



Electric Expansion Valves

Electrically operated stepper motor valves
for precise flow control of liquid refrigerants



ENGINEERING YOUR SUCCESS.

Description

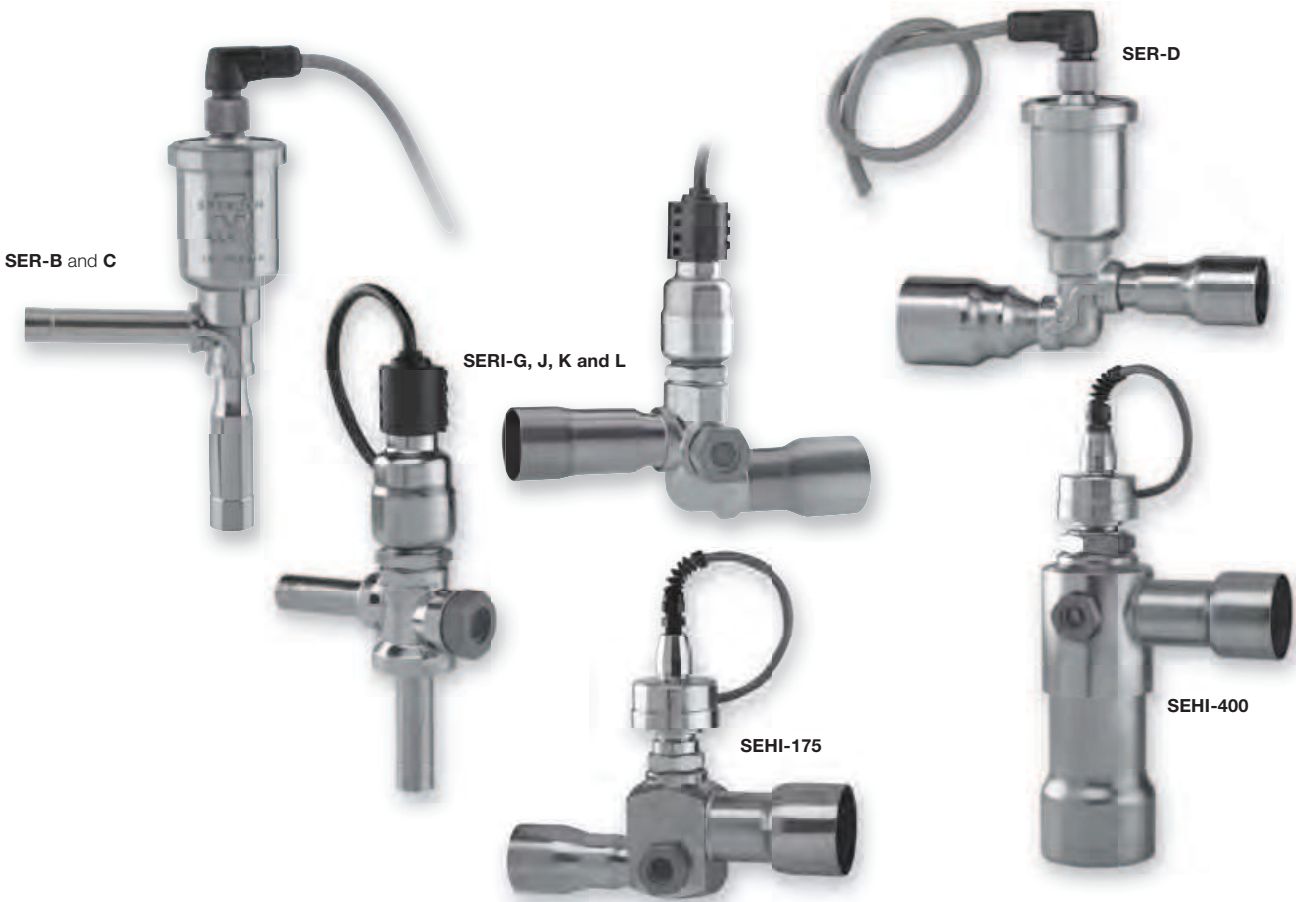
Built on a foundation of more than 75 years of refrigerant flow control designs, and over 20 years of experience in electronic superheat control, these valves are a perfect fit for today's demanding applications.

From the unique uni-body construction and quad-position cable found on the **SER-B** through **SER-D**, to the multiple body configurations and built-in sight glass on the **SERI-G** through **SERI-L**, these valves are designed for flexibility, reliability, and ease of use.

Equipped with advanced pin designs and Digital Linear Actuators, Parker Sporlan Electric Expansion Valves have minimal energy requirements, without sacrificing performance. Parker Sporlan Electric Expansion Valves (EEVs) are currently available in nominal R-407C capacities from 2 to 400 tons (7 to 1400 kW), and can control refrigerant flow from **10% to 100%** of nominal capacity. Valve selection and SKU (Stock Keeping Units) reduction are simplified.

The **SER**, **SERI** and **SEHI Valves** are Electronically Operated Stepper Motor flow control valves, intended for the precise control of liquid refrigerant flow. Synchronized signals to the motor provide discrete angular movement, which translates into precise linear positioning of the valve piston. Valve pistons and ports are uniquely characterized, providing improved flow resolution and performance.

The **SER**, **SERI** and **SEHI Valves** are easily interfaced with microprocessor based controllers, including Parker Sporlan supplied controllers (**PSC** Superheat Controller and **IB** interface board).



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SER, SERI or SEHI

Valve Nomenclature/Ordering Instructions

Parker Sporlan valves are available in angle and/or straight through offset configurations (reference the Available Connections table for additional details). The SERI and SEHI valves are equipped with a built-in sight-glass (not available on the small SER family of valves). The sight-glass indicates the moisture level of the refrigerant, flash gas present upstream of the valve, and provides a visual confirmation of valve piston movement. This unique feature is useful for system refrigerant charging, service and diagnostics.

