru 1/3	АА	Yellow	
1/2 thru 1	3/4 thru 1-1/2	1/2 thru 1	1/2 thru 1	1/2 thru 1	1/2 thru 1	1 thru 1-3/4	1/2 thru 1	1/2 thru 1	Α	Blue	
1-1/4 thru 1-3/4	1-3/4 thru 3	1-1/4 thru 1-3/4	1-1/4 thru 1-3/4	1-1/4 thru 2	1-1/4 thru 2	2 thru 3-1/2	1-1/4 thru 2	1-1/4 thru 2	В	Pink	
2 thru 3	3-1/4 thru 5-1/2	2 thru 3	2 thru 3	2-1/4 thru 3	2-1/4 thru 3	4 thru 6	2-1/4 thru 3	2-1/4 thru 3	С	White	

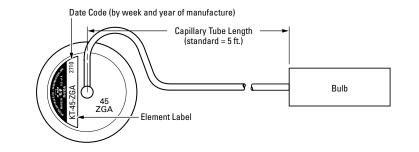
For Refrigerants 22, 134a, 404A, 410A*, 507 **SAE Flare & Extended ODF Solder Connections**

*Type Q, EQ, and SQ are not approved for R-410A applications.

ELEMENT

Abbreviation

for "Kit"



SPORLAN REFRIGERANT CODE

ELEMENT	LABEL	COLOR CODE
F	R-12	Yellow
V	R-22, R-422D	Green
J	R-134a	Blue
X	R-401A	Pink
L	R-402A	Sand
S	R-404A	Orange
V	R-407A	Green
N	R-407C	Light Brown
R	R-408A	Purple
F	R-409A	Yellow
Z	R-410A	Pink
R	R-502	Purple
Р	R-507	Teal

① While many new refrigerants and refrigerant blends have a unique letter code, many use the same thermostatic element as the traditional refrigerant they replace. Refer to the table below to select the correct thermostatic element.

Refrigerant

Code ①

RECOMMENDED THERMOSTATIC ELEMENTS**

45

Element

Size

Number

						RE	RIGER	ANT							0407514 1400
APPLICATION	12	22, 422D	134a	401A	402A	404A	407A	407C	408A	409A	410A	502	507	THERMOSTATIC ELEMENT	SYSTEM MOP psig
	Χ	_	Х	Х	-	_	_	_	_	Х	_	_	_	KT-43-JCP60	50
	_	Х	_	_	_	_	Х	Х	-	_	_	_	_	KT-43-VCP100	90
Air Conditioning	_	Х	_	_	_	_	Х	Х	_	_	_	_	_	KT-43-VGA	_
Air Conditioning	_	_	_	_	_	Х	_	_	Х	_	_	Χ	_	KT-43-SCP115	105
	_	_	_	_	_	_	_	_	_	_	Х	_	-	KT-45-ZGA	_
	_	_	_	_	_	_	_	_	_	_	Х	_	_	KT-45-ZCP180	170
	Χ	_	Χ	X	_	_	-	_	_	X	_	_	-	KT-43-JC	_
Commercial	_	Х	_	_	_	_	Х	Х	-	_	_	_	-	KT-43-VC	_
Refrigeration 50°F to -10°F	_	_	_	_	_	Х	_	_	Х	_	_	Χ	_	KT-43-SC	_
30 1 10 -10 1	-	_	-	_	Х	_	_	_	_	_	_	_	Χ	KT-43-PC	_
	Χ	_	-	_	_	_	_	_	_	_	_	-	_	KT-43-JZ	_
[Χ	_	_	_	_	_	_	_	_	_	_	_	_	KT-43-JZP	12
Low Temperature Refrigeration 0°F to -40°F	-	X	-	_	_	_	-	_	_	_	_	_	-	KT-43-VZ	_
	_	Х	-	_	_	_	_	_	_	_	_	_	_	KT-43-VZP40	30
0 1 to -40 F	_	_	_	_	Х	Х	_	_	Х	_	_	Х	Х	KT-43-SZ	_
	_	_	_	_	Х	Х	_	-	Х	_	_	Х	Х	KT-43-SZP	35

GA

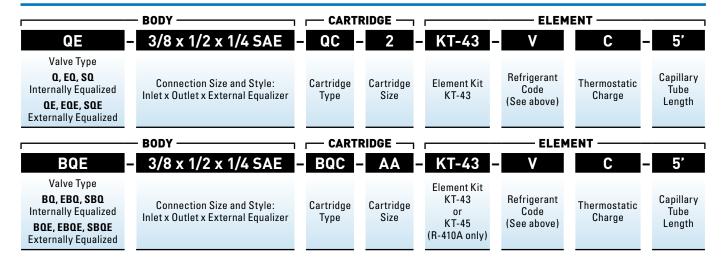
Thermostatic

Charge

**APPLICATION FACTORS:

- 1. The Sporlan Type ZP thermostatic charges have essentially the same characteristics as the conventional Z cross charges with one exception: they produce a pressure limit or MOP. The ZP charges are not intended as replacements for the Z charges they should only be used where a definite pressure limit is required to prevent motor overloading.
- All air conditioning and heat pump charges are intended for use with externally equalized valves.
- 3. For dual temperature applications, use the "C" charge.
 4. The "C" charge may be used on applications down to -30°F on R-22, R-404A and R-507.

ORDERING INSTRUCTIONS VALVE NOMENCLATURE





*Type Q, EQ, and SQ are not approved for R-410A applications.

Q SPECIFICATIONS ELEMENT SIZE NO. 43, KNIFE EDGE JOINT

		:	ODY TYPE -	CARTRIDG	E				ິບ	Ξ	CONNECTIONS		
	SAE	Flare		Extended	ODF Solder		DGE	AL ITY of	TAT ES BLE	ARD :NG1	Inches Blue figures are	⊨	NG
REFRIGERANT (Sporlan Code)	Internal Equalizer	External Equalizer ②	Internal Equalizer	External Equalizer ②	Internal Equalizer	External Equalizer ②	CARTRIDGE	NOMINAL CAPACITY Tons of Refrigeration	THERMOSTATIC CHARGES AVAILABLE	STANDARD TUBING LENGTH	standard and will be furnished unless otherwise specified. INLET x OUTLET	NET WEIGHT	SHIPPING Weight
	Q-0	QE-0	EQ-0	EQE-0	SQ-0	SQE-0	0	1/3			Q & QE Only		
22 (V)	Q-1	QE-1	EQ-1	EQE-1	SQ-1	SQE-1	1	3/4			1/4 x 3/8 SAE		
	Q-2	QE-2	EQ-2	EQE-2	SQ-2	SQE-2	2	1			90° Angle Inlet		
407C (N)	Q-3	QE-3	EQ-3	EQE-3	SQ-3	SQE-3	3	1-1/2			or		
407A (V)	Q-4	QE-4	EQ-4	EQE-4	SQ-4	SQE-4	4	2-1/2			1/4 x 1/2 SAE		
422D (V)	Q-5	QE-5	EQ-5	EQE-5	SQ-5	SQE-5	5	3-1/2			90° Angle Inlet		
	Q-6	QE-6	EQ-6	EQE-6	SQ-6	SQE-6	6	5			or		
	Q-0	QE-0	EQ-0	EQE-0	SQ-0	SQE-0	0	1/6			3/8 x 1/2 SAE		
134a (J)	Q-1	QE-1	EQ-1	EQE-1	SQ-1	SQE-1	1	1/4	19		90° Angle Inlet		
	Q-2	QE-2	EQ-2	EQE-2	SQ-2	SQE-2	2	1/2	nded on Page		EQ Only		
12 (F)	Q-3	QE-3	EQ-3	EQE-3	SQ-3	SQE-3	3	1	led Pa		3/8 x 1/2 ODF		
401A (X)	Q-4	QE-4	EQ-4	EQE-4	SQ-4	SQE-4	4	1-1/2	o o		Straight Thru		
409A (F)	Q-5	QE-5	EQ-5	EQE-5	SQ-5	SQE-5	5	2	l its		3		1-1/2
	Q-6	QE-6	EQ-6	EQE-6	SQ-6	SQE-6	6	2-1/2	Refer to Recommended nostatic Elements on Pa	5 ft.	EQE Only	1 lb.	lbs.
	Q-0	QE-0	EQ-0	EQE-0	SQ-0	SQE-0	0	1/6	Rec	1.5 m	3/8 x 1/2 ODF	454 g	680 q
	Q-1	QE-1	EQ-1	EQE-1	SQ-1	SQE-1	1	1/4	다 다		Straight Thru		000 g
404A (S)	Q-2	QE-2	EQ-2	EQE-2	SQ-2	SQE-2	2	1/2	fer		or over 500 op 5		
502 (R)	Q-3	QE-3	EQ-3	EQE-3	SQ-3	SQE-3	3	1	Refer to Thermostatic		3/8 x 5/8 ODF Straight Thru		
408A (R)	Q-4	QE-4	EQ-4	EQE-4	SQ-4	SQE-4	4	1-1/2	l er		or		
100/1(11)	Q-5	QE-5	EQ-5	EQE-5	SQ-5	SQE-5	5	2	<u> </u>		1/2 x 5/8 ODF		
	Q-6	QE-6	EQ-6	EQE-6	SQ-6	SQE-6	6	3			Straight Thru		
	Q-0	QE-0	EQ-0	EQE-0	SQ-0	SQE-0	0	1/6			or		
	Q-1	QE-1	EQ-1	EQE-1	SQ-1	SQE-1	1	1/4			1/2 x 7/8 ODF		
E07 / D\	Q-2	QE-2	EQ-2	EQE-2	SQ-2	SQE-2	2	1/2			Straight Thru		
507 (P)	Q-3	QE-3	EQ-3	EQE-3	SQ-3	SQE-3	3	1					
402A (L)	Q-4	QE-4	EQ-4	EQE-4	SQ-4	SQE-4	4	1-1/2			SQ & SQE Only		
	Q-5	QE-5	EQ-5	EQE-5	SQ-5	SQE-5	5	2			3/8 x 1/2 ODF		
	Q-6	QE-6	EQ-6	EQE-6	SQ-6	SQE-6	6	3			90° Angle Inlet		

