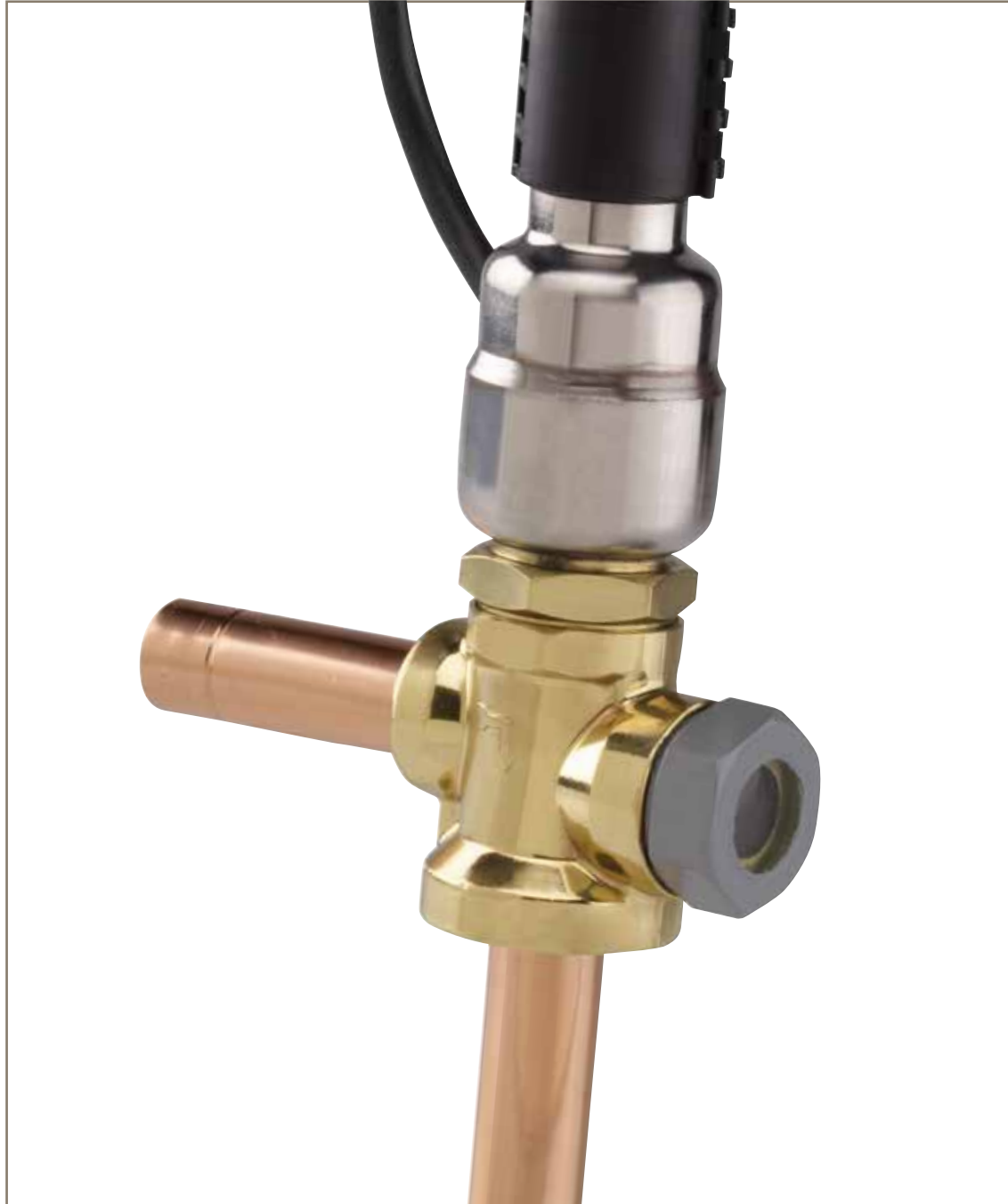




Electric Expansion Valve

Type SERI-F

SPORLAN



ENGINEERING YOUR SUCCESS.