SER	-	C		3/8"	X	1/2"		ODF	-	10	-	S
Valve Model		Valve Size		Inlet Connections Size		Outlet Connection Size		Fitting Type ODF only		Cable Length 10' (3 m) standard		Stripped and Tinned cable ends

Specifications				
Valve	SER-B, -C, -D	SERI-G, -J, -K, -L	SEHI-175	SEHI-400
Motor Type	2 phase, bipolar wet motor			
Compatible Refrigerant	All common, HCFC and HFC refrigerants, including R-410A and subcritical R-744		All common, HCFC and HFC refrigerants	
Compatible Oils	All common Mineral, Polyolester and Alkybenzene oils			
Supply Voltage	12 VDC -5% +10% measured at the valve leads			
Cable Type	IP67 Removable Quad Position	IP66 Removable	Hermetic	Hermetic
Phase Resistance	100 ohms ± 10%	100 ohms ± 10%	75 ohms ± 10%	75 ohms ± 10%
Current Range	120 ma / winding	120 ma / winding	160 ma / winding	160 ma / winding
Power Input	2.8 watts	2.8 watts	3.8 watts	3.8 watts
Recommended Step Rate	200 / second (L/R), up to 400 / second (current limited)			
Number of Steps	2500	2500	6386	6386
Full Motor Transit Time	12.5 seconds	12.5 seconds	34 seconds	34 seconds
Resolution	.00009" (.0023 mm) / step.	.00012" (.003 mm) / step.	.00008" (.002 mm) / step .	.00008" (.002 mm) / step.
Stroke	0.23" (5.8 mm)	.297" (7.5 mm)	.500" (12.7 mm)	.500" (12.7 mm)
MOPD	580 psid (40 bar)	500 psid (34 bar)	500 psid (34 bar)	300 psid (21 bar)
MRP	700 psig (48 bar)	700 psig (48 bar)	620 psig (43 bar)	500 psig (34 bar)
Max Internal Leakage	100 cc/min @ 100 psig (6.9 bar), dry air			
Max External Leakage	.10 oz/yr @ 300 psig (2.8 gram/yr @ 20 bar)			
Operating Temp. Range	-50°F to 155°F (-45°C to 68°C)			
Materials of Construction	Brass, copper, synthetic seals, stainless steel			

Approvals:

The **SER, SERI** and **SEHI Electric Expansions Valves** comply with the Pressure Equipment Directive PED 97/23/EC.

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Benefits

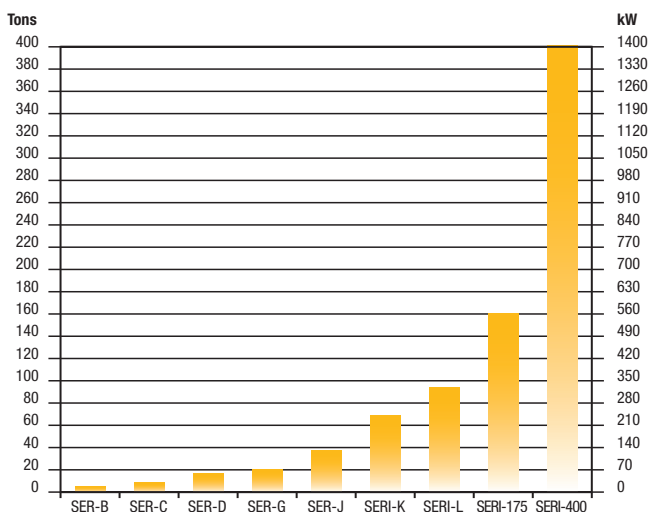
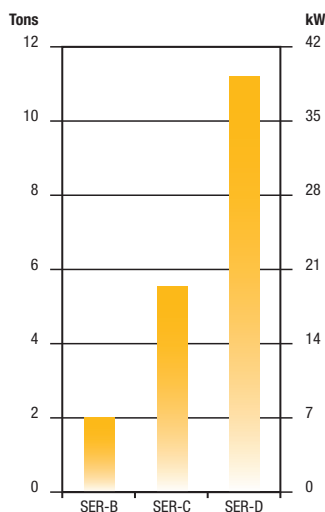
- MOPD up to 40 barg in both directions
- Wide flow control
- Step motor operated for precise control
- High resolution drive assembly
- Tight seating
- Corrosion resistant materials used throughout
- Field proven reliability
- Low power consumption - less than 4 watts
- Unique built-in sight glass - indicates valve operation, moisture levels and refrigerant quality (SEHI & SERI only)
- Compatibility tested with most HCFC, and HFC refrigerants and oils
- Self lubricating materials used for long life
- High linear force output

Available Connections

Valve Type	Inlet - Inches*** (ODF)	Outlet - Inches*** (ODF)	Configuration	Cable Length		Cable Ends
				Feet	Meters	
SER-B*	1/4, 3/8	3/8, 1/2, 5/8	Angle	10, 20	3, 6	S Stripped and Tinned
SER-C*	1/4, 3/8	3/8, 1/2, 5/8	Angle			
SER-D*	3/8, 1/2, 5/8	1/2, 5/8, 7/8, 1-1/8	Straight Through Offset	10, 20, 30, 40	3, 6, 9, 12	
SERI-G*	5/8, 7/8	1/2, 5/8, 7/8, 1-1/8	Angle or Straight Through Offset			
SERI-J*	7/8, 1-1/8	7/8, 1-1/8, 1-3/8				
SERI-K **	1-1/8	7/8, 1-1/8, 1-3/8, 1-5/8				
SERI-L**	1-1/8, 1-3/8	1-1/8, 1-3/8, 1-5/8				
SEHI-175	1-1/8, 1-3/8, 1-5/8	2-1/8	Straight Through Offset	10, 20, 30, 40	3, 6, 9, 12	
SEHI-400	1-5/8, 2-1/8, 2-5/8	1-5/8, 2-1/8, 2-5/8, 3-1/8 (ODM)	Angle			

* Suitable for bi-directional applications.
 ** Bi-sealing, reduced flow in reverse direction.
 *** Some fitting Combinations may not be available.

Capacity



R-40C at 100°F (38°C) liquid, 100 psi (7bar) pressure drop, and 40°F (5°) evaporator temperature.