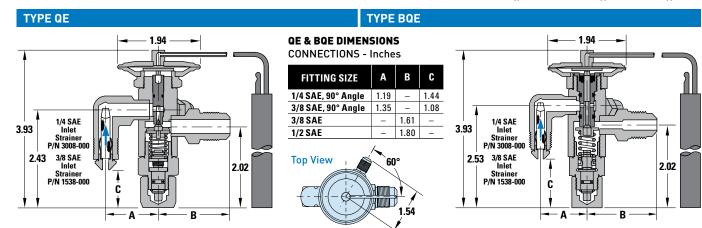
BQ SPECIFICATIONS ELEMENT SIZE NO. 43 (R-22) and NO. 45 (R-410A), KNIFE EDGE JOINT

		В	ODY TYPE	- CARTRIDG	E				C	Ŧ	CONNECTIONS		
	SAE	Flare		Extended	ODF Solder		GE	AL TY f tion	ES SLE	B L S	Inches Blue figures are	Ŀ	9 ⊢
REFRIGERANT (Sporlan Code)	Internal Equalizer	External Equalizer ②	Internal Equalizer	External Equalizer ②	Internal Equalizer	External Equalizer ②	CARTRIDGE	NOMINAL CAPACITY Tons of Refrigeration	THERMOSTATIC CHARGES AVAILABLE	STANDARD Tubing Length	standard and will be furnished unless otherwise specified. INLET x OUTLET	NET WEIGHT	SHIPPING WEIGHT
22 (\/\	BQ-AAA	BQE-AAA	EBQ-AAA	EBQE-AAA	SBQ-AAA	SBQE-AAA	AAA	1/8 thru 1/3			BQ & BQE		
22 (V)	BQ-AA	BQE-AA	EBQ-AA	EBQE-AA	SBQ-AA	SBQE-AA	AA	1/2 thru 2/3			1/4 x 3/8 SAE		
407C (N)	BQ-A	BQE-A	EBQ-A	EBQE-A	SBQ-A	SBQE-A	Α	3/4 thru 1-1/2			90° Angle Inlet	İ	
407A (V)	BQ-B	BQE-B	EBQ-B	EBQE-B	SBQ-B	SBQE-B	В	1-3/4 thru 3			0r		
422D (V)	BQ-C	BQE-C	EBQ-C	EBQE-C	SBQ-C	SBQE-C	С	3-1/4 thru 5-1/2			1/4 x 1/2 SAE 90° Angle Inlet		
12/10 / 1\	BQ-AAA	BQE-AAA	EBQ-AAA	EBQE-AAA	SBQ-AAA	SBQE-AAA	AAA	1/8 thru 1/5			Or		
134a (J)	BQ-AA	BQE-AA	EBQ-AA	EBQE-AA	SBQ-AA	SBQE-AA	AA	1/4 thru 1/3	_		3/8 x 1/2 SAE 3		
12 (F)	BQ-A	BQE-A	EBQ-A	EBQE-A	SBQ-A	SBQE-A	Α	1/2 thru 1	e 19		90° Angle Inlet		
401A (X)	BQ-B	BQE-B	EBQ-B	EBQE-B	SBQ-B	SBQE-B	В	1-1/4 thru 1-3/4	d ag		EBQ Only		
409A (F)	BQ-C	BQE-C	EBQ-C	EBQE-C	SBQ-C	SBQE-C	С	2thru 3	Recommended Elements on Page		3/8 x 1/2 ODF ①		
	BQ-AAA	BQE-AAA	EBQ-AAA	EBQE-AAA		SBQE-AAA	AAA	1/8 thru 1/5	ner :s o		Straight Thru		
404A (S)	BQ-AA	BQE-AA	EBQ-AA	EBQE-AA	SBQ-AA	SBQE-AA	AA	1/4 thru 1/3	m l	5 ft.	EBQE Only	1 lb.	1-1/2
502 (R)	BQ-A	BQE-A	EBQ-A	EBQE-A	SBQ-A	SBQE-A	Α	1/2 thru 1	e m	ວາເ. 1.5 m	3/8 x 1/2 ODF ®	454 g	lbs.
408A (R)	BQ-B	BQE-B	EBQ-B		SBQ-B	SBQE-B	В	1-1/4 thru 2	E E	1.5 111	Straight Thru	454 g	680 g
	BQ-C	BQE-C	EBQ-C		SBQ-C	SBQE-C	С	2-1/4 thru 3	Refer to Thermostatic I		or		
	BQ-AAA	BQE-AAA	EBQ-AAA	EBQE-AAA		SBQE-AAA	AAA	1/4 thru 1/3	lefe ost		3/8 x 1/2 0DF ③		
	BQ-AA	BQE-AA	EBQ-AA		SBQ-AA	SBQE-AA	AA	1/2 thru 3/4	- E		90° Angle Inlet or		
410A (Z)	BQ-A	BQE-A	EBQ-A		SBQ-A	SBQE-A	Α	1 thru 1-3/4	l Pe		1/2 x 5/8 ODF ④		
	BQ-B	BQE-B	EBQ-B	EBQE-B	SBQ-B	SBQE-B	В	2 thru 3-1/12			Straight Thru		
	BQ-C	BQE-C	EBQ-C		SBQ-C	SBQE-C	С	4 thru 6			or		
	BQ-AAA	BQE-AAA	EBQ-AAA		SBQ-AAA	SBQE-AAA	AAA	1/8 thru 1/5			1/2 x 7/8 0DF ④		
507 (P)	BQ-AA	BQE-AA	EBQ-AA			SBQE-AA	AA	1/4 thru 1/3			Straight Thru		
	BQ-A	BQE-A	EBQ-A		SBQ-A	SBQE-A	Α	1/2 thru 1			SBQ & SBQE Only		
402A (L)	BQ-B	BQE-B	EBQ-B		SBQ-B	SBQE-B	В	1-1/4 thru 2			3/8 x 1/2 ODF ④		
	BQ-C	BQE-C	EBQ-C	EBQE-C	SBQ-C	SBQE-C	С	2-1/4 thru 3			90° Angle Inlet		

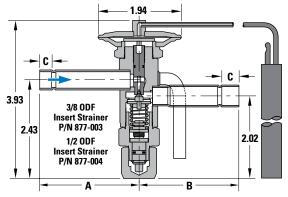
Valves listed in the column are NOT AVAILABLE with MOP type air conditioning charges.
 Standard External Equalizer 1/4" SAE (0 and B0 Body), 1/4" ODF (SQ, SBQ, EQ and EB0 Body).
 The 3/8" SAE inlet fitting has a long taper on the flare surface. A 3/8" x 1/4" reducing flare nut will allow 1/4" OD tubing to be attached to this fitting.
 ODF Solder indicates a female connection on the valve of proper diameter to receive copper tubing of corresponding OD size. Thus 1/2" ODF will receive 1/2" OD tubing.

For Refrigerants 22, 134a, 404A, 410A*, 507 SAE Flare & Extended ODF Solder Connections

*Type Q, EQ, and SQ are not approved for R-410A applications.

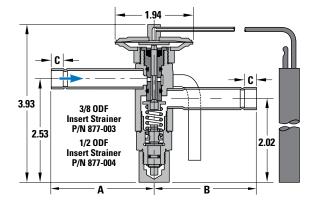


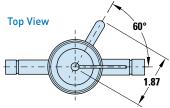
TYPE EQE TYPE EBQE



EQE & EBQE DIMENSIONSCONNECTIONS - Inches

FITTING SIZE	A	В	С
3/8	2.50	_	0.31
1/2	2.42	2.48	0.40
5/8	-	2.48	0.50
7/8	-	2.39	0.78





TYPE SQE TYPE SBQE 1.94 Removable Strainer Removable **Top View** Strainer P/N 3427-000 P/N 3427-000 .40 3.93 3.93 2.43 2.02 2.02 .31 <u>.31</u> **-** 1.39 2.48 ---- 1.39 2.48

BULB SIZES - Inches

STANDARD		REFRIGERANT											
CHARGES	22	134a	410A	507									
С		0.50 OD x 3.00	-	0.50 OD x 3.00									
Z & ZP Series	0.50 OD x 3.00	-	0.50 OD x 3.00	_	0.50 OD x 3.00								
CP Series			_										
GA	0.75 OD x 2.00	-	-	0.75 OD x 2.00	-								



Sporlan Type G valve is a forged brass body, externally adjustable valve with SAE flare connections. The thermostatic element is replaceable, and the inlet connection has a removable 100 mesh strainer. This valve is designed for small refrigeration systems such as refrigerated cases, coolers and freezers. In addition to refrigeration applications, the externally equalized Type G valve may be used for small capacity air conditioning and heat pump units.

Outlet Connections 1/2" SAE

Mating Distributors (See Bulletin 20-10) 1603, 1605, 1606, 1608, 1650(R)

For complete details of construction, see page 35.