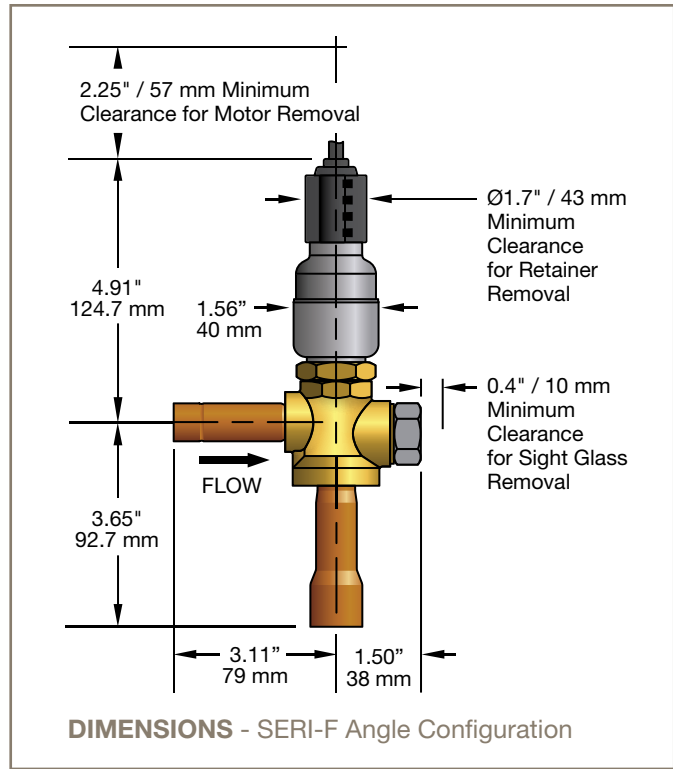
SERI-F ELECTRIC EXPANSION VALVE

The **SERI-F** is a new addition to the existing Sporlan family of SERI Electric Expansion Valves. Intended to bridge the capacity gap between the SER-D and SERI-G, it carries all of the benefits of the existing SERI product line. Refer to Bulletin 100-20 for more information about the entire family of Sporlan EEVs.

Currently available in angle configuration only, the SERI-F electric expansion valve comes standard with:

- integral sight glass
- removable cable
- high resolution actuator

Contact your Sales Engineer for more details, or reference the Sporlan Product Selection Program for assistance in sizing this valve for your application.



SPECIFICATIONS

Motor Type	2 phase, bipolar wet motor
Compatible Refrigerant	All common HCFC and HFC refrigerants, including R-410A and subcritical R-744 (CO ₂)
Compatible Oil	All common mineral, polyester and alkybenzene oils
Supply Voltage	12 volts DC, -5% +10% (L/R)
Cable Type	IP66 removable
Phase Resistance	100 ohms ± 10%
Stepping Current	120 ma/winding
Holding Current	Not recommended
Step Rate	200/second (L/R), up to 400/second (properly configured current chopper)
Number of Steps	2500 full steps
Initialization	3500 steps closing
Overdriving	Recommend one 10% overdrive closed per day (overdriving open not permitted)
MOPD	500 psid (34 bar)
MRP	700 psig (48 bar)
Maximum Internal Leakage	100 cc/min @ 100 psid (6.9 bar), dry air
Maximum External Leakage	.10 oz/yr at 300 psig (2.8 gram/yr @ 20 bar)
Liquid Temperature Range	-50°F to 155°F (-45°C to 68°C)
Ambient Temperature Range	-50°F to 140°F (-45°C to 60°C)

ORDERING INSTRUCTIONS / NOMENCLATURE

SERI	F	5/8" 7/8"	x	5/8, 7/8, 1-1/8, 1-3/8	ODF	10, 20, 30, 40 or LESS CABLE	S
Valve Family	Valve Model	Inlet Fitting (Inches)		Outlet Fitting (Inches)	Fitting Type	Cable Length (Feet)	Stripped and Tinned Cable Ends (Custom Connectors Available)

FULL STROKE CAPACITIES - TONS (AT EVAPORATOR TEMPERATURE °F)