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Selection Tables

R-134a

Capacities in kW at Evaporator Temperature °C

Valve Type	5°C								-10°C							
	Pressure Drop Across Valve (bar)															
	2.5	4.0	5.5	7.0	8.5	10.0	11.5	13.0	2.5	4.0	5.5	7.0	8.5	10.0	11.5	13
SER-B	4.96	6.28	7.36	8.31	9.15	9.93	10.6	11.3	4.71	5.96	6.98	7.88	8.68	9.42	10.1	10.7
SER-C	13.5	17.0	20.0	22.5	24.8	26.9	28.9	30.7	12.8	16.1	18.9	21.4	23.5	25.5	27.4	29.1
SER-D	27.4	34.6	40.6	45.8	50.5	54.8	58.7	62.4	26.0	32.8	38.5	43.5	47.9	51.9	55.7	59.2
SERI-G	52.4	66.4	77.8	87.6	96.7	105	112	120	49.2	62.4	73.1	82.4	90.8	98.5	106	112
SERI-J	94.4	119	140	158	174	189	202	215	88.6	112	131	146	164	176	191	202
SERI-K	171	216	254	286	315	342	367	391	161	204	238	269	296	321	344	366
SERI-L	233	295	346	390	430	466	500	532	221	280	328	370	408	442	474	504
SEHI-175	406	514	602	680	749	813	871	926	381	482	566	638	704	762	818	869
SEHI-400	839	1061	1244	1404	1547	1678	1799	1913	796	1006	1180	1331	1467	1591	1707	1814

R-134a

Valve Type	-20°C							
	Pressure Drop Across Valve (bar)							
	2.5	4	5.5	7	8.5	10	11.5	13
SER-B	4.48	5.67	6.65	7.50	8.27	8.97	9.62	10.2
SER-C	12.2	15.4	18.0	20.3	22.4	24.3	26.1	27.7
SER-D	24.7	31.3	36.7	41.4	45.6	49.5	53.0	56.4
SERI-G	47.1	59.5	69.8	78.7	86.7	94.1	101	107
SERI-J	84.6	107	126	142	156	169	181	193
SERI-K	153	194	228	256	284	307	329	349
SERI-L	211	266	312	352	388	421	452	480
SEHI-175	365	461	540	609	672	728	781	831
SEHI-400	758	959	1124	1268	1397	1516	1625	1728

°C	Liquid Temperature Correction Factors															
	-18	-12	-7	-1	4	10	16	21	27	32	38	43	49	54	60	
R-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	

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Selection Tables

R-407C

Capacities in kW at Evaporator Temperature °C

Valve Type	5°C								-10°C							
	Pressure Drop Across Valve (bar)															
	4	6	8	10	12	14	16	18	4	6	8	10	12	14	16	18
SER-B	6.35	7.78	8.98	10.0	11.0	11.9	12.7	13.5	6.05	7.41	8.55	9.56	10.5	11.3	12.1	12.8
SER-C	17.2	21.1	24.4	27.2	29.8	32.2	34.4	36.5	16.4	20.1	23.2	25.9	28.4	30.7	32.8	34.8
SER-D	35.0	42.9	49.5	55.4	60.7	65.5	70.1	74.3	33.4	40.9	47.2	52.7	57.8	62.4	66.7	70.8
SERI-G	65.3	79.9	92.4	103	113	122	131	138	61.6	75.5	87.2	97.5	107	115	124	131
SERI-J	117	144	166	186	204	220	235	249	111	136	156	175	192	208	222	235
SERI-K	213	261	301	336	369	398	426	452	201	246	284	318	348	376	402	427
SERI-L	298	365	422	472	517	558	597	633	284	348	402	449	492	532	568	603
SEHI-175	506	619	715	800	875	946	1012	1073	478	585	675	765	827	894	955	1013
SEHI-400	1073	1315	1518	1697	1859	2008	2147	2277	1022	1252	1446	1616	1770	1912	2044	2168

R-407C

Valve Type	-20°C							
	Pressure Drop Across Valve (bar)							
	4	6	8	10	12	14	16	18
SER-B	5.83	7.14	8.25	9.22	10.1	10.9	11.7	12.4
SER-C	15.8	19.4	22.4	25.0	27.4	29.6	31.6	33.5
SER-D	32.2	39.4	45.5	50.8	55.7	60.2	64.3	68.2
SERI-G	59.1	72.4	83.6	93.5	102	111	118	125
SERI-J	106	131	151	168	184	199	213	226
SERI-K	193	236	273	305	334	361	386	409
SERI-L	274	335	387	433	474	512	548	581
SEHI-175	4.58	561	647	724	793	856	915	972
SEHI-400	985	1207	1393	1558	1707	1843	1971	2090

Liquid Temperature Correction Factors															
°C	-18	-12	-7	-1	4	10	16	21	27	32	38	43	49	54	60
R-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

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Selection Tables

R-404A

Capacities in kW at Evaporator Temperature °C

R-404A	Valve Type	5°C								-10°C							
		Pressure Drop Across Valve (bar)															
		4	6	8	10	12	14	16	18	4	6	8	10	12	14	16	18
SER-B	4.36	5.34	6.16	6.89	7.55	8.15	8.72	9.24	4.06	4.97	5.74	6.42	7.03	7.60	8.12	8.62	
SER-C	11.8	14.5	16.7	18.7	20.5	22.1	23.6	25.1	11.0	13.5	15.6	17.4	19.1	20.6	22.0	23.4	
SER-D	24.0	29.4	34.0	38.0	41.6	45.0	48.1	51.0	22.4	27.4	31.7	35.4	38.8	41.9	44.8	47.5	
SERI-G	47.1	57.5	66.4	74.4	81.4	87.9	94.0	99.6	43.6	53.4	61.6	69.1	75.6	81.6	87.3	92.6	
SERI-J	84.5	104	120	134	146	158	169	179	78.5	96.2	111	124	136	147	156	167	
SERI-K	153	188	216	242	265	287	307	325	142	174	201	225	247	266	285	302	
SERI-L	205	251	289	324	355	383	409	434	191	234	270	302	330	357	382	405	
SEHI-175	364	446	515	575	631	681	728	772	338	414	478	534	586	633	676	718	
SEHI-400	736	902	1041	1164	1275	1378	1473	1562	686	841	971	1085	1189	1284	1373	1456	