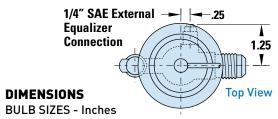


SPECIFICATIONS ELEMENT SIZE NO. 53. KNIFE EDGE JOINT

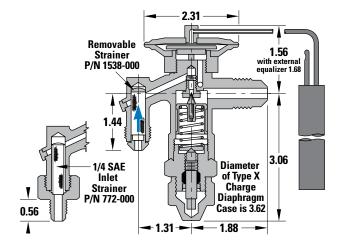
	VALVE	ТҮРЕ	"	E VIC	Q	CONNECTIO SAE	NS - Inches		(7
REFRIGERANT (Sporlan Code)	Internal Equalizer ①	External Equalizer 1/4" SAE Flare	NOMINAL CAPACITY Tons of Refrigeration	THERMOST/ CHARGE! AVAILABI	STANDARD Tubing Length	Blue figures	are standard nished unless	NET WEIGHT	SHIPPING WEIGHT
	GV-1/5 GV-1/3	GVE-1/5 GVE-1/3	1/5 1/3			1/4 or 3/8 ②			
	GV-1/3	GVE-1/3 GVE-1/2	1/3						
22 (V)	GV-1/2 GV-3/4	GVE-1/2 GVE-3/4	3/4			1/4 or 3/8 ②			
407C (N)	GV-1	GVE-1	1			1/4 01 3/0 (2)			
407A (V)	GV-1-1/2	GVE-1-1/2	1-1/2						
422D (V)	-	GVE-2	2			0.40	3/8 ②		
	GV-2-1/2	_	2-1/2			3/8 (2)			
	-	GVE-3	3						
	GJ-1/8	GJE-1/8	1/8	Refer to Recommended Thermostatic Charges on page 3 w 9.1 m 9.1					
134a (J)	GJ-1/6	GJE-1/6	1/6		1/4 or 3/8 ②				
	GJ-1/4 GJE-1/4 1/4 F) GJ-1/2 GJE-1/2 1/2 (X) GJ-1 GJE-1 1 GJ-1-1/2 GJE-1-1/2 1-1/2 - GJE-2 2 GS-1/8 GSE-1/8 1/8 GS-1/6 GSE-1/6 1/6 GS-1/4 GSE-1/4 1/4 GSE-1/4 GSE-1/4 1/4								
12 (F)	GJ-1/2	GJE-1/2	1/2	nen s o		1/4 or 3/8 (2)) 1/2		
401A (X) 409A (F)	GJ-1	GJE-1	1	mn rge	F 6:	1,7 1 01 0,70 (3)			
403A (F)	GJ-1-1/2	GJE-1-1/2	1-1/2	co ha	5 ft.	3/8 ②			3 lbs.
		GJE-2 GSE-1/8	2 1/8	. Re	1.5 m				1.36 kg
	GS-1/8 GS-1/6	GSE-1/8 GSE-1/6	1/8	r to tati					
404A (S)	GS-1/6	GSE-1/6	1/4	efe		1/4 or 3/8 ②			
	GS-1/2	GSE-1/2	1/2	A E					
502 (R)	GS-1	GSE-1	1/2	Ţ		1/4 or 3/8 ②			
408A (R)	GS-1-1/2	GSE-1-1/2	1-1/2						
	-	GSE-2	2			3/8 ②			
	GP-1/8	GPE-1/8	1/8						
	GP-1/6	GPE-1/6	1/6			1/4 or 3/8 ②			
507 (P)	GP-1/4	GPE-1/4	1/4						
	GP-1/2	GPE-1/2	1/2			1/4 or 3/8 (2)			
402A (L)	GP-1	GPE-1	1			1/4 01 3/0 (2)			
	GP-1-1/2	GPE-1-1/2	1-1/2			3/8 ②			
	_	GPE-2	2			3,0 (2)			

① Valves listed in this column NOT AVAILABLE with MOP Type air conditioning charges.

The 3/8" SAE inlet fitting has a long taper on the flare surface. A 3/8" x 1/4" reducing flare nut will allow 1/4" OD tubing to be attached to this fitting.



STANDARD	REFRIGERANT						
CHARGES	22	134a	507				
C		0.50 OD x 3.50					
Z & ZP Series	0.50 OD x 3.50	_	0.50 OD x 3.50				
Х	0.75 OD x 4.00	_	0.75 0[0 x 4.00			
CP Series		0.50 OD x 3.50 –					
VGA	0.75 OD x 2.00	0 - -					





Sporlan Type EG valve is a forged brass body, externally adjustable valve with ODF solder connections. The thermostatic element is replaceable, and the inlet connection has a removable 100 mesh strainer which can be cleaned and/or replaced without removing the valve from the line. This valve is designed for small refrigeration systems such as refrigerated cases, coolers and freezers. In addition to refrigeration applications, the externally equalized Type EG valve

may be used for small capacity air conditioning and heat pump units.

Outlet Connections

1/2" ODF

Mating Distributors (See Bulletin 20-10)

D260, D262

For complete details of construction, see page 35.

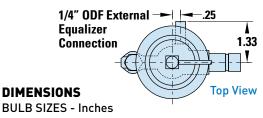


SPECIFICATIONS ELEMENT SIZE NO. 53, KNIFE EDGE JOINT

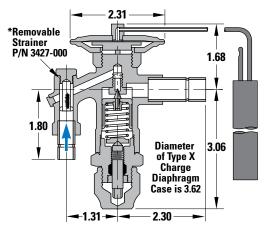
	VALVE	ТҮРЕ	ion Y	ATIC S LE	9	CONNECTIO ② ODF	NS - Inches		5 _
REFRIGERANT (Sporlan Code)	Internal Equalizer ①	External Equalizer 1/4" ODF Solder	NOMINAL CAPACITY Tons of Refrigeration	THERMOSTAT CHARGES AVAILABLE	STANDAR TUBING LENGTH	Blue figures	are standard nished unless	NET	SHIPPING WEIGHT
	EGV-1/5	EGVE-1/5	1/5						
	EGV-1/3	EGVE-1/3	1/3						
22 (V)	EGV-1/2	EGVE-1/2	1/2						
	EGV-3/4	EGVE-3/4	3/4						
407C (N)	EGV-1	EGVE-1	1						
	407A (V) 422D (V) EGV-1-1/2 I-1/2 - EGVE-2 2								
422D (V)									
	EGV-2-1/2		2-1/2						
		EGVE-3	3	က					
	EGJ-1/8	EGJE-1/8	1/8						
134a (J)	EGJ-1/6	EGJE-1/6	1/6						
12 (F)	EGJ-1/4	EGJE-1/4	1/4	Refer to Recommended mostatic Charges on pa					
401A (X)	EGJ-1/2	EGJE-1/2	1/2	ner is (1/2		
401A (A) 409A (F)	EGJ-1	EGJE-1	1 1/0	rge rge	F (1			0.11	0.11
403A (1 /	EGJ-1-1/2	EGJE-1-1/2	1-1/2	eco tha	5 ft.	3/8		2 lbs.	3 lbs.
	EGS-1/8	EGJE-2 EGSE-1/8	<u>2</u> 1/8	S. B.	1.5 m			0.90 kg	1.36 kg
	EGS-1/8	EGSE-1/8 EGSE-1/6	1/8	r to :ati					
404A(S)	EGS-1/6	EGSE-1/6 EGSE-1/4	1/6	efe					
	EGS-1/4	EGSE-1/4	1/4	Refer to Recommended Thermostatic Charges on page					
502 (R)	EGS-1/2	EGSE-1	1/2	l he					
408A (R)	EGS-1-1/2	EGSE-1-1/2	1-1/2	_					
	_	EGSE-2	2						
	EGP-1/8	EGPE-1/8	1/8						
	EGP-1/6	EGPE-1/6	1/6						
E07 (D)	EGP-1/4	EGPE-1/4	1/4						
507 (P)	EGP-1/2	EGPE-1/2	1/2						
402A (L)	EGP-1	EGPE-1	1						
, ,	EGP-1-1/2	EGPE-1-1/2	1-1/2						
	_	EGPE-2	2						

① Valves listed in this column NOT AVAILABLE with MOP Type air conditioning charges.

② ODF Solder indicates a female connection on the valve of proper diameter to receive copper tubing of corresponding OD size. Thus 1/2" ODF will receive 1/2" OD tubing.



STANDARD	REFRIGERANT						
CHARGES	CHARGES 22 134a 404A						
C		0.50 OD x 3.50					
Z & ZP Series	0.50 OD x 3.50	_	- 0.50 OD x 3.50				
X	0.75 OD x 4.00	_	0.75 0	0 x 4.00			
CP Series		0.50 OD x 3.50					
VGA	0.75 OD x 2.00	_					



^{*} Type EG valves manufactured prior to June 1994 use a smaller inlet strainer, P/N 1935-000, which has a 1/2" brass hex head. Current Type EG valves use inlet strainer P/N 3427-000 which has a 5/8" brass hex head. These strainers are not interchangeable. The 3427-000 is available as a replacement part. The 1935-000 is no longer available.



Sporlan Type BF valve is a small brass bar body valve with SAE flare connections and balanced port construction. This valve has the same exterior dimensions as the Type F valve. The thermostatic element is replaceable, and the inlet connection has a removable 100 mesh strainer. The balanced port construction makes this valve ideally suited for small capacity refrigeration applications which operate over widely varying operating conditions.

Outlet Connections 1/2" SAE

Mating Distributors (See Bulletin 20-10) 1603, 1605, 1606, 1608, 1650(R)

For complete details of construction, see page 35.



SPECIFICATIONS ELEMENT SIZE NO. 43, KNIFE EDGE JOINT

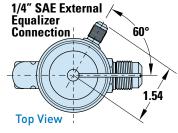
REFRIGERANT (Sporlan Code)		E TYPE Flare	MAL AND STA		HERMOSTATIC CHARGES AVAILABLE STANDARD TUBING		CONNECTIONS - Inches SAE Flare Blue figures are standard and will be furnished unless otherwise specified.			NET WEIGHT	SHIPPING WEIGHT				
(Sporial code)	Internal Equalizer	External Equalizer	SIZE	NOI CAF To Refri	THERMOS CHAR(AVAILA	STA TU LEI	INLET	OUTLET	EXTERNAL EQUALIZER	M	WI SHI				
00 (11)	BFV-AAA	BFVE-AAA	AAA	1/8 thru 1/3			1/4 or 3/8 Elbow (1)								
22 (V)	BFV-AA	BFVE-AA	AA	1/2 thru 2/3	С		1/4 UI 3/6 EIDUW (I)								
407C (N)	BFV-A	BFVE-A	Α	3/4 thru 1-1/2	Z ZP40		1/4 or <mark>3/8</mark> Elbow 1								
407A (V) 422D (V)	BFV-B	BFVE-B	В	1-3/4 thru 3			3/8 Elbow								
	BFV-C	BFVE-C	С	3-1/4 thru 5-1/2			3/6 EIDUW								
	BFJ-AAA	BFJE-AAA	AAA	1/8 thru 1/5				1/4 or 3/8 Elbow (1)	ı						
134a (J)	BFJ-AA	BFJE-AA	AA	1/4 thru 1/3			1/4 01 3/0 LIDOW (1)								
12 (F)	BFJ-A	BFJE-A	Α	1/2 thru 1	С		1/4 or 3/8 Elbow ①								
401A (X) 409A (F)	BFJ-B	BFJE-B	В	1-1/4 thru 1-3/4] '			3/8 Elbow	0.40			
	BFJ-C	BFJE-C	С	2 thru 3		30 in.	3/0 LIDOW	3/8 or	1/4	1 lb.	1-1/2 lbs.				
	BFS-AAA	BFSE-AAA	AAA	1/8 thru 1/5		760 mm 1/4 or 3/8 Elbow (1)	1/2	1/4	454 g	680 g					
404A (S)	BFS-AA	BFSE-AA	AA	1/4 thru 1/3	С		1/4 UI 3/6 EIDUW (I)								
502 (R)	BFS-A	BFSE-A	Α	1/2 thru 1	Z		1/4 or 3/8 Elbow 1								
408A (R)	BFS-B	BFSE-B	В	1-1/4 thru 2	ZP		3/8 Elbow								
	BFS-C	BFSE-C	С	2-1/4 thru 3			3/6 LIBOW								
	BFP-AAA	BFPE-AAA	AAA	1/8 thru 1/5			1/4 or 2/0 Flbour (4)								
E07/D\	BFP-AA	BFPE-AA	AA	1/4 thru 1/3	_	С	1/4 or 3/8 Elbow ①								
507 (P)	BFP-A	BFPE-A	Α	1/2 thru 1		7 i] z [1/4 or 3/8 Elbow 1							
402A (L)	BFP-B	BFPE-B	В	1-1/4 thru 2	ZP		3/0 Elbour								
	BFP-C	BFPE-C	С	2-1/4 thru 3		3/8 Elbow									

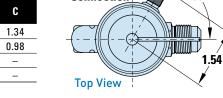
The 3/8" SAE inlet fitting has a long taper on the flare surface. A 3/8" x 1/4" reducing flare nut will allow 1/4" OD tubing to be attached to this fitting.