R-22, R-404A, R-407A, R-407C, R-422D, R-507

REFRIGERANT	40°F								20°F								0°F							
	Pressure Drop Across Valve (psid)																							
	75	100	125	150	175	200	225	250	75	100	125	150	175	200	225	250	75	100	125	150	175	200	225	250
R-22	17.6	20.4	22.8	25.0	27.0	28.8	30.6	32.2	17.2	19.9	22.2	24.3	26.3	28.1	29.8	31.4	16.7	19.3	21.6	23.6	25.5	27.3	28.9	30.5
R-404A	11.7	13.5	15.1	16.5	17.8	19.1	20.2	21.3	11.1	12.8	14.3	15.6	16.9	18.1	19.2	20.2	10.4	12.0	13.4	14.7	15.9	17.0	18.0	19.0
R-407A	16.5	19.0	21.3	23.3	25.2	26.9	28.6	30.1	15.7	18.2	20.3	22.3	24.1	25.7	27.3	28.8	15.0	17.3	19.3	21.2	22.9	24.5	25.9	27.3
R-407C	16.2	18.7	20.9	22.9	24.8	26.5	28.1	29.6	15.5	18.0	20.1	22.0	23.7	25.4	26.9	28.4	14.9	17.1	19.2	21.0	22.7	24.3	25.7	27.1
R-422D	12.0	13.9	15.5	17.0	18.4	19.7	20.9	22.0	11.4	13.1	14.7	16.1	17.4	18.6	19.7	20.8	10.7	12.3	13.8	15.1	16.3	17.4	18.5	19.5
R-507	11.4	13.2	14.8	16.2	17.5	18.7	19.8	20.9	10.8	12.5	14.0	15.3	16.5	17.7	18.8	19.8	10.2	11.8	13.2	14.4	15.6	16.7	17.7	18.6

REFRIGERANT	-20°F								-40°F							
	Pressure Drop Across Valve (psid)															
	75	100	125	150	175	200	225	250	75	100	125	150	175	200	225	250
R-22	16.2	18.7	20.9	22.9	24.7	26.4	28.0	29.5	15.6	18.1	20.2	22.1	23.9	25.5	27.1	28.5
R-404A	9.70	11.2	12.5	13.7	14.8	15.9	16.8	17.7	9.01	10.4	11.6	12.7	13.8	14.7	15.6	16.4
R-407A	14.2	16.4	18.3	20.1	21.7	23.2	24.6	25.9	–	–	–	–	–	–	–	–
R-407C	14.1	16.3	18.2	20.0	21.6	23.1	24.5	25.8	–	–	–	–	–	–	–	–
R-422D	10.0	11.5	12.9	14.1	15.3	16.3	17.3	18.2	–	–	–	–	–	–	–	–
R-507	9.54	11.0	12.3	13.5	14.6	15.6	16.5	17.4	8.87	10.2	11.5	12.5	13.6	14.5	15.4	16.2

R-134a

REFRIGERANT	40°F								20°F								0°F							
	Pressure Drop Across Valve (psid)																							
	40	60	80	100	120	140	160	180	40	60	80	100	120	140	160	180	40	60	80	100	120	140	160	180
R-134a	12.0	14.7	17.0	19.0	20.8	22.5	24.0	25.5	11.5	14.1	16.2	18.1	19.9	21.5	22.9	24.3	10.9	13.4	15.4	17.3	18.9	20.4	21.8	23.2

R-410A

REFRIGERANT	40°F								20°F								0°F							
	Pressure Drop Across Valve (psid)																							
	80	120	160	200	240	280	320	360	80	120	160	200	240	280	320	360	80	120	160	200	240	280	320	360
R-410A	17.3	21.1	24.4	27.3	29.9	32.3	34.5	36.6	16.8	20.6	23.8	26.6	29.2	31.5	33.7	35.7	16.4	20.0	23.1	25.9	29.3	30.6	32.7	34.7

REFRIGERANT	-20°F								-40°F							
	Pressure Drop Across Valve (psid)															
	80	120	160	200	240	280	320	360	80	120	160	200	240	280	320	360
R-410A	15.8	19.4	22.4	25.1	27.4	29.6	31.7	33.6	15.3	18.7	21.6	24.2	26.5	28.6	30.6	32.4

FULL STROKE CAPACITIES - kW (AT EVAPORATOR TEMPERATURE °C)