R-404A	Valve Type	-20°C								-30°C							
		Pressure Drop Across Valve (bar)															
		4	6	8	10	12	14	16	18	4	6	8	10	12	14	16	18
SER-B	3.85	4.71	5.44	6.08	6.66	7.20	7.69	8.16	3.62	4.44	5.12	5.73	6.28	6.78	7.25	7.69	
SER-C	10.4	12.8	14.8	16.5	18.1	19.5	20.9	22.1	9.83	12.0	13.9	15.5	17.0	18.4	19.7	20.8	
SER-D	21.2	26.0	30.0	33.6	36.8	39.7	42.4	45.0	20.0	24.5	28.3	31.6	34.6	37.4	40.0	42.4	
SERI-G	41.2	50.5	58.4	65.2	71.4	77.1	82.5	87.5	38.7	47.4	54.8	61.2	67.1	72.4	77.4	82.1	
SERI-J	74.2	90.8	105	117	128	139	148	156	69.6	85.3	98.5	110	121	131	139	148	
SERI-K	134	165	191	213	233	252	269	285	126	155	179	200	219	236	253	268	
SERI-L	181	221	256	286	313	338	361	383	170	208	241	269	295	318	340	361	
SEHI-175	319	391	452	505	553	598	639	678	300	367	425	474	520	561	600	636	
SEHI-400	650	796	919	1028	1126	1216	1300	1379	612	750	866	968	1061	1146	1225	1299	

R-404A	Valve Type	-40°C							
		Pressure Drop Across Valve (bar)							
		4	6	8	10	12	14	16	18
SER-B	3.39	4.16	4.80	5.37	5.88	6.35	6.79	7.20	
SER-C	9.20	11.3	13.0	14.5	15.9	17.2	18.4	19.5	
SER-D	18.7	22.9	26.5	29.6	32.4	35.0	37.4	39.7	
SERI-G	36.1	44.4	51.1	57.1	62.6	67.5	72.4	76.7	
SERI-J	65.1	79.6	91.9	103	113	122	131	138	
SERI-K	118	144	167	186	204	221	236	251	
SERI-L	159	195	225	252	276	298	319	338	
SEHI-175	280	342	396	442	485	524	560	594	
SEHI-400	573	702	811	907	993	1073	1147	1216	

Liquid Temperature Correction Factors																
°C	-18	-12	-7	-1	4	10	16	21	27	32	38	43	49	54	60	
R-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	

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Selection Tables

R-410A

Capacities in kW at Evaporator Temperature °C

Valve Type	5°C								-10°C							
	Pressure Drop Across Valve (bar)															
	5	8	11	14	17	20	23	26	5	8	11	14	17	20	23	26
SER-B	7.03	8.89	10.4	11.8	13.0	14.1	15.1	16.0	6.88	8.70	10.2	11.5	12.7	13.8	14.8	15.7
SER-C	19.1	24.1	28.3	31.9	35.1	38.1	40.9	43.5	18.7	23.6	27.7	31.2	34.4	37.3	40.0	42.5
SER-D	38.8	49.0	57.5	64.9	71.5	77.5	83.2	88.4	37.9	48.0	56.3	63.5	70.0	75.9	81.4	86.5
SERI-G	75.2	95.1	112	126	139	151	161	171	72.7	91.9	108	122	134	145	156	166
SERI-J	135	171	201	226	249	271	291	309	131	165	194	219	241	262	280	298
SERI-K	245	311	364	411	452	491	526	559	236	300	352	396	436	474	509	541
SERI-L	330	418	490	553	609	660	708	753	323	409	479	541	596	646	693	737
SEHI-175	582	736	865	975	1074	1165	1249	1328	564	712	835	942	1039	1126	1208	1284
SEHI-400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

R-410A

Valve Type	-20°C							
	Pressure Drop Across Valve (bar)							
	5	8	11	14	17	20	23	26
SER-B	6.70	8.47	9.93	11.2	12.3	13.4	14.4	15.3
SER-C	18.2	23.0	26.9	30.4	33.5	36.3	38.9	41.4
SER-D	36.9	46.7	54.8	61.8	68.1	73.9	79.2	84.2
SERI-G	70.7	89.5	105	118	131	141	152	161
SERI-J	127	161	189	213	235	255	273	291
SERI-K	231	292	342	386	425	461	495	526
SERI-L	316	398	467	526	580	629	675	717
SEHI-175	548	693	813	916	1011	1096	1175	1249
SEHI-400	-	-	-	-	-	-	-	-

Liquid Temperature Correction Factors															
°C	-18	-12	-7	-1	4	10	16	21	27	32	38	43	49	54	60
R-410A	1.61	1.55	1.49	1.43	1.39	1.31	1.23	1.17	1.12	1.06	1.00	0.94	0.88	0.82	0.76

Selection example:

Refrigerant: R-410A
 Condensing Temperature: 38°C
 Liquid Temperature: 32°C
 Evaporator Temperature: 5°
 Liquid Line Loss: 0.5 bar
 ΔP Distributor and Tubes: 2.5 bar

Evaporator Load: 17 kW
 Condensing Pressure (bar) ≈ 22
 Liquid Line Loss (Estimate) ≈ - 0.5
 Distributor and Tubes ≈ - 2.5
 Evaporator Pressure (bar) ≈ -8
 ΔP across EEV ≈ 11

R-410a, 32°C Liquid Correction Factor from Table: 1.08
 SER-B: 10.4 kW x 1.06 = 11.02 kW
 SER-C: 28.3 kW x 1.06 = 30 kW