DIMENSIONS

CONNECTIONS - Inches

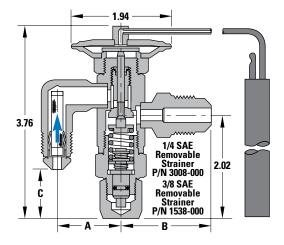
FITTING SIZE SAE Flare	A	В	С
1/4 Elbow	1.19	-	1.34
3/8 Elbow	1.35	-	0.98
3/8 SAE	-	1.61	-
1/2 SAE	_	1.80	_





BULB SIZES - Inches

STANDARD	REFRIGERANT						
CHARGES	22	134a	134a 404A				
C		0.50 OD x 3.00					
Z & ZP Series	0.50 OD x 3.00	0.50 OD x 3.00 – 0.50 OD x 3.00					



TYPE SBF & EBF

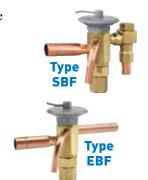
Sporlan Types SBF & EBF are small brass bar body valves with Extended ODF solder connections and the same balanced port construction as the Type BF valve. Both valves have replaceable thermostatic elements. The Type EBF has a 100 mesh insert strainer. The Type SBF has a 100 mesh removable strainer that can be cleaned and/or replaced while the valve is still soldered to the system tubing. The balanced port construction makes these valves ideally suited for small

capacity refrigeration applications which operate over widely varying conditions.

Outlet Connections 1/2" ODF, 5/8" ODF

Mating Distributors (See Bulletin 20-10)
D260, D262, 1620, 1622, 1651(R)

For complete details of construction, see page 35.



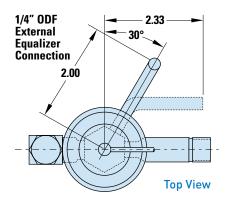
SPECIFICATIONS ELEMENT SIZE NO. 43, KNIFE EDGE JOINT

	TYPE SBF TYPE Extended ODF Solder Extended O		E EBF		AL (ANGE f tion (ATIC SS		TATIC ES SLE RD G		CONNECTIONS - Inches ① Extended ODF Solder Blue figures are standard			9-		
REFRIGERANT (Sporlan Code)	with replac	eable strainer	Extenueu	ODL 201061	PORT SIZE	OMINA CITY R/ Tons of rigerati	IRGI ILAE	and will be furnished unless		ished unless	크 I I I I	SHIPPING WEIGHT		
(Sportali Code)	Internal Equalizer	External Equalizer	Internal Equalizer	External Equalizer	SIZE	NOMINAL CAPACITY RAN Tons of Refrigeration	CAPACI To Refri THERN CHA	THERN CH/ AVA	STAI TU LEI		nerwise s OUTLET	EXTERNAL EQUALIZER	W	WE SHIII
	SBFV-AAA	SBFVE-AAA	EBFV-AAA	EBFVE-AAA	AAA	1/8 thru 1/3								
22 (V)	SBFV-AA	SBFVE-AA	EBFV-AA	EBFVE-AA	AA	1/2 thru 2/3	С							
407C (N)	SBFV-A	SBFVE-A	EBFV-A	EBFVE-A	Α	3/4 thru 1-1/2	Z							
407A (V) 422D (V)	SBFV-B	SBFVE-B	EBFV-B	EBFVE-B	В	1-3/4 thru 3	ZP40	ZP40						
1225 (1)	SBFV-C	SBFVE-C	EBFV-C	EBFVE-C	С	3-1/4 thru 5-1/2							1-1/2 bs. 680 g	
	SBFJ-AAA	SBFJE-AAA	EBFJ-AAA	EBFJE-AAA	AAA	1/8 thru 1/5		1				IIIh		
134a (J)	SBFJ-AA	SBFJE-AA	EBFJ-AA	EBFJE-AA	AA	1/4 thru 1/3	C							
12 (F)	SBFJ-A	SBFJE-A	EBFJ-A	EBFJE-A	Α	1/2 thru 1								
401A (X) 409A (F)	SBFJ-B	SBFJE-B	EBFJ-B	EBFJE-B	В	1-1/4 thru 1-3/4								
403A (1)	SBFJ-C	SBFJE-C	EBFJ-C	EBFJE-C	С	2 thru 3	30 in. 760 mm	30 in.	1 -3/0	1/2 or 5/8				
	SBFS-AAA	SBFSE-AAA	EBFS-AAA	EBFSE-AAA	AAA	1/8 thru 1/5		760 mm				454 g		
404A(S)	SBFS-AA	SBFSE-AA	EBFS-AA	EBFSE-AA	AA	1/4 thru 1/3	С				Parallel to Outlet			
502 (R)	SBFS-A	SBFSE-A	EBFS-A	EBFSE-A	Α	1/2 thur 1	Z				Connection			
408A (R)	SBFS-B	SBFSE-B	EBFS-B	EBFSE-B	В	1-1/4 thru 2	ZP							
	SBFS-C	SBFSE-C	EBFS-C	EBFSE-C	С	2-1/4 thru 3								
	SBFP-AAA	SBFPE-AAA	EBFP-AAA	EBFPE-AAA	AAA	1/8 thru 1/5								
E07 (D)	SBFP-AA SBFPE-AA EBFP-AA EBFPE-AA AA 1/4 thru 1/3 C													
507 (P)	SBFP-A	SBFPE-A	EBFP-A	EBFPE-A	Α	1/2 thru 1	Z							
402A (L)	SBFP-B	SBFPE-B	EBFP-B	EBFPE-B	В	1-1/4 thru 2	ZP							
	SBFP-C	SBFPE-C	EBFP-C	EBFPE-C	С	2-1/4 thru 3								

① ODF Solder indicates a female connection on the valve of proper diameter to receive copper tubing of corresponding OD size. Thus 1/2" ODF will receive 1/2" OD tubing.

▼ TYPE **SBF & EBF**

TYPE SBF



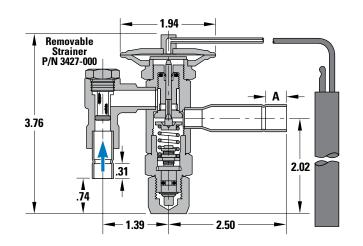
DIMENSIONS

CONNECTIONS - Inches

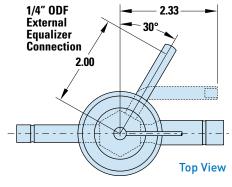
OUTLET FITTING SIZE	A
1/2	0.40
5/8	0.50

BULB SIZES - Inches

STANDARD	REFRIGERANT					
CHARGES	22	134a	404A	507		
C		0.50 0	0 x 3.00			
Z & ZP Series	0.50 OD x 3.00	-	0.50 OD x 3.00			



TYPE EBF



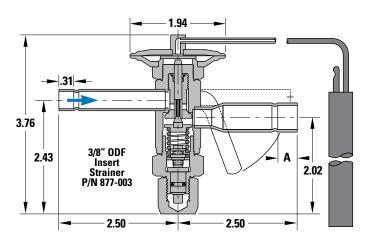


CONNECTIONS - Inches

OUTLET FITTING SIZE	А
1/2	0.40
5/8	0.50

BULB SIZES - Inches

STANDARD		REFRIG	ERANT				
CHARGES	22 134a 404A 507						
C		0.50 0[0 x 3.00				
Z & ZP Series	0.50 OD x 3.00	3.00 – 0.50 OD x 3.00					





Sporlan Type S valve is a brass bar body, externally adjustable valve with ODF solder connections. The thermostatic element is replaceable, and the inlet connection has a permanent 12 mesh strainer. This valve is designed for both air conditioning and refrigeration applications.

Outlet Connections 5/8" ODF, 7/8" ODF, 1-1/8" ODF

Mating Distributors (See Bulletin 20-10) 1112, 1113, 1115, 1116, 1620, 1622, 1651(R), 1653(R), 1655(R)





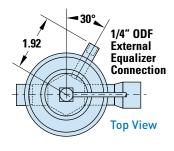
SPECIFICATIONS ELEMENT SIZE NO. 83, KNIFE EDGE JOINT