R-22, R-404A, R-407A, R-407C, R-422D, R-507

REFRIGERANT	5°C								-10°C								-20°C							
	Pressure Drop Across Valve (bar)																							
	4	6	8	10	12	14	16	18	4	6	8	10	12	14	16	18	4	6	8	10	12	14	16	18
R-22	54.5	66.8	77.1	86.2	94.4	102	109	116	52.6	64.5	74.4	83.2	91.2	98.5	105	112	51.2	62.8	72.5	81.0	88.8	95.9	102	109
R-404A	36.0	44.1	51.0	57.0	62.4	67.4	72.1	76.4	33.5	41.0	47.3	52.9	58.0	62.6	66.9	71.0	31.6	38.7	44.7	50.0	54.8	59.2	63.2	67.1
R-407A	51.0	62.4	72.1	80.6	88.3	95.4	102	108	47.9	58.6	67.7	75.7	82.9	89.5	95.7	102	45.7	56.0	64.6	72.3	79.2	85.5	91.4	96.9
R-407C	50.1	61.3	70.8	79.2	86.7	93.7	100	106	47.3	57.9	66.9	74.8	81.9	88.5	94.6	100	45.3	55.5	64.1	71.7	78.5	84.8	90.7	96.2
R-422D	37.2	45.6	52.6	58.8	64.4	69.6	74.4	78.9	34.5	42.2	48.8	54.5	59.7	64.5	69.0	73.1	32.5	39.8	46.0	51.4	56.3	60.8	65.0	68.9
R-507	35.3	43.2	49.9	55.8	61.2	66.1	70.6	74.9	32.8	40.1	46.4	51.8	56.8	61.3	65.6	69.5	31.0	38.0	43.9	49.0	53.7	58.0	62.0	65.8

Capacity is calculated at full stroke, with no reserve capacity. Valve should be selected with consideration given to entire range of potential system conditions.

FULL STROKE CAPACITIES - kW (AT EVAPORATOR TEMPERATURE °C)

R-22, R-404A, R-407A, R-407C, R-422D, R-507 (continued)

REFRIGERANT	-30°C								-40°C							
	Pressure Drop Across Valve (bar)															
	4	6	8	10	12	14	16	18	4	6	8	10	12	14	16	18
R-22	49.8	61.0	70.4	78.7	86.2	93.1	99.5	106	48.2	59.1	68.2	76.3	83.5	90.2	96.5	102
R-404A	29.7	36.4	42.0	47.0	51.4	55.6	59.4	63.0	27.7	33.9	39.2	43.8	48.0	51.9	55.4	58.8
R-407A	43.5	53.3	61.5	68.8	75.4	81.4	87.0	92.3	–	–	–	–	–	–	–	–
R-407C	43.3	53.1	61.3	68.5	75.0	81.0	86.6	91.9	–	–	–	–	–	–	–	–
R-422D	30.6	37.5	43.3	48.4	53.0	57.2	61.2	64.9	–	–	–	–	–	–	–	–
R-507	29.2	35.7	41.3	46.1	50.5	54.6	58.4	61.9	27.3	33.4	38.6	43.2	47.3	51.1	54.6	57.9

R-134a

REFRIGERANT	5°C								-10°C								-20°C							
	Pressure Drop Across Valve (bar)																							
	2.5	4	5.5	7	8.5	10	11.5	13	2.5	4	5.5	7	8.5	10	11.5	13	2.5	4	5.5	7	8.5	10	11.5	13
R-134a	40.2	50.9	59.7	67.3	74.2	80.4	86.3	91.7	37.8	47.8	56.0	63.2	69.6	75.5	81.0	86.1	36.1	45.6	53.5	60.4	66.5	72.2	77.4	82.3

R-410A

REFRIGERANT	5°C								-10°C								-20°C							
	Pressure Drop Across Valve (bar)																							
	5	8	11	14	17	20	23	26	5	8	11	14	17	20	23	26	5	8	11	14	17	20	23	26
R-410A	57.7	73.0	85.6	96.5	106	115	124	132	55.8	70.5	82.7	93.3	103	112	120	127	54.3	68.6	80.5	90.8	100	109	116	124

REFRIGERANT	-30°C								-40°C							
	Pressure Drop Across Valve (bar)															
	5	8	11	14	17	20	23	26	5	8	11	14	17	20	23	26
R-410A	52.8	66.8	78.4	88.4	97.4	106	113	120	51.0	64.6	75.7	85.4	94.1	102	109	116

Capacity is calculated at full stroke, with no reserve capacity. Valve should be selected with consideration given to entire range of potential system conditions.

⚠ WARNING – USER RESPONSIBILITY

Failure or improper selection or improper use of the products described herein or related items can cause death, personal injury and property damage.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.

The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

For safety information see the Safety Guide at www.parker.com/safety or call 1-800-CParker.

OFFER OF SALE

The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated in the detailed "Offer of Sale" available at www.parker.com.

FOR USE ON AIR CONDITIONING and REFRIGERATION SYSTEMS ONLY