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Selection Tables

R-507A Capacities

Capacities in kW at Evaporator Temperature °C

	Valve Type	5°C								-10°C							
		Pressure Drop Across Valve (bar)															
		4	6	8	10	12	14	16	18	4	6	8	10	12	14	16	18
R-507A	SER-B	4.22	5.17	5.97	6.68	7.31	7.90	8.44	8.96	3.93	4.81	5.56	6.21	6.81	7.35	7.86	8.33
	SER-C	11.4	14.0	16.2	18.1	19.8	21.4	22.9	24.3	10.7	13.0	15.1	16.8	18.5	19.9	21.3	22.6
	SER-D	23.3	28.5	32.9	36.8	40.3	43.6	46.6	49.4	21.7	26.5	30.6	34.3	37.5	40.5	43.3	46.0
	SERI-G	46.0	56.4	65.1	72.8	79.6	86.1	92.1	97.6	42.7	52.4	60.4	67.6	74.0	80.0	85.5	90.7
	SERI-J	82.8	101	117	131	144	155	166	176	76.9	94.2	109	122	133	144	154	164
	SERI-K	151	184	212	236	260	281	300	319	139	171	196	220	241	261	279	296
	SERI-L	198	243	280	314	344	371	397	421	185	226	261	292	320	345	369	392
	SEHI-175	356	436	505	564	618	667	713	756	331	406	468	524	573	619	662	702
	SEHI-400	713	874	1009	1128	1236	1335	1427	1514	664	813	939	1050	1150	1242	1328	1408
			-20°C								-30°C						
		Pressure Drop Across Valve (bar)															
		4	6	8	10	12	14	16	18	4	6	8	10	12	14	16	18
R-507A	SER-B	3.72	4.55	5.26	5.88	6.44	6.96	7.44	7.89	3.50	4.28	4.94	5.53	6.06	6.54	6.99	7.42
	SER-C	10.1	12.3	14.3	15.9	17.5	18.9	20.2	21.4	9.48	11.6	13.4	15.0	16.4	17.7	19.0	20.1
	SER-D	20.5	25.1	29.0	32.4	35.5	38.4	41.0	43.5	19.3	23.6	27.3	30.5	33.4	36.1	38.6	40.9
	SERI-G	40.4	49.5	57.2	63.9	70.0	75.6	80.8	85.8	38.0	46.6	53.8	60.2	65.9	71.2	76.1	80.7
	SERI-J	72.7	89.1	103	115	126	136	145	154	68.4	83.8	96.8	108	119	128	136	145
	SERI-K	132	162	186	209	228	247	264	280	124	152	176	196	215	232	248	264
	SERI-L	175	214	247	276	302	327	349	370	164	201	232	260	284	307	328	348
	SEHI-175	313	384	442	495	542	586	626	665	295	361	416	466	511	552	589	625
	SEHI-400	628	769	888	993	1088	1175	1256	1333	591	724	836	934	1023	1105	1182	1253
			-40°C														
		Pressure Drop Across Valve (bar)															
		4	6	8	10	12	14	16	18								
R-507A	SER-B	3.27	4.00	4.62	5.17	5.66	6.11	6.54	6.93								
	SER-C	8.86	10.9	12.5	14.0	15.3	16.6	17.7	18.8								
	SER-D	18.0	22.1	25.5	28.5	31.2	33.7	36.0	38.2								
	SERI-G	35.6	43.6	50.4	56.4	61.6	66.6	71.2	75.5								
	SERI-J	64.1	78.5	90.6	101	111	120	128	136								
	SERI-K	116	142	164	184	201	216	232	246								
	SERI-L	153	188	217	243	266	287	307	326								
	SEHI-175	275	338	391	436	478	516	552	585								
	SEHI-400	552	676	781	873	956	1033	1104	1171								

Liquid Temperature Correction Factors																
°C	-18	-12	-7	-1	4	10	16	21	27	32	38	43	49	54	60	
R-507A	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	

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Selection Tables

R-744 Capacities

Capacities in kW at Evaporator Temperature °C

	Valve Type	-20°C				-30°C				-40°C			
		Pressure Drop Across Valve (bar)											
		8	12	16	20	12	16	20	24	16	20	24	28
R-744	SER-B	13.8	16.9	19.6	21.9	16.9	19.6	21.9	24.0	19.4	21.7	23.8	25.7
	SER-C	37.5	46.0	53.1	59.3	45.9	53.0	59.3	65.0	52.7	59.0	64.6	69.8
	SER-D	76.3	93.5	108	121	93	108	121	132	107	120	131	142
	SERI-G	144	175	204	227	175	204	227	248	202	226	247	267
	SERI-J	259	316	366	408	316	365	408	447	364	406	445	480
	SERI-K	468	574	662	741	573	662	740	811	659	736	806	871
	SERI-L	650	796	919	1028	796	919	1027	1125	913	1021	1119	1208
	SEHI-175	-	-	-	-	-	-	-	-	-	-	-	-
	SEHI-400	-	-	-	-	-	-	-	-	-	-	-	-

Liquid Temperature Correction Factors															
°C	-18	-12	-7	-1	4	10	16	21	27	32	38	43	49	54	60
R-744	1.13	1.07	1.00	0.93	0.86	-	-	-	-	-	-	-	-	-	-

Accurate at the time of going to print.

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Selection Tables

R-422D

Capacities in kW at Evaporator Temperature °C

R-422D	Valve Type	5°C								-10°C							
		Pressure Drop Across Valve (bar)															
		2.5	4.0	5.5	7.0	8.5	10.0	11.5	13.0	2.5	4.0	5.5	7.0	8.5	10.0	11.5	13
SER-B	3.48	4.40	5.16	5.82	6.41	6.96	7.46	7.93	3.21	4.06	4.77	5.38	5.93	6.43	6.89	7.33	
SER-C	9.43	11.9	14.0	15.8	17.4	18.9	20.2	21.5	8.71	11.0	12.9	14.6	16.1	17.4	18.7	19.9	
SER-D	19.2	24.3	28.5	32.1	35.4	38.4	41.1	43.7	17.7	22.4	26.3	29.7	32.7	35.4	38.0	40.4	
SERI-G	37.6	47.8	55.9	63.1	69.2	75.3	80.8	85.8	34.5	44.1	51.4	58.0	63.9	69.4	74.7	79.2	
SERI-J	67.8	85.8	100	113	125	136	145	155	62.3	79.1	92.7	105	115	125	134	143	
SERI-K	123	155	182	206	226	246	264	280	113	143	168	189	209	226	243	258	
SERI-L	163	207	242	273	301	327	350	373	151	191	224	253	278	302	324	344	
SEHI-175	285	361	423	477	526	570	610	650	263	333	391	442	486	525	564	599	
SEHI-400	588	744	872	984	1084	1176	1261	1340	543	687	805	909	1001	1086	1165	1238	