	VALVE	ТҮРЕ	on Y	TIC E	Q		ONS - Inches F Solder		(0
REFRIGERANT (Sporlan Code)	Internal Equalizer	External Equalizer	OMINA APACIT Tons of frigerati	RMOSTA Charges Vailabl	STANDAR TUBING LENGTH	Blue figures and will be fu	r Soluer are standard irnished unless e specified.	NET WEIGHT	SHIPPING WEIGHT
	①		N C/	THE C AN		INLET	OUTLET		S
	SV-2	SVE-2	2			2/0 1/2	F (0, 7/0 1, 1/0		
22 (V)	SV-3	SVE-3	3			3/8 or 1/2	5/8 , 7/8 or 1-1/8		
407C (N)	SV-4	SVE-4	4			1/2	E/0 7/0 or 1 1/0		
407A (V) 422D (V)	SV-5	SVE-5	5		5 ft. 1.5 m	1/2	5/8, 7/8 or 1-1/8		
	_	SVE-8	8	Refer to Recommended Thermostatic Charges on page 3		5/8	7/9 or 1 1/9	7/8 or 1-1/8 5/8 , 7/8 or 1-1/8	
	_	SVE-10	10			3/0	7/0 01 1-1/0		
404- / 1\	SJ-2	SJE-2	2			3/8 or 1/2	5/8 , 7/8 or 1-1/8		
134a (J)	SJ-2-1/2	SJE-2-1/2	2-1/2			1/2	5/8, 7/8 or 1-1/8		
12 (F)	SJ-3	SJE-3	3	ner es o		1/2	3/0,7/00111/0		
401A (X) 409A (F)	_	SJE-5	5	omr irge		5/8	7/8 or 1-1/8	2 lbs.	3 lbs.
403A (17	-	SJE-6	6	ecc		3/0	, , .	0 90 kg	1.36 kg
	SS-2	SSE-2	2	o B tic	1.0	3/8 or 1/2	5/8 , 7/8 or 1-1/8		1.00 kg
404A (S)	SS-3	SSE-3	3	Refer to mostatic		1/2	5/8, 7/8 or 1-1/8		
502 (R)	SS-4	SSE-4	4	Ref		1/2	3/0, 7/0 01 1-1/0		
408A (R)	_	SSE-6	6	her		5/8	7/8 or 1-1/8		
	_	SSE-7	7	F		-,-			
	SP-2	SPE-2	2			3/8 or 1/2	5/8 , 7/8 or 1-1/8		
507 (P)	SP-3	SPE-3	3			1/2	5/8, 7/8 or 1-1/8		
	SP-4	SPE-4	4			-/2	3,0,2,00111/0		
402A (L)	-	SPE-6	6			5/8	7/8 or 1-1/8		
	_	SPE-7	7			3/0	7,0 01 1 1/0		

DIMENSIONS

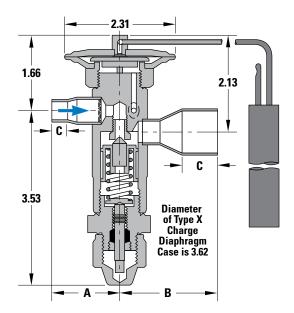
CONNECTIONS - Inches

FITTING SIZE	A	В	С
3/8	1.34	-	0.31
1/2	1.29	1.36	0.40
5/8	1.50	1.57	0.50
7/8	-	2.13	0.78
1-1/8	_	2.19	0.91



BULB SIZES - Inches

STANDARD		REFRIGERANT						
CHARGES	22	134a	404A	507				
C		0.50 OD x 3.50						
Z & ZP Series	0.50 OD x 3.50	_	0.50 OD x 3.50					
Х	0.75 OD x 4.00	_	0.75 0	D x 4.00				
CP Series	0.50 OD x 3.50 –							
VGA	0.75 OD x 2.00	_						



① Valves listed in this column NOT AVAILABLE with MOP Type air conditioning charges.
② ODF Solder indicates a female connection on the valve of proper diameter to receive copper tubing of corresponding OD size. Thus 5/8" ODF will receive 5/8" OD tubing.

▼ TYPE **EBS**

Sporlan Type EBS valve is a brass bar body valve having the same physical size as the Type S valve except the Type EBS features a balanced port construction and extended ODF connections. The thermostatic element is replaceable, and the inlet connection has a permanent 12 mesh strainer. The balanced port construction makes this valve ideally suited for refrigeration and air conditioning applications which operate over widely varying conditions.

Outlet Connections

7/8" ODF, 1-1/8" ODF, 1-3/8" ODF

Mating Distributors (See Bulletin 20-10) 1112, 1113, 1115, 1116, 1117, 1126, 1128, 1653(R), 1655(R), 1657(R)

For complete details of construction, see page 35.



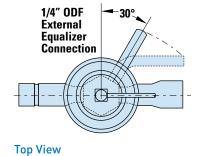
SPECIFICATIONS ELEMENT SIZE NO. 83, KNIFE EDGE JOINT

REFRIGERANT (Sporlan Code)	VALVE TYPE External	OMINAL APACITY Tons of rigeration	THERMOSTATIC CHARGES AVAILABLE	STANDARD TUBING LENGTH	① Blue fig	NNECTIONS - Inche Extended ODF Solo jures are standard and ed unless otherwise s	ler will be	NET WEIGHT	SHIPPING WEIGHT			
	Equalizer	N(CA)	THER CI AV	ST	INLET	OUTLET	EXTERNAL EQUALIZER	>	S A			
22 (V)	EBSVE-8 ②	8			1/2 or 5/8	7/8 or 1-1/8						
407C (N)	EBSVE-11 ②	11			1/2, 5/8 or 7/8	7/8 , 1-1/8 or 1-3/8						
407A (V)	EBSVE-15	15	*Refer to Recommended Thermostatic Charges on page 3		5/8 or 7/8	7/8, 1-1/8 or 1-3/8						
422D (V)	EBSVE-20	20		ge 3	ge 3	ge 3		7/8	1-1/8 or 1-3/8			
134a (J)	EBSJE-5 ②	5						1/2 or 5/8 7/8 or 1-1/8				
134a (J) 12 (F)	EBSJE-7 ②	7			1/2, 5/8 or 7/8	7/8 , 1-1/8 or 1-3/8	1/4 Pointed Toward Bottom Cap	2 lbs.	3 lbs.			
401A (X)	EBSJE-9	9	mer es o		5/8 or 7/8	7/8, 1-1/8 or 1-3/8						
409A (F)	EBSJE-12	12	com	5 ft.	7/8	1-1/8 or 1-3/8						
	EBSSE-6 ②	6	s Re	- Re	1.5 m	1/2 or 5/8	7/8 or 1-1/8	or	0.90 kg	1.36 kg		
404A (S)	EBSSE-7-1/2 ②	7-1/2	er to tati		1/2, 5/8 or 7/8	7/8 , 1-1/8 or 1-3/8	Parallel to Outlet					
502 (R) 408A (R)	EBSSE-10	10	Ref mos		5/8 or 7/8	7/8, 1-1/8 or 1-3/8	Connection					
400A (n)	EBSSE-13	13	* her		7/8	1-1/8 or 1-3/8						
	EBSPE-6 ②	6	_		1/2 or 5/8	7/8 or 1-1/8						
507 (P)	EBSPE-7-1/2 ②	7-1/2						1/2, 5/8 or 7/8	7/8 , 1-1/8 or 1-3/8	8		
402A (L)	EBSPE-10	10									5/8 or 7/8	7/8, 1-1/8 or 1-3/8
	EBSPE-13	13		7/8	1-1/8 or 1-3/8							

① ODF Solder indicates a female connection on the valve of proper diameter to receive copper tubing of corresponding OD size. Thus 5/8" ODF will receive 5/8" OD tubing. ② Approved for bi-directional applications.

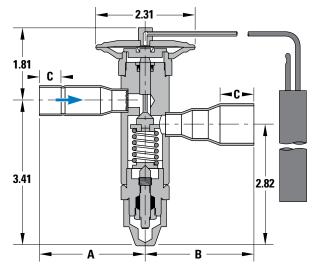
DIMENSIONS CONNECTIONS - Inches

FITTING SIZE	A	В	С
1/2	2.49	_	0.40
5/8	2.46	_	0.50
7/8	2.46	2.53	0.78
1-1/8	_	2.53	0.91
1-3/8	_	3 04	N 97



BULB SIZES - Inches

STANDARD	REFRIGERANT						
CHARGES	22	134a	404A	507			
C		0.50 OD x 3.50					
Z & ZP Series	0.50 OD x 3.50 - 0.50 OD x 3.50						
CP Series	(0.50 OD x 3.50					
VGA	0.75 OD x 2.00	-	-	_			



Minimum quantities may apply to non-standard connections. Not all connection combinations are available.

^{*} X charge not available.



Sporlan Type O valve is a brass bar body, externally adjustable valve with ODF solder connections. The thermostatic element is replaceable, and the inlet connection has a permanent 12 mesh strainer. This valve type features a balanced port construction, and it is designed for both air conditioning and refrigeration applications. A synthetic seating surface provides tight shut-off during system off periods.

This valve type has two body styles: a small body which provides capacities up to 30 tons R-22 and

35 tons R-410A, and a large body which extends capacities to 70 tons R-22 and 60 tons R-410A.

Outlet Connections

1-1/8" ODF, 1-3/8" ODF, 1-5/8" ODF

Mating Distributors (See Bulletin 20-10) 1115, 1116, 1117, 1125, 1126, 1127, 1128, 1143, 1655(R), 1657(R), 1659(R)

For complete details of construction, see page 35.