R-422D	Valve Type	-20°C								-30°C							
		Pressure Drop Across Valve (bar)															
		2.5	4	5.5	7	8.5	10	11.5	13	2.5	4.0	5.5	7.0	8.5	10.0	11.5	13
SER-B	3.03	3.83	4.49	5.06	5.58	6.05	6.49	6.90	2.83	3.58	4.20	4.74	5.22	5.67	6.08	6.46	
SER-C	8.21	10.4	12.2	13.7	15.1	16.4	17.6	18.7	7.68	9.72	11.4	12.9	14.2	15.4	16.5	17.5	
SER-D	16.7	21.1	24.8	27.9	30.8	33.4	35.8	38.1	15.6	19.8	23.2	26.1	28.8	31.3	33.5	35.6	
SERI-G	32.8	41.2	48.4	54.5	60.1	65.4	70.0	74.5	30.5	38.4	45.1	50.8	56.3	60.9	65.1	69.2	
SERI-J	58.5	74.3	87.0	98.0	108	117	126	134	54.8	69.3	81.2	91.6	101	109	118	125	
SERI-K	107	134	158	178	196	213	228	243	99.2	125	147	166	183	199	213	227	
SERI-L	142	180	211	238	262	284	305	324	133	168	197	223	245	266	285	304	
SEHI-175	248	314	368	415	459	494	533	564	232	294	344	388	429	464	499	530	
SEHI-400	511	647	758	856	943	1023	1097	1166	479	606	710	801	883	958	1027	1092	

R-422D	Valve Type	-40°C							
		Pressure Drop Across Valve (bar)							
		2.5	4	5.5	7	8.5	10	11.5	13
SER-B	2.64	3.34	3.91	4.41	4.86	5.27	5.66	6.01	
SER-C	7.15	9.04	10.6	12.0	13.2	14.3	15.3	16.3	
SER-D	14.5	18.4	21.6	24.3	26.8	29.1	31.2	33.2	
SERI-G	28.0	35.9	41.9	47.2	51.9	56.5	60.6	64.3	
SERI-J	50.6	64.1	75.4	85.0	93.9	101	109	116	
SERI-K	92.2	116	137	154	170	184	198	210	
SERI-L	124	157	184	207	228	248	266	282	
SEHI-175	216	273	321	361	398	434	465	491	
SEHI-400	446	564	661	746	822	891	956	1016	

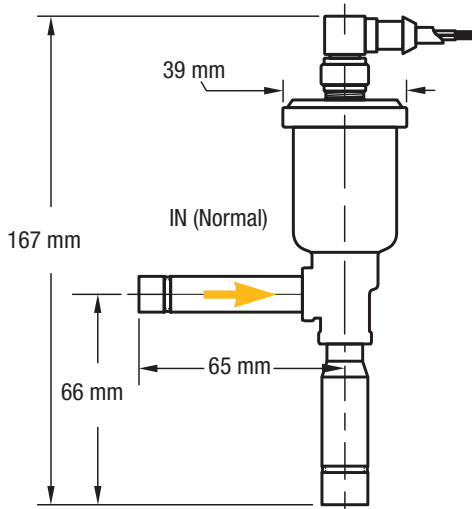
Liquid Temperature Correction Factors																
°C	-18	-12	-7	-1	4	10	16	21	27	32	38	43	49	54	60	
R-422D	1,99	1,90	1,80	1,70	1,60	1,50	1,41	1,31	1,20	1,10	1,00	0,90	0,79	0,68	0,57	

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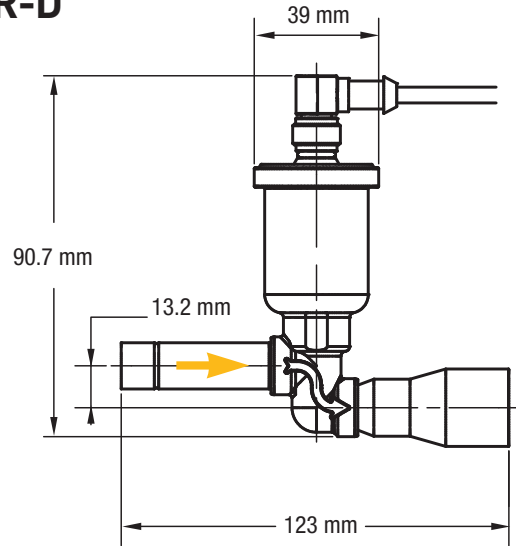