SPECIFICATIONS ELEMENT SIZE NO. 83, NO. 33, NO. 85 (R-410A), AND NO. 85-3 (R-410A), KNIFE EDGE JOINT

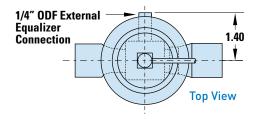
	VALVE TYPE	u	TIC	TIC	Q		NS - Inches		(5	
REFRIGERANT (Sporlan Code)	External Equalizer	NOMINAL CAPACITY Tons of Refrigeration	THERMOSTATIC ELEMENT SIZE NO.	THERMOSTATIC CHARGES AVAILABLE	STANDARD TUBING LENGTH		Solder andard and will be therwise specified.	NET WEIGHT	SHIPPING WEIGHT	
		~	픋	₹ 1	0,	INLET	OUTLET			
	0VE-15 ②	15				7/0	1-1/8			
22 (V)	0VE-20 2	20	83			7/8	1-3/8	2 lbs. 0.90 kg	3 lbs. 1.36 kg	
407C (N)	0VE-30 ②	30					1-3/6	0.00 kg	1.00 kg	
407A (V)	0VE-40	40				1-1/8				
422D (V)	0VE-55	55	33			1-1/0	1-3/8 or 1-5/8	4 lbs. 1.82 kg	5 lbs. 2.27 kg	
	OVE-70	70						1.02 kg	L.L. Kg	
	OJE-9	9				7/8	1-1/8			
134a (J)	0JE-12	12	83			1/6	1-3/8	2 lbs. 0.90 kg	3 lbs. 1.36 kg	
12 (F)	OJE-16	16					1-3/6	0.00 kg	1.00 kg	
401A (X)	0JE-23	23				1.1/0	1-3/8 or 1-5/8	1-1/8		
409A (F)	0JE-32	32	33	8 9		1-1/6		4 lbs. 1.82 kg	5 lbs. 2.27 kg	
	OJE-40 40 OSE-9 9 OSE-12 12 83 OSE-21 21 OSE-30 30 OSE-35 35 35 OSE-45 45 OZE-20 20 20			Z.Z. Kg						
	OSE-9	9		end	7/0	1-1/8	l			
	0SE-12	12	83	nmu		7/8	1 2/0	2 lbs. 0.90 kg	3 lbs. 1.36 kg	
404A (S)	0SE-21	21		leco Chai	5 feet 1.5 m		1-3/8	0.50 kg	1.50 kg	
502 (R) 408A (R)	OSE-30	30	30	*Refer to Recommended rmostatic Charges on paq	1.5 111	1-1/8		4 lbs. 1.82 kg		
400A (N)	OSE-35	35	33	efer osta		1-1/8	1-3/8 or 1-5/8		5 lbs. 2.27 kg	
	OSE-45	45		*R erm				1.02 kg	2.27 Kg	
	0ZE-20 ②	20		Th		7/0	4.4/0			
	0ZE-25 ②	25	85			7/8	1-1/8	2 lbs. 0.90 kg	3 lbs. 1.36 kg	
410A (Z)	0ZE-35 ②	35						0.30 kg	1.50 kg	
	0ZE-50	50	05.0			1-1/8	1-3/8	4 lbs.	5 lbs.	
	OZE-60	60	85-3					1.82 kg	2.27 kg	
	OPE-9	9				7.0	1-1/8			
	OPE-12 12 83	83			7/8	4.2/0	2 lbs. 0.90 kg	3 lbs. 1.36 kg		
507 (P)	0PE-21	21					1-3/8	บ.ชบ หตู	1.50 Kg	
402A (L)	0PE-30	30							5 lbs. 2.27 kg	
	0PE-35	35	33			1-1/8	1-3/8 or 1-5/8 4 lbs.			
	OPE-45 45		1.82 kg	2.27 Ny						

① ODF Solder indicates a female connection on the valve of proper diameter to receive copper tubing of corresponding OD size. Thus 5/8" ODF will receive 5/8" OD tubing.
② Optional bi-directional feature is available, please contact Sporlan Division of Parker for more information.

^{*} X charge not available.



TYPE 0 with NUMBER 83 and 85 ELEMENT



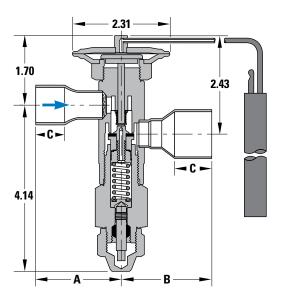
DIMENSIONS

CONNECTIONS - Inches

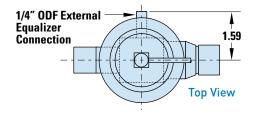
STRAIGHT THRU ODF SOLDER	A	В	С
7/8	2.09	2.08	0.78
1-1/8	2.21	2.23	0.91
1-3/8	_	2.39	0.97

BULB SIZES - Inches

STANDARD	REFRIGERANT							
CHARGES	22	22 134a		410A	507			
С		0.50 OD X 3.50		_	0.50 OD X 3.50			
Z & ZP Series	0.50 OD X 3.50	_	0.50 OD X 3.50	_	0.50 OD X 3.50			
CP Series		0.50 OD X 3.50		-	-			
GA	0.75 OD X 2.00	_	_	0.75 OD X 2.00	-			



TYPE 0 with NUMBER 33 and 85-3 ELEMENT



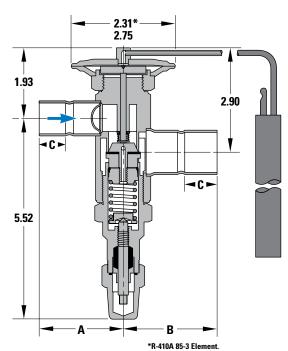
DIMENSIONS

CONNECTIONS - Inches

STRAIGHT THRU ODF SOLDER	A	В	С
1-1/8	2.69	-	0.91
1-3/8	-	2.84	0.97
1-5/8		3.12	1.09

BULB SIZES - Inches

	STANDARD						
17	507	410A	404A	134a	CHARGES 22 134a		
x 4.00	0.75 OD x 4		0.75 OD x 4.00	0.50 OD x 5.00	0.75 OD x 4.00	C	
x 4.00	0.75 OD x		0.75 OD x 4.00		0.75 OD x 4.00	Z & ZP Series	
_	_	_		0.75 OD x 4.00		CP Series	
-	-	0.75 OD X 2.00	_	_	0.75 OD x 4.00	GA	
	_	– 0.75 OD X 2.00		0.75 OD x 4.00		CP Series	





Sporlan Type H valve is a brass bar body, externally adjustable valve available with either ODF solder or FPT flange connections. The thermostatic element is replaceable, and the inlet connection has a permanent 16 mesh strainer. The FPT flange connection requires the Sporlan K-1178 adapter kit. This valve type provides the smallest capacity TEVs with flange connections, and it is designed for both air conditioning and refrigeration applications.

Outlet Connections

7/8" ODF, 1-1/8" ODF, "H" flange type

Mating Distributors (See Bulletin 20-10) 1109, 1110, 1112, 1113, 1115, 1116, 1124, 1192 (aluminum), 1653(R), 1655(R)

For complete details of construction, see page 35.



SPECIFICATIONS ELEMENT SIZE NO. 33, KNIFE EDGE JOINT

	VALVE	ТҮРЕ	- L	TIC E	D		ONS - Inches F Solder	FLANGE		(7)
REFRIGERANT (Sporlan Code)	Internal Equalizer	External Equalizer	NOMINA CAPACITY Tons of efrigerati	HERMOSTA CHARGES AVAILABLI STANDARI TUBING LENGTH	Blue figures and will be fu	are standard rnished unless e specified.	RING SIZE OD x ID Inches	NET WEIGHT	SHIPPING Weight	
	1	2	C. C.	THER CH AV/	S	INLET	OUTLET	4		0,
00 (1/)	HV-5-1/2	HVE-5-1/2	5-1/2							
22 (V)	-	HVE-7	7			5/8 or 7/8	7/8 or 1-1/8			
407C (N)	_	HVE-11	11		5 ft.					
407A (V) 422D (V)	_	HVE-16	16			7/8	7/8 or 1-1/8			
4220 (V)	_	HVE-20	20	Refer to Recommended Thermostatic Charges on page 3			7/0 01 1-1/0			6 lbs.
12/1- / 1\	HJ-3	HJE-3	3						5 lbs.	
134a (J)	HJ-4	HJE-4	4			5/8 or 7/8	7/8 or 1-1/8			
12 (F)	HJ-5	HJE-5	5	Refer to Recommended mostatic Charges on pa		3/0 01 7/0	7,0011170	1.25 x 1.00		
401A (X) 409A (F)	_	HJE-8	8	nme ges						
403A (F)	_	HJE-12	12	com		7/8	7/8 or 1-1/8			
	HS-3	HSE-3	3	Rec	1.5 m			1.23 X 1.00	2.27 kg	2.72 kg
404A (S)	HS-4	HSE-4	4	r to atic		5/8 or 7/8	7/8 or 1-1/8			
502 (R)	_	HSE-6-1/2	6-1/2	efer ost		3/6 01 7/6	7/6 UI 1-1/6			
408A (R)	_	HSE-9	9	R.						
	-	HSE-12	12	The		7/8	7/8 or 1-1/8			
	HP-3	HPE-3	3							
E07 (D)	HP-4	HPE-4	4			F (0 7/0	7/8 or 1-1/8			
507 (P)	-	HPE-6-1/2	6-1/2			5/8 or 7/8				
402A (L)	-	HPE-9	9							
	-	HPE-12	12			7/8	7/8 or 1-1/8			

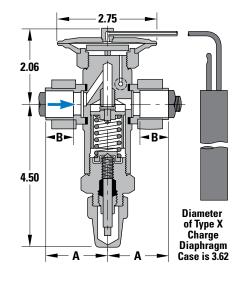
DIMENSIONS

CONNECTIONS - Inches

SOLDERING BUSHING	A	В
1/2	2.00	0.88
5/8	2.00	0.88
7/8	2.00	0.88
1-1/8	2.06	0.94

BULB SIZES - Inches

STANDARD	REFRIGERANT							
CHARGES	22	134a	404A	507				
C	0.75 OD x 4.00	0.50 OD x 5.00	0.75 OD x 4.00					
Z & ZP Series	0.75 OD x 4.00	_	0.75 0[0 x 4.00				
X	0.75 OD x 4.00	_	0.75 0[0 x 4.00				
CP Series		0.75 OD x 4.00						
VGA	0.75 OD x 4.00	_						



① Valves listed in this column NOT AVAILABLE with MOP Type air conditioning charges.
② Standard External Equalizer Connection 1/4" SAE Flare, 1/4" ODF Solder connection available on request.

ODF Solder indicates a female connection on the valve of proper diameter to receive copper tubing of corresponding OD size. Thus, 5/8" ODF will receive 5/8" OD tubing.

Kit K-1178 with two brass bushings is available for two purposes: 1) To allow the current Type H valve to replace obsolete Types T and H with 1.125" x 0.75" flange rings by mating with the smaller flange ring bushings and/or distributors. 2) To allow the Type H to use 1/2" FPT connections — Part number 225-002 and 1/2" socket weld connections — Part number 580-000. Order the appropriate 1/2" connections and one K-1178 per valve.



Sporlan Type M valve is a cast bronze body, externally adjustable valve with either ODF solder or FPT flange connections. The thermostatic element is replaceable, and the inlet connection has a permanent 12 mesh strainer. This valve type provides capacities greater than the Type H, and it is designed for both air conditioning and refrigeration applications. Flanges for the Type M valve are interchangeable with the Type V.

Outlet Connections

1-1/8" ODF, 1-3/8" ODF, 1-5/8" ODF, M/V flange

Mating Distributors (See Bulletin 20-10) 1115, 1116, 1117, 1119, 1121, 1125, 1126, 1127, 1128, 1143, 1193 (aluminum), 1655(R), 1657(R), 1659(R)

For complete details of construction, see page 35.