Valve Dimensions

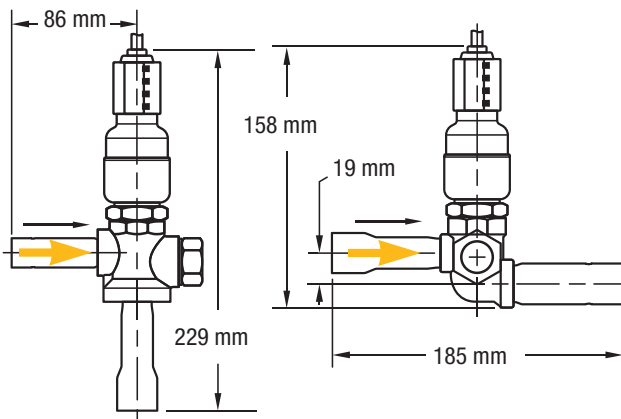
SER-B, -C



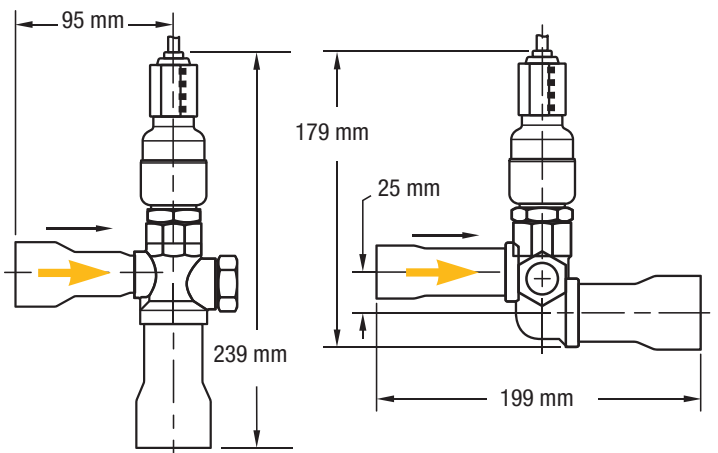
SER-D



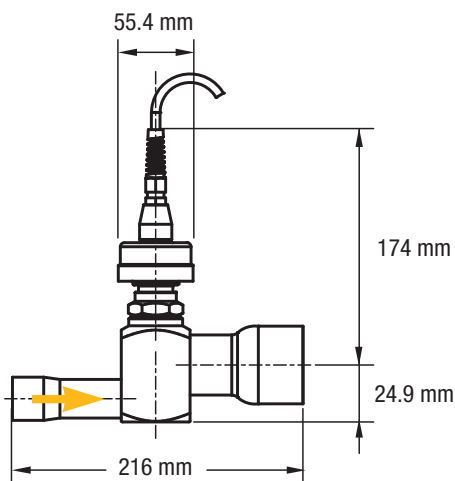
SER-G & SERI-J



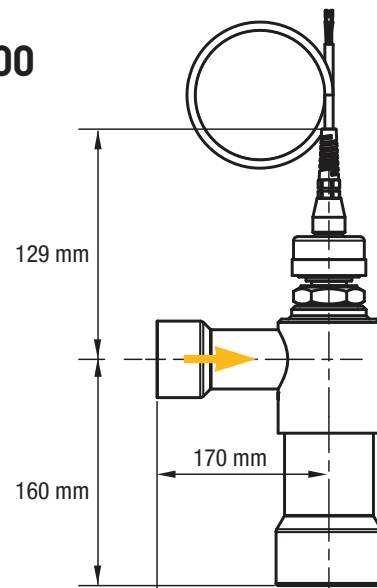
SER-K & SERI-L



SER-175



SER-400



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Order Selection Guide

Type	Connections	Body Configuration	Cable Length in Meter	Part Number
SER-B	3/8" x 1/2" ODF	Angle	3	805145
	Inlet 1/4" or 3/8" ODF Outlet 3/8" , 1/2", 5/8" ODF		3 or 6	Special order valve
SER-C	3/8" x 3/8" ODF	Angle	3	805152
	3/8" x 1/2" ODF		3	805130
	3/8" x 5/8" ODF		3	805155
	Inlet 1/4" or 3/8" ODF Outlet 3/8", 1/2", 5/8" ODF		3 or 6	Special order valve
SER-D	5/8" x 7/8"	Straight Through Offset	3	805160
	Inlet 3/8", 1/2", 5/8" ODF Outlet 1/2", 5/8", 7/8", 1-1/8" ODF		3 or 6	Special order valve
*SERI-G	7/8" x 1-1/8" ODF	Angle	3	805089
	5/8" x 7/8" ODF		3	805067
	7/8" x 1-1/8" ODF	Straight Through Offset	3	805114
	Inlet 5/8", 7/8" ODF Outlet 1/2", 5/8", 7/8", 1-1/8" ODF	Angle or Straight Through Offset	3, 6, 9, 12	Special order valve
*SERI-J	1-1/8" x 1-3/8" ODF	Straight Through Offset	3	805115
	1-1/8" x 1-3/8" ODF	Angle	3	805091
	7/8" x 7/8" ODF		3	805069
	Inlet 7/8", 1-1/8" ODF Outlet 7/8", 1-1/8", 1-3/8" ODF	Angle or Straight Through Offset	3, 6, 9, 12	Special order valve
*SERI-K	1-1/8" x 1-5/8" ODF	Angle	3	805093
	1-1/8" x 1-1/8" ODF		3	805072
	1-1/8" x 1-5/8" ODF	Straight Through Offset	3	805116
	1-1/8" x 1-3/8" ODF		3	805133
	Inlet 1-1/8" ODF Outlet 7/8", 1-1/8", 1-3/8", 1-5/8" ODF		Angle or Straight Through Offset	3, 6, 9, 12
*SERI-L	1-1/8" x 1-3/8" ODF	Straight Through Offset	3	805140
	1-3/8" x 1-5/8" ODF		3	805132
	Inlet 1-1/8", 1-3/8" ODF Outlet 1-1/8", 1-3/8", 1-5/8" ODF	Angle or Straight Through Offset	3, 6, 9, 12	Special order valve
*SEHI-175	1-5/8" x 2-1/8"	Straight Through Offset	6	953012
	Inlet 1-1/8", 1-3/8", 1-5/8" ODF Outlet 2-1/8" ODF		3, 6, 9, 12	Special order valve
*SEHI-400	2-5/8" x 2-5/8"	Angle	6	953251
	Inlet 1-5/8", 2-1/8", 2-5/8" ODF Outlet 1-5/8", 2-1/8", 2-5/8" ODF, 3-1/8" ODM		3, 6, 9, 12	Special order valve

* With built-in sight glass
Special order valves might be available upon request.

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Electric Expansion Valve Kits

Motor Kit

for Electric Expansion Valves

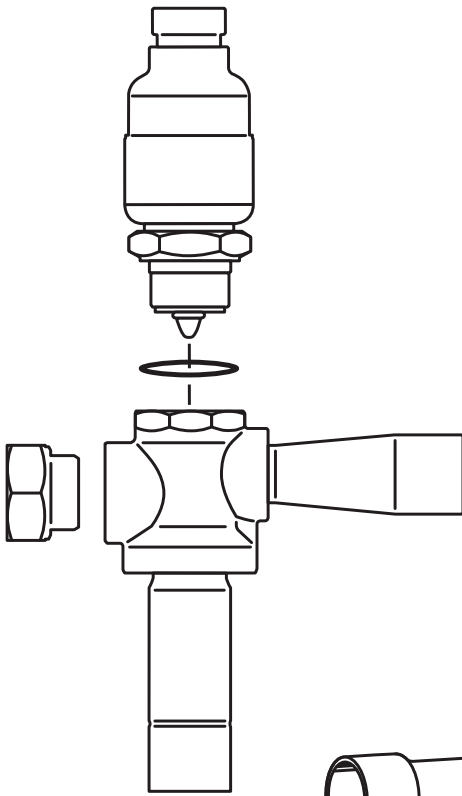
Valve Type	KIT No.	Part Number
SERI-G	KS-SERI-G	958184
SERI-J	KS-SERI-G	958185
SERI-K	KS-SERI-K	958186
SERI-L	KS-SERI-L	958189
SEHI-175	KS-SEH-175	958126
SEHI-400	KS-SEH-400	380821