SPECIFICATIONS ELEMENT SIZE NO. 63, GASKET JOINT

	VALVE TYPE	۱۲ ۲۷ ion	TATIC SES BLE		ures are standard a d unless otherwise		FLANGE RING	_	٥_
REFRIGERANT (Sporlan Code)	External Equalizer	NOMINAL CAPACITY Tons of Refrigeration		ANDARD UBING ENGTH	② CONNECT ③ ODF So	② CONNECTIONS - Inches ③ ODF Solder Flange		NET WEIGH	SHIPPING WEIGHT
	1	N C/ Ref	THERMOS CHAR(AVAILA	STAN TUB LEN	INLET	OUTLET	OD x ID Inches	>	S N
22 (V)	MVE-21	21							
407C (N)	MVE-26	26			7/8 or 1-1/8				
407A (V)	MVE-34	34	rd page 3					8 lbs.	9 lbs. 4.09 kg
422D (V)	MVE-42	42		5 ft. 1.5 m	7/8 or 1-1/8	1-1/8 1-3/8			
134a (J)	MJE-15	15			7/8 or 1-1/8				
12 (F) 401A (X)	MJE-20	20	ende s on l		7/6 UI 1-1/0				
409A (F)	MJE-25	25	Refer to Recommended Thermostatic Charges on page	10 44	7/8 or 1-1/8				
	MSE-15	15	Rec c Ch	10 ft. 3 m		or	1.75 x 1.25	3.63 kg	
404A (S)	MSE-20	20	er to tati		7/8 or 1-1/8	1-5/8			
502 (R) 408A (R)	MSE-25	25	Refe						
400A (N)	MSE-30	30	Ther		7/8 or 1-1/8				
	MPE-15	15	_						
507 (P)	MPE-20	20			7/8 or 1-1/8				
402A (L)	MPE-25	25							
	MPE-30	30			7/8 or 1-1/8				

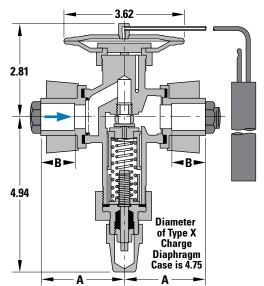
DIMENSIONS

CONNECTIONS - Inches

SOLDERING BUSHING	A	В
7/8	2.38	0.88
1-1/8	2.75	0.94
1-3/8	2.75	0.94
1-5/8	3.22	1.22

BULB SIZES - Inches

STANDARD		REFRIGERANT							
CHARGES	22	22 134a 404A							
C		0.88 OD x 6.00							
Z & ZP Series	0.88 OD x 6.00	-	10 88.0	O x 6.00					
Х	0.88 OD x 6.00	_	10 88.0	O x 6.00					
CP Series		_							
VGA	0.75 OD x 4.00								



① Standard External Equalizer Connection 1/4" SAE Flare. 1/4" ODF Solder connection available on request.
② FPT connections also available on request; 1/2" FPT - Part Number 360-000, 3/4" FPT - Part Number 360-001, 1" FPT - Part Number 362-000.

[®] ODF Solder indicates a female connection on the valve of proper diameter to receive copper tubing of corresponding OD size. Thus, 7/8" ODF will receive 7/8" OD tubing.



Sporlan Type V valve is a cast bronze body, externally adjustable valve available with either ODF solder or FPT flange connections. The thermostatic element is replaceable, and the inlet connection has a permanent 12 mesh strainer. This valve features a dual port semi-balanced design, and it is designed for both air conditioning and refrigeration applications. A synthetic seating surface provides tight shut-off during system off periods. This valve provides greater

capacities than the Type M. Flanges for the Type V valve are interchangeable with the Type M.

Outlet Connections

1-3/8" ODF, 1-5/8" ODF, M/V flange

Mating Distributors (See Bulletin 20-10) 1117, 1119, 1121, 1125, 1126, 1127, 1128, 1143, 1193 (aluminum), 1657(R), 1659(R)

For complete details of construction, see page 35.



SPECIFICATIONS ELEMENT SIZE NO. 63, GASKET JOINT

	VALVE TYPE	ال ۲	TATIC ES BLE		ures are standard a d unless otherwis		FLANGE		G.
REFRIGERANT (Sporlan Code)	External Equalizer	NOMINAL CAPACITY Tons of Refrigeration	MOS Iarg Aila	IDARD SING IGTH	② CONNECTIONS - Inches ③ ODF Solder Flange		RING SIZE OD x ID	NET WEIGHT	SHIPPING WEIGHT
	1	N C/ Ref	THER CH AV,	STAN TUE LEN	INLET	OUTLET	Inches		S
22 (V)	VVE-52	52							
407C (N) 407A (V) 422D (V)	VVE-70	70					1.75 x 1.25	9 lbs.	10 lbs. 4.54 kg
	VVE-100	100	d oage 3	Refer to Recommended Thermostatic Charges on page 3 1.2 tr. 2 tr. 2 tr. 3 tr. 4 tr.					
134a (J)	VJE-35	35							
12 (F) 401A (X)	VJE-45	45	ende s on p						
409A (F)	VJE-55	55	omm arge	1.5 m	1-1/8	1-1/8 1-3/8			
404A (S)	VSE-38	38	o Rec tic Ch	10 ft.	or 1-3/8	or 1-5/8		4.09 kg	
502 (R)	VSE-50	50	efer t ostal	3 m					
408A (R)	VSE-70	70	Re herm						
(-)	VPE-38	38	F						
507 (P)	VPE-50	50							
402A (L)	VPE-70	70							

① Standard External Equalizer Connection 1/4" SAE Flare. 1/4" ODF Solder connection available on request.

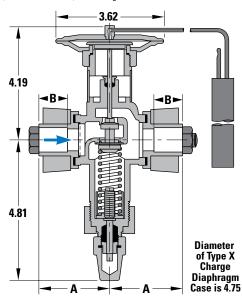
DIMENSIONS

CONNECTIONS - Inches

SOLDERING BUSHING	A	В
7/8	2.38	0.88
1-1/8	2.75	0.94
1-3/8	2.75	0.94
1-5/8	3.22	1.22

BULB SIZES - Inches

STANDARD	REFRIGERANT							
CHARGES	22	134a	404A	507				
C		0.88.0	0 x 6.00					
Z & ZP Series	0.88 OD x 6.00	_	0.88 OD x 6.00					
Х	0.88 OD x 6.00	_	0.88.0	0 x 6.00				
CP Series		_						
VGA	0.75 OD x 4.00	75 OD x 4.00 – –						



[©] FPT connections also available on request; 1/2" FPT - Part Number 360-000, 3/4" FPT - Part Number 360-001, 1" FPT - Part Number 362-000.

To ODF Solder indicates a female connection on the valve of proper diameter to receive copper tubing of corresponding OD size. Thus, 7/8" ODF will receive 7/8" OD tubing.



Sporlan Type W valve is a cast bronze body, externally adjustable valve available with ODF solder flange connections. The thermostatic element is replaceable, and the inlet connection has a permanent 12 mesh strainer. This valve features a dual port semi-balanced design, and it is designed primarily for large capacity chillers. A synthetic seating surface provides tight shut-off during system off periods. This valve provides the largest capacities available for flange connection TEVs.

Outlet Connections 1-3/8" ODF, 1-5/8" ODF

Mating Distributors (See Bulletin 20-10) 1117, 1125, 1126, 1127, 1128, 1143, 1657(R), 1659(R)

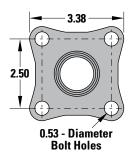
For complete details of construction, see page 35.

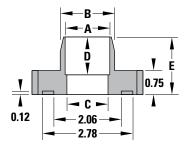


SPECIFICATIONS ELEMENT SIZE NO. 63 and 7, GASKET JOINT

	VALVE TYPE	io Y	ATIC S LE	ATIC S S LE T		Blue figures are standard and will be furnished unless otherwise specified.				9_				
REFRIGERANT (Sporlan Code)	External Equalizer	OMINA APACIT Tons of frigerat	RMOST HARGE AILAB	525	EMENT Size Umber	525	ELEMEN SIZE NUMBE		DARD IING GTH		NS - Inches Ider Flange	RING SIZE OD x ID	NET WEIGHT	SHIPPING WEIGHT
	1	NOI CAF To Refri	THEF CI AV	E	STAN TUB LEN	INLET	OUTLET	Inches ④		IS A				
22 (V) 407C (N)	WVE-135	135	3	63						ı				
407A (V) 422D (V)	WVE-180	180	G only	7	10 ft.	1-1/8 1-3/8	1-1/8 1-3/8	2.75 2.10	10 lbs.	11 lbs.				
134a (J) 12 (F) 401A (X) 409A (F)	WJE-80	80	3	63	3 m	1-5/8 or 2-1/8	1-5/8 or 2-1/8	2.75 x 2.19	4.54 kg	4.99 kg				
	WJE-110	110	G only	7										

- ① Standard External Equalizer Connection 1/4" SAE Flare, 1/4" ODF Solder connection available on request.
 ② ODF Solder indicates a female connection on the valve of proper diameter to receive copper tubing of corresponding OD size. Thus, 1-1/8" ODF will receive 1-1/8" OD tubing.
- Refer to Recommended Thermostatic Charges, page 3.
- For 1-1/2" NPT connections, order flanges separately for MA42 solenoid eg P/N 933-1. The customer must supply 5/8" diameter x 6" long bolts and 5/8" diameter nuts.