Cable Assembly Kit

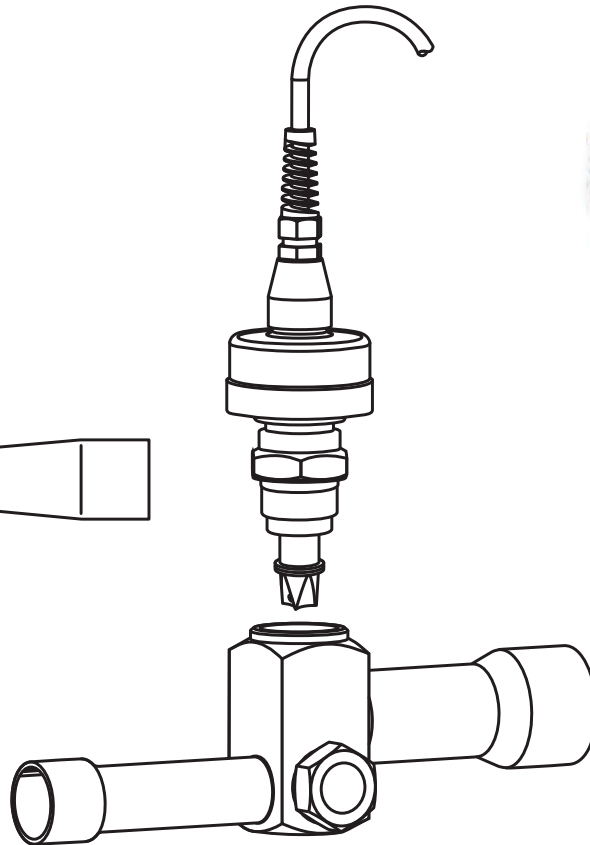
for Electric Expansion Valves

Valve Type	Cable Length	Part Number
SER-B, -C, -D	3 meter	805194
	6 meter	805195
SERI-G,-J,-K,-L	3 meter	805081
	6 meter	805082
	9 meter	805083
	12 meter	805084

Motor Kit **SERI**



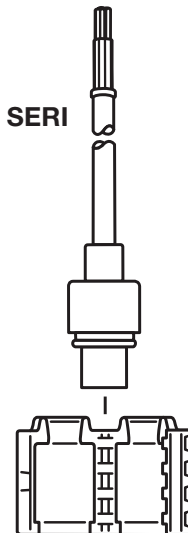
Motor Kit **SEHI**









Cable Kit **SER**



Cable Kit **SERI**



Components and Accessories

Product	Parker Part Number	Description
	PSCDRIVE (X) 1	Superheat Controller no display
	PSCDRIVE (X) 1 DO	Superheat Controller with LED display
		(x) insert communication option S = Stand alone, C = CANbus, M= Modbus, I = Intrabus
	PSTPN830S200	Temperature probe, NTC 103 AT-2, -50°C to 120°C, 1.5 m long
	PSTPN530F202	Temperature probe, NTC 103 AT-2, -50°C to 110°C, 3 m long
	PSCT5108	Fast response Pressure Transducers, 2 wire 4/20mA, 0 to 30 Bar, 8 to 28 VDC
	PSCT5130	Pressure Transducers, 2 wire 4/20mA, 0 to 30 Bar, 8 to 28 VDC
	PSCT130L00	Pressure Transducers Ratiometric 2 wire, 5 VDC, 0 to 7 Bar
	PSCT130L01	Pressure Transducers Ratiometric 2 wire, 5 VDC, 0 to 25 Bar
	PSCT130L02	Pressure Transducers Ratiometric 2 wire, 5 VDC, 0 to 60 Bar
	983189	IB2Q Interface Board (2500 steps)
	952960	IB6Q Interface Board (6386 steps)
	953276	SMA-12 Step Motor Actuator / Test instrument

For further information on the electronic controller please refer to chapter 2 and 3.

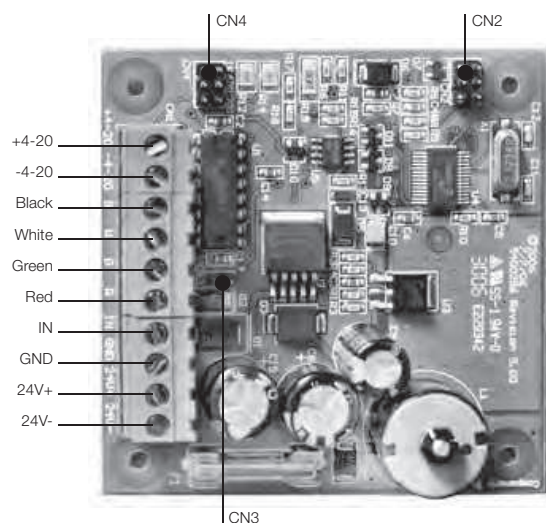
SMA-12 Step Motor Actuator

The SMA-12 is designed to diagnose systems with step motor valves by proving operation of the step motor. The unit is powered by two 9 volt alkaline batteries and will power any standard 12-volt DC bipolar step motor. Step rate is selectable at 1, 50, 100 or 200 steps per second and will stroke the motor in both directions. Red lamps indicate continuity of the motor windings and battery power, and binding posts provide quick connection of the motor leads. In the event of a controller failure, the SMA-12 can manually open or close the valve or step it to any position. The SMA-12 is the basic troubleshooting tool for all step



IBQ Interface Board

The IBQ interface board allows the Parker Sporlan electric expansion valves stepper motor to be modulated in response to an externally generated signal. The IBQ accept a 4-20 milliamp, or 0-10 volt DC inputs and stroke the valve proportionately to that signal. While the IBQ will control Parker Sporlan's line of SER, SERI and SEHI stepper motor electric expansion valve, an external signal must be generated in response to superheat.



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