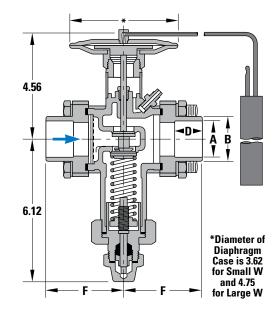
DIMENSIONS

CONNECTIONS - Inches

FITTING SIZE	A	В	С	D	E	F
1-1/8	1.12	1.27	1.06	0.91	1.56	3.09
1-3/8	1.38	1.53	1.28	0.97	1.62	3.16
1-5/8	1.62	1.78	1.50	1.09	1.75	3.28
2-1/8	2.12	2.44	1.94	1.34	1.53	3.25

BULB SIZES - Inches

STANDARD	ELEMENT SIZE	REFRIGERANT				
CHARGES	NUMBER	22	134a			
С		10 88.0	O x 6.00			
Z & ZP Series		0.88 OD x 6.00	_			
Х	63	0.88 OD x 6.00	_			
CP Series		0.75 0[0 x 4.00			
VGA		0.75 OD x 4.00	_			
G	7	0.75 OD x 4.00	_			



▼ MATERIALS & **DETAILS OF CONSTRUCTION**

VALVE TYPE	BODY	SEAT	PIN	PIN CARRIER	PUSHROD(S)	TYPE OF JOINTS	CONNECTIONS	INLET STRAINER
RC	Machined Brass Bar	Brass Port Machined in Body	Stainless Steel	-	Stainless Steel	Knife Edge to Metal	Chatleff, SAE Flare, ODF Copper Fittings Silver Soldered to Body	No Strainer
ER	Machined Brass Bar	Brass Port Machined in Body	Stainless Steel	-	Stainless Steel	Knife Edge to Metal	ODF Copper Fittings Silver Soldered to Body	No Strainer
F	Machined Brass Bar	Brass	Stainless Steel	Brass	Stainless Steel	Knife Edge to Metal	SAE Flare Fittings Silver Soldered to Body	Removable Strainer Screen
EF	Machined Brass Bar	Brass	Stainless Steel	Brass	Stainless Steel	Knife Edge to Metal	ODF Copper Fittings Silver Soldered to Body	Insert Strainer
0/ B0	Machined Brass Bar	Brass	Stainless Steel	Brass	Stainless Steel	Knife Edge to Metal	SAE Flare Fittings Silver Soldered to Body	Removable
SQ/ SBQ	Machined Brass Bar	Brass	Stainless Steel	Brass	Stainless Steel	Knife Edge to Metal	ODF Copper Fittings Silver Soldered to Body	Strainer Screen
EQ/ EBQ	Machined Brass Bar	Brass	Stainless Steel	Brass	Stainless Steel	Knife Edge to Metal	Extended Copper Fittings Silver Soldered to Body	Insert Strainer
G	Brass Forging	Brass	Stainless Steel	Brass	Internally Equalized:	Knife Edge to Metal	SAE Flare, Integral Part of Brass Forged Body	Removable
EG	Brass Forging	Brass	Stainless Steel	Brass	Triangular Stainless Steel Externally	Knife Edge to Metal	ODF Copper Fittings Silver Soldered to Body	Strainer Screen
S	Machined Brass Bar	Brass	Stainless Steel	Brass	Equalized: Round Stainless Steel	Knife Edge to Metal	ODF Copper Fittings Silver Soldered to Body	Coarse Mesh Strainer Disc
BF	Machined Brass Bar	Brass	Stainless Steel	-	Stainless Steel	Knife Edge to Metal	SAE Flare Fittings Silver Soldered to Body	Removable
SBF	Machined Brass Bar	Brass	Stainless Steel	-	Stainless Steel	Knife Edge to Metal	ODF Copper Fittings Silver Soldered to Body	Strainer Screen
EBF	Machined Brass Bar	Brass	Stainless Steel	-	Stainless Steel	Knife Edge to Metal	Extended Copper Fittings Silver Soldered to Body	Insert Strainer
EBS	Machined Brass Bar	Brass Port Machined in Body	Stainless Steel	-	Stainless Steel	Knife Edge to Metal	ODF Copper Fittings Silver Soldered to Body	Coarse Mesh Strainer Disc
SMALL 0	Machined Brass Bar	Brass Port Machined in Body	Brass Piston With	-	Stainless Steel	Knife Edge to Metal	ODF Copper Fittings Silver Soldered to Body	Coarse Mesh Strainer Disc
LARGE 0	Machined Brass Bar	Brass Port Machined in Body	Synthetic Seating Surface	-	Stainless Steel	Knife Edge At Element and	ODF Copper Fittings Silver Soldered to Body	Coarse Mesh Strainer Disc
Н	Machined Brass Bar	Stainless Steel or Brass	Stainless Steel	Brass	Stainless Steel	Bottom Cap Gasket At Seal Cap	Solder-Flange, Pipe Flange	Coarse Mesh Strainer Disc
M	Bronze Casting	Stainless Steel or Brass	Stainless Steel	Brass	Stainless Steel	Gasket	Solder-Flange, Pipe Flange	Coarse Mesh Strainer Disc
V	Bronze Casting	Dual Port, Seats	Bronze Piston With	-	Stainless Steel	Gasket	Solder-Flange, Pipe Flange	Coarse Mesh Strainer Disc
W	Bronze Casting	Machined in Valve Body	Synthetic Sealing Surface	-	Stainless Steel	Gasket	Solder-Flange, Pipe Flange	Coarse Mesh Strainer Disc



OEM TYPE THERMOSTATIC EXPANSION VALVES

In addition to the standard line of Thermostatic Expansion Valves listed in this bulletin, special valve types are also available to fill manufacturers' specific requirements. Listed below are examples of valves that are supplied for quantity orders.

VALVE TYPE	CONNECTION Type	VALVE DESCRIPTION and APPLICATION	TYPICAL REPLACEMENT TEVs
BI*/BBI * BI is OBSOLETE.	SAE Flare or ODF Solder	Small brass body valve available with either angle style or straight through connections. Type BI valves with straight through connections are normally supplied non-adjustable. The Type BBI is a Type BI valve modified to incorporate balanced port construction. The thermostatic element is not replaceable on valves manufactured prior to 1994. Current models use a replaceable No. 43 element. Typical applications: small capacity R-22 air conditioning and heat pump systems.	ER, RC, G, EG, S, Q, SQ, EQ, BQ, SBQ, EBQ
Y997-BI OBSOLETE	SAE Flare or ODF Solder	Type BI valve modified to incorporate an internal check valve and bypass tube to allow for reverse flow with heat pump applications. The valve is not adjustable. The thermostatic element is not replaceable on valves manufactured prior to 1994. Current models use a replaceable No. 43 element. Typical applications: small capacity R-22 heat pump systems.	RC, G, EG, S, Q, SQ, EQ, BQ, SBQ, EBQ Note: A check valve may be required for install around the TEV to allow flow in the reverse direction.
OBSOLETE	SAE Flare or ODF Solder	Small brass body valve available with either angle style or straight through connections. Type I valves with straight through connections are normally supplied non-adjustable. Current models use a replaceable No. 43 element. This valve is available with the Rapid Pressure Balancer (RPB) feature for off-cycle pressure equalization. Typical applications: small capacity R-22 air conditioning and heat pump systems.	ER, RC, G, EG, S, Q, SQ, EQ, BQ, SBQ, EBQ
CBI*/CBBI * CBI is OBSOLETE.	SAE Flare or ODF Solder	Type BI/BBI valves modified to incorporate an internal check valve to allow for reverse flow with heat pump applications. Type CBI/CBBI valves with straight through connections are normally supplied non-adjustable. The valve uses a replaceable No. 43 element. Typical applications: small capacity R-22 heat pump systems.	RC, G, EG, S, Q, SQ, EQ, BQ, SBQ, EBQ Note: A check valve may be required for install around the TEV to allow flow in the reverse direction.
FB	SAE Flare or ODF Solder	Small brass body valve available only with straight through connections and external adjustment. The thermostatic element is not replaceable on valves manufactured prior to 1994. Current models use a replaceable No. 43 element. Typical applications: small capacity air conditioning and refrigeration applications where an external adjustment is desired.	ER, RC, G, EG, S, Q, SQ, EQ, BQ, SBQ, EBQ
X OBSOLETE	SAE Flare or ODF Solder	Brass body valve available with either angle style or straight through connections. Angle style valve is available only with SAE flare connections. Type X valves with straight through connections are normally supplied non-adjustable. The thermostatic element is a replaceable type, size number 53. This valve is available with the Rapid Pressure Balancer (RPB) feature in certain nominal capacities for off-cycle pressure equalization. Typical applications: R-22 air conditioning and heat pump systems.	ER, RC, G, EG, S, Q, SQ, EQ, BQ, SBQ, EBQ

FEATURES NOT INCLUDED IN THIS BULLETIN

Special features such as non-adjustable construction or similar modifications are also available for both standard and special valves when ordered in reasonable quantities.

Automatic (constant pressure) expansion valves are also available on special order.

If you have a special valve application, contact your Sporlan Sales Engineer or Sporlan Division, Parker Hannifin, 206 Lange Drive, Washington, Missouri 63090, 636-239-1111.

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- 13. Cancellations and Changes. Orders shall not be subject to cancellation or change by Buyer for any reason, except with Seller's written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage. Seller may change product features, specifications, designs and availability with notice to Buyer.
- 14. <u>Limitation on Assignment.</u> Buyer may not assign its rights or obligations under this agreement without the prior written consent of Seller.
- 15. **Entire Agreement.** This agreement contains the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of the agreement. All prior

- or contemporaneous written or oral agreements or negotiations with respect to the subject matter are herein merged.
- 16. Waiver and Severability. Failure to enforce any provision of this agreement will not waive that provision nor will any such failure prejudice Seller's right to enforce that provision in the future. Invalidation of any provision of this agreement by legislation or other rule of law shall not invalidate any other provision herein. The remaining provisions of this agreement will remain in full force and effect.
- 17. Termination. This agreement may be terminated by Seller for any reason and at any time by giving Buyer thirty (30) days written notice of termination. In addition, Seller may by written notice immediately terminate this agreement for the following: (a) Buyer commits a breach of any provision of this agreement (b) the appointment of a trustee, receiver or custodian for all or any part of Buyer's property (c) the filing of a petition for relief in bankruptcy of the other Party on its own behalf, or by a third party (d) an assignment for the benefit of creditors, or (e) the dissolution or liquidation of the Buyer.
- 18. Governing Law. This agreement and the sale and delivery of all Products hereunder shall be deemed to have taken place in and shall be governed and construed in accordance with the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to this agreement. Disputes between the parties shall not be settled by arbitration unless, after a dispute has arisen, both parties expressly agree in writing to arbitrate the dispute.
- 19. Indemnity for Infringement of Intellectual Property Rights. Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Section. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets ("Intellectual Property Rights"). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that a Product sold pursuant to this Agreement infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If a Product is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Product, replace or modify the Product so as to make it noninfringing, or offer to accept return of the Product and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to Products delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any Product sold hereunder. The foregoing provisions of this Section shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.
- 20. <u>Taxes.</u> Unless otherwise indicated, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of Products.
- 21. Equal Opportunity Clause. For the performance of government contracts and where dollar value of the Products exceed \$10,000, the equal employment opportunity clauses in Executive Order 11246, VEVRAA, and 41 C.F.R. §§ 60-1.4(a), 60-741.5(a), and 60-250.4, are hereby incorporated.



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